Region 15 Lower Rio Grande Regional Flood Planning Group

March 27, 2025

Mr. Bryan McMath
Executive Administrator
Texas Water Development Board
Stephen F. Austin Building
1700 N. Congress Avenue, 6th Floor
Austin, Texas 78701

RE: Amendment to the 2023 Region 15 Regional Flood Plan

Dear Mr. McMath:

On behalf of the Lower Rio Grande Regional Flood Planning Group (RFPG), I am pleased to submit the Amended Regional Flood Plan (RFP) for Region 15 in accordance with Texas Administrative Code (TAC) §361.51. On December 4, 2024, the Lower Rio Grande RFPG voted to provide an opportunity for communities to incorporate additional flood mitigation and management needs into the RFP through an amendment process to make projects eligible for the 2026 FIF cycle. The RFPG met again on February 19, 2025, to review submitted FMXs and voted to incorporate those FMXs meeting minimum requirements to be incorporated into a Draft RFP Amendment. The Draft Amendment was posted for public comment on the Region 15 website on March 12, 2025, and the RFPG formally approved and adopted the RFP Amendment at the March 19, 2025, meeting of the Lower Rio Grande RFPG in accordance with applicable laws, regulations, and TWDB requirements.

The amendment consists of the addition of 89 new FMEs, 35 new FMSs, and 12 new FMPs. These revisions represent 34 community stakeholders throughout the Lower Rio Grande basin. The recommendations included in this amendment will not negatively impact neighboring areas and would adequately provide for the preservation of life and property.

The amendment documentation including a Summary of Changes, a detailed Amendment Document, and supporting documentation (including H&H models, updated tables & figures, and the geodatabase) is included with this submittal and has been uploaded to the SharePoint.

If you have any questions regarding any part of this Amended RFP submittal package, please contact our technical consultant, Anne Whitko, at awhitko@halff.com or by phone at 956-303-7105. You may also reach me at jaime.salazar@hcdd1.org or by phone at 956-292-7080, extension 5811. We look forward to TWDB's feedback on the Amended Regional Flood Plan.

Sincerely,

Jaime J. Salazar, Hidalgo County Drainage District No. 1
Region 15 RFPG Sponsor

c: Reem Zoun, TWDB Director of Flood Planning
Nick Collins, TWDB Project Manager for the Lower Rio Grande Flood Planning Region
Lower Rio Grande Regional Flood Planning Group Members
Raul Sesin, Hidalgo County Drainage District No. 1
Kristina Leal, Halff Associates, Technical Consultant
Anne Whitko, Halff Associates, Technical Consultant

2023 REGIONAL FLOOD PLAN
REGION 15
LOWER RIO GRANDE

Amendment No.2 (2025)

Texas Water Development Board

REGION 15 Lower Rio Grande Regional Flood Planning Group

Amendment to the 2023 Regional Flood Plan – Region 15 Lower Rio Grande

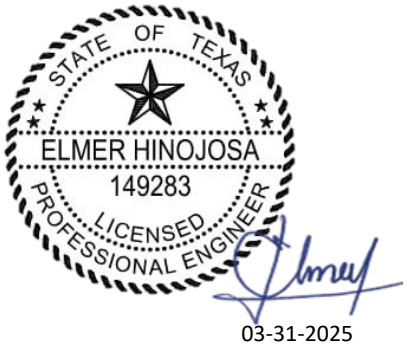
Prepared for:

Region 15 Regional Flood Planning Group and Texas Water Development Board

Prepared by:

Halff Associates, Inc.

TBPELS Firm #312



March 2025

Summary of Changes

2023 Regional Flood Plan Amendment No. 2

Executive Summary

The executive summary was updated to reflect the changes made to the report chapters and appendices. These changes include the addition of new recommended flood risk solutions (FMXs), updated flood exposure analyses based on new detailed data, and public meeting records.

Chapter 1: Planning Area Description

The introduction was revised to incorporate the new amendment approved by the Regional Flood Planning Group.

Chapter 2: Flood Risk Analyses

Following the flood exposure analysis, several figures, tables, and text in Chapter 2 were updated to reflect changes made to the existing and future floodplains after incorporating new studies for the amendment. These updates were necessary to ensure that the most current and accurate flood risk data is represented, addressing refinements in floodplain boundaries, hydrologic and hydraulic studies, and exposure assessments. The revised content provides a more precise understanding of regional flood vulnerabilities by integrating additional local and state data sources, improving both the existing conditions (Task 2A) and future conditions (Task 2B) analyses. The table and list below show a summary of chapter 2 updates:

Updated Text Sections	Updated Figures	Updated Tables
1	13	15

Updated Data includes:

- Structures at Risk (Residential, Non, Residential, Critical Facilities)
- Roadway Segments and Low Water Crossings at Risk
- Agricultural Land at Risk
- Population at Risk
- Existing and Future Flood Quilt

Chapter 3

No changes were made to Chapter 3.

Chapter 4: Assessment and Identification of Flood Mitigation Needs

Chapter 4 was updated to include the addition of 89 potential Flood Mitigation Evaluations (FMEs), 24 potential Flood Mitigation projects (FMPs), and 35 potential Flood Mitigation Strategies (FMSs). The table below shows a summary of changes to the count of potential FMXs included in the plan:

FMX Type	Previous Potential Count	Amended Potential Count
FME	457	546
FMP	98	122
FMS	86	121

Chapter 5: Recommendation of FMEs, FMSs, & Associated FMPs

Chapter 5 was updated to include the addition of 89 recommended FMEs, 12 recommended FMPs, and 35 recommended FMSs. Additionally, costs associated with FMXs, figures denoting FMX locations, as well additional text were adjusted to reflect the changes to the recommended FMXs listed. The table below shows a summary of changes to the count of recommended FMXs included in the plan:

FMX Type	Previous Recommended Count	Amended Recommended Count
FME	406	495
FMP	94	106
FMS	86	121

Chapter 6: Impact and Contribution of the Regional Plan

The chapter was updated to account for the addition of new FMXs and their implementation impact on the statistics presented throughout the chapter. The following items in tables and text were updated to reflect the changes:

- Floodplain area impacted by the FMP implementations
- Population impacted by the implementation of FMPs
- Number of structures removed from the floodplain after FMP implementations
- Number of critical facilities removed from the floodplain after FMP implementations
- Number of low water crossings removed from the floodplain after FMP implementations
- Number of roadways removed from the floodplain after FMP implementations

Chapter 7-8

No changes were made to chapters 7 and 8.

Chapter 9: Flood Infrastructure Financing Analysis

Analysis updated to reflect the new total cost needed to implement the recommended FMXs.

Chapter 10: Public Outreach and Engagement

Table and text updated to reflect the additional RFPG meetings held for the amendment process.

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A.1 Introduction and Planning Group Action

A.1.1 Summary of amendments and associated evaluations

The Texas Water Development Board (TWDB) has recently advertised their intent to solicit applications for the 2026 Flood Infrastructure Funding (FIF) cycle to be awarded in 2027. Only flood mitigation and management actions listed within the 2024 State Flood Plan are eligible for funding through the 2026 FIF and future FIF funding cycles. Within the Lower Rio Grande Flood Planning Region (Region 15), many communities have expressed interest in providing additional flood mitigation needs for incorporation into the 2024 State Flood Plan, so that they are eligible for upcoming FIF cycles.

On December 4, 2024, the Lower Rio Grande RFPG voted to provide an opportunity for communities to incorporate additional flood mitigation and management needs into the Lower Rio Grande 2023 Regional Flood Plan through an amendment to give communities the opportunity to make these additional needs eligible for 2026 FIF funding.

Following the December RFPG meeting, a data collection window was opened to allow communities to submit FMEs, FMSs, and FMPs for inclusion into the amendment. The data collection period ended February 17, 2025. Requests received during this period of time were evaluated by the technical consultant team and presented to the RFPG for their consideration on February 19, 2025. The RFPG voted to proceed with incorporating all received FMXs that met the minimum requirements for inclusion into the Regional Flood Plan based on RFPG and TWDB requirements, into a Draft Regional Flood Plan Amendment. The draft amendment was posted for public comment on March 12, 2025, and formally approved and adopted by the RFPG on March 19, 2025 during a RFPG meeting.

A.2 Consistency with Rules and Statute

The Lower Rio Grande 2023 Regional Flood Plan Amendment was developed in conformance with all relevant administrative rules and statute. The amendment was developed in accordance with 31 TAC §361.21 notice requirements and adheres to the requirements and guidance principles for regional flood plans as described in TWC §16.062(h)(1). The recommendations included in this amendment will not negatively impact neighboring areas and would adequately provide for the preservation of life and property.

A.3 Modifications and additions to the 2023 Regional Flood Plan Report

A.3.1 Changes made to the Executive Summary

The executive summary was updated to reflect the changes made to the report chapters and appendices. These changes include an update to the flood exposure analyses due to the inclusion of new detailed mapping, the addition of potential and recommended flood risk solutions (FMXs), statistics measuring benefits provided by the FMP implementation, and public meeting records.

Sentence added to describe the process of the new amendment:

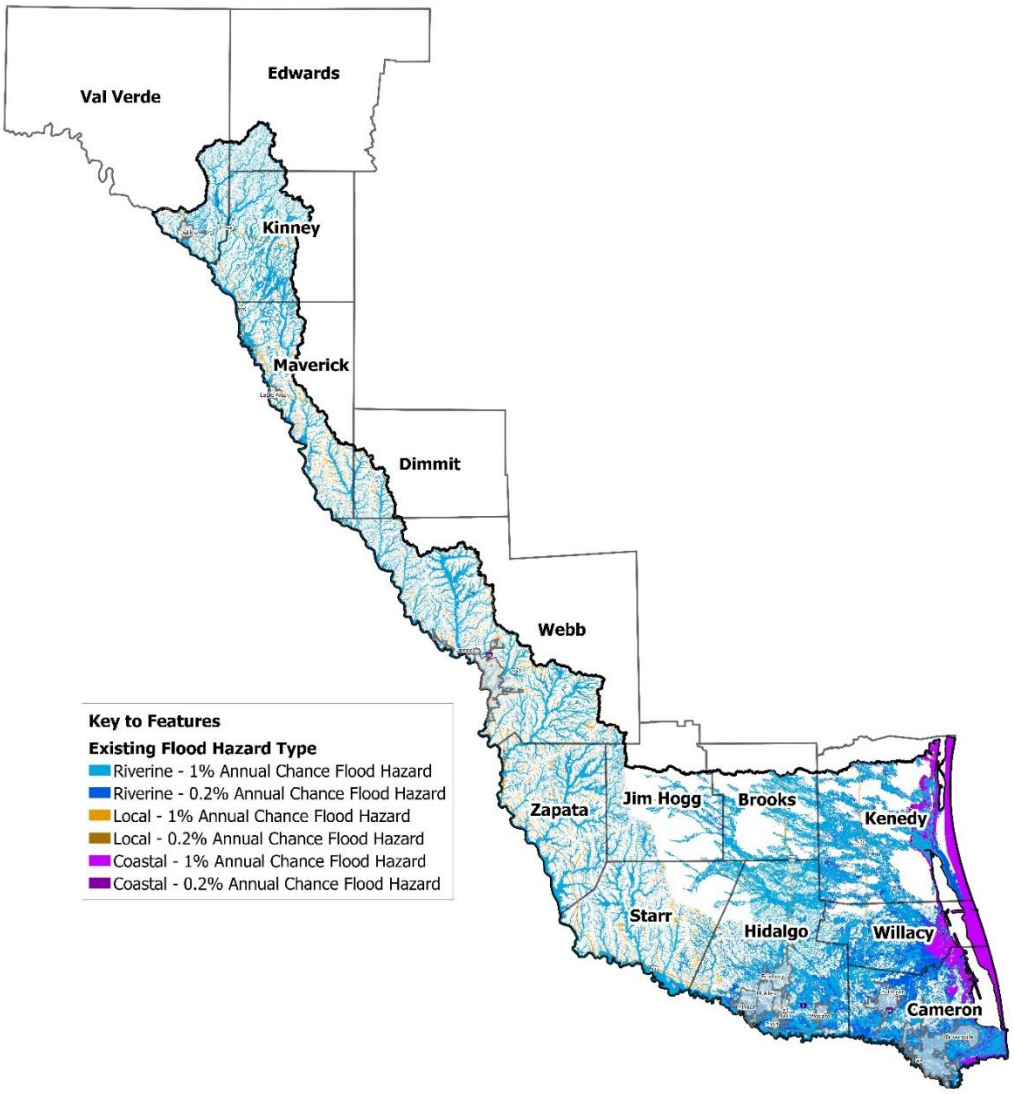
Page ES 2: "The RFPG met on February 19, 2025 to present and approve the inclusion of additional FMXs for the second amendment. On March 19, 2025, the technical consultant presented the final FMXs included for the amendment, and the group adopted the amended plan."

Chapter Included in the Plan – Modification to values associated with FMEs, FMPs, and FMSs.

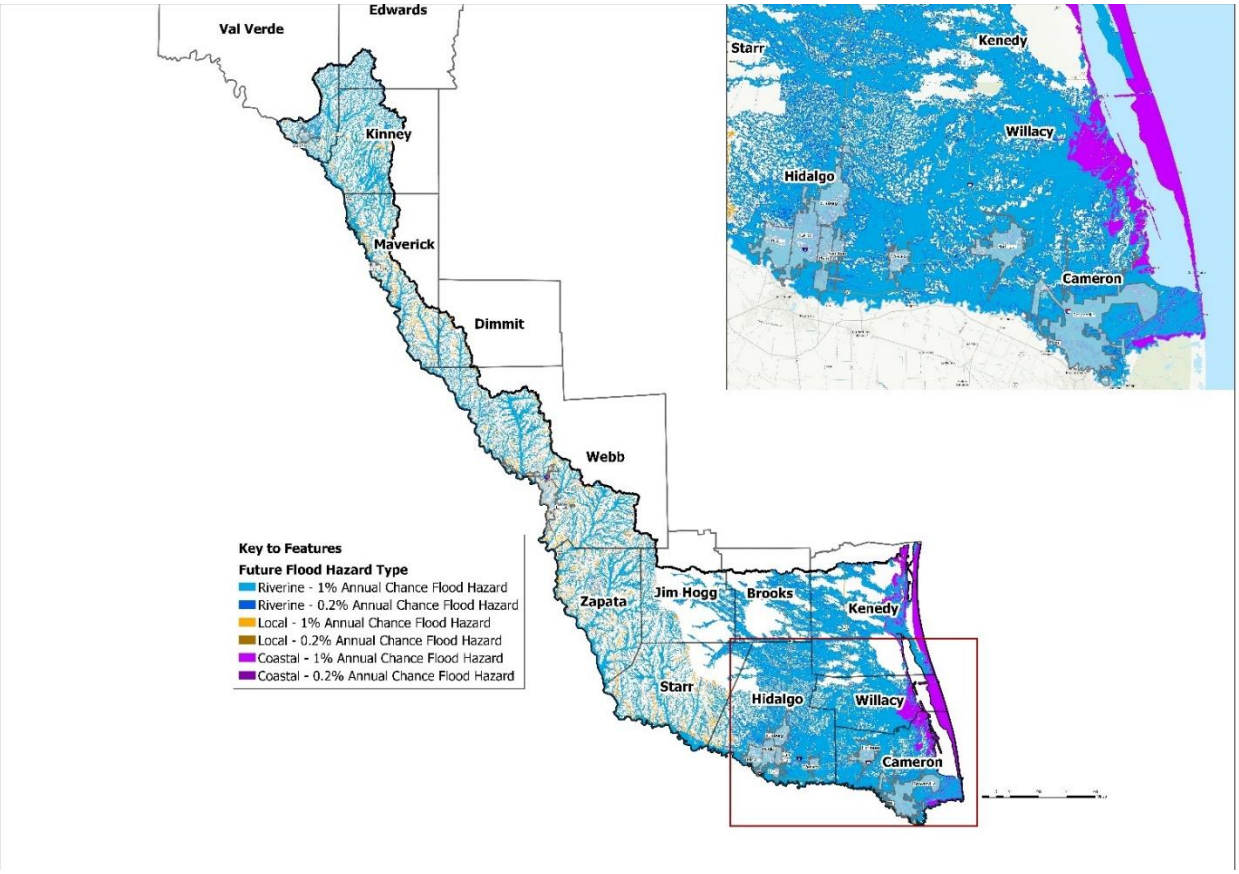
Page ES-4: "A total of ~~**95**~~ **495** FMEs, ~~**2 (previously updated to 97)**~~ **106** FMPs, and ~~**51**~~ **121** FMSs are recommended in this regional flood plan."

Existing and Future Flood Risks- Existing and Future Floodplain Quilt figures were updated to reflect the Flood Risk Analysis extent after the inclusion of new FMPs.

Page ES-10: Figure ES.4 Lower Rio Grande Existing Conditions Floodplain Quilt


Val Verde
Edwards
Kinney
Maverick
Dimmit
Webb
Zapata
Jim Hogg
Brooks
Kenedy
Starr
Hidalgo
Willacy
Cameron
Key to Features
Existing Flood Hazard Type
Riverine - 1% Annual Chance Flood Hazard
Riverine - 0.2% Annual Chance Flood Hazard
Local - 1% Annual Chance Flood Hazard
Local - 0.2% Annual Chance Flood Hazard
Coastal - 1% Annual Chance Flood Hazard
Coastal - 0.2% Annual Chance Flood Hazard

Page ES-11: Figure ES.5 Lower Rio Grande Future Conditions Floodplain Quilt



Identification and Selection of Recommended Floodplain Management and Flood Mitigation Actions – Modification to values associated with FMEs, FMPs, and FMSs. Inclusion of a sentence describing the meeting held for the amendment process.

Page ES-14: "The Lower Rio Grande RFPG recommended ~~406~~ **495** FMEs, ~~97~~ **106** FMPs, ~~86~~ and **121** FMSs."

Page ES-14: **Table ES.1 Summary of Recommended FMEs**

FME Type	# of Potential FMEs Identified	# of FMEs Recommended	Total Cost of Recommended FMEs
Watershed Planning	~~46~~ 71	~~46~~ 71	~~$35,168,000~~ $55,418,000
Project Planning	~~409~~ 473	~~358~~ 422	~~$1,184,768,582~~ $213,880,561
Preparedness	~~2~~ 2	~~2~~ 2	~~$3,371,721~~ $404,607
Total	~~**457**~~ **546**	~~**406**~~ **495**	~~**$1,223,308,303**~~ **$269,703,167**

Page ES-14: **Table ES.2 Summary of Recommended FMPs**

FMP Type	# of Potential FMPs Identified	# of FMPs Recommended	Total Cost of Recommended FMPs
Infrastructure	76	70	$407,285,871
Channel	12	2	$65,975,580
Detention Pond	8	8	$428,904,356
Storm Drain	6	6	$53,255,305
Comprehensive	17	18	$320,445,742
Other	2	2	$7,967,309
~~Flood Early Warning System~~	~~2~~	~~2~~	~~$54,667,000~~
~~Flood Proofing~~	~~6~~	~~6~~	~~$103,417,000~~
~~Infrastructure~~	~~94~~	~~76~~	~~$500,215,852~~
~~Regional Detention~~	~~16~~	~~14~~	~~$381,253,606~~
Total	~~**117**~~ **122**	~~**97**~~ **106**	~~**$1,039,553,458**~~ **$1,283,834,163**

Page ES-15: **Table ES.3 Summary of Recommended FMSs**

FMS Type	FMS Description	# of Potential FMSs Identified	# of FMSs Recommended	Total Cost of Recommended FMSs
Education and Outreach	NFIP Education; Flood Education; Floodplain Regulatory Awareness; Emergency Contact Awareness	~~7~~ 10	~~7~~ 10	~~$875,000~~ $763,500
Flood Measurement and Warning	Flood Warning Systems; Mass Notifications during Natural Hazard Incidents; Dam Inundation Studies	~~47~~ 48	~~47~~ 48	~~$110,400,000~~ $107,406,050
Infrastructure Projects	Assessments for flood proofing, building a shelter; funding plan for dredging plan	~~8~~ 11	~~8~~ 11	~~$36,720,000~~ $48,820,000
Regulatory and Guidance	City Floodplain Ordinance Creation/Updates; Zoning Regulations; Land Use Programs	~~19~~ 45	~~19~~ 45	~~$2,170,000~~ $12,020,500
Other	Funding Plans; Formation or union with Drainage District; Renegotiation of Agreements; Levee Recertification Alliances	~~5~~ 7	~~5~~ 7	~~$1,150,000~~ $1,251,000
	Total	**~~86~~ 121**	**~~86~~ 121**	**~~$151,315,000~~ $170,261,050**

Page ES-15: "An additional RFPG meeting was held in February 2025 to present and approve additional FMXs for a new amendment."

Cost of the Recommended Plan– The total FMX cost was updated based on the amendment results

Page ES-15: “Overall, the estimated cost to implement the recommended FMEs, FMPs, and FMSs in this plan is ~~$2.4~~ **$1.3** billion.”

Assessment and Identification of Flood Mitigation Needs – Updated values related to FMXs.

Page ES-16: “Implementation of the ~~97~~ **106** recommended flood mitigation projects (FMPs) included in this RFP is expected to benefit an estimated 101,494 people living in a flood-prone area. ~~Forty-six (46)~~ **Seventy-one (71)** of the recommended FMEs are watershed planning studies that were identified during the needs assessment. These ~~46~~ **71** watershed planning mapping will better define the flood risk for ~~67%~~ **83%** of the floodplain. Implementation of the FMEs will ultimately give entities a tool to address the flood hazard aggressively and effectively in their community. Once the flood hazard is better understood, effective floodplain management and land use strategies can be implemented. Another ~~409~~ **473** proposed FMEs will conduct an alternative analysis to determine the source and extent of a flood-prone area and will identify the most beneficial solution that not only mitigates the flood problem, but also considers the project’s impact on their neighbors and water supply.”

A.3.2 Changes made to Chapter 1

Chapter 1 was modified to include the amendment process.

Introduction – A statement was added to include the new amendment process.

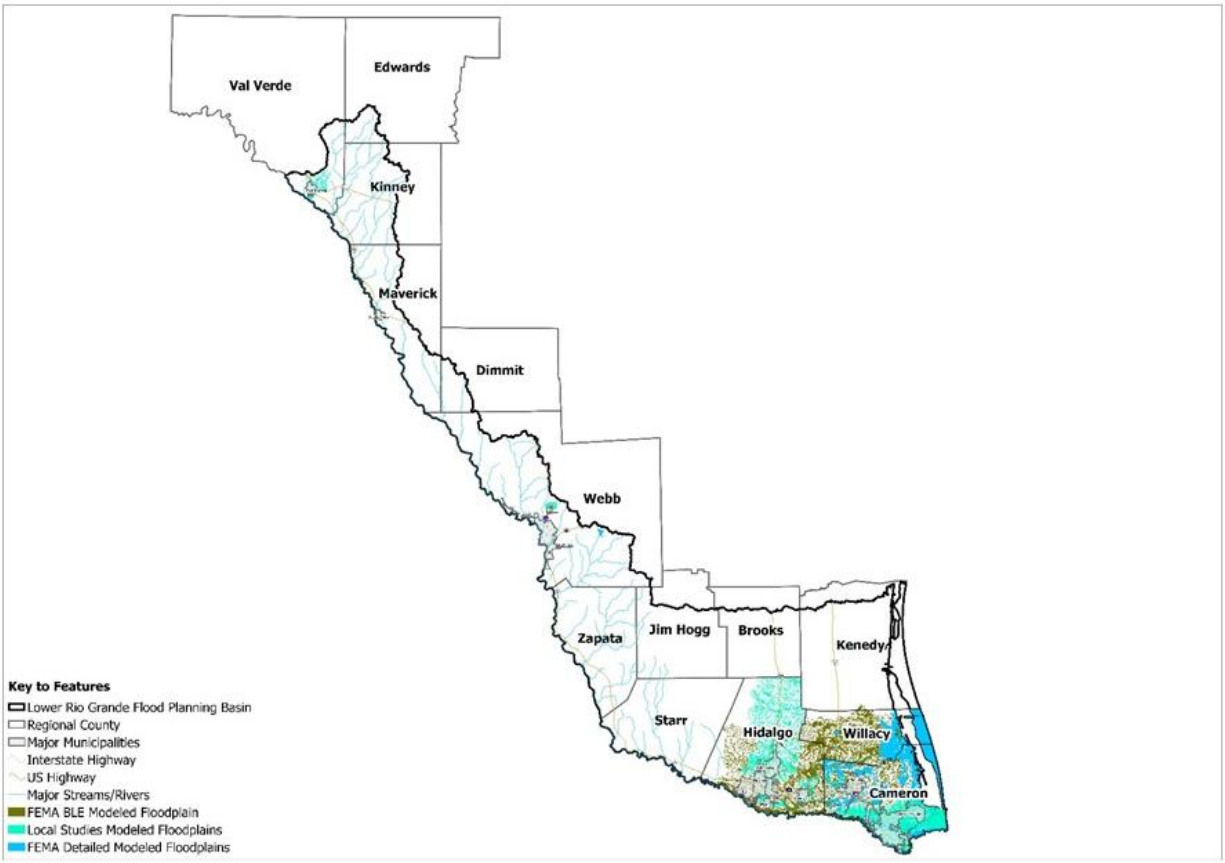
Page 1-1: “An additional amendment was approved by the group, to be submitted by April 1, 2025.”

A.3.3 Changes made to Chapter 2

Chapter 2 was updated to reflect the changes made to the existing and future floodplains after incorporating new studies during the March 2025 Amendment process. The changes to the floodplains affected the number of structures, critical facilities, roadways, population, etc. within the floodplains. Several tables and figures, as well specific text was updated to reflect the new floodplains extents.

2A.1.B Existing Hydrologic & Hydraulic Model Availability- Modification to Figure 2.2 to reflect the inclusion of the new Local studies submitted during the March 2025 Amendment

Page 2-4: **Figure 2.2 Existing Conditions Model Availability**



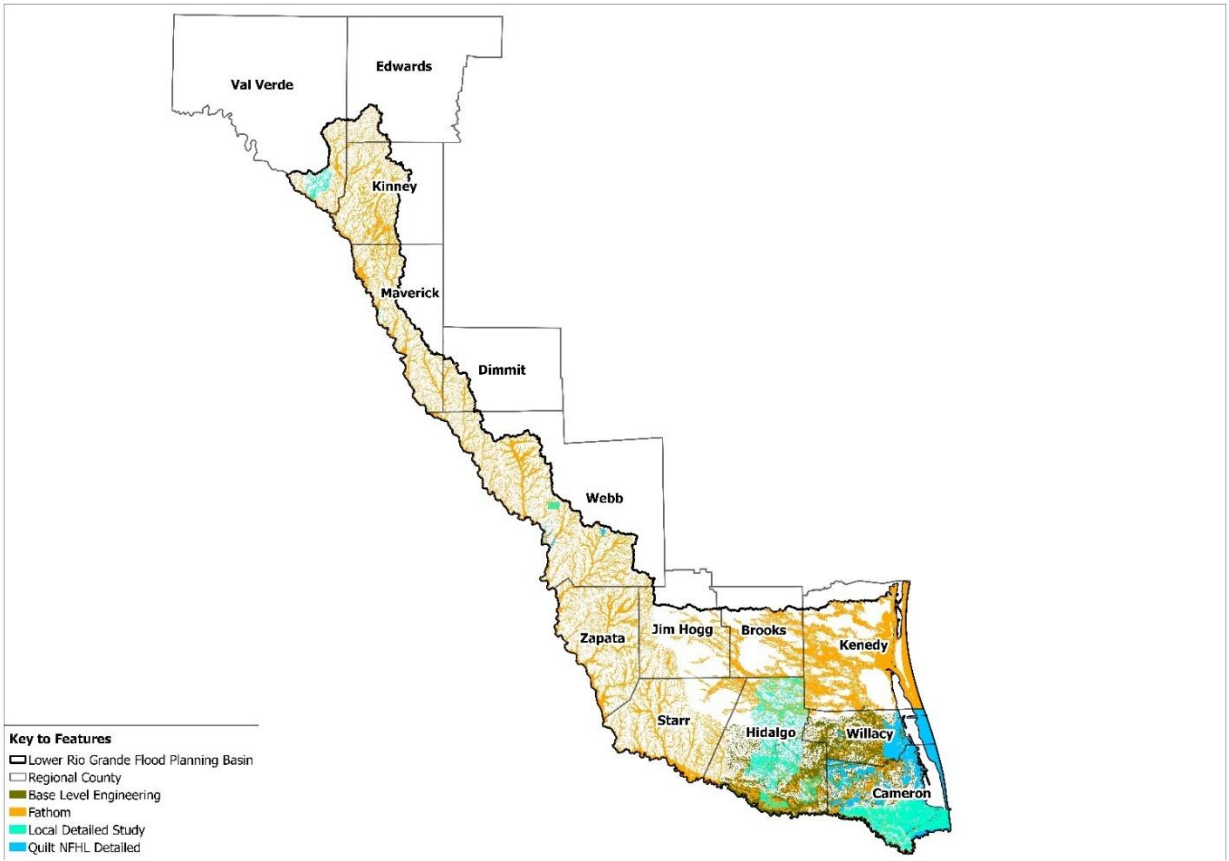
2A.1.C Best Available Existing Flood Hazard Data – Updated Table 2.2 to include the 6 new local models submitted (last 6 entries on table 2.2), also included studies that were not included in the previous submittal (Marked with an "*"). Figures were adjusted to reflect the latest data. Statistic related to the updated existing flood hazard data was updated on Tables 2.4 and 2.5.

Page 2-8: **Table 2.2: Detailed Hydrologic and Hydraulic Studies (models) Provided by Entities within Region and Incorporated into the Flood Plain Quilt**

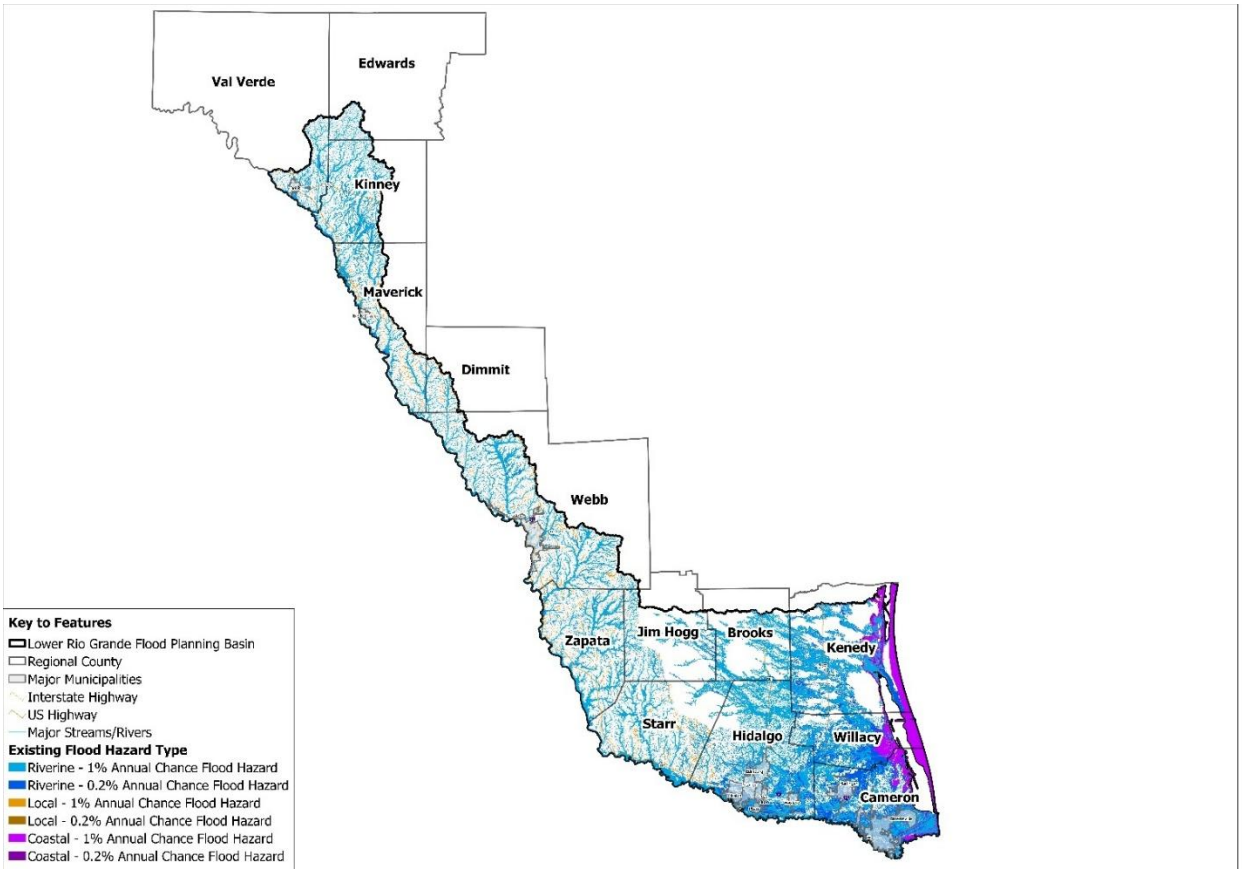
Study Name	Entity	Existing Conditions	
		1% ACE	0.2% ACE
Alton Master Drainage Plan	City of Alton	x	
Cameron County Drainage District No. 5 Flood Protection Plan	Cameron County Drainage District No. 5	x	
Eagle Pass Master Drainage Plan	City of Eagle Pass	x	
Hidalgo County Precinct 1 Drainage Assessment	Hidalgo County Precinct 1	x	
Hidalgo County Precinct 4 Master Drainage Study	Hidalgo County Precinct 4	x	

Study Name	Entity	Existing Conditions	
		1% ACE	0.2% ACE
Pharr Master Drainage Plan	City of Pharr	x	x
Weslaco Stormwater Improvement Plan	City of Weslaco	x	
Brownsville to Port Isabel HUC-10 Watershed Study	City of Brownsville	x	
McAllen Master Drainage Study	City of McAllen	x	
Harlingen HUC 10 FIF Flood Protection Planning Study*	City of Harlingen	x	
Cameron County Drainage District No. 6*	Cameron county Drainage District No. 6	x	
Edinburg Master Drainage Plan*	City of Edinburg	x	
Cameron County Drainage District #3 FIF Flood Protection Plan*	Cameron County Drainage District No. 3	x	
HCDD1 Bond 2023*	Hidalgo County Drainage District No. 1	x	
Hydrologic and Hydraulic Study of the Olmito Townsite Subdivision*	Cameron County	x	
Zacate Creek Feasibility Study*	City of Laredo	x	
HCDD1 Delta Region Water Management Project*	Hidalgo County Drainage District No. 1	x	
City of Brownsville: Los Tomates	City of Brownsville	x	x
City of McAllen: McAllen Lateral	City of McAllen	x	x
City of McAllen: El Rancho	City of McAllen	x	x
City of Del Rio: San Felipe Creek	City of Del Rio	x	x
City of Del Rio: Cienegas Creek	City of Del Rio	x	x
HCDD1 South Lateral	Hidalgo County Drainage District No. 1	x	x

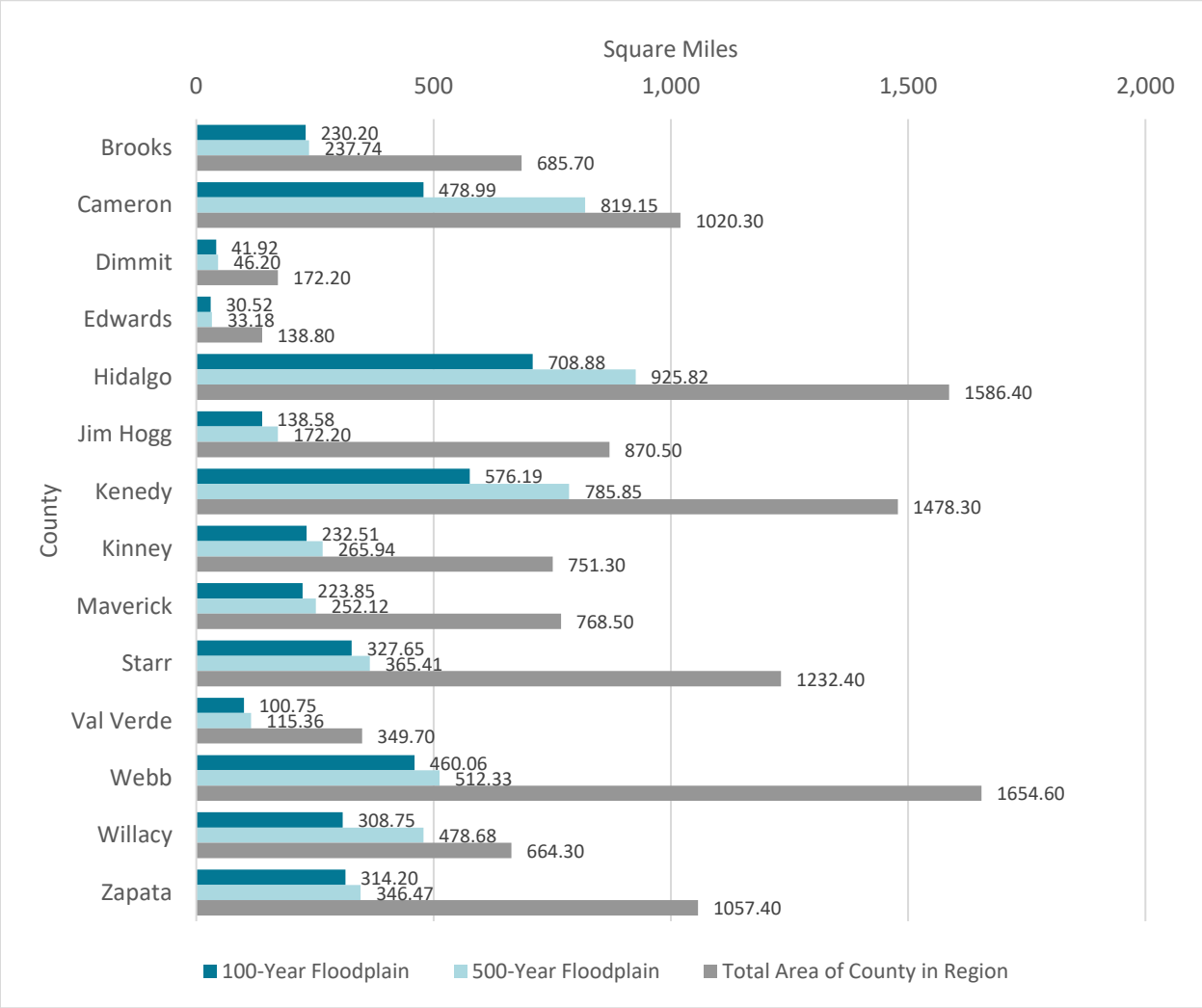
Page 2-10: Updated ***"Figure 2.4 Floodplain Quilt Data Sources"*** to reflect the extent of the floodplain following the inclusion of the new detailed local studies.



Page 2-11: Updated ***"Figure 2.5 Existing Conditions Floodplain Quilt"*** to reflect the extent of floodplain following the inclusion of the new detailed local studies.



Page 2-12: Updated ***"Figure 2.6 Existing Conditions Flood Hazard Areas (in Square Miles) by County"*** to show the total floodplain area distribution for each county after incorporating the new local studies.



Page 2-13: **Table 2.4 Percentage of Land Area in Existing Floodplain Quilt by County**

County	1% Flood Hazard	0.2% Flood Hazard*	Possible Flood Prone Areas
Brooks	~~33.6%~~ 33.6%	~~34.7%~~ 34.7%	~~0.0%~~ 0.0%
Cameron	~~46.9%~~ 46.9%	~~80.3%~~ 80.3%	~~1.1%~~ 1.1%
Dimmit	~~24.3%~~ 24.3%	~~26.8%~~ 26.8%	~~0.0%~~ 0.0%
Edwards	~~22.0%~~ 22.0%	~~23.9%~~ 23.9%	~~0.0%~~ 0.0%
Hidalgo	~~44.6%~~ 44.7%	~~58.4%~~ 58.4%	~~0.1%~~ 0.1%
Jim Hogg	~~15.9%~~ 15.9%	~~19.8%~~ 19.8%	~~0.0%~~ 0.0%
Kenedy	~~39.0%~~ 39.0%	~~55.5%~~ 53.2%	~~0.0%~~ 0.0%
Kinney	~~30.9%~~ 30.9%	~~35.4%~~ 35.4%	~~0.0%~~ 0.0%
Maverick	~~29.1%~~ 29.1%	~~32.8%~~ 32.8%	~~0.0%~~ 0.0%
Starr	~~26.6%~~ 26.6%	~~29.6%~~ 29.7%	~~0.0%~~ 0.0%
Val Verde	~~26.2%~~ 28.8%	~~29.4%~~ 33.0%	~~0.0%~~ 0.0%
Webb	~~27.8%~~ 27.8%	~~31.0%~~ 31.0%	~~0.5%~~ 0.5%
Willacy	~~46.4%~~ 46.5%	~~72.1%~~ 72.1%	~~0.0%~~ 0.0%
Zapata	~~29.7%~~ 29.7%	~~32.8%~~ 32.8%	~~0.0%~~ 0.0%

**The 0.2 percent Flood Hazard does not incorporate the 1 percent Flood Hazard to avoid overlapping polygons.*

Page 2-14: **Table 2.5 Existing Hazard by Flood Risk Type Summary Table**

County	1% Flood Hazard			0.2% Flood Hazard*		
	Coastal Flood Risk Areas (sq. mi.)	Local Flood Risk Areas (sq. mi.)	Riverine Flood Risk Areas (sq. mi.)	Coastal Flood Risk Areas (sq. mi.)	Local Flood Risk Areas (sq. mi.)	Riverine Flood Risk Areas (sq. mi.)
Brooks	~~0~~ 0	~~0~~ 0	~~230.2~~ 230.2	~~0~~ 0	~~0~~ 0	~~237.7~~ 237.7
Cameron	~~114.7~~ 114.7	~~0~~ 0	~~364.3~~ 364.6	~~115.8~~ 115.7	~~0~~ 0	~~703.6~~ 704.0
Dimmit	~~0~~ 0	~~41.9~~ 41.9	~~34.3~~ 34.3	~~0~~ 0	~~46.2~~ 46.2	~~37.5~~ 37.5
Edwards	~~0~~ 0	~~30.5~~ 30.5	~~30.1~~ 30.1	~~0~~ 0	~~33.2~~ 33.2	~~32.7~~ 32.7
Hidalgo	~~0~~ 0	~~31.2~~ 31.2	~~701.4~~ 702.2	~~0~~ 0	~~36.6~~ 36.6	~~917.5~~ 926.1
Jim Hogg	~~0~~ 0	~~75.0~~ 75.0	~~131.9~~ 131.9	~~0~~ 0	~~84.9~~ 84.9	~~164.0~~ 164.0
Kenedy	~~212.0~~ 212.0	~~0~~ 0	~~433.3~~ 433.3	~~252.8~~ 245.9	~~0~~ 0	~~640.1~~ 612.2
Kinney	~~0~~ 0	~~232.5~~ 232.5	~~223.5~~ 223.5	~~0~~ 0	~~265.9~~ 265.9	~~254.8~~ 254.8
Maverick	~~0~~ 0	~~221.3~~ 221.3	~~185.6~~ 185.6	~~0~~ 0	~~249.5~~ 249.5	~~208.2~~ 208.2
Starr	~~0~~ 0	~~285.3~~ 285.3	~~286.5~~ 286.5	~~0~~ 0	~~319.4~~ 319.4	~~315.1~~ 315.1
Val Verde	~~0~~ 0	~~89.1~~ 76.5	~~86.7~~ 96.5	~~0~~ 0	~~100.1~~ 86.0	~~97.0~~ 126.2
Webb	~~0~~ 0	~~449.7~~ 449.7	~~394.1~~ 394.1	~~0~~ 0	~~500.5~~ 500.5	~~434.5~~ 434.5
Willacy	~~109.2~~ 109.2	~~0~~ 0	~~199.6~~ 199.6	~~110.0~~ 110.0	~~0~~ 0	~~368.9~~ 368.8
Zapata	~~0~~ 0	~~314.2~~ 314.2	~~269.8~~ 269.8	~~0~~ 0	~~346.5~~ 346.5	~~295.3~~ 295.3
TOTAL	~~435.9~~ 435.9	~~1,770.7~~ 1,758.1	~~3,571.3~~ 3,582.0	~~478.6~~ 471.6	~~1,982.8~~ 1,968.8	~~4,706.9~~ 4,717.2

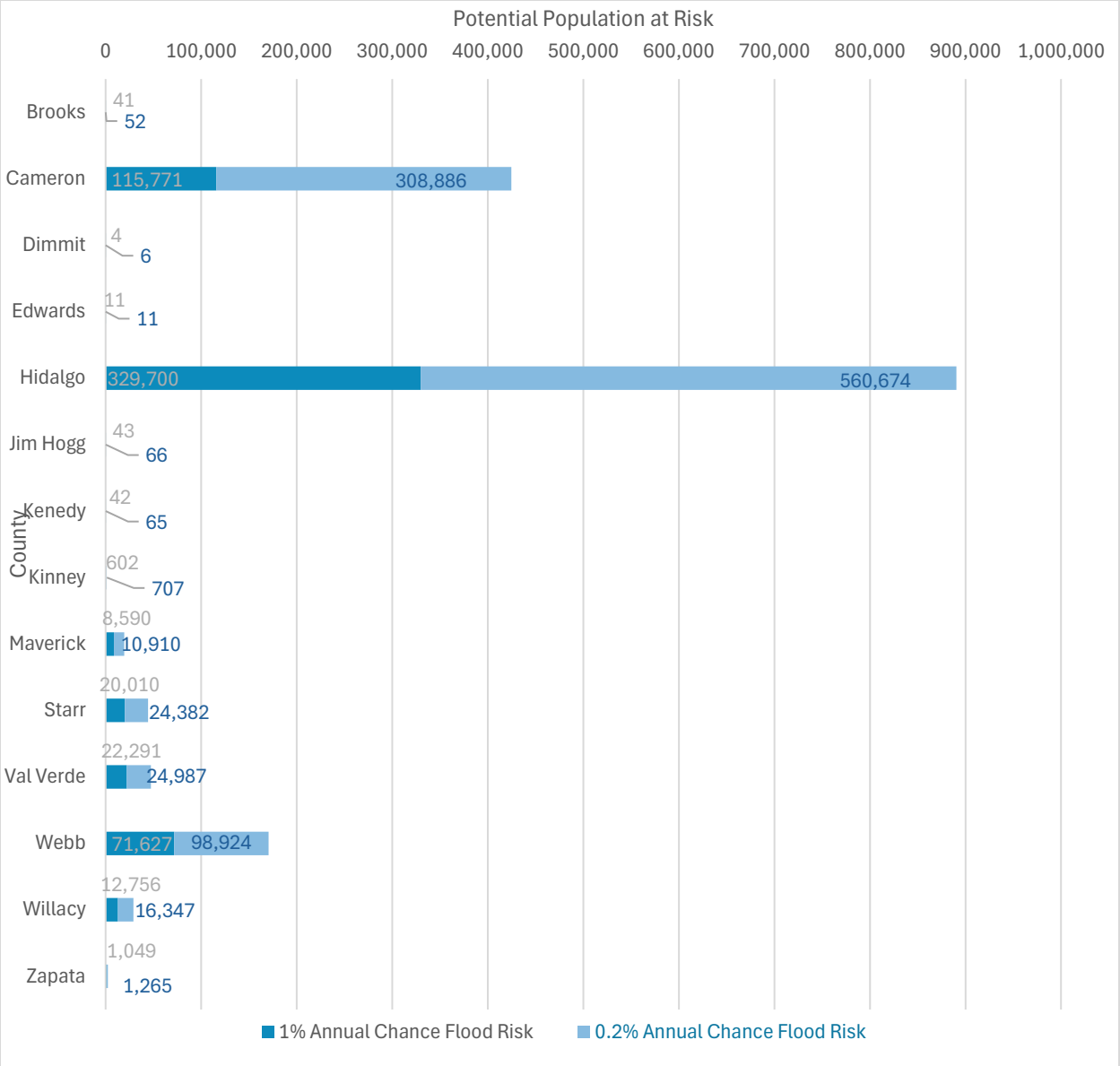
**The 0.2 percent Flood Hazard does not incorporate the 1 percent Flood Hazard to avoid overlapping polygons.*

2A.2.C Existing Conditions Flood Exposure – Updated tables and figures to reflect latest exposure analysis.

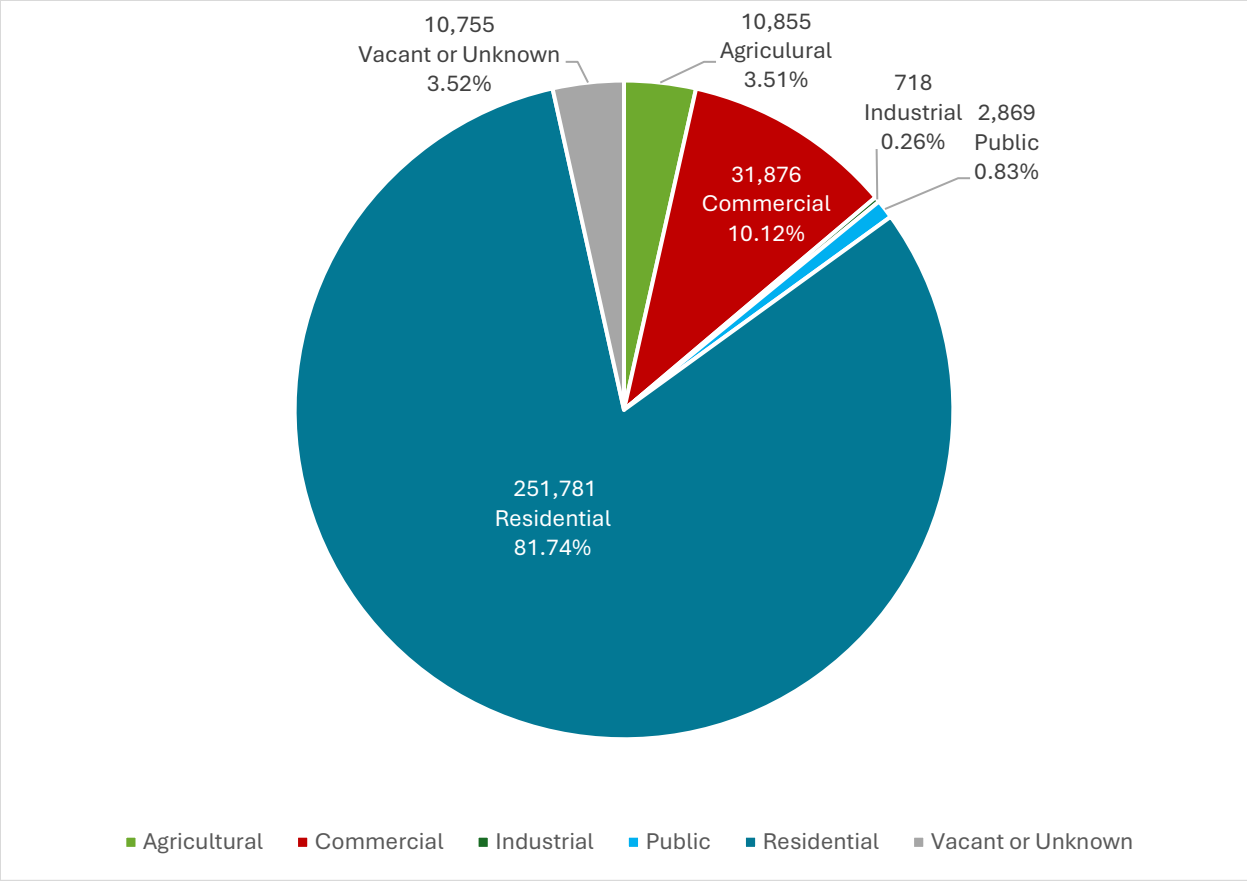
Page 2-21: **Table 2.7 Existing Conditions Flood Exposure of Population by County***

County	1% Annual Chance Flood Risk		0.2% Annual Chance Flood Risk	
	Population (Daytime)	Population Nighttime)	Population (Daytime)	Population Nighttime)
Brooks	~~14~~ 14	~~40~~ 41	~~18~~ 18	~~52~~ 52
Cameron	~~54,619~~ 115,771	~~59,981~~ 103,420	~~308,187~~ 308,886	~~295,448~~ 294,606
Dimmit	~~0~~ 0	~~1~~ 4	~~0~~ 0	~~6~~ 6
Edwards	~~0~~ 0	~~9~~ 11	~~0~~ 0	~~11~~ 11
Hidalgo	~~153,388~~ 321,260	~~227,375~~ 329,700	~~531,400~~ 535,999	~~562,417~~ 560,674
Jim Hogg	~~6~~ 26	~~18~~ 43	~~31~~ 38	~~61~~ 66
Kenedy	~~28~~ 42	~~28~~ 38	~~58~~ 65	~~55~~ 60
Kinney	~~354~~ 602	~~449~~ 574	~~689~~ 703	~~704~~ 707
Maverick	~~3,074~~ 7,291	~~5,421~~ 8,590	~~10,511~~ 10,577	~~10,897~~ 10,910
Starr	~~9,732~~ 16,520	~~15,723~~ 20,010	~~19,248~~ 20,678	~~24,277~~ 24,382
Val Verde	~~2,575~~ 22,291	~~3,045~~ 16,089	~~10,668~~ 24,987	~~6,643~~ 20,042
Webb	~~28,358~~ 71,627	~~35,624~~ 64,051	~~99,649~~ 98,924	~~85,727~~ 85,708
Willacy	~~8,644~~ 10,676	~~11,453~~ 12,756	~~15,304~~ 15,304	~~16,347~~ 16,347
Zapata	~~525~~ 711	~~706~~ 1,049	~~819~~ 823	~~1,262~~ 1,265

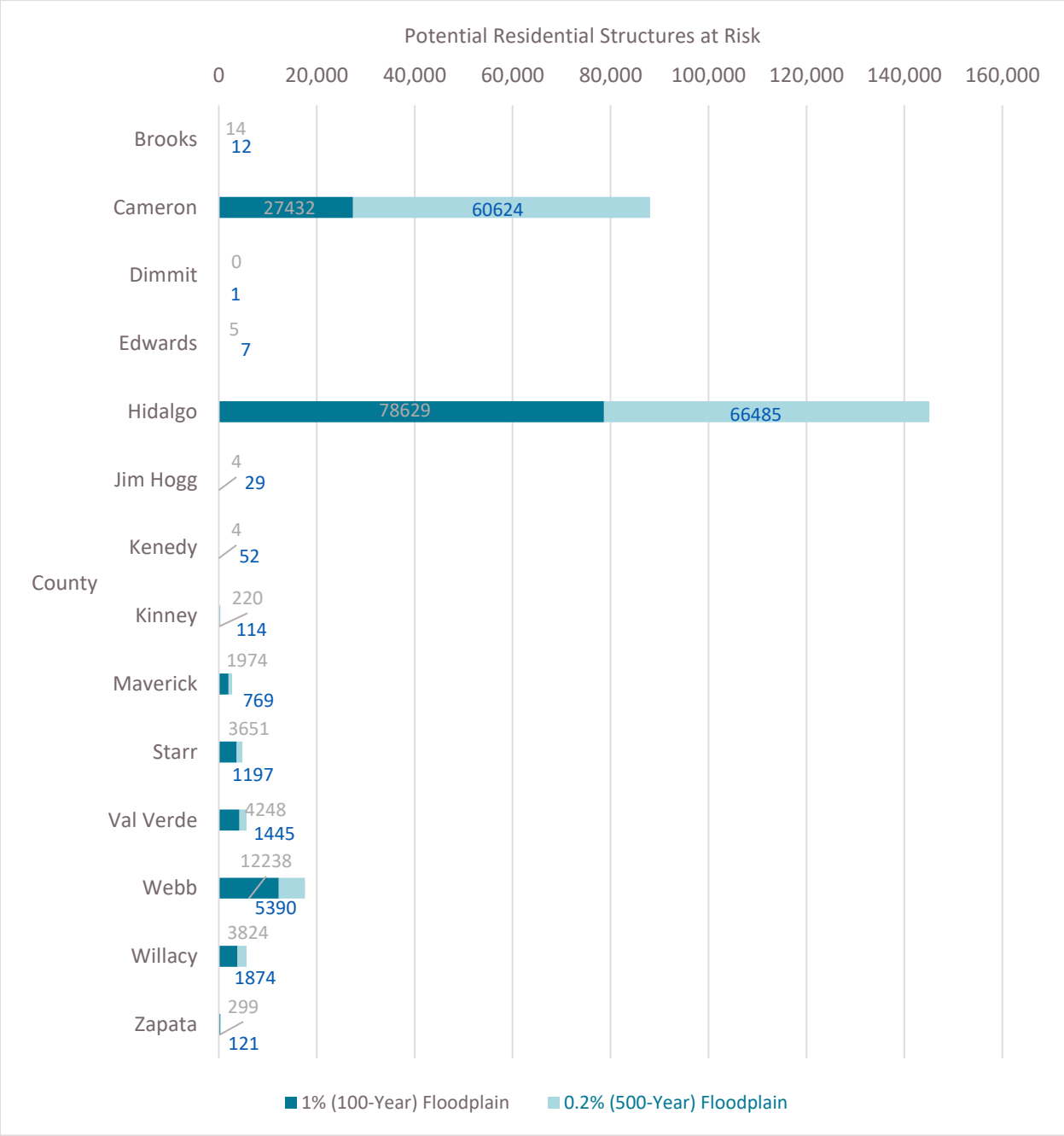
Page 2-22: Updated "**Figure 2.9 Population at Risk in Existing Conditions Floodplain Quilt by County**" to reflect the changes in impacted population after the flood exposure analysis.



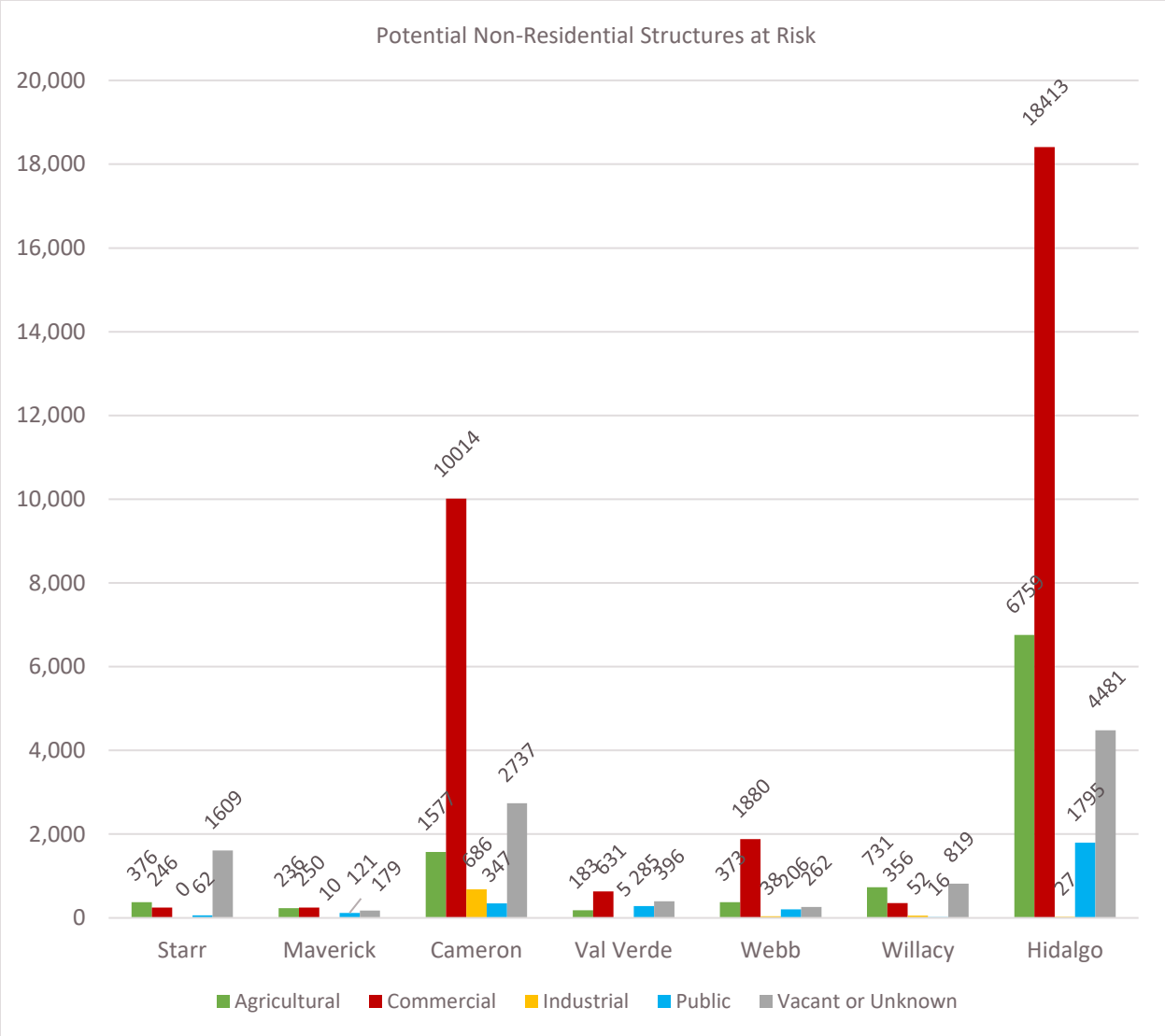
Page 2-23: Updated "**Figure 2.10 Building Type Distribution in the Existing Floodplain Quilt**" to reflect structures impacted after the flood exposure analysis.



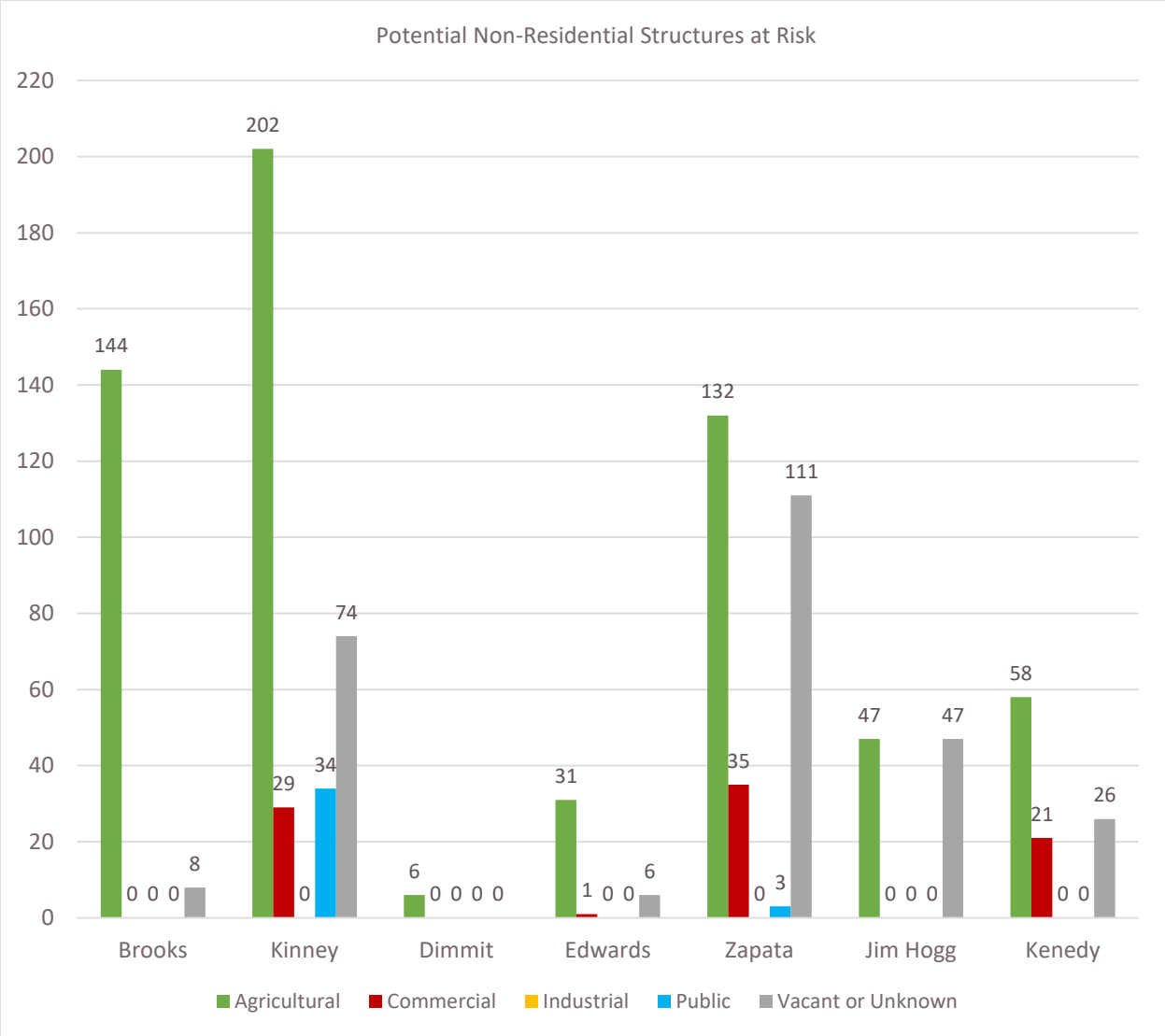
Page 2-24: Updated **"Figure 2.11 Residential Structure Counts in Existing Conditions Floodplain Quilt"** to reflect Residential Structures impacted after the flood exposure analysis.



Page 2-25: Updated "**Figure 2.12 Non-Residential Structure Counts in Existing Conditions Floodplain Quilt**" to reflect Residential Structures impacted after the flood exposure analysis.



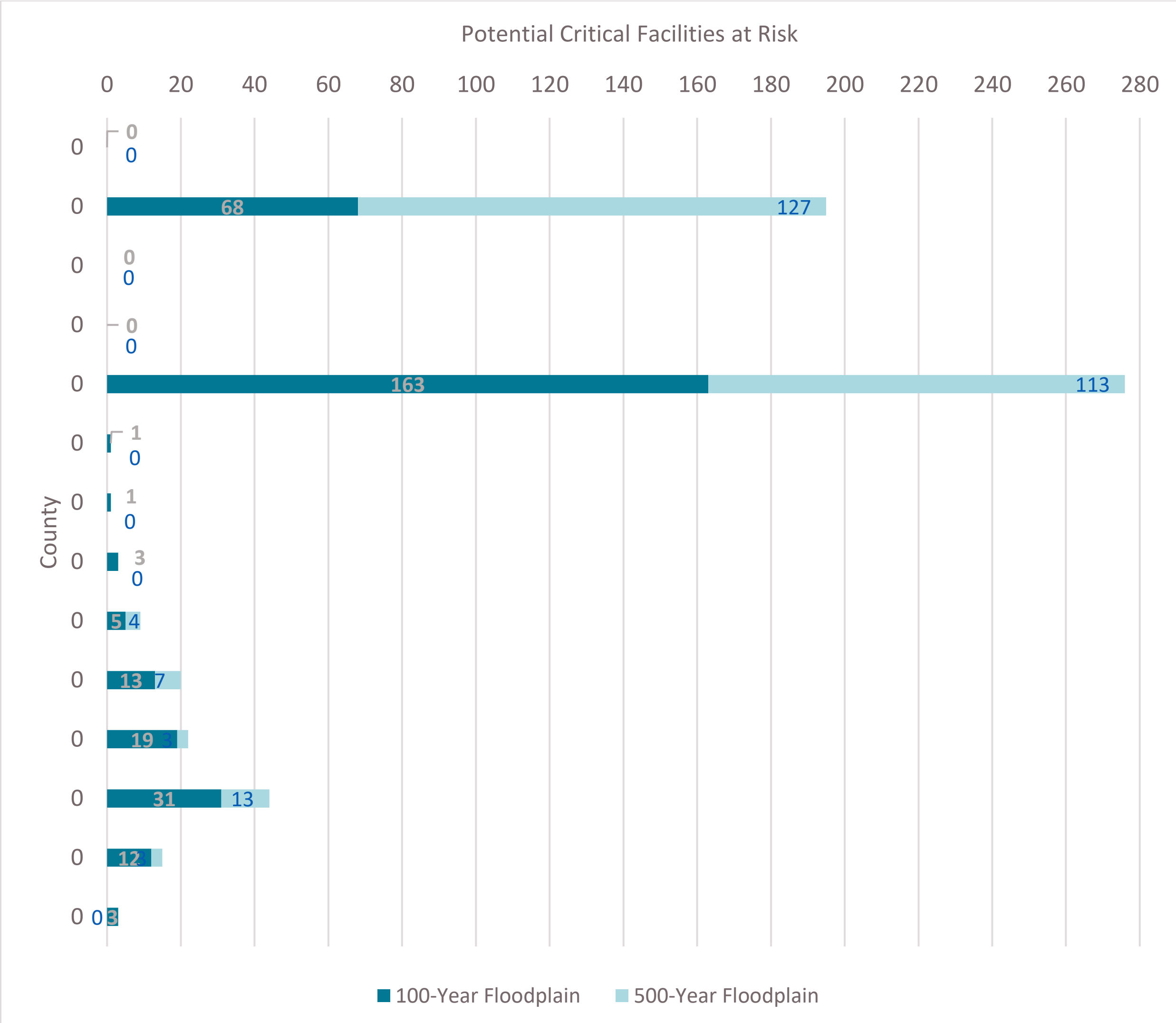
Page 2-26: Updated "**Figure 2.13 Non-Residential Structure Counts in Existing Conditions Floodplain Quilt (Continued)**" to reflect Residential Structures impacted after the flood exposure analysis.



Page 2-27: **Table 2.8 Existing Conditions Flood Exposure of Structures**

County	1% Annual Chance Flood Risk			0.2% Annual Chance Flood Risk		
	Non-Residential Structures in Floodplain	Residential Structures in Floodplain	Critical Facilities	Non-Residential Structures in Floodplain	Residential Structures in Floodplain	Critical Facilities
Brooks	~~138~~ 143	~~13~~ 14	~~0~~ 0	~~152~~ 152	~~17~~ 17	~~0~~ 0
Cameron	~~4,254~~ 6,277	~~19,444~~ 27,432	~~34~~ 68	~~13,904~~ 15,115	~~68,171~~ 79,218	~~198~~ 195
Dimmit	~~3~~ 5	~~0~~ 0	~~0~~ 0	~~6~~ 6	~~0~~ 0	~~0~~ 0
Edwards	~~24~~ 31	~~3~~ 5	~~0~~ 0	~~38~~ 38	~~5~~ 5	~~0~~ 0
Hidalgo	~~13,143~~ 19,807	~~54,857~~ 78,629	~~65~~ 163	~~31,141~~ 31,150	~~133,801~~ 133,771	~~282~~ 276
Jim Hogg	~~39~~ 66	~~2~~ 4	~~1~~ 1	~~95~~ 95	~~4~~ 4	~~1~~ 1
Kenedy	~~43~~ 60	~~3~~ 4	~~0~~ 1	~~106~~ 106	~~10~~ 10	~~1~~ 1
Kinney	~~255~~ 287	~~164~~ 220	~~2~~ 3	~~339~~ 339	~~282~~ 282	~~3~~ 3
Maverick	~~460~~ 618	~~1,372~~ 1,974	~~1~~ 5	~~797~~ 797	~~2,564~~ 2,564	~~9~~ 9
Starr	~~1,452~~ 1,848	~~3,068~~ 3,651	~~6~~ 13	~~2,294~~ 2,295	~~4,402~~ 4,401	~~20~~ 20
Val Verde	~~364~~ 1,250	~~1,022~~ 4,248	~~2~~ 19	~~751~~ 1,500	~~2,056~~ 5,443	~~14~~ 22
Webb	~~1,345~~ 2,129	~~7,833~~ 12,238	~~13~~ 31	~~2,715~~ 2,704	~~17,055~~ 17,053	~~44~~ 44
Willacy	~~1,161~~ 1,321	~~3,455~~ 3,824	~~10~~ 12	~~1,976~~ 1,974	~~5,044~~ 5,045	~~15~~ 15
Zapata	~~155~~ 221	~~214~~ 299	~~1~~ 3	~~281~~ 281	~~360~~ 360	~~3~~ 3

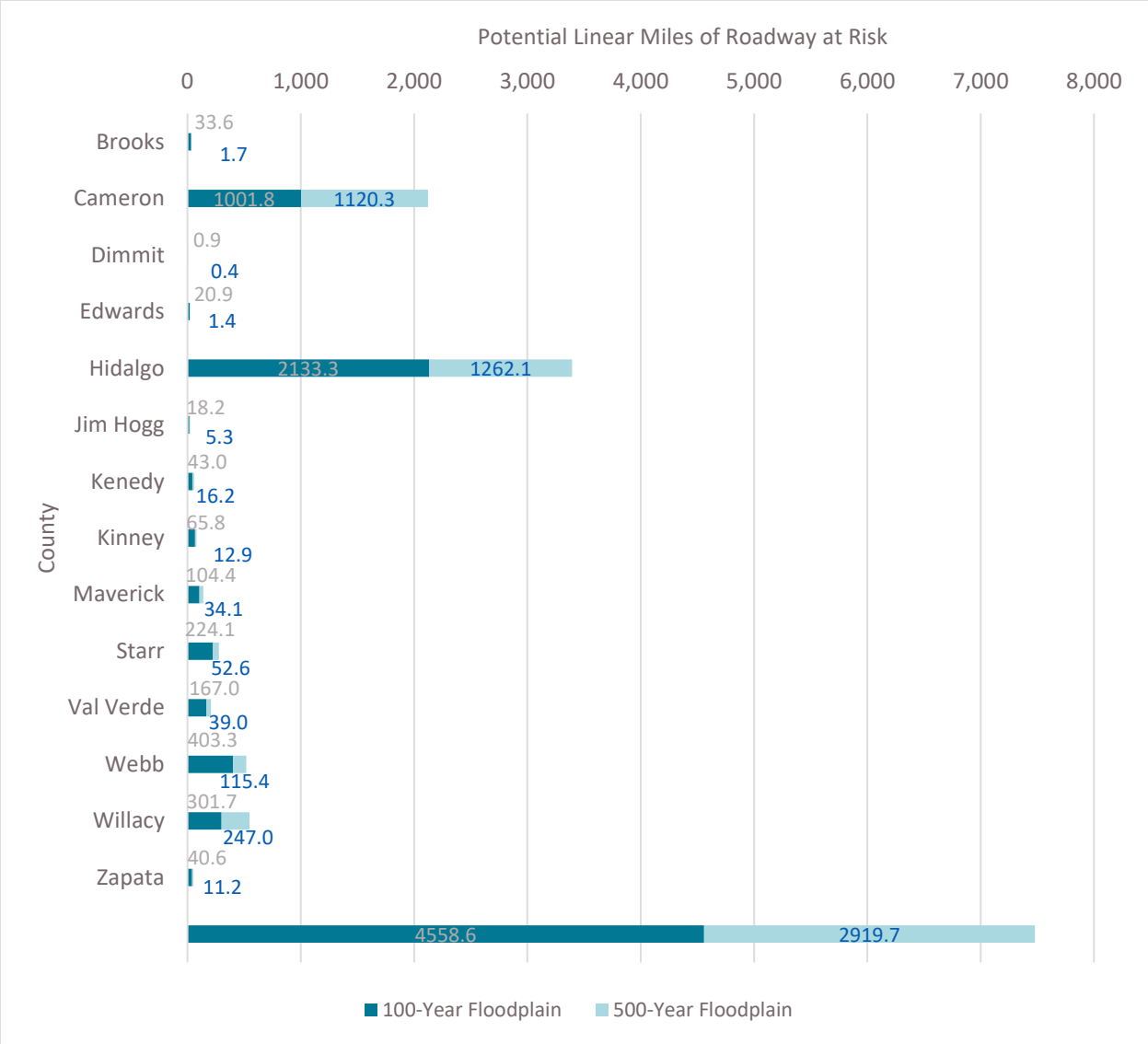
Page 2-28: Updated "**Figure 2.14 Critical Facilities in Existing Conditions Floodplain Quilt**" to reflect the changes in Critical Facilities impacted after the flood exposure analysis.



Page 2-29: **Table 2.9 Existing Conditions Flood Exposure of Roadway Segments by County**

County	1% Annual Chance Flood Risk		0.2% Annual Chance Flood Risk	
	Roadway Stream Crossings	Roadway Segments (miles)	Roadway Stream Crossings	Roadway Segments (miles)
Brooks	~~0~~ 0	~~29.9~~ 33.6	~~0~~ 0	~~31.4~~ 35.3
Cameron	~~2~~ 2	~~898.3~~ 1,001.8	~~2~~ 2	~~1,917.6~~ 2,122.1
Dimmit	~~0~~ 0	~~0.8~~ 0.9	~~0~~ 0	~~1.1~~ 1.3
Edwards	~~6~~ 6	~~18.1~~ 20.9	~~6~~ 6	~~19.3~~ 22.3
Hidalgo	~~16~~ 16	~~1,914.0~~ 2,133.3	~~16~~ 16	~~3,043.1~~ 3,395.4
Jim Hogg	~~1~~ 1	~~16.2~~ 18.2	~~1~~ 1	~~20.9~~ 23.5
Kenedy	~~0~~ 0	~~38.2~~ 43.0	~~0~~ 0	~~52.6~~ 59.2
Kinney	~~44~~ 44	~~57.1~~ 65.8	~~44~~ 44	~~68.4~~ 78.7
Maverick	~~5~~ 5	~~91.2~~ 104.4	~~6~~ 6	~~121.1~~ 138.5
Starr	~~0~~ 0	~~200.5~~ 224.1	~~0~~ 0	~~247.5~~ 276.6
Val Verde	~~24~~ 24	~~68.1~~ 167.0	~~25~~ 25	~~85.4~~ 206.0
Webb	~~26~~ 26	~~356.8~~ 403.3	~~26~~ 26	~~458.9~~ 518.7
Willacy	~~0~~ 0	~~270.0~~ 301.7	~~0~~ 0	~~491.1~~ 548.7
Zapata	~~0~~ 0	~~36.2~~ 40.6	~~0~~ 0	~~46.1~~ 51.9

Page 2-30: Updated "**Figure 2.15 Linear Miles of Roadway at Risk in Existing Conditions Floodplain Quilt**" to reflect the number of Miles of Roadway by county after flood exposure analysis.



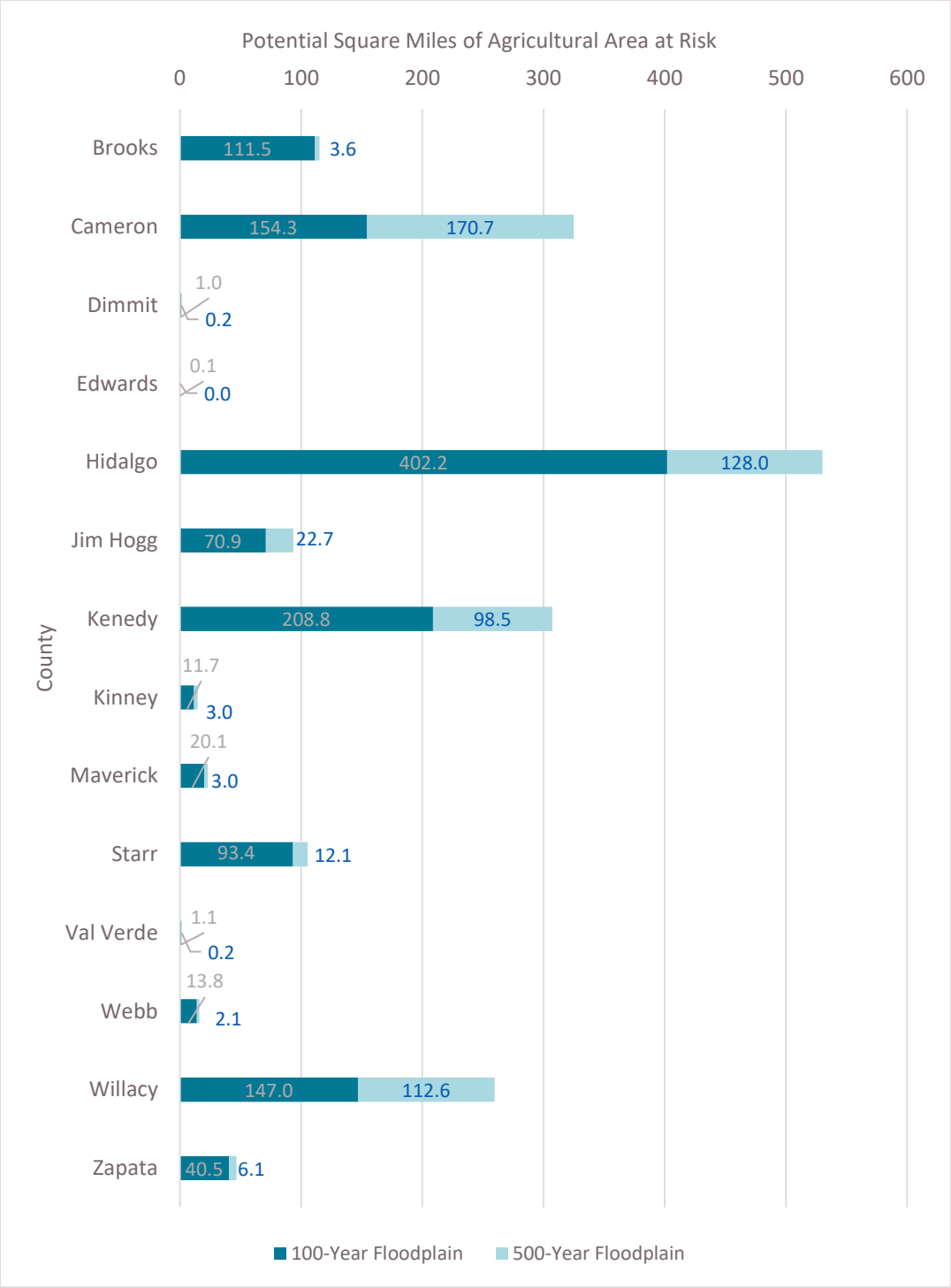
Page 2-31: **Table 2.10 Exposed Bridge and Low Water Crossings and Affected Population in Existing Conditions Floodplain Quilt**

County	1% Annual Chance Flood Risk		0.2% Annual Chance Flood Risk	
	Roadway Stream Crossings	Population at Risk	Roadway Stream Crossings	Population at Risk
Brooks	~~1~~ 0	~~14~~ 41	~~2~~ 0	~~18~~ 52
Cameron	~~495~~ 2	~~54,619~~ 115,771	~~989~~ 2	~~308,187~~ 308,886
Dimmit	~~3~~ 0	~~0~~ 4	~~5~~ 0	~~0~~ 6
Edwards	~~60~~ 6	~~0~~ 11	~~60~~ 6	~~0~~ 11
Hidalgo	~~671~~ 16	~~153,388~~ 329,700	~~1,180~~ 16	~~531,400~~ 560,674
Jim Hogg	~~19~~ 1	~~6~~ 43	~~21~~ 1	~~31~~ 66
Kenedy	~~0~~ 0	~~28~~ 42	~~0~~ 0	~~58~~ 65
Kinney	~~105~~ 44	~~354~~ 602	~~115~~ 44	~~689~~ 707
Maverick	~~219~~ 5	~~3,074~~ 8,590	~~251~~ 6	~~10,511~~ 10,910
Starr	~~115~~ 0	~~9,732~~ 20,010	~~121~~ 0	~~19,248~~ 24,382
Val Verde	~~150~~ 24	~~2,575~~ 22,291	~~158~~ 25	~~10,668~~ 24,987
Webb	~~541~~ 26	~~28,358~~ 71,627	~~587~~ 26	~~99,649~~ 98,924
Willacy	~~179~~ 0	~~8,644~~ 12,756	~~286~~ 0	~~15,304~~ 16,347
Zapata	~~110~~ 0	~~525~~ 1,049	~~121~~ 0	~~819~~ 1,265

Page 2-33: **Table 2.11 Existing Conditions Flood Exposure of Lands and Population by County**

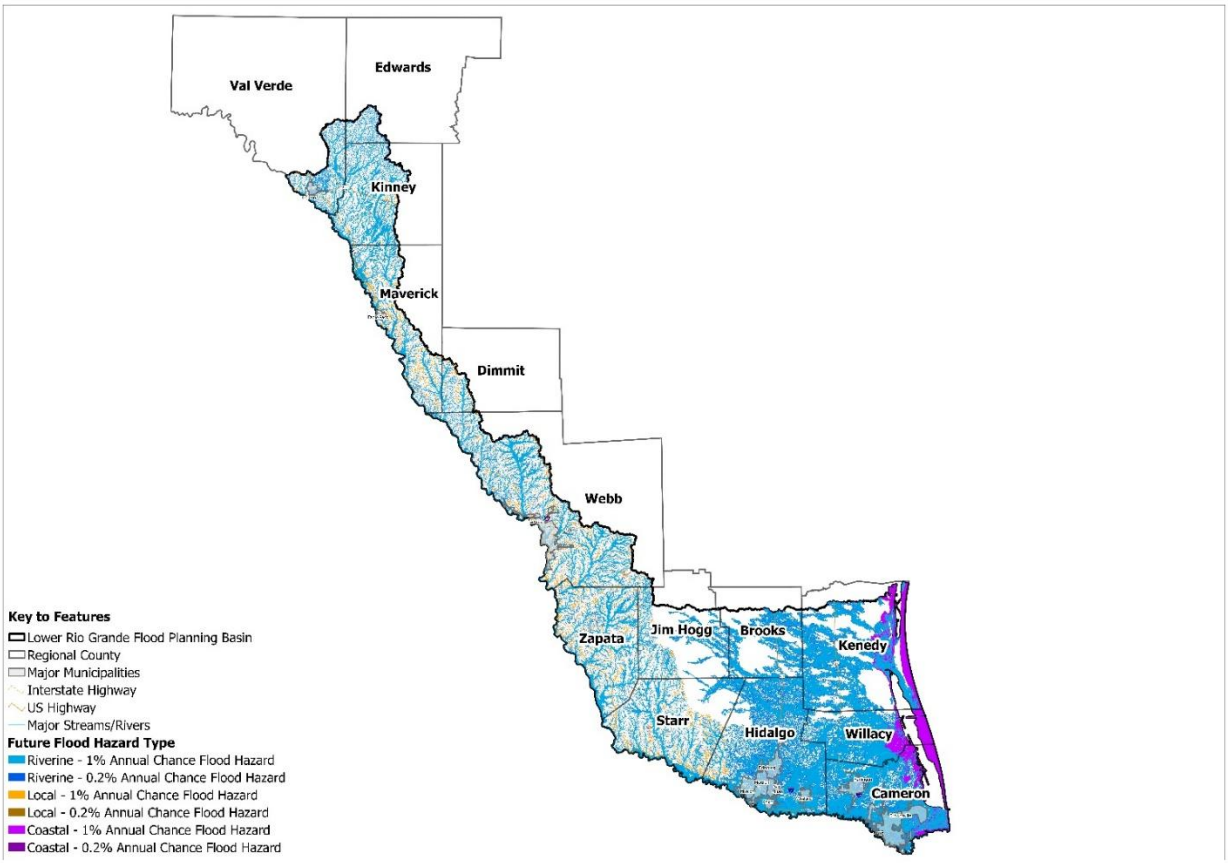
County	1% Annual Chance Flood Risk		0.2% Annual Chance Flood Risk	
	Area in Floodplain (sq mi)	Agricultural Areas (sq mi)	Area in Floodplain (sq mi)	Agricultural Areas (sq mi)
Brooks	~~230.1~~ 230.2	~~111.5~~ 111.5	~~237.7~~ 237.7	~~115.1~~ 115.1
Cameron	~~466.7~~ 479.0	~~154.3~~ 154.3	~~773.2~~ 819.1	~~325.9~~ 325.0
Dimmit	~~41.9~~ 41.9	~~1.0~~ 1.0	~~46.2~~ 46.2	~~1.2~~ 1.2
Edwards	~~30.5~~ 30.5	~~0.1~~ 0.1	~~33.2~~ 33.2	~~0.1~~ 0.1
Hidalgo	~~636.3~~ 708.9	~~401.3~~ 402.2	~~880.1~~ 925.8	~~530.1~~ 530.2
Jim Hogg	~~138.6~~ 138.6	~~70.9~~ 70.9	~~172.2~~ 172.2	~~93.6~~ 93.6
Kenedy	~~576.1~~ 576.2	~~208.8~~ 208.8	~~820.6~~ 785.8	~~308.5~~ 307.3
Kinney	~~232.5~~ 232.5	~~11.7~~ 11.7	~~265.9~~ 265.9	~~14.7~~ 14.7
Maverick	~~223.9~~ 223.9	~~20.1~~ 20.1	~~252.1~~ 252.1	~~23.1~~ 23.1
Starr	~~327.6~~ 327.6	~~93.4~~ 93.4	~~365.4~~ 365.4	~~105.4~~ 105.4
Val Verde	~~91.7~~ 100.7	~~1.0~~ 1.1	~~102.8~~ 115.4	~~1.2~~ 1.3
Webb	~~460.1~~ 460.1	~~13.8~~ 13.8	~~512.3~~ 512.3	~~16.0~~ 16.0
Willacy	~~308.7~~ 308.7	~~147.0~~ 147.0	~~478.8~~ 478.7	~~259.6~~ 259.6
Zapata	~~314.2~~ 314.2	~~40.5~~ 40.5	~~346.5~~ 346.5	~~46.6~~ 46.6

Page: 2-34: Updated "**Figure 2.16 Agricultural Land Exposure (in Square Miles) to Existing Conditions Floodplain Quilt**" to reflect the Agricultural Areas impacted by county after flood exposure analysis.



2B.1.C One and 0.2 Percent Annual Chance Exceedance Floodplains – Updated tables and figures to reflect the additional data incorporated.

Page 2-49: Updated **"Figure 3.3.1 Future Conditions Floodplain Quilt"** to reflect floodplain extent changes after incorporating new local studies.



Page 2-50: **Table 2.16 Percentage in Future Floodplain Quilt by County**

County	1% Flood Hazard	0.2% Flood Hazard	Possible Flood Prone Areas
Brooks	~~34.7%~~ 34.7%	~~45.9%~~ 45.9%	~~0.0%~~ 0.0%
Cameron	~~80.3%~~ 80.3%	~~95.0%~~ 93.7%	~~0.4%~~ 1.1%
Dimmit	~~26.8%~~ 26.8%	~~35.5%~~ 35.5%	~~0.0%~~ 0.0%
Edwards	~~23.9%~~ 23.9%	~~36.7%~~ 36.7%	~~0.0%~~ 0.0%
Hidalgo	~~58.4%~~ 58.4%	~~77.1%~~ 76.9%	~~0.1%~~ 0.1%
Jim Hogg	~~19.8%~~ 19.8%	~~27.3%~~ 27.3%	~~0.0%~~ 0.0%
Kenedy	~~55.5%~~ 53.2%	~~65.4%~~ 62.7%	~~0.0%~~ 0.0%
Kinney	~~35.4%~~ 35.4%	~~43.6%~~ 43.6%	~~0.0%~~ 0.0%
Maverick	~~32.8%~~ 32.8%	~~42.4%~~ 42.4%	~~0.0%~~ 0.0%
Starr	~~29.6%~~ 29.7%	~~38.1%~~ 38.1%	~~0.0%~~ 0.0%
Val Verde	~~29.4%~~ 33.0%	~~39.6%~~ 44.6%	~~0.0%~~ 0.0%
Webb	~~31.0%~~ 31.0%	~~41.9%~~ 41.9%	~~0.4%~~ 0.5%
Willacy	~~72.1%~~ 72.1%	~~84.7%~~ 84.3%	~~0.0%~~ 0.0%
Zapata	~~32.8%~~ 32.8%	~~42.8%~~ 42.8%	~~0.0%~~ 0.0%

Page 2-52: **Table 2.17 Future Flood Hazard by Flood Risk Type Summary Table**

County	1% Flood Hazard			0.2% Flood Hazard		
	Coastal Flood Risk Areas (sq. mi.)	Local Flood Risk Areas (sq. mi.)	Riverine Flood Risk Areas (sq. mi.)	Coastal Flood Risk Areas (sq. mi.)	Local Flood Risk Areas (sq. mi.)	Riverine Flood Risk Areas (sq. mi.)
Brooks	~~0~~ 0	~~0~~ 0	~~237.7~~ 237.7	~~0~~ 0	~~0~~ 0	~~314.8~~ 314.8
Cameron	~~115.8~~ 115.7	~~0~~ 0	~~703.6~~ 704.0	~~122.9~~ 119.9	~~0~~ 0	~~845.5~~ 837.3
Dimmit	~~0~~ 0	~~46.2~~ 46.2	~~37.5~~ 37.5	~~0~~ 0	~~61.1~~ 61.1	~~47.2~~ 47.2
Edwards	~~0~~ 0	~~33.2~~ 33.2	~~32.7~~ 32.7	~~0~~ 0	~~50.9~~ 50.9	~~49.9~~ 49.9
Hidalgo	~~0~~ 0	~~36.6~~ 36.6	~~917.5~~ 926.1	~~0~~ 0	~~45.0~~ 45.3	~~1,224.3~~ 1,216.1
Jim Hogg	~~0~~ 0	~~84.9~~ 84.9	~~164.0~~ 164.0	~~0~~ 0	~~113.7~~ 113.7	~~222.3~~ 222.3
Kenedy	~~252.8~~ 252.8	~~0~~ 0	~~640.1~~ 612.2	~~264.0~~ 267.4	~~0~~ 0	~~743.9~~ 740.3
Kinney	~~0~~ 0	~~265.9~~ 265.9	~~254.8~~ 254.8	~~0~~ 0	~~327.7~~ 327.7	~~309.5~~ 309.5
Maverick	~~0~~ 0	~~249.5~~ 249.5	~~208.2~~ 208.2	~~0~~ 0	~~322.3~~ 322.1	~~253.7~~ 253.6
Starr	~~0~~ 0	~~319.4~~ 319.4	~~315.1~~ 315.1	~~0~~ 0	~~408.6~~ 408.5	~~384.6~~ 384.6
Val Verde	~~0~~ 0	~~100.1~~ 87.4	~~97.0~~ 126.2	~~0~~ 0	~~135.4~~ 116.1	~~169.4~~ 163.0
Webb	~~0~~ 0	~~500.5~~ 500.5	~~434.5~~ 434.5	~~0~~ 0	~~680.5~~ 680.3	~~551.6~~ 551.4
Willacy	~~110.0~~ 110.0	~~0~~ 0	~~368.9~~ 368.8	~~115.8~~ 114.0	~~0~~ 0	~~447.3~~ 446.7
Zapata	~~0~~ 0	~~346.5~~ 346.5	~~295.3~~ 295.3	~~0~~ 0	~~452.6~~ 452.4	~~360.2~~ 359.9
TOTAL	~~478.6~~ 478.5	1~~,982.8~~ 1,970.2	~~4,706.9~~ 4,717.2	~~502.7~~ 501.3	~~2,597.9~~ 2,578.2	~~5,924.1~~ 5,896.5

Page 2-51: **Table 2.18 Increase in Flood Hazard Area for Future Condition Compared to Existing Condition**

Flood Frequency	Existing Conditions Area (Sq. Mi)	Future Conditions Area (sq. mi.)	Increase (sq. mi.)	% Increase
1% Annual Chance	~~4,163~~ 4,173	~~5,379~~ 5,356	~~1,216~~ 1,183	~~29.2%~~ 28.4%
0.2% Annual Chance	~~5,379~~ 5,356	~~6,794~~ 6,751	~~1,415~~ 1,395	~~26.3%~~ 26.0%

2B.2.A Future Conditions Flood Exposure - Tables 2.19 – 2.22 and Figure 2.22 were updated to include the latest exposure analysis.

Page 2-52: **Table 2.19 Summary of Increased Exposure in the Flood Hazard Area**

Feature	1% Flood Hazard			0.2% Flood Hazard		
	Existing Conditions	Future Conditions	Increase	Existing Conditions	Future Conditions	Increase
Population	~~359,873~~ 582,537	~~814,692~~ 1,041,627	~~454,819~~ 459,090	~~1,003,907~~ 1,047,282	~~1,344,614~~ 1,406,712	~~340,707~~ 359,430
Total Structures	~~115,711~~ 166,605	~~254,465~~ 304,725	~~138,754~~ 138,120	~~301,286~~ 304,725	~~400,231~~ 404,364	~~98,945~~ 99,639
Residential Structures	~~92,825~~ 132,542	~~208,482~~ 248,173	~~115,657~~ 115,631	~~245,344~~ 248,173	~~326,005~~ 330,324	~~80,661~~ 82,151
Non-Residential Structures	~~22,886~~ 34,063	~~45,983~~ 56,552	~~23,097~~ 22,489	~~55,942~~ 56,552	~~74,226~~ 74,040	~~18,284~~ 17,488
Critical Facilities	~~135~~ 319	~~342~~ 589	~~207~~ 270	~~590~~ 589	866 871	276 282
Low Water Crossings	~~124~~ 124	~~126~~ 126	~~2~~ 2	~~126~~ 126	~~137~~ 137	~~11~~ 11
Roadway Segments (miles)	~~3,995~~ 4,559	~~6,605~~ 7,478	~~2,609~~ 2,920	~~6,605~~ 7,478	~~10,041~~ 13,346	~~3,437~~ 5,867
Agricultural Area (sq. mi)	~~1,275~~ 1,276	~~1,842~~ 2,309	~~567~~ 1,033	~~1,841~~ 1,839	~~2,340~~ 2,309	~~499~~ 471

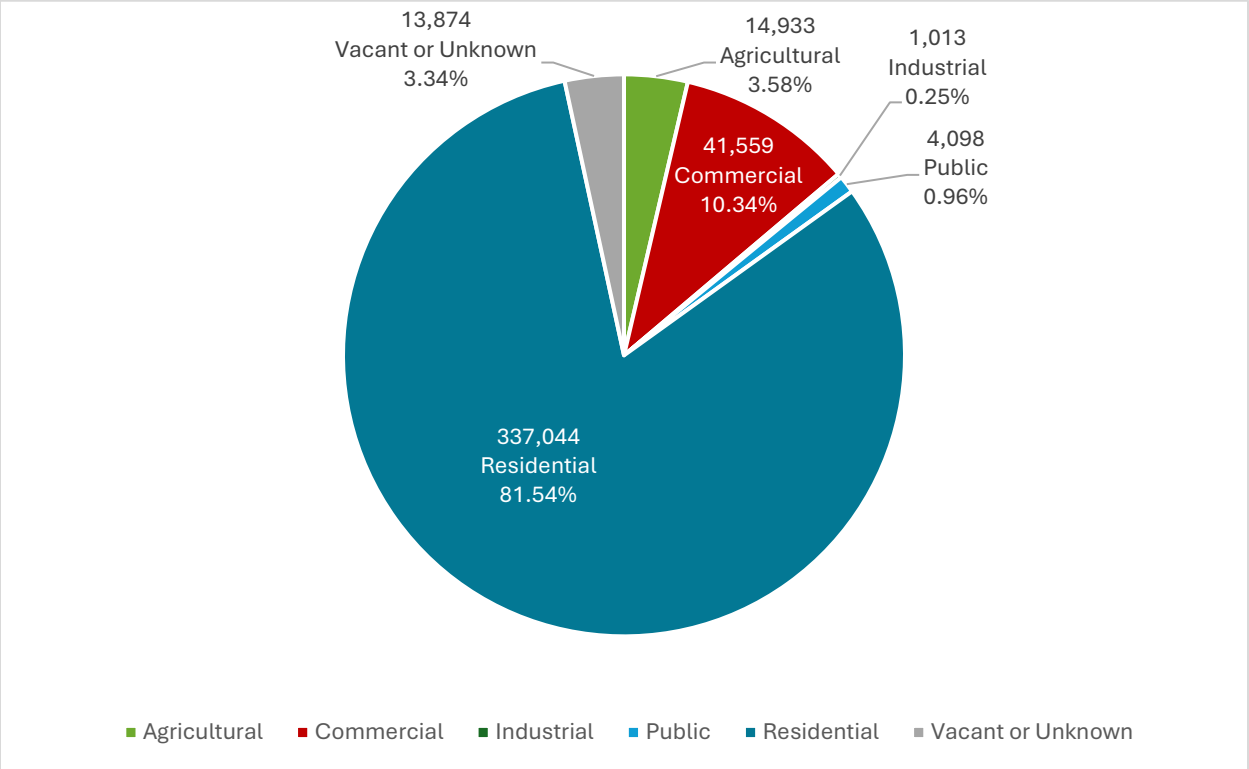
Page 2-53: **Table 2.20 Counties with the Highest Population Exposure within the 0.2 percent ACE Flood Hazard Area**

County	Existing Conditions Population	Future Conditions Population	Increase
Hidalgo	~~562,417~~ 560,674	~~738,758~~ 750,736	~~176,341~~ 190,062
Cameron	~~295,448~~ 308,886	~~392,250~~ 406,945	~~96,802~~ 98,059
Webb	~~85,727~~ 98,924	~~133,733~~ 142,164	~~48,006~~ 43,240
Starr	~~24,277~~ 24,382	~~30,549~~ 30,696	~~6,272~~ 5,537

Page 2-55: **Table 2.21 Counties with the Highest Structural Exposure within the 0.2 percent ACE Flood Hazard Area**

County	Existing Conditions Structures	Future Conditions Structures	Increase
Hidalgo	~~165,300~~ 164,921	~~216,588~~ 215,147	~~51,288~~ 50,226
Cameron	~~94,637~~ 94,333	~~122,450~~ 121,150	~~27,813~~ 26,817
Webb	~~19,770~~ 19,757	~~32,458~~ 32,429	~~12,688~~ 12,672
Starr	~~6,696~~ 6,696	~~8,649~~ 8,648	~~1,953~~ 1,952

Page 2-56: **Figure 2.22 Distribution of Structures at Risk of Flooding by Structure Type**



Page 2-57: **Table 2.22 Counties with the Highest Critical Facilities Exposure within the 0.2% ACE Flood Hazard Area**

County	Existing Conditions Critical Facilities	Future Conditions Critical Facilities	Increase
Hidalgo	~~282~~ 276	~~445~~ 432	~~163~~ 156
Cameron	~~198~~ 195	~~267~~ 273	~~69~~ 78
Starr	~~44~~ 20	~~65~~ 25	~~21~~ 5
Webb	~~20~~ 44	~~25~~ 65	~~5~~ 21

A.3.4 Changes made to Chapter 4

The chapter was modified to include the addition of potential FMEs, FMPs, and FMEs that were received for the amendment process. Tables and text related to the potential FMX was updated to reflect the new values.

4B.3.a. FME Types – Updated the total number of potential FMEs identified in Table 4.8 and paragraph.

Page 4-18: "In total, ~~457~~ **546** potential FMEs were identified and evaluated."

Page 4-18: **Table 4.8 FME Types and General Description**

FME Type	FME Description	# of Potential FMEs Identified
Watershed Planning	Promotes the development and/or refinement of detailed flood risk maps to address data gaps and inadequate mapping. Creates FEMA mapping in previously unmapped areas and updates existing FEMA maps as needed.	~~46~~ 71
Project Planning	Supports the development and analysis of H&H models to evaluate flood risk within specific problem areas, evaluate potential alternatives to mitigate flood risk, and develop a project.	~~409~~ 473
Preparedness	Study to develop evacuation center plans and design of rehabilitation of pumps for flood relief.	~~2~~ 2
	Total	~~**457**~~ **546**

4B.4 Evaluation of Potentially Feasible FMPs and FMSs – Updated Tables 4.10 values and the FMP type to match the Exhibit C FMP types. The number of potential FMSs in Table 4.11 was also updated to reflect the addition of FMSs.

Page 4-20: "The Lower Rio Grande RFPG identified ~~117~~ **122** potentially feasible FMPs for the Lower Rio Grande Planning Region."

Page 4-21: **Table 4.10 Summary of FMP Types**

FMP Type	Potential FMP Sponsor	# of Potential FMPs Identified
~~Flood Early Warning System~~	~~City of Los Fresnos~~	~~2~~
~~Flood Proofing~~	~~Hidalgo County Precinct No. 1~~ ~~City of Los Fresnos~~	~~6~~

FMP Type	Potential FMP Sponsor	# of Potential FMPs Identified
~~Infrastructure~~	~~City of Alton~~ ~~City of Eagle Pass~~ ~~City of Edinburg~~ ~~City of Harlingen~~ ~~City of Laredo~~ ~~City of McAllen~~ ~~City of Pharr~~ ~~City of Weslaco~~ ~~Cameron County~~ ~~Cameron County Drainage District No. 3~~ ~~Cameron County Drainage District No. 5~~ ~~Cameron County Drainage District No. 6~~ ~~Hidalgo County Drainage District No. 1~~ ~~Hidalgo County Precinct 4~~	~~94~~
~~Regional Detention~~	~~City of Harlingen~~ ~~City of McAllen~~ ~~City of Pharr~~ ~~City of Brownsville~~	~~16~~
Infrastructure	Los Fresnos La Joya Starr Weslaco Valley MUD 2 Laredo La Villa Cameron County Drainage District 3 McAllen Hidalgo County Drainage District 1 Harlingen Cameron County Drainage District 6 Pharr Alton Cameron Del Rio Cameron County Irrigation District 6 Cameron County Drainage District 1 Brownsville Rancho Viejo	76

FMP Type	Potential FMP Sponsor	# of Potential FMPs Identified
Channel	Brownsville Hidalgo County Drainage District 1 Raymondville Cameron County Drainage District 1 Cameron Cameron County Drainage District 6	12
Detention Pond	Brownsville Del Rio Hidalgo County Drainage District 1	8
Storm Drain	Los Fresnos Brownsville McAllen	6
Comprehensive	La Villa McAllen Harlingen Cameron County Drainage District 6 Pharr Hidalgo County Drainage District 1 Los Fresnos Brownsville	18
Other	Del Rio	2
	Total	~~**118**~~ **122**

Page 4-22: "The Lower Rio Grande RFPG identified ~~86~~ **122** potentially feasible FMSs for the Lower Rio Grande Planning Region."

Page 4-22: **Table 4.11 Summary of FMS Types**

FMS Type	FMS Description	# of Potential FMSs Identified
Education and Outreach	NFIP Education; Flood Education; Floodplain Regulatory Awareness; Emergency Contact Awareness	~~7~~ 10
Flood Measurement and Warning	Flood Warning Systems; Mass Notifications during Natural Hazard Incidents; Dam Inundation Studies	~~47~~ 48
Infrastructure Projects	Upgrade existing stormwater storage, develop shelter facilities, identify improvements to flood proof critical facilities	~~8~~ 11

FMS Type	FMS Description	# of Potential FMSs Identified
Regulatory and Guidance	City Floodplain Ordinance Creation/Updates; Zoning Regulations; Land Use Programs;	~~19~~ 45
Other	Communicate with current land owners on increasing conveyance into their property, develop plans to secure future funding, secure funding to become or join an existing drainage district	~~5~~ 7
	Total	~~**86**~~ **121**

A.3.5 Changes made to Chapter 5

Chapter 5 was updated to include the addition of new recommended FMEs, FMPs, and FMSs. Text and tables related to the modified FMXs were updated to reflect the changes.

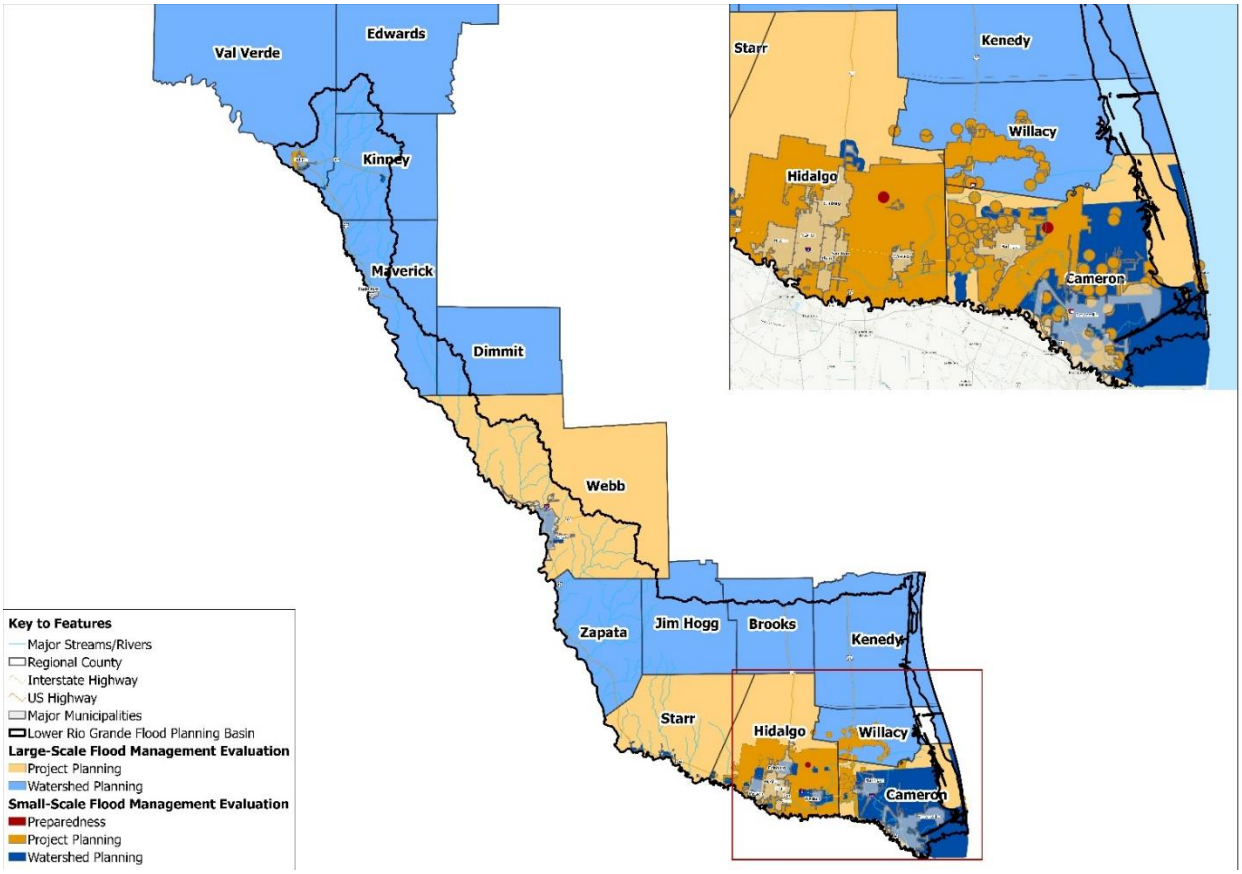
5.2.2 Description and Summary of Recommended FMEs – Updated numbers on Table 5.1 and replaced Figure 5.2. Additionally, text related to the FME numbers was updated to match the new table.

Page 5-5: "A total of ~~457~~ **546** potential FMEs were identified and evaluated by the Lower Rio Grande Planning Region. Of these projects, ~~406~~ **495** were recommended, representing a total of approximately ~~$1.2 billion~~ **$270 million** of FME needs across the region."

Page 5-5: **Table 5.1 Summary of Recommended FMEs**

FME Type	# of Potential FMEs Identified	# of FMEs Recommended	Total Cost of Recommended FMEs
Watershed Planning	~~46~~ 71	~~46~~ 71	~~$35,168,000~~ $55,418,000
Project Planning	~~409~~ 473	~~358~~ 422	~~$1,184,768,582~~ $213,880,561
Preparedness	~~2~~ 2	~~2~~ 2	~~$3,371,721~~ $404,607
Total	~~**457**~~ **546**	~~**406**~~ **495**	~~**$1,223,308,303**~~ **$269,703,167**

Page 5-6: Updated "**Figure 5.2 Map of Recommended FMEs**" to include the additional FMEs.



5.4.3 Description and Summary of Recommended FMPs– Updated numbers on Table 5.2 and replaced Figure 5.3. Text referencing table data was updated to match the new values on the updated table. Note that the reported total cost on Page 5-9 below has a typo when it was converted to million dollars, the correct number was supposed to be $968 million instead of $9.6 million. FMP type was updated to match the Exhibit C FMP types, for consistency.

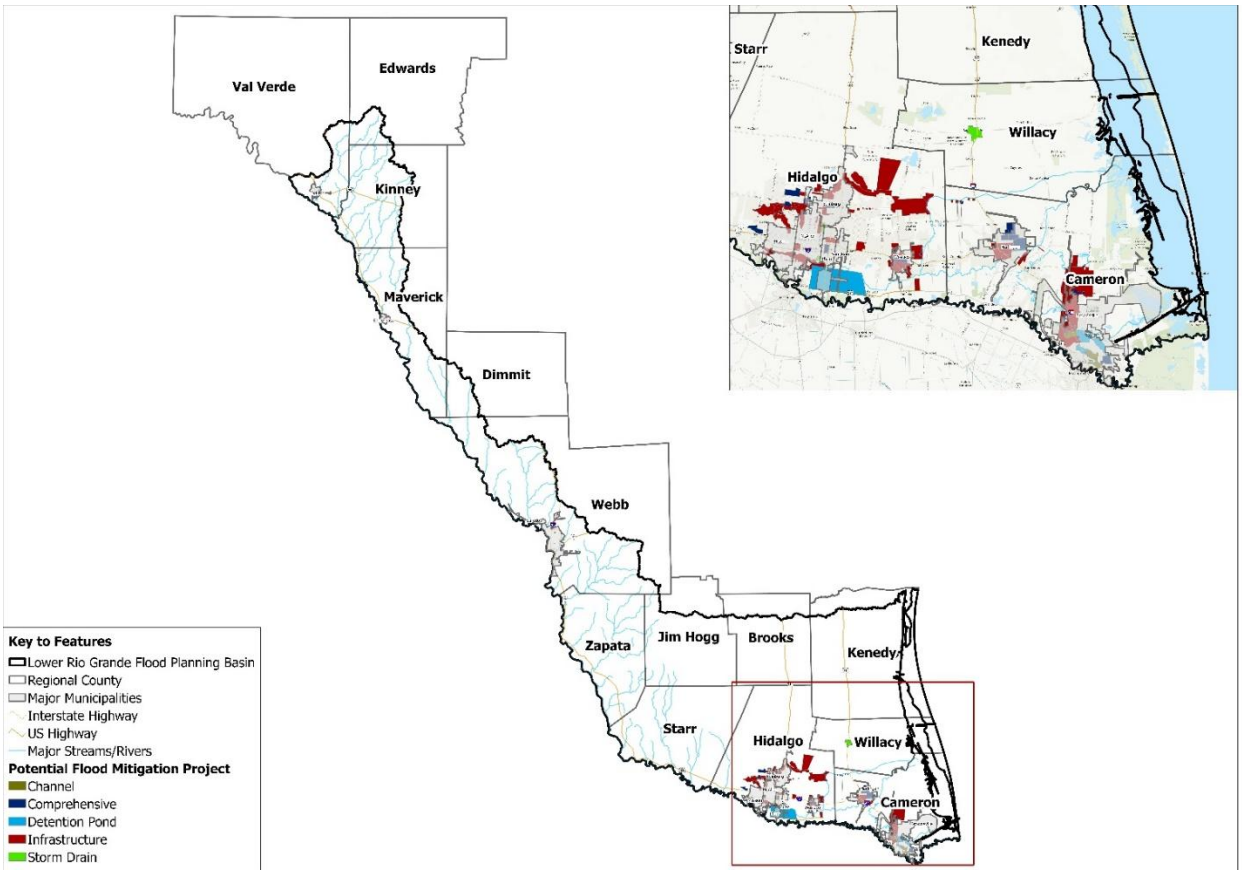
Page 5-9: "Due to the level of detail required for consideration as an FMP, ~~94~~ **106** out of ~~98~~ **122** potentially feasible FMPs were determined to have enough details available for evaluation and potential recommendation for inclusion in the Regional Flood Plan. Based on the FMP evaluation described in Section 5.4.2, the Lower Rio Grande Planning Region has determined that ~~94~~ **106** FMPs comply with all the TWDB requirements and recommend them for inclusion in the Regional Flood Plan representing a combined total project cost of ~~$968,383,868~~ **$1.3 billion**. A map of project areas for the recommended FMPs is provided in Figure 5.3 on the next page.

A summary of the recommended FMPs for inclusion in the Regional Flood Plan is presented in **Table 5.2.** These projects represent a combined total construction cost of ~~$9.6 million~~ **$1.3 billion**."

Page 5-9: **Table 5.2 Summary of Recommended FMPs**

FMP Type	# of Potential FMPs Identified	# of FMPs Recommended	Total Cost of Recommended FMPs
~~Flood Proofing~~	~~32~~	~~30~~	~~$358,386,210~~
~~Infrastructure~~	~~48~~	~~47~~	~~$318,613,002~~
~~Regional Detention~~	~~18~~	~~17~~	~~$291,384,656~~
Infrastructure	76	70	$407,285,871
Channel	12	2	$65,975,580
Detention Pond	8	8	$428,904,356
Storm Drain	6	6	$53,255,305
Comprehensive	18	18	$320,445,742
Other	2	2	$7,967,309
Total	~~**98**~~ **122**	~~**94**~~ **106**	~~**$968,383,868**~~ **$1,283,834,163**

Page 5-10: Updated "**Figure 5.3 Map of Recommended FMPs**" to include the additional FMPs.



5.4.2 Description and Summary of Recommended FMSs – Updated numbers on Table 5.3 and replaced Figure 5.4. Additionally, text related to the FMS numbers was updated to match the new table.

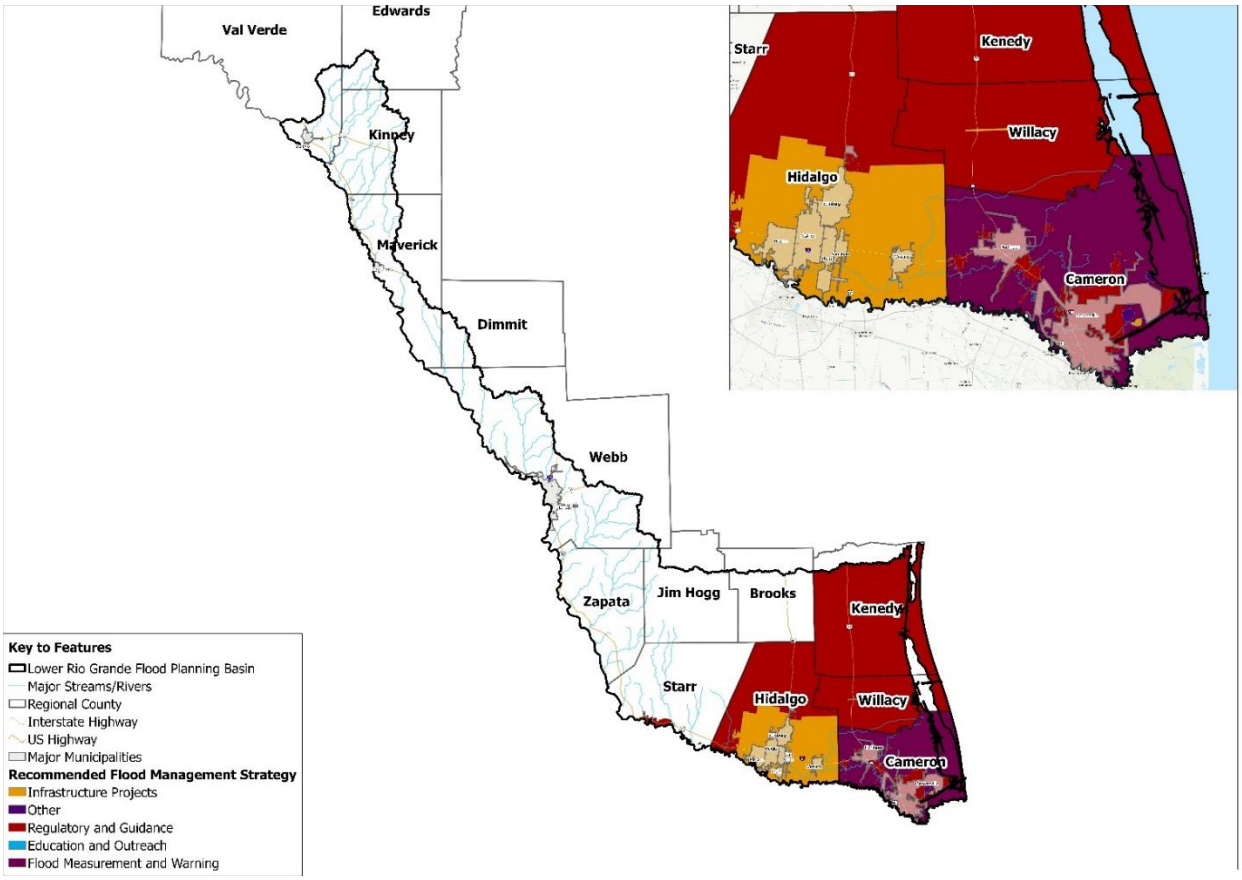
Page 5-11: "A wide variety of FMS types were identified and evaluated for the Lower Rio Grande Planning Region. The Lower Rio Grande Region considered a total of ~~86~~ **121** potentially feasible FMSs and all ~~86~~ **121** were recommended for inclusion in the Regional Flood Plan. Generally, these FMSs recommend city-wide and county-wide strategies and initiatives that represent a combined total cost of approximately ~~$151~~ **$170** million."

Page 5-12: **Table 5.3 Summary of Recommended FMSs**

FMS Type	FMS Description	# of Potential FMSs Identified	# of FMSs Recommended	Total Cost of Recommended FMSs
Education and Outreach	NFIP Education; Flood Education; Floodplain Regulatory Awareness; Emergency Contact Awareness	~~7~~ 10	~~7~~ 10	~~$875,000~~ $763,500
Flood Measurement and Warning	Flood Warning Systems; Mass Notifications during Natural Hazard Incidents; Dam Inundation Studies	~~47~~ 48	~~47~~ 48	~~$110,400,000~~ $107,406,050
Infrastructure Projects	Assessments for flood proofing, building a shelter; funding plan for dredging plan	~~8~~ 11	~~8~~ 11	~~$36,720,000~~ $48,820,000
Regulatory and Guidance	City Floodplain Ordinance Creation/Updates; Zoning Regulations; Land Use Programs	~~19~~ 45	~~19~~ 45	~~$2,170,000~~ $12,020,500
Other	Funding Plans; Formation or union with Drainage District; Renegotiation of Agreements; Levee	~~5~~ 7	~~5~~ 7	~~$1,150,000~~ $1,251,000

FMS Type	FMS Description	# of Potential FMSs Identified	# of FMSs Recommended	Total Cost of Recommended FMSs
	Recertification Alliances			
	Total	~~**86**~~ **121**	~~**86**~~ **121**	~~**$151,315,000**~~ **$170,261,050**

Page 5-13: Updated "***Figure 5.4 Map of Recommended FMSs***" to include the additional FMSs.



A.3.6 Changes made to Chapter 6

Chapter 6 was modified to account for the additional FMPs included in the amendment. Tables and text referencing the benefits of the FMP implementation were updated. Changes include the reduction of flood-impacted areas, population removed from the floodplain, structures removed from the floodplain, critical facilities removed from the floodplain, low water crossings removed, and at-risk roadways removed.

6.1 Impacts of Regional Flood Plan – Sentence modified to account for the additional FMPs.

Page 6-1: "Implementation of the ~~97~~ **106** recommended flood mitigation projects (FMPs) included in this RFP is expected to benefit an estimated ~~95,994~~ **125,974** people living in flood-prone areas."

1.1.a. Summary of Relative Reduction of the Flood Risk - Sentence modified to account for the additional FMEs. Text and Tables 6.1 – 6.7 modified to account for the additional FMPs benefits after implementation.

Page 6-2: "A total of ~~457~~ **495** FMEs are recommended in this RFP. ~~Forty-six (46)~~ **Seventy-one (71)** of the recommended FMEs are watershed planning studies identified during the needs assessment. These ~~46~~ **71** floodplain mapping will better define the flood risk for ~~67%~~ **83%** of the floodplain. Implementing the FMEs will ultimately give entities a tool to address the flood hazard aggressively and effectively in their community. Once the flood hazard is better understood, effect floodplain management and land use strategies can be implemented. Another ~~409~~ **473** proposed FMEs will conduct an alternative analysis to determine the source and extent of a flood-prone area and will identify the most beneficial solution that not only mitigates the flood problem but also considers the project's impact on their neighbors and water supply. The last 2 FMEs will provide the analysis to design an evacuation center and rehabilitate pumps for flood relief."

Page 6-2: "Implementing the Regional Flood Plan will reduce areas previously impacted by approximately ~~4.3~~ **3.4** percent, or a reduction of approximately ~~12.1~~ **17** square miles."

Page 6-2: **Table 6.1 Reduction in Existing Flood-Impacted Areas**

Annual Chance Event Flood Event	Area in Floodplain (sq. mi.)	Reduction of Floodplain after Implementation (sq. mi.)	Decrease in floodplain impacted, (%)
1% (100-Year Event)	~~237.2~~ 343.4	~~8.5~~ 12.2	~~3.6%~~ 3.5%
0.2% (500-Year Event)	~~45.2~~ 153.9	~~3.6~~ 4.9	~~8.0%~~ 3.2%
Total	~~**282.4**~~ **497.3**	~~**12.1**~~ **17.0**	~~**4.3%**~~ **3.4%**

Page 6-3: **Table 6.3 Population Removed from the Floodplain**

Annual Chance Event Flood Event	Existing At-Risk Population	Reduction of At-Risk Population after Implementation	Decrease in Population Impacted
1% (100-Year Event)	~~282,017~~ 306,627	~~43,930~~ 51,262	~~15.6%~~ 16.7%
0.2% (500-Year Event)	~~689,125~~ 542,721	~~52,064~~ 74,019	~~7.6%~~ 13.6%
Total	~~**971,142**~~ **849,348**	~~**95,994**~~ **123,449**	~~**9.9%**~~ **14.7%**

Page 6-3: **Table 6.4 Structures Removed from the Floodplain**

Annual Chance Event Flood Event	Existing At-Risk Structures	Reduction of At-Risk Structures after Implementation	Decrease in Structures Impacted
1% (100-Year Event)	~~53,276~~ 58,131	~~15,487~~ 17,350	~~29.1%~~ 29.8%
0.2% (500-Year Event)	~~174,084~~ 180,907	~~24,204~~ 24,904	~~13.9%~~ 13.8%
Total	~~**227,360**~~ **239,038**	~~**39,691**~~ **42,254**	~~**17.5%**~~ **17.7%**

Page 6-4: **Table 6.5 Critical Facilities Removed from the Floodplain**

Annual Chance Event Flood Event	Existing At-Risk Critical Facilities	Reduction of At-Risk Critical Facilities After Implementation	Decrease in Critical Facilities Impacted
1% (100-Year Event)	~~65~~ 85	~~2~~ 5	~~3.1%~~ 5.9%
0.2% (500-Year Event)	~~428~~ 428	~~20~~ 20	~~4.7%~~ 4.7%
Total	~~**493**~~ **513**	~~**22**~~ **25**	~~**4.5%**~~ **4.9%**

Page 6-4**: Table 6.6 Low Water Crossings Removed**

Annual Chance Event Flood Event	Existing At-Risk Low Water Crossings	Reduction of At-Risk Low Water Crossings after Implementation	Decrease in Low Water Crossings Impacted
1% (100-Year Event)	~~3262~~ 3,269	~~44~~ 44	~~1.3%~~ 1.3%
0.2% (500-Year Event)	~~3,524~~ 3,524	~~0~~ 0	~~0%~~ 0%
Total	~~**6786**~~ **6,793**	~~**44**~~ **44**	~~**0.7%**~~ **0.6%**

Page 6-4: **Table 6.7 At-Risk Roadways Removed**

Annual Chance Event Flood Event	Existing At-Risk Roadways (miles)	Reduction of At-Risk Roadways after Implementation	Decrease in Roadways Impacted
1% (100-Year Event)	~~6,093~~ 6,222	~~0~~ 32	~~0%~~ 0.5%
0.2% (500-Year Event)	~~2,583~~ 2,583	~~0~~ 0.0	~~0%~~ 0%
Total	~~**6,376**~~ **8,805**	~~**0**~~ **28**	~~**0%**~~ **0.4%**

A.3.7 Changes made to Chapter 9

Chapter 9 was updated to include the additional recommended FMEs, FMSs, and FMPs in the financial analysis. It should be noted that the total cost number of $2,414,176,760 of implementing all FMEs, FMSs, and FMPs was incorrectly stated in the 2023 Regional Flood Plan due to an inconsistency with the values reported in Table 15 of Exhibit C for cost of FMEs. The total cost of implementing FMEs as reported in Table 15 is $227,172,167 and not the $1,223,308,303 previously reported in Table 5.1. This error transferred to the text in chapter 9 where the total cost of implementing all FMXs was reported at $2,414,176,760. The correct number in the 2023 Regional Flood Plan should have been reported as $1,428,040,624. The new total cost of implementing all FMEs, FMSs, and FMPs with the additions included in this project is now $1,723,798,380.

9.3 Flood Infrastructure Financing Survey – Modified total estimated cost of FMEs, FMSs, and FMPs to include additional entries.

Page 9-13: "Overall, a total cost of ~~$2,414,176,760~~ **$1,723,798,380** is needed to implement the recommended FMEs, FMSs, and FMPs in this regional flood plan. From the total cost, it is project that ~~$2,172,759,084~~ **$1,551,418,542** of state and federal funding is needed."

A.3.8 Changes made to Chapter 10

Chapter 10 was updated to include the additional RFPG meetings that were held to approve the RFPGs intent to prepare an amendment and when received FMXs were reviewed and approved for incorporation into the amendment.

10.1 Regional Flood Planning Group Meetings (2022-~~2022~~ 2025) - Modified to include two additional entries to Table 10.1.

Page 10-2: **Table 10.1 RFPG and Technical Committee Meeting Calendar and Summary**

Year	Date	Meeting	Highlights
2020	November 5	Planning Group Virtual Meeting	RFPG convening hosted by TWDB
2020	December 3	Planning Group Virtual Meeting	Planning Group Sponsor (TWDB) hosts
2021	January 13	Planning Group Virtual Meeting	Pre-planning public comment Nominating members
2021	February 24	Planning Group Virtual Meeting	Pre-planning public comment Technical consultant selected/hired
2021	June 30	Planning Group Virtual Meeting	Award contract to Technical consultant Award contract for public website
2021	July 28	Pre-planning Virtual Meeting	The technical consultant presented and discussed the scope of work, goals, and strategies for public engagement and project completion.
2021	August 18	Planning Group Virtual Meeting & Pre-Planning Meeting	Pre-planning public comment and technical consultant provided updates on Regional Flood Plan Task 1-3
2021	October 13	Planning Group Virtual Meeting	The technical consultant provided tasks 1, 3B,4A, and 4B updates.
2021	November 17	Planning Group Virtual Meeting	The technical consultant presented the potential adoption of Region 15 overarching flood mitigation and floodplain management goals for the Lower Rio Grande Regional Flood Plan. The Regional Flood Plan approved the process used by the RFPG to identify and evaluate potential FMEs, FMPs, and FMSs. The technical consultant also discussed Floodplain management standards.
2021	December 15	Pre-Planning Virtual Meeting	The technical consultant presents the technical memo for approval to submit to the TWDB by January 7, 2022
2022	January 19	Planning Group Virtual Meeting	The technical consultant provides an update on flood mitigation resolution and reaching out to different entities regarding missing data for the best models to reflect the information given
2022	March 9	Planning Group Hybrid Meeting	The technical consultant provides updates on Tasks 2A, 2B, 3A, and 4B.
2022	April 12	Planning Group Hybrid Meeting	The technical consultant introduces RATES to RFPG and provides updates on Tasks 3A.

Year	Date	Meeting	Highlights
2022	May 18	Planning Group Virtual Meeting	The technical consultant introduces RATES to RFPG and provides updates on Tasks 3A.
2022	July 21	Planning Group Virtual Meeting	The Technical consultant presents summaries of Chapters 3a, 4, 5, 6,7,8, and 9 of the draft Regional Flood Plan for comments and approval to submit to TWDB and post for Public Comment.
2022	September 21	Planning Group Virtual Meeting	The Technical consultant presents plan for Task 12 for consideration and approval to the TWDB.
2022	November 16	Planning Group Virtual Meeting	The Technical consultant presents revisions to Chapter 7, comments received on draft Regional Flood Plan, and reviewed responses for consideration and approval to the TWDB.
2022	December 7	Planning Group Virtual Meeting	The Technical consultant presents Final Regional Flood Plan for approval to be submitted and FMEs to be studied further for FMPs for consideration and approval to the TWDB.
2023	February 21	Technical Sub-Committee Virtual Meeting	The Technical Sub-Committee reviewed and evaluated the expanded list of FMEs and models to recommend a short list of FMEs for approval to the RFPG for further study.
2023	April 26	Planning Group Virtual Meeting	The Technical consultant presented new FMXs for evaluation and approval, received approval for additional FMEs for further study un Task 12, reviewed TWDB's comments on the Final Plan and responses, and reviewed TWDB's proposed ranking criteria for FMXs to provide comments.
2023	May 19	Planning Group Virtual Meeting	The Technical consultant presented the plan and request for use of Task 13 funding, reviewed new possible FMXs for recommendation, and requested additional FMEs for further study. Additionally, consultant presented the proposed changes to Chapters 1, 2, 4, 5, 6, 7, 8, 9 and 10 for the Amended RFP.
2023	June 28	Planning Group Virtual Meeting	The Technical consultant presented new FMXs for evaluation and approval and presented the Draft of the Amended Regional Flood Plan for approval, subject to comments and final reconciliation revisions.
2024	**December 4**	**Planning Group Virtual Meeting**	**The technical consultant presented the optional amendment, and the group decided to proceed with the amendment process.**

Year	Date	Meeting	Highlights
2025	**February 19**	**Planning Group Virtual Meeting**	**The technical consultant presented the additional FMXs included in the amendment. The group approved incorporating the additional FMXs into the amendment.**
2025	**March 19**	**Planning Group Virtual Meeting**	**The technical consultant presented the additional FMXs that were included for the amendment. The group approved and adopted the amended plan.**

10.4 Outreach for the Amended Regional Flood Plan – Included a paragraph describing the meetings held for the amendment process.

Page 10-8:

"Second Amended Plan

The RFPG met on December 4, 2024, to present and proceed with the second amendment of the 2023 Amended Regional Flood Plan. The incorporation of additional FMXs was presented and approved on February 19, 2025. The amendment documents were posted a week prior to the March 19, 2025, meeting. The RFPG approved the submission of the Second Amended Regional Flood Plan to TWDB by April 1, 2025."

A.4 Modifications and Additions to Appendices

A.4.1 Exhibit C Tables

The Lower Rio Grande Regional Flood Plan includes many deliverable components that support the narrative in the report. The TWDB prescribed Exhibit C Tables are one of these components. Several of the tables were updated to reflect the new FMEs, FMPs, and FMSs made during the amendment process. Summaries of the changes are provided in the subsequent sections.

Table 3: Existing Flood Risk
Table 3 was revised to incorporate updates to the existing conditions exposure analysis as a result of incorporating the 12 additional FMPs.

Table 5: Future Flood Risk
Table 5 was revised to incorporate updates to the future conditions exposure analysis as a result of incorporating the 12 additional FMPs.

Table 12: Potential Flood Management Evaluations
Table 12 was revised to include the 89 additional FMEs incorporated into the Lower Rio Grande Regional Flood Plan as part of the amendment.

Table 13: Potential Flood Mitigation Projects
Table 13 was revised to include the 12 additional FMPs incorporated into the Lower Rio Grande Regional Flood Plan as part of the amendment.

Table 14: Potential Flood Mitigation Strategies
Table 14 was revised to include the 35 additional FMSs incorporated into the Lower Rio Grande Regional Flood Plan as part of the amendment.

Table 15: Recommended Flood Management Evaluations
Table 15 was revised to include the 89 additional FMEs incorporated into the Lower Rio Grande Regional Flood Plan as part of the amendment.

Table 16: Recommended Flood Mitigation Projects
Table 16 was revised to include the 12 additional FMPs incorporated into the Lower Rio Grande Regional Flood Plan as part of the amendment.

Table 17: Recommended Flood Mitigation Strategies
Table 17 was revised to include the 35 additional FMSs incorporated into the Lower Rio Grande Regional Flood Plan as part of the amendment.

Table 18: Previous Studies Models
Table 18 was revised to add the models that were received with the submittals of the 11 new FMPs.

Table 20: Recommended Flood Mitigation Project Details
Table 20 was revised to include the 12 additional FMPs incorporated into the Lower Rio Grande Regional Flood Plan as part of the amendment.

Table 20B: Scoring Summary
Table 20B was revised to include the 12 additional FMPs incorporated into the Lower Rio Grande Regional Flood Plan as part of the amendment.

A.4.2 No Negative Impacts Table

No Negative Impact table was revised to include negative impact analysis description for 11 additional recommended FMPs.

A.4.3 List of Models Submitted/Uploaded to MS2

Model ID	Model Name
150000000051	Los Tomates
150000000052	McAllen Lateral
150000000053	El Rancho
150000000054	City of Del Rio Watershed Addendum San Felipe Creek
150000000055	City of Del Rio Watershed Addendum Cienegas Creek
150000000056	South Lateral

A.4.4 Maps

Map 4: Existing Condition Flood Hazard
Map 4 was updated to incorporate the new existing condition flooding maps that were developed for the new FMPs.

Map 8: Future Condition Flood Hazard
Map updated to include the new future condition flooding maps that were obtained from the existing condition flooding maps developed for the additional FMPs.

Map 10: Extent of Increase of Flood Hazard
Map 10 was updated to incorporate the new existing condition and future condition flooding maps that were developed for the new FMPs.

Map 16: Potential Flood Management Evaluations
Map updated to incorporate the additional potential FMEs received.

Map 17: Potential Flood Mitigation Projects
Map updated to incorporate the additional potential FMPs received.

Map 18: Potential Flood Management Strategies
Map updated to incorporate the additional potential FMSs received.

Map 19: Flood Management Evaluations
Map updated to incorporate the additional recommended FMEs received.

Map 20: Recommended Flood Mitigation Projects
Map updated to incorporate the additional recommended FMPs received.

Map 21: Recommended Flood Management Strategies
Map updated to incorporate the additional recommended FMSs received.

Map 22: Model Coverage
Map updated to incorporate the additional models received for FMPs

A.5 Modifications and Additions to the Geodatabase

The Lower Rio Grande Flood Plan includes a geodatabase with relevant data presented in the report, maps, and appendices. Feature classes were updated to account for the inclusion of additional FMEs, FMPs, and FMSs. The detailed log of changes is included in **Attachment B** for reference. The updated geodatabase is included as part of this submittal.