Appendix C1 – Historic Flood Event Data

Historical Flood Summary for Select USGS Gage Records

U.S. Geological Survey (USGS) gage information was used to identify historical flood stages located along the major rivers and tributaries within the basin. The date, peak flow, peak stage, and expected consequences during these historic flood events at several key locations throughout the basin are summarized in Table B-1. USGS gage locations are also viewable at Region 13 Nueces (arcgis.com).

Table 1. USGS Historical Flood Summary

River Gages	Flood Date	Peak Flow (cubic feet per second)	Peak Stage (feet)	Expected Consequence
Tilden	7/10/2002	33,000	30.1	Major flooding occurs. Disastrous flooding of commercial and residential buildings in Tilden. Restaurant on the right bank of the Frio River had 3 to 4 feet of water in it.

Historic Flood Events

Past flood events provide insight on where flood-prone areas are located within the basin. Table B-2 provides a list and brief description of historical events within the basin.

Table 2. Listing of Historical Flood Events

Table 2. Listing of Historical	1 1004 EVOITS
Flood Event	Description
2017 Hurricane Harvey	Hurricane Harvey is the most expensive storm on record, costing an estimated \$4.28 billion dollars in damages to Region 13 counties. Aransas county experienced the most extensive damages with an estimated cost totaling \$1.75 billion. Nueces, San Patricio, and Refugio counties saw losses of \$1.32 billion, \$520 million, and \$520 million respectively. The National Weather Service (NWS) reports that 64 injuries and 2 fatalities were caused in Region 13 by Hurricane Harvey.
2003 Flash Floods	In late June and early July of 2003, flash floods hit the northwestern counties of Region 13 after a hurricane turned tropical storm blew across the coastal counties.
2002 Frio River Flood	In July and September of 2002, Frio River saw record stages near Tilden. The July storm represents the flood of record for parts of the middle basin. The tributaries of the complex northwestern portion of the basin see peak stages in different storm events.
1998 Flash Flood Real County	The deadliest floods in these records are the flood of August 1998, which took four lives in Real County.
1997 Flash Flood in Medina, Bandera, and Goliad Counties	The flood of June 1997 which took four lives across Medina, Bandera, and Goliad Counties.
1996 Nueces Flood	The Nueces near Uvalde saw its record peak stage in 1996.
1971 Hurricane Edith and Fern	The combination of Hurricanes Edith and Fern caused only a slightly higher stage on the Mission River in 1971. These two storms represent the largest storms in the lower counties of the Nueces Basin, at the time of occurrence.
1967 Hurricane Beulah	In 1967, Hurricane Beulah set the record for highest stage in the Nueces River at gages in Tilden, Three Rivers, and Calallen. Beulah also set the record for highest recorded stage in the Atascosa at Whitsett and caused the second highest stage recorded in the Mission River at Refugio. National Oceanic and Atmospheric Administration (NOAA) reports that 41 lives were lost in Hurricane Beulah and an estimated 1 billion dollars of damage was done to property. Beulah is reported to have left thousands of people homeless as well.
1935 Nueces and West Nueces Flood	The earliest major flood in the Nueces River Basin regularly referenced in literature is the flood of 1935. This historic flood affected the Nueces River and its tributaries in the early weeks of June. The Nueces River and many of its tributaries saw record stages with some like the West Nueces River breaking their prior stage records by over ten feet. This storm caused the largest peak stage in the Nueces River at Cotulla and in the West Nueces River.
1932 Frio and Nueces Flood	There was a 1932 storm that caused the highest peak stage in the Frio River at Concan and the second highest recorded peak stage in the Nueces River at near Uvalde.

National Weather Service Flood Data

The National Weather Service (NWS) has documented fatalities, injuries, and property damage as the result of past flood events since 1996 as shown in Figures B-1 through B-3.

A summary of flood damage data gathered from the NWS can be seen in Tables B-3 ad B-4. Table B-3 reports flood damage in dollars, injuries, and fatalities by year. Table B-4 uses the same base data as Table 3 but is divided based on counties. To generate Tables B-3 and B-4, raw yearly damage data in Texas was downloaded from NWS website. Then, a filter on counties is used so that only damage data of Region 13 counties remain in the dataset. Finally, types of damages that are non-essential to this study, such as wind and fire damage, were filtered out so that damages include only rain, storm and flood damages.

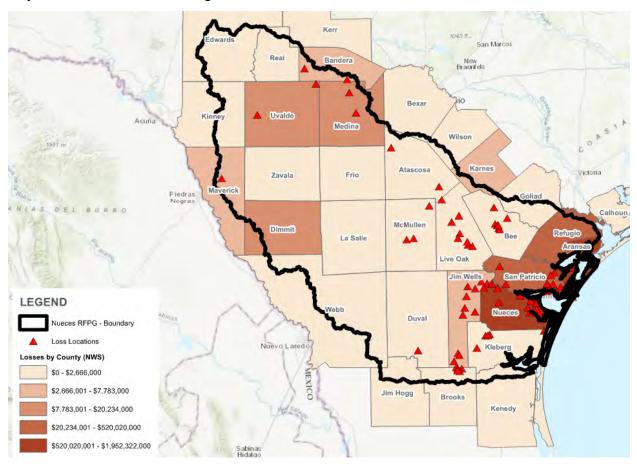


Figure 1. National Weather Service Property Damage from Flooding, since 1996

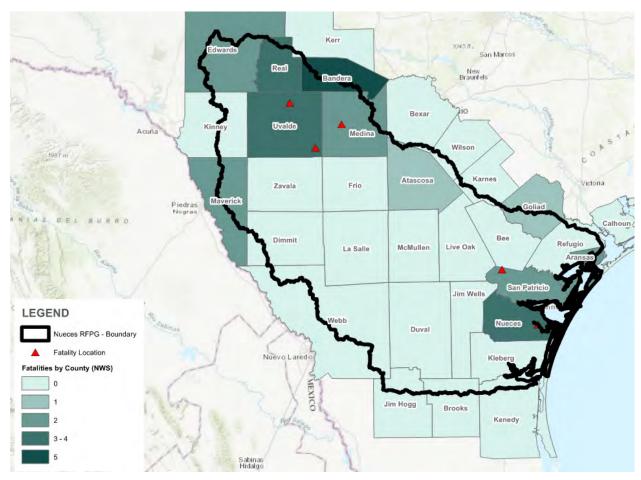


Figure 2. National Weather Service Fatalities from Flooding, since 1996

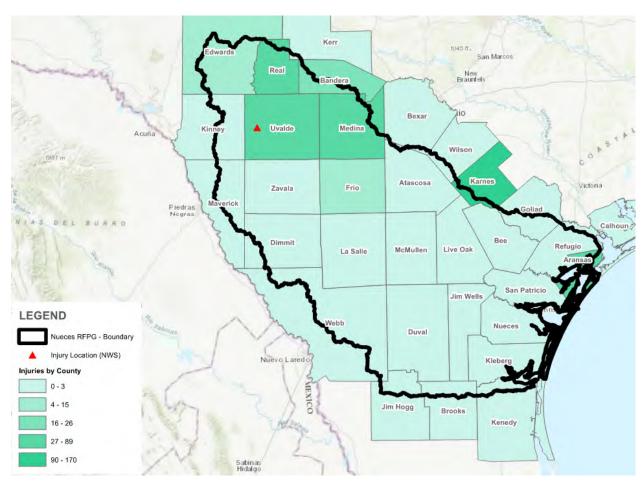


Figure 3. National Weather Service Injuries from Flooding, since 1996

Table 3. Losses associated with Flooding in Region 13 counties since 1996 as reported by the National Weather Service

Flood Year	Damages (in Dollars)	Injuries	Fatalities		
1996	56,367,000	0	1		
1997	21,807,000	170	8		
1998	94,424,000	495	5		
1999	492,000	4	0		
2000	961,000	1	0		
2001	3,540,000	21	1		
2002	4,680,000	29	1		
2003	5,642,000	0	1		
2004	2,585,000	7	1		
2005	-	0	0		
2006	2,170,000	0	0		
2007	4,910,000	0	0		
2008	7,207,000	2	1		
2009	-	0	0		
2010	10,775,000	0	3		
2011	-	0	0		
2012	6,770,000	0	0		
2013	810,000	0	0		
2014	1,550,000	0	0		
2015	5,365,000	0	4		
2016	2,335,000	0	0		
2017 ¹	4,278,561,000	65	2		
2018	1,350,000	3	1		
2019	155,000	0	0		
2020	1,005,000	0	0		
Totals	4,513,461,000	797	29		

¹ Hurricane Harvey is responsible for most of these damages

Table 4. Losses associated with Flooding from 1996 to 2020 as reported by the National Weather Service

Counties	Damages	Injuries	Fatalities
Aransas	\$ 1,952,322,000	65	2
Atascosa ²	\$ 2,067,000	0	1
Bandera ²	\$ 7,783,000	26	5
Bee	\$ 1,049,000	0	0
Bexar ²	\$ -	0	0
Brooks ²	\$ 1,625,000	0	0
Dimmit ²	\$ 20,234,000	0	0
Duval	\$ 50,000	0	0
Edwards ²	\$ 721,000	15	2
Frio	\$ 2,342,000	15	0
Goliad ²	\$ 1,025,000	0	1
Jim Hogg ²	\$ -	0	0
Jim Wells	\$ 4,816,000	0	0
Karnes ²	\$ 7,084,000	170	0
Kenedy ²	\$ -	0	0
Kerr ²	\$ -	0	0
Kinney ²	\$ 1,390,000	0	0
Kleberg	\$ 1,170,000	0	0
La Salle	\$ -	0	0
Live Oak	\$ 425,000	0	0
Maverick ²	\$ 7,266,000	3	2
McMullen	\$ 200,000	0	0
Medina ²	\$ 17,148,000	59	2
Nueces	\$ 1,315,015,000	3	4
Real ²	\$ 2,666,000	69	4
Refugio ²	\$ 520,020,000	0	0
San Patricio	\$ 518,722,000	0	2
Uvalde	\$ 18,009,000	89	4
Webb ²	\$ -	0	0
Wilson ²	\$ 89,786,000	257	0
Zavala	\$ 20,526,000	26	0
Total	\$ 4,513,461,000	797	29

 $^{^2}$ Total county damages shown. These counties are only partially located in Region 13, with the remaining amount in an adjoining flood planning basin.

Federal Emergency Management Agency Flood Damage Data

Federal Emergency Management Agency (FEMA) funding for flood damages was obtained from 2002 to June 2021 as shown in Figure B-4. Table B-5 includes flood related damages by county. Unlike the gross damage data in Table B-3 and Table B-4, data in Table B-5 is summarized from various federal programs. First, raw data of all program funds in the Region 13 counties was downloaded from the FEMA website. Then, programs that are non-related to flood damages are filtered out. Finally, FEMA funding of four federal programs is summarized by county: Public Assistance Funded Project Summaries, Individuals and Households Program – Valid Registrations, Individual Assistance Housing Registrants – Large Disasters, and Housing Assistance Program.

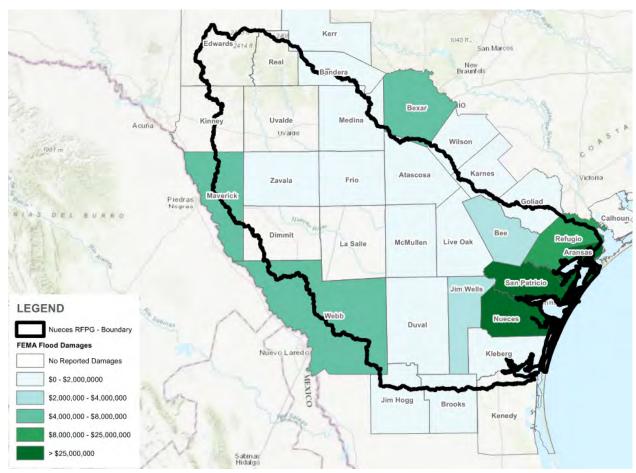


Figure 4. FEMA Flood Assistance to Owners and Renters for Flood Damages, since 2002

Table 5. FEMA Funding for Flood Related Damages by Program (2002 to June 2021)

	Public Assistance Funded Project Summaries		eholds Program Valid trations	Individual Assistance Housing Registrants Large Disasters	Housing Assistance Program	
Counties	Federal Share Obligated	Flood Damage Amount	Repair Amount	Real Property Damage Amount Observed by FEMA	Owners and Renters Combined Amount	
Aransas ²	75,674,264	616,914	734,181	8,457,466	50,377,516	
Atascosa ²	1,534,103	0	0	0	668,809	
Bandera ²	2,077,275	0	0	0	72,991	
Bee	1,198,186	9,016	7,686	62,702	2,908,309	
Bexar ²	0	0	0	0	6,886,899	
Brooks ²	152,608	0	0	0	218,103	
Dimmit ²	758,646	0	0	0	0	
Duval	0	0	0	0	595,316	
Edwards ²	0	0	0	0	0	
Frio	497,840	4,767	7,737	0	435,145	
Goliad ²	618,371	453	1,175	40,534	1,550,171	
Jim Hogg ²	265,938	0	0	0	404,417	
Jim Wells	1,754,451	150,464	59,198	895	3,090,062	
Karnes ²	751,420	482	3,677	6,823	1,108,783	
Kenedy ²	29,192	0	0	0	0	
Kerr ²	1,110,759	0	0	0	5,902	
Kinney ²	663,038	0	0	0	0	
Kleberg	1,185,217	63,131	30,086	32,654	999,455	

Table 5. FEMA Funding for Flood Related Damages by Program (2002 to June 2021)

	Public Assistance Funded Project Summaries	Individuals and Hous Regist	eholds Program Valid trations	Individual Assistance Housing Registrants Large Disasters	Housing Assistance Program	
Counties	Federal Share Obligated	Flood Damage Amount	Repair Amount	Real Property Damage Amount Observed by FEMA	Owners and Renters Combined Amount	
La Salle	783,237	0	0	0	0	
Live Oak	333,648	1,530	3,911	0	633,648	
Maverick ²	568,802	0	0	0	5,485,074	
McMullen	125,315	0	0	0	30,906	
Medina ²	2,658,555	0	0	0	1,448,375	
Nueces	107,325,093	2,543,856	2,049,947	7,302,464	43,018,855	
Real ²	1,427,573	0	0	0	0	
Refugio ²	27,531,715	2,028	0	323,289	8,183,992	
San Patricio	38,006,297	0	0	2,481,751	25,725,502	
Uvalde	2,934,567	0	0	0	0	
Webb ²	3,761,150	0	0	0	4,085,755	
Wilson ²	2,059,932	0	0	0	267,428	
Zavala	3,827,640	27,034	14,984	0	1,408,517	
Totals	279,614,832	3,419,675	2,912,582	18,708,578	159,609,930	

Historical Flood Data Summary

National Weather Service (NWS) and Federal Emergency Management Agency (FEMA) data both report flood damages and correlate well throughout the basin. These two agencies report different figures, but the underlying data agrees on important points for regional flood planning including which counties see the largest financial losses due to flooding, what type of storms are the most damaging, and which years were the costliest. In summary of these two data sources the coastal counties of Aransas, Nueces, San Patricio, and Refugio see the most expensive damages and receive the most federal relief in relation to flooding. Hurricanes and tropical storms cause the higher rates of loss experienced in these counties. However, NWS reported injuries and fatalities indicate that the flash flooding of the northwest basin and riverine flooding of the middle basin are also dangerous and costly. It is important to mention that neither of these data providers are able to completely capture the total amount of damages caused by flooding. The NWS, for example, reports no damages in Webb County since 1996 while FEMA reports some \$4 million provided to homeowners and renters for flood damage repairs since 2002. The NWS also reports damages that FEMA does not when no federal funds are distributed for repair or future mitigation.

Flash floods prove to be even more dangerous making up 72% of all fatalities and 59% of all injuries reported by the NWS since 1996 with most of these incidents in the northwestern counties. While dangerous, flash floods are responsible for less than 3% of total damages with a total across all Region 13 counties of \$105 million. These figures may include losses that occurred in adjacent flood planning regions if a county is located in more than one region.

Appendix C2 – List of Previous Flood Studies

Appendix C2 – Previous Relevant Flood Studies

A list of previous flood studies considered by the Regional Flood Planning Group (RFPG) to be relevant to the development of the regional flood plan are provided in the following table:

	princing of the regional need plan are previded in			
Previous and Relevant Flood Study	Description	Jurisdictions	Counties	Year
Coastal Texas Protection and Restoration Feasibility Study	This effort, known as the Coastal Texas Protection and Restoration Feasibility Study (Coastal Texas Study), was initiated in 2014 to evaluate large-scale coastal storm risk management (CSRM) and ecosystem restoration (ER) actions aimed at providing the coastal communities of Texas with multiple lines of defense to reduce impacts from a wide array of coastal hazards. This study falls under the U.S. Army Corps of Engineers (USACE) Civil Works Mission, which includes but is not limited to inland and coastal flood risk management and the restoration, protection, and management of aquatic ecosystems. This planning effort was conducted in full compliance with the National Environmental Policy Act (NEPA) and this report includes a companion Final Environmental Impact Statement (EIS).	USACE, GLO	Nueces, San Patricio	2021
Lower Nueces River Watershed Protection Plan	The purpose of this report is to summarize data collected by Texas Stream Team citizen scientists. The data presented in this report should be considered in conjunction with other relevant water quality reports for a holistic view of water quality in the lower Nueces River watershed.	Jurisdictions within the Lower Nueces River Watershed	Counties within the Lower Nueces River Watershed	2020
Atascosa-McMullen Multi-Jurisdictional Hazard Mitigation Action Plan	The Atascosa and McMullen Counties Hazard Mitigation Plan is a multi-jurisdictional plan covering two counties, 8 cities, and 2 school districts. The purpose of the plan is to minimize or eliminate long-term risks to human life and property from known hazards and to break the cycle of high-cost disaster response and recovery within the planning area.	Atascosa County, McMullen County, the Cities of Charlotte, Christine, Jourdanton, Pleasanton, Poteet, Lytle, the school district of Lytle Independent School District (ISD) and Poteet ISD.	Atascosa- McMullen	2020
Coastal Resiliency Master Plan	Developed by the Texas General Land Office (GLO), the 2019 Texas Coastal Resiliency Master Plan is the second installment of a statewide plan to protect and promote a vibrant and resilient Texas coast that supports and sustains a strong economy and healthy environment for all who live, work, play or otherwise benefit from the natural resources and infrastructure along the Texas coast.	GLO	Aransas, Kleberg, Nueces, Refugio, San Patricio	2019

Appendix C2 – Previous Relevant Flood Studies

Previous and Relevant Flood Study	Description	Jurisdictions	Counties	Year
Bandera County River Authority and Groundwater District Flood Plan	The purpose of the flood plan is to outline a plan of operation to effectively coordinate and provide reliable information to the community during rainfall runoff events resulting in minor to significant flooding conditions of the Medina River and Sabinal River within Bandera County.	Bandera County River Authority and Groundwater District	Bandera	2019
The City of Alice & Jim Wells County Multi-Hazard Mitigation Plan	This plan addresses the following natural hazards: floods, hurricanes / tropical storms, wildfire, tornados, drought, riverine erosion, dam/levee failure, earthquakes, expansive soils, extreme heat, hailstorms, severe winter storms, windstorms, and lightning. The goals of the plan are to reduce loss of life and injury to persons; reduce disruptions to essential public services and infrastructure; reduce economic impacts to individuals, businesses, and area institutions; and to reduce losses to civic, cultural, and environmental resources.	Jim Wells County and City of Alice	Jim Wells County	2018
San Patricio County Hazard Mitigation Action Plan	The plan was prepared by San Patricio County, participating jurisdictions, and H2O Partners, Inc. The purpose of the plan is to protect people and structures and to minimize the costs of disaster response and recovery. The goal of the plan is to minimize or eliminate long-term risks to human life and property from known hazards by identifying and implementing cost-effective hazard mitigation actions.	San Patricio County	San Patricio	2018
Aransas County Multi-Jurisdictional Floodplain Management Plan	The focus of the mitigation action plan is to reduce future losses within Aransas County by identifying mitigation strategies based on a detailed hazard risk analysis, including both an assessment of regional hazards and vulnerability. The mitigation strategies seek to identify potential loss-reduction opportunities. The goal of this effort is to work towards more disaster-resistant and resilient communities throughout Aransas County.	Aransas County, the City of Aransas Pass, the Town of Fulton, and the City of Rockport.	Aransas	2017
Aransas County Texas Multi- Jurisdictional Hazard Mitigation Action Plan	This plan covers two counties, 8 cities, and 2 school districts. The purpose of the plan is to minimize or eliminate long-term risks to human life and property from known hazards and to break the cycle of high-cost disaster response and recovery within the planning area	Unincorporated Aransas County, City of Aransas Pass, Town of Fulton, City of Rockport	Aransas	2017
Nueces County Multi- Jurisdictional Hazard Mitigation Action Plan	The focus of the mitigation action plan is to reduce future losses within Nueces County by identifying mitigation strategies based on a detailed hazard risk analysis, including both an assessment of regional hazards and vulnerability. The mitigation strategies seek to identify potential loss-reduction opportunities. The goal of this effort is to work towards more disaster-resistant and resilient communities throughout Nueces County.	Nueces County, City of Aqua Dulce, City of Bishop, City of Corpus Christi, City of Driscoll, City of Petronila, City of Petronila, City of Port Aransas, City of Robstown, Port of Corpus Christi Authority	Nueces	2017

Appendix C2 – Previous Relevant Flood Studies

Previous and Relevant Flood Study	Description	Jurisdictions	Counties	Year
Hazard Identification, Risk Assessment (HIRA) and Consequence Analysis	The HIRA is the first step in evaluating natural and technological hazards that exist. It serves as a basis for the development plans, public education programs, responder training and exercises. It also lays foundation to begin mitigation efforts to minimize these identified potential threats.	Bexar County, City of San Antonio	Bexar	2014
A Joint Erosion Response Plan for Nueces County and the City of Corpus Christi	The purpose of the erosion response plan is to reduce storm damage along the city and county gulf coastlines. The erosion response plan will be used by the GLO to qualify local governments for certain GLO grants.	City of Corpus Christi, Nueces County	Nueces	2012
Coastal Bend Mitigation Action Plan	The main purpose to the planning project is to reduce future losses in the Coastal Bend region of Texas by identifying mitigation strategies based on an analysis of risk, including both an assessment of regional hazards and vulnerability. The mitigation strategies seek to identify potential loss-reduction opportunities; however, implementation of the strategies will be constrained to some extent by the future availability of funding in the context of other community priorities.	Aransas County, Bee County, Jim Wells County, Kleberg County, Live Oak County, Nueces County, San Patricio County	Aransas, Bee, Jim Wells, Kleberg, Live Oak, Nueces, San Patricio	2012
Potential for Bed- Material Entrainment in selected Streams of the Edwards PlateauEdwards, Kimble, and Real Counties, Texas, and Vicinity	An investigation of the problem at low-water crossings (LWCs) was made by the U.S. Geological Survey (USGS) in cooperation with the Texas Department of Transportation (TXDOT), and in collaboration with Texas Tech University, Lamar University, and the University of Houston. The bed-material entrainment problem for LWCs occurs at two spatial scales - watershed scale and channel-reach scale. First, the relative abundance and activity of cobble- and gravel-sized bed material along a given channel reach becomes greater with increasingly steeper watershed slopes. Second, the stresses required to mobilize bed material at a location can be attributed to reach-scale hydraulic factors, including channel geometry and particle size.	USGS, TXDOT	Edwards, Kimble and Real	2008

Appendix C3 – Floodplain Management Practices and Goal Survey Results

Entity Name:	Submission Date	Does your entity have floodplain management regulations?	Has your organization adopted minimum regulations pursuant to Texas Water Code Section 16.3145?	What standards or regulations does your community or jurisdiction use to protect the floodplain and/or encourage disaster resistant development/design? What are your minimum standards for: floodplain management, disaster resistant building codes, other ordinances? (Select all that apply)	Higher standards adopted	How would you gauge the level of enforcement of floodplain management practices?	Is there an existing stormwater or drainage fee?	Web link to entity regulations	regulations in the process of being	Which of the following describes your local funding sources for flood management activities? (Select all that apply)	Over the next ten years, what specific challenges does your community or jurisdiction face regarding managing any potential increase in flood risk in your jurisdiction? Include challenges such as funding, project identification, training, resources, etc.	Does your jurisdiction have access to the necessary training and educational resources for floodplain management?	Please explain your jurisdiction access needs.	term (10 year) floodplain management goals? If yes, please	Has your city/county identified long term (30 year) floodplain management goals? If yes, please describe goal and extent of area that it applies to.
Aransas County	2021/07/30 17:41:58	Yes	Yes	National Flood Insurance Program (NFIP) minimum requirements only Local Floodplain ordinance with higher standards (greater than NFIP)		Moderate	No	https://www.ara	Yes	Bond Program Special Tax Districts Permitting Fees	Sea-level rise, project identification, resources (namely staff - more full-time employees are needed both for maintenance of drainage infrastructure and for code enforcement), inconsistent regulations and methods for drainage between County and municipalities within the county	No	More staffing for public outreach and code enforcement; assistance in coordinating regional drainage standards and projects	Protect existing resources through regulatory standards; utilize the CRS to incentivize higher floodplain management standards; create comprehensive Public Information Plan; protect property through mitigation measures	Create a coordinated infrastructure plan for all jurisdictions
				National Flood Insurance Program (NFIP)											
Bandera County Bexar County	2021/08/06 07:14:21 2021/07/15 14:54:29	Yes	Yes	Local Floodplain ordinance with higher standards (greater than NFIP)		Moderate Moderate	No No	www.banderacou	No Yes	Permitting Fees General Fund Permitting Fees	Funding related to projects to remove dangerous roadway crossings and floodplain impacts on private property; Funding related to having staffing to inspect and enforce the Floodplain Damage Prevention Court Order to including having attorneys with the District Attorney's Office dedicated to prosecuting floodplain violators; Lack of stiff penalties for individuals who violate the Court Order	Yes		Bexar County identifies projects on a continuing basis. Approximately \$2 million/yr is delegated to projects that can be completed in a short time frame with a high cost/benefit ratio. Higher dollar/long term projects are slated for future multi-year bond projects.	
				National Flood Insurance Program (NFIP)							Funding and community awareness and buy-in from		Routine training on floodplain management and		
City of Beeville	2021/07/17 19:06:34	No	No	minimum requirements only		Low	No	NO	No	General Fund	the community	No	best practices		
City of Bishop	2021/07/13 15:58:07	Yes	Yes	National Flood Insurance Program (NFIP) minimum requirements only		Moderate	No	www.cityofbisho	Yes	We do not have a local funding source for flood management activities	Funding plays a huge part for the city the only improvements the city can make is with grant funds.	No		We have a flood management plan that is included with Nueces County but for some reason the creek beds weren't included and this is our only drainage for the city.	Yes, we are included in Nueces County's floodplain management plan, but drainage issues were left out from the current plan.
City of Corpus Chris	2021/07/13 10:17:40	Yes	Yes	Local Floodplain ordinance with higher standards (greater than NFIP)		High	No	https://library.mi	No	Storm Water Fund	Funding, getting local builders & developers in tune with our vision, enough educational materials and trainings for public.	No	We have 1 person on our staff to handle floodplain issues/questions/concerns and would love to have as much training & educational resources as possible.	In the process of doing that.	In the process of doing that
				National Flood Insurance Program (NFIP)									lack of training and	Beginning initial studies to create new	
	2021/08/05 09:54:14 2021/08/02 12:49:35	Yes Yes	Yes	Mational Flood Insurance Program (NFIP) minimum requirements only Local Floodplain ordinance with higher standards (greater than NFIP)		Low	No No	municode N/A	Yes No	General Fund General Fund Permitting Fees Ad Valorem Tax	funding and training; Map revision of main floodways	No Yes	our current need will be opening drainage ditches and installation of culverts to carry the storm water to relief the low line areas	Ves will have allocated funding for the drainage culverts within the community through our Drainage District with anticipation of curb and gutters	goals will be to have all streets with curb and gutters
City of Hondo	2021/08/05 15:07:40	Yes	Yes	National Flood Insurance Program (NFIP) minimum requirements only Disaster Resistant Building Codes Designated design storms (design for a specific storm event)		Moderate	No	https://z2.frankli	No	General Fund We will research this and provide additional information if there are other funds available.	Funding, project identification, training, and staff time/resources are all challenges faced for floodplain management. The City has a large floodplain, some of which does not have a defined floodway. The area needs to be restudied and the City needs to develop a comprehensive stormwater management plan, but these actions require significant funding and staff time to manage.	Yes	We do have access to educational resources. We struggle with allocation of staff time for such training opportunities.	Not officially at this time. Generally speaking the City needs to create a stormwater management plan and drainage study which incorporates a restudy of the City's floodplain. There have been improvements to the bridges that run under the Union Pacific Railroad, so a subsequent restudy would improve the accuracy of our floodplain management.	
City of Ingleside	2021/07/09 11:47:29	Yes	Yes	Local Floodplain ordinance with higher standards (greater than NFIP) Disaster Resistant Building Codes Designated design storms (design for a specific storm event) National Flood Insurance Program (NFIP)		High	No	https://library.mi	No	General Fund Bond Program	New development not creating new issues and requiring new development to include surrounding area drainage in their engineered drainage plans; Funding can be challenging in any situation.	Yes		The City of Ingleside is currently working on a drainage master plan that will identify troublesome areas; An increase in the freeboard from 12" to 18" is being considered	
City of Leakey	2021/08/05 14:26:08	Yes	No	minimum requirements only		Moderate	No	none	No	General Fund	none	Yes			
City of Leakey	2021/08/05 14:26:08	Yes	No	minimum requirements only		Moderate	No	none	No	General Fund	none	Yes		1	<u> </u>

Entity Name:	Submission Date	Does your entity have floodplain management regulations?	Has your organization adopted minimum regulations pursuant to Texas Water Code Section 16.3145?	What standards or regulations does your community or jurisdiction use to protect the floodplain and/or encourage disaster resistant development/design? What are your minimum standards for: floodplain management, disaster resistant building codes, other ordinances? (Select all that apply)	Higher standards adopted	How would you gauge the level of enforcement of floodplain management practices?	Is there an existing stormwater or drainage fee?	Web link to entity regulations	regulations in the process of being	Which of the following describes your local funding sources for flood management activities? (Select all that apply)	Over the next ten years, what specific challenges does your community or jurisdiction face regarding managing any potential increase in flood risk in your jurisdiction? Include challenges such as funding, project identification, training, resources, etc.	Does your jurisdiction have access to the necessary training and educational resources for floodplain management?	Please explain your jurisdiction access needs.	Has your city/county identified short term (10 year) floodplain management goals? If yes, please describe goal and extent of area that it applies to.	Has your city/county identified long term (30 year) floodplain management goals? If yes, please describe goal and extent of area that it applies to.
City of Port Aranca	s 2021/06/18 09:21:22		Yes	National Flood Insurance Program (NFIP) minimum requirements only Local Floodplain ordinance with higher standards (greater than NFIP)		High	No	https://library.mi	No	General Fund	funding, training, resources	Yes		The city has a master drainage plan, and works consistently on upgrading drainage areas in need.	
				National Flood Insurance Program (NFIP) minimum requirements only Disaster Resistant Building Codes				inttps://iibi ai y.iiii			runung, tranning, resources			uramage areas in need.	
City of Sinton	2021/07/12 14:32:02	Yes	Yes	No building in the floodplains		Moderate	No	sintontexas.org	No	General Fund			floodplain, its kind of hard to	I would for the city to hire another floodplain manager. I wear many hats besides floodplain manager and i	Not that I know of, maybe strategic
City of Uvalde	2021/07/12 07:21:42	Yes	Yes	Local Floodplain ordinance with higher standards (greater than NFIP)		Moderate	No	https://library.mi	No	General Fund I don't know	The lack of resources.		just do floodplain in our smaller communities.	know that floodplain is not a priority to us.	planning has something that they are working on?
city of ovalue	2021/01/12/01.21.42	165	165	painous (greater trian NETF)		iviouel ate	140	inceps.//iibi ai y.lli	NU	SOFTERIOW	THE BUN OF TESTURES.		Not very familiar with the floodplain management in our County. Substantial research will be needed with		TOTALIS OII:
Dimmit County	2021/08/06 15:47:25	No	No	I don't know		None	No	none	No	0 15 1			follow-ups.	No	No
Duval County Duval County Conservation & Reclamation	2021/08/04 16:48:40	No	No	No building in the floodplains		Low	No	www.co.duval.tx.	No	General Fund We do not have a local funding source for flood management		No			
District	2021/08/05 09:40:04	No	No	National Flood Insurance Program (NFIP)		None	No	None	No	activities We do not have a local funding source for flood management		No			
Frio County Karnes County	2021/07/13 11:36:52 2021/08/05 10:56:15	Yes Yes	Yes	minimum requirements only Local Floodplain ordinance with higher standards (greater than NFIP)		Low	No No	N/A none	No No	activities Permitting Fees	Flood mapping, funding	Yes		No	No
				National Flood Insurance Program (NFIP)											
KERR COUNTY ENG	2021/08/03 08:38:05	Yes	Yes	minimum requirements only		Moderate	No	https://www.co.l	No	General Fund We do not have a local funding source for flood management	Funding		We have no jurisdiction on		
McMullen County \	2021/08/10 10:00:55	No	No	I don't know National Flood Insurance Program (NFIP) minimum requirements only Local Floodplain ordinance with higher		Low	No	None	No	activities General Fund	We have no jurisdiction.	No	floodplain management.	No	No
Medina County	2021/08/04 09:33:23	Yes	Yes	standards (greater than NFIP) Local Floodplain ordinance with higher standards (greater than NFIP)		High	No	medinacountytex	No	Permitting Fees General Fund	Portland is growing, however much of the growth is occuring westerly away from the bays and established floodplains. However, in response to this growth, we'll need to review our current stormwater and floodplain		We need to continue networking with adjacent cities, county and state regarding flood plain	explore review of our current	about the importance of protecting our flood plains from encroachment and if construction is proposed that permit applications are submitted for review and that any project meet the
Portland, Texas	2021/07/16 13:04:38	Yes	Yes	Designated design storms (design for a specific storm event) National Flood Insurance Program (NFIP)		High	Yes	https://library.mi	No	Storm Water Utility Fee	regulations to access whether amendments are needed.	Yes	management best practices and regulatory measures.	regulations and identify future short term flood plain management goals.	City's flood plain development requirements.
Real County	2021/08/09 12:52:49	Yes	Yes	minimum requirements only		Moderate	No	co.real.tx.us	No	General Fund					

Entity Name:	Submission Date	Does your entity have floodplain management regulations?	Has your organization adopted minimum regulations pursuant to Texas Water Code Section 16.3145?	What standards or regulations does your community or jurisdiction use to protect the floodplain and/or encourage disaster resistant development/design? What are your minimum standards for: floodplain management, disaster resistant building codes, other ordinances? (Select all that apply)	Higher standards adopted	How would you gauge the level of enforcement of floodplain management practices?	Is there an existing stormwater or drainage fee?	Web link to entity regulations	regulations in the process of being	Which of the following describes your local funding sources for flood management activities? (Select all that apply)	Over the next ten years, what specific challenges does your community or jurisdiction face regarding managing any potential increase in flood risk in your jurisdiction? Include challenges such as funding, project identification, training, resources, etc.	Does your jurisdiction have access to the necessary training and educational resources for floodplain management?	Please explain your jurisdiction access needs.	Has your city/county identified short term (10 year) floodplain management goals? If yes, please describe goal and extent of area that it applies to.	Has your city/county identified long term (30 year) floodplain management goals? If yes, please describe goal and extent of area that it applies to.
Refugio County	2021/08/04 13:59:15	Yes	Yes	I don't know		Low	No	n/a	No	We do not have a local funding source for flood management activities	Training and updating FP regulations, as needed.		Do not have the funds for the labor to acquire certifications and manage the FP administration process. County Judge reviews each building permit for FP applicability per the established 9/2014 FIRM maps. If proposed building is in a Flood Zone, the applicant is asked to provide elevation certificates and warnings acknowledged. Approvals can be with elevation stipulations.		
	2021/07/14 09:35:18	Yes	Yes	Local Floodplain ordinance with higher standards (greater than NFIP)		High		https://www.two		General Fund	More training and collaboration of our order and regulations with local appraisal district, relators, "building movers," etc. in order to spread necessary knowledge for the safety and well being of the community.			Yes. There are many different goals we have that include but not limited to: -increasing community knowledge of rules and regulations -identifying key issues and mitigate their risks -expediting permitting process -collaborating more with other departments in our community -updating our policies and procedures that will increase the well being of the community -working more with surrounding communities -increase and store data of development in an fashion that is feasible to search back for	Drainage Study RFPG Study Hazard mitigation action plan long term recover plan
San Patricio County	2021/07/11/05/55/10	1.63	1.03	National Flood Insurance Program (NFIP)						Ceneral rand	- Community	ies	is disking	reasine to search addition	long term recover plan
Drainage District San Patricio County, City of Ingleside on the Bay	2021/06/23 10:34:30 2021/08/03 09:00:52	No Yes	No No Yes	minimum requirements only National Flood Insurance Program (NFIP) minimum requirements only		High Moderate		co.san-patricio.tx		We do not have a local funding source for flood management activities	n/a A city wide drainage study is in process at this time. The study should be finished in the next couple of months. The council will review existing measures taken and new suggestions, solutions included in the study. Funding will be an issue and the City will be looking for grant sources. We are not really in a position where bonds or loans are feasible as we have limited funding for our small community.			n/a No, not really. As mentioned above, Ingleside on the Bay is conducting a drainage study to integrate existing measures in place with additional actions to alleviate some of the flooding problems we have experienced.	n/a
	2021/06/18 09:03:43	No	Yes	I don't know		High		none		Ad Valorem Tax		Yes			
Webb County	2021/06/18 09:32:50	Yes	Yes	Local Floodplain ordinance with higher standards (greater than NFIP)		High	No	https://www.wel	No	General Fund		Yes			
				Local Floodplain ordinance with higher standards (greater than NFIP)						Permitting Fees Ad Valorem Tax					
	2021/07/19 16:28:33 2021/08/05 13:34:10	Yes	Yes Yes	Local Floodplain ordinance with higher standards (greater than NFIP)		Moderate Moderate	No No	http://www.co.w		I don't know	Funding and resources	Yes No		No I am new to the department and I am learning and seeing all the different challenges that we are facing little by little.	No, not at the moment

Appendix C4 – TFMA Higher Standard Survey Results for the Nueces Basin

Appendix C4 - TFMA 2018 Higher Standard Survey Results for the Nueces Basin

No.	City or County Name	Feet above Fully Developed BFE	Feet above Existing BFE	Zone X(B) (Shaded) above street or curb	Zone X(C) (Unshaded) above street or curb	Special Notes	Is Local Floodplain Administer (LFA) a CFM?	CFM s on Staff	Community Rating System (CRS)
1	City of Alice	-	1	1.5	1.5	(1) The City requires a hydraulic analysis on all new development. (2) The City requires on-site detention. (3) In Zone X new construction must be elevated a minimum of 1.5' above natural grade or above the crown of the nearest street, whichever is higher.	-	-	
2	City of Aransas Pass	-	1	0	0	City building FPM program	LFA is a CFM	1	
3	City of Charlotte	0	0	-	-	(1) Developer is required to conduct a study to define BFE and floodway in Zone A. (2) Detention is required (3) EC is required prior to forming/pouring lowest floor; when structure is completed; and prior to CO.	-	-	-
4	City of Corpus Christi	-	-	1.5	1.5	(1) Developer is required to conduct a study to define BFE in Zone A. (2) Developer must mitigate downstream impacts (3) In Zone X new structures must be elevated a minimum of +1.5' above curb of nearest street (4) EC is required prior to forming/pouring lowest floor; when structure is completed; and prior to CO. (5) Biggest problem is community education	LFA is a CFM	9	7

Appendix C4 - TFMA 2018 Higher Standard Survey Results for the Nueces Basin

No.	City or County Name	Feet above Fully Developed BFE	Feet above Existing BFE	Zone X(B) (Shaded) above street or curb	Zone X(C) (Unshaded) above street or curb	Special Notes	Is Local Floodplain Administer (LFA) a CFM?	CFM s on Staff	Community Rating System (CRS)
5	City of Ingleside	1	1	1	1	(1) City utilized the 1987 San Patricio Drainage District Study that established the 100-year flood elevation in the City (2) New development must be +1' above BFE or +1' above crown of nearest street whichever is higher. (3) Developer must conduct a study, based on fully developed watershed conditions, to define the BFE in Zone A (4) Onsite Detention required, setback from Floodway and mitigation of downstream impacts (5) Development in Zone X must be elevated a minimum of +1' above the crown of closest road (6) EC required prior to forming/pouring lowest floor; when construction is completed and prior to CO. (7) Biggest problem is coastal flooding and incomplete record keeping in the past	LFA is a CFM	1	
6	City of Kingsville	-	1	-	-	City is proposing +2 ft above BFE along the floodplain with no new development allowed in the floodplain unless an engineered study is provided showing no rise in FP	-	-	-
7	City of Port Aransas	1	1	0	0	(1) City is a Zone V community (2) EC required before framing/pouring lowest floor and prior to CO (3) Biggest problem is hurricanes	LFA is a CFM	2	-

Appendix C4 - TFMA 2018 Higher Standard Survey Results for the Nueces Basin

No.	City or County Name	Feet above Fully Developed BFE	Feet above Existing BFE	Zone X(B) (Shaded) above street or curb	Zone X(C) (Unshaded) above street or curb	Special Notes	Is Local Floodplain Administer (LFA) a CFM?	CFM s on Staff	Community Rating System (CRS)
8	City of Rockport	0	1.5	1	1	(1) Detention is required (2) EC required prior to CO (3) Biggest problems are: transitioning to higher floodplain management standards; resistance to freeboard requirements; and historic waterfront structures downtown	LFA is a CFM	1	-
9	City of Uvalde	-	2	2	2	(1) New construction must be elevated a minimum of 2' above BFE. (2) Developer must conduct a study to establish the BFE and floodway in Zone A based on existing watershed conditions (3) No fill in floodway without mitigation. (4) In Zone X new construction must be elevated 2' above natural grade or crown of nearest street (5) EC required prior to framing/pouring lowest floor.	-	-	-
10	Aransas County	-	1.5	-	-	Aransas County requires new construction to be elevated in the SFHA - 18" for new structures and 6" for accessory buildings.	LFA is a CFM	1	-
11	Bandera County	-	3	2	1	(1) Developer must submit a study defining the floodway boundary in Zone A prior to permit (2) EC required prior to forming or pouring the lowest floor and when construction is completed (3) County requires detention, mitigation of downstream impacts and setback from floodway	LFA is a CFM	1	-

Appendix C4 - TFMA 2018 Higher Standard Survey Results for the Nueces Basin

No.	City or County Name	Feet above Fully Developed BFE	Feet above Existing BFE	Zone X(B) (Shaded) above street or curb	Zone X(C) (Unshaded) above street or curb	Special Notes	Is Local Floodplain Administer (LFA) a CFM?	CFM s on Staff	Community Rating System (CRS)
12	Bexar County	-	1	8"	8"	(1) Developer must conduct a study to determine the BFE and Floodway in Zone A prior to permit (2) NAI is required (no impact) outside of owners property (3) Platted property requirements include residences to be 8" above finish grade in all zones (4) Plat must show floodplain areas as drainage easements (5) County does not use floodway rules (6) EC is required prior to framing/pouring lowest floor and when structure is completed (7) Biggest problem is building and modifying structures without permits	-	10	-
13	Kerr County	-	1	-	-	(1) Developer must conduct a study to define the BFE in Zone A areas. (2) EC required when construction is completed	LFA is a CFM	1	-
14	Live Oak County	1	1	1	1	(1) Developer must conduct a study to define BFE in Zone A. (2) Onsite and regional Detention is required for new construction. (3) Developer must offset from Floodway boundary and mitigate downstream impacts (4) No fill is allowed in floodplain or floodway without mitigation. (5) In Zone X new construction must be elevated to street level (6) EC is required prior to forming/placement of lowest floor and prior to CO.	LFA is a CFM	1	-

Appendix C4 - TFMA 2018 Higher Standard Survey Results for the Nueces Basin

No.	City or County Name	Feet above Fully Developed BFE	Feet above Existing BFE	Zone X(B) (Shaded) above street or curb	Zone X(C) (Unshaded) above street or curb	Special Notes	Is Local Floodplain Administer (LFA) a CFM?	CFM s on Staff	Community Rating System (CRS)
15	Medina County	1	1	1.5	0	(1) Developer must conduct a study to define BFE and floodway in Zone A prior to permit (2) On-site detention is required for new construction. (3) Developer must mitigate downstream impacts (4) 18" Freeboard required in all zones (4) EC is required prior to forming/pouring lowest floor and when construction is completed. (5) Biggest problem is County has numerous unstudied streams	LFA is a CFM	1	-
16	Nueces County	1	1	1	1	(1) Fill placed in floodplain/floodway must be mitigated. (2) On-site detention required (3) EC required prior to forming/pouring lowest floor and when structure is completed. (4) Biggest problem is staffing	-	-	-
17	Refugio County	0	0	2	2	-	-	-	-

Appendix C4 - TFMA 2018 Higher Standard Survey Results for the Nueces Basin

No.	City or County Name	Feet above Fully Developed BFE	Feet above Existing BFE	Zone X(B) (Shaded) above street or curb	Zone X(C) (Unshaded) above street or curb	Special Notes	Is Local Floodplain Administer (LFA) a CFM?	CFM s on Staff	Community Rating System (CRS)
18	San Patricio County	1.5	1.5	1.5	1.5	San Patricio County requires all development, regardless of zone, to be elevated a minimum of 18" above NG. (1) Developer must conduct a study, based on fully developed watershed conditions, to define BFE and Floodway in Zone A. (2) Detention is required for new construction. (3) Developer must setback from Floodway and mitigate downstream impacts (NAI) upstream and downstream. (4) Development in Zone X must be elevated a minimum of 18" above NG or the crown of the nearest street (5) EC is required when construction is completed and prior to CO. (6) Biggest problem is citizen compliance with Court Orders	LFA is a CFM	3	-
19	Webb County	1	1	-	-	(1) Developer must conduct a study, based on fully developed watershed conditions, to identify BFE and Floodway boundary in Zone A. (2) Developer must mitigate all fill placed in floodplain and floodway. (3) Both onsite and regional detention required (4) Developer must setback from Floodway boundary and mitigate downstream impacts (5) EC is required before forming/pouring lowest floor; when construction is completed; and prior to CO. (6) County withholds public utility connections until structure is compliant with FP development requirements	LFA is a CFM	4	-

Appendix C5 – Mid-Point Technical Memorandum

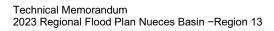




Technical Memorandum

2023 Regional Flood Plan Nueces Basin - Region 13

Texas Water Development Board January 7, 2022



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Appendices

Appendix A: Exhibit C, Table 6, Existing Floodplain Management Practices

Appendix B: Historical Flood Information Compiled for the Nueces FPR to Assess Flood Prone Areas

Appendix C: Exhibit C, Table 12, Potential Flood Management Evaluations, Identified by the Regional Flood Planning Group

Appendix D: Exhibit C, Table 13, Potentially Feasible Flood Mitigation Projects, Identified by the Regional Flood Planning Group

Appendix E: Exhibit C, Table 14, Potentially Feasible Flood Management Strategies, Identified by the Regional Flood Planning Group

List of Abbreviations

BLE base level elevation

FAFDS First American Flood Data Services

FEMA Federal Emergency Management Agency

FIF TWDB Flood Infrastructure Funding

FME flood management evaluations FMS flood management strategies

FMP flood mitigation projects
FPR flood planning region
HDR HDR Engineering, Inc.
LWC low-water crossing

NFHL National Flood Hazard Layer
NFIP National Flood Insurance Program
Nueces FPR Nueces flood planning region
RFPG Regional Flood Planning Group

TNRIS Texas Natural Resources Information System

TWDB Texas Water Development Board USACE U.S. Army Corps of Engineers

USGS U.S. Geological Survey

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Background

This Technical Memorandum is an interim submittal to support development of the 2023 Nueces Basin Regional Flood Plan. On December 6, 2021, the Nueces Regional Flood Planning Group (RFPG) approved and authorized the Nueces River Authority to submit this technical memorandum and associated data to the TWDB.

1 Political Subdivisions with Flood-Related Authority

A list of existing political subdivisions within the Nueces FPR that have flood-related authorities or responsibilities is provided in Table 1-1. After the list of political subdivisions was identified for the Nueces Flood Planning Region (Nueces FPR), a point of contact was assigned for each entity based on the Federal Emergency Management Agency (FEMA) Community Contact Report (dated 2/12/2021), and additional information provided by the Nueces River Authority. HDR Engineering, Inc. (HDR) developed a Floodplain Management Survey on existing practices and sent it to the identified contact.

Table 1-1. List of Flood-Related Authorities Within the Nueces FPR

Entity ^A	Entity ID	Currently Engaged in Flood Planning Activities (Yes/ No/ Unknown)	Floodplain Management Regulations (Yes/ No/ Unknown) ^A	NFIP Participant (Yes/ No) ^{A,C}	Higher Standards Adopted (Yes/ No) ^B
Counties					
Aransas County	00000083	Yes	Yes	Yes	Yes
Atascosa County	00000096	Unknown	Unknown	Yes	Yes
Bandera County	00000011	Yes	Yes	Yes	No
Bee County	13000087	Unknown	Unknown	Yes	
Bexar County	0000007	Yes	Yes	Yes	Yes
Brooks County	00000073	Unknown	Unknown	Yes	
Dimmit County	00000254	No	No	Yes	No
Duval County	13000079	Yes	No	Yes	No
Edwards County	00000021	Yes	Unknown	Yes	
Frio County	13000093	Yes	Yes	Yes	No
Goliad County	00000090	Unknown	Unknown	Yes	

Entity ^A	Entity ID	Currently Engaged in Flood Planning Activities (Yes/ No/ Unknown)	Floodplain Management Regulations (Yes/ No/ Unknown) ^A	NFIP Participant (Yes/ No) ^{A,C}	Higher Standards Adopted (Yes/ No) ^B
Jim Hogg County	00000076	Unknown	Unknown	Yes	
Jim Wells County	13000080	Unknown	Unknown	Yes	
Karnes County	00000095	Yes	Yes	Yes	No
Kenedy County	00000074	Unknown	Unknown	Yes	
Kerr County	00000022	Yes	Yes	Yes	Yes
Kinney County	00000101	Unknown	Unknown	Yes	
Kleberg County	13000077	Unknown	Unknown	Yes	
La Salle County	13000085	Unknown	Unknown	Yes	
Live Oak County	13000089	Unknown	Unknown	Yes	Yes
Maverick County	00000091	Unknown	Unknown	Yes	
McMullen County	13000086	Unknown	Unknown	Yes	
Medina County	00000005	Yes	Yes	Yes	Yes
Nueces County	13000078	Unknown	Unknown	Yes	
Real County	00000015	Yes	Yes	Yes	No
Refugio County	00000084	Yes	Yes	Yes	No
San Patricio County	13000081	Yes	Yes	Yes	No
Uvalde County	13000001	Unknown	Unknown	Yes	
Webb County	00000082	Yes	Yes	Yes	No
Wilson County	00000100	Yes	Yes	Yes	No
Zavala County	13000092	Yes	Yes	Yes	No
Cities					
Agua Dulce	13002546	Unknown	Unknown	Yes	
Alice	13003128	Unknown	Unknown	Yes	Yes
Aransas Pass	13002735	Unknown	Unknown	Yes	
Asherton	13002555	Unknown	Unknown	Yes	
Bayside	13003122	Unknown	Unknown	Yes	

Entity ^A	Entity ID	Currently Engaged in Flood Planning Activities (Yes/ No/ Unknown)	Floodplain Management Regulations (Yes/ No/ Unknown) ^A	NFIP Participant (Yes/ No) ^{A,C}	Higher Standards Adopted (Yes/ No) ^B
Benavides	13003410	Unknown	Unknown	Yes	
Big Wells	13002553	Unknown	Unknown	No ^D	
Camp Wood	13002625	Unknown	Unknown	Yes	
Carrizo Springs	13002556	Unknown	Unknown	Yes	
Charlotte	13003214	Unknown	Unknown	Yes	Yes
Christine	13003215	Unknown	Unknown	Yes ^D	
City of Beeville	13002711	No	No	Yes	No
City of Bishop	13002388	Yes	Yes	Yes	No
City of Corpus Christi	13002625	Yes	Yes	Yes	Yes
City of Cotulla	13003005	Yes	Yes	Yes	No
City of Gregory	13002558	Yes	Yes	Yes	No
City of Hondo	13002953	Yes	Yes	Yes	No
City of Ingleside	13002930	Yes	Yes	Yes	Yes
City of Ingleside on the Bay	13003248	Yes	Yes	Yes	No
City of Leakey	13002626	Yes	Yes	Yes	No
City of Lytle	13002446	Unknown	Unknown	Yes	
City of Port Aransas	13003368	Yes	Yes	Yes	No
City of Portland	13003233	Yes	Yes	Yes	No
City of Sinton	13002864	Yes	Yes	Yes	No
City of Uvalde	13002952	Yes	Yes	Yes	No
Crystal City	13003432	Unknown	Unknown	Yes	
Devine	13003378	Unknown	Unknown	Yes	
Dilley	13003073	Unknown	Unknown	Yes	
Driscoll	13002389	Unknown	Unknown	Yes	
Encinal	13003006	Unknown	Unknown	Yes	
Falfurrias	13003038	Unknown	Unknown	Yes	

Entity ^A	Entity ID	Currently Engaged in Flood Planning Activities (Yes/ No/ Unknown)	Floodplain Management Regulations (Yes/ No/ Unknown) ^A	NFIP Participant (Yes/ No) ^{A,C}	Higher Standards Adopted (Yes/ No) ^B
Cities					
Freer	13003411	Unknown	Unknown	Yes	
Fulton	13003450	Unknown	Unknown	Yes	
George West	13003096	Unknown	Unknown	Yes	
Jourdanton	13003116	Unknown	Unknown	Yes	
Kingsville	13002378	Unknown	Unknown	Yes	Yes
Lake City	13003249	Unknown	Unknown	Yes	
Lakeside	13003250	Unknown	Unknown	Yes	
Mathis	13003251	Unknown	Unknown	Yes	
Natalia	13002955	Unknown	Unknown	Yes	
Odem	13003412	Unknown	Unknown	Yes	
Orange Grove	13003130	Unknown	Unknown	Yes	
Pearsall	13003230	Unknown	Unknown	Yes	
Petronila	13002390	Unknown	Unknown	No	
Pleasanton	13003117	Unknown	Unknown	Yes	
Poteet	13003118	Unknown	Unknown	Yes	
Premont	13003131	Unknown	Unknown	Yes	
Refugio	13003123	Unknown	Unknown	Yes	
Robstown	13002392	Unknown	Unknown	Yes	
Rockport	13003451	Unknown	Unknown	Yes	
Rocksprings	00003592	Unknown	Unknown	Yes	
Sabinal	13003329	Unknown	Unknown	Yes	
San Diego	13003127	Unknown	Unknown	Yes	
San Patricio	13003234	Unknown	Unknown	Yes	
Taft	13002882	Unknown	Unknown	Yes	
Three Rivers	13002540	Unknown	Unknown	Yes	

Entity ^A	Entity ID	Currently Engaged in Flood Planning Activities (Yes/ No/ Unknown)	Floodplain Management Regulations (Yes/ No/ Unknown) ^A	NFIP Participant (Yes/ No) ^{A,C}	Higher Standards Adopted (Yes/ No) ^B
Woodsboro	13003124	Unknown	Unknown	Yes	
River Authorities					
Nueces River Authority	00000290	Yes	No	No	
Other (Council of Governments [COGs], Drai Authorities, Districts, Water Control an Municipal Water Districts (MWDs), Und	d Improvement	Districts [WCII	Os], <u>Municipal Ütili</u>	ty Districts (MU	
Alamo Area Council of Governments	00000255	Unknown	Unknown	No	
Alice Water Authority	13001788	Unknown	Unknown	No	
Aransas County MUD 1	13000881	Unknown	Unknown	No	
Aransas County Navigation District	13000381	Unknown	Unknown	No	
Aransas County WCID 1	13000727	Unknown	Unknown	No	
Beeville Water Supply District	00000339	Unknown	Unknown	No	
Bexar-Medina-Atascosa Counties WCID 1	13001488	Unknown	Unknown	No	
Canyon Regional Water Authority	00000392	Unknown	Unknown	No	
Coastal Bend Council of Governments	00000260	Unknown	Unknown	No	
Corpus Christi Downtown Management District	13001739	Unknown	Unknown	No	
Duval County Conservation & Reclamation District	13001666	No	No	No	No
Escondido Watershed District	00000519	Unknown	Unknown	No	
Freer WCID	13001665	Unknown	Unknown	No	
Golden Crescent Regional Planning Commission	00000264	Unknown	Unknown	No	
Hondo Creek Watershed Improvement District	00000526	Unknown	Unknown	No	
Jim Hogg County WCID 2	13000843	Unknown	Unknown	No	
Jim Wells County FWSD 1	13000842	Unknown	Unknown	No	
Lamar Improvement District	13001044	Unknown	Unknown	No	

Entity ^A	Entity ID	Currently Engaged in Flood Planning Activities (Yes/ No/ Unknown)	Floodplain Management Regulations (Yes/ No/ Unknown) ^A	NFIP Participant (Yes/ No) ^{A,C}	Higher Standards Adopted (Yes/ No) ^B
Maverick County WCID 1	00000951	Unknown	Unknown	No	
McMullen County WCID #1	13000949	No	No	No	No
Medina County WCID 2	13000948	Unknown	Unknown	No	
Middle Rio Grande Dev Council	00000268	Unknown	Unknown	No	
Nueces County Bishop Driscoll Drainage District 3	13000384	Unknown	Unknown	No	
Nueces County Drainage & Conservation District 2	13000940	Unknown	Unknown	No	
Nueces County WCID 3	13000982	Unknown	Unknown	No	
Nueces County WCID 4	13000981	Unknown	Unknown	No	
Nueces County WCID 5	13000980	Unknown	Unknown	No	
Padre Island Gateway Municipal Management District	13000876	Unknown	Unknown	No	
Pettus MUD	13001487	Unknown	Unknown	No	
Port of Corpus Christi Authority	13000409	Unknown	Unknown	No	
Refugio County Drainage District 1	00001608	Unknown	Unknown	No	
Refugio County Navigation District	00000758	Unknown	Unknown	No	
Refugio County WCID 2	00000714	Unknown	Unknown	No	
Rio Grande Regional Water Authority	00001609	Unknown	Unknown	No	
Riviera WCID	13000674	Unknown	Unknown	No	
San Diego MUD 1	13001741	Unknown	Unknown	No	
San Patricio County Drainage District	13000585	No	No	No	No
San Patricio County MUD 1	13000972	Unknown	Unknown	No	
San Patricio County Navigation District 1	13000576	Unknown	Unknown	No	
San Patricio MWD	13000586	Unknown	Unknown	No	
South Texas Development Council	00000276	Unknown	Unknown	No	

Entity ^A	Entity ID	Currently Engaged in Flood Planning Activities (Yes/ No/ Unknown)	Floodplain Management Regulations (Yes/ No/ Unknown) ^A	NFIP Participant (Yes/ No) ^{A,C}	Higher Standards Adopted (Yes/ No) ^B

^A At a minimum, the RFPGs must list all counties, cities and districts in the region with flood related authority in the region and identify whether entity they have any established floodplain management practices.

Thirty-two entities of the 134 identified in the Nueces FPR responded to the survey. Sixteen of the 31 counties located at least partly within the Nueces FPR responded to the survey. Twelve of the 57 cities located within the Nueces FPR responded to the survey. Four of the 45 water control districts located within the Nueces FPR responded to the survey.

A total of 25 entities reported that they had floodplain management regulations. The level of enforcement of floodplain management regulations within the basin are shown in Figure 1-1. The level of floodplain management practices and enforcement was identified as high, moderate, low, or none, as defined below, within the Nueces FPR.

- High Level Actively enforces the entire ordinance, performs many inspections throughout the construction process, issues fines, violations, and Section 1316s where appropriate, and enforces substantial damage and substantial improvement.
- Moderate Level Enforces much of the ordinance, performs limited inspections and is limited in issuance of fines and violations.
- Low Level Provides permitting of development in the floodplain, may not perform inspections, may not issue fines or violations.
- None Does not enforce floodplain management regulations.

Of the responses received, 10 entities reported having a high level, 14 entities reported having a 'moderate level, 6 entities reported having a low level, and 2 entities reported having no level of floodplain management practices and enforcement.

Of the responses received, 28 entities reported that they are participants of the National Flood Insurance Program (NFIP) and 11 entities have adopted higher standards according to the Texas Floodplain Management Association (TFMA) 2016 higher standards survey. One entity reported having an existing stormwater or drainage fee.

A list of existing floodplain management practices based on survey responses is included in **Appendix A**.

^B This field may be left blank during the 1st planning cycle. However, RFPGs are strongly encouraged to provide this information when applicable and available.

^c Communities Participating in the National Flood Program- Texas, FEMA Community Status Book Report, May 15, 2021. *FEMA NFIP Participation Book – TX 5-15-21.pdf*

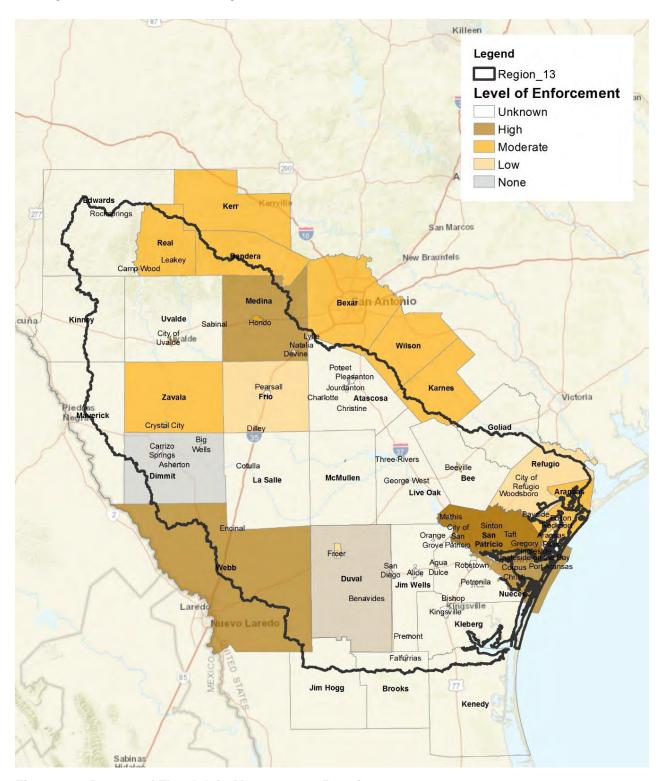


Figure 1-1. Degree of Floodplain Management Practices

2 Previous Relevant Flood Studies

A list of previous flood studies considered by the Regional Flood Planning Group (RFPG) to be relevant to the development of the regional flood plan are provided in Table 2-1.

Table 2-1. Previous Local and Regional Relevant Flood Plans and Studies

Previous and Relevant Flood Study	Description	Jurisdictions	Counties	Year
Aransas County Multi-Jurisdictional Floodplain Management Plan	The focus of the mitigation action plan is to reduce future losses within Aransas County by identifying mitigation strategies based on a detailed hazard risk analysis, including both an assessment of regional hazards and vulnerability. The mitigation strategies seek to identify potential loss-reduction opportunities. The goal of this effort is to work towards more disaster-resistant and resilient communities throughout Aransas County.	Aransas County, the City of Aransas Pass, the Town of Fulton, and the City of Rockport.	Aransas	2017
Aransas County Texas Multi- Jurisdictional Hazard Mitigation Action Plan	This plan covers two counties, 8 cities, and 2 school districts. The purpose of the plan is to minimize or eliminate long-term risks to human life and property from known hazards and to break the cycle of high-cost disaster response and recovery within the planning area	Unincorporated Aransas County, City of Aransas Pass, Town of Fulton, City of Rockport	Aransas	2017
Coastal Bend Mitigation Action Plan	The main purpose to the planning project is to reduce future losses in the Coastal Bend region of Texas by identifying mitigation strategies based on an analysis of risk, including both an assessment of regional hazards and vulnerability. The mitigation strategies seek to identify potential loss-reduction opportunities; however, implementation of the strategies will be constrained to some extent by the future availability of funding in the context of other community priorities.	Aransas County, Bee County, Jim Wells County, Kleberg County, Live Oak County, Nueces County, San Patricio County	Aransas, Bee, Jim Wells, Kleberg, Live Oak, Nueces, San Patricio	2012
Coastal Resiliency Master Plan	Developed by the Texas General Land Office (GLO), the 2019 Texas Coastal Resiliency Master Plan is the second installment of a statewide plan to protect and promote a vibrant and resilient Texas coast that supports and sustains a strong economy and healthy environment for all who live, work, play or otherwise benefit from the natural resources and infrastructure along the Texas coast.	GLO	Aransas, Kleberg, Nueces, Refugio, San Patricio	2019

Previous and Relevant Flood Study	Description	Jurisdictions	Counties	Year
Atascosa-McMullen Multi-Jurisdictional Hazard Mitigation Action Plan	The Atascosa and McMullen Counties Hazard Mitigation Plan is a multi-jurisdictional plan covering two counties, 8 cities, and 2 school districts. The purpose of the plan is to minimize or eliminate long-term risks to human life and property from known hazards and to break the cycle of high-cost disaster response and recovery within the planning area.	Atascosa County, McMullen County, the Cities of Charlotte, Christine, Jourdanton, Pleasanton, Poteet, Lytle, the school district of Lytle Independent School District (ISD) and Poteet ISD.	Atascosa- McMullen	2020
Bandera County River Authority and Groundwater District Flood Plan	The purpose of the flood plan is to outline a plan of operation to effectively coordinate and provide reliable information to the community during rainfall runoff events resulting in minor to significant flooding conditions of the Medina River and Sabinal River within Bandera County.	Bandera County River Authority and Groundwater District	Bandera	2019
Hazard Identification, Risk Assessment (HIRA) and Consequence Analysis	The HIRA is the first step in evaluating natural and technological hazards that exist. It serves as a basis for the development plans, public education programs, responder training and exercises. It also lays foundation to begin mitigation efforts to minimize these identified potential threats.	Bexar County, City of San Antonio	Bexar	2014
Lower Nueces River Watershed Protection Plan	The purpose of this report is to summarize data collected by Texas Stream Team citizen scientists. The data presented in this report should be considered in conjunction with other relevant water quality reports for a holistic view of water quality in the lower Nueces River watershed.	Jurisdictions within the Lower Nueces River Watershed	Counties within the Lower Nueces River Watershed	2020
Potential for Bed- Material Entrainment in selected Streams of the Edwards PlateauEdwards, Kimble, and Real Counties, Texas, and Vicinity	An investigation of the problem at low-water crossings (LWCs) was made by the U.S. Geological Survey (USGS) in cooperation with the Texas Department of Transportation (TXDOT), and in collaboration with Texas Tech University, Lamar University, and the University of Houston. The bed-material entrainment problem for LWCs occurs at two spatial scales - watershed scale and channel-reach scale. First, the relative abundance and activity of cobble- and gravel-sized bed material along a given channel reach becomes greater with increasingly steeper watershed slopes. Second, the stresses required to mobilize bed material at a location can be attributed to reach-scale hydraulic factors, including channel geometry and particle size.	USGS, TXDOT	Edwards, Kimble and Real	2008

Previous and Relevant Flood	Description	Jurisdictions	Counties	Year
Nueces County Multi- Jurisdictional Hazard Mitigation Action Plan	The focus of the mitigation action plan is to reduce future losses within Nueces County by identifying mitigation strategies based on a detailed hazard risk analysis, including both an assessment of regional hazards and vulnerability. The mitigation strategies seek to identify potential loss-reduction opportunities. The goal of this effort is to work towards more disaster-resistant and resilient communities throughout Nueces County.	Nueces County, City of Aqua Dulce, City of Bishop, City of Corpus Christi, City of Driscoll, City of Petronila, City of Port Aransas, City of Robstown, Port of Corpus Christi Authority	Nueces	2017
A Joint Erosion Response Plan for Nueces County and the City of Corpus Christi	The purpose of the erosion response plan is to reduce storm damage along the city and county gulf coastlines. The erosion response plan will be used by the GLO to qualify local governments for certain GLO grants.	City of Corpus Christi, Nueces County	Nueces	2012
Coastal Texas Protection and Restoration Feasibility Study	This effort, known as the Coastal Texas Protection and Restoration Feasibility Study (Coastal Texas Study), was initiated in 2014 to evaluate large-scale coastal storm risk management (CSRM) and ecosystem restoration (ER) actions aimed at providing the coastal communities of Texas with multiple lines of defense to reduce impacts from a wide array of coastal hazards. This study falls under the U.S. Army Corps of Engineers (USACE) Civil Works Mission, which includes but is not limited to inland and coastal flood risk management and the restoration, protection, and management of aquatic ecosystems. This planning effort was conducted in full compliance with the National Environmental Policy Act (NEPA) and this report includes a companion Final Environmental Impact Statement (EIS).	USACE, GLO	Nueces, San Patricio	2021
San Patricio County Hazard Mitigation Action Plan	The plan was prepared by San Patricio County, participating jurisdictions, and H2O Partners, Inc. The purpose of the plan is to protect people and structures and to minimize the costs of disaster response and recovery. The goal of the plan is to minimize or eliminate long-term risks to human life and property from known hazards by identifying and implementing cost-effective hazard mitigation actions.	San Patricio County	San Patricio	2018

3 Inundation Boundaries

A geodatabase and associated maps in accordance with Texas Water Development Board (TWDB) flood planning guidance documents that the RFPG considers to be best representation of the region-wide 1.0 percent annual chance flood event and 0.2 percent annual chance flood event inundation boundaries, and the source of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined was prepared and is included in the electronic submittal to accompany this technical memorandum.

3.1 Existing Flood Hazard

The 1.0 percent and 0.2 percent annual chance flood inundation boundaries were defined for all waterways with contributing drainage areas larger than one square mile for the entire basin. This complete coverage was due in part to the availability of Fathom flood inundation boundaries for the entire basin. The most accurate inundation boundaries were applied when multiple inundation data sets were available.

The floodplain quilt was obtained from TWDB and consists of multiple layers of data from various sources available throughout the state to "quilt" together a single flood hazard dataset. The floodplain quilt does not typically include localized flooding or complex urban flooding problems. Additionally, inundation boundaries were obtained from the City of Corpus Christi and some floodprone areas were identified from public comments. The following list the various flood inundation data sets used, in order of accuracy from most accurate to least accurate, including the base level elevation (BLE) data and above considered accurate.

- National Flood Hazard Layer (NFHL) Pending Data
- 2. NFHL Preliminary Data
- 3. Corpus Christi Downtown Study
- 4. NFHL Effective Data
- 5. BLE
- 6. NFHL Approximate Study Areas
- 7. First American Flood Data Services (FAFDS)
- 8. Fathom Draft Data1
- 9. Public Comments

A large portion of the regional flood planning area contains approximately 1.0 percent annual chance flood inundation boundaries but no 0.2 percent annual chance flood inundation boundaries (i.e., NFHL approximate study areas or lower accuracy data). Thus, for these areas, the 0.2 percent annual chance flood inundation boundary had to be estimated for approximate areas by buffering the 100-year inundation boundary by 100 feet to each side. This 100-foot buffer was approximated by evaluating portions of the region that had available detailed studies that defined both the 1.0 percent and 0.2 percent annual chance flood inundation boundary using a similar offset between the 1.0 percent and 0.2 percent annual chance flood inundation boundary.

¹ July 14, 2021 version.

The existing condition 1.0 percent and 0.2 percent annual chance flood inundation boundaries are provided in the geodatabase (i.e., ExFldHazard) and are available for interactive viewing at Region 13 Nueces (arcgis.com) in the Task 2 tab. Figure 3-1 below provides a region-wide depiction of the 1.0 percent annual chance flood event and 0.2 percent annual chance flood event inundation boundaries, and the source of flooding for each area, for use in the risk analysis.

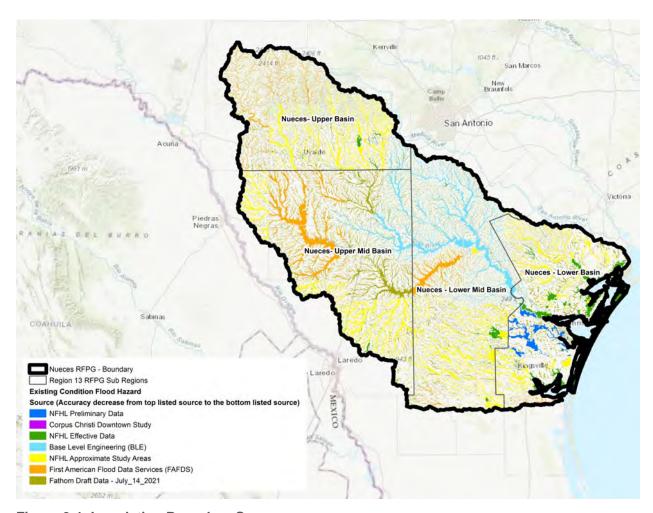


Figure 3-1. Inundation Boundary Sources

3.2 Future Flood Hazard

Future flood conditions represent projected conditions 30 years into the future, or year 2050, and can be influenced by several factors, such as the following:

- Precipitation increases due to climate change
- Rising sea levels
- Population growth and associated development increases (impervious cover)
- Natural stream migration changes to existing waterways
- Implementation of constructed drainage infrastructure

For the 2020 to 2023 planning cycle, the development of future floodplains for riverine systems (inland areas) was considered to be dependent on population growth and coastal systems was considered to be dependent on population growth and sea level rise. This approach was established due to the lack of available detailed floodplain data and hydrologic/hydraulic models.

For riverine systems, the following approach was used to create future floodplains based on population growth.

Population growth projections for 2050 were determined for all cities or populated areas as well as county-wide regions within the entire watershed based on information from the 2021 State Water Plan. There is a direct correlation between population growth and an increase in development or impervious cover, which is a driving factor for adverse floodplain impacts.

The horizontal floodplain buffers summarized in Table 3-1 were developed to approximate the increase in the 1.0 percent and 0.2 percent annual chance flood inundation boundaries based on projected population increases, which are applied as appropriate to the existing 1.0 percent and 0.2 percent annual chance boundaries to obtain the future condition boundaries surrounding cities and concentrated populated areas.

Table 3-1. Future Condition Buffers based on Estimated Population Increase

Estimated	Estimated, corresponding buffer in floodplain width				
Population Increase	1% Annual Chance Event	0.2% Annual Chance Event			
0%	0	0			
1%	5	5			
5%	20	15			
10%	40	30			
15%	60	45			
25%	100	75			
50%	200	150			

Horizontal buffers were established by estimating the anticipated water surface increase due to increased development and determining the corresponding horizonal floodplain increase based on available LiDAR terrain for several areas throughout the watershed, including the upper hill county, minor/major tributaries and rivers through the watershed, and conveyance systems near cities.

Population growth projections outside of concentrated areas within the remaining county regions were determined. However, based on projected population density increases within the county regions, it was determined maximum increases were less than 20 people per square mile. Based on these assessments, it was estimated that no floodplain increases attributed to population growth would occur outside the city areas; therefore, they were shown as no change. Future 100-year and 500-year floodplain areas within the county regions, outside of cities or populated areas, were assumed to match the existing floodplain limits.

For coastal systems, an approach is currently under development to assess future flood hazards.

The future condition 1.0 percent and 0.2 percent annual chance flood inundation boundaries are provided in the geodatabase (i.e., FutFldHazard) and are available for interactive viewing at Region 13 Nueces (arcgis.com) in the Task 2 tab.

4 Additional Flood-Prone Areas

A geodatabase and associated maps in accordance with TWDB flood planning guidance documents that identify additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge was prepared and is included in the electronic submittal to accompany this technical memorandum and for interactive viewing at Region 13 Nueces (arcgis.com).

Additional flood-prone areas were identified based on the location of hydrologic features, historic flooding, and/or local knowledge. Additional flood-prone areas were added for the following:

- Local Knowledge (Stakeholders / Citizens)
- Low-Water Crossings (TNRIS)
- Historical Flood Data (U.S. Geological Survey [USGS] gage data, National Weather Service flood data, FEMA flood damage data)

The Nueces flood planning area was sub-divided into four subregions as shown in Figure 4-1 to facilitate stakeholder engagement amongst the varying geographic areas of the basin. The flood-prone areas are shown for each of these subregions in Figure 4-2 through Figure 4-5. These flood-prone points are also viewable at Region 13 Nueces (arcgis.com) in the Task 1 tab.

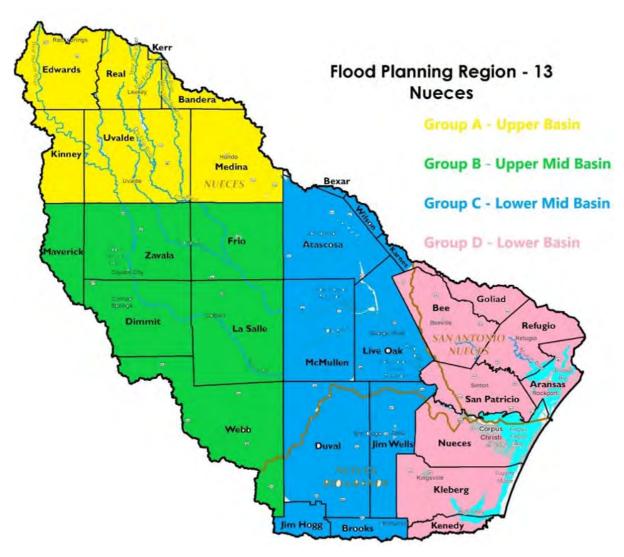


Figure 4-1. Nueces Flood Planning Sub-Regions

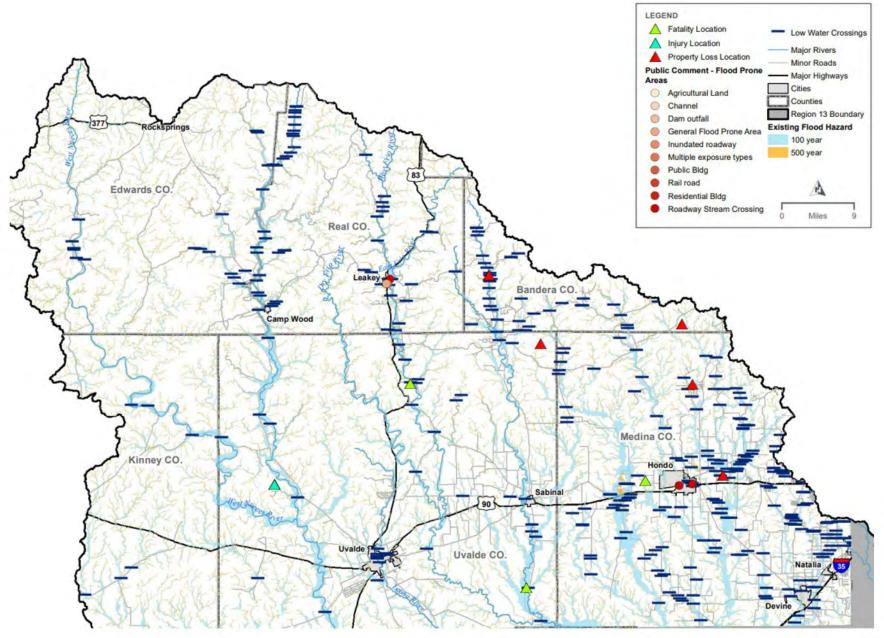


Figure 4-2. Additional Flood-Prone Areas in the Upper Nueces Basin

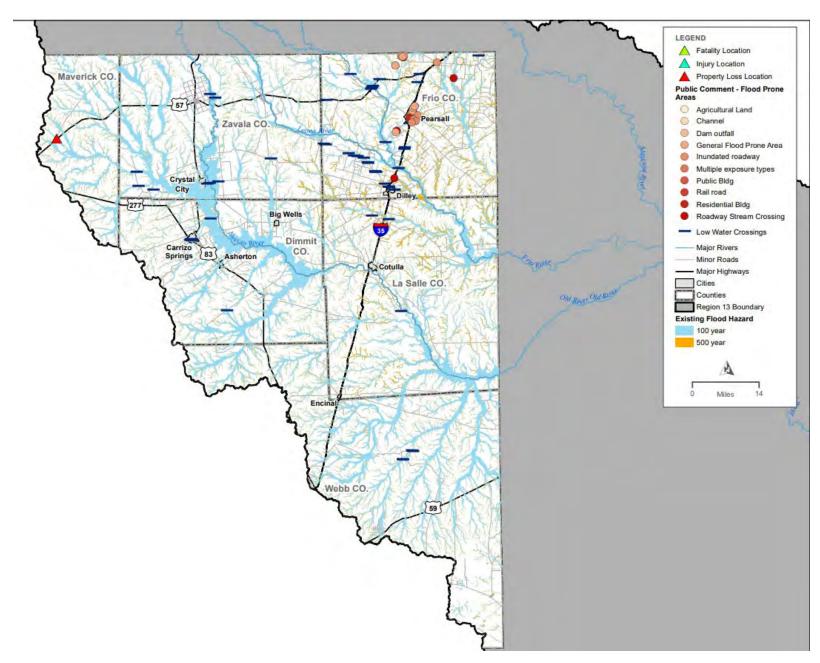


Figure 4-3. Additional Flood-Prone Areas in the Upper Mid-Nueces Basin

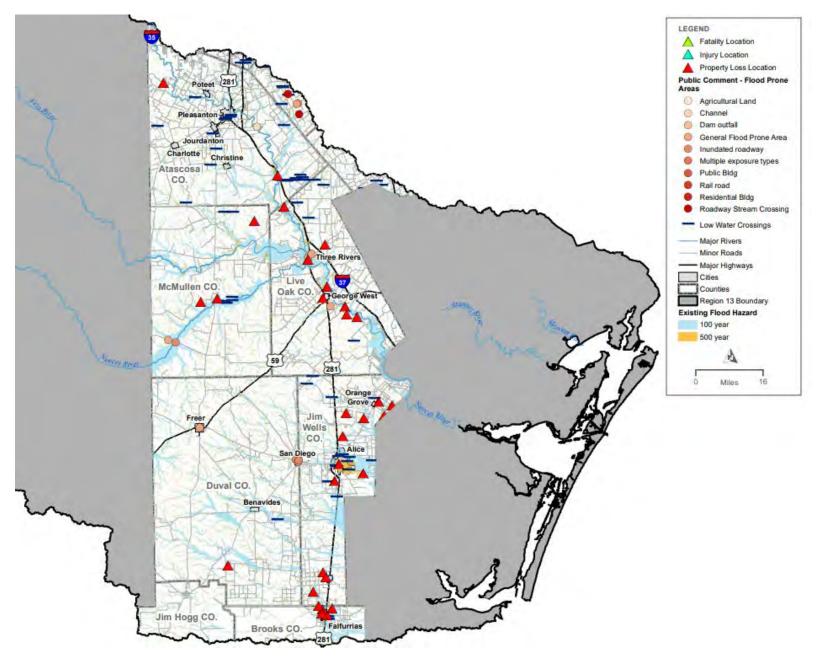


Figure 4-4. Additional Flood-Prone Areas in the Lower Mid-Nueces Basin

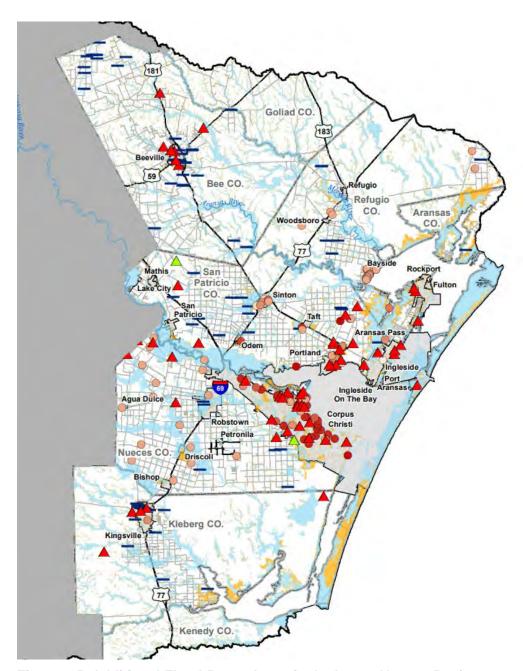


Figure 4-5. Additional Flood-Prone Areas in the Lower Nueces Basin



4.1 Local Knowledge

Four subregional meetings (one for each region shown in Figure 4-1) were held May 17 through May 20, 2021, to introduce the regional flood planning process and gather local knowledge of flood-prone areas, flood mitigation projects and needs. Additionally, an interactive on-line public comment map was posted on the Nueces River Authority's Region 13 website (Home-Nueces Regional Flood-Planning Group (Region 13) (nueces-rfpg.org)) to allow stakeholders and citizens the opportunity to identify flood-prone areas for consideration in the regional flood plan. The interactive map comment period was open from April through September 2021 and gathered additional comments on 143 flood-prone areas. Additional outreach was conducted to beneficiaries of TWDB Flood Infrastructure Funding (FIF) projects, and flood-prone areas provided during the comment period were also included on the map.

4.2 Low Water Crossings

Low water crossings are considered potential flood-prone areas due to their inherent life-loss risk during flood conditions. Low water crossings are defined where a creek crosses a road that is low enough to be subject to frequent flooding during storm events or during a 50 percent annual chance (2-year) storm event.

A total of 570 low-water crossings (LWCs) have been identify as part of the regional flood plan based on data from the Texas Natural Resources Information System (TNRIS), updated March 2021. During the first planning cycle for regional flood plan, the advisory groups can use the community feedback to identify additional, problematic LWCs not already included in the plan. Lowwater crossing locations are shown in Figure 4-2 through Figure 4-5 and are also viewable at Region 13 Nueces (arcgis.com) in the Task 1 tab.

4.3 Historical Flood Data

Historical flood data was compiled from USGS gage records, National Weather Service flood data and identified historical flood events, and FEMA flood damages, including loss of life and property damage. This information is included in **Appendix B**.

5 Availability of Existing Hydrologic and Hydraulic Models

A geodatabase and associated maps in accordance with TWDB flood planning guidance documents that identify areas where existing hydrologic and hydraulic models needed to evaluate flood management strategies (FMSs) and flood mitigation projects (FMPs) are available was compiled based on the following publicly available flood inundation boundary source data:

- NFHL
- BLE
- Corpus Christi Downtown Study

Hydrologic and hydraulic models used for the purposes of defining inundation boundaries are currently only available for roughly 25 percent of the basin, as shown in Figure 5-1. For interactive viewing, see <u>Region 13 Nueces (arcgis.com)</u> in the Task 2 tab map of "Known Data Gaps."

Additionally, the following hydrologic and hydraulic models were developed for the purposes of flood warning:

- U.S. Army Corps of Engineers (USACE) Hydrologic Engineer Center-Hydrologic Modeling System (HEC-HMS) 4.2 model, which encompasses the entire Nueces basin.
- USACE, Hydrologic Engineer Center-River Analysis Model (HEC-RAS) 5.0.6 model, which
 includes portions of Atascosa River, Frio River downstream of Choke Canyon, and Nueces
 River from Tilden to Odem (between Lake Corpus Christi and Corpus Christi Bay).
- USACE San Diego Creek Corps Water Management System (CWMS) Model: HEC-HMS and HEC-RAS – Models include the main stem of San Diego Creek, in Duval and Jim Wells counties near the cities of Alice, San Diego and Freer. San Diego Creek, Amargosa Creek, Chiltipin Creek, Muerto Creek, Res de Enmedio, Rosita Creek, San Fernando Creek, Toro Creek, and Lake Alice; and
- USGS Sabinal River Hydraulic Model for Early Flood Warning

The existing hydrologic and hydraulic models are shown on Figure 5-1.

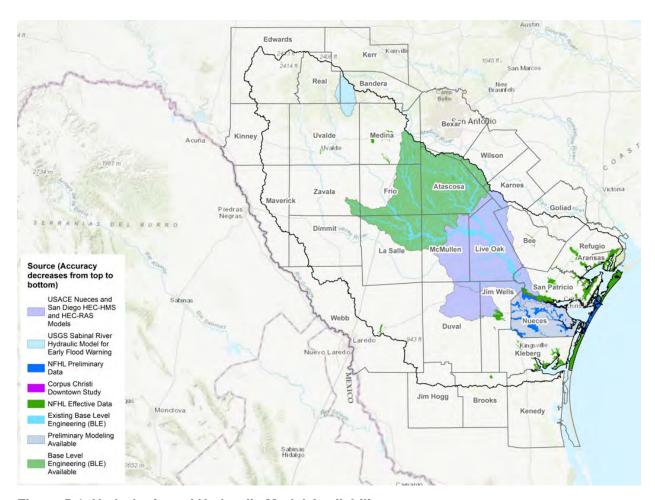


Figure 5-1. Hydrologic and Hydraulic Model Availability

6 List of Available Flood-Related Models of Most Value

A list of available flood-related models that the RFPG considers of most value in developing its plan, in order of most valuable to least valuable, based on their ability to define the extents of the 1.0 percent and 0.2 percent annual chance flood event boundaries.

- 1. USACE Nueces and San Diego HEC-HMS and HEC-RAS Models
- 2. USGS Sabinal HEC-RAS Model
- 3. NFHL
- 4. NFHL Preliminary Data
- 5. Corpus Christi Downtown Study
- 6. NFHL Effective Data
- 7. BLE

The following lists other inundation boundary data sources, which were not based on detailed hydrologic and hydraulic models.

- 1. NFHL Approximate Study Areas
- 2. FAFDS
- 3. Fathom Draft Data July 14, 2021
- 4. Public Comments

7 Adopted Flood Mitigation and Floodplain Management Goals

The flood mitigation and floodplain management goals adopted by the RFPG per §361.36 were developed with the following objectives in mind:

- To evaluate and make recommendations on floodplain management practices.
- Define overarching flood mitigation and floodplain management goals to protect against the loss of life and property, including short-term (10-year) and long-term (30-year) goals that when implemented will demonstrate progress.

At the Nueces RFPG meeting on July 26, 2021, a Region 13 subcommittee was formed to develop draft goals. The subcommittee consisting of Nueces RFPG members (Larry Dovalina, Larry Thomas, Andy Rooke, and James Tolan) met on August 25 and September 8, 2021, to discuss floodplain priorities and prepare proposed short-term (10-year) and long-term (30-year) goals for Nueces RFPG consideration. The following were considered in the development of the goals:

- Guidance Principles as listed in 31 TAC §362.3
- Existing condition flood risk analyses
- Future condition flood risk analyses
- Consideration of current floodplain management and land use approaches
- Public input
- Understanding of the residual risk of each goal (i.e., the remaining risk)

During the September 27, 2021, RFPG meeting, comments were received on floodplain management standards and goals, which were approved with comment period remaining open for 30 days after the meeting. On November 3, 2021, RFPG members participated in a call with HDR to provide refinement of nature-based goals.

The Nueces RFPG recommends the following floodplain management standard for the region:

Finished floor of structures should be a minimum of 1 foot above base flood elevations (BFE) 100 year or based on local ordinances, whichever is higher. The standards are based on available data, to be updated based on Atlas 14 data when available.

The Nueces RFPG defined 10 overarching flood mitigation and floodplain management goals, including short-term and long-term goals, to guide the overall approach and recommendations of feasible flood projects and strategies in the plan. Table 7-1 lists the flood mitigation and floodplain management goals adopted by the Nueces RFPG.

Table 7-1. Nueces Regional Flood Planning Group (RFPG) Flood Mitigation and Floodplain Management Goals

Goal ID	RFPG No.	RFPG Name	Goal	Term of Goal	Target Year	Applicable To	Overarching Goal	Associated Goal IDs
13000001	13	Nueces	Improve safety at low-water crossings through structural improvements or warning systems			Entire RFPG	Protect against the loss of life	13000002, 13000003
13000002	13	Nueces	Conduct an inventory of low water crossings (LWCs), characterize risk, and rank low water crossings to prioritize those with high risk. Prepare a large-scale public outreach campaign to include "Turn Around Don't Drown" signage at LWCs or roadways aimed at reducing loss of life. Address top 30% of high-risk low water crossings through mitigation or warning systems.	Short- Term (10- year)	2033	Entire RFPG	Protect against the loss of life	13000001, 13000003
13000003	13	Nueces	Address 80% of high risk LWC identified in the study.	Long-Term (30-year)	2053	Entire RFPG	Protect against the loss of life	13000001, 13000002
13000004	13	Nueces	Rehabilitation, Removal or Replacement of Deficient High Hazard Dams as Identified by Texas Commission on Environmental Quality (TCEQ) Dam Safety Regulation Program			Entire RFPG	Protect against the loss of life	13000005, 13000006
13000005	13	Nueces	Conduct a comprehensive study to identify all deficient high hazard dams in the 31-county region. Removal or rehabilitation of the top 30% high hazard dams.	Short- Term (10- year)	2033	Entire RFPG	Protect against the loss of life	13000004, 13000006
13000006	13	Nueces	Removal or rehabilitation of 100% deficient high hazard dams.	Long-Term (30-year)	2053	Entire RFPG	Protect against the loss of life	13000004, 13000005
13000007	13	Nueces	Improve regional coordination , data collection/sharing of flood events and impacts, and implementation of flood warning systems			Entire RFPG	Protect against the loss of life	13000008, 13000009
13000008	13	Nueces	Develop (or expand) a successful flood management program on a regional scale to cover 20% of the data gap area(s) identified in the 2023 plan. Prepare large scale public outreach to include "Turn Around Don't Drown" campaigns aimed at reducing loss of life.	Short- Term (10- year)	2033	Entire RFPG	Protect against the loss of life	13000007, 13000009

Goal ID	RFPG No.	RFPG Name	Goal	Term of Goal	Target Year	Applicable To	Overarching Goal	Associated Goal IDs
13000009	13	Nueces	Develop (or expand) a successful flood management program on a regional scale to cover 80% of the data gap area(s) identified in the 2023 plan.	Long-Term (30-year)	2053	Entire RFPG	Protect against the loss of life	13000007, 13000008
13000010	13	Nueces	Perform flood mapping evaluations and update floodplain maps and flood hazard data.			Entire RFPG	Property Damage	13000011, 13000012
13000011	13	Nueces	Develop maps to base level elevation (BLE) or NFHL level accuracy for 60% of the basin that does not currently have accurate mapping. Identify structures and buildings in the National Flood Hazard Layer (NFHL)-detailed study areas with elevations less than 1 foot above base flood elevations (BFE).	Short- Term (10- year)	2033	Entire RFPG	Property Damage	13000010, 13000012
13000012	13	Nueces	Develop accurate maps to NFHL level accuracy for 100% of the basin. Identify structures and buildings in the NFHL-detailed study areas with elevations less than 1 foot above BFE.	Long-Term (30-year)	2053	Entire RFPG	Property Damage	13000010, 13000011
13000013	13	Nueces	Reduce the number of structures within NFHL- detailed study area and existing floodplain with 1% annual chance flood risk.			Entire RFPG	Property Damage	13000014, 13000015
13000014	13	Nueces	Identify structures within existing floodplain with 1% annual chance flood risk for 60% of the basin. Prepare a list of high hazard buildings based on function, critical function, repetitive loss, or other community-related importance, summarize, and distribute results to affected floodplain management entities. Reduce the number of high hazard structures within the 1% existing floodplain by 10% for existing structures and identify new structures for targeting with 30-year goal.	Short- Term (10- year)	2033	Entire RFPG	Property Damage	13000013, 13000015

Goal ID	RFPG No.	RFPG Name	Goal	Term of Goal	Target Year	Applicable To	Overarching Goal	Associated Goal IDs
13000015	13	Nueces	Identify structures within existing floodplain with 1% annual chance flood risk for 100% of the basin, including areas that have been updated with more accurate mapping. Prepare a list of high hazard buildings based on function, critical function, repetitive loss, or other community-related importance, summarize, and distribute results to affected floodplain management entities. Reduce the number of high hazard structures within the 1% existing floodplain by 50%.	Long-Term (30-year)	2053	Entire RFPG	Property Damage	13000013, 13000014
13000016	13	Nueces	Prepare minimum flood management standards, including identifying operations and maintenance best practices to maintain drainage structures including remove gravel and sediment deposition to mitigate future flooding impacts.			Entire RFPG	Floodplain Management	13000017, 13000018
13000017	13	Nueces	Provide minimum flood standard recommendation(s) adopted by the RFPG for the Nueces Basin to floodplain administrators and community leaders, to include: Finished floor of structures are to be constructed a minimum of 1 foot above BFE 100 year or based on local ordinances, whichever is more stringent. The standards are based on available data, to be updated with Atlas 14 data when available. Achieve 30% voluntary adoption of the RFPG minimum standards by counties/cities. Define and recommend additional minimum flood standards for regional support towards implementation, as study results become available. Increase the number of communities adopting higher standards beyond National Flood Insurance Program (NFIP) requirements to 50% of counties and 30% of communities (current is 26% counties and 17% communities). Provide advocacy on the regional and state level to ensure that all communities across the region share a base-level of floodplain management support by 2030.	Short- Term (10- year)	2033	Entire RFPG	Floodplain Management	13000016, 13000018

Goal ID	RFPG No.	RFPG Name	Goal	Term of Goal	Target Year	Applicable To	Overarching Goal	Associated Goal IDs
13000018	13	Nueces	Achieve 100% voluntary adoption of RFPG minimum standards by counties/cities, including additional minimum flood standards defined during studies conducted through 2033 (10 year). Increase the number of communities adopting higher standards beyond NFIP requirements to 100% of counties and 100% of communities.	Long-Term (30-year)	2053	Entire RFPG	Floodplain Management	13000016, 13000017
13000019	13	Nueces	Increase nature-based practices through land conservation and restoration programs and participation in landowner incentive programs to encourage voluntary land stewardship practices to manage floodwaters, slow runoff and dissipate flood energy to include riparian, wetland, forest, upland, and other habitat protection programs.			Entire RFPG	Floodplain Management	13000020, 13000021
13000020	13	Nueces	Identify existing areas noted for conservation, restoration, and/or habitat protection and develop a strategy for expanding these programs and/or identifying high success areas for riparian/wetland/forest conservation, restoration, and upland protection programs to enhance flood mitigation benefits. Identify preferred areas in Nueces Basin to expand Federal and State land protection programs, and other programs that provide incentives for voluntary land conservation and restoration. Preserve 35% of undeveloped riparian corridor mileage and protect 25% of acreage within the 100-year floodplain through voluntary, local, state, or federal land conservation programs.	Short- Term (10- year)	2033	Entire RFPG	Floodplain Management	13000019, 13000021
13000021	13	Nueces	Work with local leadership to implement nature-based riparian, wetland, and upland conservation and/or restoration programs for 40% of the high success areas identified. Preserve 80% of undeveloped riparian corridor mileage and protect 50% of acreage within the 100-year floodplain through voluntary, local, state, or federal land conservation programs.	Long-Term (30-year)	2053	Entire RFPG	Floodplain Management	13000019, 13000020

Goal ID	RFPG No.	RFPG Name	Goal	Term of Goal	Target Year	Applicable To	Overarching Goal	Associated Goal IDs
13000022	13	Nueces	Develop public information campaign to increase community knowledge of rules and regulations, flood-prone areas, and importance of protecting floodplains from encroachment			Entire RFPG	Floodplain Management	13000023, 13000024
13000023	13	Nueces	Identify local, subregional workgroups aligned with flooding issues. Develop public information campaign templates with relevant flood-related communications for 20% of Nueces flood planning region (FPR).	Short- Term (10- year)	2033	Entire RFPG	Floodplain Management	13000022, 13000024
13000024	13	Nueces	Develop public information plan campaigns with relevant flood-related communications for 80% of the Region 13 area.	Long-Term (30-year)	2053	Entire RFPG	Floodplain Management	13000022, 13000023
13000025	13	Nueces	Increase dedicated funding sources to provide maintenance of drainage and culvert systems (both structural and non-structural solutions) to divert flood flows and identify structural improvements causing flooding issues to remove/rectify.			Entire RFPG	Funding	13000026, 13000027
13000026	13	Nueces	Dedicated funding sources including state-funding opportunities to support operations and maintenance (O&M) for 20% of the communities and 30% counties in Region 13.	Short- Term (10- year)	2033	Entire RFPG	Funding	13000025, 13000027
13000027	13	Nueces	Dedicated funding sources, including state-funding opportunities to support O&M for 80% of the communities and 90% counties in Region 13.	Long-Term (30-year)	2053	Entire RFPG	Funding	13000025, 13000026
13000028	13	Nueces	Identify funding , resources, and technical training for floodplain administrators or designees to support community outreach including permitting support to verify new projects meet floodplain development requirements.			Entire RFPG	Funding	13000029, 13000030

Goal ID	RFPG No.	RFPG Name	Goal	Term of Goal	Target Year	Applicable To	Overarching Goal	Associated Goal IDs
13000029	13	Nueces	Dedicated funding sources including state-funding opportunities for 20% of the communities and 30% counties in Region 13. Develop a strategy for public engagement on flood-related issues including a list of flood mitigation funding programs and potential opportunities for communities to participate in programs to support flood risk reduction (such as FEMA Community Rating System) to serve as a template for rural and underserved communities by 2030.	Short- Term (10- year)	2033	Entire RFPG	Funding	13000028, 13000030
13000030	13	Nueces	Dedicated funding sources including state-funding opportunities for 80% of the communities and 90% counties.	Long-Term (30-year)	2053	Entire RFPG	Funding	13000028, 13000029

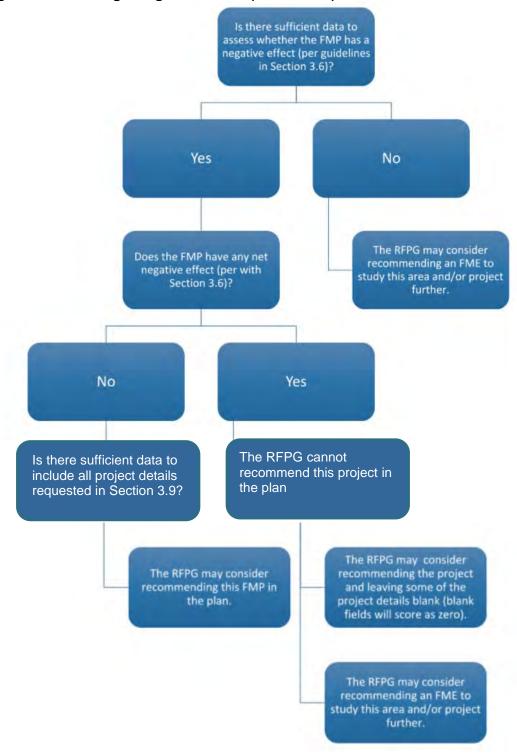
8 Documented Process to Identify Feasible Flood Projects and Strategies

The documented process used by the RFPG to identify potentially feasible FMSs and FMPs for the Nueces RFP was prepared by a Region 13 subcommittee and approved at the September 27, 2021, Regional Flood Planning Meeting. At the Nueces RFPG meeting on July 26, 2021, a Region 13 subcommittee was formed to develop a draft process. The Region 13 subcommittee included Debra Barrett, Lj Francis, Kendria Ray and Lauren Hutch Williams and met on August 23 to prepare recommendations for the Nueces RFPG. The Nueces RFPG's documented process to identified feasible flood projects and strategies is presented below.

- 1) The Nueces RFPG solicited public and stakeholder comments related to identifying potential flood management evaluations (FMEs), FMS, and FMPs, as follows:
 - Deploying a public comment map on the Region 13 website <u>Home Nueces Regional Flood Planning Group (Region 13) (nueces-rfpg.org)</u>, requesting feedback on flood-prone areas in the Nueces Basin. The comment map was open from April through August 2021. As of July 23, 185 comments on flood-prone areas were received.
 - A survey requesting information on proposed/ongoing flood projects was sent on June 18, 2021 to over 400 floodplain administrators and stakeholders in the Nueces Basin.
 - Direct outreach included four sub-regional meetings held May 17-20, personal emails to floodplain administrators, and follow-up phone calls to selected municipalities to gather information on local and regional flood plans in the Nueces Basin and flood planning needs. As of August 17, 32 entities had completed a survey on existing floodplain practices.
- 2) A subcommittee formed during the July 26 Nueces RFPG meeting consisted of voting and non-voting NRFPG members met on August 23 to develop a draft process for identifying projects.
- 3) The Nueces RFPG will receive public comment at the September 27 meeting on the proposed process to be used to identify and select FMEs, FMSs, and FMPs.
- Ongoing/proposed projects and flood-prone areas will be reviewed to identify project needs and data gaps.
- 5) Considering information provided by stakeholders, an initial screening of studies, projects and strategies will be performed based on the following metrics:
 - Addresses flood mitigation/ floodplain management goals adopted by the NRFPG
 - Prioritize emergency needs
 - Addresses flood-prone areas and outcome of needs analysis, with special emphasis on highly vulnerable areas identified from current and future condition flood risk analysis (Task 2)
 - Consider prevention projects to mitigate future flooding or repetitive loss

- Consider identified projects within a lens of potential impact to Agreed Order provisions
- Indication regarding potential use of federal funds, TWDB, or other sources of funding and include a table of potential funding sources in the draft and final plan
- Reduces flooding risk (benefits life and property) for drainage areas of 1 sq mile or more
- Assess potential for including nature-based solutions and applicability
- Unlikely to negatively affect a neighboring area (FMS or FMP only)
- Reduces flood risk for 100-year storm event (1% annual chance of flood) (FMS or FMP only)
- 6) Using TWDB guidance (next page), a draft list of FMEs, FMSs, and FMPs will be compiled for consideration by the Nueces RFPG at its meeting in Oct/Nov 2021. Infeasible FMSs and FMPs will be identified, including primary reason for deeming infeasible.
- 7) A list of potential FMEs and potentially feasible FMS and FMPs identified by the Nueces RFPG and infeasible FMSs and FMPs will be included in the technical memorandum due to TWDB in January 2022.
- 8) The process by which potentially feasible FMS are selected for evaluation in the 2023 Nueces regional flood plan will be revisited and updated (if necessary) after submittal of the technical memorandum. A description of process will be included in draft and final plans.

TWDB guidance for designating FMEs/FMPs (from TWDB)



9 Potential Flood Evaluations and Potential Feasible Flood Projects and Strategies

A list of potential FMEs and potentially feasible FMSs and FMPs identified by the RFPG, and associated tables are provided in Appendices C through E.

The list was obtained by reviewing a list of projects funded through the TWDB FIF, stakeholder engagement, and review of relevant studies. The Nueces RFPG considered and provided input on preliminary FME, FMS, and FMPs list during the October 25 and December 6, 2021, meetings.

The definitions for FMEs, FMPs, and FMSs are as follows:

A Flood Management Evaluation (FME) is a proposed flood study of a specific, flood-prone area that is needed to assess flood risk and/or determine whether there are potentially feasible FMSs or FMPs. Types of FMEs include:

- Watershed Planning
 - Hydrologic and hydraulic modeling
 - Flood mapping updates
 - o Regional watershed studies
- Engineering Project Planning
 - o Feasibility assessments
 - o Preliminary engineering
 - Studies on flood preparedness

An FMP is a proposed project, either structural or non-structural, that has non-zero capital costs or other non-recurring cost and when implemented will reduce flood risk, mitigate flood hazards to life or property. The RFPGs are strongly encouraged to consider nature-based flood risk reduction solutions in their overall approach. Types of FMPs include the following:

- Structural FMPs
 - Low water crossings or bridge improvements
 - Stormwater infrastructure (channels, ditches, ponds, storm drains)
 - o Regional detention
 - Reservoirs
 - Dam improvements, maintenance and repair
 - Flood walls / levees
 - Coastal protections
 - Natural based projects (i.e., living levees, increasing storage, increasing channel roughness, increasing losses, de-synchronizing peak flows, dune management, river restoration, riparian restoration, run-off pathway management, wetland restoration, low-impact development, green Infrastructure)
 - Comprehensive regional project includes a combination of projects intended to work together

- Non-Structural FMPs
 - Property or easement acquisition
 - Elevation of individual structures
 - Flood readiness and resilience
 - Flood early warning systems
 - Flood proofing
 - Regulatory requirements for reduction of flood risk

An FMS is a proposed plan to reduce flood risk or mitigate flood hazards to life or property. An FMS may or may not require associated FMPs to be implemented. FMS at a minimum to include any proposed action that the group would like to identify, evaluate, and recommend that does not qualify as either a FME or FMP.

The proposed process for identifying potential FMEs, FMSs, and FMPs for the 2023 Nueces regional flood plan can be found under **Section 8 - Documented Process to Identify Feasible Flood Projects and Strategies**.

The following provides a summary of the listed FMEs, FMPs, and FMSs, as of December 17, 2021:

- 65 FMEs have been identified
- 232 FMPs have been identified
- 69 FMSs have been identified

A summary of FMP, FME, FMPs by county and goals is presented in Table 9-1 and 9-2, respectively.

Table 9-1. FMPs, FMEs, FMPs by County (as of 12/17/2021)

List of Counties	FMPs	FMEs	FMSs
Aransas	56	9	12
Atascosa	23	8	4
Bandera	2		
Bee	7	1	
Bexar			
Brooks			
Calhoun	1		
Dimmit			
Duval		1	
Edwards	1		
Frio			
Goliad	1		

List of Counties	FMPs	FMEs	FMSs	
Jim Hogg				
Jim Wells	9	4	2	
Karnes	1	1		
Kenedy				
Kerr	1			
Kinney				
Kleberg	8	10	2	
La Salle	2	1		
Live Oak	5	1		
Maverick	3	4		
Nueces	49	15	15	
Real	1		34	
Refugio	3			
San Patricio	40	6		
Uvalde	2			
Webb				
Wilson				
Zavala	3			
Total	216	62	68	

Table 9-2. FMPs, FMEs, FMSs by Goals (as of 12/17/2021)

List of Goals	Goal Short Description	FMPs	FMEs	FMSs
13000001 - 13000003	Improve Safety at Low Water Crossing	10		1
13000004 - 13000006	Improve Dam Safety	4	3	
13000007 - 13000009	Improve Regional Coordination	29	10	25
13000010 - 13000012	Perform Flood Mapping	1	16	
13000013 - 13000015	Reduce Structural Flooding	132	22	11
13000016 - 13000018	Define Minimum Flood Management Standards	12	2	10
13000019 - 13000021	Increase Nature-Based Practices	12	5	6

List of Goals	Goal Short Description	FMPs	FMEs	FMSs
13000022 - 13000024	Develop Public Information Campaign	8	2	23
13000025 - 13000027	Increase Dedicated Maintenance Funding	20	2	1
13000028 - 13000030	Increase Funding for Floodplain Administrators	2		1
Total		216	62	68

10 Identified Flood Projects and Strategies determined Infeasible

Preparation of a list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary reason for it being infeasible, was considered. At this time, the Nueces RFPG has not determined any FMSs or FMPs to be infeasible.

The potential flood evaluations and potential feasible flood projects and strategies will be reviewed with stakeholders in the first quarter of 2022 to determine the feasibility of projects and to identify other relevant flood projects. It is anticipated that subgroup meetings will be used to provide the findings of stakeholder outreach on a regional level to identify broader application for regional coordination to address flood risk areas.

Appendix A Exhibit C, Table 6 Existing Floodplain Management Practices

Entity ^A	Floodplain	Adopted minimum	NFIP Participant	Higher Standards	Floodplain	Level of	Existing	Web Link to Entity Regulations ^B
	Management	regulations pursuant	(Yes/ No) ^{A,D}	Adopted	Management	Enforcement of	Stormwater	
	Regulations	to Texas Water Code		(Yes/ No) ^B	Practices	Practices (High/	or Drainage Fee	
	(Yes/ No/	Section 16.3145? (Yes/		, , ,	(Strong/Moderate/	Moderate/Low/	(Yes/ No) ^B	
	Unknown) ^A	No) ^A			Low/None) ^B	None) ^{B,C}	, , ,	
	•	,			,	,		
Atascosa County	Unknown		Yes	Yes				
Bandera County	Yes	Yes	Yes	No	Moderate	Moderate	No	www.banderacounty.org
Bee County	Unknown		Yes					
Bexar County	Yes	Yes	Yes	Yes	Moderate	Moderate	No	Not Available on line
Brooks County	Unknown		Yes					
Dimmit County	No	No	Yes	No	None	None	No	none
Duval County	No	No	Yes	No	Low	Low	No	<u>www.co.duval.tx.us</u>
Edwards County	Unknown		Yes					
Frio County	Yes	Yes	Yes	No	Low	Low	No	N/A
Goliad County	Unknown		Yes					
Jim Hogg County	Unknown		Yes					
Jim Wells County	Unknown		Yes					
Karnes County	Yes	Yes	Yes	No	Moderate	Moderate	No	none
Kenedy County	Unknown		Yes					
Kerr County	Yes	Yes	Yes	Yes	Moderate	Moderate	No	https://www.co.kerr.tx.us/engineer/floodplain.html
Kinney County	Unknown		Yes					
Kleberg County	Unknown		Yes					
La Salle County	Unknown		Yes					
Live Oak County	Unknown		Yes	Yes				
Maverick County	Unknown		Yes					
McMullen County	Unknown		Yes					
Medina County	Yes	Yes	Yes	Yes	Strong	High	No	medinacountytexas.org
Nueces County	Unknown		Yes					
Real County	Yes	Yes	Yes	No	Moderate	Moderate	No	co.real.tx.us
Refugio County	Yes	Yes	Yes	No	Low	Low	No	n/a
San Patricio	Yes	Yes	Yes	No	Strong	High	No	https://www.twdb.texas.gov/financial/programs/EDAP/m
County								sr/doc/San Patricio Co MSRs.pdf
Uvalde County	Unknown		Yes					
Webb County	Yes	Yes	Yes	No	Strong	High	No	https://www.webbcountytx.gov/Planning/
Wilson County	Yes	Yes	Yes	No	Moderate	Moderate	No	http://www.co.wilson.tx.us/upload/page/2300/docs/Daw
·								n/Ordinances/WC Flood Order Final 10272010.pdf
Zavala County	Yes	Yes	Yes	No	Moderate	Moderate	No	http://co.zavala.tx.us
Agua Dulce	Unknown		Yes					
Alamo Area	Unknown		No					
Council of								
Governments		<u> </u>						
Alice	Unknown		Yes	Yes				

Entity ^A	Floodplain	Adopted minimum	NFIP Participant	Higher Standards	Floodplain	Level of	Existing	Web Link to Entity Regulations ^B
Ellulty	Management	regulations pursuant	(Yes/ No) ^{A,D}	Adopted	Management	Enforcement of	Stormwater	Web Lilik to Elitity Regulations
	Regulations	to Texas Water Code	(162/ 140)	(Yes/ No) ^B	Practices	Practices (High/	or Drainage Fee	
1	(Yes/ No/	Section 16.3145? (Yes/		(Yes/ No)	(Strong/Moderate/	Moderate/ Low/		
		• •				None) ^{B,C}	(Yes/ No) ^B	
	Unknown) ^A	No) ^A			Low/None) ^B	None)		
Alice Water	Unknown		No					
Authority								
Aransas County	Unknown		No					
MUD 1								
Aransas County	Unknown		No					
Navigation								
District								
Aransas County	Unknown		No					
WCID 1								
Aransas Pass	Unknown		Yes					
Asherton	Unknown		Yes					
Bayside	Unknown		Yes					
Beeville Water	Unknown		No					
Supply District								
Benavides	Unknown		Yes					
Bexar-Medina-	Unknown		No					
Atascosa								
Counties WCID 1								
Big Wells	Unknown		No ^D					
Camp Wood	Unknown		Yes					
Canyon Regional	Unknown		No					
Water Authority								
Carrizo Springs	Unknown		Yes					
Charlotte	Unknown		Yes	Yes				
Christine	Unknown		Yes ^D					
City of Beeville	No	No	Yes	No	Low	Low	No	NO
City of Bishop	Yes	Yes	Yes	No	Moderate	Moderate	No	www.cityofbishoptx.com
City of Corpus	Yes	Yes	Yes	Yes	Strong	High	No	https://library.municode.com/tx/corpus_christi/codes/co
Christi								de of ordinances?nodeId=PTIIITHCOOR CH14DESE ARTV
								<u>FLHAPRCO</u>
City of Gregory	Yes	No	Yes	No	Strong	High	No	N/A
City of Hondo	Yes	Yes	Yes	No	Moderate	Moderate	No	https://z2.franklinlegal.net/franklin/Z2Browser2.html?sho
								wset=hondoset&collection=hondo&doccode=z2Code_z20
								000462
City of Ingleside	Yes	Yes	Yes	Yes	Strong	High	No	https://library.municode.com/TX/ingleside/codes/code_o
								f ordinances?nodeId=PTIICICO CH18BUBURE ARTXFLMA
								&showChanges=true
City of Leakey	Yes	No	Yes	No	Moderate	Moderate	No	none
City of Lytle	Unknown		Yes					

Entity ^A	Floodplain	Adopted minimum	NFIP Participant	Higher Standards	Floodplain	Level of	Existing	Web Link to Entity Regulations ^B
	Management	regulations pursuant	(Yes/ No) ^{A,D}	Adopted	Management	Enforcement of	Stormwater	
	Regulations	to Texas Water Code		(Yes/ No) ^B	Practices	Practices (High/	or Drainage Fee	
	(Yes/ No/	Section 16.3145? (Yes/			(Strong/Moderate/	Moderate/Low/	(Yes/ No) ^B	
	Unknown) ^A	No) ^A			Low/None) ^B	None) ^{B,C}		
City of Port	Yes	Yes	Yes	No	Strong	High	No	https://library.municode.com/tx/port aransas/codes/cod
Aransas								e_of_ordinances?nodeId=PTIIPOARCO_CH8FLDAPR
City of Portland	Yes	Yes	Yes	No	Strong	High	Yes	https://library.municode.com/tx/portland/codes/code_of
								ordinances?nodeId=COOR_CH4BUGEBURE_ARTIIIFLDAPR
								S4-30STAUFIFAPUME
City of Sinton	Yes	Yes	Yes	No	Moderate	Moderate	No	sintontexas.org
City of Uvalde	Yes	Yes	Yes	No	Moderate	Moderate	No	https://library.municode.com/tx/uvalde/codes/code_of_o
								rdinances?nodeId=TIT15BUCO CH15.48FLDAPR
Coastal Bend	Unknown		No					
Council of								
Governments								
Corpus Christi	Unknown		No					
Downtown								
Management								
District								
Crystal City	Unknown		Yes					
Devine	Unknown		Yes					
Dilley	Unknown		Yes					
Driscoll	Unknown		Yes					
Duval County	No	No	No	No	None	None	No	None
Conservation &								
Reclamation								
District								
Encinal	Unknown		Yes					
Escondido	Unknown		No					
Watershed								
District								
Falfurrias	Unknown		Yes					
Freer	Unknown		Yes					
Freer WCID	Unknown		No					
Fulton	Unknown		Yes					
George West	Unknown		Yes					
Golden Crescent	Unknown		No					
Regional Planning								
Commission								

Entity ^A	Floodplain	Adopted minimum	NFIP Participant	Higher Standards	Floodplain	Level of	Existing	Web Link to Entity Regulations ^B
,	Management	regulations pursuant	(Yes/ No) ^{A,D}	Adopted	Management	Enforcement of	Stormwater	
	Regulations	to Texas Water Code	(103) 140)	(Yes/ No) ^B	Practices	Practices (High/	or Drainage Fee	
	(Yes/ No/	Section 16.3145? (Yes/		(163/140)	(Strong/Moderate/	Moderate/ Low/	(Yes/ No) ^B	
	Unknown) ^A	No) ^A			Low/None) ^B	None) ^{B,C}	(163/140)	
	Olikilowil)	NO)			Low/None)	None)		
Hondo Creek	Unknown		No					
Watershed								
Improvement								
District								
Jim Hogg County	Unknown		No					
WCID 2								
Jim Wells County	Unknown		No					
FWSD 1								
Jourdanton	Unknown		Yes					
Kingsville	Unknown		Yes	Yes				
Lake City	Unknown		Yes					
Lakeside	Unknown		Yes					
Lamar	Unknown		No					
Improvement								
District								
Mathis	Unknown		Yes					
Maverick County	Unknown		No					
WCID 1								
McMullen County	No	No	No	No	Low	Low	No	None
WCID #1								
Medina County	Unknown		No					
WCID 2								
Middle Rio	Unknown		No					
Grande								
Development								
Council								
Natalia	Unknown		Yes					
Nueces County	Unknown		No					
Bishop Driscoll								
Drainage District								
3								
Nueces County	Unknown		No					
Drainage &								
Conservation								
District 2								
Nueces County	Unknown		No					
WCID 3								
Nueces County	Unknown		No					
WCID 4								

Entity ^A	Floodplain	Adopted minimum	NFIP Participant	Higher Standards	Floodplain	Level of	Existing	Web Link to Entity Regulations ^B
	Management	regulations pursuant	(Yes/ No) ^{A,D}	Adopted	Management	Enforcement of	Stormwater	
	Regulations	to Texas Water Code		(Yes/ No) ^B	Practices	Practices (High/	or Drainage Fee	
	(Yes/ No/	Section 16.3145? (Yes/			(Strong/Moderate/	Moderate/Low/	(Yes/ No) ^B	
	Unknown) ^A	No) ^A			Low/None) ^B	None) ^{B,C}		
Nueces County	Unknown		No					
WCID 5								
Nueces River	Unknown		No					
Authority								
Odem	Unknown		Yes					
Orange Grove	Unknown		Yes					
Padre Island	Unknown		No					
Gateway								
Municipal								
Management								
District								
Pearsall	Unknown		Yes					
Petronila	Unknown		No					
Pettus MUD	Unknown		No					
Pleasanton	Unknown		Yes					
Port of Corpus	Unknown		No					
Christi Authority								
Poteet	Unknown		Yes					
Premont	Unknown		Yes					
Refugio	Unknown		Yes					
Refugio County	Unknown		No					
Drainage District								
1								
Refugio County	Unknown		No					
Navigation								
District								
Refugio County	Unknown		No					
WCID 2								
Rio Grande	Unknown		No					
Regional Water								
Authority								
Riviera WCID	Unknown		No					
Robstown	Unknown		Yes					
Rockport	Unknown		Yes					
Rocksprings	Unknown		Yes					
Sabinal	Unknown		Yes					
San Diego	Unknown		Yes					
San Diego MUD 1	Unknown		No					

Entity ^A	Floodplain	Adopted minimum	NFIP Participant	Higher Standards	Floodplain	Level of	Existing	Web Link to Entity Regulations ^B
-	Management	regulations pursuant	(Yes/ No) ^{A,D}	Adopted	Management	Enforcement of	Stormwater	
	Regulations	to Texas Water Code		(Yes/ No) ^B	Practices	Practices (High/	or Drainage Fee	
	(Yes/ No/	Section 16.3145? (Yes/			(Strong/Moderate/	Moderate/Low/	(Yes/ No) ^B	
	Unknown) ^A	No) ^A			Low/None) ^B	None) ^{B,C}		
San Patricio	Unknown		Yes					
San Patricio	No	No	No	No	Strong	High	No	co.san-patricio.tx.us
County Drainage								
District								
San Patricio	Unknown		No					
County MUD 1								
San Patricio	Unknown		No					
County								
Navigation								
District 1								
San Patricio	Unknown		No					
MWD								
South Texas	Unknown		No					
Development								
Council								
South Texas	Unknown		No					
Water Authority								
Taft	Unknown		Yes					
Three Rivers	Unknown		Yes					
Three Rivers	Unknown		No					
Water District								
Uvalde County	No	Yes	No	No	Strong	High	No	none
UWCD								
Woodsboro	Unknown		Yes					
Zavala County	Unknown		No					
WCID 1								
Aransas County	Yes	Yes	Yes	Yes	Moderate	Moderate	No	https://www.aransascountytx.gov/main/docs/ordinances/
								OAmended%20Aransas%20County%20Floodplain%20Man
								agement%20Watershed%20Protection%20Order%20O-23-
								<u>2019.pdf</u>
City of Cotulla	Yes	Yes	Yes	No	Low	Low	No	municode
City of Ingleside	Yes	Yes	Yes	No	Moderate	Moderate	No	www.inglesideonthebay.org
on the Bay								

Appendix B

Historical Flood Information Compiled for the Nueces FPR to Assess Flood Prone Areas

B.1 Historical Flood Summary for Select USGS Gage Records

U.S. Geological Survey (USGS) gage information was used to identify historical flood stages located along the major rivers and tributaries within the basin. The date, peak flow, peak stage, and expected consequences during these historic flood events at several key locations throughout the basin are summarized in Table B-1. USGS gage locations are also viewable at Region 13 Nueces (arcgis.com).

Table B-1. USGS Historical Flood Summary

River Gages	Flood Date	Peak Flow (cubic feet per second)	Peak Stage (feet)	Expected Consequence						
Nueces River	Nueces River									
Calallen	9/15/2002	47,800	13	Widespread long-lived residential flooding of hundreds of homes above Calallen occurs. This requires residents to be evacuated. Roads into the flood-prone areas flood for miles, cutting off large residential areas for weeks. Massive flooding of roads near and around Calallen.						
Three Rivers	9/12/2002	48,500	44.4	Boats needed in downtown area of Three Rivers. Water is over the County Road 151 bridge south of George West.						
Tilden	10/16/2003	31,000	23.1	Moderate flooding occurs. The flow is to the slab elevation of the lowest businesses and homes in Tilden. Numerous roads and low bridges flood and become very dangerous to motorists. Hundreds of livestock are trapped and potentially drowned in the flood plain, below Derby to the Choke Canyon Reservoir.						
Cotulla	7/15/2002	18,700	21.6	Major and massive lowland flooding occurs. Evacuations of livestock and a few residential properties along the river required. Many roads near the river will flood, including FM 3408 from I-35, Valley Wells Road, the frontage road near mile marker 67. Flooding also occurs on Dobie Road including in and around Highway 624. FM 624 also floods south of Highway 97 toward Fowlerton.						
Uvalde	10/27/1996	201,000	24.9	Residents of many low lying homes in Crystal City flood in less than a day from a crest in Uvalde. Roads and bridges are damaged above Barksdale to below Carrizo Springs. Flow ranges from one half mile to four miles wide in the flood plain, trapping livestock and destroying equipment in the flood plain.						
Mission River										
Refugio	8/31/2001	46,900	Missing	Missing						
Concan	6/21/1997	56,200	24.4	Disastrous life-threatening flooding destroys anything in the flood plain from the headwaters to below Concan. Homes are flooded and a few washed downstream below Leakey to below Rio Frio. Up to and over 15 feet of turbulent flow is life threatening in campgrounds above Rio Frio to Concan.						

River Gages	Flood Date	Peak Flow (cubic feet per second)	Peak Stage (feet)	Expected Consequence
Tilden	7/10/2002	33,000	30.1	Major flooding occurs. Disastrous flooding of commercial and residential buildings in Tilden. Restaurant on the right bank of the Frio River had 3 to 4 feet of water in it.

B.2 Historic Flood Events

Past flood events provide insight on where flood-prone areas are located within the basin. Table B-2 provides a list and brief description of historical events within the basin.

Table B-2. Listing of Historical Flood Events

Flood Event	Description
2017 Hurricane Harvey	Hurricane Harvey is the most expensive storm on record, costing an estimated \$4.28 billion dollars in damages to Region 13 counties. Aransas county experienced the most extensive damages with an estimated cost totaling \$1.75 billion. Nueces, San Patricio, and Refugio counties saw losses of \$1.32 billion, \$520 million, and \$520 million respectively. The National Weather Service (NWS) reports that 64 injuries and 2 fatalities were caused in Region 13 by Hurricane Harvey.
2003 Flash Floods	In late June and early July of 2003, flash floods hit the northwestern counties of Region 13 after a hurricane turned tropical storm blew across the coastal counties.
2002 Frio River Flood	In July and September of 2002, Frio River saw record stages near Tilden. The July storm represents the flood of record for parts of the middle basin. The tributaries of the complex northwestern portion of the basin see peak stages in different storm events.
1998 Flash Flood Real County	The deadliest floods in these records are the flood of August 1998, which took four lives in Real County.
1997 Flash Flood in Medina, Bandera, and Goliad Counties	The flood of June 1997 which took four lives across Medina, Bandera, and Goliad Counties.
1996 Nueces Flood	The Nueces near Uvalde saw its record peak stage in 1996.
1971 Hurricane Edith and Fern	The combination of Hurricanes Edith and Fern caused only a slightly higher stage on the Mission river in 1971. These two storms represent the largest storms in the lower counties of the Nueces Basin, at the time of occurrence.
1967 Hurricane Beulah	In 1967, Hurricane Beulah set the record for highest stage in the Nueces River at gages in Tilden, Three Rivers, and Calallen. Beulah also set the record for highest recorded stage in the Atascosa at Whitsett and caused the second highest stage recorded in the Mission River at Refugio. National Oceanic and Atmospheric Administration (NOAA) reports that 41 lives were lost in Hurricane Beulah and an estimated 1 billion dollars of damage was done to property. Beulah is reported to have left thousands of people homeless as well.
1935 Nueces and West Nueces Flood	The earliest major flood in the Nueces River Basin regularly referenced in literature is the flood of 1935. This historic flood affected the Nueces River and its tributaries in the early weeks of June. The Nueces River and many of its tributaries saw record stages with some like the West Nueces River breaking their prior stage records by over ten feet. This storm caused the largest peak stage in the Nueces River at Cotulla and in the West Nueces River.
1932 Frio and Nueces Flood	There was a 1932 storm that caused the highest peak stage in the Frio River at Concan and the second highest recorded peak stage in the Nueces River at near Uvalde.

B.3 National Weather Service Flood Data

The National Weather Service (NWS) has documented fatalities, injuries, and property damage as the result of past flood events since 1996 as shown in Figures B-1 through B-3.

A summary of flood damage data gathered from the NWS can be seen in Tables B-3 ad B-4. Table B-3 reports flood damage in dollars, injuries, and fatalities by year. Table B-4 uses the same base data as Table 4-3 but is divided based on counties. To generate Tables B-3 and B-4, raw yearly damage data in Texas was downloaded from NWS website. Then, a filter on counties is used so that only damage data of Region 13 counties remain in the dataset. Finally, types of damages that are non-essential to this study, such as wind and fire damage, were filtered out so that damages include only rain, storm and flood damages.

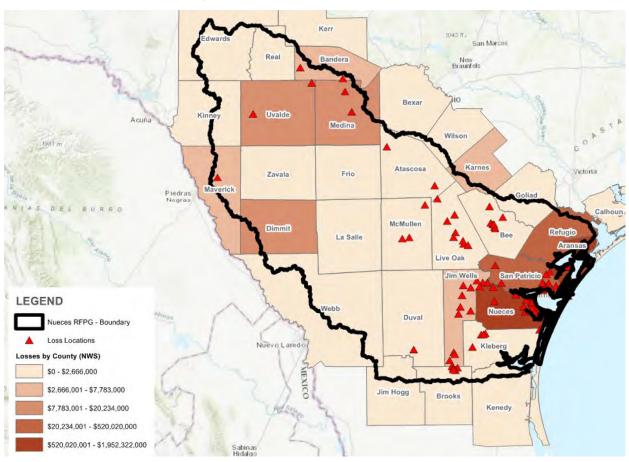


Figure B-1. National Weather Service Property Damage from Flooding, since 1996

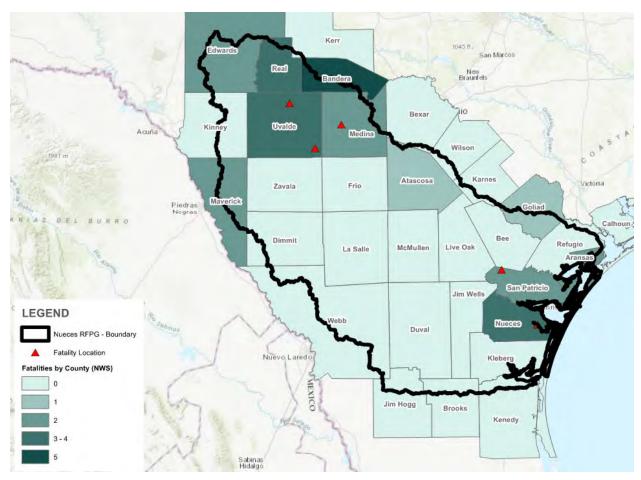


Figure B-2. National Weather Service Fatalities from Flooding, since 1996

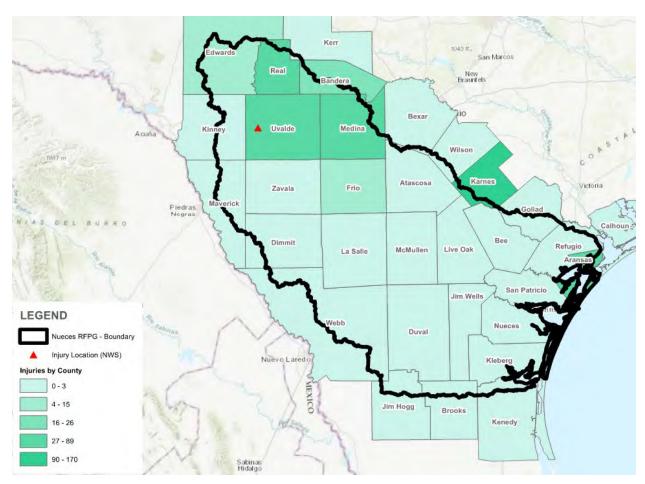


Figure B-3. National Weather Service Injuries from Flooding, since 1996

Table B-3. Losses associated with Flooding in Region 13 counties since 1996 as reported by the National Weather Service

Flood Year	Damages (in Dollars)	Injuries	Fatalities
1996	56,367,000	0	1
1997	21,807,000	170	8
1998	94,424,000	495	5
1999	492,000	4	0
2000	961,000	1	0
2001	3,540,000	21	1
2002	4,680,000	29	1
2003	5,642,000	0	1
2004	2,585,000	7	1
2005	-	0	0
2006	2,170,000	0	0
2007	4,910,000	0	0
2008	7,207,000	2	1
2009	-	0	0
2010	10,775,000	0	3
2011	-	0	0
2012	6,770,000	0	0
2013	810,000	0	0
2014	1,550,000	0	0
2015	5,365,000	0	4
2016	2,335,000	0	0
2017 ¹	4,278,561,000	65	2
2018	1,350,000	3	1
2019	155,000	0	0
2020	1,005,000	0	0
Totals	4,513,461,000	797	29

¹ Hurricane Harvey is responsible for most of these damages

Table B-4. Losses associated with Flooding from 1996 to 2020 as reported by the National Weather Service

Counties	Damages	Injuries	Fatalities
Aransas	\$ 1,952,322,000	65	2
Atascosa ²	\$ 2,067,000	0	1
Bandera ²	\$ 7,783,000	26	5
Bee	\$ 1,049,000	0	0
Bexar ²	\$ -	0	0
Brooks ²	\$ 1,625,000	0	0
Dimmit ²	\$ 20,234,000	0	0
Duval	\$ 50,000	0	0
Edwards ²	\$ 721,000	15	2
Frio	\$ 2,342,000	15	0
Goliad ²	\$ 1,025,000	0	1
Jim Hogg ²	\$ -	0	0
Jim Wells	\$ 4,816,000	0	0
Karnes ²	\$ 7,084,000	170	0
Kenedy ²	\$ -	0	0
Kerr ²	\$ -	0	0
Kinney ²	\$ 1,390,000	0	0
Kleberg	\$ 1,170,000	0	0
La Salle	\$ -	0	0
Live Oak	\$ 425,000	0	0
Maverick ²	\$ 7,266,000	3	2
McMullen	\$ 200,000	0	0
Medina ²	\$ 17,148,000	59	2
Nueces	\$ 1,315,015,000	3	4
Real ²	\$ 2,666,000	69	4
Refugio ²	\$ 520,020,000	0	0
San Patricio	\$ 518,722,000	0	2
Uvalde	\$ 18,009,000	89	4
Webb ²	\$ -	0	0
Wilson ²	\$ 89,786,000	257	0
Zavala	\$ 20,526,000	26	0
Total	\$ 4,513,461,000	797	29

 $^{^2}$ Total county damages shown. These counties are only partially located in Region 13, with the remaining amount in an adjoining flood planning basin.

B.4 Federal Emergency Management Agency Flood Damage Data

Federal Emergency Management Agency (FEMA) funding for flood damages was obtained from 2002 to June 2021 as shown in Figure B-4. Table B-5 includes flood related damages by county. Unlike the gross damage data in Table B-3 and Table B-4, data in Table B-5 is summarized from various federal programs. First, raw data of all program funds in the Region 13 counties was downloaded from the FEMA website. Then, programs that are non-related to flood damages are filtered out. Finally, FEMA funding of four federal programs is summarized by county: Public Assistance Funded Project Summaries, Individuals and Households Program – Valid Registrations, Individual Assistance Housing Registrants – Large Disasters, and Housing Assistance Program.

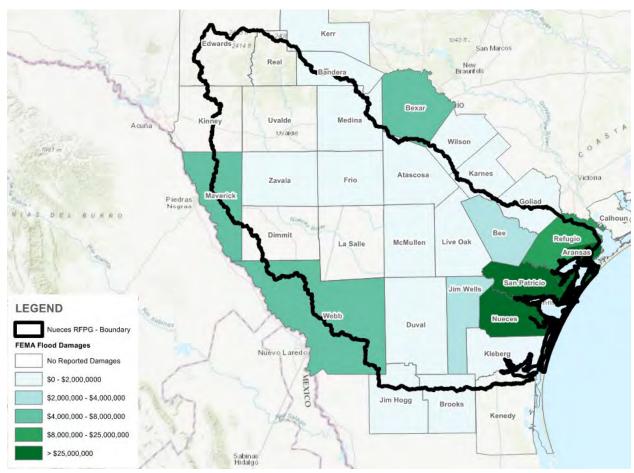


Figure B-4. FEMA Flood Assistance to Owners and Renters for Flood Damages, since 2002

Table B-5. FEMA Funding for Flood Related Damages by Program (2002 to June 2021)

	Public Assistance Funded Project Summaries		eholds Program Valid trations	Individual Assistance Housing Registrants Large Disasters	Housing Assistance Program
Counties	Federal Share Obligated	Flood Damage Amount	Repair Amount	Real Property Damage Amount Observed by FEMA	Owners and Renters Combined Amount
Aransas ²	75,674,264	616,914	734,181	8,457,466	50,377,516
Atascosa ²	1,534,103	0	0	0	668,809
Bandera ²	2,077,275	0	0	0	72,991
Bee	1,198,186	9,016	7,686	62,702	2,908,309
Bexar ²	0	0	0	0	6,886,899
Brooks ²	152,608	0	0	0	218,103
Dimmit ²	758,646	0	0	0	0
Duval	0	0	0	0	595,316
Edwards ²	0	0	0	0	0
Frio	497,840	4,767	7,737	0	435,145
Goliad ²	618,371	453	1,175	40,534	1,550,171
Jim Hogg ²	265,938	0	0	0	404,417
Jim Wells	1,754,451	150,464	59,198	895	3,090,062
Karnes ²	751,420	482	3,677	6,823	1,108,783
Kenedy ²	29,192	0	0	0	0
Kerr ²	1,110,759	0	0	0	5,902
Kinney ²	663,038	0	0	0	0
Kleberg	1,185,217	63,131	30,086	32,654	999,455

Table B-5. FEMA Funding for Flood Related Damages by Program (2002 to June 2021)

	Public Assistance Funded Project Summaries		eholds Program Valid trations	Individual Assistance Housing Registrants Large Disasters	Housing Assistance Program
Counties	Federal Share Obligated	Flood Damage Amount	Repair Amount	Real Property Damage Amount Observed by FEMA	Owners and Renters Combined Amount
La Salle	783,237	0	0	0	0
Live Oak	333,648	1,530	3,911	0	633,648
Maverick ²	568,802	0	0	0	5,485,074
McMullen	125,315	0	0	0	30,906
Medina ²	2,658,555	0	0	0	1,448,375
Nueces	107,325,093	2,543,856	2,049,947	7,302,464	43,018,855
Real ²	1,427,573	0	0	0	0
Refugio ²	27,531,715	2,028	0	323,289	8,183,992
San Patricio	38,006,297	0	0	2,481,751	25,725,502
Uvalde	2,934,567	0	0	0	0
Webb ²	3,761,150	0	0	0	4,085,755
Wilson ²	2,059,932	0	0	0	267,428
Zavala	3,827,640	27,034	14,984	0	1,408,517
Totals	279,614,832	3,419,675	2,912,582	18,708,578	159,609,930

Appendix C Exhibit C, Table 12 Potential Flood Management Evaluations Identified by the Regional Flood Planning Group

Exhibit C, Table 12 Potential Flood Management Evaluations Identified by RFPG

FME ID	FME Name	Description	Associated Goals	Counties HUC8s	HUC12s	Watersheds	Study FME Area Flood Risk Type (sqmi) Type	Sponsor	Entities E with	Emergency Need	Estimated Study Cost	Potential Funding Sources and Amount	Estimated number of	Habitable Estimated Critical Number of structures Population at facilities at low water	f Estimated number of	Estimated Estimated active farm Existing length of roads & ranch land at flood Anticipal		Reason for n Recommendation
									Oversight				structures at flood risk	at flood risk flood risk flood risk (#) crossings flood risk			Maps (year) (Y/N)	
				Nueces, Jim 2110202,12110203,1211020														
131000001 131000002		Nueces County Regional Drainage Master Plan Study Drainage Master Planning Study - Duval County	13000008 13000011	Wells, Kleberg 110205,12110206 Duval 2110205,12110206			244.4050983 Riverine 166.7713815 Riverine				\$2,137,500	TWDB FIF						
131000003	County Wide Drainage Master Plan Study	Drainage Master Planning Study - San Patricio County	13000011	San Patricio 2110201	000	034,13000035,13000037,13000043,130000	65.47693177 Riverine	TWDB FIF			\$13,941,120	TWDB FIF						-
131000004	County Wide Drainage Master Plan Study	Drainage Master Planning Study - Bee County	13000011	Bee 12100406,12100407,121101	11 0,1 1003030402,121003030405,121003030504,1210 130	000003.13000010.13000410.13000432.130	81.64120969 Riverine	TWDB FIF			\$2,000,000	TWDB FIF						
131000005	County Wide Flood Planning/Prevention Study	Flood Planning/Prevention Study	13000011	Karnes 2110111		00435,13000441,13000446	69.60447877 Riverine	TWDB FIF			\$618,750	TWDB FIF						+
131000006	County Wide Drainage Master Plan Study	Nueces County Drainage & Conservation District 2	13000011	Nueces 12110202,12110205	1102050601,121102050602,121102050603,1211 005 02050604,121102050606,121102050607	560,13000561,13000563,13000611,130006 13	11.79478028 Riverine	TWDB FIF			\$2,137,500	TWDB FIF						
131000007	Others (Flood Prevention/Planning Study, LOMR etc)		13000011	Atascosa 12110110	121101100205,121101100206 121102040205,121102040206,121102040407,12 130	13000418,13000419 000483,13000497,13000502,13000515,130	0.706252085 Riverine	TWDB FIF			\$78,500	TWDB FIF						
131000008	Drainage Master Plan Study	Drainage Master Plan - Location 1 - Kingsville	13000014	Kleberg 12110204	1102040409,121102040410 121102040205,121102040206,121102040407,12 130	00517 000483,13000497,13000502,13000515,130	1.291287727 Riverine	TWDB FIF			\$1,360,258	TWDB FIF						_
131000009	Drainage Master Plan Study	Drainage Master Plan - Location 2 - Kingsville	13000014	Kleberg 12110204	1102040409,121102040410 121102040205,121102040206,121102040407,12 130		1.291287727 Riverine	TWDB FIF			\$3,600,000	TWDB FIF						-
131000010	Drainage Master Plan Study	Drainage Master Plan - Location 3 - Kingsville	13000014	Kleberg 12110204	1102040409,121102040410 121102040205,121102040206,121102040407,12 130		1.291287727 Riverine	TWDB FIF			\$1,457,419	TWDB FIF						+
131000011	Drainage Master Plan Study	Drainage Master Plan - Location 4 - Kingsville	13000014		1102040409,121102040410 121102040205,121102040206,121102040407,12 130		1.291287727 Riverine				\$1,846,064	TWDB FIF						+
131000012	Drainage Master Plan Study	Drainage Master Plan - Location 5 - Kingsville	13000014		1102040409,121102040410 121102040205,121102040206,121102040407,12			TWDB FIF			\$7,800,000	TWDB FIF						+
131000013	Drainage Master Plan Study	Drainage Master Plan - Location 6 - Kingsville	13000014		1102040409,121102040410 121102040205,121102040206,121102040407,12			TWDB FIF			\$230,000	TWDB FIF						+ -
131000014	Drainage Master Plan Study	Drainage Master Plan - Location 7 - Kingsville	13000014	Kleberg 12110204	1102040409,121102040410 121102040205,121102040206,121102040407,12 1102040409.121102040410	00517 000483,13000497,13000502,13000515,130 00517	1.291287727 Riverine	TWDB FIF			\$1,360,258	TWDB FIF						
131000015	Drainage Master Plan Study	Drainage Master Plan - Location 8 - Kingsville	13000014		1102040409,121102040410 121102040205,121102040206,121102040407,12 130 1102040409,121102040410		1.291287727 Riverine	TWDB FIF			\$5,600,000	TWDB FIF						+
131000018 131000017 131000018	Drainage Master Plan Study Others (Flood Prevention/Planning Study, LOMR etc)	Drainage Master Plan - Location 9 - Kingsville Flood Planning Study for LOMR - Cotulla	13000011	La Salle 12110103,12110105	121102040409,121102040410 121101030705,121101050201 121102040404,121102040405	13000117,13000239 13000496,13000513	0.183974647 Riverine 1.179815544 Riverine	TWDB FIF			\$149,500 \$241,500	TWDB FIF TWDB FIF						
131000018	Drainage Master Plan Study Drainage Master Plan Study	Drainage Master Plan Study - Alice Drainage Master Plan Study - Driscoll		Jim Wells 12110204 Nueces 12110205 Bandera.	121102040404,121102040405	13000496,13000513	0.106515502 Riverine				\$150,000	TWDB FIF						
131000020	USGS Flood Warning Modeling on the Sabinal River	Developing Flood Preparedness Toolsets Using Streamgaging and Flood Inundation Mapping	13000008	Uvalde 12110106	121101060603,121101060604	13000308,13000298	0.900368893 Riverine											
		The premise of the Hazard Identification, Risk Assessment and Consequence Analysis is to determine what risks are most relevant to Bexar County and the City of San Antonio. Moving forward, this risk assesment could be used to determine what																
	Hazard Identification Birk Accordant and Concession	risks are most relevant, and accordingly pursue projects that work to reduce or eliminate these risks. There could be potential e in working with Bexar County and the City of San Antonio to develope funding sources based on the nature of projects they	13000004.															
131000021	Analysis		13000004,	Bexar				-										4
131000022	COASTAL BEND MITIGATION ACTION PLAN - IW - 05	study options for preventing infiliation of county wood 303 and for bardon Estates Subdivision. In neavy rainfall events, county, Road 303 becomes inundated, preventing egress from the Barbon Estates subdivision and access to emergency response vehicles. In the past, residents have been stranded for a period of two to three days.	13000012	Jim Wells														
	TOTAL	The City of Alice and Jim Wells County were notified in July 2008 that the San Diego Creek Levee was an unacceptable flood control structure. Since that time the City and County have been moving forward to bring the levee back into compliance by																
		conducting the San Diego Creek Levee Certification study, survey work and clearing. A total of \$93,500.00 has been spent to date from local funds. This project will involve raising the height of the levee to meet the required freeboard for a 100 year																
131000023	COASTAL BEND MITIGATION ACTION PLAN - JW - 11		13000004	Jim Wells				1	1									+
434000	COASTAL BEND ANTICATION ASSESSMENT	Improved drainage to reduce disruptions due to flooding in the vicinity of the Live Oak County Airport. The area surrounding	13000	Live Oak														
131000024	COASTAL BEND MITIGATION ACTION PLAN - LO - 06	the airport is subject to flood inundation, thereby cutting off access to the airport and also on the future runway extension. The Corps of Engineers studied the Cotulia Reservoir site, located in the upper Nueces Basin, in the 1960's. Therecent Nueces	13000013	Live Oak														
		River Basin Reconnaissance Study identified a potentially down-sized version of this project, including a pipeline to divert water directly into Choke Canyon Reservoir. In addition to the flood damage reduction potential for Lake Corpus Christi and the	r															
		lower river basin, this project would enhance the regional water supply by increasing water storage capacity, and reducing losses associated with downstream evaporation across an 81 mile braided reach. During Phase 1 of the Feasibility Study, existing	,															
		data will be reviewed to estimate the flood damage reduction potential of the project: a.A preliminary hydrologic analysis to determine the portion of the volume of historical lower-basin floods that originate upstream of Cotulla will be performed.b.A																
		review of existing map information of the Nueces River for a 25-mile reach downstream of the proposed reservoir to identify areas that could benefit from the potential flood damage reduction potential of the reservoir will be performed.c.Data from																
		FEMA and other agencies on historical flood damages will be summarized. (Phase 2) Depending on the findings of the flood damage analyses, a daily flow flood model may need to be developed to evaluate the downstream flood damage reduction																
131000025	COASTAL BEND MITIGATION ACTION PLAN - NU - 12	potential in terms of magnitude and frequency for the Cotulla Diversion Project. The Nucces River Basin Reconnaissance Study identified a two-way pipeline project between Choke Canyon and Lake Corpus	13000013	Nueces														
		Christi, coupled with the off-channel storage and a high capacity pump station, for the dual purpose of flood control and increased water supply, through reduced channel losses. During the Feasibility Study, analyses will be performed to determine																
		the potential flood damage reduction benefits of this project:a. A review of existing map information of the area along the Lower Nueces River below LCC will be performed to identify areas that could benefit from the potential flood damage reduction	1															
		potential of the diversion facilities. Records of flood damages associated with historical events will be obtained.b.(Phase 2). A daily flood model to evaluate the downstream flood damage reduction potential in terms of magnitude and frequency for this																
		project will be developed.c.(Phase 2) Analysis will be performed to determine the potential effects of coupling the pipeline with the off-channel storage and a high capacity pump station in order to manage Lake Corpus Christi storage to better control																
131000026	COASTAL BEND MITIGATION ACTION PLAN - NU - 13	incoming flood flows. The Corpus Christi City Council approved the Storm Water Capital Improvement Program (CIP) for FY99-00 on July 20, 1999	13000013	Nueces														
		(Ordinance No. 023703). Included were separate projects for drainage studies in specific areas of the City. The need to integrate these individual drainage studies into a consistent, uniform analysis became evident and was approved in Storm																
		Water CIP for FY00-01, (Ordinance No. 024130). The City's use of master plans that date back to 1946, 1961, 1970, 1982, and 1988 resulted in the use of inconsistent criteria without an adopted level of protection policy. The separate projects are																
		integrated into the FY00-01 Storm Water CIP as a Storm Water Master Plan Project. The Development of a comprehensive, updated, consistent Storm Water Master Plan based on an adopted Storm Water Criteria and Design Manual is necessary to																
		respond to development, environmental issues and tobetter define and prioritize on going and future drainage capital improvement projects. The purposes of this project are as follows:a.Establish drainage criteria that reflects input from the																
		different segments of the community (elected officials, developers, engineers, citizens, planning and zoning) and in the consensus process identify a "level of protection" for the City to be adopted as a standard for the City D. Adopt a drainage																
		criteria and design procedure for designers to use in capital improvement projects and in the subdivision platting process of residential and commercial developmentc. Establish policy statements or guidelines that are responsive to storm water quality,																
		storm water pollution prevention requirements, development issues for usein future street and drainage project designd. Develop a master plan to implement the drainage criteria established to include updates of the existing areas and production of non-master plan to implement the drainage criteria established to include updates of the existing areas and production of non-master plan to implement the drainage criteria established to include updates of the existing areas and production of non-master plan to implement the drainage criteria established to include updates of the existing areas and continued updates of the drainage criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established to include updates of the existing areas and criteria established updates of the exis																
131000027	COASTAL BEND MITIGATION ACTION PLAN - NU - 17	production of new master plan for other areas. The master plan will include the inventory of all outfalls and data necessary for the design process and will utilize criteria and reflects the characteristics of each master plan	13000013	Nueces				1										\perp
		The Federal Emergency Management Agency's Multi-Hazard Flood Map Modernization Program will update and digitize flood hazard maps across the nation. The majority of the City of Corpus Christi's FIRMs are nearly 20 years old. It is in the interest of																
		nazard maps across the nation. The majority of theirty of Corpus Christis FIRMS are nearly 20 years old. It is in the interest of the City and its residents for the maps, which determine flood insurance premiums, to be accurate and up-to-date. Other planning and hazard mitigation benefits are expected to accure as well. FEMA has notified the City by letter dated July 15, 2004																
		planning and nazard mitigation benefits are expected across as well. FRAN has notified the City by retired dated july 32, 54th at its contractor will be contacting the City within the next few months regarding the flood mapping effort. A key FEMA strategy is to form local partnerships for this purpose under the Cooperating Technical Partners program to leverage local																
131000028	COASTAL BEND MITIGATION ACTION PLAN - NU - 23	resources. In addition to preparation for the contractor visit, the City will evaluate the feasibility of becoming a CTP partner. The City does not currently have a clearly defined drainage plan and is only marginally affected by the county master plan. To	13000010	Nueces				+	+									+
		improve drainage throughout the City of Agua Dulce, it is necessary to properly assess the community drainage needs and establish a local prioritization plan to serve as a guide to successful flood mitigation. All citizens and business owners remain																
		concerned about their health and public safety due to continuous flooding. Over the past several years, there have been numerous flood events that have directly affected the City. The Coastal Bend will continue to be susceptible to very heavy																
		rainfall and tropical weather events putting the City in a continuous battle to stay accessible and safe for its citizens. Agua Duice is geographically situated in a manner that makes it highly susceptible to flooding. Runoff to the west directly flows into																
		the City and has almost no ability to continue to drain out, backing up into the streets and private property throughout the community. One of the City's most critical facilities, the waste-water lift stations on both the east and west side has continually																
		been affected and the City has a great amount of trouble keeping these facilities operable during flooding. In addition to the already mentioned issues, travel near and through the community is limited on a regular basis including a very heavily highway																
131000029		that is also a critical hurricane evacuation route. y Undertake a comprehensive study of flood risk and flood reduction alternatives with the assistance of the USACE; Implement fe	13000013	Nueces	+										1	+ + + - + -		+
131000030	of Ingleside, Action #7 San Patricio County Hazard Mitigation Action Plan - Cit		13000007	San Patricio											1			+
131000031	of Sinton, Action #13 San Patricio County Hazard Mitigation Action Plan - Cit	Identify and implement feasible actions to reduce risk for repetitive loss properties. Complete a comprehensive flood study. Submit data to FEMA for flood mapping.	13000007,	San Patricio				1										+
131000032	of Taft, Action #6 San Patricio County Hazard Mitigation Action Plan - Cit	Adopt higher floodplain development standards, above the minimum required based on the results of the flood study.		San Patricio				1										+
131000033	of Taft, Action #13 Aransas County Texas Multi-Jurisdisctinal Hazard		13000022	San Patricio	+													+
131000034	Mitigation Action Plan - Action #1 Aransas County Texas Multi-Jurisdisctinal Hazard Mitigation Action Plan - Action #70	risk reduction.	13000022	Aransas														+
131000035	Mitigation Action Plan - Action #70 Aransas County Multi-Jurisdictional Floodplain	Design and conduct an engineering study to address flooding in downtown Rockport Evaluate current floodplain management regulations in other coastal towns, cities, and counties in order to identify potential	13000010	Aransas				1										+
131000036	Managment Plan - Action 1.1.a Aransas County Multi-Jurisdictional Floodplain	areas of improvment for Aransas County jurisdictions. Using the information collected in Action 1.1.a, create a plan for how, and when, to integrate potential improvements into models the country and musiciality countries.	13000016	Aransas	+													+
131000037		existing county and municipality regulations. Create a coordinated development flow-chart for Arasas County, the Tow of Fulton, and the City of Rockport floodplain	13000007	Aransas											1			+
131000038 131000039	Managment Plan - Action 1.1.c Aransas County Multi-Jurisdictional Floodplain Managment Plan - Action 2.1.a	managers. Evaluate list of repetivitive loss propoerties for opportunities to parnter with property owners regarding potential mitigation actions.	13000007	Aransas														
131000039	Managment Plan - Action 2.1.a Aransas County Multi-Jurisdictional Floodplain Managment Plan - Action 2.1.b	Evaluate areas in the floorinain visable for open coars resconstion	13000014	Aransas														
131000040	Aransas County Multi-Jurisdictional Floodplain	Evaluate areas in the floodplain viaable for open space preservation.	13000019					1										+ 1
131000041	Managment Plan - Action 2.1.c Aransas County Multi-Jurisdictional Floodplain Management Plan - Action 2.1 d	Investigate grant opportunities for property buyouts, open space preservations or other flood mitigation measures. Investigate potential partnerships with local non-profits to purchase high priority areas for public parkland/open space preservation.	13000019	Aransas											1			+ +
131000042	Managment Plan - Action 2.1.d	preservation.	13000019	ALGH303	1				<u> </u>						-1	1 1		

Exhibit C, Table 12 Potential Flood Management Evaluations Identified by RFPG

FME ID	FME Name	Description	Associated	Counties	HUC8s	HUC12s	Watersheds	Study FME Area Flo	od Risk Sponsor	Entities	es Emergency	y Estimated Study	Potential Funding Sources and	Estimated	Habitable Estimated Critical Number	of Estimated	Estimated	Estimated active farm	Existing or	Existing or	FPG Reas	son for
		· ·	Goals					Type (sqmi)	ype	with Oversigh	Need	Cost	Amount	number of structures at	structures Population at facilities at low was at flood risk flood risk flood risk (#) crossing	er number of	f length of roads	& ranch land at floor risk (acres)	Anticipated Models	Anticipated Recom Maps (year)	mendation Recomm	nendation
										Oversign	pric			flood risk	flood risk	(#) (#)	(Miles)	risk (acres)	(year)	iviaps (year)	1/14)	
		The Federal Emergency Management Agency's Multi-Hazard Flood Map Modernization Program will update and digitize flood hazard maps across the nation. Most the City of Corpus Christi's FIRMsare nearly 20 years old. It is in the interest of the City																				
		and its residents for the maps, which determine flood insurance premiums, to be accurate and up-to-date. Other planning and																				
131000043	Nueces County Hazard Mitigation - Corpus Christi Actio	n hazard mitigation benefits are expected to accrue as well. The City of Corpus Christi is currently working through the appeals process of the map modernization	13000010	Nueces																		
		Corpus Christi Action #11 Proposed Action Build the Cotulla Reservoir in the upper reaches of the Nueces River which would																				
		include a pipeline to divert water directly into Choke Canyon Reservoir.																				
		The Corps of Engineers studied the Cotulla Reservoir site, located in the upper Nueces Basin, in the 1960's. The recent Nueces River Basin Reconnaissance Study identified a potentially down-sized version of this project, including a pipeline to divert water																				
		directly into Choke Canyon Reservoir. In addition to the flood damage reduction potential for Lake Corpus Christi and the lower																				
		river basin, this project would enhance the regional water supply by increasing water storage capacity, and reducing losses																				
		associated with downstream evaporation across an 81 mile braided reach. During Phase 1 of the Feasibility Study, existing data will be reviewed to estimate the flood damage reduction potential of the project: a. A preliminary hydrologic analysis to																				
		determine the portion of the volume of historical lower-basin floods that originate upstream of Cotulla will be performed. b. A review of existing map information of the Nucces River for a 25-mile reach downstream of the proposed reservoir to identify																				
		areas that couldbenefit from the potential flood damage reduction potential of the reservoir will be performed. c. Data from																				
		FEMA and other agencies on historical flood damages will be summarized. (Phase 2) Depending on the findings of the flood																				
131000044	Nueces County Hazard Mitigation - Corpus Christi Actio #11	n damage analyses, a daily flow flood model may need to be developed to evaluate the downstream flood damage reduction potential in terms of magnitude and frequency for the Cotulla Diversion Project.	13000013	Nueces																		
		Complete an assessment of the needed repairs and improvements on all 8 major and 100 minor stormwater outfalls that																				
		drain into Corpus Christi Bay. There are eight major storm water outfalls and more than 100 other outfalls that allow runoff to drain into Corpus Christi Bay. In 2003, 13.5 miles of these outfall structures were inspected and improvements and repairs were																				
		made to four outfalls. The purpose of this current project is toprovide an updated assessment, which may include the	1														1					ļ
131000045	Nueces County Hazard Mitigation - Corpus Christi Actio #19	n Brawner/proctor and Gollihar outfalls and other outfalls, pending results of the initial assessment, and providing recommendations for repairs, improvements, and rehabilitation as necessary.	13000013	Nueces													1					
		Complete a feasibility study of Oso Creek at the confluence of La Volla Creek to determine if any construction projects will help																				
		the creek conveyance capacity during high flow events. The drainage profiles of Oso Creek east of the La Volla Creek confluence show several constrictions that impact the base flood elevations upstream. This project will investigate the	1														1					ļ
434000045	Nueces County Hazard Mitigation - Corpus Christi Actio	feasibility of the construction of additional creek conveyance capacity for high flow events. If the investigationshows a	4300007														1					ļ
131000046	#20	significant potential to impact the base flood elevation, then construction will be completed in those areas.	13000013	Nueces				+ + + - + -			-		+		+ + + + + + + + + + + + + + + + + + + +		-		-			
		Map and assess the vulnerabilities the city may face for Coastal Erosion, Expansive Soils, Land Subsidence, and Wildfires.																				ļ
1		Improve data and mapping on specific risks for coastal erosion, expansive soils, land subsidence and wildfires. Use GIS to																				
		n identify and map erosion areas, riparianlandslides, expansive soils and wildfires. Develop and maintain a database to track	13000013,																			
131000047	#23 Nueces County Hazard Mitigation - Corpus Christi Actio	vulnerability and indicate where critical structures and any development is located in relation to the hazardousareas.	13000019	Nueces											+ + + + + + + + + + + + + + + + + + + +							\longrightarrow
131000048	#27	Design and implement a dam breach study for dams in Corpus Christi.	13000004	Nueces																		
131000049	Atascosa McMullen Hazard Mitigation Plan - Atascosa County Action #9	Upgrade existing floodplain maps. Add new Atlas 14 rainfall frequency data.	13000010	Atascosa																		
131000050	Atascosa McMullen Hazard Mitigation Plan - Atascosa County Action #10		13000010	Atascosa																		
	Atascosa McMullen Hazard Mitigation Plan - City of	Develop and implement a new Stormwater Management Plan Create and implement a hazard educational enchancement program which faculty/students can collaborate and understand		Atascosa											+ + + + + + + + + + + + + + + + + + + +							\longrightarrow
131000051	Charlotte Action #4 Atascosa McMullen Hazard Mitigation Plan - City of	the hazards.	13000007	Atascosa																		\longrightarrow
131000052	Christine Action #2	land development code for future developments.	13000014,	Atascosa																		
131000053	Atascosa McMullen Hazard Mitigation Plan - City of Jourdanton Action #12	Idenitfy problem flooding areas within an area drainage study and implement a program to reduce citywide and localized flooding.	13000008,	Atascosa																		
	Atascosa McMullen Hazard Mitigation Plan - City of Lyti	le l																				
131000054	Action #4 Atascosa McMullen Hazard Mitigation Plan - Lytle ISD	Enforcement of code and floodplain development is improving with meetings with new businesses.	13000016	Atascosa																		\rightarrow
131000055	Action #3	Preform a detailed study of cost effective measures to protect and harden schools against all hazards	13000026	Atascosa																		
131000056	Atascosa McMullen Hazard Mitigation Plan - McMuller County Action #2	1 Conduct a countywide floodplain study and mapping to undertand the limits of the 1% annual chance and 0.2% annunal chance floodplain boundaries and their effects on the community, infrastructure and critical facilities.	13000008, 13000009	McMullen																		
	·		13000001,																			
131000057	Atascosa McMullen Hazard Mitigation Plan - McMullen County Action #3	Study and prioritize low water crossing improvments	13000002, 13000003	McMullen																		ļ
	Atascosa McMullen Hazard Mitigation Plan - McMuller	Provide FEMA review of floodplain management criteria by ensuring that the community correct NKP program deliciences and		McMullen																		
131000058	County Action #5	enforces existing ordinanaces that regular planning and development.	13000010	rvicMullen		+				-			Estuaries Program, Texas Commission	1			+				-	
1		An adaptive management hydrologic restoration study would look at the interactions of the physical systems that afect the							1				on				1					J
1		hydrology in Nueces County, as well as the stakeholder interactions in the region. Work has been conducted on Nueces Bay freshwater infows via adaptive management plans of the Senate Bill 3 (80th Texas Legislature, 2007) Environmental Flows											Environmental Quality, Texas A&M University-Corpus									ļ
		Process. Two current studies include: Using Comparative Long-Term Benthic Data for Adaptive Management of Freshwater		Nueces, San									Christi, Nueces River Authority, City of	ıf			1					ļ
131000059	Texas Coastal Resiliency Master Plan - R2-20	Infow to Three Estuaries (Colorado-Lavaca, Guadalupe, and Nueces) and Infuence of Freshwater Infow Gradients on Estuarine Nutrient-Phytoplankton Dynamics in the Three Estuaries (Guadalupe, Nueces, and Upper Laguna Madre).	13000007, 13000010	Patricio, Aransas									Corpus Christi, Port of Corpus Christi Authority	'								ļ
		Nutrient-Phytoplankton Dynamics in the Three Estuaries (Guadalupe, Nueces, and Upper Laguna Madre). The Baffin Bay Watershed Monitoring and Management Plan would guide restoration eforts aimed at reducing pollutants to the											Coastal Bend Bays and									
		watershed streams and bay. This project would support all phases of plan development, including additional bay and watershed data collection, land use and load modeling, outreach to engage landowners and businesses in the stakeholder	13000009,										Estuaries Program Texas A&M University-Corpus									ļ
131000060	Texas Coastal Resiliency Master Plan - R3-25	process, and improvement of stewardship practices. And fnally, assembly of the watershed plan itself. The same stakeholder group also is working to secure funding for "early phase" targeted restoration activities.	13000010, 13000020	Kleberg									Christi Texas Water Resources Institute				1					ļ
131000000	rexas Codstal Resiliency Master Pidfi - R3-25	This project would create a program to monitor long-term subsidence and sea level rise in the Laguna Madre. While the causes				+				-			reads Water Resources Institute				+				-	
		of subsidence are understood in general, they have not been identified for individual coastal communities. This project would include assessing combinations of repeated benchmark measurements, installing Continuously Operating Reference Stations		Kenedy, Kleberg,																		ļ
		(CORS), studying tide gauge data, andanalyzing Interferometric Synthetic Aperture Radar (InSAR) data. The project would make		Willacy,					1								1					J
131000061	Texas Coastal Resiliency Master Plan - R4-13	data publicly accessible to all coastal communities A feasibility study was performed to assess methods to help protect wetlands, seagrass, and otherrelated aquatic and coastal	13000022	cameron							-		Texas General Land Office				+					
		habitat at Indian Point from erosion associated with shoreline retreat. Inaddition to the benefits of protecting valuable habitat,							1								1					J
		the project would also provide an increased level of protection to public infrastructure at Indian Point Park including a roadway parking lot, and pier entrance. This feasibility study is intended as a precursor to development of a U.S. Army Corps of	13000019																			ļ
131000062	Indian Point Shoreline Erosion Project	Engineers (USACE) permit application.	13000019,	Nueces																		
131000063	City of Hondo Drainage Master Plan and Flood Mitigation plan		13000014	Medina															1 T			
		Hydrological and Topographic Study to provide drainage solutions to alleviate flooding within the residential subdivision, as																				
131000064	Petronila Drainage Improvements Feasibility Study	well as the low areas north and south of the intersection of FM 665 with CR 67. Hydrological and Hydraulic Study to provide drainage solutions to alleviate flooding within the residential subdivision due to	13000014	Nueces				+ + + -			-		+				+					\longrightarrow
	Tierra Grande Subdivision Drainage	existing hydrological flow patterns from regional (off-site), upgradient (off-site), and local (on-site) runoff drainage areas flowing							1								1					J
131000065	Improvements Feasibility Study	toward the center of the subdivision.	13000014	Nueces		1						1	1	1		1		J	1			

Appendix D Exhibit C, Table 13 Potentially Feasible Flood Mitigation Projects Identified by the Regional Flood Planning Group

FMP ID	,	FMP Name	Cencription Asso Cost	ociated Counties als (ID)	HUC12s	Watersheds	Project Type Project A (sqml)	rea Flood Risk Type Sponsor (Riverine, Coastal, Urban,	Entities with Emergency Ex Oversight Need (Y/N)	stimated Project Cost (\$)	Potential Funding Sources and Amount Area in 100y (1% annual	r Area in 500yr Estimated Residential (0.2% annual number of structures at	Flood Risk Estimated Critical Number of Population at facilities at low water	Estimated Estimated Estimated number of length of farm & ranch	Number of Number of Numb structures with structures struct	er of Residential Estimate unes structures Population	Reduction in Flood Risk Critical Number of low n facilities water crossings	Diffracted Diffracted Committed Comm	ost- Cost/ Percent oject Structure Nature- el-of- removed based	Negative Social Water Support (Y/N) Impact Vulnerability Benefit (Y/Mitigation Index (SVI)	by Traffic Count Benefit-Cost i) for Low Water Ratio Crossings	RFPG Reason for Recommenda Recommendation tion (Y/N)
								Playa, Other)			chance) Floodplain	chance) structures at 200-year Floodplain 200yr flood flood risk risk	100-year 100-year crossings at flood risk (#) flood risk (#)	road dosures roads at 100- land at 100- year flood risktyear flood risk (Miles) (acres)	reduced 200yr removed from removes k (1% annual 200yr (1% 500yr) chance) Flood annual annu	d from removed from removed fi (0.2% 100yr (1% 100yr (1 ual annual annual	om removed from removed from 100yr (1% 100yr (1% annual annual chance)	road closure roads land fatalities (if injuries (if occurrences from 100yr from 100yr from 100yr from 100yr	vice Solution (by cost)	(Y/N)		
															risk (chance) Flood (chance) risk risi	Flood chance) Flood chance) Fl k risk risk	od chance) Flood Flood risk (#) risk (#)	flood fluk (Miles) (acres)				.
						13000026,13000028,13000030,13000031,13000034,13000035,13000037, 13000043,13000044,13000045,13000046,13000442,13000445,13000447,																
133000001			Green Lake Outfall System and Gregory Diversion Ditch 1300	00005, 00014 San Patricio		13000448,13000462,13000463,13000466,13000467,13000469,13000479, 13000480,13000481,13000482,13000592,13000594,13000596	65.48	TWDB RIF	s	11,841,990	TWD8 FIF											
133000002 133000003		e Early Flood Warning	Medio Creak Road Control Improvements 1300 Self-Supporting Tower for Early Warning System 1300	00014 Bee 00008 Uvalde			81.64	TWOB FIF	s	3,473,313 219,000	TWD8 FIF											
133000004		e Early Hood Warning	Flood Early Warning System – Phase I 1300	00008 Bee			81.64	TWDB FIF	s		TWD8 FIF											
		d Prevention/Planning		Aransas, Bandera, Bexar, Calhoun, Goliac Karnes, Kerr, Refugio,	1,	1300002,1300005,1300006,1300007,13000021,1300022,13000023, 13000024,13000025,13000026,13000028,13000042,1300045,13000592, 13000593,13000595,13000597,13000598,13000601,13000602,13000603,																
133000005	Stud	dy, LOMR etc)	GBRA Hazard Mitigation Plan Jurisdiction 1300	00011 San Patricio, Wilson	121102020101,121102020102,121102050506,1211020	13000604,13000605,13000606,13000607	731.70	TWDB RIF	S	78,500	TWD8 FIF											
133000006	Flood V	Warning System	Nueces County Drainage & Conservation District 2 1300	00008 Nueces	02050606,121102050607	1 13000532,13000553,13000558,13000559,13000560,13000561,13000563, 13000611,13000613	11.79	TWDB RIF	5	465,500	TWD8 FIF											
133000007	County Wide D	Drainage Improvements	Nueces County Drainage & Conservation District 2 - Casa Blanca Drainage Improvements 1300	00014 Nueces	121102020101,121102020102,121102050506,1211020 0601,121102050602,121102050603,121102050604,121 02050606,121102050607		11.79	TWDB RIF	s	809,600	TWD8 RF											
					121102020101,121102020102,121102050506,1211020 0601,121102050602,121102050603,121102050604,121	1 13000532,13000553,13000558,13000559,13000560,13000561,13000563,																
133000008	County Wide D	Orainage Improvements	Nucces County Drainage & Conservation District 2 - Bosquez Rd. / Avenue I Drainage Improvements 1300	00014 Nueces	02050606,121102050607 121102020101,121102020102,121102050506,1211020 0601,121102050602,121102050603,121102050604,121	13000611,13000613 13000532,13000553,13000558,13000559,13000560,13000561,13000563,	11.79	TWOB RIF	s	2,453,716	TWD8 RF											
133000009			Nueces County Drainage & Conservation District 2 - Ditch "A" and Bluebonnet Drainage Improvements 1305	00014 Nueces Aransas, Nueces, San 00014 Patricio	02050606,121102050607 121004050204,121004050400,121102020200	13000611,13000613 13000692,13000696,13000608	11.79	TWDB FIF	\$	1,311,320	TWD8 FIF											
133000010			Stormwalter Pump Station #3 (Euclid) - Aransas Pass 1300 Pintas Creek at Sunset Dr. & Viginia St. Drainage Improvements - Alice 1300	00014 Jim Wells	121102040404,121102040405	13000496,13000513	1.18		s	372,500												
133000012	City of Alice: Vir	irginia St. Area Drainage	Jacob Main Street Drainage Project 1300	00014 Atascosa	121101100206,121101100402,121101100405	13000419,13000427,13000428	0.32	TWDB RIF	\$	1,504,770	TWD8 FIF											
133000013	Jim Wells Cour Alice Acres Dr	Project nty: Rancho Alegre and rainage and Detention	SLO Disaster Mitigation Project 1300	00014 Jim Wells	121102040405	13000513	0.00	TXGLO	s	6,942,193	TX GLO											
133000014 133000015	City of Beeville	Project le Low Water Crossines	GLO Disaster Mitigation Project 1300 GLO Disaster Mitigation Project 1300 GLO Disaster Mitigation Project 1300	00014 Jim Wells 00003 Bee	121102040202,121102040405,121102040409 121004070101	13000497,13000498,13000513 13000032	0.67 p.nn	TX GLO TX GLO	\$	9,650,296 3,844,490	TX GLO TX GLO											
133000016	Improvement	remont Drainage ts and Flood Mitigation	Loss CEC Disaster Mitigation Project 1300	00014 Jim Wells	121102050402, 121102050405	13000534,13000548	016	TXGLO		13.116.000	TX GLO											
133000017	Drainage Im	nprovements Project	Drainage Improvements Project - Location 1 - Corral Street, Kingsville 1300	00014 Kleberg	121102040407,121102040409	13000497,13000517	0.00	TXGLO	s	3,333,333	TX GLO											
133000018	Drainage Im	nprovements Project	Drainage Improvements Project - Location 2 - Kenedy Street, Kingsville 1300		121102040205, 121102040205, 121102040409	13000483,13000497,13000502	0.00	TX GLO TX GLO	s	3,333,333	TX GLO TX GLO	+ + + + -					+					
133000020	Town of Re Treatment a	tefugio Wastewater and Drainage Project	Drainage Improvements Project - Location 3 - Johnston Street, Kingsville 1300 Clipwide Wastewater Treatment Plant and Drainage Project 1300	00014 Kleberg 00014 Refugio	121102040205, 121102040206, 121102040409 121004060301	13000483,13000497,13000502 13000022	0.00	TX GLO	s	3,333,333	TX GLO TX GLO											
		nty Hazard Mitigation				1300002,1300005,1300006,1300007,1300021,1300002,13000023, 13000024,13000025,13000026,13000028,13000042,13000045,13000593, 1300595,1300597,1300598,13000601,1300602,13000603,13006604,				\exists												. -
133000021	Improv	vements Project	Hazard Mitigation Improvements Project 1990 Channel Conful Dischause Improvement Project - Location 1 - Talk Site 1990	00014 Refugio 00014 San Patricio	121004070305, 121004070403	13000605,13000607 13000605,13000604	72.27	TXGLO	\$	6,910,131 7,717,591	TX GLO	+ + + +		 								
133000022	San Patricio C Drainage In	County Channel Outfall mprovement Project	Channel Outfall Drainage Improvement Project - Location 2 - Sinton Sibe 1300	00014 San Patricio	121004070303, 121004070304	13000034,13000046	0.14	TXGLO	s	7,717,591												
133000024 133000025	Phase	e III - Project A	CoCC Downtown Study 1300 TXXOT Road Project - 120601020 1300	00014 Nueces 00014 Live Oak 00014 Live Oak 00014 Neces 00014 Nueces 00014 Nueces 00014 Nueces 00014 Nueces 00014 Neces 00014 Medina 00014 Medina 00014 Alaccosa 00014 Medina	121102020107 121101110106	13000615,13000618 13000454	0.0001	B TXDOT	s	519,596 260,900	TXDOT											
133000026 133000027 133000028	TXDOT TXDOT	T Road Projects	10.07 10.0	00014 Live Oak 00014 Nueces 00014 Nueces	121101100504 12110200102 121102020102 121102020107, 12110202000 121102020102	13000435 13000613 13000608,13000615,13000617,13000618,13000623	0.0001 0.0016 0.0009	2 TXDOT 1 TXDOT 3 TXDOT	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	260,900 1,500,000 800,000,000	TXDOT TXDOT TXDOT											
133000029 133000030 133000031	TXDOT TXDOT TXDOT	T Road Projects T Road Projects T Road Projects T Road Projects	1500 1500	00014 Nueces 00014 Live Oak 00014 Medina	121102020102 121101110106 121101070304	13000613 13000454 13000340	0.0004 0.0005 0.0001	7 TXDOT 2 TXDOT 5 TXDOT	\$ \$ \$	60,000 905,442 2.176.000	TXDOT TXDOT TXDOT											
133000032 133000033	TXDOT	T Road Projects T Road Projects T Road Projects	TXDOT Read Project - 00731002 1300 mod Project - 00731002 1300 mod Project - 00731002 1300 mod Project - 00740000 1300 000 1300 000 000 000 000 000 0	00014 Atascosa 00014 Medina	121101070304 121101100308 121101070102 121101060601	13000413 13000319 13000275	0.0001	B TXDOT S TXDOT	\$ \$ \$	5,195,540 3,332,101	TODKT TODKT TODKT											
133000036 133000036	TXDOT	T Road Projects	2200 NEOT Road Project - 031001015 IXDOT Road Project - 031001133 3300	00014 Medina 00014 Bandera 00014 Medina 00014 La Salle 00014 La Salle 00014 Medina 00014 Zavala	121101000103 12110100205 12110100205	1300380 1300370	0.0004 0.0001	TXDOT TXDOT	\$	861,900 5,500,000	TXDOT TXDOT											
133000037 133000038 133000039	TXDOT TXDOT	T Road Projects T Road Projects T Road Projects	TROOT Read Project - REPORTED S 1300 TROOT READ REPORTED S 1300 TROOT REPORTED S 1300 TROOT REPORTED S 1300 TROOT REPORTED S 1300 TROOT R 1	00014 La Salle 00014 Medina 00014 Zavala	12110108(205 121101070109 121101030104 121101040802	13000370 13000322 13000108	0.0003 0.0012		\$ \$	3,784,200 15,000,000	TXDOT											
133000040	TXDOT	T Road Projects	This ER measure involves shoreline protection and restoration consisting of 7.4 miles of rock breakwater, at a crest height of 7 ft (NAVD88) with 2H:1V side slopes and a base width of 46 ft, 391.4 acres of island restoration, and 1.4 miles of cyster reef creation. A total of 3,500.5 AAHU would be created.	00014 Zavala	121101040602	13000159	0.0011	5 TXDOT	\$	6,886,071	TXDOT											
	Coastal Te Restoration Fe	exas Protection and leasibility Study - SP1 =	The measure provides for the restoration of the Dagger, Ransom, and Stefman Island complex in Redfish Bay through the construction of breakwater along the unprotected GIWW shorteline along the backside of Redfish Bay and on the bayside of the restored islands. Additional protection is provided to the island complex through the placement of red Balts between the breakwater and island complex to create 1.4 miles of oyster red. The breakwater and islands would protect																			.
133000041			submerged aquatic vegetation (e.g., seaprast) within Redfish Bay, and it is assumed that additional submerged aquatic vegetation will form between the breakwater and the islands and support coastal water birds. 300 Sased on the findings of "Petential for Bate-Material Entrainment in Selected Streams of the Edwards Plateau—Edwards, Kimble, and Real Counties, Texas, and	00021 Nueces, San Patricio																		
42200042	in selected Str PlateauEdw	treams of the Edwards wards, Kimble, and Real	Vicinity", it is found that every 12 to 18 months, a flow occurs within the Edwards Plateua in Central Texas that entrains bed material with the capacity to damage Low Water Crossings. Based on the regularity of this damaging event, it would appear beneficial to find a way to reduce or eliminate the damage that occurs at the	Edwards, Kimble and																		
13300042	A Joint Erosio	ion Response Plan for	Sections of the tow Water Crossings. Could also be of benefit to askin in secrement of funding for this probject if applicable. 100 The study "A joint Eval approaches (Could and to be of a benefit to askin in secrement of funding for this probject if applicable. 100 The study "A joint Eval approaches (Could and to the Corp of Corpse, Christo 2021 "year out goals and approaches for erosion control, based maintenance, inservement of salety, access and enjoyment of beaches, and increased education of residents and victors about the beaches, it's danger, and the language of the salety	00013 Real 00019,																		
133000043	COASTAL BEND	Christi D MITIGATION ACTION	improved beach access, while also providing funding solutions to enable the community to pursue as many of these goals as possible. 1300 Proveed which accussifies of accuments to no provided in the provided provided in the provided provided in the provided provided in the provided	00025 Nueces 00013,																		
133000044	COASTAL BEND	D MITIGATION ACTION	Files to reduce repeated flooding in poorly drained areas of the county. Funding Needed. 1300	00025 Aransas 00013,																		- - -
133000045	PL	IAN - AR-03	accordance with the requirements of the Master Pian, to ensure that flooding is minimized. 2001 Coastal erosion along the shoreline of Aransas Bays to threatening to undermine local readways and recreational areas. A strategic plan to address this issue has been develoced and addressed by the participating unisofactions. The success of this conject is only timed by availability of funding. There is a need to raise the erade of the	00025 Aransas																		
			developed and adepted by the participating jurisdictions. The success of this project is only finited by availability of funding. There is a need to nake the grade of the content is more areast. There are miles of public by access and the perfect following the jurisdictions are a very riving batching is ceight great. The direct destruction has been a level and public areas and prioritised. Priority 1: Broadway along Utilit Bay (Clty of Redipport/priority 2: Fution Beach Road, exclude of Fution Instant Clty of Endoport/priority 2: Broadway Endographic Stanting 1: Fution Beach Road, exclude of Fution Instant Road (Priority 2: Broadway Endographic Stanting 2: Fution Beach Road, exclude (Fution Stanting 2: Broadway Endographic Stanting 2: Fution Beach Road, exclude (Fution Stanting 2: Broadway Endographic Stanting 2: Fution Beach Road, exclude (Fution Stanting 2: Broadway Endographic Stanting 2: Fution Beach Road, exclude (Fution Stanting 2: Broadway Endographic Stanting 2: Fution Beach Road, exclude 1: Fution Beach Road, exclude 2: Fution Beach Road, exclude 3: Fution Beach Road, exclude 4: Fution Beach Road, exclude 3: Fution Beac	00013,																		
133000046			on Key Allagor Island (Clip of Rockport)Priority 6: Shall Ridge Road (Aransas Country) 300 300 300 300 300 300 300 3	00025 Aransas					\$	25,000,000.00												
133000048	COASTAL BENG	D MITIGATION ACTION	Boild a box cubert with parallel wings on C.R. 628, Low water crossing washes out during heavy rains, causing erosion to road surface. 1300 13	00013 Bee					s	70,200												
133000049	COASTAL BENG	AN - BE - 05 D MITIGATION ACTION	communicate warnings and emergency information to residents. 1300 Poesta and Medio creek drainage project. Complete concrete drainage ditch from east city limits to west city limits. A portion of the project has been completed from	00007 Bee					5	20,000												
133000050			Addams street to South Jackson. 1900. Addams street to S	00013 Bee					5	900,000												
133000051	COASTAL BENG	AN - JW - 03 D MITIGATION ACTION	constructed beginning in the early Saties, responsibility for annual maintenance has been assumed by local authorises. This system is designed to mitigate flooding across large portions of central list Welds Coothy, as well as other downstream communities in neighboring counties. 1000 Lake Findley is the primary source of water for the city of Alice. The dam requires routine maintenance to ensure it stays in compliance with TCEQ standards for such	00016 Jim Wells					s	33,000												
133000052	COASTAL BENG	AN - JW - 12 D MITIGATION ACTION	structures to prevent dam failure and resulting downstream flooding. This project also includes an Operations and Maintenance Manual that is in development.	00016 Jim Wells 00007 Jim Wells					s	25,000 85,000												
133000054	COASTAL BENE	D MITIGATION ACTION	Acquire and install outdoor warning system for the City of Oursep Grove, residents of this city do not have a means of being warned of imminent hazards. 100 Thurchias or 1 sieus emergency warning call down system (reverse \$13.1. a call down warning system can alter residents directly by calling their homes or places of the control o	00007 Jim Wells					s	85,000												
133000055	COASTAL BEND	AN - JW - 18 D MITIGATION ACTION	business. This capability is especially useful during daylight business hours when individuals may not have access to warning broadcast via television or radio. Although telephonic messages must be concise, they on provide additional instructions at to recommended reponses actions for all hazardous situations. 1300 The commended of reponse actions from a provide additional instructions as to recommended reponses actions for all hazardous situations. 1300 The commended of reponse actions from a provide additional instructions as to recommended reponses actions for all hazardous situations.	00007 Jim Wells					5	30,000												
133000056 133000057	PLI COASTAL BENE	AN - KL - 07 ID MITIGATION ACTION	Solution on afficient provides and on a fifther provides and the black had a follow gain exception. This is a fairly well-used winter feature recreation area. The scope 1800 could include an in offstore breakwaster to protect the black had a follow gain exception.	00007 Kleberg 00013, 00019 Kleberg					S	40,000		+ + + +		 								-+-
133000058	COASTAL BEND		account mouse an one-store or executave or protect, the research and a minning pair or extension. 1300 130	00013 Kleberg					s	13,000												
133000059	PL	AN - KL - 13	and rain water has also produced some flooding to residential homes and properties. Augment the outdoor warning system for the City of George West with the purchase and installation of two additional sirens. The City of George West has one 10 hp	00013 Kleberg					s	260,000							+					
133000060	PLA	AN - LO - 10	sirely located at the fire station, which is not adequate. The city needs at least two more sirens to warn most of the city. A study by Texas A&M during the late 1976's indicated that at least three-sirens were needed within the City to warn at least 195's of the public. Sinhance the City of Three Rosers outdoor warning system to include voice capability. A large refinery, currently owned and operated by Valero, is situated within the	00007 Live Oak					s	16,000		+ + + +		 								
133000061	CUASTAL BENE	AN - LO - 12	City of Three Rivers, where a multi-burgoss, outdoor warning sinn system is currently implemented. Enhancing the system to include voice capability would permit 1300. 13	00007 Live Oak					s	10,000												$\overline{}$
			on concess any execution production of the system, related by the system of the system of the system, related by the system of the system, related by the system of the system, related by the system of the system of the system, related by the system of the system																			.
133000062	COASTAL BENG		long distance telephone charges. The parties have agreed in principle to provide access to the City of Bishop through the Ringshift-(following Country agreement, at the whole is authorised to distort their system of the City of Bishop through the Ringshift (following Country agreement, at the long-time agreement, at the long-time agreement, at the long-time agreement, and the long-time agreement agreement, and the long-time agreement	00007 Nueces																		
133000063	CUASTAL BENE	D MITIGATION ACTION AN - NU - 08	available within the City of bishop to alert residents to rapid onset natural hazards such as fornadoes, or other hazardous situation. 1300 A periodic inspection of over 71,400 linear feet (13.5 miles) of storm water runoff conveyance lines during mid-2003 indicated that some sections of the lines needed	00007 Nueces					s	51,113		+							+		\Box	
133000064	COASTAL BENG	D MITIGATION ACTION AN - NU - 18	repairs. The structural integrity and functionality of those contail lines are ordical in proventing flooding and in improving water quality. There are sight major storm water contails has consequently extensive are significant for the major contains were contained in the contract point of the purpose of this project is preferred meeting designarial sense of the major contains ("spical repairs will include. Inadexists, wing walls, included structural repairs, clamaged lateral lines that penetrate contail, holes, joint, and spalls. 300 Approach (sepsection of over 74,000 lines refer (1.15) mails of storm waterunroff conveyance lines during mid-200 disclosed that that the ord the eight major conflish.	00013 Nueces					s	2,000,000											<u> </u>	
133000065	COASTAL BENG	D MITIGATION ACTION AN - NU - 19		00013 Nueces						5,000,000												
	,,,		his project is to replace the two contribs: Exametr Proctor, and Gollikar. 1300 This propose of this project is regard received non-defined major devising channels as a result of a heavy ain or other severe weather. A number of law propose of this project is regard received non-defined major devising and interest and other strong point to the Cybard strong of the contribution of th						,	J,444(000												
		D MITIGATION ACTION	rain event. In order to make improvements which will stabilize the stopes and storam beds of major channels, an allocation of funds is earmanded for this project to be utilized on a priority basis on those disthers where ensisten and slope failures becomes a reviews and critical problem. The project will apmentally includes shaping practing, fattening idea stopes, seeding, adding concrete flumes of Innel Assembly and great matter appurementors such as infect, pipes, and some minor right-of-																			
133000066			way acquisitions as necessary. City, Adequate ROW helps to prevent/minimize flooding, helps to facilitate maintenance, and allows potential for improving quality of storm water runoff. The purpose of this project is to provide funding for acquiring right-of-way (ROW) where needed in order to implement drainage problem solutions, such as distributions.	NUMBERS NUMBERS					\$	5,000,000												
133000067	PLA	D MITIGATION ACTION AN - NU - 21	aidaining, erotion control, extending storm sewers, providing essements, etc. During design, it is often required that additional ROW be provided for implementation of the project. 1300: Hooding in the downstern area is a frequently recurring event, and a major concern for both offisens and businesses. In addition to a variety of private businesses,	00013 Nueces					s	2,000,000												
133000068		D MITIGATION ACTION AN - NU - 22 D MITIGATION ACTION	several local and referral policic facilities are located within this area. The excerting pumps date from 1946 and are potentially subject to failure. Separating the probability of a future catastrophic failure. 1300 The Osco Transferrant Plant is citizated in a location or subject to filending from macinal investation. The wastewater lift stations are also uninerable to flooding. The	00013 Nueces					\$	800,000												
133000069	PLA	AN - NU - 27	Introduct insummer varies is statisted in a locusion value for the control of the control variety of the control v	00013 Nueces					\$	160,000		+ + + +								- -		_
133000070			various process units at the plant. Those waters have come very close to demograg equipment in the electrical building which is critical to plant operations. This projects would provide floor protection for the electrical building even the plant remains or events, and protect project would provide that the plant remains an experistion during floor events, and protect project building and well-that and well-that and well-that the electrical building even the electrical building and the plant remains and events. The protect was a second of the electrical building even the project would be provided by the plant remains and events. This project was a second of the project with the protection of the plant remains and events. The cover floatest was a final frequent of the project with the construction of Wesley Saile Dam. The Lower Nauces Nove Water and Construction of the project was a second of the project with the construction of Wesley Saile Dam. The Lower Nauces Nove Water and Construction of the project was a second of the	00013 Nueces					s	90,000												
			approximately 35 miles from Corpus Christi, Texas. This facility is used to store raw water that flows down the Nueces River from the northern part of the							T				_								_ _
			water-had. DuringStarts 2001, the Wesley Seale Dam north and south gathway stabilisation project was completed. This 52 million project includes the installation of special equipment in proteining being said and part of the City overall dam monthoring glain. Information included in the program is obtained from equipment and flow measurements from piezometers, exist wells, and sand drains. Information included in the program is obtained from equipment and flow measurements from piezometers, exist week, and sand drains. Information included in the program is obtained from equipment and flow measurements from piezometers, existence, seek and and drains. Information included in the program is obtained from equipment and flow measurements from piezometers, existence, seek and and advant. Information included in the program is obtained from equipment and flow measurements from piezometers, existence, seek and advant. Information included in the program is obtained from equipment and flow measurements from piezometers, existence, seek and advant. Information included in the program is obtained from equipment and flow measurements from piezometers, existence, seek and advant. Information included in the program is obtained from equipment and flow measurements from piezometers, existence, seek and advant. Information included in the program is obtained from equipment and flow measurements from piezometers, and and advant. Information included in the program is obtained from equipment and flow measurements from piezometers, and and advant. Information included in the program is obtained from equipment and advant. Information included in the program is obtained from equipment and advant. Information included in the program is obtained from equipment and measurements and advant. Information in the program is obtained from equipment and advant. Information in the program is obtained from equipment and advant. Information in the program is obtained from equipment and advant. Information in the program is obtained from equipm																			
133000071	COASTAL BENG PLA	D MITIGATION ACTION AN - NU - 29	inspections are conducted on a daily and monthly basis by their Department staff, with ordar inspections are conducted on a daily and monthly basis by their Department staff, with ordar inspections are conducted on markly by an independent engineering firm, and a playly detailed inspection is schedulated becare over three years. 100 100 100 100 100 100 100 1	00016 Nueces					s	300,000												
	COASTAL BENG																					1
133000072	PLA	AN - NU - 33	undamaged: 1300	00013 Nueces	+	1			5	36,000												\longrightarrow

FMP ID	D IND Name Description Associated Counties (N/C2); Grade (D)	Watersheds Project Type Project Area Flood Risk Type Spor (signs) (Everlae, Coasta), Urban,	onsor Entities with Emergency Estimated Project Oversight Need (Y/N) Cost (\$)	Potential Funding Sources and Amount Area in 100yr Area in 500yr Estimated Residential (1% annual (0.2% annual number of structures a	Therefore Section Sect	ated Number of Number of Res ranch structures with structures structures str	Reduction in Flood Risk sidential Estimated Critical Number of low ructures Population facilities water crossings	Estimated Estimated Estimated Estimated Estimated Level-of- Project Posterolation in length of farm & ranch reduction in reduction in Service Level-	ct Structure Nature-Import- removed based	Magative Megative Social Water Supply Traffic Count Benefit -Cost RFG Reason for
		Plays, Other)		chance) chance) structures at 300-year Floodplain Floodplain 100yr flood flood risk	100-year 100-year crossings at road dosures roads at 100- land at flood risk (8) (8) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	t 100- reduced 100yr removed from removed from removed of risk (1% annual 100yr (1% 500yr (0.2% 10 es) chance) Flood annual annual a	oved from removed from removed from removed from 100yr (1% 100yr (road closure roads land fatalities (if injuries (if occurrences nemoved nemoved available) available) from 100xr from 100xr	Solution (by cost)	(Y/N)
						risk chance) Flood chance) Flood chan risk risk	noe) Flood chance) Flood chance) Flood risk (#) risk risk (#)	flood risk (Miles) (acres)		
	COASTAL BROW MTGATON ACTION: This project pertains to coastal erosion of the buildheading along the Corpus Christ Ship Channel, and the Municipal Marina. Ship traffic in the dhannel has: 1000011, PAN - NJ - 41 considered ye code the west cide of the alone. Excling bath 4-acting in the Municipal Histor has been undermined by the date. 1000019 Names:									
133000073	Project is germitted and reach to go-ignit needs funding. Coastal encount in Corpus Christi Bay is well that group in the project is germitted and reach to go-ignit needs funding. Coastal encount in Corpus Christi Bay is well for perspect in ord done soon, the entire killed may COASTAL BEND MITIGATION ACTION.		\$ 785,000							
133000074	PARS - NUL - 40 Implicating design wave constructed for Surfish International Conference (Surfish Intern		\$ 1,000,000 \$ 1,000,000							
23,00073	Nucesc County (finished a countywide Master Driange Wan Study and developed the Master Driange Implementation (Mas as a guide for prioritising and implementation in improvements definified as part of the study. The prioritism could not large for the major that the propriet of the propr		2,00,000							
	storm water management for aware sequelencing foodings problems. Nances County's scooperfals to flooding debaseure some of the defined deviange ways and or wells are constricted by indeequate channel capacides, main-made barriers such as road and related enhankments, inspiration canals, and because its flat topography and loss so departmentably revalue poor or aimage and pounding, implementation from larn for Market deviange Park Nunces County, Treats December 2009 intelligent major									
	improvements with will be inequired throughout the county own future development occurs. The recommendations in the study provides against or five occurs in improvements with will be required throughout the county own future development occurs. The recommendations is the study provides against on the county in improvements against which will reduce flood dealiness through both future that all an elevant an assume size under include lensing ingreding against great and in part of the county in improvement and a position of the county in improvements and									
133000076	CO-Six Cerculo and notice of the control conditional great entrol control cont		\$ 258,587,835							
	100 year floodpain. Noted the property cemers are not insured and have held numberous reportative loase. Additionally, this project will be low-up existing partnerships with an intervent in maintaining a clause, sale and reliable water supply for the City of Corpus Christia is apart of the Nucest New Watershed Protection Nam. The Nucest New Authority, City of Corpus Christia is associated Castalla and Coastall lended days and Estuaries Countidation support									
	we wrange discharges. This program will be mainly as and well liverage multiply funding contract and partners. These are currently 64 single properties in Nazace County for the Repostitive Proc. County and Approximately 1 Services and well with the a successponsed asked and seed for the county and and the second of the county and the second of									
133000077	COASTAL BRO MITGATION ACTION Dear the market state water quality statesfer in Neurosen's 200 attributed to high levels depollutants causaled by rusoff from Neuerism's Apart of the necessary COASTAL BRO MITGATION ACTION PAN - NU - 55 PAN - NU - 55 Overside and the production of		\$ 1,000,000							
	Elevate and re-grade displated mode. Many of the City's road-have suns singificantly and are a contributing fact not many or flood issues throughout the community. Repetitive flood damages have caused maintenance costs to be burdenome on the City. Sugardes from aniche to a move standard road surface would grady enhance the ability of the road system to biolizate inclinance and neccurring flooding. The City of Discolar was first formed as a community in 2004 and was									
	their incorporated as a Cost C City in 1561. The Colfy infrastructures and buildings are very old and is foocated in an area that is very file, control and foocated about their hastlift and public safety due to conformation foocing. Over the past safe very law of humans and outcomed about their hastlift and public safety due to conformation foocing. Over the past safe very law of humans conformation food event that have directly									
	affected the City. The Coastal Bend will continue to be succeptible to very heavy rainful and tropical whether events potting the City in a continuous but to stay COASTAL BEND MITIGATION ACTION Exceptible and sale for for to closures, in addition to the already-emission to the already-emissi									
133000078	PAS - NU-55 Nearth Injulyway that is also actifical herricane resourcation rode. 13000013 Nasces Conduct of other removal appractions on incomposate at sinsage enhancement that will reduce the incidence of flooding. This will include supposide to colverts and verwariging (Day and private maintenance and construction project. This project will further be we have been been been part of an exist of section and re-public project. The City of visical very land in the control of the control of the control and in common year. 950 And we sate the responsable as Collect City of 1555. The City in distraction and buildings are very claim in the control of the control		\$ 8,750,000							
	located in an area that is very flar, causing it to be prone to flash floods. Aggressive debis control and flood-proofing is essential too mitigate against flooding and hurrisone without All citaters and business owners remain concerned about their health and oublist is defend used to conflict selected use to conflict selected uservices and the conflict selected use to conflict selected use th									
	there have been numerous flood events that have directly affected the City. The Coastal Benth continues to be exceepible to very heavy related land tropical. COASTAL REND MITIGATION ACTION. Accordance to the control of the coastal benth of the searchest and safe day accordance and selection of the searchest									
133000079	Metarbish, Road proof repetitive loss homes damaged by declared disasters. San Patricio County behavior mories to complete 40 home rebuilds and has approximately 60 homes which are qualified but has no including at this from Aunty residential structures were demanged by ystems in 2002. Incurance was non-		\$ 325,000							
133000080	CONSTABLESION MITHIACTION ACTION TO Provide the Construction of t		\$ 4,500,000						\bot	
	GOASTAL BEND MITIGATION ACTION Office Grant on the process of protein in the microscopy and protein country has procured into properties in the ware, fine five factates and 5 in Pleased willing through FEMA & COASTAL BEND MITIGATION ACTION Office Grant. We are in the process of protein proceed from one fine Coastal Bays and 6 tasky and 15 tracts through a Feast General Land									
133000081			\$ 20,000,000 \$ 75,000							
133000083	10.1 PAAR- 9-04 partial and manifolds beyond, present plant of an anomalist beyond, present plant of anomalist beyond, present plant of an anomalist beyond, present plant of an anomalist beyond, present plant									
133000084	COSTAL 8500 MITEATION ACTION COSTAL 8500 MITEATION									
133000085	285 PAAN - 97-26 Choke campen and take Corpus Christi dams due to tropical storms and heavy rain events. COLSTAIL REPAIR MITIGATION ACTION. Repair research accorpus Christid dams due to tropical storms and heavy rain events. COLSTAIL REPAIR MITIGATION IN Repair research in river of SIA protection on Newal stores and research and research repair to replace from		\$ 1,000,000							
133000086 133000087	Reg FUAN - 59-20 dhoke campon and take Corpus Christi dams due to tropical storms and heavy rain events. COASTAL RENO MICRIATOR ACTION To prevent florating (see gasts as) and practice convolve florating with a 10 ton craine. To prevent fraing water into city, sea gasts:		\$ 1,000,000 \$ 250,000							
********	San Patricio County Hazard Mitigation Artis Mits. Sa Britishi Christian County Hazard Mitigation (Artis Mits. San Britishi Christian County Hazard Mitigation)		23000							
133000088	288 Action 63 Service Cappelly, and reduce flooding. Utilize Near Door any principle years. Special principle years and distribute on private property. 10000003 See Perticol 200, 450 Perticol Cappell See Cappell, Action 64 200, 450 Seeptre, Action 63 Seeptre, Action 64 200, 450 Seeptre, Action 63 Seeptre, Action 65 Seeptre, Action		\$ 250,000 \$ 10,000							
133000090	San Paricio County Russard Militogloss — Classe and clave and desirange distince, cubers and examents; Disposed advances profession (2004) and paid-or (2004) and pai		\$ 450,000							
133000091	San Paricio County Hazard Militging Conference (Annual Paricine) (Indiana Conference (Indiana Conf		S 2,000							
133000092	San Patricio County Hazard Milipation Obtain and implement an AM Emergency Andricory Hazdo System for emergency notifications to citizens during entreme events; Purchase and distribute NOAA 202 Action Plan - City of Ingleside, Action 42 all hazard radios to critical facilities for early varining.		s 20,000							
122010102	San Patricio County Hazard Mitigation		c 250,000							
13,00033	See Patricio County House Militaglistin Adopt and implement a program to regularly clean and repair storm water drains; Upgrade undersized storm		2.5,000							
	994 Action Plan - City of Inglesida, Action Mil water drains to improve drainage and reduce Tocoding 23000023 San Patricio San Patricio County Hazard Milipston		\$ 1,000,000							
133000095	55 Action Run. City of Implicida, Action in Blowdop à hazard resistant municipal complie that will facilitate City Hall functions, Police Department, Municipal Court and an Emergency Operations Center 3000003 See Patricio See Patricio Courty Yeasard Milipation Action Flas. City of Implicida, Action I		\$ 8,000,000							
133000096	956 # \$22 Implement Avenue 8 drainage project improvements \$1300013 San Patricio \$		\$ 3,700,000							
133000097	Action Plani- City of Ingleide, Action Plani- City of Ingleide		\$ 650,000							
133000098	Action Plan - City of Ingleside, Action Use 44 San Particio Court y Master Annie Control Communication infrastructure and equipment. 13000013 San Retricio		\$ 500,000							
133000099	Action Plan - City of Ingleside on the		\$ 10,000							
133000101	pg Mary, counter W and Park Conference of Mary Conf		\$ 500,000							
	treatment plants in flood hazard/flowlying areas; San Patricio County Hazard Milisation Increase cander/dead stormwater detection / retention basins: Increase dimensions of drainase culverts in areas orone to flooding and/or with									
133000102	202 Auton Hu. Clight Mathis, Action #9 Initiage problems (speely locations) 3000003 See Particia		\$ 3,000,000							
133000104	120 Action Pinn-C-Cyal Colom Action II commental. 12000001 See Patricia See Patricia Colom Action II commental. 12000001 See Patricia See Patricia Colom Action II colom Action II colom Action II colom Action III colom Action II		S 20,000							
133000105	(15) Action Plan - City of Protriand, Action IX1 Installar generators with hard-wived quick connections at critical facilities, including lift and pump stations, as deemed necessary. 13000018 San Patricio San		\$ 275,000							
133000106	105 Action Plan - City of Senton, Action 44 Mercolif police, fine, RAS Societies to Nazard-evisitant levels (see comments), incall generators with hardwined quick connections. 10000013 San Patricia San Patricia Unique Ministration (Indicated Ministration Components of Sentence (Indicated Ministration Compo		\$ 1,000,000							
133000107	Sa Pritridio Clustry Instant Mitiglition Sa Pritridio Clustry Instant Mitiglition Sa Action Face Copt of Strine, Action 813 Clean and repair stormwater drains. Upgrade undersized stormwater drains. San Pritridio Clustry Instant Mitiglition San Pritridio Clustry Instant Mitiglica		\$ 3,000,000							
133000109	1909 Action Plan - City of Tark, Action #5 Narden/Herofit critical facilities to protect against hazards (see comments), install generators with hard-wired quick connections. 13000033 San Patricio		\$ 1,000,000							
133000110	10 Action Ran City of Tail, Action #7 Intermediate drains. 1300016 San Patricio S	+ + + +	\$ 1,000,000 \$ 100,000							+++++
	Anassas County Texas Multi- Jurisdictional Juraged Mitigation Action		2 20,000							
133000112	Arango Crimto Timo Minit.		5 3,426,000							
	Jurisdiction Hased Miligation Action 13 Files - Note 14 security 12- Pricinal/Weeping Willow-Projects 1.2 Surface stormwater conveyance impowements from Weeping Willow Rd to PA10509 1000001 Aristia County Faces Mails Aristia County Faces Mails Provinced County Faces Mails		\$ 605,880							
133000114			\$ 1,769,900			+ + + +				+++++
133000115	Journational Hasted Marginion Action of Process 4 - South Central Law and Project 1. Surface and Central Law and Central		\$ 160,380						+	
133000116	15 Plan - Action 817 Infrastructure by making improvements to the County drainage system 13000014 Aransas Aransas County of Co		\$ 591,030							
133000117	Journal Hazard Milipation Action Precinct 1/1A - Polim Harbor - Project 1: Cealth outfall to Avenical Bay; improvements to surface to subsurface conveyance system, disinger structures under 915 Plan - Action #13 Delin - Acti		\$ 400,895			+				
133000118	Jurisdictional Hazard Mitigation Action Procinct 4- Southwatt Lamar - Projects 1,23-5 Solastrace conveyance system. Reduces the threat of flooding to new and existing buildings and infrastructure by 13 Plan - Action #39 making improvements to the County defining system 13 plants 14 pla		\$ 239,030							
133000119	Anises Control Fasts Multi- Min - Action IZO MIT Fast Multi- M		\$ 2,090.550							\square
133000120	Jurisdictional Hazard Mitigation Action Precinct 4 - Spanish woods - Projects 1, 2, 3: Surface conveyance system and drainage structures under Sanctuary Drive and Spanish Woods Drive. Reduces the threat		\$ 602.420							
	Arassa's County Teas: Multi- Procinct 17.1A - Southwest 1009 - Pojects 2, 3: Improve upon inadequate right-of-way width on County reads in this watershed, improve upon undersized structures Jurisdictional Hagadan Malagiation Assertion quader Managiation Assertion quader Managiation Assertion quader Managiation Assertion quader Managiation (Assertion Assertion Asse		5 004,220							
133000121	Pile - Action RIZ Improvements to the County drainage system \$1000014 Avantai		5 1,323,476							
133000122	222 Plan - Action #23 drainage system 25000014 Avanisas Aransia County Fassa Multi- A		\$ 2,125,200			+ + + +				+++++
133000123	223 Plan - Action 824 County drainage system 13000014 Aransas 13000014 Ara		\$ 114,400							
133000124	An indicational Massage Molegation Action Proceeding 37th - Combess 15 - Project 2 Reduces the Interest of Recording to new and existing buildings and infrastructure by making improvements to the County 25 Maria Action 25		\$ 167,200							
133000125	post discover Named Margines Andrea Margines Andrea Mexical YIAs - South east 35 - Project 1 Reduces the threat of Rooding to new and existing buildings and infrastructure by making improvements to the County arising systems are already systems and arising buildings and infrastructure by making improvements to the County arising systems are already arising systems and arising buildings and infrastructure by making improvements to the County arising systems are already arising systems are already arising systems are already arising systems are already arising systems and arising buildings and infrastructure by making improvements to the County arising systems are already are already arising systems are already arising systems. The arising systems are already ar		\$ 246,510							
133000126			\$ 979,000							
133000127	256 Plan - Action #27 Improvements to the County drainage system 13000014 Avantase		\$ 1,074.150							\square
	Aransac County Teass Mulbi Aurisaction Action Shall Ridge Road - the construction of new habitat will provide erosion protection improvements. Reduces the threat of flooding to new and existing buildings and									
133000128	Ariesta's County (sea's Multi- Jurisdiction) Hazard Mitigation Action Newcomb's Point - the construction of new habitat will provide erosion		\$ 2,375,700							
133000129	Plan - Action #22 protection improvements. Reduces the threat of flooding to new and existing buildings and infrastructure by making improvements to the County drisinage system 33000014 Azansas County faces Multi-		\$ 3,028,500							+++++
133000130			\$ 1,000,000							
133000131			\$ 2,500							
133000132	Juridictional Hazard Milgation Action 22 Plus - Action H12 Purchase land behind levers 23000000 Aransas		\$ 500,000							

FMP ID	FMP Name	Description	Associated Counties HUC12s Goals (ID)	Watersheds	Project Type Project Area Floo (sqmi) () Coa	od Risk Type Sponsor (Riserine, istal, Urban,	Entities with Emergency Estimated Pro Oversight Need (Y/N) Cost (\$)	ect Potential Funding Sources and Amount Area in 100yr (1% annual	Area in SCOyr Catimated Residential (0.2% annual number of chance) structures at Prooplain 200y flood risk	Flood Risk Estimated Critical Number of Population at facilities at low water	Estimated Estimated Estimated number of length of farm & ranch	Number of Number of Number of structures with structures atructure	Residential Estimated structures Population	duction in Flood Risk Critical Number of low I facilities water crossings or	Estimated Estimated Estimated reduction in length of farm & ranch in	Pre-Project Po Estimated Estimated Level-of- Pro eduction in reduction in Service Leve	st- Cost/ Percent ject Structure Nature- il-of- removed based	Negative Negative Social Water Suppl repact (Y/N) Impact Vulnerability Benefit (Y/N Mitigation Index (SVI)	Traffic Count Benefit-Cost for Low Water Ratio Rec Crossings ti	RFPG Reason for commenda Recommendation ion (Y/N)
					Pla	sys, Other)		chance) Floodplain	chance) structures at 100-year Floodplain 100yr flood flood risk	100-year 100-year crossings at flood risk (#)	road closures roads at 100- land at 100- (#) year flood risk year flood risk (Miles) (arres)	reduced 100yr removed from removed from (1% annual 100yr (1% 500yr (0.2 chance) Flood annual annual annual	om removed from removed from ren 6 100yr (1% 100yr (1% 1	noved from removed from re 100yr (1% 100yr (1% o	road closure roads land forcurrences removed removed	atalities (if injuries (if ser available) available)	vice Solution (by cost)	(v/N)		
									100		(actual)	risk chance) Flood chance) Flo	od chance) Flood chance) Flood cha risk risk	nnce) Flood Flood risk (#) risk (#)	flood risk (Miles) (acres)					
	Aransas County Texas Multi-																			
133000133	urisdictional Hazard Mitigation Act	Sion Develop and implement a buyout program	13000015 Aransas				\$ 500	000												
133000134	Aransas County Texas Multi- urisdictional Hazard Mitigation Act Plan - Action #50	ion Update and improve sea gates that protect the city and harbor	13000013 Aransas				\$ 1,000	000												
	Aransas County Texas Multi- urisdictional Hazard Mitigation Act	sion .					,													
133000135	Plan - Action #53 Aransas County Texas Multi- urisdictional Hazard Mitigation Act	to Dudge and implement a castal ension study to identify projects	13000014 Aransas 13000014				5 2	500												
133000136	urisdictional Hazard Mitigation Act Plan - Action #55 Aransas County Texas Multi-		13000016 Aransas				S 2	500												
133000137	urisdictional Hazard Mitigation Act Plan - Action #58 Aransas County Texas Multi-	Son Cove Harbor Bulkheads - bulkhead construction will provide erosion protection improvements	13000016 Aransas				\$ 1,000	000												
133000138		Sormwater Crossing at PM 1781 - Upgrade/replacement of box culverts to accommodate growth	13000014 Aransas				\$ 171	248												
133000139	urisdictional Hazard Mitigation Act	ion	13000014 Aransas				S 996	175												
	arisdictional Hazard Mitigation Act	Masser Plan - Drainage Improvements - Project 1 - SH 3S BUS - Traylor Ave & Tule Park Dr.																		
133000140	Plan - Action #61 Aransas County Texas Multi- urisdictional Hazard Mitigation Act	Master Plan - Drainage Improvements - Project 2 - SH 35 BUS - Enterprise & Maple	13000014 Aransas				\$ 540	798												
133000141	Plan - Action #62 Aransas County Texas Multi-	Master Plan - Drainage Improvements - Project 3 - Market St (FM1069) at SH 35 Bypass, Hickory & Steart	13000014 Aransas				\$ 1,411	411												
133000142	urisdictional Hazard Mitigation Act Plan - Action #63 Aransas County Texas Multi-	Master Plan - Drainage Improvements - Project 4 - Market St (FM1069) at SH 3S BUS	13000014 Aransas				\$ 791	725												
133000143	irisdictional Hazard Mitigation Act	Son Master Plan - Drainage Improvements - Project 5 - Market St (FMS1069) at Burton & Kossuth	13000014 Aransas				\$ 3,135	881												
133000144	arisdictional Hazard Mitigation Act	50n Mastar Plan - Drainage Improvements - Project 7 - Market St (FM1060) at Church St (Loop 70)	13000014 Aransas				S 349	414												
	Plan - Action #65 Aransas County Texas Multi- urisdictional Hazard Mitigation Act	ion																		
133000145	Plan - Action #66 Aransas County Texas Multi- urisdictional Hazard Mitigation Act	Master Plan - Drainage Improvements - Project 8 - Pearl St (FM2165) at Orleans & Laure	13000014 Aransas				\$ 2,813	827												
133000146	Plan - Action #68 Aransas County Texas Multi-	RCC Lakes - removal of sediment for drainage improvements	13000014 Aransas				\$ 376	800											+	
133000147	urisdictional Hazard Mitigation Act Plan - Action #73 Aransas County Multi-Jurisdiction	al .	13000014 Aransas				\$ 2,000	000												
133000148	Floodplain Managment Plan - Acti 1.1.d Aransas County Multi-Jurisdiction	on	13000016 Aransas				\$ 76	754												
	Floodplain Managment Plan - Acti	ai on	13000016 Aransas		1 T						_	_	\perp	\Box	\Box				1 I T]
	Floodolain Manaement Plan - Acti	Incorporate higher floodplain management standards into City of Rockport comprehensive plain update.																		
133000150	1.1.f Aransas County Multi-Jurisdiction Floodplain Managment Plan - Acti	Incorporate higher floodplain management standards into Aransas County hazard Mitigation Action plan update al	13000016 Aransas					+ + + + + + + + + + + + + + + + + + + +												
133000151	3.1.b Aransas County Multi-Jurisdiction	Develop a joint floodplain management and awareness website with all jurisdictions.	1300007 Aransas					+ +												
133000152	Floodplain Managment Plan - Acti 3.1.c Aransas County Multi-Jurisdiction	Publish informational flood articles in city and county newsletters	13000007 Aransas					+									+			
133000153	Floodplain Managment Plan - Acti 3.1.f Arancas County Multi-Juristiction	n A flood response plan that will identify outreach projects that can be utilized to give the public information on flood protection, rebuilding after a flood event, grant information, etc.	13000024 Aransas																	
133000154	Floodplain Managment Plan - Acti 3.1.h	Sand informational mailers to repetitive loss property owners about buyouts and other mitigation options.	13000024 Aransas																	
4920004	Aransas County Multi-Jurisdiction Floodplain Managment Plan - Acti	at Lacks jurisdiction will continue ongoing maintenance of drainage pipes, culverts, and swakes until the country-wide master plan is approved and implementation can begin.	13000025 Aransas																	
133000156	Nueces County Hazard Mitigation Corpus Christi Action #1	page	13000025 AFATSUS 13000027 Nuoces				\$ 5,500	000												
133000157	Corpus Christi Action #1 Nueces County Hazard Mitigation Corpus Christi Action #2 Nueces County Hazard Mitigation	Construction of a new bulkhead in Corpus Christi Bay along the south side shoreline of Corpus Christi.	1300026, 1300027 Nueces				\$ 10,500	000												
133000158	Corpus Christi Action #3 Nueces County Hazard Mitigation Nueces County Hazard Mitigation	Make improvements to the Salt Flat Levie System	13000026, 13000027 Nueces 13000026,				\$ 3,000	000												
133000159		Make improvements to Power Street Pump Station Excavate sit and debris in Drainage Master Channel 31 caused by the erosion on sides and bottom of the Drainage Master Channel 31.	13000027 Nueces				\$ 5,500	000												
		Master Channel 31 was constructed in various phases in conjunction with the development in the area. The side slopes and bottom are severely eroded resulting in more deal-nase and serving-hone of filtris intrivial of the City right-of-way. This project will require project improvement to control and improve the deal-nase neofice																		
133000160	Nueces County Hazard Mitigation Corpus Christi Action #6	poor draining and concademant of dish notified of the Cuty right of very. The project will provide ordical improvements to rectice and improve the drainage profile and incides recinition control measures such as ide slope scalibilisation, soil to between, vegetative cover and other best management practices. This project is planned in multiple planies as funding allows.	1300013 Nueces				\$ 2,819	800												
		The existing profile of Sybanen Ditrh exceeds the recommended stone of 41 and maximum of 31. This is resulting in major stone stabilization failure in multiple																		
	Nueces County Hazard Mitigation	areas near the Yorktown Bridge. Work to improve this ditch will include excavation/backfill to widen and create 3:1 side slopes with stabilization matting, new culvert - and outfalls, riprap and ditch bottom improvements, seeding, irrigation adjustments, traffic controls, dewatering and other miscellaneous items. Construction of																		
133000161	Corpus Christi Action #7 Nueces County Hazard Mitigation	Please 1 of this project has been recently completed and future phases will be completed to the watent that funding allows. This project will involve the improvement of La Volla Creak that crosses 59 1857 (Saratoga Blud). The project will provide 100-year capacity for conveyance to the Oso Creak. Phase 1 Channel improvements include the removal of vegetation from the channel factor to Saratoga Boulevard and channel wideling South of Saratoga Creak. Phase 2 Channel improvements include the removal of vegetation from the channel factor to Saratoga Boulevard and channel wideling South of Saratoga	13000013 Nueces				\$ 2,756	100												
133000162	Corpus Christi Action #8	Boslevard. Make improvements to the instrumentation system at Wesley Seale Dam.	13000013 Nueces				\$ 4,152	800												
	Nueces County Hazard Mitigation	This project provides for improvements to the original instrumentation system including annual safety inspection, integration with O.N. Stevens WTP process - controls. The Howell-Bunner Valve, the downstream sluice pages, and the dewatering system in resconse to previous inspections and priority investment																		
133000163	Corpus Christi Action #13	recommendations into the system. This project will protect the integrity of the Wesley Seale Dam system (1957), to provide for proper inspection and updated Make improvements to the side seals on the Wesley Seale Dam Spilway to maintain the spillway's integrity.	1300004 Nueces				\$ 5,850	500												
		The Wesley Saist Dam has 60 crest gates located in two separate spillways: the south spillway includes 27 gates and the north spillway includes 33 gates. Over the years, leakage from the side soals has increased and it has become significant at several of the gates. The water flow from the excessive leakage damages the concrete and encourages algae and other vegetates growed and leads to concrete in sixes on the gates, must appurhensions and enricher cing test. This project																		
133000164	Nueces County Hazard Mitigation Corpus Christi Action #15	 concrete and encourages alphe and other vegetative growth and leads to corrosion issue on the gates, metal appurtenances and reinforcing steel. This project provides for the necessary improvements including seal replacement, miscellaneous structural repairs and application of a protective coating system for the Dam. Build a finodewall along Corpus Christi Bay at the Science and Natural History Museum. 	13000004 Nueces				\$ 22,800	000												
	Nueces County Hazard Mitigation	- Recommendation to construct a new floodwall (or a coastal structure) that would follow a "hypotenuse" alignment between the existing Promenade and the USACE																		
133000165	Corpus Christi Action #16	Bulkhead. The project would also backfill the triangle to make it function more like a coastal structure. This would also provide additional land area for future use. Make improvements to the erosion on sides and bottom of Drainage Master Channel 31.	13000013 Nueces				\$ 350,000	000												
		Master Channel 31 was constructed in various phases in conjunction with the development in the area. The side slopes and bottom are severely eroded resulting in poor drainage and encroachment of disch outside of the City right-of-way. This project will provide critical improvements to restore and improve the drainage profile																		
133000166	Nueces County Hazard Mitigation Corpus Christi Action #17	 and include erosion control measures such as side slope stabilization, sell treatment, vegetative cover and other best management practices. This project is planned in multiple phases as funding allows. 	13000013 Nueces				\$ 3,000	000												
133000167	Corpus Christi Action #24	Coastal Erosion Cole Park: Installation of groins and/or breakwaters to the areas behind the bulkhead to retrofit the areas that are eroding.	13000015, 13000019 Nueces		+ +		500000-1000	200		\longrightarrow						+++	+		+	
133000168	Plan - Atascosa County Action #: tascosa McMullen Hazard Mitigat	Mace flood gauges upstream of flood-prone areas to alert citizens to quickly rising waters.	1300007 Atascosa 1300002 Atascosa		 		\$ 300	000		++-	 	 		+++	+++				+++	
133000169	tascosa McMullen Hazard Mitigat Plan - Atascosa County Action #	Inventory of all low water crossing in the country and develop a prioritize projects in a COP for upgrades or replacement.	1300002 Atascosa 13000025 Atascosa				S 60	000												
133000171	rtascosa McMullen Hazard Mitigat Plan - Atascosa County Action #1	ion 2 Eastablish and implement a voluntary "acquistion and demo program" to address repetitive loss to floodprone properties.	13000013 Atascosa				\$ 600	000												
133000172	Plan - Atascosa County Action #1	3 Implement alert system to warn community of hazards.	13000007 Atascosa				\$ 300												+	
		implement a stormwater plan needing to identify and prioritize projects that will improve drainage in the areas in the city Ion The enforcement of the flood damage reposition or dispare	1300013 Atascosa 1300013 Atascosa		 		\$ 350 \$ 30													
133000174	tascosa McMullen Hazard Mitigat Plan - City of Charlotte Action #8	The enforcement of the flood damage prevention ordinance Inc. Conduct a feasibility study to evaluate size options for a community safe room	13000013 Alascosa 13000028 Atascosa				\$ 250	000												
133000176	rtascosa McMullen Hazard Mitigat Plan - City of Christine Action #4		1300026, 1300027 Atascosa	-			\$ 150	000												
133000177	Plan - City of Jourdanton Action & Nascosa McMullen Hazard Mitigat	B Enforcement of flood damage prevention ordinance	13000013 Atascosa				\$ 30	000	\vdash							-+-+				
133000178	Plan - City of Jourdanton Action 8 Nascosa McMullen Hazard Mitigat	Conformment of Bood damage prevention ordinance Materials for m Divinge System On One of the Conformment of Conf	13000013 Atascosa 13000001,		 		S 40	000						+++			++-			
133000179	ran - City of Jourdanton Action & tascosa McMullen Hazard Mitigat Plan - City of Jourdanton Action &	to Install early warning systems for hazards Install early warning systems for hazards	1300002 Atascosa 13000026, 13000027 Atascosa				\$ 5													
		10 Confuct a fealbility study to evaulate site options for a community safe room for hazards	1300028 Atacosa				\$ 250	000												
133000182	Plan - City of Lytle Action #1	Public education and outreach programs to education citizens about mitigation against hazards	1300024 Atascosa		 		s s		\Box					-	\bot					\perp
133000183	Plan - City of Lytle Action #11 tascosa McMullen Hazard Mitigat	Develop a stormwater management plan and implement the structural and non-structural solutions to mitigate flooding. Create and implement a hazard educational enhancement program in which faculty/students can collaborate in inderstanding and communicating hazards of	13000025 Atascosa		 		\$ 750	000												
133000184	Plan - Lytle ISD Action #6 tacrnca MrMullen Hazard Mitiest	oncern.	13000024 Atascosa 13000024 McMullen				\$ 5	000												
133000186	tascosa McMullen Hazard Mitigat Plan - City of Pleasanton Action R	4. Public revieweness and education on all hazards for 5. Education homeoweners on all types of hazards for	13000024 McMullen 13000022 McMullen				S 10													
133000187	Plan - City of Pleasanton Action R Assence McMullen Hazard Mitigat	6 New emergency communication infrastructure.	1300007 McMullen				\$ 300			\Box				\bot		\Box	\bot			\perp
133000188	Plan - City of Poteet Action #3	Install early warning systems	1300007 Atascosa 13000008,				\$ 50	000						+					+	
133000189	tascosa McMullen Hazard Mitigat Plan - City of Poteet Action #7 tascosa McMullen Hazard Mitigat	Study and implement findings of study to improve local drainage at Betty Louis and school drive	1300009, 13000025 Atascosa 13000014.				\$ 250	200												
133000190	Plan - Poteet ISD Action #1 tascosa McMullen Hazard Mitigat	Upgrade Schools against all hazards. A detailed study on the cost effectiveness measures to protect schools against all hazards from Replace or improve inoperable communication equipment for better county wide coordination between municipalicies, police, EMTs, and other emergency	13000014, 13000015 Atascosa				\$ 300										+			
133000191	rian - Potent ISD Action #6 itascosa McMullen Hazard Mitigat	ion ion	1300007 Atascosa 1300007 Atascosa		 		\$ 50	000	 		 	 								-
	itascosa McMullen Hazard Mitigat	Improve or replace inoperable communications in city departements and outside agencies ion 10 reduce flooding and poor drainage by increasing maintenance of existing storm water system.	1300007 Atascosa 13000025 McMullen				\$ 50 \$ 21,000	000												
133000193	Margie, Commissioner Precinct 1- San Diego	00 reducer flooding and poor drainage by increasing maintenance of existing storm water system. Drainage in Colonia: E-Bar, Alice Acres, and Bancho Allage (GLO) The project is Escaled along the Sar Andrea by phoneline side of the Azansas National Widdlife Bufuge (ANYWI) in an area known as Dagger Point. This project would	13000025 NrcNollern 13000025 Sim Wells				\$ 9,800,00	.00												
		The project is located along the San Antonio Bay showline side of the Aranasa National Wildlife Relage (ANWR); in an area known ac Dagger Point. This project would enstall a kiving shoreline using rock breakwaters to preserve this area. The Coastal Bend Bays and Estuary Program is working the Coastal Castal San Compared to the Coastal San C				Estuaries Program, U.S. Fish and Wildlife Service, Aransas National Wildlife		Estuaries Program, U.S. Fish and Wildlife Service, Aransas												
133000195	R3-3	Dagger Point: Stakeholders are seeking funding for construction of the shoreline restoration and protection This project would acquire approximately 400 acres of coastal habitats that support coastal prairie, freshwater and estuarine wetlands, and the southernmost	13000020 Aransas			Refuge, U.S. Department	\$ 2,600,00	1.00 National Wildlife						+++			+			
133000196	R3-5	in - settents of mirrar mounts at Shall Point Reach. After successful compilition of this project, it would be optimal to protect additional areas north and east of Shell Point through acquisitions or conservation assements to provide a contiguous wildlife corridor to benefit whooging cranes and increase coastal land preservation. In Under this project, approximately 1 mile of breakwaters would be installed along larner Beach Road, from Main Street to 21th Street in Austrassic County. The project	13000020 Aransas			TPWD County	\$ 5,000,00	LOO TPWD Aransas County									\perp			
133000197	R3-6	also would include regrading and filing along the shoreline, and marsh planting to establish a living shoreline system	13000020 Aransas			Navigation District	\$ 3,500,00	.00 Navigation District						-		-+-+	+		+	
133000198	exas Coastal Resiliency Master Pla R3-8	threats of eroson. Potential solutions could include creating a living shreline that would protect the shoreline from erosion, such as semi-submerged breakwater with vegetation behind it to allow the shoreline to accrete and stabilize natural	13000020 Aransas			Texas Parks & Wildlife Department	\$ 2,700,00	Texas Parks & Wildlife Department												

Exhibit C, Table 13 Potentially Feasible Flood Mitigation Projects Identified by RFPG

FMP ID FMP Name	Description Associated Goals (ID)	Counties	HUC12s Watersheds	Project Type Project Area Flood Risk Type Sponsor (sqmi) (Riverine,	Entities with Emergency Estimated Project Oversight Need (Y/N) Cost (\$)	Potential Funding Sources and Amount Acea in	100ur Area in 500ur Estimated	Flood Risk Residential Estimated Critica	al Number of Estimates	d Estimated Estimated	Number of Number of Numb	r of Residential Estimated	Reduction in Flood Riv	cof low Estimated Estimated	Estimated Estimated Estimat	Pre-Project Post- Cost/ ed Level-of- Project Structur	Percent Negative e Nature- Impact (Y/N)	Negative Soci Impact Vulnera	il Water Supply Traffic C bility Benefit (Y/N) for Low I	ount Benefit-Cost RF Vater Ratio Recom	G Reason for menda Recommendation
				Coastal, Urban, Plays, Other)		(1% ar	nual (0.2% annual number of	structures at Population at facilities	s at low water number of	of length of farm & rand	Number of Number of Number of Structures with structures structure	res structures Population	facilities water c	ossings reduction in length of	farm & ranch reduction in reduction	n in Service Level-of-remove	d based Solution (by	Mitigation Index (Y/N)	SVI) Crossi	ngs tion	r/N)
						Flood	plain Floodplain 100yr flood	flood risk flood risk flood risk	k (#) flood risk (#) (#)	year flood risk year flood ris (Miles) (arres)	sk (1% annual 200yr (1% 500yr (3.2% 100yr (1% 100yr (1% arount	100yr (1% 100y	osungs reduction in different road closure occurrences occurrences from 100yr flood risk (Miles)	removed available) availab	le)	cost)				
							-			()	risk chance) Flood chance)	Flood chance) Flood chance) Floo risk risk	d chance) Flood Flood	isk (#) flood risk (Miles)	flood risk (acres)						
														(
				Coastal Bend Bays and		Estuaries Program,															-
				Estuaries Program, The		The Nature															
	This project would protect two rookery islands, Tern Island and Triangle Tree Island, in the Upper Laguna Madre from erosion by constructing protective structures, such as shoreline armoring for each Island. This project would be considered Phase 1 and would include feasibility, preliminary engineering, alternatives analysis, final			Audubon Texas, U.S. Fisi and Wildlife Service,		Conservancy, Audubon Texas, U.S. Fish and Wildlife															
	design and permitting. Phase 2 would cover the construction phase. Opportunities to include beneficial use of dredged material during the construction would be			Texas General Land		Service, Texas General															
133000199 R3-12	pursued 13000019	Kleberg		Office Coastal Bend Bays and Estuaries	\$ 3,600,000.00	Coastal Bend Bays and					 		 								_
Texas Coastal Resiliency Master Plan -	The project would include the construction of breakwaters along approximately 3,900 linear feet of shoreline at the Nuecos River Delta to dissipate wave energy that is causing estuarine wetland loss. This project was permitted by the U.S. Army Corps of Engineers in October 2016 and the project is considered shovel-ready.					Estuaries Program, Texas															
133000200 R3-15 Texas Coastal Resiliency Master Plan -	Coordination is ongoing with the Port of Corpus Christi regarding the possibility of boxelicially using diredged material in this area. 13000029 This project would acquire additional land within the Guadalupe Never and Deta Wittlife Management Area corridor to connect tidal march from the upper reaches of highests but you be Widtlife Management Area corridor to connect tidal march from the upper reaches of highests but you be Widtlife Management Area corridor to connect tidal march from the upper reachest of highests but you be Widtlife Management Area corridor to connect tidal march from the upper reachest of highest but you be widtlife Management Area corridor to connect tidal march from the upper reachest of highest but you have a fine or the connection of the property of the propert	San Patricio, Nueces Aransas, Refugio, Nueces		Land Office Texas Parks &	\$ 3,500,000.00	General Land Office Tevos Parks &															
133000201 R3-18	of Hymes Bay to the Wildlife Management Area in Refugio County. 13000020	Nueces		Wildlife Department Coastal Bend Bays and	\$ 3,000,000.00	General Land Office Texas Parks & Wildlife Department Coastal Bend Bays and															
				Estuaries																	
	In 2015, Nueces County acquired property on North Padre Island approximately 4 miles southwest of the causeway. There are several ongoing restoration eforts at			Program, The Nature Conservancy, Texas		Program, The Nature Conservancy, Texas															
	the site, including eradicating approximately 12 acres of invasive Brazilian Pepper Trees, implementing a prescribed burn management plan, and re-purposing an old impacted well pad site to establish burrowing owl habitat. Nucces County completed a Habitat Land Use Management Plan for the property to guide future			Parks & Wildlife Department, U.S. Fish		Parks & Wildlife Department, U.S. Fish															
	The acquired property has three immediate needs:			and Wildlife Service, U.S National Park Service,		and Wildlife Service, U.S. National Park															
Texas Coastal Resiliency Master Plan -				Texas General Land Office, Private		Service, Texas General Land Office, Private															
133000202 R3-19	3. Invasive species control and post-control monitoring and removal. This include Brazilian Pepper Trees and Chinese Tallow Trees 1300020	Kleberg		Landowners	\$ 500,000.00	Landowners															
	2. Restoring demayed westered from human use activities, uses a driving procept jurisdictional westands. 1. Inside expects contained and past control monthlying and removal. Human the self-late Papeur Tirees and Chinese Tallow Tirees 13000000 This recommended temprovements under this project include: 1. Reporting Tracelan in the situ polaranties restored on contenter Mustang Bland;																				
	Lonstructorig rening anoneming on the simp channel near existing rock constructor to nextor to execute highlight.																				
1 1	Repairing the Charlis's Pasture bulkhead that was damaged during																				
1 1	Hurricane Harvey: - Remaining units are units are units and units are units			City of Port Aransas		City of Port Aransas															
Texas Coastal Resiliency Master Plan -	Permitting this site for beneficial use of dredged material to elevate the land.			Port of Corpus Christi Texas General Land		Port of Corpus Christi Texas General Land					1 1 1		1 1								
133000203 R3-23 Lower Nucces River Watershed	There is a potential to leverage Federal Emergency Management Agency-Public Assistance funding for this project. The engineering work has been initiated 13000020	Nueces		Office	\$ 4,400,000.00	Office															
Lower Nueces River Watershed Protection Plan - Riparian habitat Conservation Management Measures																					
Conservation Management Measures 133000204 No. 1 Lower Nueces River Watershed	Purchase of Properties 13000019	Nueces		City of Corpus Christi and Counties	\$ 15,000.00	City of Corpus Christi and Counties															
Lower Nueces River Watershed Protection Plan - Riparian habitat																					
Conservation Management Measures 133000205 No. 2	Armiditines of Concentrion Facements (annonymately 970 arres)	Nueces		City of Corpus Christi/NRA/TALT	g e20,000,00	City of Corpus Christi/NRA/TALT															
133000205 No. 2	Acquisitions of Conservation Easements (approximately 970 acres) This project will construct 3,000 linear feet of breakwater to protect 650 acres of marsh habitat along the face of the Nueces Delta shoreline. The Nueces Delta is	NUMERS		CERTIFIER	3 970,000.00	CHISDYNBACIALI															
	convenience and a second control of the seco																				
	restoration of a large contiguous area of salt marsh which will benefit these estuarine species. The proposed breakwater cyclem will improve the area's recilience against sea level rise storm sures and fineting and also property conservation properties.																				
Nueces Delta Shoreline Erosion	The proposed breakwater system will improve the area's riscillence against scale level rise, storm surge, and flooding, and also protect nearby conservation properties. Outcomes from this project contribute to goals in several regional conservation management plans, including the Texas General Land Office's Texas Coastal	San Patricio		Nation Fish and Wildlife Foundation		Nation Fish and Wildlife Foundation															
Tule Creek Watershed Project Report -	Resiliency Master Plan and Texas Parks and Wildlife's Texas Wedlands Conservation Plan. 13000005 The mesquite by-pass project is primarily a drainage and flood control plan that will divert 25 percent of the total Tule Creek Watershed area to a new Aransas Bay			TOEQ																	_
	Outfall. This project will require approx. 3,200 feet of 5x5 box culvert to be installed within the Mesquite Street ROW. 13000025	Aransas		TCEQ	\$ 1,600,000.00	TCEQ					 		 								-
Tule Creek Watershed Project Report - 7.1.2 Area 2: Tule Creek West Sediment	This project is located in a position that will enable capture of most flows and sediment from the watershed before discharge into Little Ray. The nond will emphasize																				
133000208 pond and habitat Enhancement Tule Creek Watershed Project Report-	sediment control should be placed more or less on line but so as to avoid changes to filord and draksage control. This project with hip agrificantly reduce one of the leading stormwater pollutions within the Line Creak Watershad and discharge to little Bay. The vegetative slopes recent on which personal evidence and control evidence and sedimentation downstream when combined with a maintenance project medicined to also control evidence. It is expected.	Aransas		TCEQ	\$ 650,000.00	TCEQ					 										
7.1.3 Area 3: Upper Tule Creek West 133000209 Widening and sinne Protection	protection will help control erosion and sedimentation downstream when combined with a maintenance projgram designed to also control erosion. It is expected that approx. 100 feet of additinal RDW is needed to be dedicated and cleaned to accommodate the widening.	Aransas		TOPO	\$ 650,000.00	TOFO															
Tule Creek Watershed Project Report - 7.1.4 Area 4: Tule Creek north																					
Retention Pond and Habitat	An on-line gond, up to 5 acres, capturing frequent flows from the Rairoad ROW tributary as well as the lands to the west should be designed at this location. It is			****	\$ 1,325,000.00	7070															
Tule Creek Watershed Project Report -	also recommended that an additional 42" pipe be placed adjacent to the existing 42" outfall from the golf course. 13000025 This area is located near the downstream part of the watershed, which makes it ideally located from the perspective of providing capture of contaminants before	Aramsas		ICEQ	5 1,325,000.00	, rord															
7.1.5 Area 5: Tule Creek East Detention 133000211 Pond and Marsh Enhancement	discharge into the Bay. Due to the requiement of constructing a weir and overflow device, this project is hydraufically sensitive and will need carefull planing to develoe an effective project design and avoid obvious potential risk. 13000025 Whith the first principly of the Nuecos Story Preserves is habitations inservation, this unique location provides South Texas an important opportunity for public education	Aransas		TCEQ	\$ 925,000.00	TCEQ															
Nueces Delta Preserve Project - Building an enterational Estuary Learing Center	on the Rincon Unit's highest ground near the Union Pacific Railroad and overlooking the delta. An observation tower and hillside amphith-nater will be next to the existing classroom. A bunkhouse for visiting researchers will be nearby along with maintenance and support facilities. Hiking trails with improved rest areas and																				
133000212 and Visitor Center	interpretive signage will allow visitors to venture deep into the varied delta habitats. 13000022 The Oso Creek Channel Bottom Rectification and Green infrastructure Project would address a 12-mile section of Oso Creek channel from Greenwood Drive to Cayo	Nueces		CBBEP		CBBEP															
Rectification and Bank Stabilization	del Oso including channel modifications to remove peaks and valleys, and implement bank stabilization, revegetation, and other green infrastructure techniques. It				l I I						1 1 1		1 1								
133000213 Project Greenwood Plant Flood Mitigation	will advance long term resilience by enhancing capacity of stormwater system and improving water quality. 3000025 Greenwood Plant consistently floods and is in need of repairs. The proposed project would improve the infrastructure in and around the plant to prevent furture	Nueces		TWDB	\$44,000,000.00	TWDB				+ +	+ + +		 		 	+ + + -	+ + + -				-
133000214 Project		Nueces		City of Corpus Christi	\$5,000,000.00	City of Corpus Christi				+	+-+-					+	+				-
Nueces County Living Breakwater	Riscoss trom impacting the plant. 13000014 Rin proposed proceful improve the resiliency of the County and surrounding communities that sustained damage Hurriciane Harvey, Select, key mitigation enterventions are needed around the Bay's to augment and leavings the range of horeline substitutions are needed around the Bay's to augment and leavings the range of horeline substitutions are needed around the Bay's to augment and leavings the range of horelines substitutions and evotion control projects that have been constructed throughout the County Critical Bay area to protect the communities from storm statements. (This includes budge positification for herit backs, Port Annacias and 10000019,			City of Corpus Christi,		City of Corpus Christi,					1 1 1		1 1								
133000215 project	Ingleside on the Bay).	Nueces		Nueces County, CDBG		Nueces County, CDBG	+		+	+	+	+	-			+++			+	\perp	+
122000016 Dagger informal contraction Action	impropose with collection and management of the control of the collection of the col	San Patricio		Texas Parks and Wildlife	\$3,824,000.00	Texas Parks and Wildlife Department										1 1 1					
august is and restoration Project	Channel improvements to system near Las Animas Creek to improve conveyance: - Upsize culverts on Palacios St and S Benavides St - Improve conveyance capacity			Department Urban /	\$3,624,000.00	ume Department										+					-
133000217 Las Animas Conveyance Infrastructure	under bridges on HWY 399 and HWY 339 - Procurement of examents and rights of-ways INDOORS on HWY 399 and HWY 339 - Procurement of examents and rights of-ways INDOORS on HWY 399 and HWY 339 - Procurement and rights of-ways INDOORS on HWY 399 and HWY 339 - Procurement and rights of-ways INDOORS on HWY 399 and HWY 339 - Procurement of exament and rights of-ways INDOORS on HWY 399 and HWY 339 - Procurement of exament and rights of-ways INDOORS on HWY 339 - Procurement of exament and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights of-ways INDOORS on HWY 339 - Procurement and rights on HWY 339 - Procuremen	Duval		4 Riverine		 			+ +	+ +	 	+ +	-			+ + +			+ +		_
																1 1 1					
1 1	- Expand network to Santa Rosa de Lima Street - Improvements to concrete channel on Peters Street.																				
1220000319 Beautifur Main Cir.	- Improvements to outfail structures	Dunt		2.9 Hidaa							1 1 1		1 1								
133000218 Benavides Main City Network	- Procurement of outfall assuments	outil.		J. Orban													1 1				
133000219 Upsize Burch St Crossing	- Increase rubert capacity on Bruth 3t and other undersized crossings - Channel improvements along the main earthen channel 13000014 improvements street overland of chiange system:	Duval		5.6 Urban																	
													1 1			\perp					
133000220 Improvement	-Cu-b as to give replacement. Simples consequence by rold planning and registing of prioritized streets. 1,0000014 Diseage reprovements to busherful and integer populars. Localization of reverse unique of diseage prioritized streets. -Capacition in a verification of reverse proposed diseage prioritized verification and reverse proposed diseage prioritized streets and supplements to busherful and integer proposed continues prioritized integer prioritized and improve conveyance or rainout or retired crossings and on suctions of regiment 44 to improve conveyance or rainout or retired crossings and on suctions of regiment 44 to improve	Duval, Jim Wells		2.7 Urban					+	+		+	+-+			+	+		+	-	+
Northern San Diego Drainage	- Installation of new underground drainage infrastructure along Luby street - Evanacion and improvements to the Street System - Treatment of the Street System	Duval, Jim Wells		2.7 Urban																	
Improvements to Drainage	Improvement to underground drainage system to increase capacity and improve conveyance on railroad under-crossings and on sections of Highway 44 to improve			2.7 Miles													1 1				
Southern San Diego Drainage	Stormwalst drainage from north to Sooth 13000014	Duval, Jim Wells		2.7 Urban													1 1				_
133000223 Improvement Project Improvements to San Dieso Levee	New underground stormwater collection system along Collins Street, including interconnections between existing and new infrastruture. 13000014	Duval, Jim Wells		2.7 Urban /						1 1	+					+	1 1		+		
		Duval, Jim Wells		2.7 Riverine Urban /						1 1	+					+	1 1		+		
133000225 Realitos Drainage Improvements 133000226 Concepcion Drainage Improvements	Improvements to surface and subsurface infrastructure of Realtos Drainage System 1300014 Improvements to drainage infrastructure in Concepcion 1300014	Duval Duval		4.7 Riverine 4.1 Riverine		 					+					+					
Upper Oso Creek/Channel A Robstown	merproments to ordice and subordice infrastructure of Realted Crainage System 1000014 Improvements to drainage infrastructure in Conception 1000014 Acquire right of ways to widen & deepen existing drainage district 1000014			- MANGELLINE																	
133000228 Upper Oso Creek	Acquire right of way to write & development outling crisings officials. 1.0000014 Acquire right of way to write & development with the development of the development of the development of the ord front development of	Nueces Nueces																			
233000229 Tributary No. 5 County Road 6- North Carreta Creek	Acquire right or way to improve the now or flood waters in the London Area. [13000014] Restoration project to bring this section of North Carreta creek (located between CR6 and Meadowbrook Road) back to its original elevation as built by USDA Soil	Nueces															1 1				_
133000230 Drainage Improvements 133000231 Belk Lane Street and Drainage	reconstruction project our intig this section or norm Laterial creek pocused acresses have an enablewardors require that or in intigral elevation as that by USA-501 130000294 130000294 130000294 130000294	Nueces Nueces									+-+-					+	+				
Rehabilitation of Ditch at County Road 133000232 14F	Topographic and hydrological study for improvement and regrading of Drainage ditch.	Nueces																			

Appendix E Exhibit C, Table 14 Potentially Feasible Flood Management Strategies Identified by the Regional Flood Planning Group

FMS ID FMS Name	Discription	Associated Goals (ID)	Counties	HUC8s	HUC12s V	Vatershed Strategy Name	Type Strategy Project Area (sqmi)	ct Flood Risk Type Spor (Riverine, Coastal, Urban.	onsor Ent	ntities with Emergency Need Estim Oversight (Y/N)	ated Strategy Potential Fundin Cost (\$) Sources and Amou			ed Residential E	Flood Risk Estimated Critical Number	or of Estimated Esti	ated Estimated Number of	Number of Number of	Reduction in Residential Estimated Crit	n Flood Risk tical Number of Estima	ated Estimated Estimated	Estimated Estimated	Cost/ Considerar Structure on of	Megative Negative Impact Impact (Y/N) Mitigation	Water RFPG Supply Recommen	Reason for Recommen
								Playa Other)				annual	Floodolain at 100vi	res lat flood risk at vr	opulation facilities at low wo t flood risk flood risk crossing (#) flood r	st road road isk closures (#) floo	th of lactive farm structures is at & ranch with reduced irisk land at 100yr (1%	removed from removed from 100yr (1% 500yr (0.2%	structures Population facili removed from removed remo 100yr (1% from 100yr from 1 annual chance) (1% annual (1% a	lities low water reduct loved crossings in roo 100yr removed closu	tion length of lactive farm ad roads & ranch are removed land	reduction reduction in fatalities in injuries (if (if	removed Nature- based Solution	(Y/N)	(Y/N) (Y/N)	dation
												Floodplain	flood risi	sk	(4)	(N	les) flood risk annual (acres) chance) Flood risk	annual chance) annual chance Flood risk Flood risk	e) annual chance) (1% annual (1% a Flood risk chance) char	annual from 100yr occurre ince) (1% annual s	ence from 100yr removed flood risk from 100yr	available) available)	(Y/N)		, '	
																	risk		Flood risk chance) char Flood risk Flood (#	d risk chance) (#) Flood risk (#)	(Miles) flood risk (acres)				, '	
																				,,					, '	
Improving Stormwater Management in	Port								of Port		GLO CMP / City	of														
132000001 Aransas	Improving Stormwater Management	13000008		12110202 12: 00405,12110111,12110	1102020200 1	3000608	0.95	Arar	ansas	\$	168,080 Port Aransas															-
132000002 Riparian Buffers	Voluntary vegetation management on private riparian lands. Riparian area vegetation is a key factor in reducing downstream flooding.	13000020	Various 201,	12110202,12110203,12 110204,12110205			79.71	NR	IRCS		NRCS															
Atascosa McMullen Hazard Mitigation Pl 132000003 City of Poteet Action #2	Increase local enforcement of the flood damage prevention ordinance by hiring a more full time staff	13000016	Atascosa Atascosa							s	530,000														'	
	Implement 'All Hazards' NOAA Weather Radio (NWR) procedures for dissemination of emergency messages originating with local jurisdictions. The National Weather Service (NWS) will implement a new, centralized point of collection for non-weather related emergency messages broadcast over NWS systems. NWS expects to deploy the All-Hazards Emergency Message Collection System, HazCollect, in the		Bee, Jim Wells,																						, '	
COASTAL BEND MITIGATION ACTION PL 132000004 RG-02	AN - summer and fall of 2005. HazCollect will provide an information technology interface between state and local systems, and the NWS Advanced Weather Interactive Processing System (AWIPS). HazCollect will provide a fast, reliable way to inject messagesinto the Emergency Alert System (EAS) and NGAA Weather Radio.	13000007 Liv	Kleberg, ve Oak, Nueces,							Low	cost activity															
	Promote public awareness and use of NOAA Weather Radio (NWR) to receive 'All Hazards' warnings by distributing NWR Iterature, posting information on jurisdiction Web sites, hosting special events, and taking advantage of other opportunities as they arise. The National Weather Service provides weather-related hazards warnings to citizens, both through feeds to commercial media via the Emergency Alert System		Bee, Jim Wells,																						, '	
COASTAL BEND MITIGATION ACTION PL	(EAS), and directly into homes, businesses, schools and other locationsthrough NOAA Weather Radio (NWR). Through the efforts of the Emergency Management programs in both Kleberg and Live Oak counties, AN-broadcast coverage has recently been completed for the Coastal Bend region through installation of transmitters near the communities of Riviera and Three Rivers. These transmitters will also enhance reception		Kleberg, ve Oak, Nueces,																						, '	
132000005 RG-04 COASTAL BEND MITIGATION ACTION PL		13000007	San Patricio							Low	cost activity															-
132000006 AR-05	The ISWMP will identify problem areas and recommend improvement projects. Areas of Jim Wells County and the City of Alice are subject to persistent flooding including: the south quadrant of the City of Alice (Lattas Creek/South Relief Creek watershed), the northwest quadrant of the Ben	13000007	Aransas							\$	900,000															-
COASTAL BEND MITIGATION ACTION PL	Bolt areas, and the southwest quadrant of the city of Alice (Lattas Creek/Rancho Alegre area). There is currently no officially recognized district or advisory group addressing drainage issues in a comprehensive AN - manner. A Joint Advisory group may provide an organizational framework for establishing priorities, determining what studies are needed, and developing a Drainage Master Plan to guide future efforts to reduce		Jim Wells								8.000.000														, '	
132000007 JW - 01	Booding. Part of law energency warning call down system (Reverse 911). A call down warning system can alert residents directly by calling their homes or places of business. This capability is especially useful during NA- daylight business hours when individuals may not have access to warning broadcast via television or radio. Although telephonic messages must be concise, they can provide additional instructions as to	13000016	Jim Wells							\$	8,000,000															
132000008 JW - 08	recommender response actions for all hazardous situations. There are no independent drainage districts currently existing within the county addressing drainage issues in a comprehensive manner. A county-wide approach can facilitate coordination for the development	13000007	Jim Wells																							
COASTAL BEND MITIGATION ACTION PL 132000009 KL - 04		13000016	Kleberg							s	20.000														, '	
	and action to reduce losses from flooding. Coordinate with Texa A&M university -fingspille to promote campus mitigation activities, and to enhance awareness of the Disaster Resistant University Program. This activity may potentially include hooting a workshop based on the FBAM report, Building a Disaster-Resistant University. The Texas A&M University-fingswille campus is located within a predominately residential area on the northwest edge of Ringswille.																									
COASTAL BEND MITIGATION ACTION PL	The university has approximately 6000 students with nearly 1,000 faculty and staff. The main campus encompasses 257 acres and has 82 primary buildings including five occupied residence halls and 13 occupied AN-student family apartments. FEIMA's Disaster Resistant University Program is specifically designed to provide assistance for mitigation in the university setting and in the past, has set aside monies from the Pre																								, '	
132000010 KL - 05	Disaster Mitigation Competitive grant program for this purpose. The City of Bishop is subject to frequent episodes of inland flooding during heavy rainfall events. Nueces County Drainage District 83 is responsible for addressing drainage issues which may have impacts for the	13000022	Kleberg					+ +	-					+	-+	+ +			+ + +	+			_	1 1		\vdash
COASTAL BEND MITIGATION ACTION PL 132000011 NU - 11	AN- City of Bishop; however, there has been a lack of coordinated effort in the past. Additional floor control projects of interest to the City of Bishop include clearing of stream blookage on King Ranch property and the Carreto Creek project, including removal of sit and connection with the Blood control project on King Ranch. The Federal Emergency Management Agency (FEMA) Mitigation Division administers the National Flood Insurance Program (NFIP). To encourage participating communities to go beyond the minimum	13000016	Nueces																						'	
	The Federal Emergency Management Agency (FEMA) Militaption Division administers the National Flood Insurance Program (NFIP). To encourage participating communities to go beyond the minimum requirements for flood plain management, the Community Rating System (CKS) program classifies communities by awarding points for related activities. Corpus Christi has participated in the CKS program since 1991 and is currently rated as a Class 3 community, entitleling its residents to a 5% discount on flood insurance premium. This project is intended to improve its rating to a Class 8, thereby increasing the premium																								, '	
	1991 and is currently race as a Lists y community, entiting or residents to a syn discount on blood insurance premium. In project is memore to improve its rating to a Lists y, thereby increasing the premium discount to 10% for Special Flood Hazard Areas (SFHA), The CRS classes for local communities are based on 18 creditable activities, organized under four categories: (i) Public Information, (ii) Apaping and Regulations, (iii) Flood Damage Reduction, and (iv) Flood Preparedness. Other actions identified in this Mitigation Plan will have a direct bearing on fulfilling CRS requirements to qualify for the higher																								, '	
COASTAL BEND MITIGATION ACTION PL 132000012 NU - 24	AN - (Isstification: This activity includes a comprehensive review of eligible activity requirements, identification of additional potential actions, monitoring completion of previously identified actions, and completing the abolication process.	13000007	Nueces																						, '	
COASTAL BEND MITIGATION ACTION PL	Evaluate eligibility for participation in National Flood Insurance Program (NFIP) Community Rating System (CRS) for the purpose of improving CRS rating to qualify policyholders for premium discounts. The City of AN-Port Aranasa currently has a rating of 10, which is automatically assigned to all communities participating in the NFIP. In order to qualify for a rating of 9, and entry into the CRS program, sufficient points must be																									
132000013 NU - 35	scored in a variety of program areas. This activity is to investigate whether Port Aransas currently can achieve the required score, or can do so with improvement in its program areas.	13000007	Nueces			-			-							+			+ + +							+-
132000014 NU - 40	AN - Identify opportunities to increase home and business owner awareness of hazards and use of mitigation for private property such as the City Web site and distribution of printed literature. The City of Port Aransas has a City Web site that can be updated to promote mitigation activities by residents and businesses; mitigation literature can be added to other emergency preparedness literature currently distributed annually.	13000022	Nueces							\$	1,000														'	igsquare
COASTAL BEND MITIGATION ACTION PL 132000015 SP-13	Drainage Plan for the City of Portland	13000013	San Patricio							\$	40,000															
COASTAL BEND MITIGATION ACTION PL 132000016 SP-32 San Patricio County Hazard Mitigation Ac	AN Public needs to know what to expect during a disaster. The city of Aransas Pass will need to promote public awareness by distributing literature, posting information on jurisdiction websites, hosting events and taking advantage of other opportunities as they arise to keep the community informed to save lives.	13000022	San Patricio							\$	2,000														'	
Plan - San Patricio County, Hazaro Mitigation Ad Plan - San Patricio County, County Wic 132000017 Action #1		12000012	San Patricio								5,000,000														, '	
San Patricio County Hazard Mitigation Ad	locentry and implement reasons to reduce risk for repetitive loss properties including actions such as nodo prooting, elevation, acquisition, relocation, and retroitting. tion 6. Develop and implement an all hazards education program. Utilize	13000013	San Patricio							,	5,000,000															
122000019 Action #2	Sacebook, the whopegae and distribution of brochuser to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damage, injury or illness. dopp/update disaster resistant building codes, ordinances and / or subdivision regulations (see comments).		San Patricio San Patricio							s s	2,000															
San Patricio County Hazard Mitigation Ad Plan - San Patricio County, County Wid	ction le,																									
132000020 Action #4	Participate in the Community Rating System. Develop and implement a dam failure hazard education	13000007	San Patricio							\$	5,000															-
San Patricio County Hazard Mitigation Ad	too orgam. Utilier Facebook, (styl/county webpages and distribution of brochures to provide information on the potential for dam failure and the areas at greatest risk. Provide mitigation measuresto reduce risk of damages, injury or illness. Too Develop and implement an all hazards education program. Utilize	13000022	San Patricio							\$	2,000															
San Patricio County Hazard Mitigation Ad 132000022 Plan - City of Gregory, Action #1	tion Develop and implement an all hazards education program. Utilize facebook, city webpage and distribution of brochures to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damage, injury or illness. To Develop and implement an all hazards education program. Utilize	13000022	San Patricio							\$	2,000															
132000023 Plan - City of Ingleside on the Bay, Actio	#1 Facebook, city webpage and distribution of brochures to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damage, injury or illness.	13000022	San Patricio							\$	2,000														'	
San Patricio County Hazard Mitigation Ad 132000024 Plan - City of Ingleside on the Bay, Action	tion ##II Adopt ASFPM's "No Adverse Impact" policy to mitigate local flooding. ##II Adopt ASFPM's "No Adverse Impact" policy to mitigate local flooding. ##II Adopt ASFPM's "No Adverse Impact" policy to mitigate local flooding.	13000007	San Patricio							\$	2,000														'	
132000025 Plan - City of Mathis, Action #6	to Overopy and Imperience and an interact sociation to project United Section (1) and interaction of the Community Provide miligation measures to reduce risk of damage, injury or illness. 100 (Data certification by the National Weather Service as "Storm Ready" community; improve emergency management radio coverage and reception; implement and enhance an area-wide telephone Emergency Information (1) and	13000022	San Patricio							\$	2,000															
San Patricio County Hazard Mitigation Ad	tion	13000022	San Patricio							\$	50,000															
132000027 Plan - City of Mathis, Action #10	Install signs prohibiting dumping in streams, ditches, waterways and floodplain areas.		San Patricio							\$	2,000															-
132000028 Plan - City of Odem, Action #1	Facebook, city webpage and distribution of brochures to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damage, injury or illness. Improve emergency management radio coverage and reception; Implement and enhance an area-wide telephone	13000022	San Patricio							\$	2,000															-
132000029 Plan - City of Odem, Action #4	tion lamegracy (vortication system ("Keverse 911"); Develop atternative evacuation routex/plans and designate emergency (normalization procedures. Utes and procedures.	13000007	San Patricio							s	10,000															
San Patricio County Hazard Mitigation Ad 132000030 Plan - City of Odem, Action #5	Adopt higher floodplain standards above the minimum requirements to provide additional flood protection to new development.	13000007	San Patricio							s	1,000														'	
132000031 Plan - City of Odem, Action #12 San Patricio County Hazard Mitigation Ad	Update public community facilities to include severe weather action plans and designated tornado shelter areas. Educate public on plans and shelter locations.	13000022	San Patricio							\$	2,500															
132000032 Plan - City of Odem, Action #15 San Patricio County Hazard Mitigation Ac	Relocate books, manuals, permits, and other critical government records to the upper floors and/or on shelves above the base flood elevation of the library and records building.	13000013	San Patricio							\$	2,500															
132000033 Plan - City of Odem, Action #15 San Patricio County Hazard Mitigation Ac	tion		San Patricio							\$	2,500															-
San Patricio County Hazard Mitigation Ad			San Patricio							\$	2,000															_
132000035 Plan - City of Portland, Action #4 San Patricio County Hazard Mitigation Act 132000036 Plan - City of Portland, Action #5	Adopt higher floodplain standards above the minimum requirements to provide additional flood protection to new development.		San Patricio			_		+	-+	\$	1,000			1 1		+-+			+ + +					+++		+
	Identify and install stream and rain gauges at critical sites, upgrade gauges at established sites where necessary, coordinate installation requests. 100 Develop and implement an all hazards education program. Utilize Section Provide and Expert Provide Information on all hazards that could impact the community. Provide militagrison measures to reduce risk of damage, injury or liness.		San Patricio San Patricio							\$	2 000															\vdash
			San Patricio							,	2,000															
San Patricio County Hazard Mitigation Ad 132000039 Plan - City of Sinton, Action #3	Adopt higher floodplain standards above the minimum requirements to provide additional flood protection to new development. Too Develop and implement an all hazards education program. Utilize Facebook, (iv) we propose and distribution of borchures to provide information on all hazards that could impact the community. Provide miligation measures to reduce risk of damage, injury or illness.		San Patricio							s	2,000															
132000039 Plan - City of Sinton, Action #3 San Patricio County Hazard Mitigation Ac 13200040 Plan - City of Sinton, Action #6		13000007,	San Patricio							s	3,000															
San Patricio County Hazard Mitigation Ad 132000041 Plan - City of Sinton, Action #7	Obtain certification by the National Weather Service as a "Storm Ready" community.	13000007, 13000022	San Patricio							\$	2,000															
	tion Coss train building inspectors in floodplain management requirements. Toto Develop and implement an all hazards education program. Utilize Packbook, rity webgap and distribution of brotheries to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damage, injury or Illness.	13000007	San Patricio							\$	2,000														'	$\perp \perp \mid$
132000043 Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Ac	Facebook, city webpage and distribution of brochures to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damage, injury or illness.	13000022	San Patricio							\$	2,000															
132000044 Plan - City of Taft, Action #8 San Patricio County Hazard Mitigation Ac	Install signs prohibiting dumping in streams, ditches, waterways and floodplain areas.	13000013 13000007.	San Patricio							\$	2,000															-
132000045 Plan - City of Taft, Action #10 San Patricio County Hazard Mitigation Ac	Advertise and promote the availability of flood insurance and availability of the Preferred Risk Policy (PRP); Distribute flood insurance handouts with all permit applications. tion	13000022 13000007,	San Patricio							\$	2,000															-
132000046 Plan - City of Taft, Action #11 Aransas County Texas Multi-Jurisdiscti	Educate community on the dangers of low water crossings through the installation of warning signs and promotion of "Turn Around, Don't Drown" program		San Patricio			-			-	\$	1,000					+			+ + +							+-
Aransas County Texas Multi-Jurisdiscti	24 Create a county-wide wetlands preservation plan 24 all	13000013,	Aransas			-+	-		+	\$	2,500				-+	+			+ + +							\vdash
Aransas County Texas Multi-Jurisdisction		13000013,	Aransas			_		+	-+	\$	2,500			1 1		+-+			+ + +					+++		+
132000049 Hazard Mitigation Action Plan - Action Aransas County Texas Multi-Jurisdisctis 132000050 Hazard Mitigation Action Plan - Action	nal .	13000014	Aransas Aransas							5	500,000															
132000050 Hazard Mitigation Action Plan - Action Aransas County Multi-Jurisdictional Floor 132000051 Managment Plan - Action 1.3.a	plain	13000016	Aransas Aransas							5	60,000														-	\Box
Aransas County Multi-Jurisdictional Flood	plain Complete process of entry into the Community Rating System (CRS) to incentive higher floodplain management standards for Aranasa County.	13000016	Aransas							s	45,000															
Aransas County Multi-Jurisdictional Flood	plain Investigate whether CRS is viable for the City of Aransas Pass and the Town of Fulton.	13000016	Aransas																							
Aransas County Multi-Jurisdictional Flood 132000054 Managment Plan - Action 3.1.e	lplain .		Aransas																							\Box
Aransas County Multi-Jurisdictional Floor 132000055 Managment Plan - Action 3.2.a Aransas County Multi-Jurisdictional Floor	plain Determine whether any life stations and pump stations will need generators.	13000025	Aransas																						'	\sqcup
Aransas County Multi-Jurisdictional Floor 132000056 Managment Plan - Action 4.1.a Aransas County Multi-Jurisdictional Floor	projects.	13000022	Aransas			-									\perp	\perp			+	\perp						ш
Aransas County Multi-Jurisdictional Floor 132000057 Managment Plan - Action 4.1.c		13000028	Aransas																	\perp					'	\square
	The Corpus Christl City Council approved the Storm Water Capital Improvement Program (CIP) for PY99 00 on July 20, 1999 (Ordinance No. 023703). Included were separate projects for drainage studies in specific areas of the City. Theneed to integrate these individual drainage studiesinto a consistent, uniform analysis became evident and was approved in Storm Water CIP for P100-01. (Ordinance No. 024130). The City's																								, '	
	use of master plans that date back to 1946, 1961, 1970, 1982, and 1988 resulted in the use of inconsistent criteria without an adopted level of protection policy. The separate projects are integrated into the PYOO- 01 Storm Water (IP as a Storm Water Master Pian Project. The Development of a comprehensive, updated, consistent Storm Water Master Pian based on an adopted Storm Water (Trieris and Design Manual is																								, '	
	necessary to respond to development, environmental issues and to better define and prioritize on going and futuredrainage capital improvement projects. The purposes of this project is as follows: a. Establish drainage criteria that reflects input from the different segments of the community (elected officials, developers, engineers, citizens, planning and zoning) and in the consensus process identify a "level of																								, '	
	protection" for the City to be adopted as a standard for the City b. Adopt a drainage criteria and design procedure for designers to use in capital improvement projects and in the subdivision platting process of residential and commercial development. c. Establish policy statements or guidelines that are responsive to storm water quality, storm water pollution prevention requirements, development issues for use in																								, '	
Nueces County Hazard Mitigation - Cor 132000058 Christi Action #5	us future street and drainage project design d. Develop a master plan to implement the drainage criteria established to include updates of the existing areas and production of new master plan for other areas. The master plan will include the inventory of all outfalls and data necessary for the design process and will utilize orities and reflects the characteristics of each master plan for other areas. The Corpus Circuit has participated in the CKS program since 1991 and is currently rated as a Class? community, entitling the residents to a 13th discount on flooring incoming the control of the con	13000013	Nueces							s	4,084,900														'	\perp
Manage Company (* 1996)	Corpus Christ has participated in the CRS program incre 1991 and is currently rated as a Class 7 community, entitling its residents to a 15% document on flood insurance premiums. This project is intended to improve its rating to a Class 5, thereby increasing the premium discount by an additional 10% for Special Flood Hazard Areas (SHH4). Other actions identified in this Mitigation Flaw will have a direct bearing on fulfilling CRS requirements to qualify for the higher classification. This activity includes a comprehensive review of eligible activity requirements, identification of additional potential actions, monitoring																								, '	
132000059 Christi Action #10	durling CAS requirements of quarry for the ingries classification; min activity includes a completion of previously identified actions, and completing the application process.	13000007	Nueces																							

Exhibit C, Table 14 Potentially Feasible Flood Management Strategies Identified by RFPG

FMSID	FMS Name	Description	Associated	Counties	HUC8s	HUC12s	Watershed St	Strategy Type Strateg	y Project Flood Risk Type	Sponsor E	Entities with En	mergency Need E	stimated Strategy	Potential Funding				Flood Risk			Reduction in Flood Risk			Cost/ Considerat	ti Negative Negative	Water RF	-PG Reason for
			Goals (ID)				Name	Area	(sqmi) (Riverine, Coastal, Urban, Playa Other)		Oversight	(Y/N)	Cost (\$)	Sources and Amount	annual chan	n 500yr Estimated annual number of nuce) structures dplain at 100yr flood risk	at flood risk at	Estimated C. Critical Number of Estimated Est. 1 (a) the Composition function as Joan water number of the fibod risk flood risk resembling at road flood risk (a) (a) (b) (b) (c) (b) (c) (b)	is at & ranch i risk land at les) flood risk	with reduced removed from removed from 100yr (1% 100yr (1% 500yr (0.2% annual chance) annual chance	Besiderstall Estimated Critical Number of Estimate Victoriums Population Incilities Invested Professional Confession Incilities Incilities Indiana (Incilities Indiana) Incilities Indiana (Incilities Indiana) Indiana	rrence from 100y flood risk	r removed ava	imsted Estimated Structure on of our function reduction removed the state of the structure of the state of the structure of t	(Y/N)		
132000060	Nueces County Hazard Mitigation - Corpus	Utilize the city adopted "Developer Agreement" thatthe can use with developers to help cover the cost of installing over-sized stormwater drainage.	13000013	Nueces									3.100.000				-					_	+		+		
		Insurance Services Office, Inc. (ISO) is an independent organization that administers the Building Code Effectiveness Grading Schedule (BECGS) to assess "the building codes in effect in a particular community and	13000016	Nueces																					+		
		The City of Corpus Christi has seen multiple hazards occur within the years past. Most residents are heavily informed of what to do during heavy rains, tropical storms and hurricanes. However, there are multiple																	_	 		_			+		
		hazards that are not as frequent. The City will be working towards creating and disseminating a pamphlet(s) that will cover what todo before, during and after the following hazards: Extreme Heat, Lighting,																									
132000062	Christi Action #22	Hallstorm, Hurricane and Tropical Storms, Windstorms, Tornados, Drought, Flood, Dam/Levee Failure, Coastal Erosion, Expansive Soils, Land Subsidence and Wildfires	13000022	Nueces																							
	Atascosa McMullen Hazard Mitigation Plan -																								1 1 1		
132000063	City of Christine Action #5	Public education and outreach programs to education citizens about mitigation against hazards	13000024	Atascosa									5,000														
	Atascosa McMullen Hazard Mitigation Plan -																								+ - + +		
132000064	Poteet ISD Action #4	Create and implement a hazard educational enhancement program in which faculty/students can collaborate in inderstanding and communicating hazards of concern.	13000022	Atascosa									5.000														
		Under this project, locations in the Coastal Bend area that have been identified through existing habitat suitability index models would be selected to restore degraded oyster reefs. The project would include data																							+		
132000065	Texas Coastal Resiliency Master Plan - R3-26		13000020 Nu	seces, San Patricio									700.000														
	Nueces Delta Preserve Project - Land	This master plan envisions that eventually most or all of the delta land identified here will be part of the Nucces Delta Preserve. This effort will follow the Texas tradition of working voluntarily with private	13000019.																						1 1 1		
132000066	Acquisition	landowners and other organizations to achieve a common conservation goal. This will be done over time through a combination of strategies to meet the individual needs of specific landowners.	13000020	Nueces									1.500.000														
		Re-Furbish, Flood proof Repetitive Loss Homes damaged by Declared Disasters. San Patricio County obtained monies to complete 40 home rebuilds and has approximately 60 homes which are qualified but has no																							1 1 1		
	Flood Proof Repetitive Loss Homes in San	funding at this time. Many residential structures were damaged by storms in 2002. Insurance was non-existent, or coverage was not provided for by the homeowner, who were either elderly, low-income, or																									
132000067	Patricio County	unaware that coverage on normal homeowner's insurance does not provide for flood or wind storm damage.	13000014	San Patricio									4,500,000														
		The Nucces River has had three major flood events, two Presidential declarations in 2002, and a non-declared event in 2003. The property is located in the 100 year floodplain, with portions in the floodway. San																							1 1 1		
		Patricio County has procured nine properties in the area, 6 in River Estates and 3 in Peaceful Valley through FEMA & ORCA Grants. We are in the process of purchasing one 600 acre parcel through the Coastal Bays																									
132000068	Buyout Program in Peaceful Valley	and Estuary Program, and 13 tracts through a Texas General Land Office Grant (GLO) in the La Fruita Subdivision on the Nueces River.	13000019	San Patricio									20.000.000														
	-	Inspection and Assessment of CR18 Drainage Ditch to evaluate the physical and operational conditions of the drainage system by conducting on-site visual and drone scanning inspections. Generate a report																							1		
		based on these inspections to provide Nueces County with a preliminary assessment report and recommendations that can be utilized to make an informed decision regarding plans and advancements for the				- 1	1							l		1	1		- 1			1	1		1 1 '		
132000069	County Road 18 Drainage Improvements	Improvement of the drainage ditch system.	13000014	Nueces										l								1					

Appendix C6 – HUC-12 Flood Risk Data Score Table

HUC12 Unique Property Property Juliage Property Damage Spource (Agency Data) 121004050101 1 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0	ms} (Flood-Prone Areas)		15% Historical Life Loss	15% Property Damage –	15% Property Damage –	15% Property Damage –	15% Low	10%	100%	Scaled
HUC12 Unique Property Damage (Flood Prone Areas) Damage (Agency Data) 121004050101 1 0 0 0 0 0 0 0 Damage - Damage - Vulnerability (Critical Buildings) 121004050101 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ms) (Flood-Prone Areas)	Damage		Damage -	2015	Damage –	Low			
1D Damage (Flood- Prone Areas) Data Loss (Bulldings) (Bulldings) (Critical Buildings) (Crossings (Dana Crossings (Dana (Dana Crossings (Dana (Dana Crossings (Dana (Dana (Dana Crossings (Dana (Dana	(Flood-Prone Areas)					Vulnerability	Water	Life Loss	Total	Score (1- 5)
121004050101 1 0 0 0 0 0 2 0 0			Lie Loss	Exposure (Buildings)	Vulnerability (Buildings)	(Critical	Crossings	(Dams)	Score	
		Data) D	D	0	0	Buildings) 0.3	0	0	2	0.42
121004050102 2 0 0 0 0 0 2 0 0 121004050103 3 0 0 0 5 0 2 0 0		0	0	0.75	0	0.3	0	0	2	0.42 1.46
121004050201 4 0 0 0 0 0 0 0 0		0	0	0.73	0	0.3	0	0	0	0.00
121004050202 5 5 0 0 4 0 1 0 0 121004050203 6 1 5 0 5 0 5 0 0		0.375	0	0.6 0.75	0	0.15 0.75	0	0	10 16	1.56 2.71
121004050204 7 3 4 0 5 5 5 1 0		0.373	0	0.75	0.75	0.75	0.15	0	23	4.06
121004050205 8 1 0 0 4 0 1 0 0 121004050301 9 0 0 0 0 0 4 0 0		0	0	0.6	0	0.15	0	0	6 4	1.15 0.83
121004050302 10 1 0 0 0 0 1 0 0	0.075	0	0	0	D	0.15	0	0	2	0.31
121004050303 11 1 0 0 0 0 0 0 0 0 0 1 121004050304 12 0 0 0 0 0 0 4 0 0		0	0	0	0	0.6	0	0	1 4	0.10
121004050305 13 0 0 0 1 0 5 0 0	0 0	0	D	0.15	0	0.75	0	0	6	1.25
121004050306 14 0 0 0 5 0 0 0 0 0 121004050307 15 0 0 0 0 0 0 0 0 0		0	0	0.75	0	0	0	0	5	0.00
121004050308 16 0 0 0 0 0 0 0 0	0 0	0	0	0	0	0	0	0	0	0.00
121004050400 17 0 4 0 5 5 4 0 0 0 121004060101 18 0 0 0 4 0 3 3 0	200	0.3	0	0.75	0.75 0	0.6 0.45	0.45	0	18 10	3.33 2.08
121004060102 19 0 0 0 1 0 0 3 0		0	0	0.15	0	0	0.45	0	4	0.83
121004060103 20 0 4 0 3 0 0 0 0 0 121004060104 21 0 0 0 3 0 4 0 0		0.3	0	0.45 0.45	0	0.6	0	0	7	1.04
121004060105 22 0 1 0 1 0 2 0 0	0 0	0.075	0	0.15	0	0.3	0	0	4	0.73
121004060106 23 0 0 0 2 0 2 0 0 121004060107 24 0 0 0 1 0 3 0 0		0	0	0.3 0.15	0	0.3 0.45	0	0	4	0.83
121004060108		0	0	0.3	0	0.3 0.15	0	0	4	0.83 0.21
121004060201 27 0 0 0 1 0 0 0 0	g g	0	0	0.15	0	0	0	0	1	0.21
121004060202 28 0 0 0 3 0 2 1 0 121004060203 29 0 0 0 1 0 3 0 0		0	0	0.45 0.15	0	0.3	0.15 0	0	6 4	1.25 0.83
121004060204 30 0 0 0 0 0 2 0 0		0	0	0.13	0	0.3	0	0	2	0.42
121004060205 31 0 0 0 1 0 1 0 0 121004060206 32 0 0 0 0 0 1 0 0		0	0	0.15	0	0.15 0.15	0	0	2	0.42
121004060207 33 0 0 0 1 0 4 0 0	0 0	0	D	0.15	0	0.6	0	0	5	1.04
121004060208 34 0 0 0 3 0 2 0 0 121004060209 35 0 0 0 2 0 1 3 0		0	0	0.45	0	0.3	0.45	0	5 6	1.04
121004060301 36 3 0 0 5 0 5 0 0	0.225	0	0	0.75	0	0.75	0	0	13	2.40
121004060302 37 1 0 0 0 0 1 0 0 121004060303 38 1 0 0 5 0 5 3 0		0	0	0.75	0	0.15	0.45	0	2 14	0.31 2.81
121004060304 39 0 0 0 0 0 2 0 0	0 0	0	D	0	0	0.3	0	0	2	0.42
121004060305 40 0 0 0 0 0 1 0 0 121004060306 41 0 0 0 0 0 3 0 0		0	0	0	0	0.15	0	0	3	0.21
121004060307 42 0 0 0 0 0 2 0 0		0	0	0	D	0.3	0	0	2	0.42
121004070101 43 0 4 0 5 5 5 5 0 121004070102 44 0 1 0 5 5 3 4 0		0.3	0	0.75 0.75	0.75 0.75	0.75 0.45	0.75	0	24 18	4.58 3.65
121004070103 45 0 0 0 4 0 5 4 0		0	0	0.6	0	0.75	0.6	0	13	2.71
121004070104 46 0 0 0 3 0 5 0 0 121004070105 47 0 0 0 3 0 3 1 0		0	0	0.45 0.45	0	0.75 0.45	0.15	0	8 7	1.67 1.46
121004070106 48 0 0 0 4 0 3 0 0 121004070201 49 0 0 5 3 0 2 1 0		0	0.75	0.6 0.45	0	0.45	0 0.15	0	7 11	1.46 2.29
121004070202 50 0 0 0 3 0 3 0 0		0	0.75	0.45	0	0.45	0.13	0	6	1.25
121004070203 51 0 0 0 4 0 4 3 0 121004070204 52 0 0 0 0 0 1 0 0		0	0	0.6	0	0.6 0.15	0.45	0	11	2.29 0.21
121004070205 53 0 0 0 4 0 2 0 0	0 0	0	О	0.6	0	0.3	0	0	6	1.25
121004070206 54 0 0 0 0 0 0 2 0 0 121004070301 55 0 0 0 4 0 4 0 0		0	0	0.6	0	0.3	0	0	2	0.42 1.67
121004070302 56 0 0 0 5 5 4 3 0	0 0	0	0	0.75	0.75	0.6	0.45	0	17	3.54
121004070303 57 0 0 0 5 0 5 3 0 121004070304 58 4 0 0 5 5 5 0 0		0	0	0.75	0.75	0.75 0.75	0.45	0	13 19	2.71 3.54
121004070305 59 0 0 0 4 4 4 1 0	0 0	0	0	0.6	0.6	0.6	0.15	0	13	2.71
121004070401 60 0 0 0 0 0 2 0 0 121004070402 61 0 0 0 0 0 4 0 0		0	0	0	0	0.3	0	0	2 4	0.42
121004070403 62 4 5 0 5 5 5 3 0 121004070404 63 0 0 0 3 0 2 0 0	0.3	0.375	0	0.75 0.45	0.75	0.75 0.3	0.45	0	27 5	4.69 1.04
121101010101 64 0 0 0 0 0 4 0 0	0 0	0	0	0.45	0	0.6	0	0	4	0.83
121101010102 65 0 0 0 0 0 0 3 0 121101010103 66 0 0 0 0 0 0 5 0		0	0	0	0	0	0.45	0	3 5	0.63 1.04
121101010104 67 0 0 0 0 0 0 0 0	0 0	0	D	0	0	0	0	0	D	0.00
121101010105 68 0 0 0 3 0 0 5 0 121101010201 69 0 0 0 1 0 2 1 0		0	0	0.45 0.15	0	0.3	0.75	0	8	1.67 0.83
121101010202 70 0 0 0 1 0 1 0 0	0 0	0	0	0.15	0	0.15	0	0	2	0.42
121101010203 71 0 0 0 2 0 3 0 0 121101010204 72 0 0 0 0 0 0 3 0		0	0	0.3	0	0.45 0	0.45	0	5 3	1.04 0.63
121101010205 73 0 0 0 3 0 4 4 0	0 0	0	D	0.45	0	0.6	0.6	0	11	2.29
121101010301 74 0 0 0 0 0 0 3 0 121101010302 75 0 0 0 0 0 0 0 0		0	0	0	0	0	0.45	0	3	0.63
121101010303 76 0 0 0 1 0 0 0 0	0 0	0	0	0.15	0	0	0	0	1	0.21
121101010304 77 0 0 0 4 0 0 5 0 121101010305 78 0 0 0 3 0 0 0 0		0	0	0.6	0	0	0.75	0	9	1.88 0.63
121101010401 79 0 0 0 4 0 4 3 0	0 0	0	D	0.6	0	0.6	0.45	0	11	2.29
121101010402 80 0 0 0 5 5 2 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		0	0	0.75	0.75 0.6	0.3	0.15	0	13 9	2.71 1.88
121101010404 82 0 0 0 4 4 3 3 0	0 0	0	0	0.6	0.6	0.45	0.45	0	14	2.92
121101010405 83 0 0 0 2 3 3 0 0 121101010406 84 0 3 0 4 5 4 1 0		0.225	0	0.3	0.45 0.75	0.45	0.15	0	8 17	1.67 3.23
121101020101 85 0 0 0 0 0 0 0 0 0	0 0	0	0	0	0	0	0	0	0	0.00
121101020102 86 0 0 0 1 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1		0	D	0.15	0	0	0	0	0	0.21

					10								We	ighted Score					
J					s	core				7.5%	7.5%	15%	15%	15%	15%	15%	10%	100%	
		Historical	Historical	Histor	Property	Property	Property	Low		Historical	Historical		Property	Property	Property	Low			Scaled Score (1
HUC12	Unique	Property	Property Damage	-ical	Damage –	Damage –	Damage – Vulnerability	Low Water	Life Loss	Property Damage	Property Damage	Historical	Damage -	Damage –	Damage – Vulnerability	Low Water	Life Loss	Total	5)
	ID	Damage (Flood- Prone Areas)	(Agency	Life Loss	Exposure (Buildings)	Vulnerability (Buildings)	(Critical	Crossings	(Dams)	(Flood-Prone	(Agency	Life Loss	Exposure (Buildings)	Vulnerability (Buildings)	(Critical	Crossings	(Dams)	Score	
121101020104	88	0	Data) 0	0	1	0	Buildings)	0	0	Areas)	Data) 0	D	0.15	0	Buildings) 0	0	0	1	0.21
121101020105	89	0	0	0	0	0	0	0	0	0	0	0	0.15	0	0	0	0	0	0.00
121101020201	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101020202 121101020203	91 92	0	0	0	0	0	0	3	0	0	0	0	0.15	0	0	0.45	0	3	0.21
121101020203	93	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0.45	0	3	0.63
121101020205	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101020206 121101020301	95 96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101020302	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101020303	98	0	0	0	1	0	0	0	0	0	0	0	0.15	0	0	0	0	1	0.21
121101020304	99 100	0	0	0	3 2	0	0	0	0	0	0	0	0.45	0	0	0.15	0	3	0.63
121101020401	101	0	0	0	1	0	0	3	0	0	0	0	0.15	0	0	0.45	0	4	0.83
121101020402	102	0	0	0	3	0	0	0	0	0	0	0	0.45	0	0	0	0	3	0.63
121101020403 121101020404	103 104	0	0	0	1 2	0	0	0	0	0	0	0	0.15	0	0	0.15	0	3	0.21
121101020405	105	0	0	0	2	2	0	0	0	0	0	0	0.3	0.3	0	0	0	4	0.83
121101020406	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101030101 121101030102	107 108	0	0	0	3	3	2	0	0	0	0	0	0.15 0.45	0.15 0.45	0.3 0.15	0	0	7	0.83
121101030103	109	0	0	0	3	3	3	1	0	0	0	0	0.45	0.45	0.45	0.15	0	10	2.08
121101030104 121101030105	110 111	0	0	0	2	3	3	0	0	0	0	0	0.3	0.45 0.45	0.45 0.6	0.45	0	8 13	1.67 2.71
121101030105	111	0	0	0	2	3	3	0	0	0	0	0	0.45	0.45	0.45	0.45	0	8	1.67
121101030202	113	0	0	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0	2	0.42
121101030203 121101030204	114 115	0	0	0	3	3 4	2 5	0	0	0	0	0	0.45	0.45	0.3 0.75	0.15	0	8 13	1.67 2.71
121101030204	116	0	0	0	5	5	3	4	0	0	0	0	0.45	0.75	0.45	0.6	0	17	3.54
121101030206	117	0	0	0	2	2	0	0	0	0	0	0	0.3	0.3	0	0	0	4	0.83
121101030207 121101030301	118 119	0	0	0	5 1	5	1	3	5	0	0	0	0.75 0.15	0.75 0.15	0.15	0.45	0.5	19	3.61 0.83
121101030301	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101030303	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101030304 121101030305	122 123	0	0	0	4	1	4	0	1	0	0	0	0.6 0.15	0.6 0.15	0.6 0.15	0	0.1	13	2.64 0.76
121101030306	124	0	0	0	1	1	2	0	0	0	0	0	0.15	0.15	0.3	0	0	4	0.83
121101030401	125	0	0	0	1	1	4	0	0	0	0	0	0.15	0.15	0.6	0	.0	6	1.25
121101030402 121101030403	126 127	0	0	0	0	0	3 1	0	0	0	0	0	0 0.15	0 0.15	0.45 0.15	0	0	3	0.63
121101030404	128	0	0	0	1	1	0	1	0	0	0	0	0.15	0.15	0	0.15	0	3	0.63
121101030405	129	0	0	0	3	3	1	0	0	0	0	0	0.45	0.45	0.15	0	0	7	1.46
121101030501 121101030502	130 131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101030503	132	0	0	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0	2	0.42
121101030504 121101030505	133 134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15	0	0	0.00
121101030505	135	0	0	0	0	0	2	0	0	0	0	0	0	0	0.3	0.13	0	2	0.42
121101030507	136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101030601 121101030602	137 138	0	0	0	0	0	3	0	0	0	0	0	0	0	0.45	0	0	3	0.63
121101030603	139	0	0	0	0	0	3	0	0	0	0	0	0	0	0.45	0	0	3	0.63
121101030604	140	0	0	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0	2	0.42
121101030605 121101030606	141 142	0	0	0	0	0	0	0	0	0	0	0	0.15	0.15	0	0	0	2	0.42
121101030701	143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101030702	144	0	0	0	0	0	3	0	0	0	0	0	0	0	0.45 0	0	0	3	0.63
121101030703 121101030704	145 146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101030705	147	1	0	0	3	4	4	0	0	0.075	0	0	0.45	0.6	0.6	0	0	12	2.40
121101040101 121101040102	148 149	0	0	0	1 0	0	3	0	0	0	0	0	0.15	0	0.45 0.15	0	0	4	0.83
121101040102	150	0	0	0	0	0	3	1	0	0	0	0	0	0	0.45	0.15	0	4	0.21
121101040104	151	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.15	0	1	0.21
121101040105 121101040106	152 153	0	0	0	2	0	2 0	0	0	0	0	0	0.3	0	0.3	0.15	0	5	1.04
121101040107	154	0	0	0	1	1	0	0	0	0	0	0	0.15	0.15	0	0	0	2	0.42
121101040108	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101040201 121101040202	156 157	0	0	0	2	2	0	0	0	0	0	0	0.3	0.3	0	0	0	4	0.83
121101040203	158	0	0	0	1	1	0	0	0	0	0	0	0.15	0.15	0	0	0	2	0.42
121101040204	159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101040205 121101040301	160 161	0	0	0	0	0	0	0	0	0	0.075	0	0	0	0	0	0	0	0.00
121101040301	162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101040303	163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101040304 121101040305	164 165	0	0	0	0	0	0 4	0	0	0	0	0	0	0	0.6	0	0	0	0.00
121101040305	166	0	0	0	2	2	0	1	0	0	0	0	0.3	0.3	0.6	0.15	0	5	1.04
121101040307	167	0	0	0	2	3	4	0	0	0	0	0	0.3	0.45	0.6	0	0	9	1.88
121101040308 121101040309	168 169	0	0	0	0	0	1 2	0	0	0	0	0	0	0	0.15	0.15	0	1	0.21
121101040309	170	0	0	0	2	3	0	1	0	0	0	0	0.3	0.45	0.3	0.15	0	6	1.25
121101040401	171	0	0	0	0	0	4	0	0	0	0	0	0	0	0.6	0	0	4	0.83
121101040402 121101040403	172 173	0	0	0	2	2	5 1	0	0	0	0	0	0.3	0.3	0.75 0.15	0.15	0	10	2.08 0.21
	174	0	0	0	1	1	0	0	0	0	0	0	0.15	0.15	0.15	0	0	2	0.42

The column The										-				Mei	ghted Score					
Part							core				7.5%	7.5%	15%			15%	15%	10%	100%	
March			Historical	A STATE OF THE PARTY OF THE PAR	Histor	Property	Property		No.			The second second		Property	Property					Scaled
	unera	Unique					400			Life Loss		100000000000000000000000000000000000000	Historical			And the second second		Life Loss	Total	
Column	110012	ID					The second secon			(Dams)			Life Loss					(Dams)	Score	-1
1989 1989				Data}		Contract of the					Areas)			(Buildings)	Account to the second	Buildings)				
1985 1985	THE RESERVE OF THE PARTY OF THE	-												1970						
STEATH COLOR STEA											247	100				1				0.21
SEMENDAME SEME											17.	170	300			1				0.00
											1070						4			
STEAT COLUMN STEA							191									1 - 2				
		183		0		0	0	0		0		0	0		0					0.00
		-									1070	-								0.63
	ALL DESCRIPTION OF THE PARTY OF										- 27									
											1080	2.70	- 0-					0.000		0.00
												1500	100	100		100	1	the state of the s		0.00
											200	100	361							
	The second secon	-					-			_		224				1	-			
											507	200		12						2.29
STATISTICATION STAT												- 22	35.	12			100			0.21
241200000000000000000000000000000000000												2.734	- 6							
13131300000 137																				0.00
	121101050206	197	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
		-									1000									0.42
1210151525203 222											2042	75		1.7		100	100			
																				0.42
	121101050304	202	0		0				0	0							100	0		0.42
			A CONTRACTOR OF THE PARTY OF TH								374						200			
	The second secon	2000									100	-				17		_		
											177			1.5						0.00
		100000	1	7								7	7	170						0.63
2											DOM:	199			1000	100				
												179								1.04
1212110100000 234 0	The second secon	-		0				3		0		0				1000000			5	1.04
11015 2505 246	and the second second second second										1070	100	-	-	1.5		70	1070		0.42
																	-			The state of the state of
											and the same of th	1.970	1/2		390		- 65			0.00
11111059601 219			0			0					1037	190					- 0			0.21
1910 1900 120											241		A SA							2.50
											10.27	200	-				-	1037		
12101059799													- 7	179						1.46
							- 49							17						0.63
11101050903 224	The state of the s																100			
111010509076 225											100		37.	12		N. St.				
	121101050704	225	0	0	0		0	0	0	0		0	100	12		0	0			0.00
1211101505707 228											1187		- 6							0.00
121101050708 229	AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	-	-	7							3/4	7		18		1 7				
121101050709											0.80	190				100	-	Dige		0.63
121101050802 232				0			0		0			726		- 2				1000	0	0.00
121101050808 233							0	3			371	756	300	129	100		200	327	3	0.63
1211101508000 224																				0.00
1211101509006 236 0	121101050804	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101050909 237											24									0.00
121101050808 238																				
121101050902 240 0																				0.00
\$\frac{121101050902}{121101050903} 241 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 &	121101050809	239	0	0	0				0									0		0.00
\$\frac{121101050903}{2442} & \begin{array}{cccccccccccccccccccccccccccccccccccc	THE PROPERTY OF THE PARTY OF TH	_																		0.00
121101050904 243			The second secon								24		-			1				0.42
\$\frac{121101050906}{121101050907} \frac{246}{246} \text{0} 0																				0.21
121101050907 246											10.87	190	-	17/2			- 0			0.00
421101051001 247 1																				0.00
121101051002 248														100						2.40
121101051004 250 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	121101051002	248	0	0	0	1	1	0	0	0	0	0	0	0.15	0.15	0	0	0	2	0.42
\$\frac{121101051005}{251} = \frac{1}{0} = \frac{0}{0} =														100						0.00
121101051006 252 1 0 0 0 1 0 1 0 1 0 0 0 0.075 0 0 0 0.15 0 0.15 0 0 3 0.52 121101051007 253 0 0 0 0 1 0 0 4 0 0 0 0 0 0 0 0 0.15 0 0 0.6 0 0 5 1.04 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	The state of the s																			
121101051007 253 0 0 0 1 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0																				0.52
121101051009 255 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	121101051007	253	0	0	0	1	0		0	0	0	0	0	0.15	0	0.6	0	0	5	1.04
121101051101 256 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																				0.00
121101051102 257 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0													- 7	120			_	_		
121101051103 258 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																				0.21
121101051105 260 0 2 0 1 0 0 3 0 0 0.15 0 0.15 0 0 0.45 0 6 1.04	121101051103	258	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
														100						0.00
																				0.83

HUCL2	5% 15% perty age – Low	10%	100%	
HUC12 Unique Property Damage (Hond) Damage (Hond) Property Damage (Hond) Dama				Principal in the
HUC12 December Dec			- Accessor	Scaled Score (1-
	rability Water			5)
121101051201 262	tical Crossing	lgs /		
121101051203 268	0 0	D	0	0.00
	0 0	0	2	0.42
121101051205 266	0 0	0	0	0.00
121101060101 268	0 0	0	0	0.00
121101060102 269	45 0 0 0	0	6	1.15 0.00
121101060104 271	0 0.15		3	0.63
121101060105 272 0	0 0.6	0	7	1.46
121101060107 274	0 0.15 15 0.15		1 5	0.21 1.04
121101060201 275 3	15 0	0	1	0.21
121101060202 276	15 0.45 45 0.75		8 16	1.67 3.02
121101060204 278 0	.6 0.45		10	2.08
121101060205 279 1	0 0.6	_	10 15	2.08
121101060301 281 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0	0 0.45		10	3.13 1.98
121101060302 282 0	0 0.15		9	1.88
121101060303 283 0 0 0 4 4 4 0 0 0 0 0 0 0 0 0 0 0.6 0.6 0.6 121101060304 284 0 0 0 0 3 3 3 0 0 0 0 0 0 0 0 0 0 0.45 0.45 121101060301 286 0 0 0 0 3 3 3 1 1 1 0 0 0 0 0 0 0 0.45 0.45 121101060301 286 0 0 0 0 3 3 3 5 0 0 0 0 0 0 0 0 0 0 0.45 0.45 16 121101060401 286 0 0 0 0 2 2 2 4 1 0 0 0 0 0 0 0 0 0.3 0.45 16 121101060402 287 0 0 0 0 2 2 2 4 1 0 0 0 0 0 0 0 0 0 0 0.3 0.3 121101060402 289 0 0 0 0 0 2 3 3 0 0 0 0 0 0 0 0 0 0 0 0	15 0 .3 0	0	10	0.21 2.08
121101060305 285 0 0 0 0 3 3 1 1 0 0 0 0 0 0.45	0 0	0	8	1.67
121101060401 286 0 0 0 0 3 3 5 0 0 0 0 0 0 0 0.45 0.45 0 0 0 121101060402 287 0 0 0 0 2 2 2 4 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 15 0.15	0	6 8	1.25 1.67
121101060403 288 0 0 0 0 2 3 3 3 0 0 0 0 0 0 0.3 0.45 0 1 1 1 1 3 1 0 0 0 0 0 0 0 0.15 0.15 0 1 1 1 1 3 1 0 0 0 0 0 0 0 0 0 0 0 0 0	75 0.13	0	11	2.29
121101060404 289 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	.6 0.15 45 0	0	9	1.88
121101060405 290 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 0 45 0	0	3	1.67 0.63
121101060502 292 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0	0	0.00
121101060503 293 0 0 0 1 1 3 0 0 0 0 0 0.15 0.15 1 1 1 1 1 2 1 0 0 0 0 0 0 0.15 0.15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0.45	0	7	1.46 0.00
	45 0	0	5	1.04
	45 0.15 0.3 0	0	6	1.25 0.42
121101060601 296 0 0 0 2 0 0 3 1 0 0 0 0.3 0	0.45	0.1	6	1.18
121101060602 297 0 0 0 3 0 0 5 0 0 0 0 0.45 0 121101060603 298 0 1 0 4 0 1 5 0 0 0.075 0 0.6 0	0 0.75		8 11	1.67 2.19
	45 0.45		8	1.67
	45 0.75		13	2.71
121101060606 301 0 0 0 3 0 0 0 0 0 0 0 0 0.45 0 121101060701 302 0 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0	3	0.63
	15 0.45		5	1.04
	.3 0.45 .6 0.15		9	1.88
121101060705 306 0 0 0 1 0 4 1 0 0 0 0 0.15 0	.6 0.15	0	6	1.25
	15 0.15 1.6 0	0	7	1.46 0.83
	15 0.15		4	0.83
	15 0 .3 0	0	3 6	0.63 1.25
	.3 0.15		3	0.63
	45 0.75		17	3.54
	75 0 .6 0.45	0	16 17	3.23 3.54
121101060904 316 0 0 0 4 4 4 0 0 0 0 0 0 0.6 0.6	1.6 0	0	12	2.50
121101060905 317 0 0 0 3 3 0 0 0 0 0 0 0.45 0.45 121101060906 318 0 0 0 1 1 5 0 0 0 0 0 0.15 0.15	0 0 75 0	0	6 7	1.25
121101061001 319 0 0 0 4 4 1 0 0 0 0 0 0 0.6 0.6	15 0	0	9	1.88
	.3 0 75 0	0	2 5	0.42 1.04
121101061004 322 0 0 0 2 2 4 0 0 0 0 0 0.3 0.3	1.6 0	0	8	1.67
	15 0 15 0	0	1	0.21
121101061101 325 0 0 0 0 0 1 3 0 0 0 0 0 0	15 0.45	_	4	0.83
	0.15		5	1.04
	.6 0 15 0	0	6	1.25 0.63
121101061105 329 0 0 0 0 0 0 3 5 0 0 0 0 0	0 0.45	0.5	8	1.32
121101061106 330 0 0 0 0 0 0 0 4 1 0 0 0 0 0 0 1 1 1 1	0 0.6 75 0.45	2000	5 21	0.97 3.85
121101061202 332 0 0 0 0 0 3 1 0 0 0 0 0 0	45 0.15	0	4	0.83
	45 0.15 1.3 0.45	_	20	0.83 3.65
	1.6 0.45		9	1.88
121101070101 336 0 0 0 4 0 4 1 0 0 0 0 0.6 0	0.6		13	2.64
121101070102 337 0 0 0 2 0 3 4 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1	45 0.6 0 0	0	9	1.88
121101070104 339 0 5 0 3 0 0 3 0 0 0.45 0	0 0.45		11	1.77
121101070105 340 0 1 0 4 0 0 4 0 0 0.075 0 0.6 0 121101070106 341 0 0 0 4 0 0 5 0 0 0 0 0.6 0	0 0.6		9	1.77
121101070107 342 0 0 0 3 0 0 5 0 0 0 0 0.45 0	0 0.75	0	8	1.67
121101070108 343 0 0 0 4 0 2 5 0 0 0 0 0.6 0 121101070109 344 0 2 0 4 0 0 5 0 0 0.15 0 0.6 0	0.75		11 11	2.29
121101070201 345 0 0 0 5 0 3 5 0 0 0 0 0.75 0	45 0.75	0	13	2.71
	75 0.75 75 0.45		14 16	2.92 3.33
	75 0.45		14	2.92

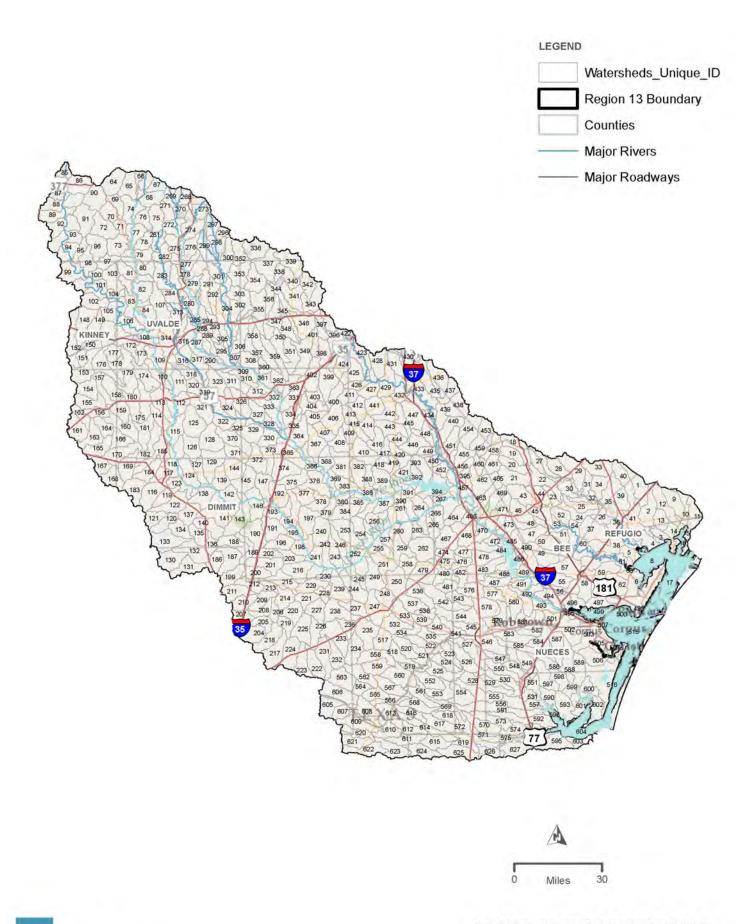
	- 1				Ś	core						I 4-01		ighted Score	4-01	I	T		
		Historical	Historical	Histor	Property	Property	Property			7.5% Historical	7.5% Historical	15%	15% Property	15% Property	15% Property	15%	10%	100%	Scaled
HUC12	Unique ID	Property Damage (Flood-	Property Damage	-ical Life	Damage – Exposure	Damage – Vulnerability	Damage – Vulnerability	Low Water	Life Loss (Dams)	Property Damage	Property Damage	Historical Life Loss	Damage – Exposure	Damage – Vulnerability	Damage – Vulnerability	Low Water	Life Loss (Dams)	Total Score	Score (1 5)
		Prone Areas)	(Agency Data)	Loss	(Buildings)	(Buildings)	(Critical Buildings)	Crossings		(Flood-Prone Areas)	(Agency Data)		(Buildings)	(Buildings)	(Critical Buildings)	Crossings			
121101070205 121101070206	349 350	0	0	0	3 4	0	5 0	3 5	1	0	0	0	0.45	0.45	0.75 0	0.45	0.1	15 9	3.06 1.88
121101070207	351	4	0	0	3	0	3	4	0	0.3	0	0	0.45	0	0.45	0.6	0	14	2,50
121101070301 121101070302	352 353	0	3	0	2	0	0	4	0	0	0.225	0	0.3	0	0.15	0.15	0	9	0.83 1.56
121101070303	354	0	0	0	1	0	0	1	0	0	0	0	0.15	0	0	0.15	0	2	0.42
121101070304 121101070305	355 356	0	0	0	5 4	0	2	5	0	0	0	0	0.75	0	0.3	0.75	0	12 13	2,50
121101070401	357	0	0	0	1	0	2	4	0	0	0	0	0.15	0	0.3	0.6	0	7	1.46
121101070402 121101070403	358 359	0	0	0	1	0	2 1	3	0	0.075	0	0	0.15 0.15	0	0.3 0.15	0.45	0	6	1.25 0.73
121101070404	360	0	0	0	0	0	1	0	0	0	0	0	0	0	0.15	0	0	1	0.21
121101070405 121101070406	361 362	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.15	0	0	0.00
121101070407	363	0	0	0	0	0	1 4	0	0	0	0	0	0	0	0.15	0	0	1	0.21
121101080101 121101080102	364 365	0	0	0	4	4	5	3	0	0.075	0	0	0.6	0.6	0.6	0.45	0	17	0.83
121101080103 121101080104	366	0	0	0	0	0	4	0	0	0	0	0	0	0	0.6	0	0	4 4	0.83
121101080104	367 368	0	0	0	0	0	3	0	0	0	0	0	0	0	0.45	0	0	3	0.63
121101080106 121101080201	369 370	0	0	0	0	0	0	0	0	0	0	0	0.15	0.15	0.15	0	0	0	0.00
121101080202	371	0	0	0	0	0	2	0	0	0	0	0	0	0.15	0.3	0	0	2	0.63
121101080203 121101080204	372 373	0	0	0	0	0	3 5	0	0	0	0	0	0	0	0.45 0.75	0.15	0	3 6	0.63 1.25
121101080205	374	0	0	0	0	0	4	1	0	0	0	0	0	0	0.6	0.15	0	5	1.04
121101080301 121101080302	375 376	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101080303	377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101080304 121101080305	378 379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101080401	380	0	0	0	1	1	0	0	0	0	0	0	0.15	0.15	0	0	0	2	0.42
121101080402 121101080403	381 382	0	0	0	0	0	4	0	0	0	0	0	0.45	0	0.6 0.15	0	0	4	0.83
121101080404	383	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0	0	0	2	0.42
121101080405 121101080406	384 385	0	0	0	0	0	5	0	0	0	0	0	0	0	0.75 0.15	0	0	5	1,04
121101080407	386	0	0	0	0	0	3	O	0	0	0	0	0	0	0.45	0	0	3	0.63
121101080408 121101080409	387 388	0	0	0	4	0	3	0	0	D.	0	0	0.6	0	0.45	0	0	6	0.83
121101080410	389	0	0	0	3	0	4	0	0	0	0	0	0.45	0	0.6	0	0	7	1.46
121101080501 121101080502	390 391	3	0	0	4	0	1 4	0	0	0.225	0	0	0.6	0	0.15 0.6	0	0	8	1.35
121101080503	392	0	0	0	0	0	4	0	0	0	0	0	0	0	0.6	0	0	4	0.83
121101080504 121101080505	393 394	0	3	0	0	0	<i>4</i> 5	0	0	0	0.225	0	0.45	0	0.6 0.75	0	0	7	1.15 1.67
121101080506	395	4	3	0	4	0	5	0	4	0.3	0.225	0	0.6	0	0.75	0	0.4	20	3.16
121101090101 121101090102	396 397	0	0	0	5 4	0	5 4	5	0	0	0	0	0.75 0.6	0	0.75 0.6	0.75	0	15 13	3.13 2.71
121101090103	398	0	0	0	5	0	5	4	0	0	0	0	0.75	0	0.75	0.6	0	14	2.92
121101090104 121101090105	399 400	3	0	0	0	0	5 3	0	0	0.225	0	0	0.15	0.15	0.75 0.45	0	0	8 5	1,35
121101090201	401	0	0	0	4	0	4	4	0	0	0	0	0.6	0	0.6	0.6	0	12	2,50
121101090202 121101090203	402	0	0	0	3	0	5 5	0	0	0.075	0	0	0.45	0.45	0.75 0.75	0.15	0	13 5	2.60 1.04
121101090204	404	1	0	0	2	2	5	0	0	0.075	0	0	0.3	0.3	0.75	0	0	10	1.98
121101090205 121101090301	405 406	0	0	0	0	0	2 5	0	0	0	0	0	0.15	0.15 0	0.3 0.75	0	0	4 5	0.83 1.04
121101090302 121101090303	407 408	0	0	0	0	0	2 4	0	0	0	0	0	0	0	0.3	0	0	2	0.42
121101090303	409	0	0	0	2	0	3	0	0	0	0	0	0.3	0	0.45	0	0	5	1.04
121101090305 121101090401	410 411	0	0	0	3	0	4	1	0	0	0	0	0.45	0	0.6	0.15 0.15	0	8	1.67
121101090402	412	0	0	0	3	0	4	0	0	0	0	0	0.45	0	0.6	0	O	7	1.46
121101090403 121101090404	413 414	0	0	0	3 2	1 0	4 0	0	0	0	0	0	0.45	0.15	0.6	0	0	8	1.67 0.42
121101090405	415	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0	0	0	2	0.42
121101090406 121101090501	416 417	0	0	0	0	0	5 2	0	0	0	0	0	0	0	0.75	0	0	5	1.04 0.42
121101090502	418	0	0	0	1	0	1	0	0	0	0	0	0.15	0	0.15	0	0	2	0.42
121101090503 121101090504	419 420	0	0	0	0	0	4 5	3	0	0	0	0	0.15	0.15	0.6 0.75	0.45	0.1	4 11	0.83
121101090505	421	0	0	0	2	0	2	0	0	0	0	0	0.3	0	0.3	0	0	4	0.83
121101100101	422 423	0	0	0	5	5 4	4	5	5	0	0	0	0.75	0.75	0.6 0.15	0.75	0.5	24 10	4.65 2.08
121101100103	424	0	0	0	4	2	0	0	0	0	0	0	0.6	0.3	0	0	0	6	1.25
121101100104 121101100105	425 426	0	0	0	4	0	2 5	0	0	0	0.075	0	0.6	0.6	0.3	0	0	11	2.19 1.67
121101100201	427	0	0	0	3	3	4	0	0	0	0	0	0.45	0.45	0.6	0	0	10	2.08
121101100202 121101100203	428 429	0	0	0	5	4 5	5 5	0	0	0	0	0	0.75	0.6 0.75	0.75 0.75	0.15	0	14 16	2.92 3.33
121101100204	430	0	0	0	5	5	3	3	1	0	0	0	0.75	0.75	0.45	0.45	0.1	17	3.47
121101100205 121101100206	431 432	0	0	0	5 5	3	3 5	0	0	0	0	0	0.75	0.45 0.45	0.45 0.75	0.6	0.1	11 18	2.29 3.68
121101100301	433	1	0	0	4	0	5	0	1	0.075	0	0	0.6	D	0.75	0	0.1	11	2.12
121101100302 121101100303	434 435	0	0	0	3 4	0	5 1	0	0	0	0	0	0.45	0	0.75 0.15	0	0	8 5	1.67

					ć	icore								ighted Score					
			Historical	200			Property			7.5% Historical	7.5% Historical	15%	15%	15%	15% Property	15%	10%	100%	Scaled
HUC12	Unique	Historical Property	Property Damage	Histor -ical	Property Damage –	Property Damage –	Damage – Vulnerability	Low Water	Life Loss	Property Damage	Property	Historical	Property Damage –	Property Damage –	Damage – Vulnerability	Low Water	Life Loss	Total	Score (1 5)
110012	ID	Damage (Flood- Prone Areas)	(Agency	Life Loss	Exposure (Buildings)	Vulnerability (Buildings)	(Critical	Crossings	(Dams)	(Flood-Prone	Damage (Agency	Life Loss	Exposure (Buildings)	Vulnerability (Buildings)	(Critical	Crossings	(Dams)	Score	-4
121101100304	436	1	Data) 0	0	3	0	Buildings)	4	0	Areas) 0.075	Data) 0	0	0.45	0	Buildings) 0.45	0.6	0	11	2.19
121101100305 121101100306	437 438	3	0	0	2	0	5	1	0	0.225	0	0	0.3	0	0.75 0.75	0.15	0	11 7	1.98 1.46
121101100307	439	0	0	0	3	0	5	0	0	0	0	0	0.45	0	0.75	0	0	8	1.67
121101100308 121101100401	440 441	0	0	0	2	0	5	3	0	0	0.15	0	0.6	0	0.75	0.45	0	14 7	2.71 1.46
121101100402	442	0	0	0	4	4	5	1	0	0	0	0	0.6	0.6	0.75	0.15	0	14	2.92
121101100403 121101100404	444	0	0	0	4	4	3	0	1	0	0	0	0.6	0.6 0.15	0.45	0.15	0.1	13 3	2.64 0.63
121101100405	445	0	0	0	3	4	0	0	0	0	0	0	0.45	0.6	0	0	0	7	1.46
121101100406 121101100407	446 447	0	0	0	3	3	5	0	0	0	0	0	0.15	0.15 0.45	0.75	0	0	7 6	1.46 1.25
121101100408	448	0	0	0	1	1	5	0	0	0	0	0	0.15	0.15	0.75	0	0	7	1.46
121101100409 121101100501	449 450	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	0	0	0	0	0.83
121101100502	451	0	1	0	0	0	4	4	0	0	0.075	0	0	0	0.6	0.6	0	9	1.77
121101100503 121101100504	452 453	0	0	0	2	0	5	0	0	0	0	0	0.3	0.15	0.45 0.75	0.15	0	6 7	1.25
121101100505	454	0	0	0	2	0	5	3	0	0	0	0	0.3	0	0.75	0.45	0	10	2.08
121101100506 121101100507	455 456	0	0	0	2	0	2	0	0	0	0	0	0.3	0	0.3	0.15	0	5 3	1.04 0.63
1211011110101	457	1	0	0	3	0	2	0	0	0.075	.0	0	0.45	0	0.3	0	0	6	1.15
121101110102 121101110103	458 459	0	0	0	1	0	3	0	0	0	0	0	0.15 0.15	0	0.45	0.45	0	7 5	1.46
121101110104	460	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101110105 121101110106	461 462	0	0	0	3	0	2	3 0	0	0	0.075	0	0.45	0	0.3	0.45	0	5 6	1.04
121101110201	463	0	0	0	0	0	0	0	0	0	0	0	.0	0	0	0	0	0	0.00
121101110202 121101110203	464 465	0	0	0	2	0	3 2	0	0	0	0	0	0.45	0	0.45 0.3	0	0	6 4	1.25 0.83
121101110204 121101110205	466 467	1	2	0	4	0	4	0	0	0.075	0.15	0	0.6 0	0	0.6 0	0	0	11	1.98
121101110205	468	0	0	0	2	0	2	0	0	0.075	.0	0	0.3	0	0.3	0	0	5	0.00
121101110301 121101110302	469 470	1 0	0 2	0	3 4	0	2	0	0	0.075 0	0.15	0	0.45	0	0.3	0	0	6 8	1.15
121101110302	470	0	0	0	3	0	3	0	0	0	.0	0	0.45	0	0.45	0	0	6	1.46
121101110304 121101110305	472 473	0	1	0	5 4	0	0	0	0	0	0.075 0	0	0.75 0.6	0	0	0	0	6 4	1.15 0.83
121101110303	474	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0	0	0	2	0.42
121101110402 121101110403	475 476	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101110403	477	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121101110405 121101110501	478 479	0	0	0	0	0	3	0	0	0	0	0	0.15	0	0.45	0	0	3 1	0.63
121101110501	480	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.15	0	1	0.21
121101110503 121101110504	481 482	0	0	0	0	0	0	0	0	0	0	0	0.15	0	0	0	0	0	0.00
121101110505	483	0	0	0	4	0	2	0	0	0	0	0	0.6	0	.0.3	0	0	6	1.25
121101110601 121101110602	484 485	0	0	0	0 5	0	0	1 0	0	0	0	0	0.75	0	0.15	0.15	0	2 5	1.04
121101110603	486	0	0	0	5	4	4	0	0	0	0	0	0.75	0.6	0.6	0	0	13	2.71
121101110604 121101110605	487 488	0	0	0	4 5	0	2	0	0	0	0	0	0.6	0	0.3	0	0	6	1.25
121101110701	489	0	0	0	5	4	0	0	0	0	.0	0	0.75	0.6	0	0	0	9	1.88
121101110702 121101110703	490 491	0	5 0	0	4	0	5 1	1	1	0	0.375 0	0	0.6	0.6 0	0.75 0.15	0.15 0	0.1	20 4	3.58 0.83
121101110704	492	0	5	0	4	0	0	0	0	0	0.375	0	0.6	0	0	0	0	9	1.35
121101110705 121101110706	493 494	0	4 5	0	5	0	2 5	0	0	0.075	0.3 0.375	0	0.75	0	0.3 0.75	0.15	0	12 14	1.98 2.40
121101110707	495	4	1	0	5	4	5	0	0	0.3	0.075	0	0.75	0.6	0.75	0	0	19	3.44
121102010001 121102010002	496 497	1	0	0	5	0	5	0	0	0.075 0.075	0.3	0	0.6	0.6	0.6 0.75	0	0	13 15	2.60
121102010003	498	5	4	0	5	0	5	0	1	0.375	0.3	0	0.75	0	0.75	0	0.1	20	3.16
121102010004 121102010005	499 500	0	0	0	3	5	5	0	0	0	0	0	0.6 0.45	0.75	0.75	0	0	14 3	2.92 0.63
121102020101 121102020102	501	0	0	0	5	5	5	3	0	0	.0	0	0.75	0.75 0.75	0.75	0.45	0	18	3.75
121102020102	502 503	4	5	0	5 5	5	5 5	0	0	0.3	0.375	0	0.75 0.75	0.75	0.75 0.75	0	0	15 24	3.13 4.06
121102020104 121102020105	504 505	0 5	0	0	0 5	0 5	0 5	0	0	0 0,375	0 0.225	0 0.75	0 0.75	0.75	0 0.75	0	0	0 28	0.00 5.00
121102020105	506	0	0	0	5	0	3	3	0	0.375	0	0	0.75	0.75	0.75	0.45	0	11	2.29
121102020106 121102020106	507 508	5 5	4	0	5	5 5	5 5	0	0	0.375 0.375	0.3	0	0.75 0.75	0.75	0.75 0.75	0	0	24 24	4.06 4.06
121102020106	509	5	4	0	5	5	5	0	0	0.375	0.3	0	0.75	0.75	0.75	0	0	24	4.06
121102020107 121102020200	510 511	5 0	4 0	0	5	5	5 0	0	0	0.375 0	0.3	0	0.75 0	0.75 0	0.75	0	0	24	4.06 0.00
121102030100	512	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102040101 121102040102	513 514	0 5	0	0	0 5	0 5	0 5	0	0	0.375	0.3	0	0.75	0 0.75	0.75	0	0	24	0.00
121102040103	515	0	3	0	5	4	5	0	0	0	0.225	0	0.75	0.6	0.75	0	0	17	3.23
121102040104 121102040105	516 517	5	5	0	5	0	4 0	0	0	0.375 0	0.375	0	0.75 0	0	0.6 0	0	0	19 0	2.92
121102040106	518	0	0	0	4	4	2	0	0	0	0	0	0.6	0.6	0.3	0	0	10	2.08
121102040107 121102040108	519 520	0	0	0	3	0	0	0	0	0	0	0	0.45	0.45	0	0	0	6	1.25 0.00
121102040109	521	0	0	0	2	2	0	0	0	0	0	0	0.3	0.3	0	0	0	4	0.83
121102040201	522	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00

					ç	core							We	ighted Score					
		700 2-2-0	Historical				Property			7.5% Historical	7.5% Historical	15%	15%	15%	15% Property	15%	10%	100%	Scaled
	Unique	Historical Property	Property	Histor -ical	Property Damage –	Property Damage –	Damage –	Low	Life Loss	Property	Property	Historical	Property Damage –	Property Damage –	Damage –	Low	Life Loss	Total	Score (1
HUC12	ID	Damage (Flood-	Damage (Agency	Life	Exposure	Vulnerability	Vulnerability (Critical	Water Crossings	(Dams)	Damage (Flood-Prone	Damage (Agency	Life Loss	Exposure	Vulnerability	Vulnerability (Critical	Water Crossings	(Dams)	Score	5)
		Prone Areas)	Data}	Loss	(Buildings)	(Buildings)	Buildings)			Areas)	Data)		(Buildings)	(Buildings)	Buildings)				
121102040202	523 524	0	0	0	3 2	3 2	0	0	0	0	0	0	0.45	0.45	0	0	0	6	1.25 0.83
121102040204	525	D	0	0	2	2	0	1	D	0	0	0	0.3	0.3	0	0.15	0	5	1.04
121102040205 121102040206	526 527	0	0	0	1 4	1	5	0	0	0	0	0	0.15	0.15	0.15 0.75	0.45	0	3 16	0.63
121102040301	528	0	0	0	2	0	4	0	0	0	0	0	0.3	0.0	0.6	0.43	0	6	1.25
121102040302	529	0	0	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0	2	0.42
121102040303 121102040304	530 531	0	3	0	5	3	2	1	0	0.075	0.225	0	0.75 0.75	0.45	0.3	0.15	0	14	2.60
121102040305	532	Ď	0	0	0	0	2	0	1	0	0	0	0	0	0.3	0	0.1	3	0.56
121102040306 121102040307	533 534	0	0	0	0	0	4	0	0	0	0	0	0.15	0.15	0.6 0.15	0	0	6	1.25 0.21
121102040308	535	0	0	0	1	1	2	0	0	0	0	0	0.15	0.15	0.3	0	0	4	0.83
121102040309 121102040310	536 537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102040310	538	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102040402	539	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102040403	540 541	0 4	0	0	3 5	3 5	4	0	0	0.3	0	0	0.45	0.45	0.45	0	0	18	1.88
121102040405	542	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0	0	0	2	0.42
121102040406 121102040407	543 544	0	0	0	2	0	0	0	0	0	0	0	0.3	0	0 0.45	0	0	2	0.42
121102040408	545	0	1	0	5	5	5	4	0	0	0.075	0	0.75	0.75	0.75	0.6	0	20	4.06
121102040409 121102040410	546 547	0	0	0	5 1	5 1	5 2	3 D	0	0	0.15 0	0	0.75 0.15	0.75 0.15	0.75	0.45	0	20 4	3.96 0.83
121102040410	548	0	3	0	4	4	4	0	0	0	0.225	0	0.15	0.15	0.6	0	0	15	2.81
121102050102	549	1	0	0	5	5	4	0	0	0.075	0	0	0.75	0.75	0.6	0	0	15	3.02
121102050103 121102050104	550 551	0	0	0	5 2	5	5	5 1	0	0	0.15 0	0	0.75	0.75	0.75	0.75	0	22 8	4.38 1.67
121102050105	552	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050106 121102050201	553 554	0	0	0	2	0	0	0	0	0.075	0	0	0.3	0.3	0.15	0	0	4	0.83
121102050201	555	0	0	0	0	0	3	0	0	0.073	0	0	0	0	0.45	0	0	3	0.63
121102050203 121102050204	556	0	0	0	5	0	4	0	0	0	0.3	0	0.75	0	0.6 0.15	0.15	0	8	1.25 1.46
121102050204	557 558	0	0	0	0	0	0	0	0	0	0	0	0.73	0	0.13	0.13	0	Ó	0.00
121102050302	559	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050303 121102050304	560 561	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050305	562	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050306 121102050307	563 564	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050401	565	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050402 121102050403	566 567	0	0	0	4	4	0	0	0	0	0	0	0.6	0.6 0.15	0	0	0	8 2	1.67 0.42
121102050404	568	0	2	0	1	1	0	0	0	0	0.15	0	0.15	0.15	0	0	0	4	0.63
121102050405	569	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050406 121102050407	570 571	0	0	0	2	2	3	0	0	0	0	0	0.3	0.3	0.6 0.45	0	0	6 7	1.25
121102050501	572	0	4	0	4	4	3	0	0	0	0.3	0	0.6	0.6	0.45	0	0	15	2.71
121102050502 121102050503	573 574	0	0	0	4	0	3	0	0	0	0.075	0	0.6	0	0.45	0	0	8	1.56 0.00
121102050504	575	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	D	0.00
121102050505 121102050506	576 577	0	0	0	1 3	0	0	0	0	0	0	0	0.15	0	0.45	0.15	0	2	1.25
121102050601	578	0	5	0	4	3	4	0	0	0	0.375	0	0.6	0.45	0.6	0	0	16	2.81
121102050602 121102050603	579 580	0	3	0	4	4 0	2	0	0	0	0.225	0	0.6	0.6	0.3 0.45	0.15	0	13 11	2.40 1.98
121102050603	581	0	0	0	5	0	5	0	0	0	0.225	0	0.6	0	0.45	0.15	0	10	2.08
121102050605	582	0	1	0	4	0	4	0	0	0	0.075	0	0.6	0	0.6	0	0	9	1.77
121102050606 121102050607	583 584	0	0	0	4 5	3 0	1	0	0	0	0	0	0.6 0.75	0.45	0.15 0.15	0.15 0	0	9	1.88
121102050608	585	0	0	0	5	3	3	0	0	0	0	0	0.75	0.45	0.45	0	0	11	2.29
121102050701	586 587	0	0	0	2	0	2	0	0	0	0	0	0.3	0	0.15	0.15	0	6	0.83
121102050703	588	0	0	0	4	0	1	0	0	0	0	0	0.6	0	0.15	0	0	5	1.04
121102050704 121102050705	589 590	0	0	0	1	0	0	0	0	0	0	0	0.15	0	0	0	0	1 0	0.21
121102050706	591	0	0	0	2	0	1	1	0	0	0	0	0.3	0	0.15	0.15	0	4	0.83
121102050707	592	0	0	0	5	0	3	1	0	0	0	0	0.75	0	0.45	0.15	0	9	1.88
121102050801 121102050802	593 594	0	0	0	0	0	2	0	0	0	0	0	0.6	0	0.3	0	0	6	1.25
121102050803	595	D	0	0	0	0	1	0	0	0	0	0	0	0	0.15	0	0	1	0.21
121102050804 121102050805	596 597	0	0	0	2	0	1 1	0	0	0	0	0	0.3	0	0.15 0.15	0	0	1 3	0.21
121102050806	598	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050807	599 600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102050808 121102060101	601	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102060102	602	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102060103 121102060104	603 604	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102060105	605	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102060201 121102060202	606 607	0	0	0	2	3 0	4 0	0	0	0	0	0	0.3	0.45	0.6	0	0	9	1.88
121102060202	608	0	0	0	5	5	4	0	0	0	0	0	0.75	0.75	0.6	0	0	14	2.92
121102060204	609	0	0	0	5	5	1	0	0	0	0	0	0.75	0.75	0.15	0	0	11	2.29

Appendix C6 - HUC-12 Flood Risk Data Score Table

F											7-		We	ighted Score					
						core				7.5%	7.5%	15%	15%	15%	15%	15%	10%	100%	
HUC12	Unique ID	Historical Property Damage (Flood- Prone Areas)	Historical Property Damage (Agency Data)	Histor- -ical Life Loss	Property Damage – Exposure (Buildings)	Property Damage – Vulnerability (Buildings)	Property Damage – Vulnerability (Critical Buildings)	Low Water Crossings	Life Loss (Dams)	Historical Property Damage (Flood-Prone Areas)	Historical Property Damage (Agency Data)	Historical Life Loss	Property Damage – Exposure (Buildings)	Property Damage – Vulnerability (Buildings)	Property Damage — Vulnerability (Critical Buildings)	Low Water Crossings	Life Loss (Dams)	Total Score	Scaled Score (1: 5)
121102060205	610	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102060206	611	0	0	0	2	3	0	0	0	0	.0	0	0.3	0.45	0	0	0	5	1.04
121102060301	612	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102060302	613	0	0	0	0	0	5	0	0	0	0	0	.0	0	0.75	0	0	5	1.04
121102060303	614	0	0	0	0	0	4	0	0	0	0	0	0	0	0.6	0	0	4	0.83
121102060304	615	0	0	0	2	2	0	0	0	0	0	0	0.3	0.3	0	0	0	4	0.83
121102060401	616	0	0	0	0	0	1	0	0	0	0	0	0	0	0.15	0	0	1	0.21
121102060402	617	0	0	0	0	0	1	0	0	0	0	0	0	0	0.15	0	0	1	0.21
121102060403	618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102060404	619	0	3	0	5	5	5	4	0	0	0.225	0	0.75	0.75	0.75	0.6	0	22	4.27
121102060405	620	0	0	0	1	1	0	0	0	0	0	0	0.15	0.15	0	0	0	2	0.42
121102060406	621	0	0	0	0	0	0	0	0	D	0	0	0	0	0	0	0	0	0.00
121102060501	622	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
121102060502	623	0	0	0	0	0	0	0	0	0	0.	0	.0	0	0	0	0	0	0.00
121102060405	624	0	0	0	3	3	0	0	0	0	0	0	0.45	0.45	0	0	0	6	1.25
121102060406	625	0	0	0	1	1	2	0	0	0	0	0	0.15	0.15	0.3	0	0	4	0.83
121102060501	626	0	0	0	1	1	1	0	0	0	0	0	0.15	0.15	0.15	0	0	3	0.63
121102060502	627	0	0	0	1	1	1	0	0	0	0	0	0.15	0.15	0.15	0	0	3	0.63





Appendix C7 – List of Removed Flood Mitigation Actions

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimat	ted Project Cost
		·	Infeasible			Risk Type	•		(\$)
44	COASTAL BEND MITIGATION ACTION PLAN -	Proceed with acquisition of easements to permit implementation of Drainage	The project lacks important	Aransas	, , , , , , , , , , , , , , , , , , ,	,			,
	AR-02	Master Plan. Six priority drainage projects have been identified in the Drainage	information to pass the						
		Master Plan to reduce repeated flooding in poorly drained areas of the county.	screening						
		Funding Needed.							
45	COASTAL BEND MITIGATION ACTION PLAN -	The City of Rockport recently completed a Master Drainage Plan for the Live Oak	The project lacks important	Aransas					
	AR-03	Peninsula, which has also been adopted by the Town of Fulton. The City of	information to pass the						
		Rockport has also recently completed a \$2.7 million drainage improvement project	screening						
		in south Rockport. As new street projects arise in the future, they will be built in							
		accordance with the requirements of the Master Plan, to ensure that flooding is							
		minimized.							
46	COASTAL BEND MITIGATION ACTION PLAN -	Coastal erosion along the shoreline of Aransas Bay is threatening to undermine	The project lacks important	Aransas				50000	000 - 25000000
	AR-04	local roadways and recreational areas. A strategic plan to address this issue has	information to pass the						
		been developed and adopted by the participating jurisdictions. The success of this	screening						
		project is only limited by availability of funding. There is a need to raise the grade of	_						
		the roads in some areas. There are miles of public bay access and the potential to							
		develop this area in a very nice fashion is quite great. The affected shoreline has							
		been divided into 6 critical areas and prioritized. Priority 1: Broadway along Little							
		Bay (City of Rockport)Priority 2: Fulton Beach Road, south of Fulton Harbor (City of							
		Rockport)Priority 3: Fulton Beach Road, north of Fulton Harbor (Town of Fulton,							
		Aransas County)Priority 4: Water Street (City of Rockport)Priority 5: Bayshore Drive							
		on Key Allegro Island (City of Rockport)Priority 6: Shell Ridge Road (Aransas County)							
197	Texas Coastal Resiliency Master Plan - R3-6	Under this project, approximately 1 mile of breakwaters would be installed along	This project is already in	Aransas			Aransas County,		
		Lamar Beach Road, from Main Street to 12th Street in Aransas County. The project	progress or completed.				Aransas County		
		also would include regrading and flling along the shoreline, and marsh planting to					Navigation District		
		establish a living shoreline system						\$	3,500,000.00
	Texas Coastal Resiliency Master Plan - R3-8	Newcomb's Point is located northeast of Copano Bay. This project would place	This project is already in	Aransas			Texas Parks &		
		shoreline stabilization at Newcomb's Point to help protect the valuable habitat	progress or completed.				Wildlife Department		
198		from threats of erosion. Potential solutions could include creating a living shoreline							
130		that would protect the shoreline from erosion, such as a semi-submerged							
		breakwater with vegetation behind it to allow the shoreline to accrete and stabilize							
		natural						\$	2,700,000.00
	Tule Creek Watershed Project Report - 7.1.1	The mesquite by-pass project is primarily a drainage and flood control plan that will	The project is no longer wanted						
	Area 1: Mesquite By-pass	divert 25 percent of the total Tule Creek Watershed area to a new Aransas Bay	by the stakeholder per our last						
		Outfall. This project will require approx. 3,200 feet of 5x5 box culvert to be installed	conversation						
207		within the Mesquite Street ROW.		Aransas			TCEQ	\$	1,600,000.00
_	Tule Creek Watershed Project Report - 7.1.2	This project is located in a position that will enable capture of most flows and	The project lacks important						
	Area 2: Tule Creek West Sediment pond and	sediment from the watershed before discharge into Little Bay. The pond will	information to pass the						
	habitat Enhancement	emphasize sediment control should be placed more or less on-line but so as to	screening						
208		avoid changes to flood and drainage control.		Aransas			TCEQ	\$	650,000.00

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estima	ated Project Cost
		·	Infeasible		_	Risk Type	•		(\$)
	Tule Creek Watershed Project Report - 7.1.3	This project will help significantly reduce one of the leading stormwater pollutants	The project lacks important		(**)	7,1-2			(, ,
	Area 3: Upper Tule Creek West Widening	within the Tule Creek Watershed and discharge to little Bay. The vegetative slope	information to pass the						
	and slope Protection	protection will help control erosion and sedimentation downstream when	screening						
		combined with a maintenance projgram designed to also control erosion. It is							
		expected that approx. 100 feet of additinal ROW is needed to be dedicated and							
209		cleared to accommodate the widening.		Aransas			TCEQ	Ś	650,000.00
	Tule Creek Watershed Project Report - 7.1.4	An on-line pond, up to 5 acres, capturing frequent flows from the Railroad ROW	The project lacks important					1	
	Area 4: Tule Creek north Retention Pond and	tributary as well as the lands to the west should be designed at this location. It is	information to pass the						
	Habitat Enhancement	also recommended that an additional 42" pipe be placed adjacent to the existing	screening						
210		42" outfall from the golf course.		Aransas			TCEQ	\$	1,325,000.00
	Tule Creek Watershed Project Report - 7.1.5	This area is located near the downstream part of the watershed, which makes it	The project lacks important					†	_,,
	Area 5: Tule Creek East Detention Pond and	ideally located from the perspective of providing capture of contaminants before	information to pass the						
	Marsh Enhancement	discharge into the Bay. Due to the requiement of constructing a weir and overflow	screening						
		device, this project is hydraulically sensitive and will neeed carefull planing to	36.668						
211		develop an effective project design and avoid obvious potential risk.		Aransas			TCEQ	\$	925,000.00
112	Aransas County Texas Multi-Jurisdictional	St. Charles Bay Shoreline/Lamar Beach Road - the creation of a new habitat will	This project is already in	Aransas				Ś	3,426,000
	Hazard Mitigation Action Plan - Action #13	provide erosion protection improvements	progress or completed.	7 61.1565				*	2,2,000
113	Aransas County Texas Multi-Jurisdictional	Precinct 1/1A- Pinciana/Weeping Willow- Projects 1,2: Surface stormwater	This project is already in	Aransas				Ś	605,880
	Hazard Mitigation Action Plan - Action #14	conveyance imrpovements from Weeping Willow Rd to FM1069	progress or completed.					'	222,222
114	Aransas County Texas Multi-Jurisdictional	Precinct 4 - Tule Creek- Mesquite Bypass - Project 1: Subsurface drainage system	The project is no longer wanted	Aransas				\$	1,769,900
	Hazard Mitigation Action Plan - Action #15	from 12th St (Fulton) to Aransas Bay Reduces the threat of flooding to new and	by the stakeholder per our last					'	,,
		existing buildings and infrastructure by making improvments to the County	conversation						
		drainage system							
115	Aransas County Texas Multi-Jurisdictional	Precinct 4 - South Central Lamar Project 1: Surface stormwater conveyance system	This project is already in	Aransas				Ś	160,380
	Hazard Mitigation Action Plan - Action #16	from Bee tree Circle to Copano Bay with 6-ac stormwater management pond west	progress or completed.					'	,
		of SH35. Reduces the threat of flooding to new and existing buildings and							
		infrastructure by making improvments to the County drainage system							
116	Aransas County Texas Multi-Jurisdictional	Precinct 1/2 - Griffith St. projects 1,2,3: Surface storwater conveyance system	This project is a duplicate of	Aransas				\$	591,030
	Hazard Mitigation Action Plan - Action #17	improvements. Reduces the threat of flooding to new and existing buildings and	another project.					'	•
		infrastructure by making improvments to the County drainage system							
117	Aransas County Texas Multi-Jurisdictional	Precinct 1/1A - Palm Harbor - Project 1: Create outfall to Aransas Bay,	This project is already in	Aransas				\$	400,895
	Hazard Mitigation Action Plan - Action #18	improvements to surface to subsurface conveyance system, draiange structures	progress or completed.					'	•
		under SH35 business. Reduces the threat of flooding to new and existing buildings							
		and infrastructure by making improvments to the County drainage system							
118	Aransas County Texas Multi-Jurisdictional	Precinct 4 - Southeast Lamar - Projects 1,2,3: Subsurface conveyance system.	This project is already in	Aransas				\$	239,030
	Hazard Mitigation Action Plan - Action #19	Reduces the threat of flooding to new and existing buildings and infrastructure by	progress or completed.					'	•
119	Aransas County Texas Multi-Jurisdictional	Precinct 2 - Copano Heights - Projects 1,2,3: Surface SW conveyance system	This project is already in	Aransas				\$	2,090,550
	Hazard Mitigation Action Plan - Action #20	imrpovements from Copano Heights through Bailey Ranch with drainage structures	progress or completed.						
120	Aransas County Texas Multi-Jurisdictional	Precinct 4 - Spanish woods - Projects 1, 2, 3: Surface conveyance system and	This project is already in	Aransas				\$	692,120
	Hazard Mitigation Action Plan - Action #21	drainage structures under Sanctuary Drive and Spanish Woods Drive. Reduces the	progress or completed.						
121	Aransas County Texas Multi-Jurisdictional	Precinct 1/1A - Southwest 1069 - Projects 2, 3: Improve upon inadequate right-of-	This project is already in	Aransas				\$	1,323,476
	Hazard Mitigation Action Plan - Action #22	way width on County roads in this watershed, improve upon undersized structures	progress or completed.	_					
122	Aransas County Texas Multi-Jurisdictional	Precinct 1/1A - Northeast AP - Project 1. Reduces the threat of flooding to new and	This project is already in	Aransas				\$	2,125,200
	Hazard Mitigation Action Plan - Action #23	existing buildings and infrastructure by making improvments to the County	progress or completed.						

FMP ID	FMP Name	Description Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimat	ted Project Cost
			Infeasible		(sqmi)	Risk Type			(\$)
123	Aransas County Texas Multi-Jurisdictional	Precinct 4 - Lowering of Picton/Sorenson - Project 5. Reduces the threat of flooding	The project is no longer wanted	Aransas				\$	114,400
	Hazard Mitigation Action Plan - Action #24	to new and existing buildings and infrastructure by making improvments to the	by the stakeholder per our last						
		County drainage system	conversation						
126	Aransas County Texas Multi-Jurisdictional	Precinct 3 - West Tule - Pond/Channel Widening - Projects 2, 3. Reduces the threat	This project is already in	Aransas				\$	979,000
	Hazard Mitigation Action Plan - Action #27	of flooding to new and existing buildings and infrastructure by making improvments	progress or completed.						
128	Aransas County Texas Multi-Jurisdictional	Shell Ridge Road - the construction of new habitat will provide erosion protection	This project is already in	Aransas				\$	2,375,700
	Hazard Mitigation Action Plan - Action #31	improvements. Reduces the threat of flooding to new and existing buildings and	progress or completed.						
129	Aransas County Texas Multi-Jurisdictional	Newcomb's Point - the construction of new habitat will provide erosion	This project is already in	Aransas				\$	3,028,500
	Hazard Mitigation Action Plan - Action #32	protection improvements. Reduces the threat of flooding to new and existing	progress or completed.					<u>.</u>	
131	Aransas County Texas Multi-Jurisdictional	Develop and adopt a stormwater master plan	This project is already in	Aransas				\$	2,500
101	Hazard Mitigation Action Plan - Action #40		progress or completed.						1 222 222
134	Aransas County Texas Multi-Jurisdictional	Update and improve sea gates that protect the city and harbor	This project is a duplicate of	Aransas				\$	1,000,000
425	Hazard Mitigation Action Plan - Action #50	Design and implement a control proving study to identify and inst	another project.	A				<u> </u>	2.500
135	Aransas County Texas Multi-Jurisdictional	Design and implement a coastal erosion study to identify projects	The project lacks important	Aransas				\$	2,500
120	Hazard Mitigation Action Plan - Action #53	Lindete eterracionates mesetes plea	information to pass the	A 20.000				<u> </u>	2.500
136	Aransas County Texas Multi-Jurisdictional	Update stormwater master plan	This project is a duplicate of	Aransas				۶	2,500
120	Hazard Mitigation Action Plan - Action #55	Chamber Consider at FN 1701. He made from least of how substitute	another project.	A				<u> </u>	171 240
138	Aransas County Texas Multi-Jurisdictional	Stormwater Crossing at FM 1781 - Upgrade/replacement of box culverts to	This project is already funded.	Aransas				\$	171,248
120	Hazard Mitigation Action Plan - Action #59	accommodate growth		•					206.475
139	Aransas County Texas Multi-Jurisdictional	Master Plan - Drainage Improvements - Project 1 - SH 35 BUS - Traylor Ave & Tule	This project is already funded.	Aransas				\$	996,175
	Hazard Mitigation Action Plan - Action #60	Park Dr.							
140	Aransas County Texas Multi-Jurisdictional	Master Plan - Drainage Improvements - Project 2 - SH 35 BUS - Enterprise & Maple	This project is already funded.	Aransas				\$	540,798
	Hazard Mitigation Action Plan - Action #61			_					
142	Aransas County Texas Multi-Jurisdictional	Master Plan - Drainage Improvements - Project 4 - Market St (FM1069) at SH 35	This project is already funded.	Aransas				\$	791,725
	Hazard Mitigation Action Plan - Action #63	BUS						<u> </u>	
143	Aransas County Texas Multi-Jurisdictional	Master Plan - Drainage Improvements - Project 5 - Market St (FM1069) at Burton &	This project is already funded.	Aransas				\$	3,135,881
	Hazard Mitigation Action Plan - Action #64	Kossuth							
144	Aransas County Texas Multi-Jurisdictional	Master Plan - Drainage Improvements - Project 7 - Market St (FM1069) at Church St	This project is already in	Aransas				\$	349,414
	Hazard Mitigation Action Plan - Action #65	(Loop 70)	progress or completed.						
145	Aransas County Texas Multi-Jurisdictional	Master Plan - Drainage Improvements - Project 8 - Pearl St (FM2165) at Orleans &	This project is already in	Aransas				\$	2,813,827
	Hazard Mitigation Action Plan - Action #66	Laure	progress or completed.						
146	Aransas County Texas Multi-Jurisdictional	RCC Lakes - removal of sediment for drainage improvements	This project is a duplicate of	Aransas				\$	376,800
	Hazard Mitigation Action Plan - Action #68		another project.						
147	Aransas County Texas Multi-Jurisdictional	Repair outfalls of pump station that pump into Aransas Bay	This project is a duplicate of	Aransas				\$	2,000,000
	Hazard Mitigation Action Plan - Action #73		another project.						
148	Aransas County Multi-Jurisdictional	Incorporate higher floodplain management standards into City of aransas Pass	The project is no longer wanted	Aransas				\$	76,754
	Floodplain Managment Plan - Action 1.1.d	comprehensive plan update.	by the stakeholder per our last						
			conversation						
149	Aransas County Multi-Jurisdictional	Incorporate higher floodplain management standards into City of Rockport	This project is already in	Aransas					
	Floodplain Managment Plan - Action 1.1.e	comprehensive plan update.	progress or completed.						
150	Aransas County Multi-Jurisdictional	Incorporate higher floodplain management standards into Aransas County hazard	This project is already in	Aransas					
	Floodplain Managment Plan - Action 1.1.f	Mitigation Action plan update	progress or completed.						
151	Aransas County Multi-Jurisdictional	Develop a joint floodplain management and awareness website with all	This project is a duplicate of	Aransas					
	Floodplain Managment Plan - Action 3.1.b	jurisdictions.	another project.						

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimat	ed Project Cost
		·	Infeasible		1 -	Risk Type	· ·		(\$)
152	Aransas County Multi-Jurisdictional Floodplain Managment Plan - Action 3.1.c	Publish informational flood articles in city and county newsletters	The project lacks important information to pass the screening	Aransas		,.			
154	Aransas County Multi-Jurisdictional	Send informational mailers to repetitive loss property owners about buyouts and	This project is already in	Aransas					
	Floodplain Managment Plan - Action 3.1.h	other mitigation options.	progress or completed.						
155	Aransas County Multi-Jurisdictional Floodplain Managment Plan - Action 4.1.b	Each jurisdiction will continue ongoing maintenance of drainage pipes, culverts, and swales until the county-wide master plan is approved and implementation can begin.	The project is no longer wanted by the stakeholder per our last conversation	Aransas					
5	Others (Flood Prevention/Planning Study, LOMR etc)	GBRA Hazard Mitigation Plan Jurisdiction	This project is already funded.	Aransas, Bandera, Bexar, Calhoun, Goliad, Karnes, Kerr, Refugio, San	731.72		TWDB FIF	\$	78,500
10	Drainage Improvements	Stormwater Pump Station #3 (Euclid) - Aransas Pass	This project is already funded.	Aransas, Nueces, San Patricio	4.88		TWDB FIF	\$	6,000,000
201	Texas Coastal Resiliency Master Plan - R3-18	This project would acquire additional land within the Guadalupe River and Delta Wildlife Management Area corridor to connect tidal marsh from the upper reaches of Hynes Bay to the Wildlife Management Area in Refugio County.	The project lacks important information to pass the screening	Aransas, Refugio, Nueces			Texas Parks & Wildlife Department	ς.	3,000,000.00
12	Drainage Improvements	Jourdanton Main Street Drainage Project	This project is already in progress or completed.	Atascosa	0.32		TWDB FIF	\$	1,504,770
32	TXDOT Road Projects	TXDOT Road Project - 007313012	This project is already funded.	Atascosa	0.00018		TXDOT	\$	5,195,540
34	TXDOT Road Projects	TXDOT Road Project - 085504032	The project is already funded.	Bandera	0.00033		TXDOT	\$	1,456,894
2	County Wide Drainage Improvements	Medio Creek Flood Control Improvements	This project is already in progress or completed.	Bee	81.64		TWDB FIF	\$	3,473,313
4	County Wide Early Flood Warning System	Flood Early Warning System – Phase I	This project is already in progress or completed.	Bee	81.64		TWDB FIF	\$	437,500
15	City of Beeville Low Water Crossings Replacement Project	GLO Disaster Mitigation Project	This project is already funded.	Bee	0.00		TX GLO	\$	3,844,490
48	COASTAL BEND MITIGATION ACTION PLAN - BE - 04	Build a box culvert with parallel wings on C.R. 628, Low water crossing washes out during heavy rains, causing erosion to road surface.	The project lacks important information to pass the screening	Вее				\$	70,200
50	COASTAL BEND MITIGATION ACTION PLAN - BE - 06	Poesta and Medio creek drainage project. Complete concrete drainage ditch from east city limits to west city limits. A portion of the project has been completed from Adams street to South Jackson.	This project is a duplicate of another project.	Bee				\$	900,000
11	Drainage Improvements	Pintas Creek at Sunset Dr. & Virginia St. Drainage Improvements - Alice	This project is already funded.	Jim Wells	1.18		TWDB FIF	\$	372,500
13	City of Alice: Virginia St. Area Drainage Project	GLO Disaster Mitigation Project	This project is already funded.	Jim Wells	0.00		TX GLO	\$	6,942,193

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimat	ted Project Cost
		·	Infeasible		(sqmi)	Risk Type	·		(\$)
51	COASTAL BEND MITIGATION ACTION PLAN -	Annual maintenance of flood prevention system, including dams, associated levees	The project is no longer wanted	Jim Wells				330	00 / annually
	JW - 03	and stream channels. The dams, levees, and stream channels maintained by Jim	by the stakeholder per our last						
		Wells county are part of a larger flood prevention system spanning four counties,	conversation						
		including Duval to the west, and Nueces and Kleberg to the east. Federally							
		constructed beginning in the early Sixties, responsibility for annual maintenance							
		has been assumed by local authorities. This system is designed to mitigate flooding							
		across large portions of central Jim Wells County, as well as other downstream							
		communities in neighboring counties.							
52	COASTAL BEND MITIGATION ACTION PLAN -	Lake Findley is the primary source of water for the city of Alice. The dam requires	The project is no longer wanted	Jim Wells				250	000 Annually
	JW - 12	routine maintenance to ensure it stays in compliance with TCEQ standards for such	by the stakeholder per our last						
		structures to prevent dam failure and resulting downstream flooding. This project	conversation						
		also includes an Operations and Maintenance Manual that is in development.							
53	COASTAL BEND MITIGATION ACTION PLAN -	Acquire and install outdoor warning system for the Tecolote Subdivision, residents	The project lacks important	Jim Wells				\$	85,000
	JW - 16	in this subdivision do not have a means of being warned of imminent hazards.	information to pass the						
			screening						
54	COASTAL BEND MITIGATION ACTION PLAN -	Acquire and install outdoor warning system for the City of Orange Grove, residents	The project lacks important	Jim Wells				\$	85,000
	JW - 17	of this city do not have a means of being warned of imminent hazards.	information to pass the						
			screening						
55	COASTAL BEND MITIGATION ACTION PLAN -	Purchase or lease emergency warning call down system (reverse 911), a call down	The project lacks important	Jim Wells				300	000 annually
	JW - 18	warning system can alert residents directly by calling their homes or places of	information to pass the						
		business. This capability is especially useful during daylight business hours when	screening						
		individuals may not have access to warning broadcast via television or radio.							
		Although telephonic messages must be concise, they can provide additional							
		instructions as to recommended response actions for all hazardous situations.							
17	Drainage Improvements Project	Drainage Improvements Project - Location 1 - Corral Street, Kingsville	This project is already funded.	Kleberg	0.00		TX GLO	\$	3,333,333
18	Drainage Improvements Project	Drainage Improvements Project - Location 2 - Kenedy Street, Kingsville	This project is already funded.	Kleberg	0.00		TX GLO	\$	3,333,333
19	Drainage Improvements Project	Drainage Improvements Project - Location 3 - Johnston Street, Kingsville	This project is already funded.	Kleberg	0.00		TX GLO	\$	3,333,333
									_
56	COASTAL BEND MITIGATION ACTION PLAN -	Purchase and install two outdoor warning sirens. There is currently no outdoor	The project lacks important	Kleberg				\$	40,000
	KL - 07	warning siren to alert the public to rapid onset hazards, such as tornadoes or	information to pass the						
		hazardous materials.	screening						
57	COASTAL BEND MITIGATION ACTION PLAN -	Coastal erosion at Riviera Park on Baffin Bay is threatening to undermine	The project lacks important	Kleberg				5000	000 - 1000000
	KL - 11	recreational facilities. This is a fairly well-used winter Texan recreation area. The	information to pass the						
		scope would include an offshore breakwater to protect the beach and a fishing pier	screening						
		extension.							
58	COASTAL BEND MITIGATION ACTION PLAN -	This project will allow public works employees to provide more sandbags to the	The project lacks important	Kleberg				\$	13,000
	KL - 12	community faster and with less employees.	information to pass the						
			screening			<u> </u>			

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimate	d Project Cost
			Infeasible		(sqmi)	Risk Type			(\$)
199	Texas Coastal Resiliency Master Plan - R3-12	This project would protect two rookery islands, Tern Island and Triangle Tree Island,	The project lacks important	Kleberg			Coastal Bend Bays		
		in the Upper Laguna Madre from erosion by constructing protective structures,	information to pass the				and		
		such as shoreline armoring for each island. This project would be considered Phase	screening				Estuaries Program,		
		1 and would include feasibility, preliminary engineering, alternatives analysis, fnal					The Nature		
		design and permitting. Phase 2 would cover the construction phase. Opportunities					Conservancy,		
		to include benefcial use of dredged material during the construction would be					Audubon Texas, U.S.		2 600 000 00
	T 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	pursued		1/1			Fish and Wildlife	\$	3,600,000.00
	Texas Coastal Resiliency Master Plan - R3-19	In 2015, Nueces County acquired property on North Padre Island approximately 4	The project lacks important	Kleberg			Coastal Bend Bays		
		miles southwest of the causeway. There are several ongoing restoration eforts at	information to pass the				and Estuaries		
		the site, including eradicating approximately 12 acres of invasive Brazilian Pepper	screening				Program, The Nature		
		Trees, implementing a prescribed burn management plan, and re-purposing an old					Conservancy, Texas		
		impacted well pad site to establish burrowing owl habitat. Nueces County					Parks & Wildlife		
		completed a Habitat Land Use Management Plan for the property to guide future					Department, U.S.		
202		conservation eforts that included input received during public meetings from					Fish and Wildlife		
202		regulatory agencies, non-governmental organizations and the general public. The acquired property has three immediate needs:					Service, U.S.		
		· · · · ·					National Park		
		 Repairing a large blow out in the dune system. During and after the dune restoration process, data will be collected to inform future repairs. 					Service, Texas General Land Ofce,		
		Restoring damaged wetlands from human use activities, such as driving					Private Landowners		
		through jurisdictional wetlands.					Private Landowners		
		3. Invasive species control and post-control monitoring and removal. This							
		include Brazilian Pepper Trees and Chinese Tallow Trees						¢	500,000.00
36	TXDOT Road Projects	TXDOT Road Project - 001708113	The project is already funded.	La Salle	0.00019		TXDOT	\$	5,500,000
37	TXDOT Road Projects	TXDOT Road Project - 001708112	The project is already funded.	La Salle	0.00019		TXDOT	\$	5,500,000
25	TXDOT Road Projects	TXDOT Road Project - 120601020	The project is already funded.	Live Oak	0.00008		TXDOT	\$	519,596
26	TXDOT Road Projects	TXDOT Road Project - 099103013	The project is already funded.	Live Oak	0.00012		TXDOT	\$	260,900
30	TXDOT Road Projects	TXDOT Road Project - 120601019	The project is already funded.	Live Oak	0.00052		TXDOT	\$	905,442
60	COASTAL BEND MITIGATION ACTION PLAN -	Augment the outdoor warning system for the City of George West with the	The project lacks important	Live Oak	0.0000			\$	16,000
	LO - 10	purchase and installation of two additional sirens. The City of George West has one	' '					·	,
		10 hp siren located at the fire station, which is not adequate. The city needs at	screening						
		least two more sirens to warn most of the city. A study by Texas A&M during the	J						
		late 1970's indicated that at least three-sirens were needed within the City to warn							
		at least 95% of the public.							
61	COASTAL BEND MITIGATION ACTION PLAN -	Enhance the City of Three Rivers outdoor warning system to include voice	The project lacks important	Live Oak				\$	10,000
	LO - 12	capability. A large refinery, currently owned and operated by Valero, is situated	information to pass the						
		within the City of Three Rivers, where a multi-purpose, outdoor warning siren	screening						
		system is currently implemented. Enhancing the system to include voice capability							
		would permit broadcasting of specific messages, such as public protective actions.							
31	TXDOT Road Projects	TXDOT Road Project - 059502024	The project is already funded.	Medina	0.00015		TXDOT	\$	2,176,000
33	TXDOT Road Projects	TXDOT Road Project - 084804049	The project is already funded.	Medina	0.00046		TXDOT	\$	3,332,101
35	TXDOT Road Projects	TXDOT Road Project - 252001015	The project is already funded.	Medina	0.00040		TXDOT	\$	861,900
38	TXDOT Road Projects	TXDOT Road Project - 264901035	The project is already funded.	Medina	0.00033		TXDOT	\$	3,784,200
6	Flood Warning System	Nueces County Drainage & Conservation District 2	The project is already funded.	Nueces	11.79		TWDB FIF	\$	465,500

FMP ID	FMP Name	Description Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimated Project Cost
		·	Infeasible		(sqmi)	Risk Type	·	(\$)
7	County Wide Drainage Improvements	Nueces County Drainage & Conservation District 2 - Casa Blanca Drainage	This project is already in	Nueces	11.79		TWDB FIF	\$ 809,600
		Improvements	progress or completed.					
8	County Wide Drainage Improvements	Nueces County Drainage & Conservation District 2 - Bosquez Rd. / Avenue J	This project is already in	Nueces	11.79		TWDB FIF	\$ 2,453,716
		Drainage Improvements	progress or completed.					
9	County Wide Drainage Improvements	Nueces County Drainage & Conservation District 2 - Ditch "A" and Bluebonnet	This project is already in	Nueces	11.79		TWDB FIF	\$ 1,311,320
		Drainage Improvements	progress or completed.					
24	Downtown Drainage Improvements Phase III	CoCC Downtown Study	This project is already funded.	Nueces	0.00019			
	- Project A							
27	TXDOT Road Projects	TXDOT Road Project - 037310009	The project is already funded.	Nueces	0.00161		TXDOT	\$ 1,500,000
28	TXDOT Road Projects	TXDOT Road Project - 010106095	The project is already funded.	Nueces	0.00099		TXDOT	\$ 800,000,000
29	TXDOT Road Projects	TXDOT Road Project - 037310008	The project is already funded.	Nueces	0.00047		TXDOT	\$ 60,000
43	A Joint Erosion Response Plan for Nueces	The study "A Joint Erosion Response Plan for Nueces County and for the City of	The project lacks important	Nueces				
	County and the City of Corpus Christi	Corpus Christi 2012" lays out goals and approaches for erosion control, beach	information to pass the					
		maintenance, improvement of safety, access and enjoyment of beaches, and	screening					
		increased education of residents and visitors about the beaches, it's dangers, and						
		the importance of its maintenance. It would be beneficial to work towards						
		determining a holistic solution to satisfy the goals of erosion control, beach						
		maintenance, and improved beach access, while also providing funding solutions to						
		enable the community to pursue as many of these goals as possible.						
62	COASTAL BEND MITIGATION ACTION PLAN -	Formalize procedures to gain authorized access to an existing regional Call Down	The project lacks important	Nueces				
	NU - 07	system through City of Kingsville/Kleberg. The City of Bishop is located close to the	information to pass the					
		border of Nueces and Kleberg Counties, near the City of Kingsville. Natural and	screening					
		other hazards impacting Bishop are likely to impact Kingsville, and vice versa.						
		Kleberg County has recently entered into an Inter-local Cooperation Agreement						
		with the City of Corpus Christi and Nueces County, operators of the METROCOM						
		center, to obtain authorized access to various warning tools, including a Call Down						
		system. Some expense is involved with maintenance and activation of the system,						
		including long distance telephone charges. The parties have agreed in principle to						
		provide access to the City of Bishop through the Kingsville/Kleberg County						
		agreement. Formal agreement as to who is authorized to activate the system on						
		behalf of Bishop, the specific procedures to be used, and what costs will be						
		incurred remains to be finalized.						
63	COASTAL BEND MITIGATION ACTION PLAN -	Evaluate cost/benefit of implementing an outdoor warning siren system and	The project lacks important	Nueces				\$ 51,113
	NU - 08	present recommendations to local officials. No outdoor warningsiren system is	information to pass the					
		currently available within the City of Bishop to alert residents to rapid onset natural	screening					
		hazards such as tornadoes, or other hazardous situation.						

		List of Flood Management Projects			1	, ,		1	
FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimated	Project Cost
			Infeasible		(sqmi)	Risk Type			(\$)
64	COASTAL BEND MITIGATION ACTION PLAN -	A periodic inspection of over 71,400 linear feet (13.5 miles) of storm water runoff	This project is a duplicate of	Nueces				\$	2,000,000
	NU - 18	conveyance lines during mid-2003 indicated that some sections of the lines needed	another project.						
		repairs. The structural integrity and functionality of these outfall lines are critical in							
		preventing flooding and in improving water quality. There are eight major storm							
		water outfalls that convey storm water runoff into Corpus Christi Bay. The purpose							
		of this project is to perform needed repairs along sections of the major outfalls.							
		Typical repairs will include: headwalls, wing walls, isolated structural repairs,							
		damaged lateral lines that penetrate outfall, holes, joints, and spalls.							
		duringed lateral lines that perfectate outlan, notes, joints, and spans.							
65	COASTAL BEND MITIGATION ACTION PLAN -	A periodic inspection of over 71,400 linear feet (13.5 miles) of storm waterrunoff	This project is a duplicate of	Nueces				¢	5,000,000
03	NU - 19	conveyance lines during mid-2003 indicated that that two of the eight major	another project.	Nucces					3,000,000
	NO - 19		another project.						
		outfalls needed replacement. The structural integrity and functionality of these							
		outfall lines are critical in preventing flooding and in improving water quality. The							
		purpose of this project is to replace the two outfalls: Brawner Proctor, and Gollihar.							
66	COASTAL BEND MITIGATION ACTION PLAN -	The purpose of this project is to repair erosion and other damages to major	The project is no longer works	Necoss				<u> </u>	3,000,000
66			The project is no longer wanted	Nueces				۶	3,000,000
	NU - 20	drainage channels as a result of a heavy rain or other severe weather. A number of	· ·						
		earthen ditches throughout the City have steep side slope (2:1) which makes them	conversation						
		more prone to erosion of stream beds and slopes during a prolong and intense rain							
		event. In order to make improvements which will stabilize the slopes and stream							
		beds of major channels, an allocation of funds is earmarked for this project to be							
		utilized on a priority basis on those ditches where erosion and slope failures							
		becomes a serious and critical problem. The project will generally includes shaping,							
		grading, flattening side slopes, seeding, adding concrete flumes or lined channels,							
		adding storm water appurtenances such as inlets, pipes, and some minor right-of-							
		way acquisitions as necessary.							
67	COASTAL BEND MITIGATION ACTION PLAN -	Having adequate and available drainage ROW is critical to developing drainage	The project is no longer wanted	Nueces				\$	2,000,000
	NU - 21	infrastructure to meet the demand for orderly growth and development within the	by the stakeholder per our last						
		City. Adequate ROW helps to prevent/minimize flooding, helps to facilitate	conversation						
		maintenance, and allows potential for improving quality of storm water runoff. The							
		purpose of this project is to provide funding for acquiring right-of-way (ROW)							
		where needed in order to implement drainage problem solutions, such as ditch							
		widening, erosion control, extending storm sewers, providing easements, etc.							
		During design, it is often required that additional ROW be provided for							
		implementation of the project.							
68	COASTAL BEND MITIGATION ACTION PLAN -	Flooding in the downtown area is a frequently recurring event, and a major concern	The project is no longer wanted	Nueces				\$	800,000
	NU - 22	for both citizens and businesses. In addition to a variety of private businesses,	by the stakeholder per our last						
		several local and federal public facilities are located within this area. The existing	conversation						
		pumps date from 1948 and are potentially subject to failure. Replacing the pumps							
		will minimize the probability of a future catastrophic failure.							
69	COASTAL BEND MITIGATION ACTION PLAN -	The Oso Treatment Plant is situated in a location subject to flooding from coastal	The project is no longer wanted	Nueces				\$	160,000
	NU - 27	inundation. The wastewater lift stations are also vulnerable to flooding. The	by the stakeholder per our last						,
		proposed improvements could include structural elevation and/or the installation	conversation						
		of dikes, berms or other flood control devices.							
		1 Since y Service of Garden mode control devices.	1		1	1		1	

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimated Project Co
			Infeasible		(sqmi)	Risk Type		(\$)
70	COASTAL BEND MITIGATION ACTION PLAN -	Portions of the Greenwood wastewater treatment plant are located immediately	This project is a duplicate of	Nueces				\$ 90,0
	NU - 28	adjacent to the La Volla Creek floodplain. Recent flood events have inundated	another project.					
		various process units at the plant. Flood waters have come very close to damaging						
		equipment in the electrical building which is critical to plant operations. This						
		project would provide flood protection for the electrical building and would help to						
		ensure that the plant remains in operation during flood events, and protect public						
		health and welfare.						
71	COASTAL BEND MITIGATION ACTION PLAN -	Lake Corpus Christi, which stores 242,241 acre-feet of water, was dedicated April	This project is a duplicate of	Nueces				200000-300000 annua
	NU - 29	26, 1958 with the construction of Wesley Seale Dam. The Lower Nueces River	another project.					
		Water Supply District built and owned the reservoir until the bonds were paid off in						
		1986 and the City of Corpus Christi assumed ownership. Wesley Seale Dam is						
		located approximately 35 miles from Corpus Christi, Texas. This facility is used to						
		store raw water that flows down the Nueces River from the northern part of the						
		watershed. DuringMarch 2001, the Wesley Seale Dam north and south spillway						
		stabilization project was completed. This \$22 million project included the						
		installation of special equipment to monitor the stability of the dam structure. This						
		equipment is presently being utilized as part of the City's overall dam monitoring						
		plan. Information included in the program is obtained from equipment and flow						
		measurements from piezometers, extensometers, relief wells, and sand drains.						
		Inspections are conducted on a daily and monthly basis by Water Department staff,						
		with extra inspections occurring during crest gate operation. In addition, formal						
		inspections are conducted annually by an independent engineering firm, and a						
		highly detailed inspection is scheduled for every three years.						
		6						
73	COASTAL BEND MITIGATION ACTION PLAN -	This project pertains to coastal erosion of the bulkheading along the Corpus Christi	This project is already in	Nueces				\$ 785,0
	NU - 41	Ship Channel, and the Municipal Marina. Ship traffic in the channel has consistently						
		eroded the west side of the island. Existing bulk-heading in the Municipal Harbor						
		has been undermined by the tides.						
74	COASTAL BEND MITIGATION ACTION PLAN -	Project is permitted and ready to go –just needs funding. Coastal erosion in Corpus	The project is no longer wanted	Nueces				500000 - 1000000
	NU - 49	Christi Bay is very high and if the project is not done soon, the entire island may	by the stakeholder per our last					
		erode away and would have to be rebuilt (or abandoned). Sunfish Island is an	conversation					
		important bird sanctuary in the Corpus Christi area. An alternatives analysis and						
		engineering design were conducted for Sunfish Island during CEPRA Cycle 2.						
		Construction could not be done due to restrictions during bird nesting season.						
75	COASTAL BEND MITIGATION ACTION PLAN -	Prevention of further erosion of shoreline at Cole Park on Corpus Christi Bay	This project is already in	Nueces				500000 - 1000000
	NU - 50	through installation of groins and/or breakwaters. Cole Park is a high use park in	progress or completed.					
		Corpus Christi. The area behind the bulkhead is eroding and needs to be	, 10 111 1 111, 111					
		retrofitted.						

FMP ID	FMP Name	Description Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimat	ed Project Cost
			Infeasible		-	Risk Type			(\$)
76	COASTAL BEND MITIGATION ACTION PLAN -	Nueces County finished a countywide Master Drainage Plan Study and developed	The project lacks important	Nueces	, , , , , , , , , , , , , , , , , , ,			\$	258,587,835
	NU - 53	the Master Drainage Implementation Plan as a guide for prioritizing and	information to pass the						
		implementing the improvements identified as part of the study. The priorities	screening						
		outlined in the implementation plan are items which will have an immediate impact							
		on storm water management for areas experiencing flooding problems. Nueces							
		County is susceptible to flooding because some of its defined drainage ways and							
		creeks are constricted by inadequate channel capacities, man-made barriers such							
		as road and railroad embankments, irrigation canals, and because its flat							
		topography and low soil permeability create poor drainage and pounding.							
		Implementation Plan for Master Drainage Plan Nueces County, Texas December							
		2009 identifies major improvements which will be required throughout the county							
		once future development occurs. The recommendations in the study provide a							
		guide for the county in implementing a plan which will reduce flood damages							
		through both structural and non-structural measures. Structural measures include							
		enlarging existing channels, constructing new channels, enlarging bridge openings							
		and constructing flood protection levees. Non structural measures include							
		floodplain regulation, flood proofing, flood forecasting, on-site detention of storm							
		water, clearing existing streams, and buyout and/or relocate structures in existing							
		floodplains.							
77	COASTAL BEND MITIGATION ACTION PLAN -	Residential flood buyout along Nueces River to reduce repetitive losses and	The project lacks important	Nueces				\$	1,000,000
	NU - 55	potential loss of life attributed to a major flood event or dam failure. Residential	information to pass the						
		development along the river in the unincorporated areas is a patchwork of	screening						
		substandard homes and development well below recommended base elevation for							
		the 100 year floodplain. Most of the property owners are not insured and have had							
		numerous repetitive loses. Additionally, this project will leverage existing							
		partnerships with an interest in maintaining a clean, safe and reliable water supply							
		for the City of Corpus Christi as part of the Nueces River Watershed Protection							
		Plan. The Nueces River Authority, City of Corpus Christi, Texas Commission on							
		Environmental Quality and Coastal Bend Bays and Estuaries Foundation support							
		continued buyouts along the river to maintain open green space and to aid in							
		removing environmentally undesirable structures responsible for runoff pollutants							
		and raw sewage discharges. This program will be multi year and will leverage							
		multiple funding sources and partners. There are currently 66 eligible properties in							
		Nueces County for the Repetitive Flood Claims Grant. Approximately 15 residential							
		properties are located within the unincorporated areas of the county and would be							
		the loss restrictive Hazard Mitigation Crent Program. The City of Cornus Christian							
		the less restrictive Hazard Mitigation Grant Program. The City of Corpus Christi failed to meet state water quality standards in November 2009 attributed to high							
		levels of pollutants caused by runoff from heavy rain. As part of the necessary							
		corrective actions, the City partnered to develop the Nueces River Watershed							
		Protection Plan. This project will support the established mission and goals set forth							
		in the plan to createenvironmentally friendly open space.							
		in the plan to createen who inheritally mentily open space.							

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimat	ed Project Cost
		·	Infeasible		-	Risk Type	•		(\$)
78	COASTAL BEND MITIGATION ACTION PLAN -	Elevate and re-grade dilapidated roads. Many of the City's roads have sunk	The project lacks important	Nueces				\$	8,750,000
	NU - 65	significantly and are a contributing factor to many of flood issues throughout the	information to pass the						
		community. Repetitive flood damages have caused maintenance costs to be	screening						
		burdensome on the City. Upgrades from caliche to a more standard road surface							
		would greatly enhance the ability of the road system to tolerate nuisance and							
		reoccurring flooding. The City of Driscoll was first formed as a community in 1904							
		and was later incorporated as a Class C City in 1951. The City's infrastructure and							
		buildings are very old and is located in an area that is very flat, causing it to be							
		prone to flash floods. Aggressive debris control and flood-proofing is essential to							
		mitigate against flooding and hurricane winds. All citizens and business owners							
		remain concerned about their health and public safety due to continuous flooding.							
		Over the past several years, there have been numerous flood events that have							
		directly affected the City. The Coastal Bend will continue to be susceptible to very							
		heavy rainfall and tropical weather events putting the City in a continuous battle to							
		stay accessible and safe for its citizens. In addition to the alreadymentioned issues,							
		travel near and through the community is limited on a regular basis including a very							
		heavily highway that is also a critical hurricane evacuation route.							
156	Nueces County Hazard Mitigation - Corpus	Seawall capital Imrpovement Project for routine maintenance and restoration.	This project is already in	Nueces				\$	5,500,000
	Christi Action #1		progress or completed.						
157	Nueces County Hazard Mitigation - Corpus	Construction of a new bulkhead in Corpus Christi Bay along the south side shoreline	, ,	Nueces				\$	10,500,000
	Christi Action #2	of Corpus Christi.	by the stakeholder per our last						
			conversation						
158	Nueces County Hazard Mitigation - Corpus	Make improvements to the Salt Flat Levee System	This project is already in	Nueces				\$	3,000,000
	Christi Action #3		progress or completed.						
159	Nueces County Hazard Mitigation - Corpus	Make improvements to Power Street Pump Station	This project is a duplicate of	Nueces				\$	5,500,000
	Christi Action #4		another project.						
160	Nueces County Hazard Mitigation - Corpus	Excavate silt and debris in Drainage Master Channel 31 caused by the erosion on	The project is no longer wanted	Nueces				\$	2,819,800
	Christi Action #6	sides and bottom of the Drainage Master Channel 31.	by the stakeholder per our last						
			conversation						
		Master Channel 31 was constructed in various phases in conjunction with the							
		development in the area. The side slopes and bottom are severely eroded resulting							
		in poor drainage and encroachment of ditch outside of the City right-of-way. This							
		project will provide critical improvements to restore and improve the drainage							
		profile and include erosion control measures such as side slope stabilization, soil							
		treatment, vegetative cover and other best management practices. This project is							
		planned in multiple phases as funding allows.							

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimat	ed Project Cost
			Infeasible		(sqmi)	Risk Type			(\$)
161	Nueces County Hazard Mitigation - Corpus	Improvements to side slopes on Schanen Ditch to eliminate erosion problems.	The project is no longer wanted	Nueces				\$	2,756,100
	Christi Action #7		by the stakeholder per our last						
		The existing profile of Schanen Ditch exceeds the recommended slope of 4:1 and	conversation						
		maximum of 3:1. This is resulting in major slope stabilization failure in multiple							
		areas near the Yorktown Bridge. Work to improve this ditch will include							
		excavation/backfill to widen and create 3:1 side slopes with stabilization matting,							
		new culvert and outfalls, riprap and ditch bottom improvements, seeding, irrigation							
		adjustments, traffic controls, dewatering and other miscellaneous items.							
		Construction of Phase 1 of this project has been recently completed and future							
		phases will be completed to the extent that funding allows.							
162	Nueces County Hazard Mitigation - Corpus	This project will involve the improvement of La Volla Creek that crosses SH 357	This project is already in	Nueces				\$	4,152,800
	Christi Action #8	(Saratoga Blvd). The project will provide 100-year capacity for conveyance to the	progress or completed.						
		Oso Creek. Phase 1 Channel improvements include the removal of vegetation from							
		the channel North of Saratoga Boulevard and channel widening South of Saratoga							
		Boulevard.							
163	Nueces County Hazard Mitigation - Corpus	Make improvements to the instrumentation system at Wesley Seale Dam.	This project is already in	Nueces				\$	5,850,600
	Christi Action #13		progress or completed.						
		This project provides for improvements to the original instrumentation system							
		including annual safety inspection, integration with O.N. Stevens WTP process							
		controls, The Howell-Bunger Valve, the downstream sluice gates, and the							
		dewatering system, in response to previous inspections and priority investment							
		recommendations into the system. This project will protect the integrity of the							
		Wesley Seale Dam system (1957), to provide for proper inspection and updated							
		regulatory reports per TCEQ.							
164	Nueces County Hazard Mitigation - Corpus	Make improvements to the side seals on the Wesley Seale Dam Spillway to	This project is already in	Nueces				\$	22,800,000
	Christi Action #15	maintain the spillway's integrity.	progress or completed.						
		The Wesley Seals Dam has 60 crest gates located in two separate spillways: the							
		south spillway includes 27 gates and the north spillway includes 33 gates. Over the							
		years, leakage from the side seals has increased and it has become significant at							
		several of the gates. The water flow from the excessive leakage damages the							
		concrete and encourages algae and other vegetative growth and leads to corrosion							
		issues on the gates, metal appurtenances and reinforcing steel. This project							
		provides for the necessary improvements including seal replacement,							
		miscellaneous structural repairs and application of a protective coating system for							
		the Dam.							
165	Nueces County Hazard Mitigation - Corpus	Build a floodwall along Corpus Christi Bay at the Science and Natural History	This project is already in	Nueces				\$	350,000,000
	Christi Action #16	Museum.	progress or completed.						
		Recommendation to construct a new floodwall (or a coastal structure) that would							
		follow a "hypotenuse" alignment between the existing Promenade and the USACE							
		Bulkhead. The project would also backfill the triangle to make it function more like							
		a coastal structure. This would also provide additional land area for future use.							

FMP ID	FMP Name	Description List of Flood Management Projects	Reason to Consider as	Counties	Project Area	Flood	Snoncor	Estimatos	Project Cost
FIVIP ID	Fivir Name	Description	Infeasible	Counties	-	Risk Type	Sponsor		(\$)
166	Nueces County Hazard Mitigation - Corpus	Make improvements to the erosion on sides and bottom of Drainage Master	This project is already in	Nueces	(Sqiiii)	NISK TYPE		Ċ	3,000,000
100	Christi Action #17	Channel 31.	progress or completed.	Nueces				Ų	3,000,000
	CHISTI ACTION #17	Channer 31.	progress or completed.						
		Master Channel 31 was constructed in various phases in conjunction with the							
		development in the area. The side slopes and bottom are severely eroded resulting							
		in poor drainage and encroachment of ditch outside of the City right-of-way. This							
		project will provide critical improvements to restore and improve the drainage							
		profile and include erosion control measures such as side slope stabilization, soil							
		treatment, vegetative cover and other best management practices. This project is							
		planned in multiple phases as funding allows.							
167	Nueces County Hazard Mitigation - Corpus	Coastal Erosion Cole Park: Installation of groins and/or breakwaters to the areas	This project is already in	Nueces				500000)-1000000
	Christi Action #24	behind the bulkhead to retrofit the areas that are eroding.	progress or completed.						
203	Texas Coastal Resiliency Master Plan - R3-23	The recommended improvements under this project include:	This project is already in	Nueces			City of Port Aransas		
		Repairing breaches in the ship channel revetment on northern Mustang Island;	progress or completed.				Port of Corpus		
		Constructing living shorelines coming of the ship channel near existing rock					Christi		
		revetments to protect mangrove habitat;					Texas General Land		
		 Rebuilding marsh and wetland habitat; 					Ofce		
		 Repairing the Charlie's Pasture bulkhead that was damaged during 							
		Hurricane Harvey;							
		 Repairing public access; and 							
		Permitting this site for benefcial use of dredged material to elevate the land.							
		There is a potential to leverage Federal Emergency Management Agency-Public							
		Assistance funding for this project. The engineering work has been initiated						\$	4,400,000.00
	Lower Nueces River Watershed Protection		The project lacks important				City of Corpus Christi		
	Plan - Riparian habitat Conservation		information to pass the				and Counties		
204	Management Measures No. 1	Purchase of Properties	screening	Nueces				\$	15,000.00
	Lower Nueces River Watershed Protection		The project lacks important						
	Plan - Riparian habitat Conservation		information to pass the						
205	Management Measures No. 2	Acquisitions of Conservation Easements (approximately 970 acres)	screening	Nueces		City	of Corpus Christi/NRA/	\$	970,000.00
		While the first priority of the Nueces Delta Preserve is habitat conservation, this	The project is no longer wanted						
		unique location provides South Texas an important opportunity for pubic education	I						
		and better understanding of the delta's role as the transition zone at the water's	conversation						
		edge.This vision includes an Estuary Learning Center and Visitor Center to be built							
		on the Rincon Unit's highest ground near the Union Pacific Railroad and overlooking							
		the delta. An observation tower and hillside amphitheater will be next to the							
		existing classroom. A bunkhouse for visiting researchers will be nearby along with							
	Nueces Delta Preserve Project - Building an	maintenance and support facilities. Hiking trails with improved rest areas and							
	educational Estuary Learing Center and	interpretive signage will allow visitors to venture deep into the varied delta							
212	Visitor Center	habitats.		Nueces			CBBEP		

FMP ID	FMP Name	List of Flood Management Projects Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimated Project Cost
	· ····· · · · · · · · · · · · · · · ·	2 costiption	Infeasible	Counties	-	Risk Type	5 p3/1301	(\$)
		The proposed project will improve the resiliency of the County and surrounding	The project lacks important		(, /	7,12		(17
		communities that sustained damage Hurricane Harvey. Select, key mitigation	information to pass the					
		interventions are needed around the Bay to augment and leverage the range of	screening					
		shoreline stabilization and erosion control projects that have been constructed						
		throughout the Corpus Christi Bay area to protect the communities from storm-					City of Corpus	
		related hazards. (This includes budget justification for North Beach, Port Aransas					Christi, Nueces	
215	Nueces County Living Breakwater project	and Ingleside on the Bay).		Nueces			County, CDBG	\$99,856,213.50
	, ,	<i>y</i> ,,	The project lacks important				.,	
	Upper Oso Creek/Channel A Robstown-		information to pass the					
227	Calallen area	Acquire right of way to widen & deepen existing drainage ditches.	screening	Nueces				
			The project lacks important					
		Acquire right of way to improve the flow of flood waters from the Robstown/	information to pass the					
228	Upper Oso Creek	Calallen Area.	screening	Nueces				
			The project lacks important					
			information to pass the					
229	Tributary No. 5	Acquire right of way to improve the flow of flood waters in the London Area.	screening	Nueces				
	,	· · · · · · · · · · · · · · · · · · ·	The project lacks important					
	Belk Lane Street and Drainage	Road reconstruction and drainage improvements consisting of driveway culvert	information to pass the					
231	Improvements	replacement and road side ditch regrading.	screening	Nueces				
	·		The project lacks important					
		Topographic and hydrological study for improvement and regrading of Drainage	information to pass the					
232	Rehabilitation of Ditch at County Road 14F	ditch.	screening	Nueces				
20	Town of Refugio Wastewater Treatment and	Citywide Wastewater Treatment Plant and Drainage Project	This project is already in	Refugio	0.14		TX GLO	\$ 12,112,636
	Drainage Project		progress or completed.					
21	Refugio County Hazard Mitigation	Hazard Mitigation Improvements Project	This project is already in	Refugio	72.27		TX GLO	\$ 6,910,131
	Improvements Project		progress or completed.					
1	County Wide Drainage Improvements	Green Lake Outfall System and Gregory Diversion Ditch	This project is already in	San Patricio	65.48		TWDB FIF	\$ 11,841,990
			progress or completed.			<u> </u>		
22	San Patricio County Channel Outfall	Channel Outfall Drainage Improvement Project - Location 1 - Taft Site	This project is already funded.	San Patricio	0.14		TX GLO	\$ 7,717,591
	Drainage Improvement Project							
23	San Patricio County Channel Outfall	Channel Outfall Drainage Improvement Project - Location 2 - Sinton Site	This project is already funded.	San Patricio	0.25		TX GLO	\$ 7,717,591
	Drainage Improvement Project							
80	COASTAL BEND MITIGATION ACTION PLAN -	Re-Furbish, Flood proof Repetitive Loss Homes damaged by Declared Disasters. San	The project lacks important	San Patricio				\$ 4,500,000
	SP-02	Patricio County obtained monies to complete 40 home rebuilds and has	information to pass the					
		approximately 60 homes which are qualified but has no funding at this time. Many	screening					
		residential structures were damaged by storms in 2002. Insurance was non-						
		existent, or coverage was not provided for by the homeowner, who were either						
		elderly, low-income, or unaware that coverage on normal homeowner's insurance						
		does not provide for flood or wind storm damage.						

FMP ID	FMP Name	Description Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimat	ed Project Cost
			Infeasible		(sqmi)	Risk Type			(\$)
81	COASTAL BEND MITIGATION ACTION PLAN -	The Nueces River has had three major flood events, two Presidential declarations in	The project lacks important	San Patricio				\$	20,000,000
	SP-03	2002, and a non-declared event in 2003. The property is located in the 100 year	information to pass the						
		floodplain, with portions in the floodway. San Patricio County has procured nine	screening						
		properties in the area, 6 in River Estates and 3 in Peaceful Valley through FEMA &							
		ORCA Grants. We are in the process of purchasing one 600 acre parcel through the							
		Coastal Bays and Estuary Program, and 13 tracts through a Texas General Land							
		Office Grant (GLO) in the La Fruita Subdivision on the Nueces River.							
82	COASTAL BEND MITIGATION ACTION PLAN -	The City of Ingleside currently has a warning siren that is out of service. This	The project is no longer wanted	San Patricio				\$	75,000
	SP-04	project is to replace that equipment for the purpose of alerting residents to	by the stakeholder per our last						
		impending natural and manmade hazards.	conversation						
83	COASTAL BEND MITIGATION ACTION PLAN -	Secure drainage right of ways along Avenue A in the area near 4th to 8th Street.	This project is a duplicate of	San Patricio					
	SP-05	This section of Avenue A has historically been inundated by heavy rain events due	another project.						
		to poor drainage, cutting off access to area residences.							
84	COASTAL BEND MITIGATION ACTION PLAN -	Conduct Engineering drainage study along California Street from West Main to the	The project is no longer wanted	San Patricio					
	SP-06	Kenney Bayou. Secure drainage right of ways to include possible property	by the stakeholder per our last						
		acquisition and utility relocation. This section of town has historically been	conversation						
		inundated by heavy rain events due to poor drainage, cutting offaccess to area							
		residences.							
85	COASTAL BEND MITIGATION ACTION PLAN -	Elevate roadway/construct bridge in city of San Patricio on Nopal street and county	The project lacks important	San Patricio				\$	1,000,000
	SP-26	road 60A. City has had multiple floods from the Nueces river due to releases from	information to pass the						
		choke canyon and Lake Corpus Christi dams due to tropical storms and heavy rain	screening						
		events.							
86	COASTAL BEND MITIGATION ACTION PLAN -	elevate roadway/construct bridge in city of San Patricio on Nopal street and county	This project is a duplicate of	San Patricio				\$	1,000,000
	SP-29	road 60B. City has had multiple floods from the Nueces river due to releases from	another project.						
		choke canyon and Lake Corpus Christi dams due to tropical storms and heavy rain							
		events.							
87	COASTAL BEND MITIGATION ACTION PLAN -	To prevent flood surge (sea gates) at pelican cove by lowering huge metal gates	This project is a duplicate of	San Patricio				\$	250,000
	SP-30	into concrete frames with a 10 ton crane. To prevent rising water into city, sea	another project.						
		gates will be placed into these frames at two railroad track openings.							
88	San Patricio County Hazard Mitigation Action		The project lacks important	San Patricio				\$	250,000
	Plan - San Patricio County, Action #3	easements; Upgrade drainage system to increase	information to pass the						
		capacity and reduce flooding; Utilize Next Door app to	screening						
		encourage area residents to maintain culverts and							
		ditches on private property.							
89	San Patricio County Hazard Mitigation Action	Survey and remove hazardous trees and brush from	The project lacks important	San Patricio				\$	10,000
	Plan - City of Gregory, Action #3	drainage system.	information to pass the						
			screening						
90	San Patricio County Hazard Mitigation Action		The project lacks important	San Patricio				\$	450,000
	Plan - City of Gregory, Action #5	easements; Upgrade drainage system to increase	information to pass the						
		capacity and reduce flooding; Utilize Next Door app to	screening						
		encourage area residents to maintain culverts and							
		ditches on private property							

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estima	ted Project Cost
			Infeasible		(sqmi)	Risk Type			(\$)
91	San Patricio County Hazard Mitigation Action	"Adopt/update disaster resistant building codes, ordinances and / or subdivision	The project lacks important	San Patricio				\$	2,000
	Plan - City of Gregory, Action #6	regulations (see comments).	information to pass the						
		(Heat resistant roofing, elevate utilities and equipment/appliances, hail resistant	screening						
		roofing, shatter proof windows, lightning rods, roof strapping, drought tolerant							
		landscaping ,low flow toilets , sprinkler system, fire resistant building materials,							
		insulated pipes, etc.)"							
92	San Patricio County Hazard Mitigation Action	Obtain and implement an AM Emergency Advisory Radio	The project lacks important	San Patricio				\$	20,000
	Plan - City of Ingleside, Action #1	System for emergency notifications to citizens during	information to pass the						
		extreme events; Purchase and distribute NOAA all	screening						
		hazard radios to critical facilities for early warning.							
93	San Patricio County Hazard Mitigation Action	Improve drainage, implement drainage right-of-way on	The project is no longer wanted	San Patricio				\$	250,000
	Plan - City of Ingleside, Action #2	California Street.	by the stakeholder per our last						
			conversation						
94	San Patricio County Hazard Mitigation Action	Adopt and implement a program to regularly clean and	The project is no longer wanted	San Patricio				\$	1,000,000
	Plan - City of Ingleside, Action #6	repair storm water drains; Upgrade undersized storm	by the stakeholder per our last						
		water drains to improve drainage and reduce flooding	conversation						
95	San Patricio County Hazard Mitigation Action	Develop a hazard resistant municipal complex that will	The project is no longer wanted	San Patricio				\$	8,000,000
	Plan - City of Ingleside, Action #8	facilitate City Hall functions, Police Department,	by the stakeholder per our last						
		Municipal Court and an Emergency Operations Center	conversation						
96	San Patricio County Hazard Mitigation Action	Implement Avenue B drainage project improvements	This project is already in	San Patricio				\$	3,700,000
	Plan - City of Ingleside, Action #12		progress or completed.						
97	San Patricio County Hazard Mitigation Action	Purchase emergency heavy equipment to facilitate	The project is no longer wanted	San Patricio				\$	650,000
	Plan - City of Ingleside, Action #13	recovery after a significant event.	by the stakeholder per our last						
			conversation						
98	San Patricio County Hazard Mitigation Action	Upgrade and harden critical communication	The project is no longer wanted	San Patricio				\$	500,000
	Plan - City of Ingleside, Action #14	infrastructure and equipment.	by the stakeholder per our last						
			conversation						
99	San Patricio County Hazard Mitigation Action	Survey and remove hazardous trees and brush from	The project is no longer wanted	San Patricio				\$	10,000
	Plan - City of Ingleside on the Bay, Action #9	drainage system.	by the stakeholder per our last						
			conversation						
100	San Patricio County Hazard Mitigation Action	Purchase NOAA "All Hazards" radios for early warning	The project lacks important	San Patricio				\$	10,000
	Plan - City of Ingleside on the Bay, Action #9	and post-event information and place in area	information to pass the						
		schools/businesses/critical facilities.	screening						
101	San Patricio County Hazard Mitigation Action	Install generators with hard-wired quick connections at	The project lacks important	San Patricio				\$	500,000
	Plan - City of Mathis, Action #1	critical facilities, including lift and pump stations, as	information to pass the						
		deemed necessary; Harden/retrofit critical facilities to	screening						
		protect against hazards (see comments).							
103	San Patricio County Hazard Mitigation Action	Harden/retrofit critical facilities, including fire, police,	The project lacks important	San Patricio				\$	1,000,000
	Plan - City of Odem, Action #3	and EMS facilities, to protect against hazards (see	information to pass the						
		comments).	screening						
104	San Patricio County Hazard Mitigation Action	Install city-wide warning system as well as phone	The project lacks important	San Patricio				\$	20,000
	Plan - City of Odem, Action #19	notification system for all critical facilities including	information to pass the						
		schools.	screening						

	_	List of Flood Management Projects	·					
FMP ID	FMP Name	Description	Reason to Consider as Infeasible	Counties	Project Area (sqmi)	Flood Risk Type	Sponsor	Estimated Project Cos (\$)
105	San Patricio County Hazard Mitigation Action	Install generators with hard-wired quick connections at	The project lacks important	San Patricio				\$ 275,00
	Plan - City of Portland, Action #1	critical facilities, including lift and pump stations, as	information to pass the					,
		deemed necessary.	screening					
106	San Patricio County Hazard Mitigation Action	·	The project lacks important	San Patricio				\$ 1,000,00
	Plan - City of Sinton, Action #4	levels (see comments); Install generators with hard-	information to pass the					, ,
		wired quick connections.	screening					
107	San Patricio County Hazard Mitigation Action		The project lacks important	San Patricio				\$ 500,00
	Plan - City of Sinton, Action #12	hazard/low-lying areas; Raise electrical components of	information to pass the					,
		sewage lift stations above BFE; Equip sewer manholes	screening					
		with watertight covers and inflow guards.	30.308					
109	San Patricio County Hazard Mitigation Action		The project lacks important	San Patricio				\$ 1,000,00
	Plan - City of Taft, Action #5	hazards (see comments). Install generators with hard-	information to pass the					_,,,,,,,
		wired quick connections.	screening					
110	San Patricio County Hazard Mitigation Action	•	The project lacks important	San Patricio				\$ 1,000,00
	Plan - City of Taft, Action #7	bridges, drains and culverts. Clean and repair	information to pass the					_,000,00
	Train only or ranging along my	stormwater drains. Upgrade undersized stormwater	screening					
		drains.	30.6618					
111	San Patricio County Hazard Mitigation Action		The project lacks important	San Patricio				\$ 100,00
	Plan - City of Taft, Action #9	guards; Raise electrical components of sewage lift	information to pass the					,
		stations above BFE.	screening					
		This project will construct 3,900 linear feet of breakwater to protect 650 acres of	This project is a duplicate of					
		marsh habitat along the face of the Nueces Delta shoreline. The Nueces Delta is	another project.					
		currently undergoing rapid erosion that is causing the loss of significant marsh	, ,					
		habitat for a variety of estuarine species that were injured by the Deepwater						
		Horizon Oil Spill, including juvenile fishes, shrimp, and crabs that support important						
		commercial and recreational fisheries. The Nueces Delta is also important habitat						
		for many bird species impacted by the spill, such as white pelicans, brown pelicans,						
		reddish egrets, black skimmers, least						
		terns, snowy plovers, and piping plovers. Construction of a living shoreline will						
		enhance the bay and estuarine habitat and contribute to the protection and						
		restoration of a large contiguous area of salt marsh which will benefit these						
		estuarine species.						
		The proposed breakwater system will improve the area's resilience against sea level						
		rise, storm surge, and flooding, and also protect nearby conservation properties.						
		Outcomes from this project contribute to goals in several regional conservation						
		management plans, including the Texas General Land Office's Texas Coastal						
		Resiliency Master Plan and Texas Parks and Wildlife's Texas Wetlands Conservation					Nation Fish and	
206	Nueces Delta Shoreline Erosion Protection	Plan.		San Patricio			Wildlife Foundation	\$ 3,328,000.0
		This project will construct a half-mile, nearshore breakwater and beneficially use	The project lacks important					, , , , , , , , , , , , , , , , , , , ,
		dredged material to restore an island in order to protect approximately 5,236 acres	information to pass the					
		of coastal habitat, including 2,630 acres of seagrass in Redfish Bay, an area adjacent						
		to Corpus Christi Bay. Additionally, this project will restore approximately 28 acres					Texas Parks and	
216	Dagger island restoration Project	of coastal wetland habitat and create oyster, invertebrate and fisheries habitat.		San Patricio			Wildlife Department	\$3,824,000.00
		, , , , , , , , , , , , , , , , , , , ,	I .	1	1		-1	. ,- ,

FMP ID	FMP Name	Description	Reason to Consider as	Counties	Project Area	Flood	Sponsor	Estimated Pi	roject Cost
			Infeasible		(sqmi)	Risk Type		(\$))
	Texas Coastal Resiliency Master Plan - R3-15	The project would include the construction of breakwaters along approximately	This project is a duplicate of	San Patricio,			Coastal Bend Bays		
		3,900 linear feet of shoreline at the Nueces River Delta to dissipate wave energy	another project.	Nueces			and Estuaries		
200		that is causing estuarine wetland loss. This project was permitted by the U.S. Army					Program, Texas		
200		Corps of Engineers in October 2016 and the project is considered shovel-ready.					General Land Ofce		
		Coordination is ongoing with the Port of Corpus Christi regarding the possibility of							
		benefcially using dredged material in this area.						\$ 3,	500,000.00
39	TXDOT Road Projects	TXDOT Road Project - 003702060	The project is already funded.	Zavala	0.00126		TXDOT	\$	15,000,000
40	TXDOT Road Projects	TXDOT Road Project - 193702032	The project is already funded.	Zavala	0.00115		TXDOT	\$	6,886,071
	Margie, Commissioner Precinct 1- to San		The project does not have						
194	Diego		enough information to be						
		Drainage in Colonias: K-Bar, Alice Acres, and Rancho Allegre (GLO)	considered as feasible.					\$ 9,	800,000.00

FME ID	FME Name	List of Potential Flood Managen Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
I I IVIL ID	I WE Name	Description	as Infeasible	Counties		Risk Type	эронзог	Study Cost	runung Source
			as illicasible		(sqiiii)	Misk Type		Study Cost	
			The project is no						
			longer wanted by the						
		Evaluate current floodplain management regulations in other	stakeholder per our						
	Aransas County Multi-Jurisdictional Floodplain	coastal towns, cities, and counties in order to identify potential	last conversation						
36	Managment Plan - Action 1.1.a	areas of improvment for Aransas County jurisdictions.		Aransas					
		, , , , , , , , , , , , , , , , , , , ,	The project is no						
			longer wanted by the						
		Using the information collected in Action 1.1.a, create a plan	stakeholder per our						
	Aransas County Multi-Jurisdictional Floodplain	for how, and when, to integrate potential improvements into	last conversation						
37	Managment Plan - Action 1.1.b	existing county and municipality regulations.		Aransas					
			The project is no						
			longer wanted by the						
		Create a coordinated development flow-chart for Arasas	stakeholder per our						
	Aransas County Multi-Jurisdictional Floodplain	County, the Tow of Fulton, and the City of Rockport floodplain	last conversation						
38	Managment Plan - Action 1.1.c	managers.		Aransas					
			The project is already						
		Evaluate list of repetivitive loss propoerties for opportunities to	in progress or						
	Aransas County Multi-Jurisdictional Floodplain	parnter with property owners regarding potential mitigation	completed						
39	Managment Plan - Action 2.1.a	actions.		Aransas					
			The project is already						
			in progress or						
	Aransas County Multi-Jurisdictional Floodplain	Evaluate areas in the floodplain viaable for open space	completed						
40	Managment Plan - Action 2.1.b	preservation.		Aransas					
			The project is no						
			longer wanted by the						
			stakeholder per our						
	Aransas County Multi-Jurisdictional Floodplain	Investigate grant opportunities for property buyouts, open	last conversation						
41	Managment Plan - Action 2.1.c	space preservations or other flood mitigation measures.		Aransas					
			The project is already						
		Investigate potential partnerships with local non-profits to	in progress or						
	Aransas County Multi-Jurisdictional Floodplain	purchase high priority areas for public parkland/open space	completed						
42	Managment Plan - Action 2.1.d	preservation.		Aransas					
			The project is no						
		Study options for preventing inundation of County Road 303	longer wanted by the						
		and the Barbon Estates Subdivision.In heavy rainfall	stakeholder per our						
		events,County Road 303 becomes inundated, preventing	last conversation						
		egress from the Barbon Estates subdivision and access to							
		emergency response vehicles. In the past, residents have been							
22	- 05	stranded for a period of two to three days.		Jim Wells				\$20,000	

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
			as Infeasible		(sqmi)	Risk Type		Study Cost	
			The project is no						
		The City of Alice and Jim Wells County were notified in July	longer wanted by the						
		2008 that the San Diego Creek Levee was an unacceptable	stakeholder per our						
			last conversation						
		flood control structure. Since that time the City and County have been moving forward to bring the levee back into	last conversation						
		compliance by conducting the San Diego Creek Levee							
		Certification study, survey work and clearing. A total of							
	COASTAL BEND MITICATION ACTION BLANK INV	\$93,500.00 has been spent to date from local funds. This							
	COASTAL BEND MITIGATION ACTION PLAN - JW	project will involve raising the height of the levee to meet the		P AAZ-II.				4050.000	
23	- 11	required freeboard for a 100 year flood.		Jim Wells				\$850,000	
			The project lacks						
		This project would create a program to monitor long-term	important						
		subsidence and sea level rise in the Laguna Madre. While the	information to pass						
		causes of subsidence are understood in general, they have not	the screening						
		been identifed for individual coastal communities. This project							
		would include assessing combinations of repeated benchmark							
		measurements, installing Continuously Operating Reference							
		Stations (CORS), studying tide gauge data, andanalyzing							
		Interferometric Synthetic Aperture Radar (InSAR) data. The							
		project would make data publicly accessible to all coastal		Kenedy, Kleberg,			Texas General Land		
61	Texas Coastal Resiliency Master Plan - R4-13	communities		Willacy, cameron			Office	\$500,000	
			This project is						
			already in progress						
			or completed.						
8	Drainage Master Plan Study	Drainage Master Plan - Location 1 - Kingsville		Kleberg	1.291288	Riverine	TWDB FIF	\$1,360,258	TWDB FIF
			This project is						
9	Drainage Master Plan Study	Drainage Master Plan - Location 2 - Kingsville	already funded.	Kleberg	1.291288	Riverine	TWDB FIF	\$3,600,000	TWDB FIF
			This project is						
			already in progress						
			or completed.						
10	Drainage Master Plan Study	Drainage Master Plan - Location 3 - Kingsville		Kleberg	1.291288	Riverine	TWDB FIF	\$1,457,419	TWDB FIF
			This project is						
			already in progress						
			or completed.						
11	Drainage Master Plan Study	Drainage Master Plan - Location 4 - Kingsville		Kleberg	1.291288	Riverine	TWDB FIF	\$1,846,064	TWDB FIF
			This project is						
12	Drainage Master Plan Study	Drainage Master Plan - Location 5 - Kingsville	already funded.	Kleberg	1.291288	Riverine	TWDB FIF	\$7,800,000	TWDB FIF
			This project is						
13	Drainage Master Plan Study	Drainage Master Plan - Location 6 - Kingsville	already funded.	Kleberg	1.291288	Riverine	TWDB FIF	\$230,000	TWDB FIF
			This project is						
			already in progress						
			or completed.						
14	Drainage Master Plan Study	Drainage Master Plan - Location 7 - Kingsville		Kleberg	1.291288	Riverine	TWDB FIF	\$1,360,258	TWDB FIF

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
			as Infeasible		(sqmi)	Risk Type		Study Cost	
			This project is						
15	Drainage Master Plan Study	Drainage Master Plan - Location 8 - Kingsville	already funded.	Kleberg	1.291288	Riverine	TWDB FIF	\$700,000	TWDB FIF
			This project is						
16	Drainage Master Plan Study	Drainage Master Plan - Location 9 - Kingsville	already funded.	Kleberg	1.291288	Riverine	TWDB FIF	\$5,600,000	TWDB FIF
			The project lacks						
			important						
		The Baffin Bay Watershed Monitoring and Management Plan	information to pass						
		would guide restoration eforts aimed at reducing pollutants to	the screening				Coastal Bend Bays and		
		the watershed streams and bay. This project would support all					Estuaries Program		
		phases of plan development, including additional bay and					Texas A&M University-		
		watershed data collection, land use and load modeling,					Corpus		
		outreach to engage landowners and businesses in the					Christi		
		stakeholder process, and improvement of stewardship					Texas Water		
		practices. And fnally, assembly of the watershed plan itself. The					Resources Institute		
		same stakeholder group also is working to secure funding for					Bafn Bay Stakeholder		
60	Texas Coastal Resiliency Master Plan - R3-25	"early phase" targeted restoration activities.		Kleberg			Group	\$2,500,000	
			This project is						
6	County Wide Drainage Master Plan Study	Nueces County Drainage & Conservation District 2	already funded.	Nueces	11.79478	Riverine	TWDB FIF	\$2,137,500	TWDB FIF
			This project is						
19	Drainage Master Plan Study	Drainage Master Plan Study - Driscoll	already funded.	Nueces	0.106516	Riverine	TWDB FIF	\$150,000	TWDB FIF

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
			as Infeasible		(sqmi)	Risk Type		Study Cost	
			The project is no						
			longer wanted by the						
		The Corps of Engineers studied the Cotulla Reservoir site,	stakeholder per our						
		located in the upper Nueces Basin, in the 1960's. Therecent	last conversation						
		Nueces River Basin Reconnaissance Study identified a							
		potentially down-sized version of this project, including a							
		pipeline to divert water directly into Choke Canyon Reservoir.							
		In addition to the flood damage reduction potential for Lake							
		Corpus Christi and the lower river basin, this project would							
		enhance the regional water supply by increasing water storage							
		capacity, and reducing losses associated with downstream							
		evaporation across an 81 mile braided reach. During Phase 1 of							
		the Feasibility Study, existing data will be reviewed to estimate							
		the flood damage reduction potential of the project::a.A							
		preliminary hydrologic analysis to determine the portion of the							
		volume of historical lower-basin floods that originate upstream							
		of Cotulla will be performed.b.A review of existing map							
		information of the Nueces River for a 25-mile reach							
		downstream of the proposed reservoir to identify areas that							
		could benefit from the potential flood damage reduction							
		potential of the reservoir will be performed.c.Data from FEMA							
		and other agencies on historical flood damages will be							
		summarized.(Phase 2) Depending on the findings of the flood							
		damage analyses, a daily flow flood model may need to be							
		developed to evaluate the downstream flood damage							
	COASTAL BEND MITIGATION ACTION PLAN - NU	reduction potential in terms of magnitude and frequency for							
25	- 12	the Cotulla Diversion Project.		Nueces				\$269,000	

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
			as Infeasible		(sqmi)	Risk Type		Study Cost	
			The project is no						
			longer wanted by the						
			stakeholder per our						
		The Nueces River Basin Reconnaissance Study identified a two-	last conversation						
		way pipeline project between Choke Canyon and Lake Corpus							
		Christi, coupled with the off-channel storage and a high							
		capacity pump station, for the dual purpose of flood control							
		and increased water supply, through reduced channel							
		losses.During the Feasibility Study, analyses will be performed							
		to determine the potential flood damage reduction benefits of							
		this project:a.A review of existing map information of the area							
		along the Lower Nueces River below LCC will be performed to							
		identify areas that could benefit from the potential flood							
		damage reduction potential of the diversion facilities. Records							
		of flood damages associated with historical events will be							
		obtained.b.(Phase 2) A daily flood model to evaluate the							
		downstream flood damage reduction potential in terms of							
		magnitude and frequency for this project will be							
		developed.c.(Phase 2) Analysis will be performed to determine							
		the potential effects of coupling the pipeline with the off-							
		channel storage and a high capacity pump station in order to							
	COASTAL BEND MITIGATION ACTION PLAN - NU	manage Lake Corpus Christi storage to better control incoming							
26	- 13	flood flows.		Nueces				\$279,000	

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
			as Infeasible		(sqmi)	Risk Type		Study Cost	
		Capital Improvement Program (CIP) for FY99-00 on July 20,	This project is a						
		1999 (Ordinance No. 023703). Included were separate projects	duplicate of another						
		for drainage studies in specific areas of the City. The need to	project.						
		integrate these individual drainage studies into a consistent,							
		uniform analysis became evident and was approved in Storm							
		Water CIP for FY00-01, (Ordinance No. 024130). The City's use							
		of master plans that date back to 1946, 1961, 1970, 1982, and							
		1988 resulted in the use of inconsistent criteria without an							
		adopted level of protection policy. The separate projects are							
		integrated into the FY00-01 Storm Water CIP as a Storm Water							
		Master Plan Project. The Development of a comprehensive,							
		updated, consistent Storm Water Master Plan based on an							
		adopted Storm Water Criteria and Design Manual is necessary							
		to respond to development, environmental issues and tobetter							
		define and prioritize on going and future drainage capital							
		improvement projects. The purposes of this project are as							
		follows:a.Establish drainage criteria that reflects input from the							
		different segments of the community (elected officials,							
		developers, engineers, citizens, planning and zoning) and in the							
		consensus process identify a "level of protection" for the City							
		to be adopted as a standard for the Cityb.Adopt a drainage							
		criteria and design procedure for designers to use in capital							
		improvement projects and in the subdivision platting process							
		of residential and commercial developmentc. Establish policy							
		statements or guidelines that are responsive to storm water							
	COASTAL BEND MITIGATION ACTION PLAN - NU	quality, storm water pollution prevention requirements,							
27	- 17	development issues for usein future street and drainage		Nueces				\$2,000,000	

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
			as Infeasible		(sqmi)	Risk Type		Study Cost	
			This project is						
			already in progress						
		The Federal Emergency Management Agency's Multi-Hazard	or completed.						
		Flood Map Modernization Program will update and digitize							
		flood hazard maps across the nation. The majority of theCity							
		of Corpus Christi's FIRMs are nearly 20 years old. It is in the							
		interest of the City and its residents for the maps, which							
		determine flood insurance premiums, to be accurate and up-to-	-						
		date. Other planning and hazard mitigation benefits are							
		expectedto accrue as well. FEMA has notified the City by letter							
		dated July 15, 2004, that its contractor will be contacting the							
		City within the next few months regarding the flood mapping							
		effort. A key FEMA strategy is to form local partnerships for							
		this purpose under the Cooperating Technical Partners							
		program to leverage local resources. In addition to preparation							
	COASTAL BEND MITIGATION ACTION PLAN - NU	for the contractor visit, the City will evaluate the feasibility of							
28	- 23	becoming a CTP partner.		Nueces					
			This project is						
			already in progress						
		The Federal Emergency Management Agency's Multi-Hazard	or completed.						
		Flood Map Modernization Program will update and digitize							
		flood hazard maps across the nation. Most the City of Corpus							
		Christi's FIRMsare nearly 20 years old. It is in the interest of the							
		City and its residents for the maps, which determine flood							
		insurance premiums, to be accurate and up-to-date. Other							
		planning and hazard mitigation benefits are expected to accrue							
	Nueces County Hazard Mitigation - Corpus	as well. The City of Corpus Christi is currently working through							
43	Christi Action #9	the appeals process of the map modernization		Nueces					

List of Potential Flood Management Evaluations (FMEs) Removed

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
		·	as Infeasible		(sqmi)	Risk Type	•	Study Cost	_
		Reservoir in the upper reaches of the Nueces River which would	The project is no						
		include a pipeline to divert water directly into Choke Canyon	longer wanted by the						
		Reservoir.	stakeholder per our						
		The Corps of Engineers studied the Cotulla Reservoir site,	last conversation						
		located in the upper Nueces Basin, in the 1960's. The recent							
		Nueces River Basin Reconnaissance Study identified a							
		potentially down-sized version of this project, including a							
		pipeline to divert water directly into Choke CanyonReservoir. In							
		addition to the flood damage reduction potential for Lake							
		Corpus Christi and thelower river basin, this project would							
		enhance the regional water supply by increasing water storage							
		capacity, and reducing losses associated with downstream							
		evaporation across an 81 mile braided reach. During Phase 1 of							
		the Feasibility Study, existing data will be reviewed to estimate							
		the flood damage reduction potential of the project: a. A							
		preliminary hydrologic analysis to determine the portion of the							
		volume of historical lower- basin floods that originate							
		upstream of Cotulla will be performed. b. A review of existing							
		map information of the Nueces River for a 25-mile reach							
		downstream of the proposed reservoir to identify areas that							
		couldbenefit from the potential flood damage reduction							
		potential of the reservoir will be performed. c. Data from FEMA							
		and other agencies on historical flood damages will be							
		summarized. (Phase 2) Depending on the findings of the flood							
		damage analyses, a daily flow flood model may need to be							
	Nueces County Hazard Mitigation - Corpus	developed to evaluate the downstream flood damage							
44	Christi Action #11	reduction potential in terms of magnitude and frequency for		Nueces				\$445,000	
			This project is a						
			duplicate of another						
		Complete an assessment of the needed repairs and	project.						
		improvements on all 8 major and 100 minor stormwater							
		outfalls that drain into Corpus Christi Bay. There are eight							
		major storm water outfalls and more than 100 other outfalls							
		that allow runoff to drain into Corpus Christi Bay. In 2003, 13.5							
		miles of these outfall structures were inspected and							
		improvements and repairs were made to four outfalls. The							
		purpose of this current project is toprovide an updated							
		assessment, which may include the Brawner/proctor and							
.	No considerate library lateral and a	Gollihar outfalls and other outfalls, pending results of the initial							
4-	Nueces County Hazard Mitigation - Corpus	assessment, and providing recommendations for repairs,		Negeria				62.447.222	
45	Christi Action #19	improvements, and rehabilitation as necessary.		Nueces				\$2,447,200	

List of Potential Flood Management Evaluations (FMEs) Removed

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
			as Infeasible		(sqmi)	Risk Type		Study Cost	
			This project is						
			already in progress						
		Complete a feasibility study of Oso Creek at the confluence of	or completed.						
		La Volla Creek to determine if any construction projects will	or completed.						
		help the creek conveyance capacity during high flow events.							
		The drainage profiles of Oso Creek east of the La Volla Creek							
		confluence show several constrictions that impact the base							
		·							
		flood elevations upstream. This project will investigate the							
		feasibility of the construction of additional creek conveyance							
		capacity for high flow events. If the investigationshows a							
	Nueces County Hazard Mitigation - Corpus	significant potential to impact the base flood elevation, then						4	
46	Christi Action #20	construction will be completed in those areas.		Nueces				\$4,715,400	
			The project is no						
			longer wanted by the						
		Map and assess the vulnerabilities the city may face for	stakeholder per our						
		Coastal Erosion, Expansive Soils, Land Subsidence, and	last conversation						
		Wildfires.							
		Improve data and mapping on specific risks for coastal erosion,							
		expansive soils, land subsidence and wildfires. Use GIS to							
		identify and map erosion areas, riparianlandslides, expansive							
		soils and wildfires. Develop and maintain a database to track							
	Nueces County Hazard Mitigation - Corpus	vulnerability and indicate where critical structures and any							
47	Christi Action #23	development is located in relation to the hazardousareas.		Nueces					
			This project is						
			already in progress						
	Nueces County Hazard Mitigation - Corpus	Design and implement a dam breach study for dams in Corpus	or completed.						
48	Christi Action #27	Christi.		Nueces				\$200,000	
			The project lacks						
			important						
		A feasibility study was performed to assess methods to help	information to pass						
		protect wetlands, seagrass, and otherrelated aquatic and	the screening						
		coastal habitat at Indian Point from erosion associated with							
		shoreline retreat. Inaddition to the benefits of protecting							
		valuable habitat, the project would also provide an increased							
		level of protection to public infrastructure at Indian Point Park							
		including a roadway, parking lot, and pier entrance. This							
		feasibility study is intended as a precursor to development of a							
62	Indian Point Shoreline Erosion Project	U.S. Army Corps of Engineers (USACE) permit application.		Nueces				3558000	
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	This project is	1.2.555					
			already in progress						
			or completed.	Nueces, Jim Wells,					
1	County Wide Drainage Master Plan Study	Nueces County Regional Drainage Master Plan Study	or completed.	Kleberg	244.4051	Riverine	TWDB FIF	\$2,137,500	TWDB FIF
Т	County white Drainage Master Plan Study	ivueces county negional Drainage Master Plan Study		Menerg	244.4031	riverille	I WUD FIF	λς,137,300	IWDDFIF

List of Potential Flood Management Evaluations (FMEs) Removed

FME ID	FME Name	Description	Reason to consider	Counties	FME Area	Flood	Sponsor	Estimated	Funding Source
			as Infeasible		(sqmi)	Risk Type		Study Cost	
			The project lacks						
			important						
		An adaptive management hydrologic restoration study would	information to pass						
		look at the interactions of the physical systems that afect the	the screening						
		hydrology in Nueces County, as well as the stakeholder					Coastal Bend Bays and		
		interactions in the region. Work has been conducted on Nueces					Estuaries Program,		
		Bay freshwater infows via adaptive management plans of the					Texas Commission on		
		Senate Bill 3 (80th Texas Legislature, 2007) Environmental					Environmental		
		Flows Process. Two current studies include: Using Comparative					Quality, Texas A&M		
		Long-Term Benthic Data for Adaptive Management of					University-Corpus		
		Freshwater Infow to Three Estuaries (Colorado-Lavaca,					Christi, Nueces River		
		Guadalupe, and Nueces) and Infuence of Freshwater Infow					Authority, City of		
		Gradients on Estuarine Nutrient-Phytoplankton Dynamics in					Corpus Christi, Port of		
		the Three Estuaries (Guadalupe, Nueces, and Upper Laguna		Nueces, San			Corpus Christi		
59	Texas Coastal Resiliency Master Plan - R2-20	Madre).		Patricio, Aransas			Authority	\$200,000	
			This project is						
			already in progress						
			or completed.						
3	County Wide Drainage Master Plan Study	Drainage Master Planning Study - San Patricio County		San Patricio	65.47693	Riverine	TDEM	\$900,000	TDEM
			The project is no						
			longer wanted by the						
		Undertake a comprehensive study of flood risk and flood	stakeholder per our						
	San Patricio County Hazard Mitigation Action	reduction alternatives with the assistance of the USACE;	last conversation						
30	Plan - City of Ingleside, Action #7	Implement feasible alternatives for flood reduction.		San Patricio				\$1,000,000	
			The project lacks						
			important						
	San Patricio County Hazard Mitigation Action		information to pass						
33	Plan - City of Taft, Action #13	Assess and map City of Taft hazard vulnerability.	the screening	San Patricio				\$50,000	

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estin	nated Project
			Infeasible		Area	Risk			Cost (\$)
6	COASTAL BEND MITIGATION ACTION PLAN - AR-05	Aransas County is in the process of developing the Intergrated Stormwater Management Plan (ISWMP). Aransas County has historically experienced flooding problems due to its coastal location and topography. The ISWMP will identify problem areas and recommend improvement projects.	The project is already in progress or completed	Aransas				\$	900,000
48	Aransas County Texas Multi- Jurisdisctinal Hazard Mitigation Action Plan - Action #7	design and implement a debris removal program in local drainage systems	The project is already in progress or completed	Aransas				\$	2,500
49	Aransas County Texas Multi- Jurisdisctinal Hazard Mitigation Action Plan - Action #6	Buyouts of RL Properties	The project lacks important information to pass the screening	Aransas				\$	500,000
51	Aransas County Multi- Jurisdictional Floodplain Managment Plan - Action 1.3.a	Complete process of entry into the Community Rating System (CRS) to incentivize higher floodplain management standards for the City of Rockport.	The project is already in progress or completed	Aransas				\$	60,000
52	Aransas County Multi- Jurisdictional Floodplain Managment Plan - Action 1.3.b	Complete process of entry into the Community Rating System (CRS) to incentivize higher floodplain management standards for Aransas County.	The project is already in progress or completed	Aransas				\$	45,000
53	Aransas County Multi- Jurisdictional Floodplain Managment Plan - Action 1.3.c	Investigate whether CRS is viable for the City of Aransas Pass and the Town of Fulton.	The project lacks important information to pass the screening	Aransas					
55	Aransas County Multi- Jurisdictional Floodplain Managment Plan - Action 3.2.a	Determine whether any lift stations and pump stations will need generators.	The project lacks important information to pass the screening	Aransas					
56	Aransas County Multi- Jurisdictional Floodplain Managment Plan - Action 4.1.a	Work across jurisdictions to coordinate drainage/stormwater projects that impact the same watersheed or sub-watersheds while working to create a county-wide prioritized, master plan of all flood related projects.	The project is already in progress or completed	Aransas					
57	Aransas County Multi- Jurisdictional Floodplain Managment Plan - Action 4.1.c	Continue to use county resiliency group to investigate potential funding options for erosion protection and habitat restoration.		Aransas					

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estimated Project
			Infeasible		Area	Risk		Cost (\$)
4	COASTAL BEND MITIGATION ACTION PLAN - RG-02	Implement 'All Hazards' NOAA Weather Radio (NWR) procedures for dissemination of emergency messages originating with local jurisdictions. The National Weather Service (NWS) will implement a new, centralized point of collection for non-weather related emergency messages broadcast over NWS systems. NWS expects to deploy the All-Hazards Emergency Message Collection System, HazCollect, in the summer and fall of 2005. HazCollect will provide an information technology interface between state and local systems, and the NWS Advanced Weather Interactive Processing System (AWIPS). HazCollect will provide a fast, reliable way to inject messagesinto the Emergency Alert System (EAS) and NOAA Weather Radio.	The project lacks important information to pass the screening	Aransas, Bee, Jim Wells, Kleberg, Live Oak, Nueces, San Patricio				Low cost activity
5	COASTAL BEND MITIGATION ACTION PLAN - RG-04	Promote public awareness and use of NOAA Weather Radio (NWR) to receive 'All Hazards' warnings by distributing NWR literature, posting information on jurisdiction Web sites, hosting special events, and taking advantage of other opportunities as they arise. The National Weather Service provides weather-related hazards warnings to citizens, both through feeds to commercial media via the Emergency Alert System (EAS), and directly into homes, businesses, schools and other locationsthrough NOAA Weather Radio (NWR). Through the efforts of the Emergency Management programs in both Kleberg and Live Oak counties, broadcast coverage has recently been completed for the Coastal Bend region through installation of transmitters near the communities of Riviera and Three Rivers. These transmitters will also enhance reception of the NWR signals in Jim Wells and Bee counties.	The project lacks important information to pass the screening	Aransas, Bee, Jim Wells, Kleberg, Live Oak, Nueces, San Patricio				Low cost activity

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estimat	ed Project
			Infeasible		Area	Risk		Co	st (\$)
7	COASTAL BEND MITIGATION ACTION PLAN - JW - 01	Areas of Jim Wells County and the City of Alice are subject to persistent flooding including: the south quadrant of the City of Alice (Lattas Creek/South Relief Creek watershed), the northwest quadrant of the Ben Bolt areas, and the southwest quadrant of the city of Alice (Lattas Creek/Rancho Alegre area). There is currently no officially recognized district or advisory group addressing drainage issues in a comprehensive manner. A Joint Advisory group may provide an organizational framework for establishing priorities, determining what studies are needed, and developing a Drainage Master Plan to guide future efforts to reduce flooding.	The project is no longer wanted by the stakeholder	Jim Wells				\$	8,000,000
8	COASTAL BEND MITIGATION ACTION PLAN - JW - 08	Purchase or lease emergency warning call down system (Reverse 911). A call down warning system can alert residents directly by calling their homes or places of business. This capability is especially useful during daylight business hours when individuals may not have access to warnings broadcast via television or radio. Although telephonic messages must be concise, they can provide additional instructions as to recommended response actions for all hazardous situations.		Jim Wells					
9	COASTAL BEND MITIGATION ACTION PLAN - KL - 04	There are no independent drainage districts currently existing within the county addressing drainage issues in a comprehensive manner. A county-wide approach can facilitate coordination for the development of a Drainage Master Plan. A specially appointed Task Force could be charged with examining alternative frameworks and reporting their recommendations to the participating governing bodies for evaluation and action to reduce losses from flooding.	This project is a duplicate of another project.	Kleberg				\$	20,000

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estimated Project
			Infeasible		Area	Risk		Cost (\$)
10	COASTAL BEND MITIGATION ACTION PLAN - KL - 05	Coordinate with Texas A&M University -Kingsville to promote campus mitigation activities, and to enhance awareness of the Disaster Resistant University Program. This activity may potentially include hosting a workshop based on the FEMA report, Building a Disaster-Resistant University. The Texas A&M University-Kingsville campus is located within a predominately residential area on the northwest edge of Kingsville. The university has approximately 6000 students with nearly 1,000 faculty and staff. The main campus encompasses 257 acres and has 82 primary buildings including five occupied residence halls and 13 occupied student family apartments. FEMA's Disaster Resistant University Program is specifically designed to provide assistance for mitigation in the university setting and in the past, has set aside monies from the Pre Disaster Mitigation Competitive grant program for this purpose.	The project lacks important information to pass the screening	Kleberg	Alea	NISK		Cost (\$)
11	COASTAL BEND MITIGATION ACTION PLAN - NU - 11	The City of Bishop is subject to frequent episodes of inland flooding during heavy rainfall events. Nueces County Drainage District #3 is responsible for addressing drainage issues which may have impacts for the City of Bishop; however, there has been a lack of coordinated effort in the past. Additional flood control projects of interest to the City of Bishop include clearing of stream blockage on King Ranch property and the Carreto Creek project, including removal of silt and connection with the flood control project on King Ranch.		Nueces				

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estimated Project
			Infeasible		Area	Risk		Cost (\$)
12	COASTAL BEND MITIGATION ACTION PLAN - NU - 24	The Federal Emergency Management Agency (FEMA) Mitigation Division administers the National Flood Insurance Program (NFIP). To encourage participating communities to go beyond the minimum requirements for flood plain management, the Community Rating System (CRS) program classifies communities by awarding points for related activities. Corpus Christi has participated in the CRS program since 1991 and is currently rated as a Class 9 community, entitling its residents to a 5% discount on flood insurance premiums. This project is intended to improve its rating to a Class 8, thereby increasing the premium discount to 10% for Special Flood Hazard Areas (SFHAs). The CRS classes for local communities are based on 18 creditable activities, organized under four categories: (i) Public Information, (ii) Mapping and Regulations, (iii) Flood Damage Reduction, and (iv) Flood Preparedness. Other actions identified in this Mitigation Plan will have a direct bearing on fulfilling CRS requirements to qualify for the higher classification. This activity includes a comprehensive review of eligible activity requirements, identification of additional potential actions, monitoring completion of previously identified actions, and completing the application process.	This project is already in progress or completed.	Nueces				
13	COASTAL BEND MITIGATION ACTION PLAN - NU - 35	Evaluate eligibility for participation in National Flood Insurance Program (NFIP) Community Rating System (CRS) for the purpose of improving CRS rating to qualify policyholders for premium discounts. The City of Port Aransas currently has a rating of 10, which is automatically assigned to all communities participating in the NFIP. In order to qualify for a rating of 9, and entry into the CRS program, sufficient points must be scored in a variety of program areas. This activity is to investigate whether Port Aransas currently can achieve the required score, or can do so with improvement in its program areas.	This project is already funded or complete.	Nueces				

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estimated Proje	ect
			Infeasible		Area	Risk		Cost (\$)	
14	COASTAL BEND MITIGATION ACTION PLAN - NU - 40	Identify opportunities to increase home and business owner awareness of hazards and use of mitigation for private property such as the City Web site and distribution of printed literature. The City of Port Aransas has a City Web site that can be updated to promote mitigation activities by residents and businesses; mitigation literature can be added to other emergency preparedness literature currently distributed annually.	This project is already funded or complete.	Nueces				\$ 1,0	000
58	Nueces County Hazard Mitigation Corpus Christi Action #5	The Corpus Christi City Council approved the Storm Water Capital Improvement Program (CIP) for FY99-00 on July 20, 1999 (Ordinance No. 023703). Included were separate projects for drainage studies in specific areas of the City. Theneed to integrate these individual drainage studiesinto a consistent, uniform analysis became evident and was approved in Storm Water CIP for FY00-01, (Ordinance No. 024130). The City's use of master plans that date back to 1946, 1961, 1970, 1982, and 1988 resulted in the use of inconsistent criteria without an adopted level of protection policy. The separate projects are integrated into the FY00-01 Storm Water CIP as a Storm Water Master Plan Project. The Development of a comprehensive, updated, consistent Storm Water Master Plan based on an adopted Storm Water Criteria and Design Manual is necessary to respond to development, environmental issues and to better define and prioritize on going and futuredrainage capital improvement projects. The purposes of this project is as follows: a. Establish drainage criteria that reflects input from the different segments of the community (elected officials, developers, engineers, citizens, planning and zoning) and in the consensus process identify a "level of protection" for the City to be adopted as a standard for the City b. Adopt a drainage criteria and design procedure for designers to use in capital improvement projects and in the subdivision platting process of residential and commercial development c. Establish policy statements or guidelines that are responsive to storm water quality, storm water pollution prevention requirements,	This project is already in progress or completed.	Nueces				\$ 4,084,9	000

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estimated Project
			Infeasible		Area	Risk		Cost (\$)
59	Nueces County Hazard Mitigation - Corpus Christi Action #10	Corpus Christi has participated in the CRS program since 1991 and is currently rated as a Class 7 community, entitling its residents to a 15% discount on flood insurance premiums. This project is intended to improve its rating to a Class 5, thereby increasing the premium discount by an additional 10% for Special Flood Hazard Areas (SFHAs). Other actions identified in this Mitigation Plan will have a direct bearing on fulfilling CRS requirements to qualify for the higher classification. This activity includes a comprehensive review of eligible activity requirements, identification of additional potential actions, monitoring completionof previously identified actions, and completing the application process.	This project is a duplicate of another project.	Nueces				
60	Nueces County Hazard Mitigation - Corpus Christi Action #18	Utilize the city adopted "Developer Agreement" thatthe can use with developers to help cover the cost of installing over-sized stormwater drainage. Under the platting ordinance, the City of Corpus Christi participates with developers on utility construction for over-sized main stormwater lines. These funds may also be used to address development drainage concerns. This project will provide for the City's share of such projects, as necessary, up to the approved amount.		Nueces				\$ 3,100,000
61	Nueces County Hazard Mitigation - Corpus Christi Action #21	Insurance Services Office, Inc. (ISO) is an independent organization that administers the Building Code Effectiveness Grading Schedule (BECGS) to assess "the building codes in effect in a particular community and how the community enforces its building codes, with special emphasis on mitigation of losses from natural hazards." The grading can influence the cost of insurance coverage in the community. Since its last assessment, the City of Corpus Christi has adopted the 2015 International Building Code and the 2016 International Residential Code for One and Two Family Dwellings, among others, and should be eligible for an improved grade. This activity includes scheduling a re-assessment and compiling the necessary documentation.		Nueces				

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estimated Pr	oject
			Infeasible		Area	Risk		Cost (\$)	
62	Nueces County Hazard Mitigation - Corpus Christi Action #22	The City of Corpus Christi has seen multiple hazards occur within the years past. Most residents are heavily informed of what to do during heavy rains, tropical storms and hurricanes. However, there are multiple hazards that are not as frequent. The City will be working towards creating and disseminating a pamphlet(s) that will cover what todo before, during and after the following hazards: Extreme Heat, Lighting, Hailstorm, Hurricane and Tropical Storms, Windstorms, Tornados, Drought, Flood, Dam/Levee Failure, Coastal Erosion, Expansive Soils, Land Subsidence and Wildfires	This project is already in progress or completed.	Nueces					
	County Road 18 Drainage	Inspection and Assessment of CR18 Drainage Ditch to evaluate the physical and operational conditions of the drainage system by conducting on-site visual and drone scanning inspections. Generate a report based on these inspections to provide Nueces County with a preliminary assessment report and recommendations that can be utilized to make an informed decision regarding plans and advancements for the	The project lacks important information to pass the screening						
69	Improvements	improvement of the drainage ditch system.		Nueces					
65	Texas Coastal Resiliency Master Plan - R3-26	Under this project, locations in the Coastal Bend area that have been identifed through existing habitat suitability index models would be selected to restore degraded oyster reefs. The project would include data collection and monitoring activities to assess the viability of future oyster reefrestoration efforts in the Coastal Bend bays.	The project lacks important information to pass the screening	Nueces, San Patricio			Texas Parks & Wildlife Department Coastal Bend Bays and Estuaries Program	\$ 700	0,000
15	COASTAL BEND MITIGATION ACTION PLAN - SP-13	The City of Portland has no Master Drainage Plan that would guide future development, and prevent new developments from compounding existing drainage problems. This project would develop a Master Drainage Plan for the City of Portland.	The project is no longer wanted by the stakeholder per our last conversation	San Patricio					0,000
16	COASTAL BEND MITIGATION ACTION PLAN - SP-32	Public needs to know what to expect during a disaster. The city of Aransas Pass will need to promote public awareness by	The project lacks important information to pass the screening	San Patricio				\$ 2	2,000
18	San Patricio County Hazard Mitigation Action Plan - San Patricio County, County Wide, Action #2	Developandimplementanallhazardseducationprogram. Utilize Facebook, city/countywebpages and distribution of brochuresto provide information on all hazards that could impact the community. Provide mitigation measurestored ucerisk of damages, injury or illness.	information to pass the	San Patricio				\$ 2	2,000

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estim	ated Project
			Infeasible		Area	Risk		(Cost (\$)
19	San Patricio County Hazard Mitigation Action Plan - San Patricio County, County Wide, Action #3	Adopt/update disaster resistant building codes, ordinances and / or subdivision regulations (see comments). (Heat resistant roofing, elevate utilities and equipment/appliances, hail resistant roofing, shatter proof windows, lightning rods, roof strapping, drought tolerant landscaping, low flow toilets, sprinkler system, fire resistant building materials, insulated pipes, etc.)	The project lacks important information to pass the screening	San Patricio				\$	2,000
20	San Patricio County Hazard Mitigation Action Plan - San Patricio County, County Wide, Action #4	Participate in the Community Rating System.	The project lacks important information to pass the screening	San Patricio				\$	5,000
22	San Patricio County Hazard Mitigation Action Plan - City of Gregory, Action #1	Develop and implement an all hazards education program. Utilize Facebook, city webpage and distribution of brochures to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damage, injury or illness.	The project lacks important information to pass the screening	San Patricio				\$	2,000
23	San Patricio County Hazard Mitigation Action Plan - City of Ingleside on the Bay, Action #1	Develop and implement an all hazards education program. Utilize Facebook, city webpage and distribution of brochures to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damages, injury or illness.	The project lacks important information to pass the screening	San Patricio				\$	2,000
city	San Patricio County Hazard Mitigation Action Plan - City of Mathis, Action #6	Develop and implement an all hazards education program. Utilize Facebook and city webpage to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damages, injury or illness.	The project lacks important information to pass the screening	San Patricio				\$	2,000
26	San Patricio County Hazard Mitigation Action Plan - City of Mathis, Action #7	Obtain certification by the National Weather Service as "Storm Ready" community; improve emergency management radio coverage and reception; Implement and enhance an area-wide telephone Emergency Notification System ("Reverse 911").	The project lacks important information to pass the screening	San Patricio				\$	50,000
27	San Patricio County Hazard Mitigation Action Plan - City of Mathis, Action #10	Install signs prohibiting dumping in streams, ditches, waterways and floodplain areas.	The project lacks important information to pass the screening	San Patricio				\$	2,000

FMS ID	FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estima	ted Project
			Infeasible		Area	Risk		C	ost (\$)
28	San Patricio County Hazard Mitigation Action Plan - City of Odem, Action #1	Develop and implement an all hazards education program. Utilize Facebook and city webpage to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damages, injury or illness and post information on evacuation routes and procedures.	The project lacks important information to pass the screening	San Patricio				\$	2,000
29	San Patricio County Hazard Mitigation Action Plan - City of Odem, Action #4	Improve emergency management radio coverage and reception; Implement and enhance an area-wide telephone Emergency Notification System ("Reverse 911"); Develop alternative evacuation routes/plans and designate emergency thoroughfares, particularly in areas with limited capacity; Educate citizens on evacuation routes and procedures.	The project lacks important information to pass the screening	San Patricio				\$	10,000
31	San Patricio County Hazard Mitigation Action Plan - City of Odem, Action #12	Update public community facilities to include severe weather action plans and designated tornado shelter areas. Educate public on plans and shelter locations.	The project lacks important information to pass the screening	San Patricio				\$	2,500
32	San Patricio County Hazard Mitigation Action Plan - City of Odem, Action #15	Relocate books, manuals, permits, and other critical government records to the upper floors and/or on shelves above the base flood elevation of the library and records building.	The project lacks important information to pass the screening	San Patricio				\$	2,500
34	San Patricio County Hazard Mitigation Action Plan - City of Odem, Action #18	Educate city employees on risks associated with natural hazards and measures to prevent injury or loss of life.	The project lacks important information to pass the screening	San Patricio				\$	2,000
37	San Patricio County Hazard Mitigation Action Plan - City of Portland, Action #7	Develop and implement an all hazards education program. Utilize Facebook and city webpage to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damages, injury or illness and post information on evacuation routes and procedures.	The project lacks important information to pass the screening	San Patricio				\$	2,000
39	San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #3	Develop and implement an all hazards education program; Utilize Facebook, city webpage and distribution of brochures to provide information on all hazards that could impact the community; Provide mitigation measures to reduce risk of damages, injury or illness; Establish a user-friendly database for local residents to access resources for mitigation purposes.	The project lacks important information to pass the screening	San Patricio				\$	2,000

FMS Name	Description	Reason to Consider as	Counties	Project	Flood	Sponsor	Estir	mated Project
		Infeasible		Area	Risk			Cost (\$)
San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #6	Limit development and increase density requirements within hazard areas; Incorporate higher standards for hazard resistance in local application of the building code.	The project lacks important information to pass the screening	San Patricio				\$	3,000
San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #7	Obtain certification by the National Weather Service as a "Storm Ready" community.	The project lacks important information to pass the screening	San Patricio				\$	2,000
San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1	Develop and implement an all hazards education program. Utilize Facebook and city webpage to provide information on all hazards that could impact the community. Provide mitigation measures to reduce risk of damages, injury or illness.	The project lacks important information to pass the screening	San Patricio				\$	2,000
San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #8	Install signs prohibiting dumping in streams, ditches, waterways and floodplain areas.	The project lacks important information to pass the screening	San Patricio				\$	2,000
San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #10	Advertise and promote the availability of flood insurance and availability of the Preferred Risk Policy (PRP); Distribute flood insurance handouts with all permit applications.	The project lacks important information to pass the	San Patricio				\$	2,000
Flood Proof Repetitive Loss		information to pass the screening	San Patricio			Office of Community	<	4,500,000
Tromes in Sun 1 dericio country	The Nueces River has had three major flood events, two Presidential declarations in 2002, and a non-declared event in 2003. The property is located in the 100 year floodplain, with	The project lacks important information to pass the screening	Sun i diricio			Potential funding sources include FEMA,	~	7,500,000
	San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #6 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #7 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #8 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #10	San Patricio County Hazard Mitigation Action #6 Sinton, Action #6 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #7 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #8 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #8 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #8 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #8 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #8 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #8 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #10 Re-Furbish, Flood proof Repetitive Loss Homes damaged by Declared Disasters. San Patricio County obtained monies to complete 40 home rebuilds and has approximately 60 homes which are qualified but has no funding at this time. Many residential structures were damaged by yorms in 2002. Insurance was non-existent, or coverage was not provided for by the homeowner, who were either elderly, low-income, or unaware that coverage on normal homeowner's insurance does not provide for flood or wind storm damage. The Nueces River has had three major flood events, two Presidential declarations in 2002, and a non-declared event in 2003. The property is located in the 100 year floodplain, with portions in the floodway. San Patricio County has procured nine properties in the area, 6 in River Estates and 3 in Peaceful Valley through FEMA & ORCA Grants. We are in the process of purchasing one 600 acre parcel through the Coastal Bays and Estuary Program, and 13 tracts through a Texas General Land	San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #10 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #17 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #17 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 Advertise and promote the availability of flood insurance and availability of the Preferred Risk Policy (PRP); Distribute flood insurance handouts with all permit applications. Re-Furbish, Flood proof Repetitive Loss Homes in San Patricio County Homes in	San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #10 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #10 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #10 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #10 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #10 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #11 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #11 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #10 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #10 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #10 Advertise and promote the availability of flood insurance and availability of the Preferred Risk Policy (PRP): Distribute flood insurance handouts with all permit applications. 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The property is located in the 100 year floodplain, with portions in the floodway. San Patricio County has pr	San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #1 San Patricio County Hazard Limit development and increase density requirements within hazard areas; incorporate higher standards for hazard resistance in local application of the building code. San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 Advertise and promote the availability of flood insurance and availability of the Perferred Risk Policy (PRP); Distribute flood insurance handouts with all permit applications. Advertise and promote the availability of the Perferred Risk Policy (PRP); Distribute flood insurance handouts with all permit applications. Re-Furbish, Flood proof Repetitive Loss Homes damaged by Declared Disasters. San Patricio County batard which are qualified but has no funding at this time. Many residential structures were damaged by storms in 2002. Insurance was non-existent, or coverage was not provided for by the homeowner, who were either elderly, low-income, or unaware that coverage on normal homeowner's insurance does not provide for flood or wind storm damage. The Nucces River has had three major flood events, two Presidential declarations in 2002, and a non-declared event in 2003. The property is located in the 100 year floodoplain, with portions in the floodway. San Patricio County has procured nine properties in the area, 6 in Rher Estates and 8 in Peaceful Valley through FEMA & ORCA Grants. We are in the process of purchasing one 600 acre parcel through the Coastal Bays and Estuary Program, and 13 tracts through a Texas General Land	San Patricio County Hazard Mitigation Action #6 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #7 San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action #8 Develop and implement an all hazards education program. Utilize Facebook and city webpage to provide information to pass the screening Taft, Action #1 Install signs prohibiting dumping in streams, ditches, waterways and floodplain areas. San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 San Patricio County Hazard Mitigation Action Plan - City of Taft, Action #1 Re-Furbish, Flood proof Repetitive Loss Homes damaged by Declared Disasters. San Patricio County data and availability of flood insurance and availability of the Preferred Risk Policy (PRP); Distribute flood insurance handouts with all permit applications. Re-Furbish, Flood proof Repetitive Loss Homes damaged by Declared Disasters. San Patricio County data proximately 60 homes which are qualified but has no funding at this time. Many residential structures were damaged by storms in 2002. Insurance was non-existent, or coverage was not provided for by the homeowner, who were either elderly, low-income, or unaware that coverage on normal homeowner's insurance does not provide for flood or wind storm damage. The Nuces River has had three major flood events, two Presidential declarations in 2002, and a non-declared event in properties in the race, 6 in River Estates and 3 in Paeceful Valley through FEMA & ORCA Grants. We are in the process of purchasing one 600 area parcel through the Coastal Bays and Estatory Program, and 13 tracts through a Texas General Land	San Patricio County Hazard Mitigation Action Plan - City of Sinton, Action Rea Obtain certification by the National Weather Service as an Patricio County Hazard Mitigation Action Plan - City of Sinton, Action Rea Obtain certification by the National Weather Service as a "Storm Ready" community. San Patricio County Hazard Mitigation Action Plan - City of Taft, Action Rea Develop and implement an all hazards education program. Utilize Facebook and city webpage to provide information an all hazards through the community. Provide mitigation measures to reduce risk of dramages, injury or liness. San Patricio County Hazard Mitigation Action Plan - City of Taft, Action Rea San Patricio County Hazard Mitigation Action Plan - City of Taft, Action Ready Rea-Furbish, Flood proof Repetitive Loss Homes damaged by Declared Disasters. San Patricio County obtained monies to complete 40 home rebuilds and has approximately 60 homes which are qualified but has no funding at this time. Many residential structure were damaged by yot from in 2002. Insurance was non-existent, or coverage was not provided for by the homeowner, who were either dedlery, low-income, or unaware that coverage on normal homeowner's insurance does which are qualified but has no funding at this time. Many residential structure were damaged by yot from in 2002. Insurance was non-existent, or coverage was not provided for by the homeowner, who were either dedleryl, low-income, or unaware that coverage on normal homeowner's insurance does which are qualified but has no funding at this time. Many residential structures were damaged to county has procured more properties in the area, 6 in Rever Estates and 3 in Peaceful Valley through FEMA & RORCA Grants, We are in the process of purchasing one 600 acre parcel through the Coastal Bays and Estatus Program, and 313 tracts through a Texas General Land The Project Lacks important information to pass the screening The project Lacks important information to pass the screening The project Lacks important informa	San Patricio County Hazard Mitgation Action Plan - City of Sinton, Action Plan - City of Taft, Action Pl

Appendix C8 – Supporting Costing Material for Flood Mitigation Actions

TAIL TOWN	6 (0	Nueces (Region 13) FMEs
FIME Type	General Description	Scope & Assumptions Assuming Open Channel DMRs
Watershed Planning – Drainage Master Plans	Supports the development and analysis of hydrologic and hydraulic models to evaluate flood risk within a given jurisdiction, evaluate potential alternatives to mitigate flood risk, and develop capital improvement plans.	Assuming Open Channel DMPs County DMP: Chose to assign a uniform cost of \$500,000 for each county to cover the following Basic Services: 1. Project Management 2. Coordination and Collaboration Work Sessions. 3. Data Collection 4. Screening Assessment 5. Targeted H&H Modeling and Alternatives Analysis 6. Technical Report 7. Public Outreach City DMP: Assign fee based on population (2020 Census) 1. Small (< 25,000) - \$250,000 2. Medium (25,000 to 100,000) - \$500,000 3. Large (100,000+) - \$1,000,000
Watershed Planning – Flood Mapping Updates	Promotes the development and/or refinement of detailed flood risk maps to address data gaps and inadequate mapping. Create FEMA mapping in previously unmapped areas and update existing FEMA maps as needed.	Key GIS Factors: ■ HUC 8 Intersections with County ■ Stream Miles* (Zone ∧ & Zone X) o 25% of total streams (unmapped and mapped) ■ FEMA FIRM Panels Basic Services Include: 1. Project Management 2. Topo Data Capture 3. Survey Data 4. Alluvial Fan Data Capture 5. Hydrologic Data Capture 6. Hydraulics Data Capture 7. Coastal Data Capture 8. Floodplain Mapping 9. Technical Report **Important to Note: 1) Revisions might be made for counties that are in more than one region. 2) These costs reflect "develop FEMA mapping" from scratch; therefore, an adjustment will need to be made to for FEMA mapping products that nee to be updated.
Watershed Planning – Flood Mapping for Dam Failure	inundation maps and models. Hydrologic studies to determine threat, risk, and potential impacts of flooding from dam	Dam Failure Scope: [\$\$/Dam] 1. Project Management 2. Discovery Data Capture 3. Screening Assessment 4. Detailed Dam Breach Analysis
Engineering Project Planning	Evaluation of a proposed project to determine whether implementation would be feasible OR Initial engineering assessment including conceptual design, alternative analysis, and up to 30 percent engineering design.	Where the (assumed) construction cost is available: • Assume FME cost is equivalent to 15% of construction costs. • Where no cost is available, assume study cost range from \$100,000 to \$250,000 based on scope of project as follows: • Localized - \$100,000 • Community - \$150,000 • Citywide - \$200,000 • In excess of Citywide - \$250,000 • When cost estimates were available, project costs were fragmented into "FMP Cost" (Construction) and "FME Cost" (Study) based on the project description and available information. • Where available costing information fragmented the project cost between Construction and Study, "FMP Cost" and "FME Cost" were assigned accordingly. • Where available costing information was not fragmented between Construction and Study costs, project description and supporting documentation was used to determine an appropriate split, explained below: • Where the description/documentation leaned towards Construction (no mention of Study), Study Cost was assumed as 15% of the project cost, and the existing project cost was assumed to be the Construction Cost. • Where the description/documentation leaned towards Study (no mention of Sonstruction), the existing project cost was assumed to be 40. • Where the description/documentation mentioned both a study and Construction Portion, the existing project cost was split such that 15% was assumed to be for Study, and 85% was assumed to be for Construction.

- Use project cost estimates when available.
- Where cost estimates are not available, use the above table.
- In all instances where a cost predating September 2020 is used, costs must be escalated to September 2020. Costs that fall within or after September 2020 may be used without being escalated.
- Where cost estimates are available, but the year/month of their development is not available, compare the available cost with the assumed cost outlined in the above table, and use the highest of the two.
- Reference the "Factors" sheet for additional information on accelerating project costs.
 Reference Appendix 5-2 for for calculators associated and additional information associated with cost determination for "Watershed Planning Flood Mapping Updates" "Watershed Planning Flood Mapping for Dam Failure".

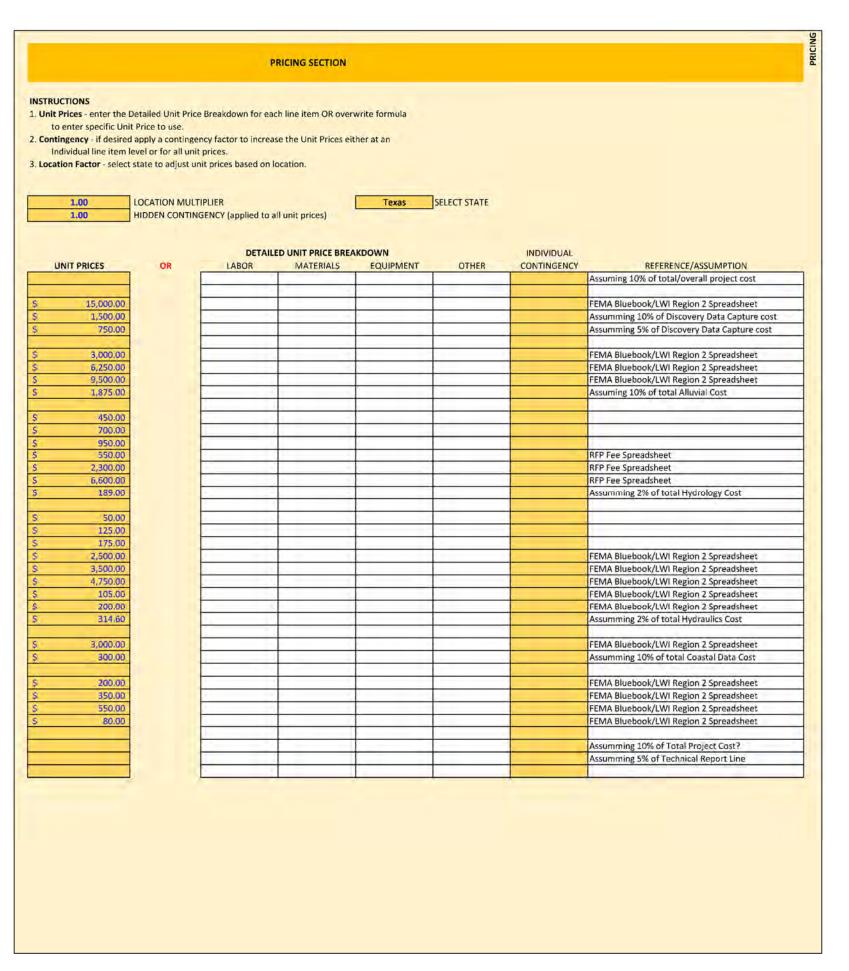
		Nueces (Region 13) FMSs
FMS Type	FMS Description/FMS Scope	Assumptions
Education and Outreach	 'Turn Around Don't Drown" campaign and LWC NFIP program and flood insurance public awareness Public education on flooding 	1. Assume a \$50,000 minimum for this group based on similar educational programs. 2. Assume a \$50,000 minimum for this group based on similar educational programs. 3. Assume as follows based on extents of education program: Region Wide - \$100,000 County Wide - \$50,000 City Wide - \$25,000
Flood Measurement and Warning	Early flood warning system/local warning system Install stream and rain gauges and weather stations LWC flood warning devices, signs, and gates	Assume a minimum of \$250,000 for this group based on https://texaswaternewsroom.org/pressreleases/2016-08-25_flood.html
Infrastructure Projects	HROM Program Lift station flood-proofing	1. Assume \$35,000,000. 2. Assume \$100,000.
Other	1. Debris clearing maintenance program 2. Channel maintenance and erosion control 3. Dam inspection program 4. Levee inspection 5. Establish city parks in low lying areas 6. Implement green infrastructure	1. Assume \$100,000. 2. Assume \$250,000. 3. Assume \$100,000 per dam. (High Level Estimate) 4. Assume \$50,000 a year. (High Level Estimate) 5. Assume \$1,000,000. 6. Assume \$500,000.
Property Acquisition and Structural Elevation	Acquire high risk and repetitive loss properties Acquire and preserve open space adjacent to floodplain areas	Assume \$5,000,000 minimum to acquire several structures based on http://nrcsolutions.org/rush-creek-property-acquisition-project-arlington-tx/
Regulatory and Guidance	1. City floodplain ordinance creation/updates 2. Zoning regulations and Land Use Programs 3. Create a Storm water Management Plan 4. Levy a stormwater fee for developers 5. Floodplain Manager Position / Enforcement of Code and Flood Damage Prevention Ordinances 6. NFIP/CRS participation 7. Region-wide stormwater management manual	 Assume a \$100,000 minimum for policy/regulations to cover engineering consultant fees. Assume \$100,000 to cover engineering consultant fees. Assume \$300,000 for engineering consultant fees. Assume \$200,000. Assume \$75,000 for a first-year salary based on the top 25% annual salary for a floodplain manager; https://www.floods.org/career-center/careers-in-floodplain-management/salary-information/ Assume \$100,000 to cover engineering consultant fees and implement projects to increase rating. Assume \$500,000 to cover engineering consultant fees and support communities in their implementation process.

- Use project cost estimates when available.
- Where cost estimates are not available, use the above table.
- In all instances where a cost predating September 2020 is used, costs must be accelerated to September 2020. Costs that fall within or after September 2020 may be used without being accelerated.
- Where cost estimates are available, but the year/month of their development is not available, compare the available cost with the assumed cost outlined in the above table, and use the highest of the
- Reference the "Factors" sheet for additional information on accelerating project costs.

Year	January	February	March	April	May	June	July	August	September	October	November	December	Avg
2022	0.92	0.91	0.90	0.89		1. 4. 6	1 4 40					1	
2021	0.99	0.98	0.98	0.97	0.96	0.95	0.94	0.92	0.92	0.92	0.92	0.92	0.95
2020	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.00	1.00	1.00	0.99	0.99	1.00
2019	1.03	1.03	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.01	1.01	1.02
2018	1.06	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03	1.04
2017	1.09	1.09	1.08	1.08	1.08	1.07	1.07	1.06	1.06	1.06	1.06	1.06	1.07
2016	1.13	1.13	1.12	1.12	1.11	1.11	1.11	1.11	1.11	1.10	1.10	1.09	1.11
2015	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.14	1.14	1.14	1.13	1.15
2014	1.19	1.19	1.19	1.18	1.17	1.17	1.17	1.17	1.17	1.16	1.16	1.16	1.17
2013	1.22	1.22	1.22	1.21	1.21	1.21	1.20	1.20	1.20	1.19	1.19	1.19	1.20
2012	1.25	1.25	1.24	1.24	1.24	1.24	1.23	1.23	1.23	1.23	1.22	1.22	1.24
2011	1.29	1.28	1.28	1.27	1.27	1.27	1.27	1.27	1.26	1.26	1.25	1.25	1.27
2010	1.33	1.33	1.33	1.33	1.31	1.31	1.30	1.30	1.30	1.29	1.28	1.28	1.31
2009	1.35	1.35	1.35	1.35	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.33	1.34
2008	1.42	1.42	1.42	1.42	1.41	1.40	1.39	1.38	1.34	1.33	1.34	1.34	1.38
2007	1.46	1.46	1.46	1.46	1.45	1.45	1.44	1.44	1.43	1.43	1.42	1.42	1.44
2006	1.50	1.50	1.49	1.49	1.50	1.49	1.49	1.49	1.48	1.46	1.45	1.46	1.48
2005	1.58	1.58	1.57	1.56	1.55	1.55	1.55	1.54	1.53	1.52	1.51	1.50	1.54
2004	1.68	1.68	1.65	1.64	1.63	1.62	1.61	1.60	1.58	1.57	1.57	1.57	1.62
2003	1.75	1.73	1.74	1.73	1.73	1.72	1.72	1.71	1.71	1.70	1.69	1.70	1.72
2002	1.78	1.78	1.77	1.77	1.77	1.76	1.74	1.74	1.75	1.75	1.75	1.75	1.76
2001	1.83	1.83	1.83	1.83	1.83	1.82	1.80	1.80	1.80	1.80	1.79	1.80	1.81
2000	1.88	1.87	1.85	1.85	1.84	1.84	1.85	1.84	1.85	1.84	1.84	1.83	1.85
1999	1.92	1.92	1.92	1.91	1.91	1.90	1.89	1.89	1.88	1.87	1.88	1.88	1.90
1998	1.96	1.96	1.96	1.95	1.96	1.95	1.94	1.94	1.93	1.92	1.92	1.92	1.94
1997	1.99	1.99	2.00	1.98	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.97
1996	2.08	2.08	2.08	2.07	2.06	2.05	2.05	2.03	2.02	2.01	2.00	2.00	2.05
1995	2.11	2.11	2.12	2.12	2.12	2.12	2.10	2.09	2.09	2.09	2.08	2.08	2.10
1994	2.15	2.14	2.14	2.13	2.13	2.13	2.13	2.12	2.11	2.11	2.11	2.11	2.13
1993	2.27	2.27	2.25	2.23	2.19	2.19	2.19	2.20	2.19	2.18	2.18	2.17	2.21
1992	2.35	2.35	2.33	2.32	2.32	2.31	2.30	2.29	2.28	2.28	2.27	2.27	2.31
1991	2.41	2.41	2.41	2.41	2.40	2.39	2.37	2.35	2.35	2.35	2.35	2.35	2.38
1990	2.46	2.45	2.45	2.45	2.44	2.43	2.43	2.42	2.41	2.41	2.40	2.41	2.43

Multipy project cost by factor that represents
 the month and year the cost estimate was
developed to convert to September 2020 dollars.

OPINION OF PROBABLE CONSTRUCTION COST - DEVELOP FEMA FIS FORM SETUP / QC REVIEW COMMENTS Regional Flood Plans Regional Flood Planning Group (RFPG) INSTRUCTIONS Enter Pricing and Quantities using the sections Jane Doe XXXX ABC12345 to the right. Expand/collapse each section by clicking on the + or - button at the top. PROJECT MANAGEMENT 1 Project Management and Meetings 1 LS \$ 7,029.86 \$ 7,030 DISCOVERY DATA CAPTURE 2 Data Collection 15,000.00 15,000.00 HUC8 5 ENTER COMMENTS / QC REVIEW COMMENTS 3 Data Collection QA/QC L5 \$ 1,500.00 1,500,00 1 LS \$ 750.00 4 Event Data Capture 750,00 5 ALLUVIAL FAN DATA CAPTURE 9 High Alluvial Fan Analysis (low) 1 SQ MI \$ 3,000.00 \$ 3,000.00 6,250.00 6,250.00 10 High Alluvial Fan Analysis (medium) SQ.MI \$ 11 High Alluvial Fan Analysis (high) SQ.MI \$ 9,500.00 9,500.00 12 High Alluvial Fan Analysis QA/QC 1 LS \$ 1.875.00 \$ 1.875.00 HYDROLOGIC DATA CAPTURE 13 Regression Analyses (low) SQ MI \$ 450.00 450.00 14 Regression Analyses (med) SQ MI S 700.00 700.00 15 Regression Analyses (high) SQ MI \$ 950.00 950.00 550.00 550.00 16 Rainfall-Runoff Analyses (low) 1 SQ MI S 17 Rainfall-Runoff Analyses (medium) 2,300.00 SQ MI S 2,300.00 18 Rainfall-Runoff Analyses (high) SQ MI S 6,600.00 6,600.00 19 Rainfall-Runoff Analyses QA/QC LS \$ 189.00 \$ 189.00 HYDRAULICS DATA CAPTURE 20 Approximate Study (low) 1 RVMI \$ 50.00 3 50.00 21 Approximate Study (medium) 1 RV MI \$ 125.00 22 Approximate Study (high) RV MI S 175.00 175.00 23 Detailed Study (low) RV MI \$ 2,500.00 2,500.00 24 Detailed Study (medium) 3,500.00 RV MI \$ 3,500.00 25 Detailed Study (high) RV MI 5 4,750.00 4,750.00 26 Floodplain Mapping 6 RV MI \$ 105.00 \$ 630.00 27 Riverine Workmaps 200.00 \$ 4,000.00 20 PANEL \$ 28 QA/QC 1 LS \$ 314.60 \$ 314.60 COASTAL DATA CAPTURE 29 Floodplain Mapping of Coastal 1 COMI \$ 3,000.00 \$ 3,000.00 30 QA/QC 15 5 300.00 \$ 300.00 FLOODPLAIN MAPPING DATA CAPTURE 31 Redelineation (low) RV MI \$ 200.00 \$ 200.00 32 Redelineation (medium) RV MI \$ 350.00 \$ 350.00 33 Redelineation (high) 550.00 \$ 550.00 RV MI S 34 Redelineation QA/QC RV MI S 80.00 \$ 240.00 FINAL DELIVERABLES 35 Technical Report LS \$ 7,029.86 \$ 7,029.86 36 Technical Report QC L5 \$ 3,514.93 \$ 3,514.93 SUBTOTAL 87,873 27,000 SUBTOTAL 115,000 Note base year of costs in OPCC PROJECT TOTAL (2021 COSTS) 121,000 Determine and Input Cost Esciation Factor Used Note year costs escalated to in parenthesis The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual instruction costs will not vary from its opinions of probable costs. 1. FNI OPCC classified as an AACE Class 4 Estimate with accuracy range or -20 to + 30. **IMPORTANT NOTES / ASSUMPTIONS:** The highlighted units (ie: HUC 8, SQ MI, RIV MI) are all values pulled from the GIS effort.

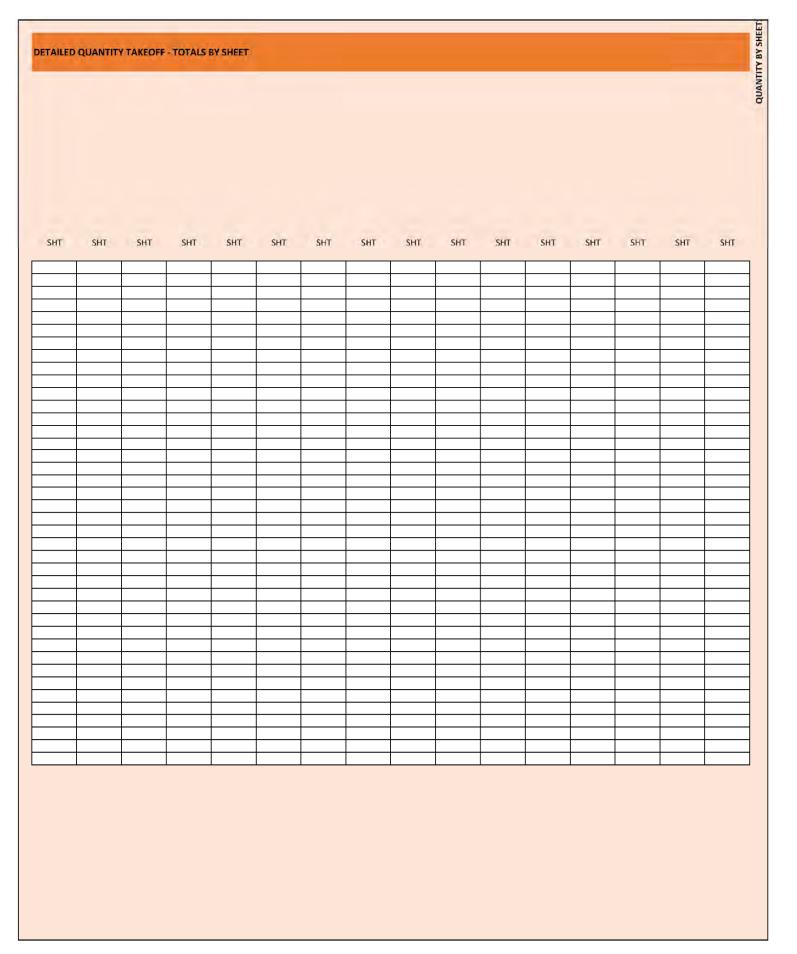


QUANTITY TAKEOFF SECTION

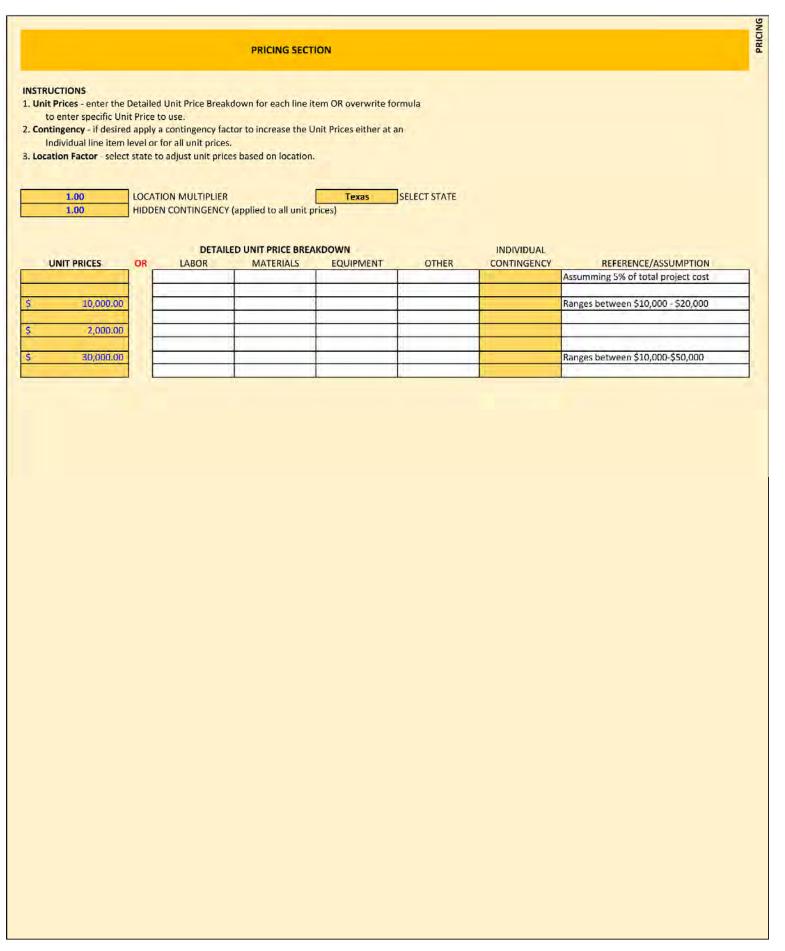
INSTRUCTIONS

- 1. Sheet Reference input the primary sheet where this line item is details within the plans.
- Total Quantity the quantity can be calculated by sheet using the "Quantity by Sheet" section and it is automatically summed or the quantity can be manually inputted below to overwrite the formula.
- 3. Units of Measure determine the appropriate unit of measure based on how item is priced to calculate quantity
- Quantity Details Described input description of what is being quantified for this line item, especially for Lump Sum quantities
 provide details on what is included within that lump sum.
- 5. Assumptions/Comments input any specific assumptions made when quantifying this line item.

SHEET REFERENCE	TOTAL	UNITS OF MEASURE	QUANTITY DETAILS DESCRIBED	ASSUMPTIONS/COMMENTS
	1	LS		Assuming 10% of total project cost
	1	HUC 8		
	1	LS		
	1	LS		
				Use when applicable to county
	1	SQ MI		
	1	SQ MI		
	1	SQ MI		
	1	LS		
				Total Drainage Area (Sq. Mi.)
	1	SQ MI	0.8	Assumming 80% of hydrology
	1	SQ MI		
	1	SQ MI		
	1	SQ MI	0.2	Assumming will need to do a model to cover larger lakes/ponds
	1	SQ MI	0	
	1	SQ MI	0	
	1	LS		Total state
				Total River Miles
	1	RV MI	0.7	Assuming 70% of total stream miles with this LOD
	1	RV MI		Assuming 20% of total stream miles with this LOD
	1	RV MI		
	1	RV MI		
		RV MI		
	1	RV MI	0.1	Assuming 10% of total stream miles with this LOD
	6	RV MI		Assumming 100% of total stream miles (ie: the sum)
	20	PANEL		The total number of FIRM panels (see GIS)
	1	LS		
				Use when applicable to county
	1	COMI	*	
	1	LS		
	1	RV MI		
	1	RV MI		
	1	RV MI		
	3	RV MI		
	1	LS		
	1	LS		



OJECT NAME Regional Flood Plans [ENT Regional Flood Planning Group (RFPG)	DATE GROUP	7/5/	2022		
E ID	PM				INSTRUCTIONS
ESTIMATED BY	QC CHECKED BY		FNI PROJECT N	JMBER	Enter Pricing and Quantities using the sections
Jane Doe	XXXX		ABC1234	5	to the right. Expand/collapse each section by clicking on the + or - button at the top.
M DESCRIPTION	QUANTITY	וואַרו ו	UNIT PRICE	TOTAL	
CT MANAGEMENT					
Project Management OVERY DATA CAPTURE	1	LS S	49,600.00 \$	49,600	
Dam Data Collection + QC	1	LS S	10,000.00 \$	10,000.00	
EENING ASSESSMENT Dam Prioritization & Need	116	EA S	2,000.00 \$	232,000.00	ENTER COMMENTS / QC REVIEW COMMENTS
AILED DAM BREACH ANALYSIS	110			232,000.00	
Full Hydrologic Analysis + PMF Regulations + Technical Report	25	EA \$	30,000.00 \$	750,000.00	
	SUBTOTAL		\$	1,041,600	
	CONTINGENC		30% \$	313,000	
ECT TOTAL (2021 COSTS)			\$	1,355,000	
form internal project setup and coordination, including project kickoff ices with backup documentation for the duration of the project.				1000	
Perform internal project setup and coordination, including project kickoff voices with backup documentation for the duration of the project. Participate in up to ## project coordination meetings with CLIENT staff, vi	a teleconference, as specified in the	following tas		1000	Note base year of costs in OPCC
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QUANTITY TAKEOFF SECTION

INSTRUCTIONS

- 1. Sheet Reference input the primary sheet where this line item is details within the plans.
- Total Quantity the quantity can be calculated by sheet using the "Quantity by Sheet" section and it is automatically summed or the quantity can be manually inputted below to overwrite the formula.
- 3. Units of Measure determine the appropriate unit of measure based on how item is priced to calculate quantity
- Quantity Details Described input description of what is being quantified for this line item, especially for Lump Sum quantities
 provide details on what is included within that lump sum.
- 5. Assumptions/Comments input any specific assumptions made when quantifying this line item.

REFERENCE	QUANTITY	MEASURE	QUANTITY DETAILS DESCRIBED	ASSUMPTIONS/COMMENTS
7	1	LS		Lump sum, assumming 5% of total project cost
	1	LS		Identifying what's available
	116	EA		Use all dams accounted for in County
	25	EA		Assumming 10 is the maximum number of dams that will be analyzed at this LOD. If there aren't

