

AGENDA ITEM MEMO

BOARD MEETING DATE: July 25, 2023

TO: Board Members

THROUGH: Jeff Walker, Executive Administrator
Ashley Harden, General Counsel
Matt Nelson, Deputy Executive Administrator, Planning

FROM: James Bronikowski, P.E., CFM, Manager, Regional Flood Planning
Reem Zoun, P.E., CFM, Director, Flood Planning

SUBJECT: 2023 Regional Flood Plan Approvals

ACTION REQUESTED

Consider approving the 2023 Regional Flood Plans for Regions 1 through 15.

BACKGROUND

In accordance with §16.061 of the Texas Water Code (TWC), the Texas Water Development Board (TWDB) must develop and adopt a comprehensive state flood plan every five years that incorporates the 15 regional flood plans developed and approved by each regional flood planning group (RFPG).

RFPGs are required to submit their adopted regional flood plans for approval every five years pursuant to TWC §16.062 and 31 Texas Administrative Code (TAC) §361.50.

In accordance with TWC §16.062, the TWDB must consider approval of submitted regional flood plans and may approve only after it has determined that the plan:

1. satisfies the requirements for regional flood plans adopted in the guidance principles;
2. adequately provides for the preservation of life and property and the development of water supply sources, where applicable;
3. and does not negatively affect a neighboring area.

All 15 RFPGs adopted and submitted their final regional flood plans by the statutory deadline of January 10, 2023.

Our Mission

Leading the state's efforts in ensuring a secure water future for Texas and its citizens

Board Members

Brooke T. Paup, Chairwoman | George B. Peyton V, Board Member | L'Oreal Stepney, P.E., Board Member
Jeff Walker, Executive Administrator

All 15 RFPGs adopted and submitted their final regional flood plans by the statutory deadline of January 10, 2023.

KEY ISSUES

A review has been conducted of all 15 of the 2023 Regional Flood Plans and it has been determined that all 15 regional flood plans:

1. Have been adopted by the RFPGs in accordance with 31 TAC §361.21 related to notice requirements.
2. Satisfy the requirements for regional flood plans adopted in the guidance principles pursuant to TWC §16.062(h)(1).
3. Adequately provide for the preservation of life and property and the development of water supply sources, where applicable pursuant to TWC §16.062(h)(2).
4. Do not negatively affect a neighboring area, pursuant to TWC §16.062(h)(3).

All 15 regional flood plans have reported a variety of metrics associated with the flood risks faced by each region. The regional flood plans also include a variety of recommendations to reduce flood risks to people and property including recommendations of 2,334 Flood Management Evaluations (FMEs), 205 Flood Mitigation Projects (FMPs) and 846 Flood Management Strategies (FMSs). It is anticipated that the number of recommended FMPs will increase when the RFPGs amend their plans. Summary of flood risk and recommended solutions for each region is included in the attached summaries.

All the recommended FMPs were reviewed for potential development of water supply sources; however, none of the recommended FMPs in any regional flood plan have identified measurable contributions to water supply sources.

RECOMMENDATION

The Executive Administrator recommends approval of all 15 of the 2023 Regional Flood Plans based on the determination that the plans comply with all applicable state statutes and rules.

Attachments:

1. Region 1 Regional Flood Plan Summary
2. Region 2 Regional Flood Plan Summary
3. Region 3 Regional Flood Plan Summary
4. Region 4 Regional Flood Plan Summary
5. Region 5 Regional Flood Plan Summary
6. Region 6 Regional Flood Plan Summary
7. Region 7 Regional Flood Plan Summary
8. Region 8 Regional Flood Plan Summary
9. Region 9 Regional Flood Plan Summary
10. Region 10 Regional Flood Plan Summary

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11. Region 11 Regional Flood Plan Summary
12. Region 12 Regional Flood Plan Summary
13. Region 13 Regional Flood Plan Summary
14. Region 14 Regional Flood Plan Summary
15. Region 15 Regional Flood Plan Summary

Attachment 1

Summary of 2023 Region 1 Canadian-Upper Red Regional Flood Plan

The Region 1 Canadian-Upper Red RFPG initially convened on October 26, 2020, and subsequently held 21 public meetings (including RFPG and subcommittee meetings) mostly in Childress prior to their plan submission. The RFPG selected the Panhandle Regional Planning Commission as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Canadian-Upper Red Flood Planning Region (Region 1) encompasses an area of over 34,600 square miles and includes a population of approximately 625,000. Approximately 12 percent of the region (4,310 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 3 percent (930 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 1,250 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

Table 1: Estimated Existing Flood Risks Identified within Region 1*

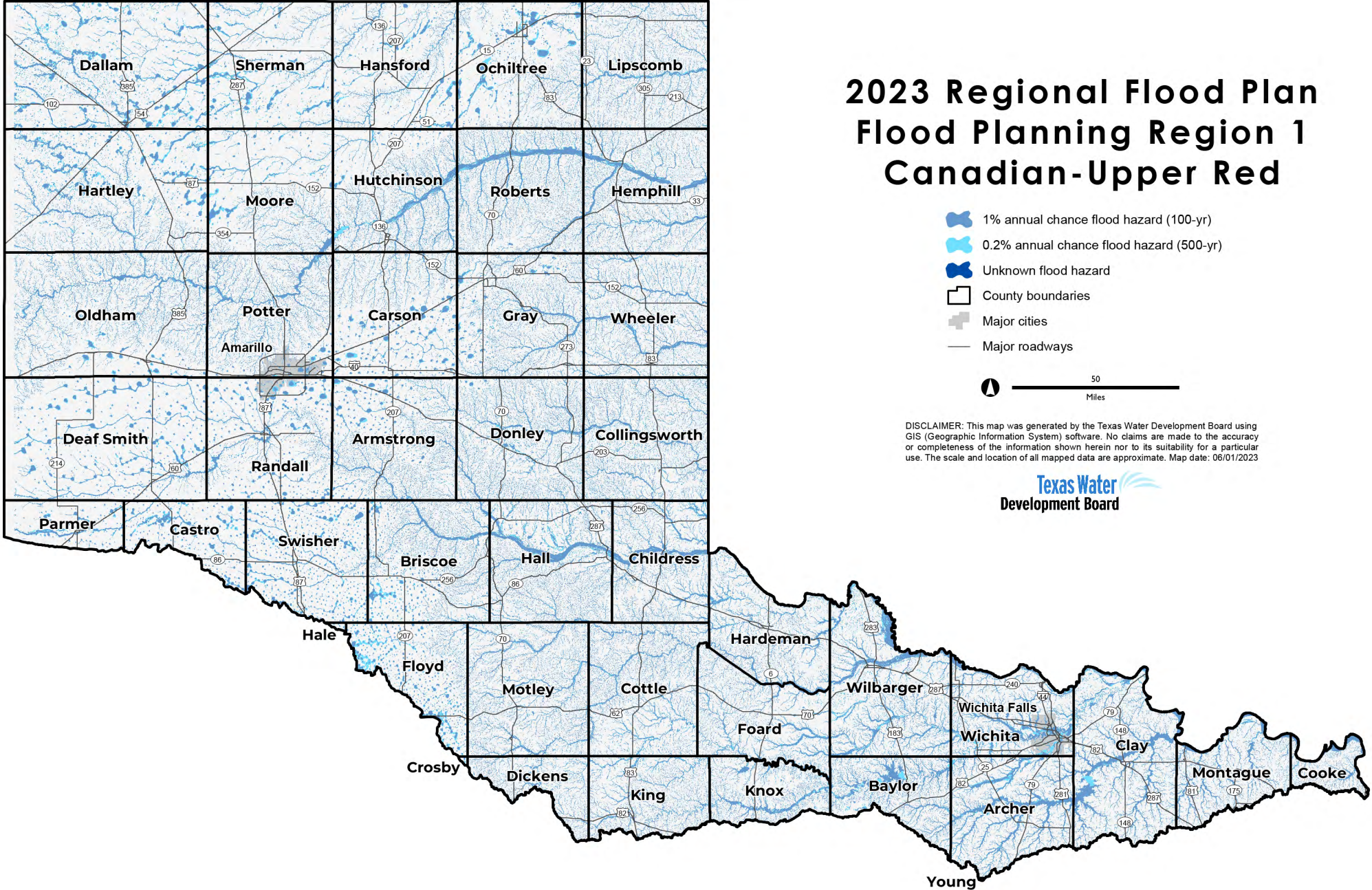
Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	11,500	12,200	23,700
Number of residential buildings	6,900	8,600	15,500
Population	30,000	38,800	68,800
Number of hospitals, schools, and police, fire, and EMS stations	96	90	186
Roadway miles	2,300	1,040	3,340
Agricultural area	3,790	860	4,650

**Statistics may be rounded*

The Region 1 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 184 FMEs with a total estimated study cost of approximately \$84,438,000
- 9 FMPs with a total estimated project cost of approximately \$92,340,000
- 60 FMSs with a total estimated cost of approximately \$13,350,000

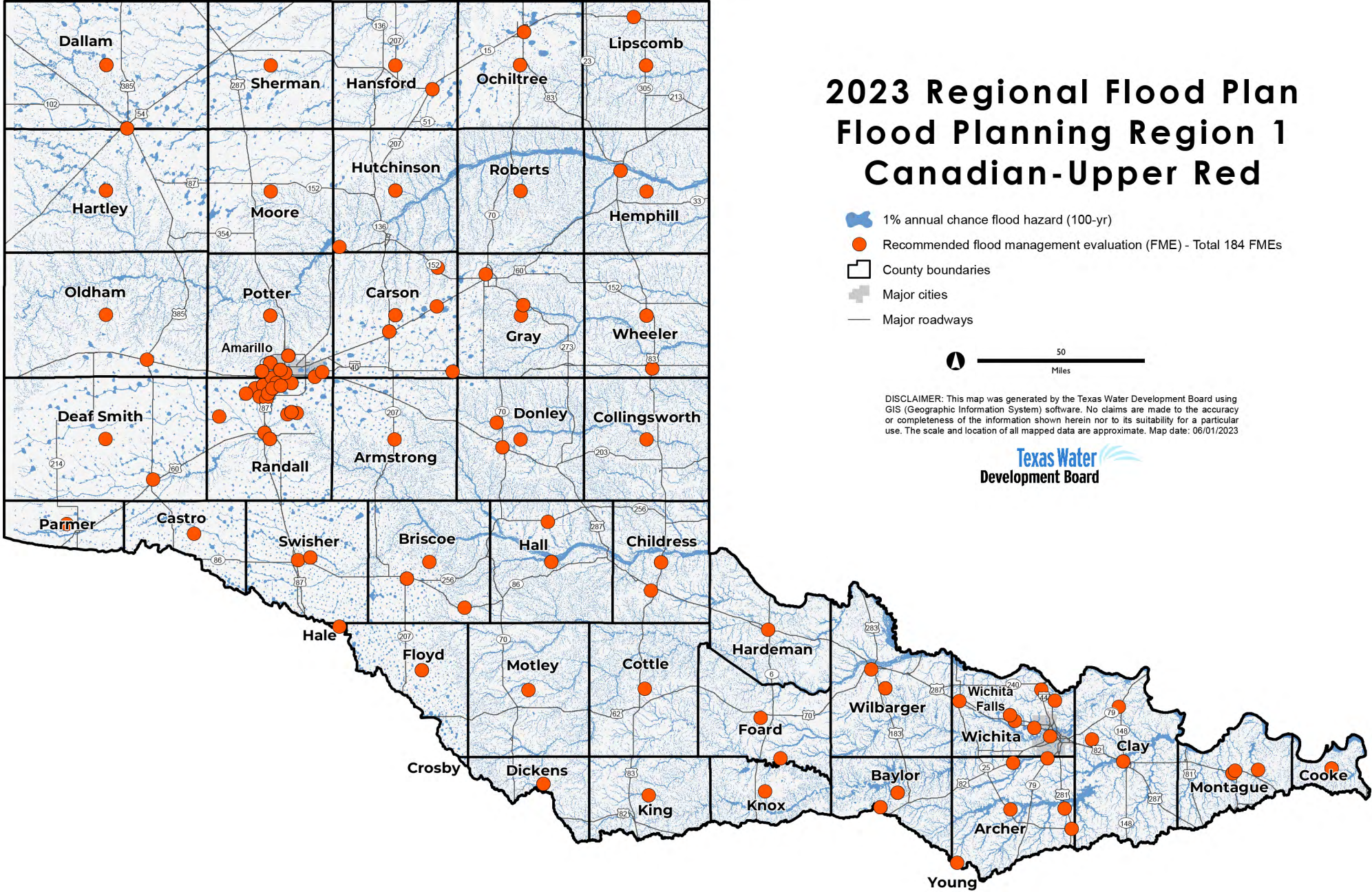
2023 Regional Flood Plan Flood Planning Region 1 Canadian-Upper Red








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2023 Regional Flood Plan Flood Planning Region 1 Canadian-Upper Red



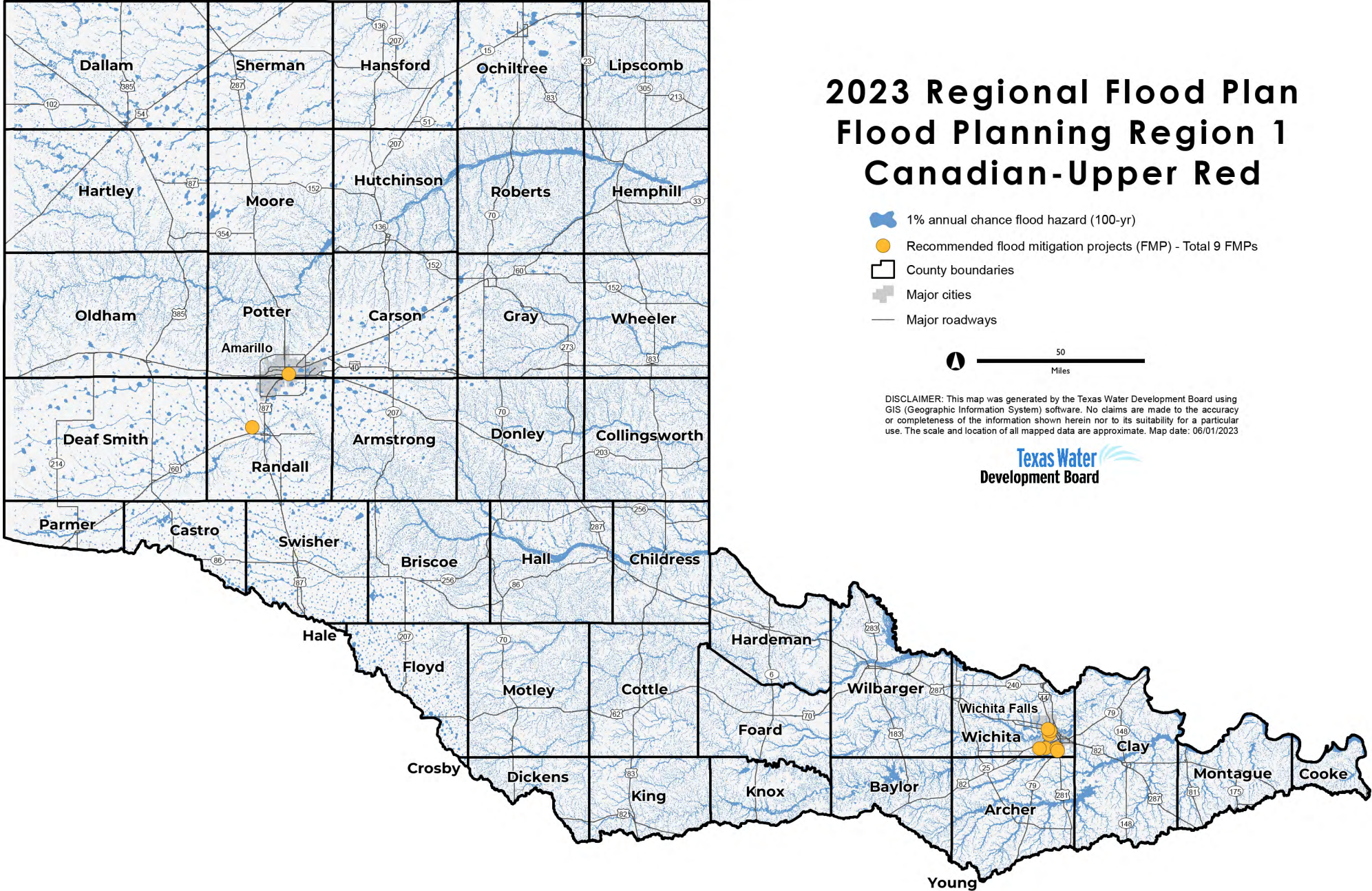
-  1% annual chance flood hazard (100-yr)
-  Recommended flood management evaluation (FME) - Total 184 FMEs
-  County boundaries
-  Major cities
-  Major roadways








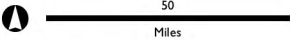
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2023 Regional Flood Plan Flood Planning Region 1 Canadian-Upper Red



-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 9 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 2

Summary of 2023 Region 2 Lower Red-Sulphur-Cypress Regional Flood Plan

The Region 2 Lower Red-Sulphur-Cypress RFPG initially convened on October 30, 2020, and subsequently held 29 public meetings (including RFPG and subcommittee meetings) mostly in Mount Pleasant prior to their plan submission. The RFPG selected the Ark-Tex Council of Governments as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Lower Red-Sulphur-Cypress Flood Planning Region (Region 2) encompasses an area of over 9,200 square miles and includes a population of approximately 531,100. Approximately 31 percent of the region (2,820 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 1 percent (120 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 130 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

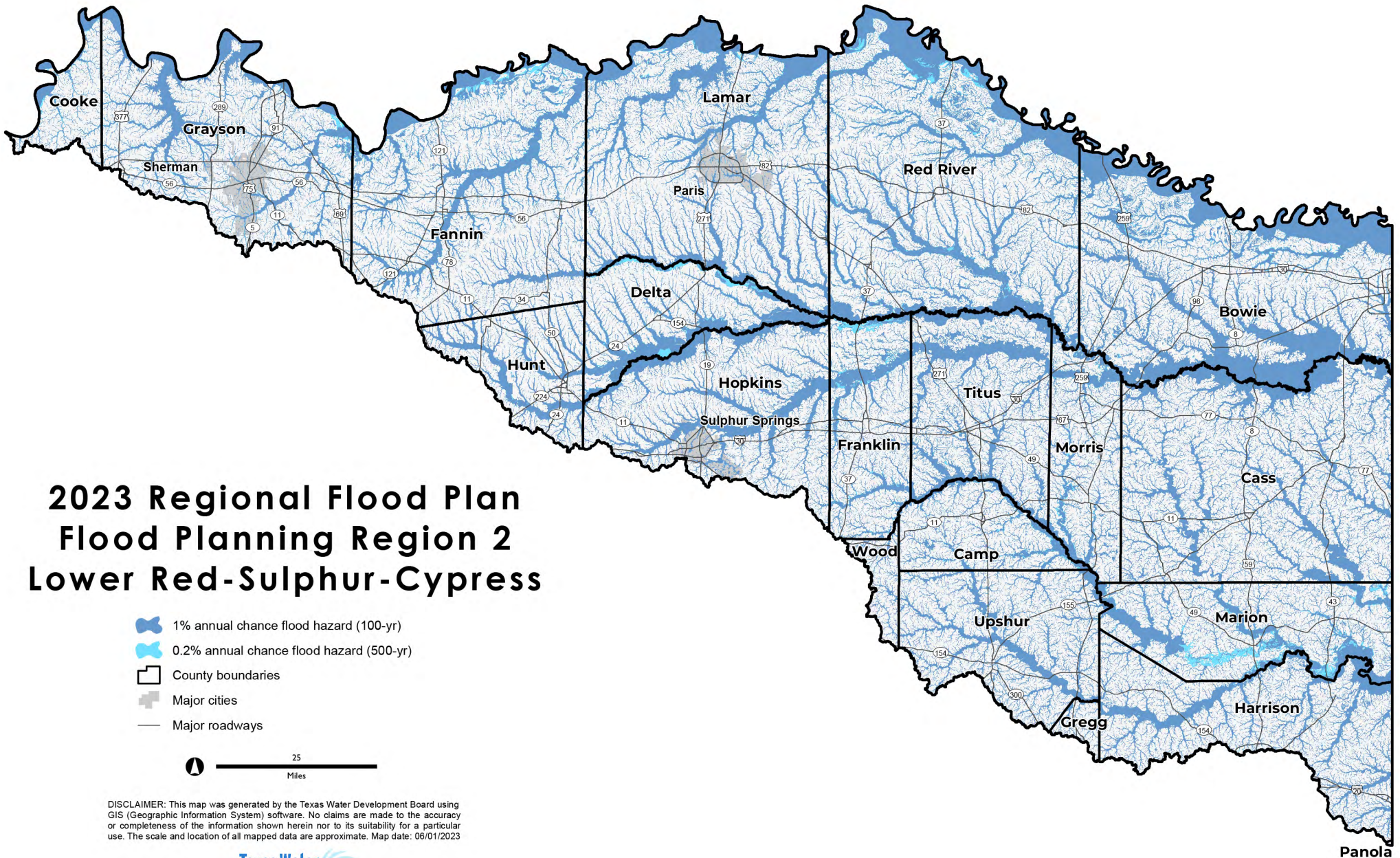
Table 1: Estimated Existing Flood Risks Identified within Region 2*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	13,400	1,600	15,000
Number of residential buildings	8,100	1,000	9,100
Population	38,000	3,900	41,900
Number of hospitals, schools, and police, fire, and EMS stations	20	2	22
Roadway miles	1,920	2,060	3,980
Agricultural area	290	310	600






**Statistics may be rounded*

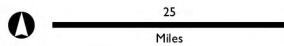
The Region 2 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 48 FMEs with a total estimated study cost of approximately \$38,450,000
- 3 FMPs with a total estimated project cost of approximately \$13,501,000
- 38 FMSs with a total estimated cost of approximately \$4,500,000








2023 Regional Flood Plan Flood Planning Region 2 Lower Red-Sulphur-Cypress

-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  County boundaries
-  Major cities
-  Major roadways



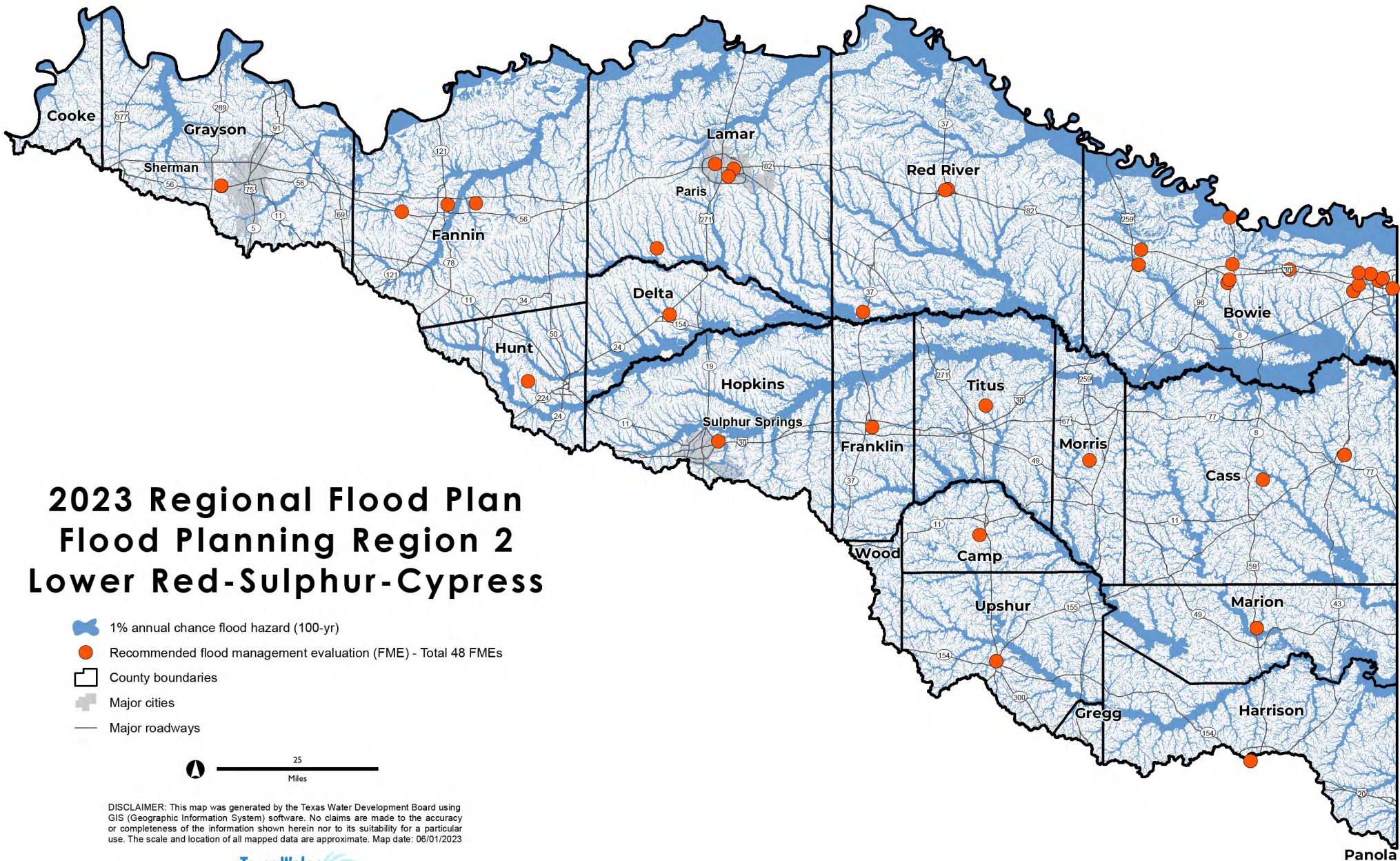
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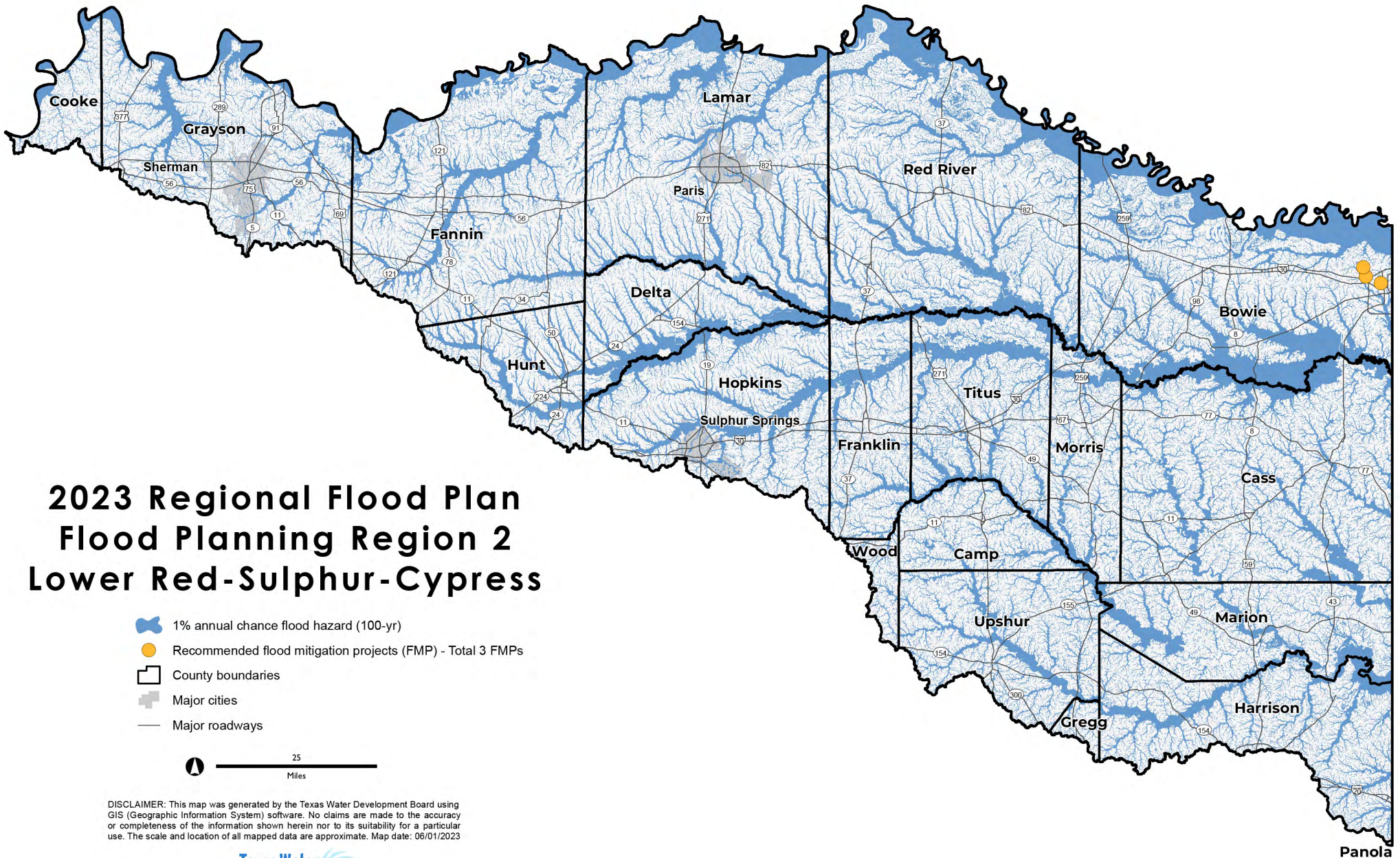
2023 Regional Flood Plan Flood Planning Region 2 Lower Red-Sulphur-Cypress

-  1% annual chance flood hazard (100-yr)
-  Recommended flood management evaluation (FME) - Total 48 FMEs
-  County boundaries
-  Major cities
-  Major roadways








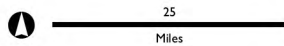
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2023 Regional Flood Plan Flood Planning Region 2 Lower Red-Sulphur-Cypress

-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 3 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 3

Summary of 2023 Region 3 Trinity Regional Flood Plan

The Region 3 Trinity RFPG initially convened on October 27, 2020, and subsequently held 25 public meetings (including RFPG and subcommittee meetings) mostly in Arlington, Huntsville, and Dallas prior to their plan submission. The RFPG selected the Trinity River Authority as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Trinity Flood Planning Region (Region 3) encompasses an area of over 17,900 square miles and includes a population of approximately 7.85 million. Approximately 27 percent of the region (4,890 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 3 percent (450 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 2,300 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

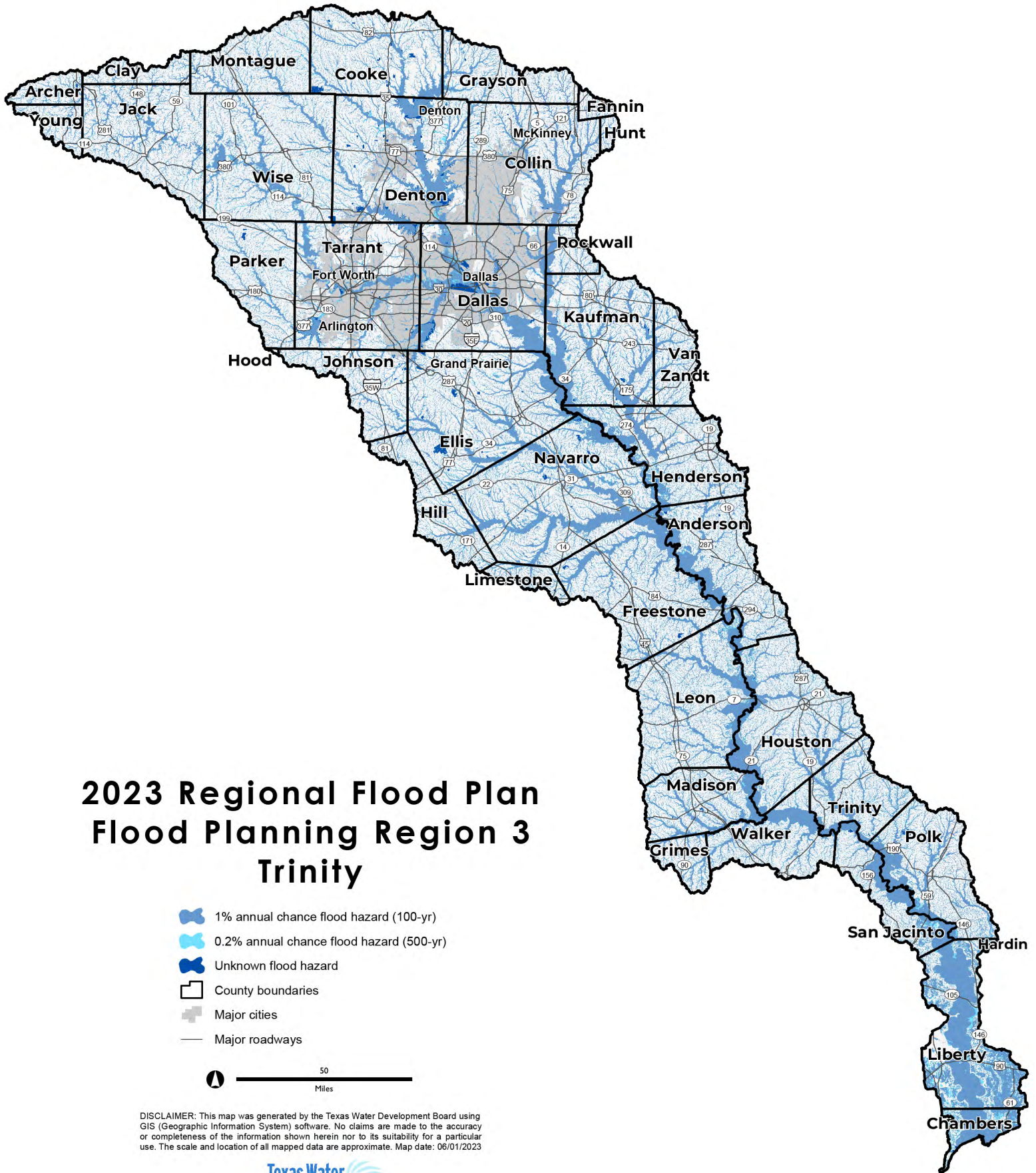
Table 1: Estimated Existing Flood Risks Identified within Region 3*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	85,900	55,600	141,500
Number of residential buildings	72,900	36,500	109,400
Population	241,500	444,800	686,300
Number of hospitals, schools, and police, fire, and EMS stations	137	113	250
Roadway miles	5,890	3,310	9,200
Agricultural area	2,120	760	2,880







**Statistics may be rounded*

The Region 3 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 342 FMEs with a total estimated study cost of approximately \$145,966,000
- 7 FMPs with a total estimated project cost of approximately \$175,770,000
- 135 FMSs with a total estimated cost of approximately \$741,900,000

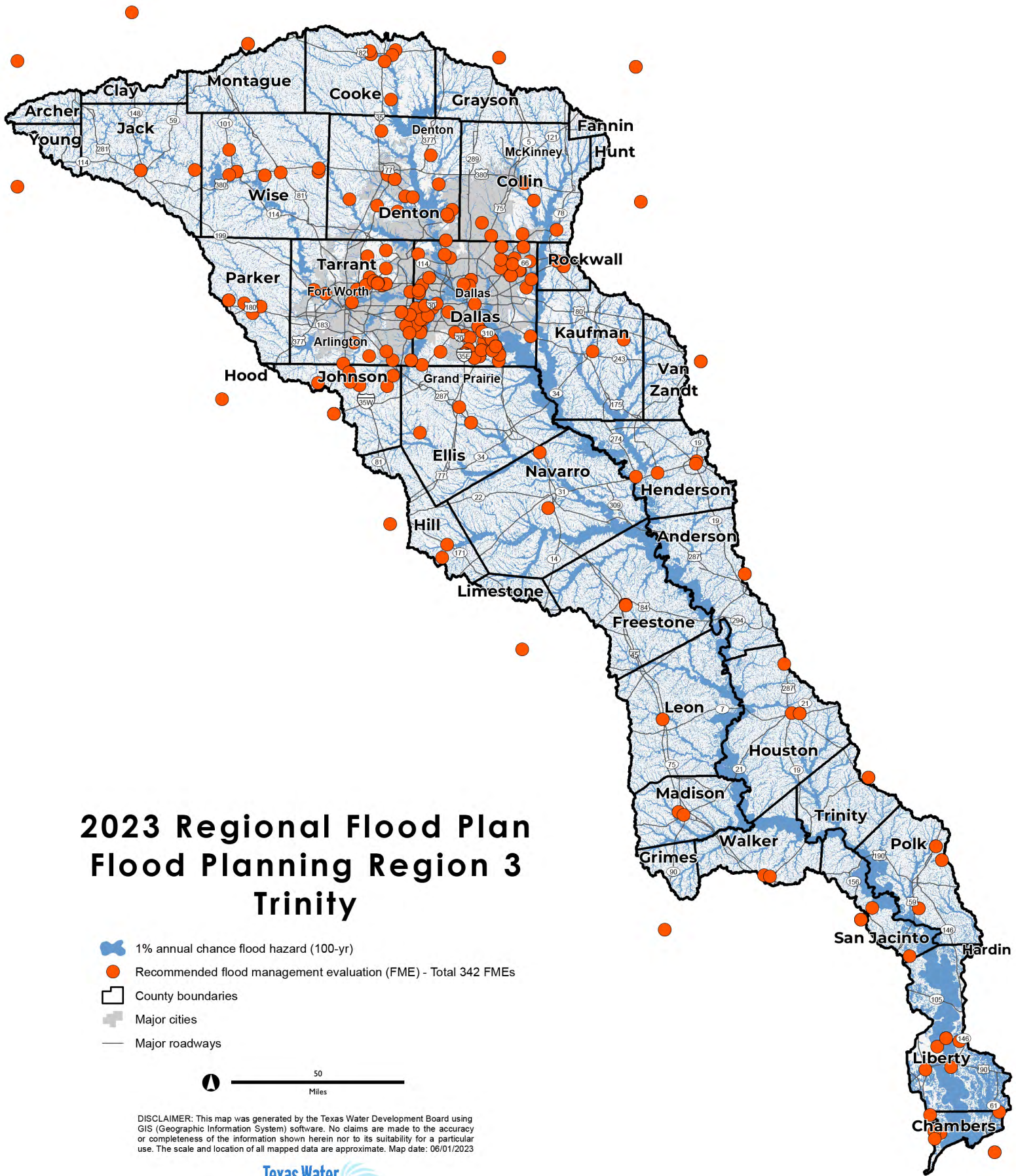


2023 Regional Flood Plan Flood Planning Region 3 Trinity

-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  Unknown flood hazard
-  County boundaries
-  Major cities
-  Major roadways



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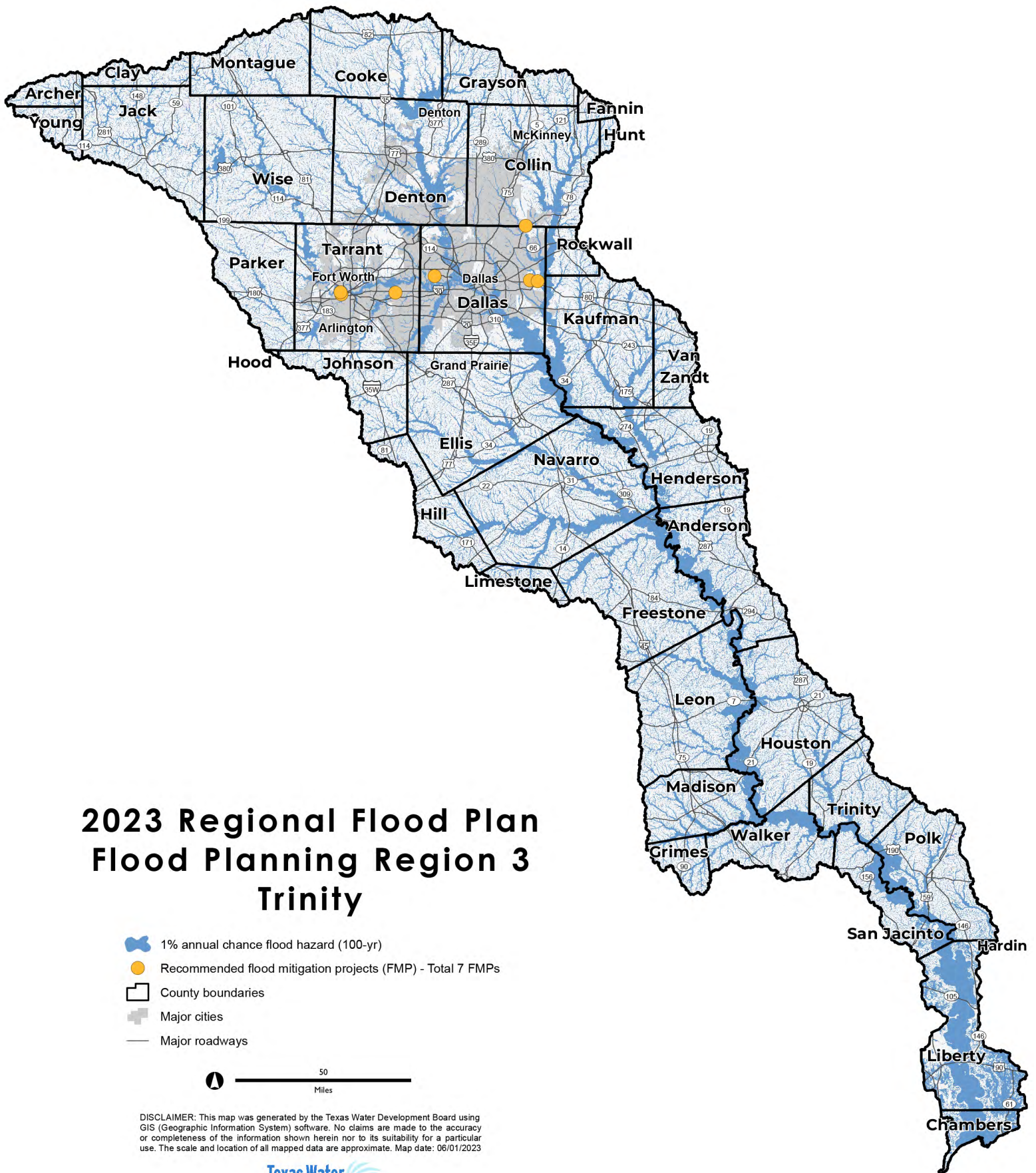


2023 Regional Flood Plan Flood Planning Region 3 Trinity

- 1% annual chance flood hazard (100-yr)
- Recommended flood management evaluation (FME) - Total 342 FMEs
- County boundaries
- Major cities
- Major roadways



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Attachment 4

Summary of 2023 Region 4 Sabine Regional Flood Plan

The Region 4 Sabine RFPG initially convened on October 27, 2020, and subsequently held 30 public meetings (including RFPG and subcommittee meetings) mostly in Orange prior to their plan submission. The RFPG selected the Sabine River Authority as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Sabine Flood Planning Region (Region 4) encompasses an area of over 7,400 square miles and includes a population of approximately 616,155. Approximately 31 percent of the region (2,310 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 2 percent (180 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 130 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

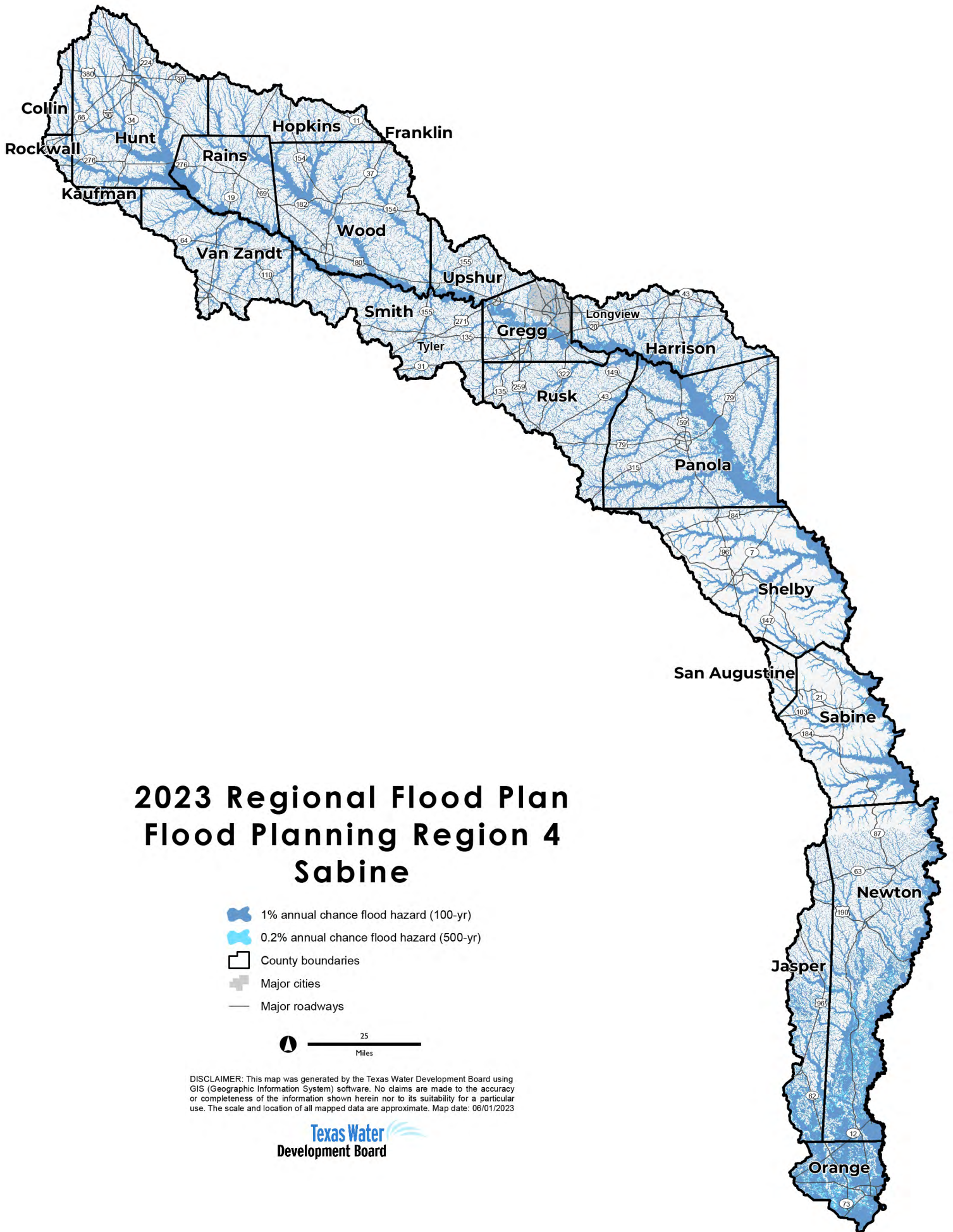
Table 1: Estimated Existing Flood Risks Identified within Region 4*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	34,600	14,100	48,700
Number of residential buildings	24,100	10,800	34,900
Population	65,000	25,600	90,600
Number of hospitals, schools, and police, fire, and EMS stations	72	21	93
Roadway miles	1,520	1,900	3,420
Agricultural area	320	360	680






**Statistics may be rounded*

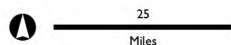
The Region 4 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 63 FMEs with a total estimated study cost of approximately \$60,925,000
- 2 FMPs with a total estimated project cost of approximately \$2,272,342,000
- 49 FMSs with a total estimated cost of approximately \$45,978,000

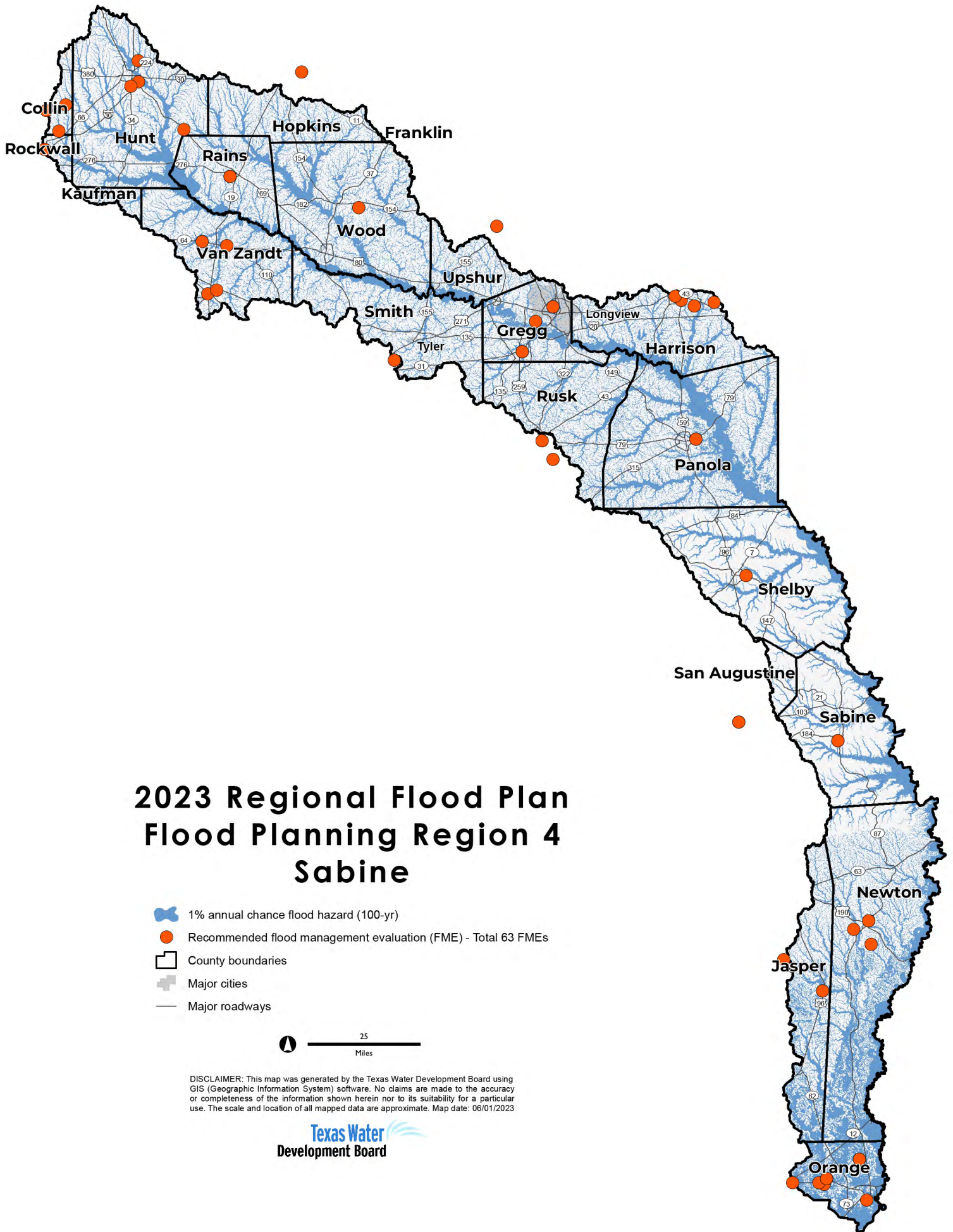


2023 Regional Flood Plan Flood Planning Region 4 Sabine

-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  County boundaries
-  Major cities
-  Major roadways

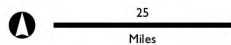


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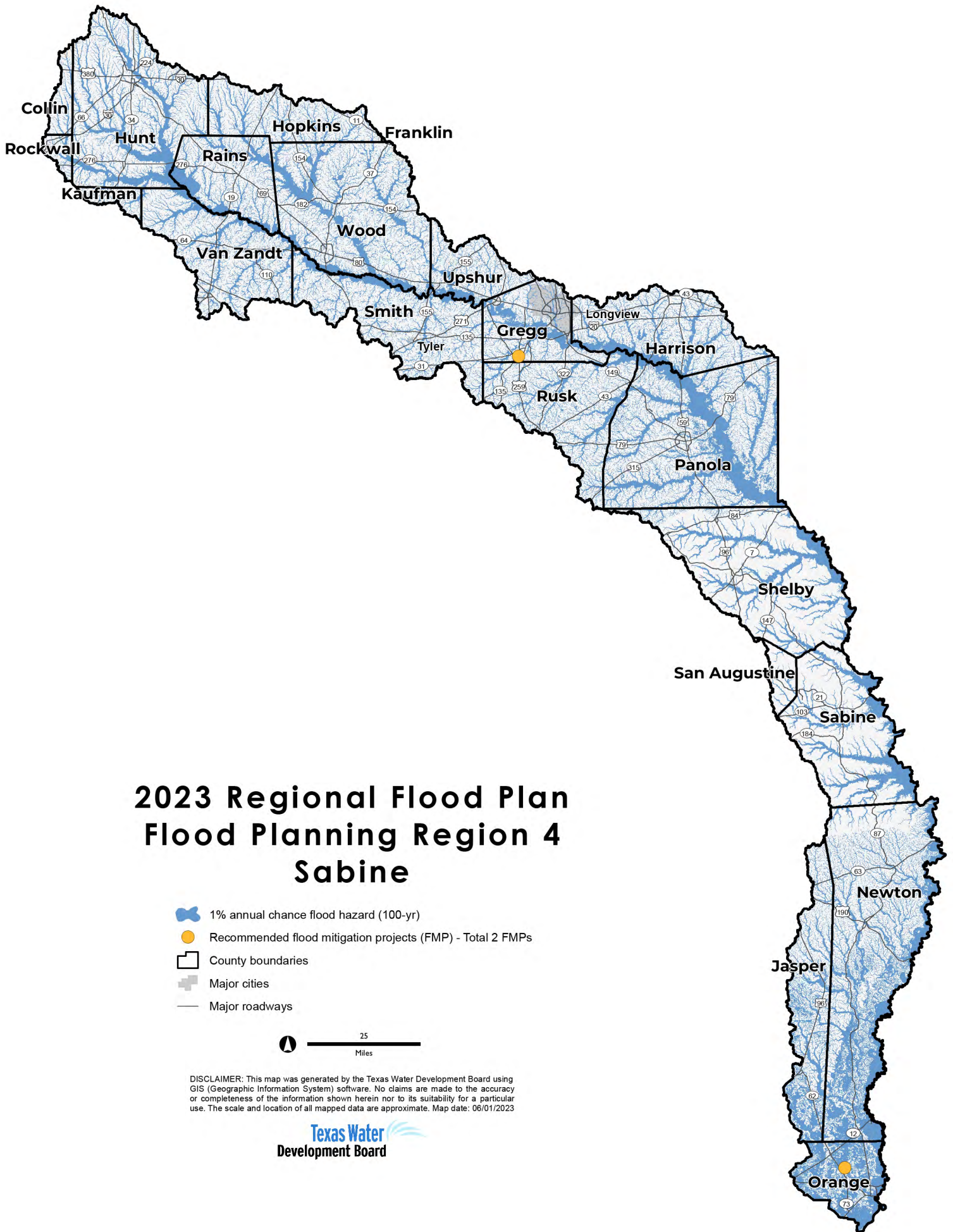


2023 Regional Flood Plan Flood Planning Region 4 Sabine

- 1% annual chance flood hazard (100-yr)
- Recommended flood management evaluation (FME) - Total 63 FMEs
- County boundaries
- Major cities
- Major roadways

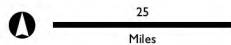


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2023 Regional Flood Plan Flood Planning Region 4 Sabine

- 1% annual chance flood hazard (100-yr)
- Recommended flood mitigation projects (FMP) - Total 2 FMPs
- County boundaries
- Major cities
- Major roadways



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Attachment 5

Summary of 2023 Region 5 Neches Regional Flood Plan

The Region 5 Neches RFPG initially convened on October 28, 2020, and subsequently held 28 public meetings (including RFPG and subcommittee meetings) mostly in Beaumont prior to their plan submission. The RFPG selected the Lower Neches Valley Authority as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Neches Flood Planning Region (Region 5) encompasses an area of over 11,400 square miles and includes a population of approximately 1.02 million. Approximately 27 percent of the region (3,080 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 3 percent (370 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 190 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

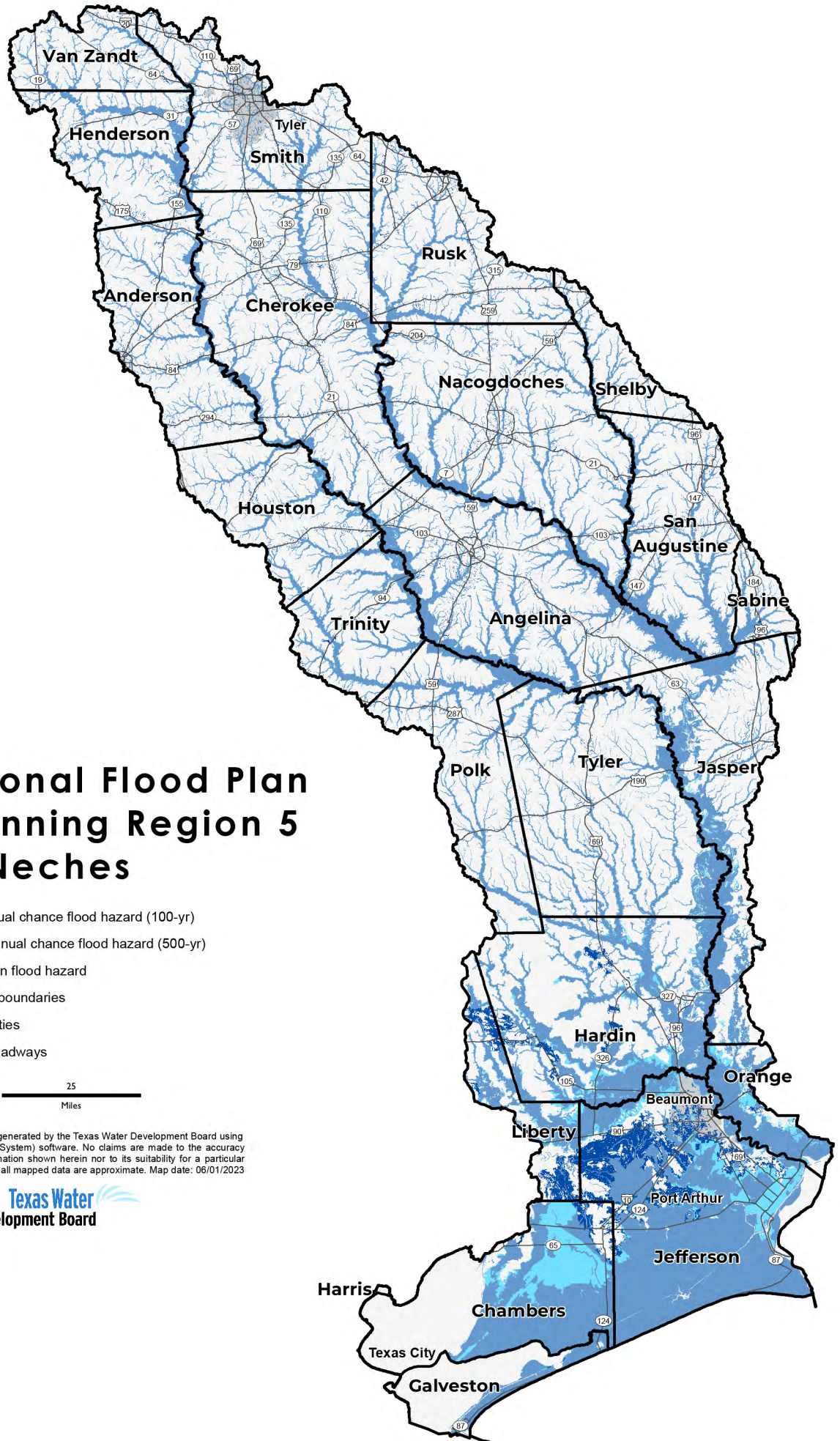
Table 1: Estimated Existing Flood Risks Identified within Region 5*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	34,600	42,900	77,500
Number of residential buildings	25,100	35,200	60,300
Population	65,700	92,600	158,300
Number of hospitals, schools, and police, fire, and EMS stations	76	147	223
Roadway miles	1,510	2,450	3,960
Agricultural area	120	170	290







**Statistics may be rounded*

The Region 5 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 157 FMEs with a total estimated study cost of approximately \$89,446,000
- 5 FMPs with a total estimated project cost of approximately \$1,111,721,000
- 147 FMSs with a total estimated cost of approximately \$175,037,000



2023 Regional Flood Plan Flood Planning Region 5 Neches






-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  Unknown flood hazard
-  County boundaries
-  Major cities
-  Major roadways



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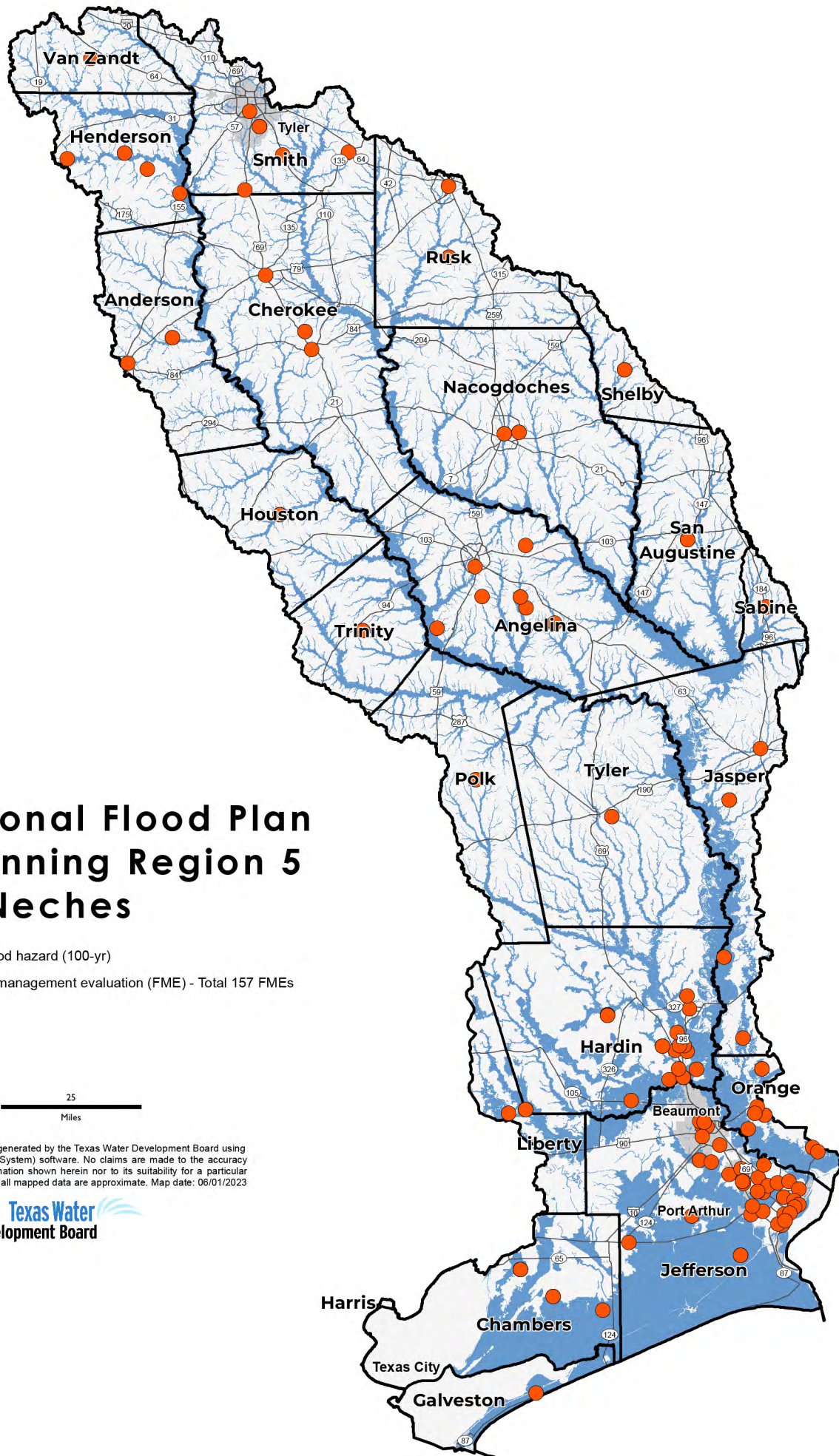


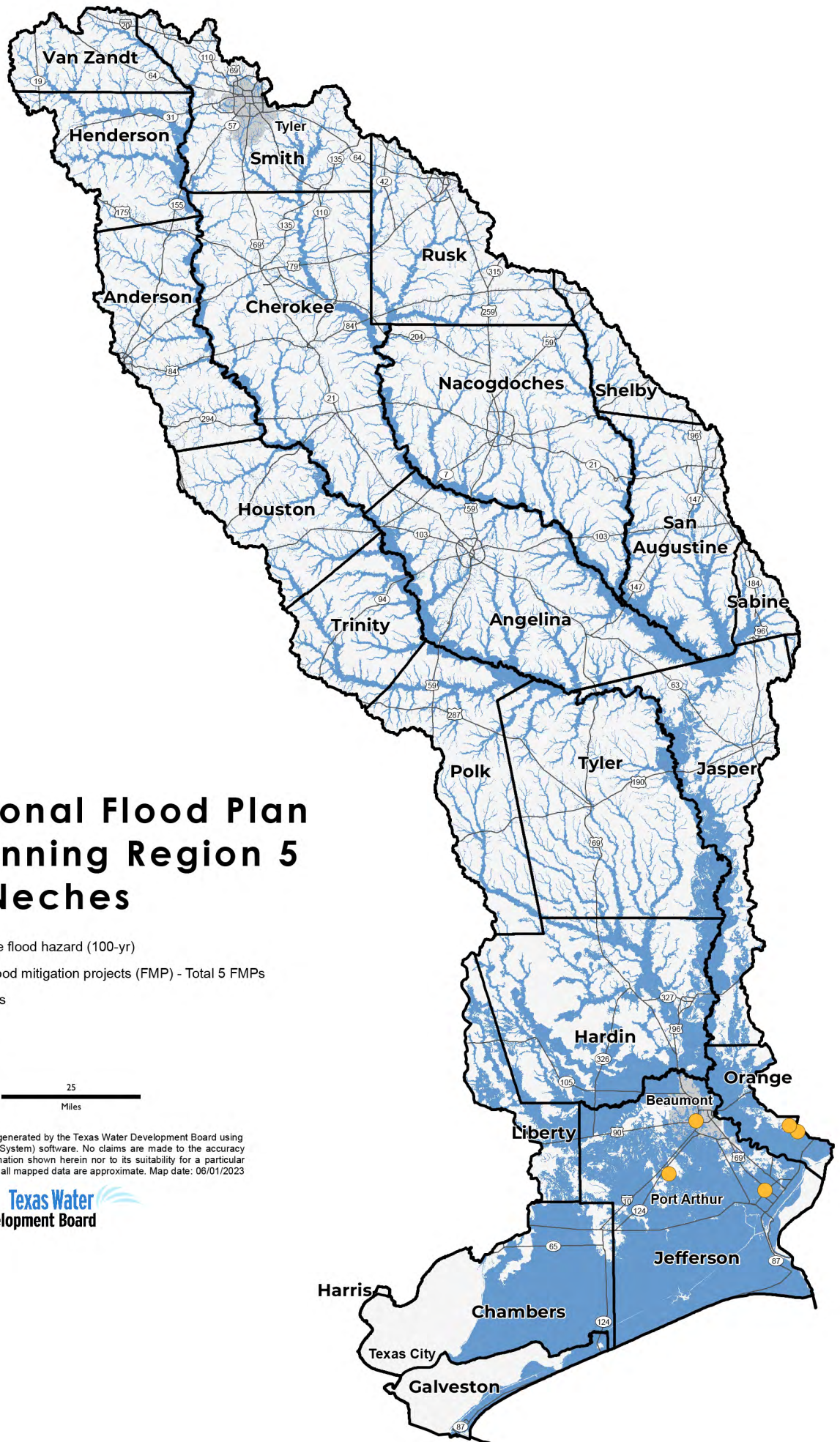
2023 Regional Flood Plan Flood Planning Region 5 Neches

-  1% annual chance flood hazard (100-yr)
-  Recommended flood management evaluation (FME) - Total 157 FMEs
-  County boundaries
-  Major cities
-  Major roadways








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2023 Regional Flood Plan Flood Planning Region 5 Neches

-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 5 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 6

Summary of 2023 Region 6 San Jacinto Regional Flood Plan

The Region 6 San Jacinto RFPG initially convened on October 28, 2020, and subsequently held 66 public meetings (including RFPG and subcommittee meetings) mostly in The Woodlands prior to their plan submission. The RFPG selected Harris County as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The San Jacinto Flood Planning Region (Region 6) encompasses an area of over 5,100 square miles and includes a population of approximately 6.40 million. Approximately 29 percent of the region (1,490 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 9 percent (470 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 240 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

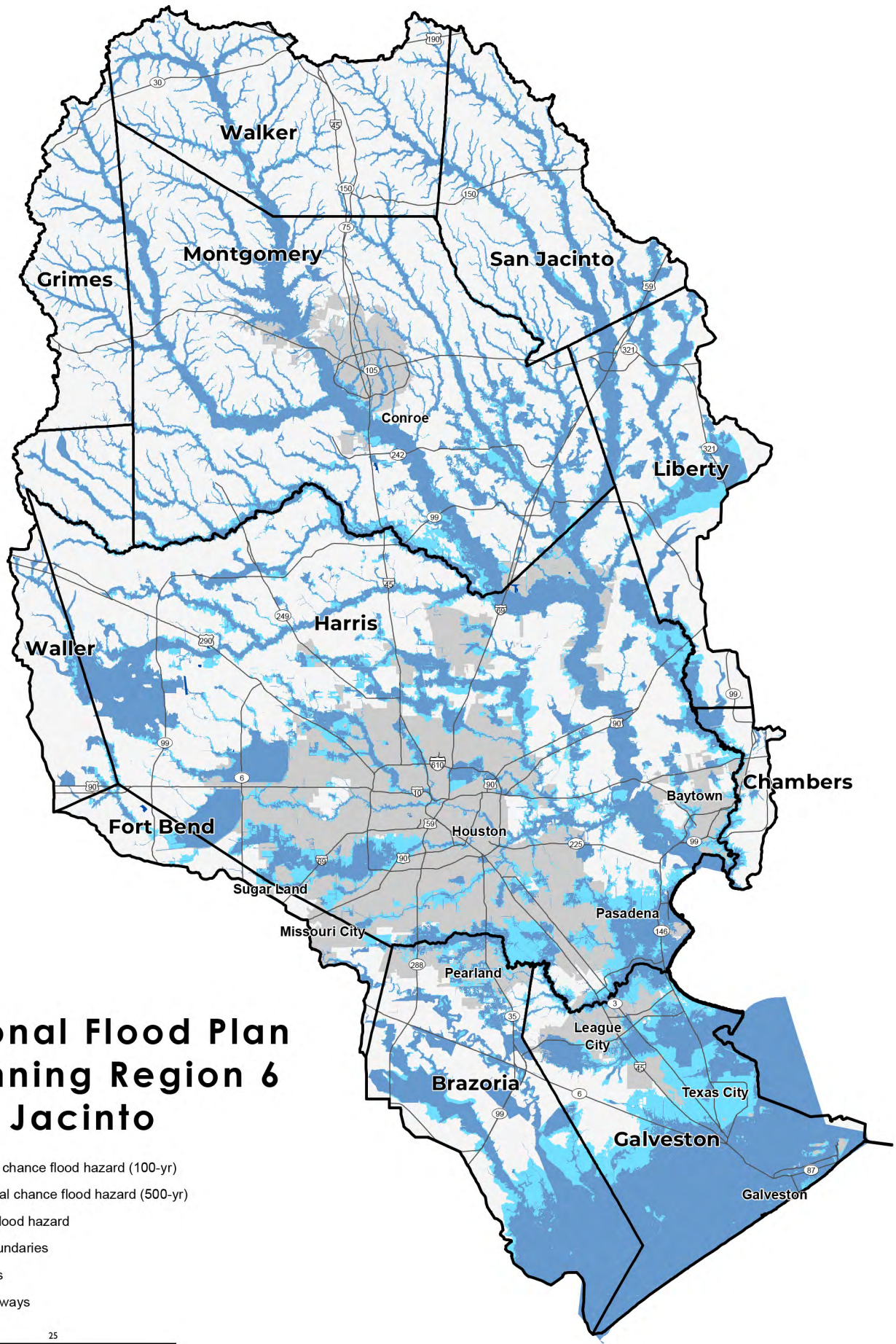
Table 1: Estimated Existing Flood Risks Identified within Region 6*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	240,100	276,800	516,900
Number of residential buildings	199,800	242,700	442,500
Population	785,900	1,691,200	2,477,100
Number of hospitals, schools, and police, fire, and EMS stations	1,494	1,908	3,402
Roadway miles	4,350	7,990	12,340
Agricultural area	40	50	90







**Statistics may be rounded*

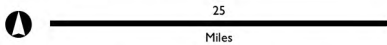
The Region 6 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 351 FMEs with a total estimated study cost of approximately \$185,022,000
- 37 FMPs with a total estimated project cost of approximately \$29,291,542,000
- 63 FMSs with a total estimated cost of approximately \$1,131,748,000

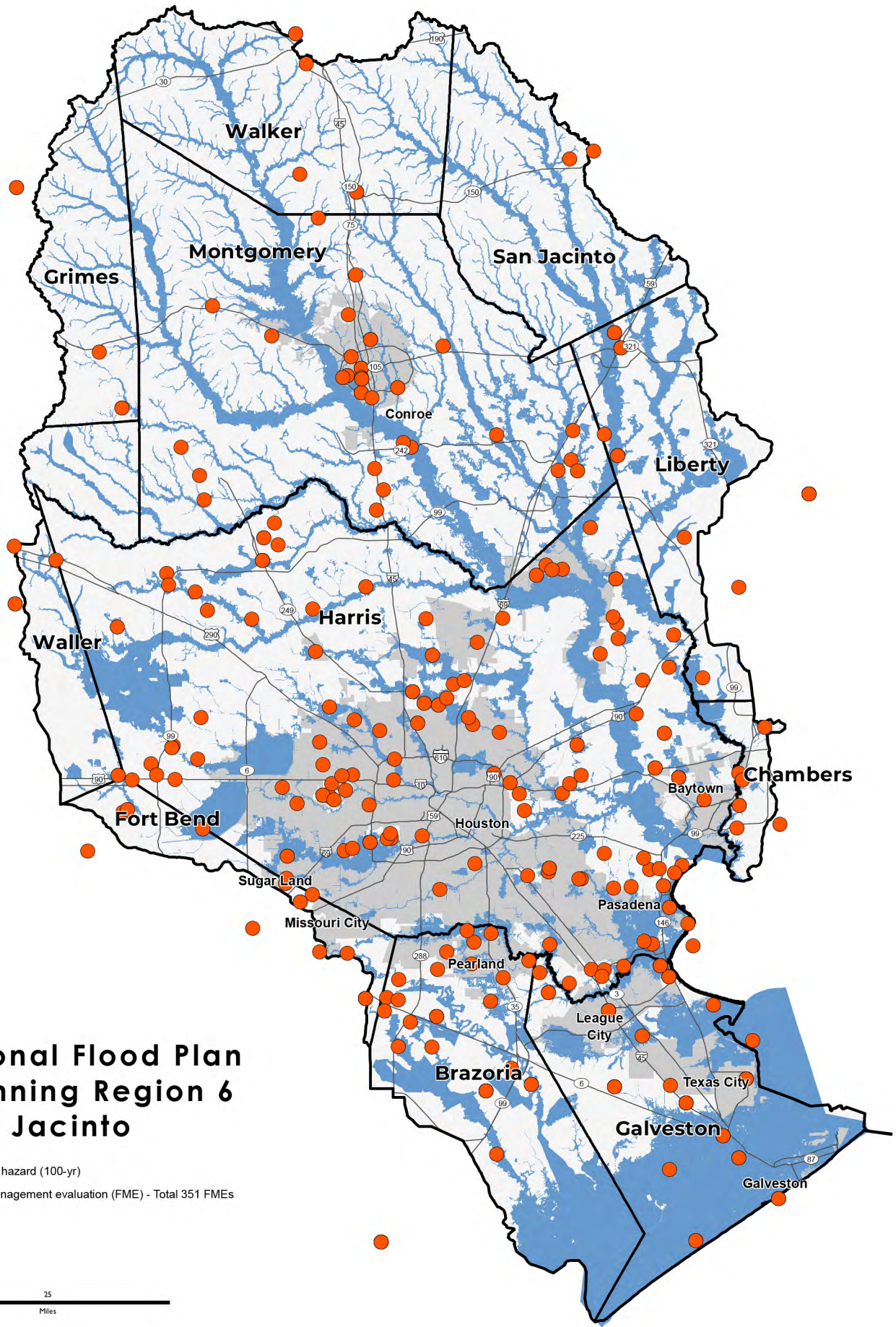


2023 Regional Flood Plan Flood Planning Region 6 San Jacinto

-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  Unknown flood hazard
-  County boundaries
-  Major cities
-  Major roadways



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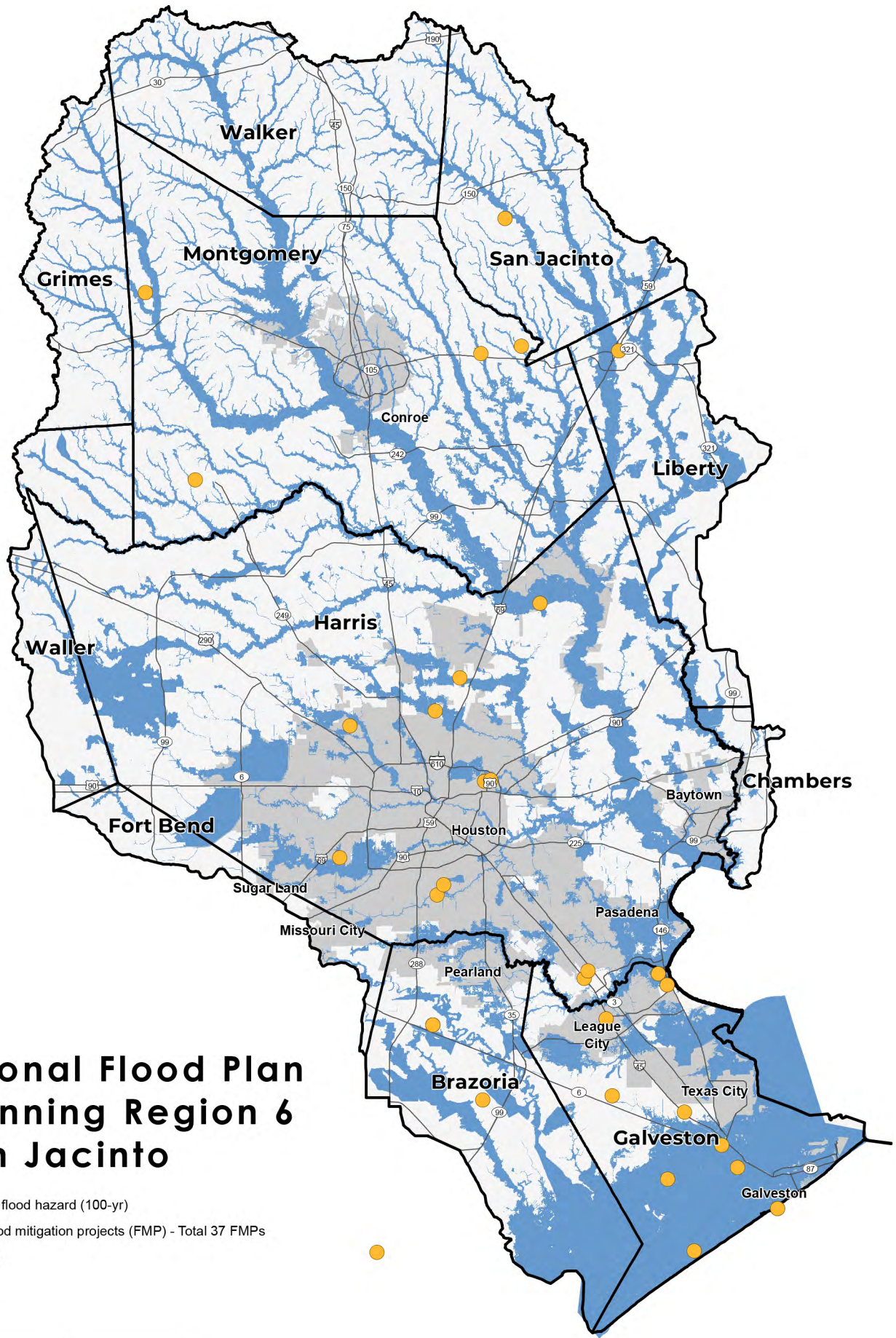


2023 Regional Flood Plan Flood Planning Region 6 San Jacinto






- 1% annual chance flood hazard (100-yr)
- Recommended flood management evaluation (FME) - Total 351 FMEs
- County boundaries
- Major cities
- Major roadways

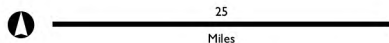


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2023 Regional Flood Plan Flood Planning Region 6 San Jacinto

-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 37 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 7

Summary of 2023 Region 7 Upper Brazos Regional Flood Plan

The Region 7 Upper Brazos RFPG initially convened on October 29, 2020, and subsequently held 24 public meetings (including RFPG and subcommittee meetings) mostly in Lubbock and Abilene prior to their plan submission. The RFPG selected the South Plains Association of Governments as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Upper Brazos Flood Planning Region (Region 7) encompasses an area of over 20,000 square miles and includes a population of approximately 633,600. Approximately 18 percent of the region (3,630 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 7 percent (1,390 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 300 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

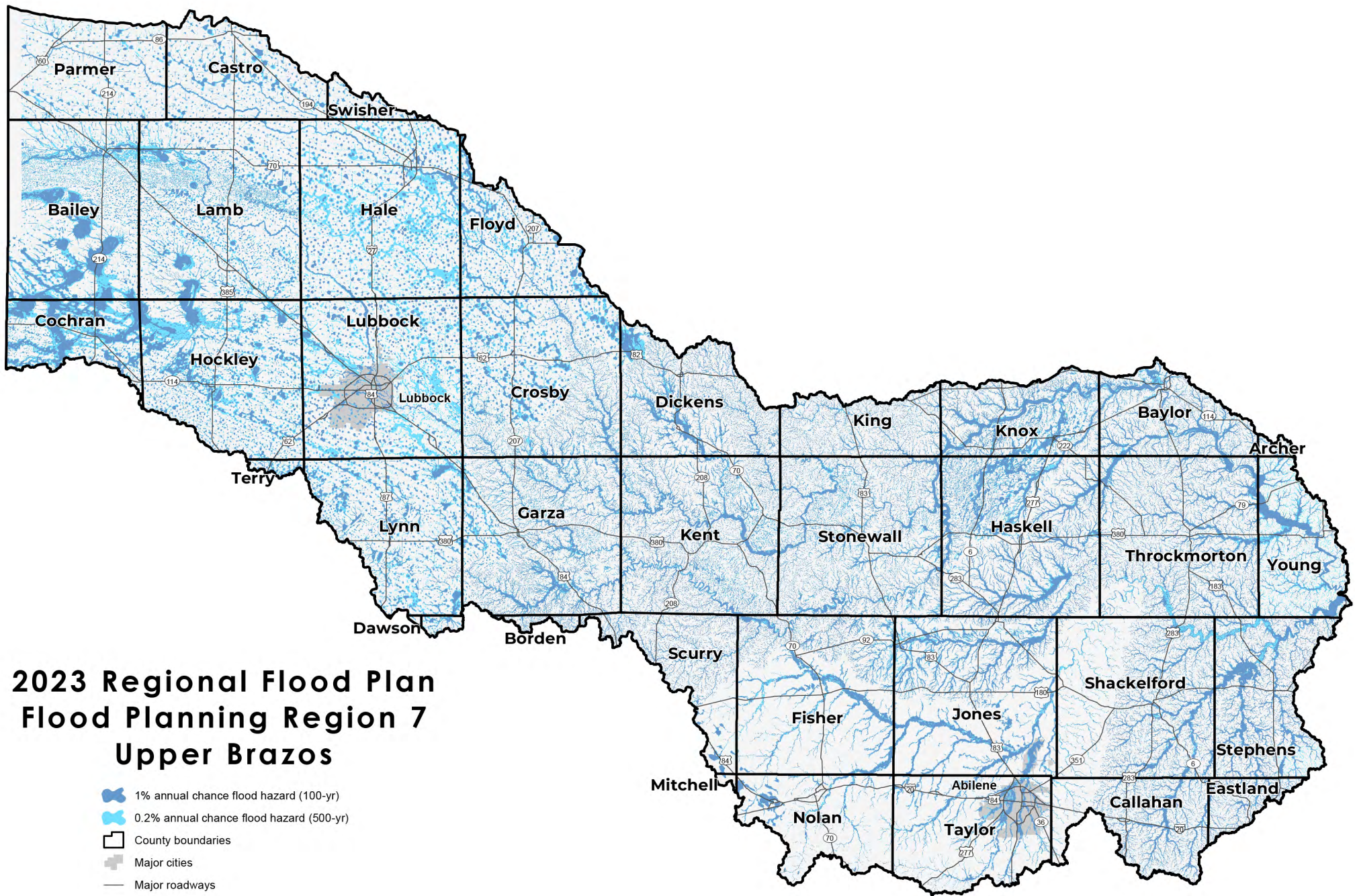
Table 1: Estimated Existing Flood Risks Identified within Region 7*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	28,500	25,600	54,100
Number of residential buildings	19,800	17,200	37,000
Population	63,400	53,300	116,700
Number of hospitals, schools, and police, fire, and EMS stations	37	53	90
Roadway miles	5,940	9,620	15,560
Agricultural area	1,360	2,230	3,590

**Statistics may be rounded*

The Region 7 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 225 FMEs with a total estimated study cost of approximately \$83,594,000
- 3 FMPs with a total estimated project cost of approximately \$5,686,000
- 63 FMSs with a total estimated cost of approximately \$13,183,000

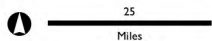
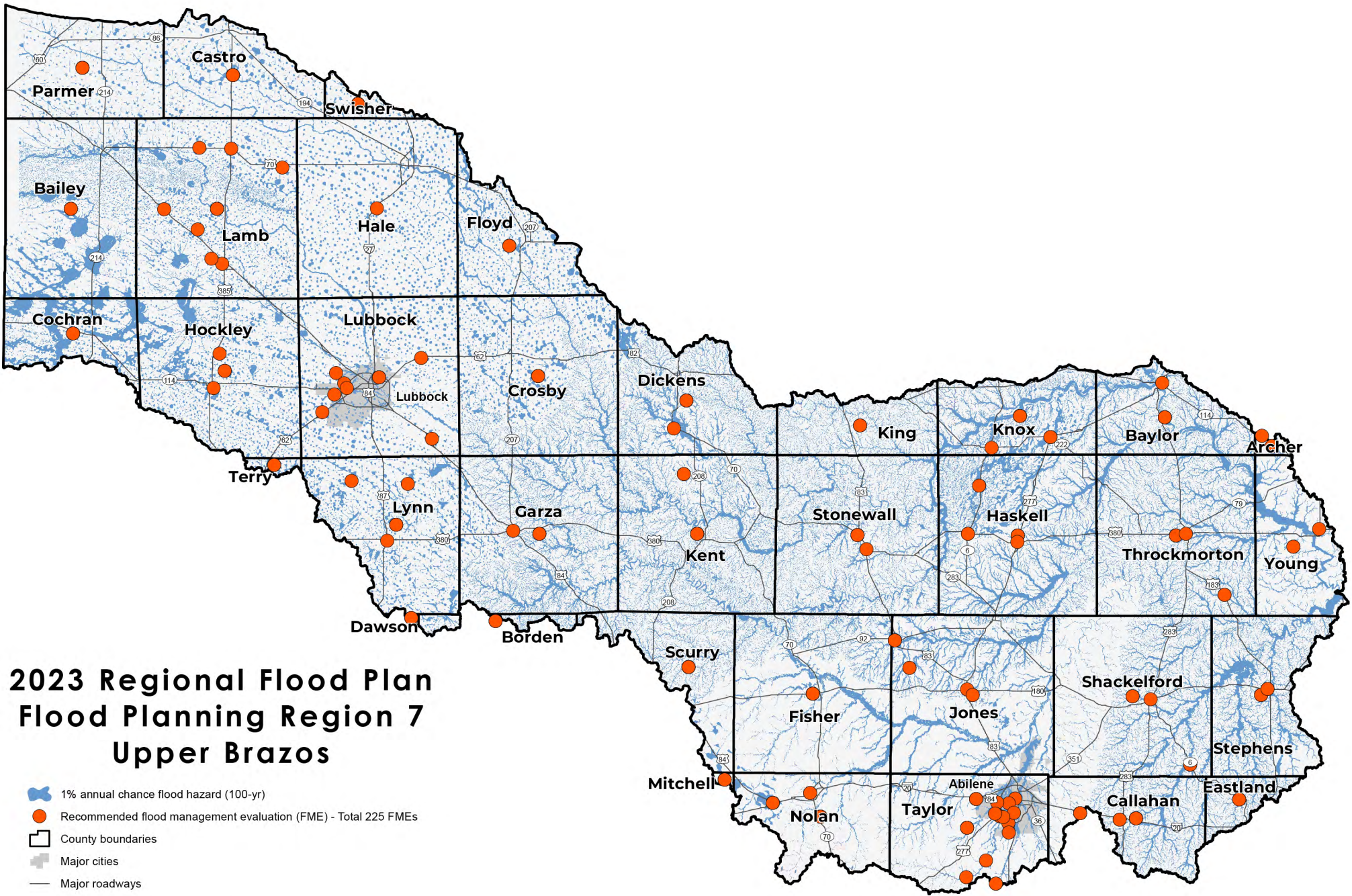


2023 Regional Flood Plan Flood Planning Region 7 Upper Brazos

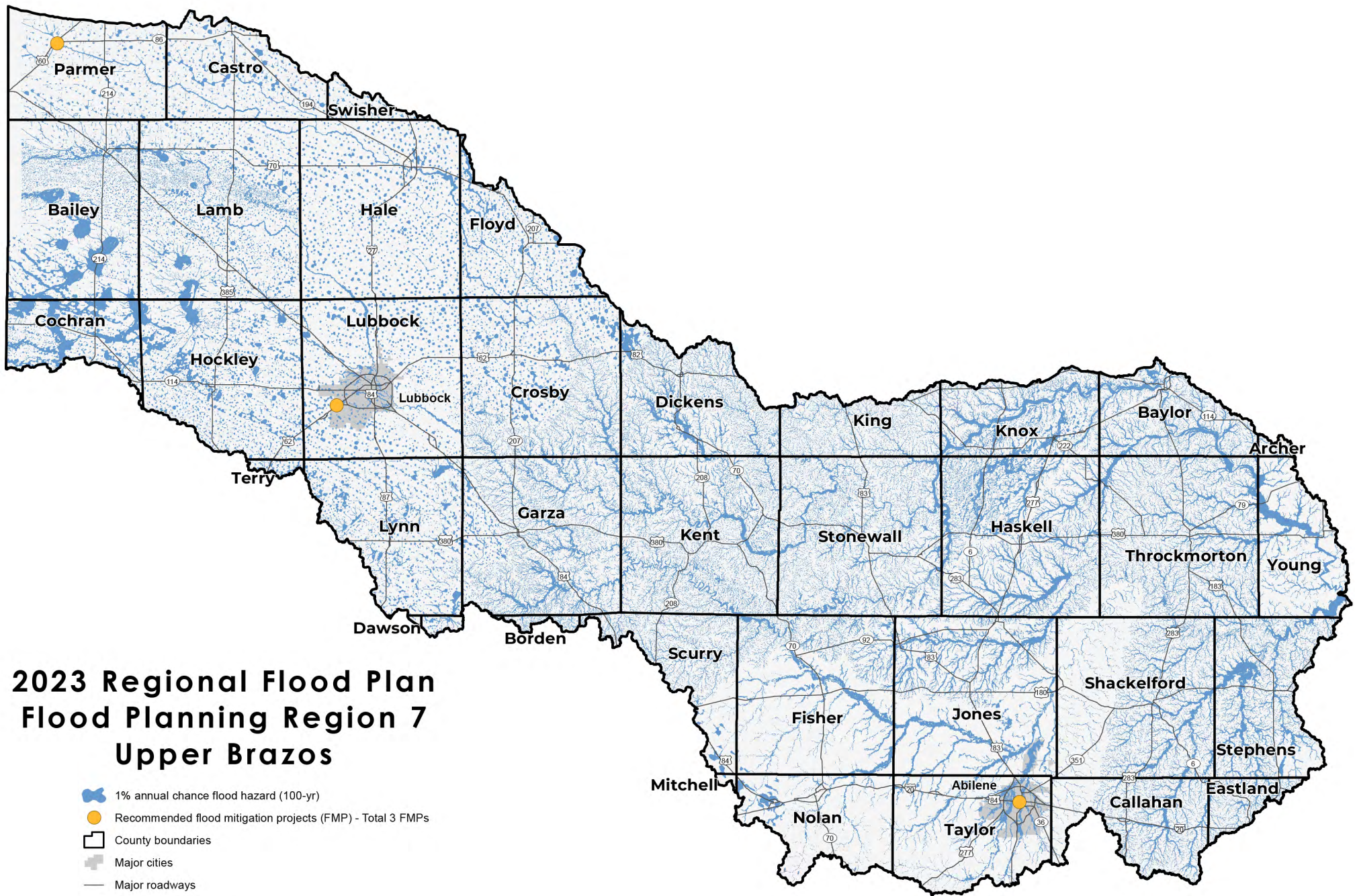
- 1% annual chance flood hazard (100-yr)
- 0.2% annual chance flood hazard (500-yr)
- County boundaries
- Major cities
- Major roadways








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2023 Regional Flood Plan Flood Planning Region 7 Upper Brazos

-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 3 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 8

Summary of 2023 Region 8 Lower Brazos Regional Flood Plan

The Region 8 Lower Brazos RFPG initially convened on October 30, 2020, and subsequently held 33 public meetings (including RFPG and subcommittee meetings) mostly in Waco prior to their plan submission. The RFPG selected the Brazos River Authority as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Lower Brazos Flood Planning Region (Region 8) encompasses an area of over 23,300 square miles and includes a population of approximately 3.04 million. Approximately 20 percent of the region (4,690 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 2 percent (490 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 1,170 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

Table 1: Estimated Existing Flood Risks Identified within Region 8*

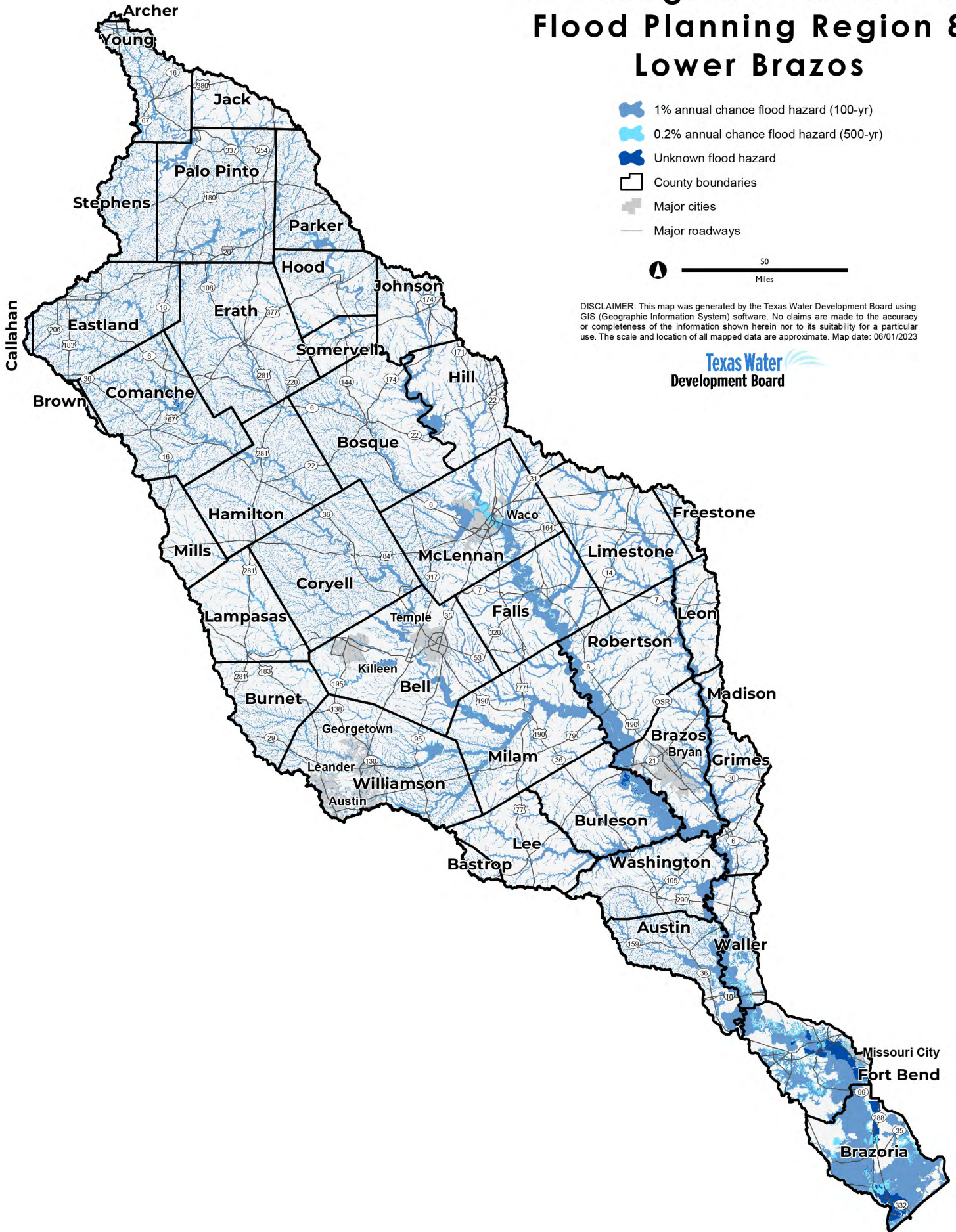
Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	62,900	44,600	107,500
Number of residential buildings	42,400	36,400	78,800
Population	129,900	132,000	261,900
Number of hospitals, schools, and police, fire, and EMS stations	74	61	135
Roadway miles	3,300	4,430	7,730
Agricultural area	840	940	1,780

**Statistics may be rounded*

The Region 8 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 95 FMEs with a total estimated study cost of approximately \$28,504,000
- 24 FMPs with a total estimated project cost of approximately \$4,153,054,000
- 10 FMSs with a total estimated cost of approximately \$360,000,000

2023 Regional Flood Plan Flood Planning Region 8 Lower Brazos



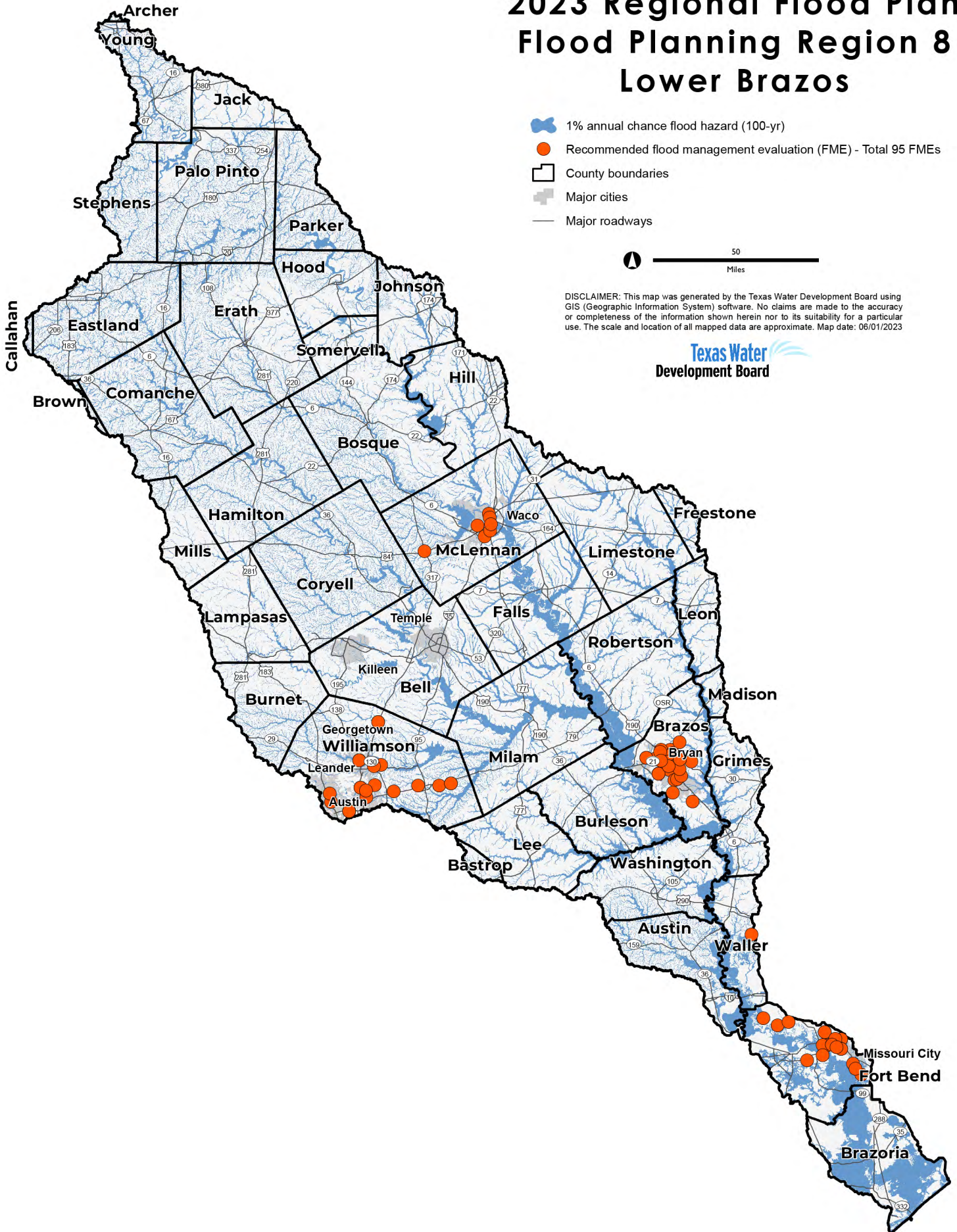
- 1% annual chance flood hazard (100-yr)
- 0.2% annual chance flood hazard (500-yr)
- Unknown flood hazard
- County boundaries
- Major cities
- Major roadways



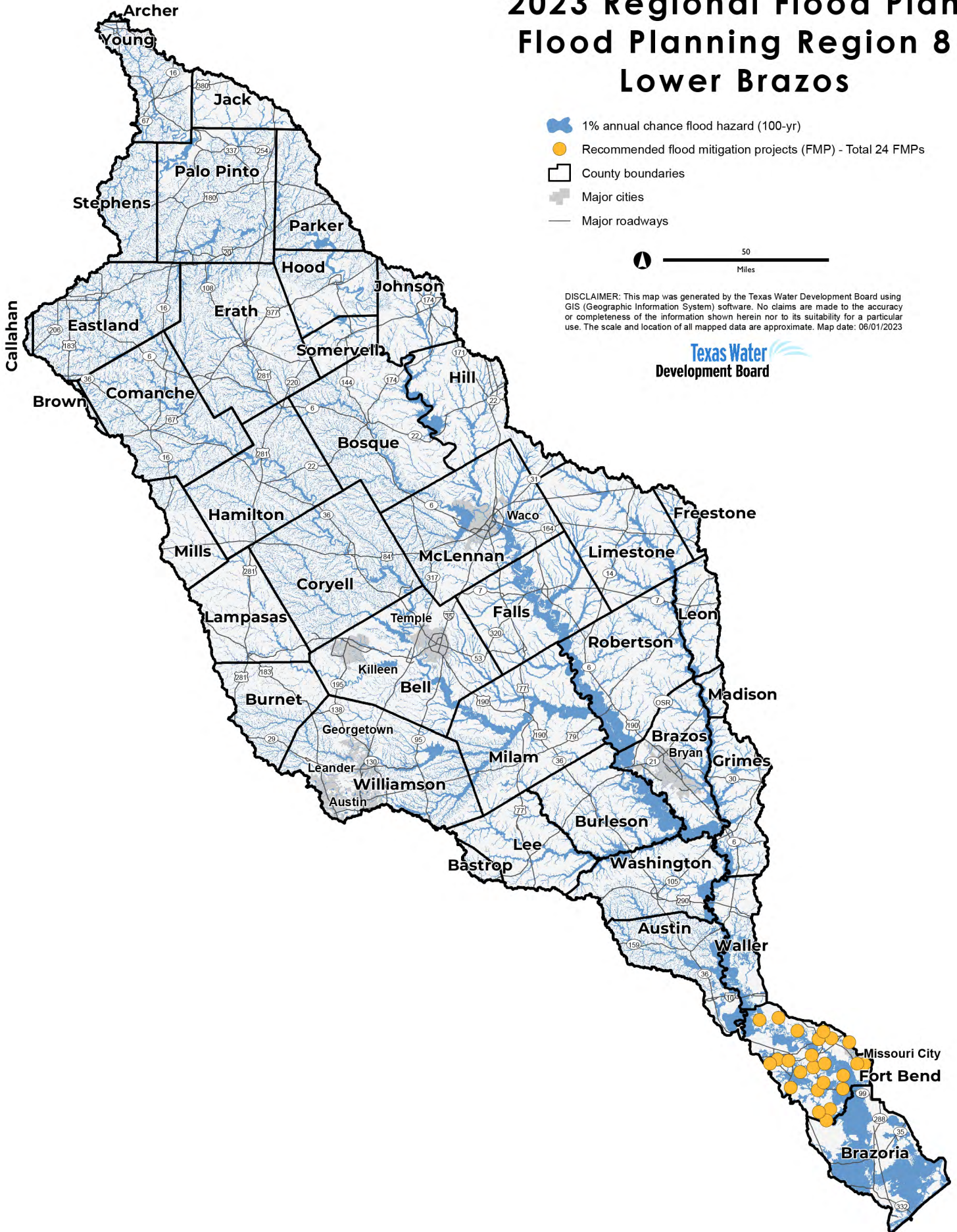
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2023 Regional Flood Plan Flood Planning Region 8 Lower Brazos



2023 Regional Flood Plan Flood Planning Region 8 Lower Brazos



Attachment 9

Summary of 2023 Region 9 Upper Colorado Regional Flood Plan

The Region 9 Upper Colorado RFPG initially convened on October 29, 2020, and subsequently held 17 public meetings (including RFPG and subcommittee meetings) mostly in San Angelo prior to their plan submission. The RFPG selected the City of San Angelo as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Upper Colorado Flood Planning Region (Region 9) encompasses an area of over 21,200 square miles and includes a population of approximately 637,000. Approximately 21 percent of the region (4,520 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 5 percent (1,130 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 540 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

Table 1: Estimated Existing Flood Risks Identified within Region 9*






Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	36,400	17,300	5,3700
Number of residential buildings	23,600	11,800	35,400
Population	83,100	40,200	123,300
Number of hospitals, schools, and police, fire, and EMS stations	56	15	71
Roadway miles	4,330	1,180	5,510
Agricultural area	1,010	330	1,340

**Statistics may be rounded*

The Region 9 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

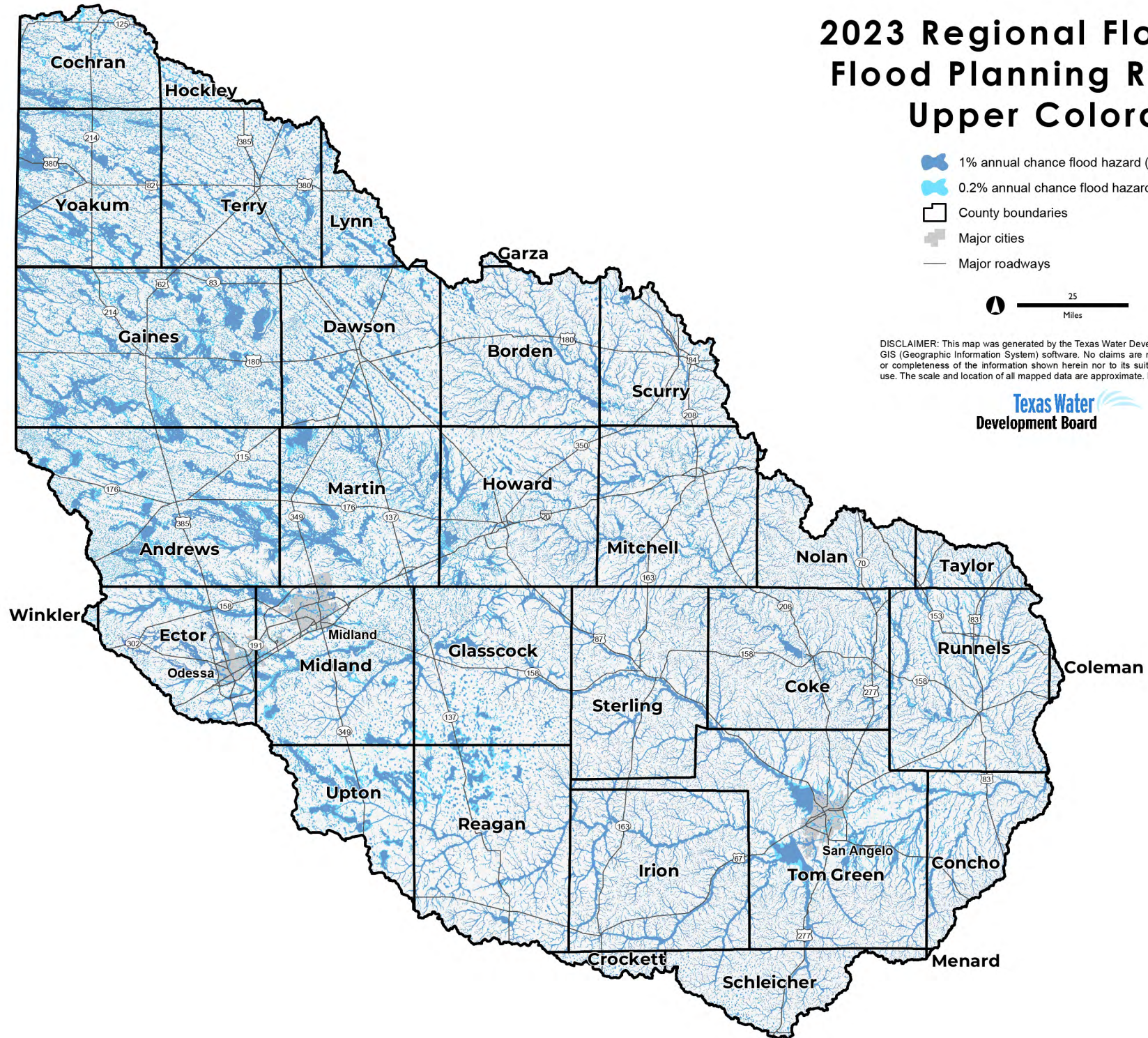
- 123 FMEs with a total estimated study cost of approximately \$79,738,000
- 8 FMPs with a total estimated project cost of approximately \$25,369,000
- 139 FMSs with a total estimated cost of approximately \$6,131,000

2023 Regional Flood Plan Flood Planning Region 9 Upper Colorado

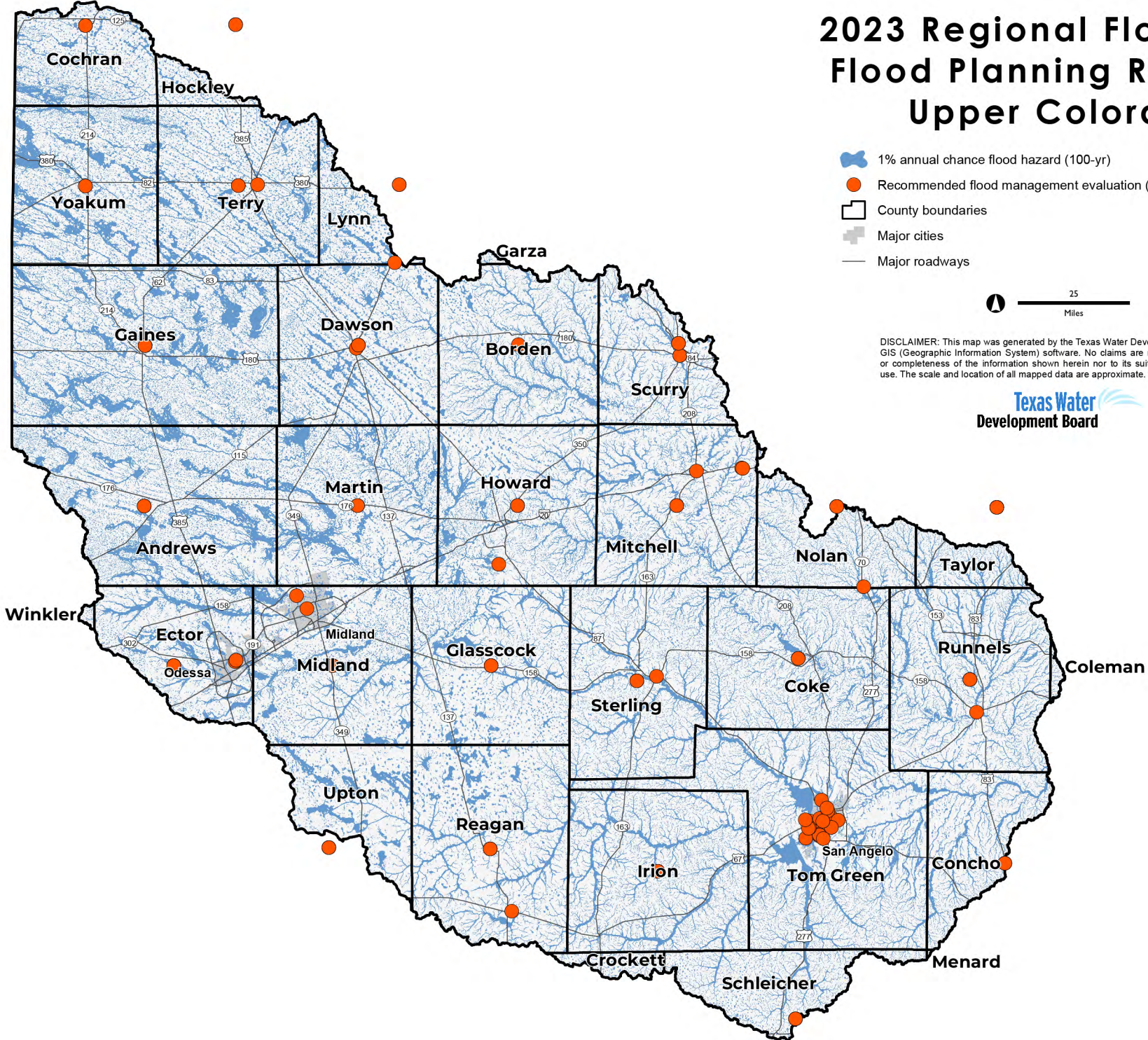
-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  County boundaries
-  Major cities
-  Major roadways








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2023 Regional Flood Plan Flood Planning Region 9 Upper Colorado



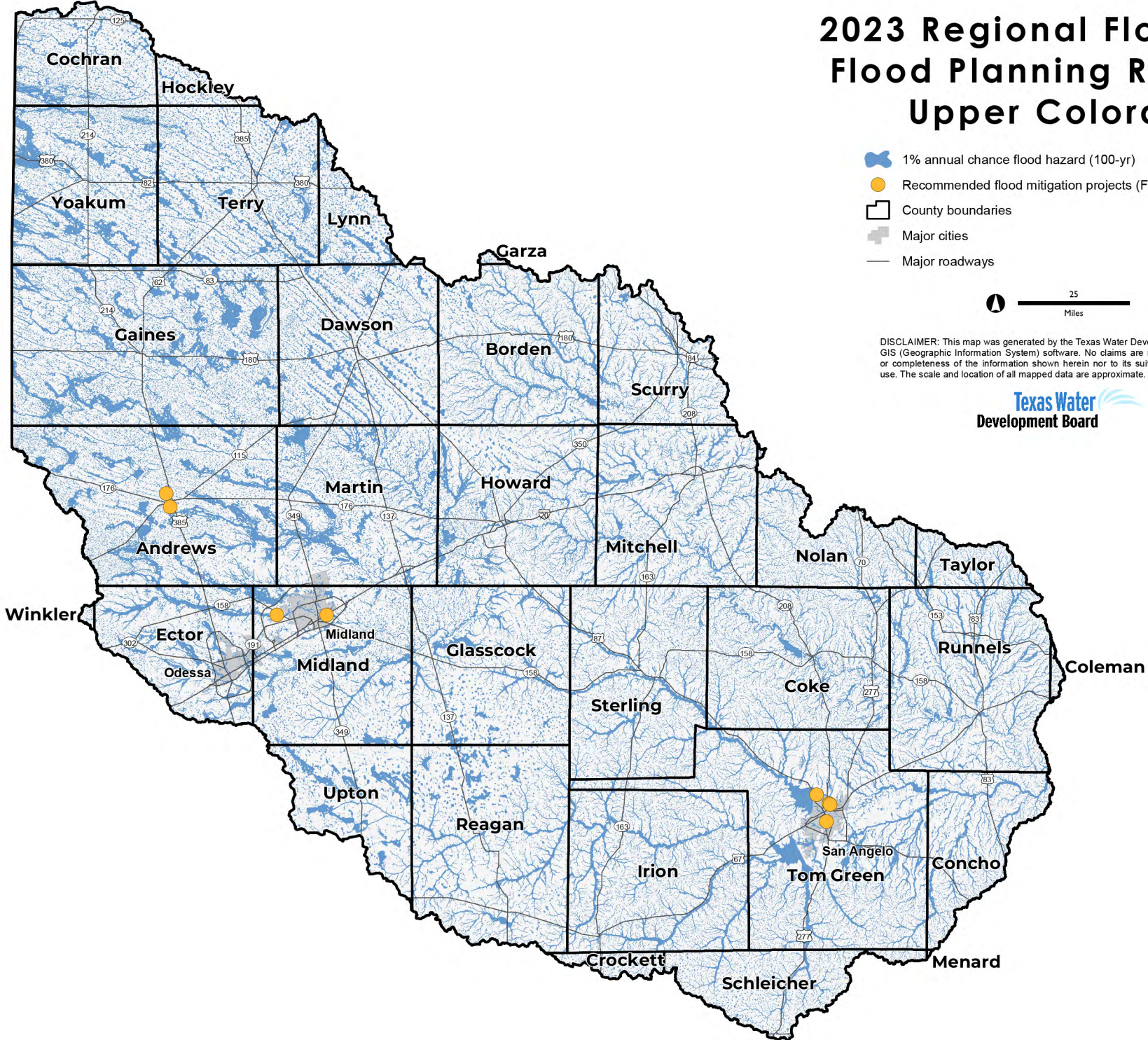
-  1% annual chance flood hazard (100-yr)
-  Recommended flood management evaluation (FME) - Total 123 FMEs
-  County boundaries
-  Major cities
-  Major roadways








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2023 Regional Flood Plan Flood Planning Region 9 Upper Colorado



-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 8 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 10

Summary of 2023 Region 10 Lower Colorado Regional Flood Plan

The Region 10 Lower Colorado Lavaca RFPG initially convened on November 2, 2020, and subsequently held 35 public meetings (including RFPG and subcommittee meetings) mostly in Austin prior to their plan submission. The RFPG selected the Lower Colorado River Authority as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Lower Colorado Lavaca Flood Planning Region (Region 10) encompasses an area of over 24,300 square miles and includes a population of approximately 1.92 million. Approximately 19 percent of the region (4,530 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 3 percent (730 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 1,350 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

Table 1: Estimated Existing Flood Risks Identified within Region 10*

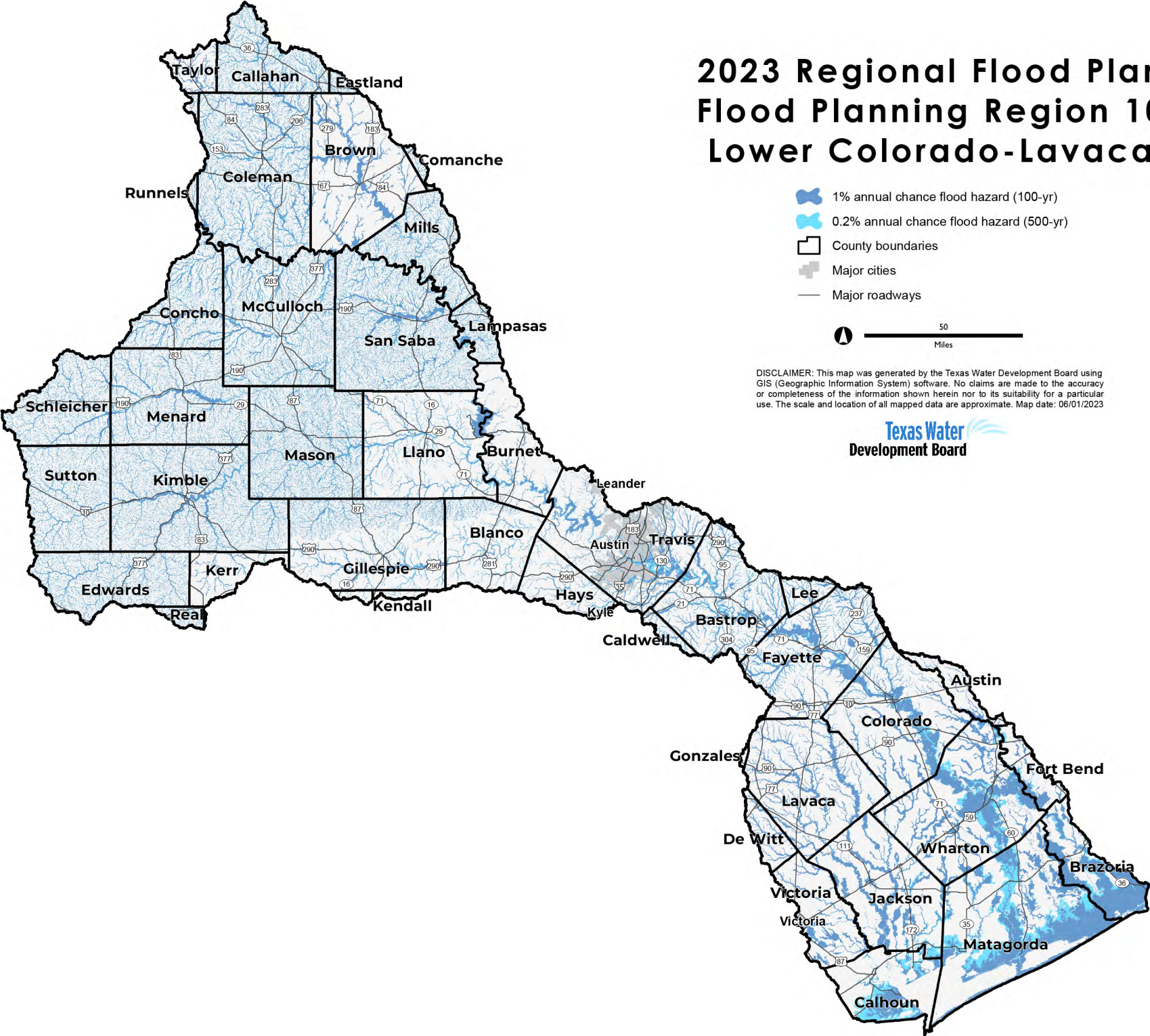
Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	67,800	34,500	102,300
Number of residential buildings	45,800	25,400	71,200
Population	149,800	94,800	244,600
Number of hospitals, schools, and police, fire, and EMS stations	65	38	103
Roadway miles	2,380	3,290	5,670
Agricultural area	3,540	4,150	7,690

**Statistics may be rounded*

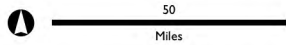
The Region 10 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 165 FMEs with a total estimated study cost of approximately \$45,920,000
- 35 FMPs with a total estimated project cost of approximately \$187,882,000
- 5 FMSs with a total estimated cost of approximately \$0

2023 Regional Flood Plan Flood Planning Region 10 Lower Colorado-Lavaca



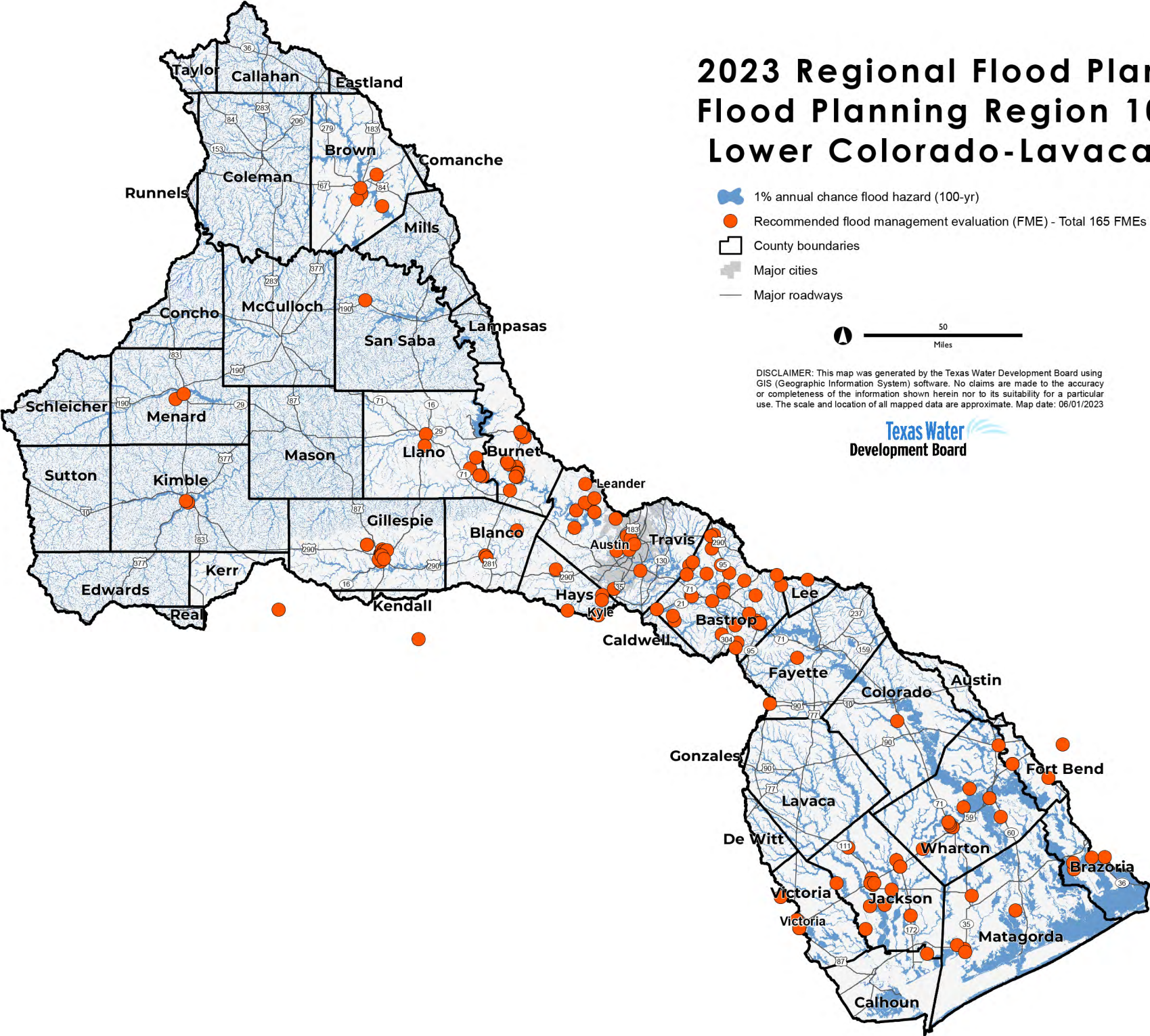
- 1% annual chance flood hazard (100-yr)
- 0.2% annual chance flood hazard (500-yr)
- County boundaries
- Major cities
- Major roadways








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2023 Regional Flood Plan Flood Planning Region 10 Lower Colorado-Lavaca



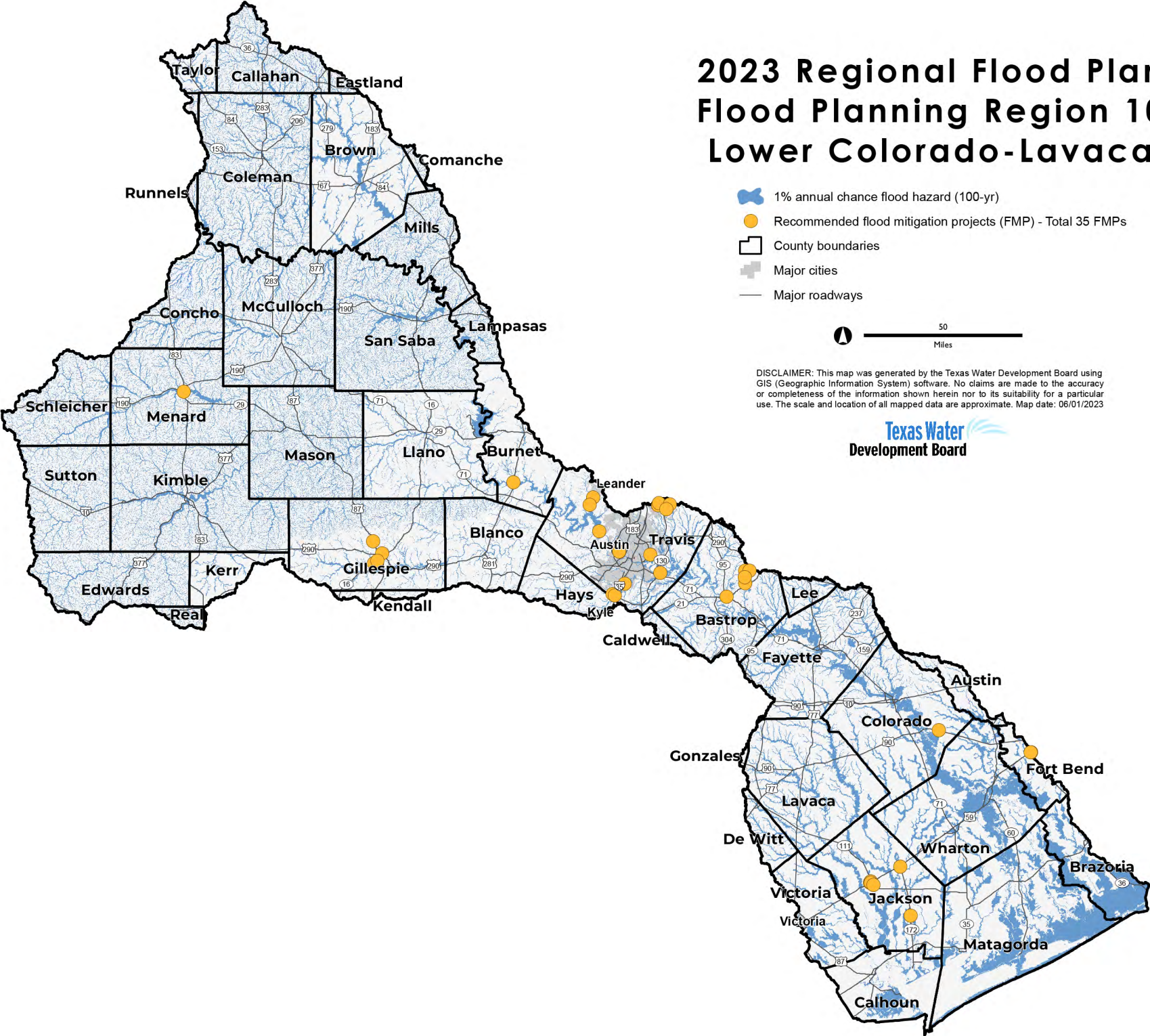
-  1% annual chance flood hazard (100-yr)
-  Recommended flood management evaluation (FME) - Total 165 FMEs
-  County boundaries
-  Major cities
-  Major roadways








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2023 Regional Flood Plan Flood Planning Region 10 Lower Colorado-Lavaca



-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 35 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 11

Summary of 2023 Region 11 Guadalupe Regional Flood Plan

The Region 11 Guadalupe RFPG initially convened on November 4, 2020, and subsequently held 28 public meetings (including RFPG and subcommittee meetings) mostly in Seguin prior to their plan submission. The RFPG selected the Guadalupe Blanco River Authority as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Guadalupe Flood Planning Region (Region 11) encompasses an area of over 6,000 square miles and includes a population of approximately 618,900. Approximately 16 percent of the region (990 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 3 percent (180 square miles) falls within the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 820 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

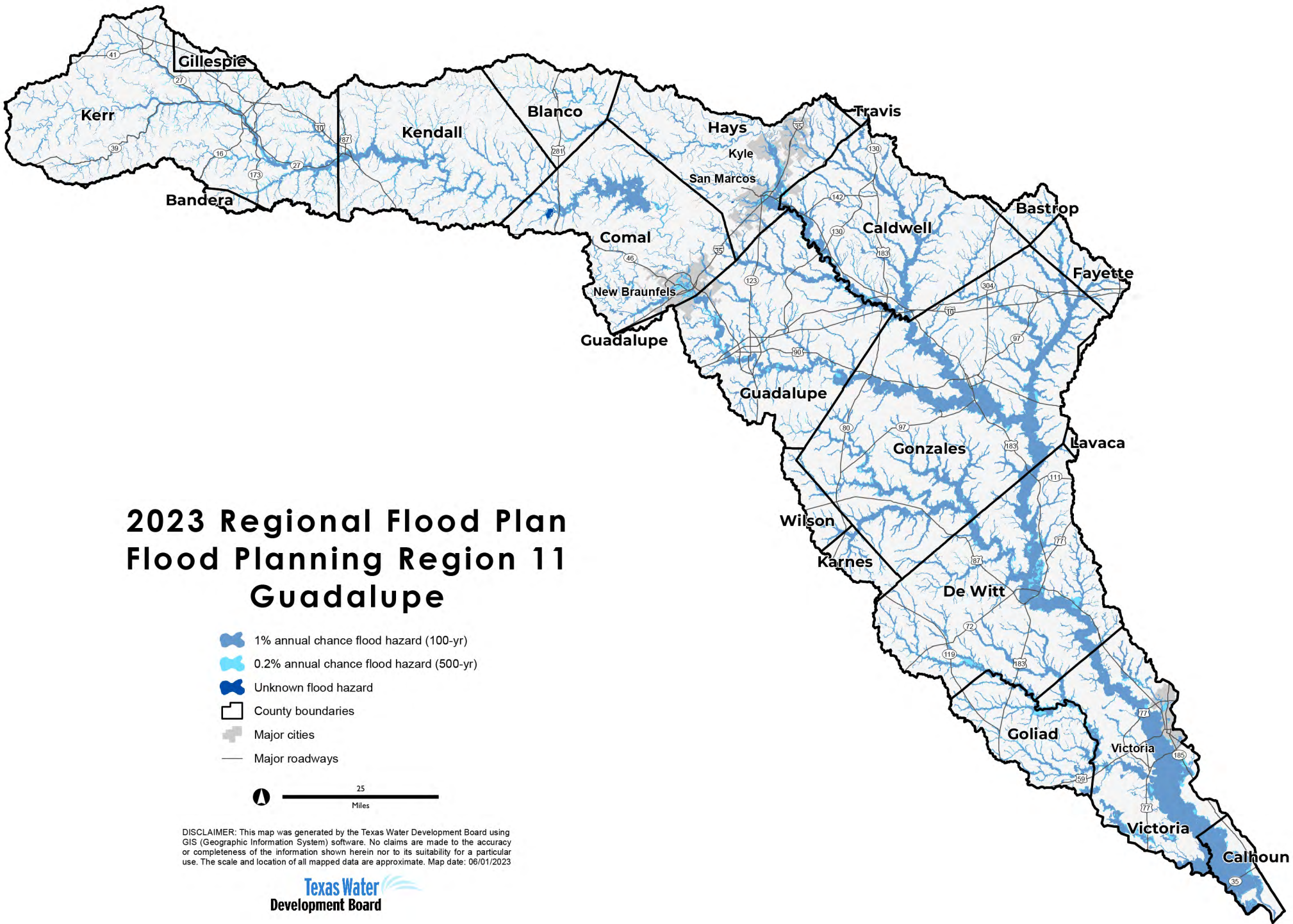
Table 1: Estimated Existing Flood Risks Identified within Region 11*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	27,100	18,400	45,500
Number of residential buildings	18,900	13,000	31,900
Population	63,900	52,600	116,500
Number of hospitals, schools, and police, fire, and EMS stations	53	71	124
Roadway miles	940	440	1,380
Agricultural area	560	130	690

**Statistics may be rounded*

The Region 11 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:







- 138 FMEs with a total estimated study cost of approximately \$69,696,000
- 28 FMPs with a total estimated project cost of approximately \$155,561,000
- 5 FMSs with a total estimated cost of approximately \$33,473,000



2023 Regional Flood Plan

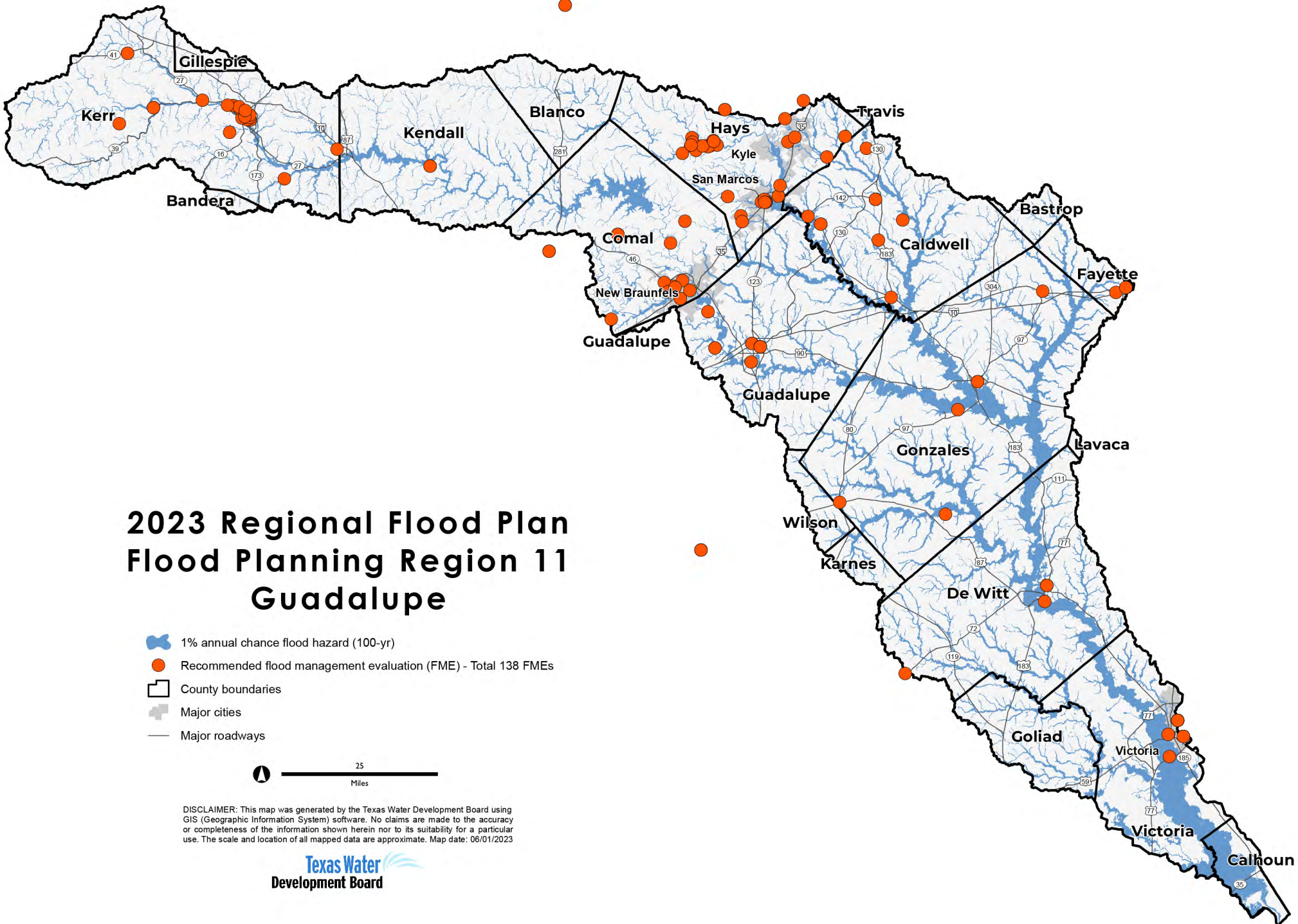
Flood Planning Region 11

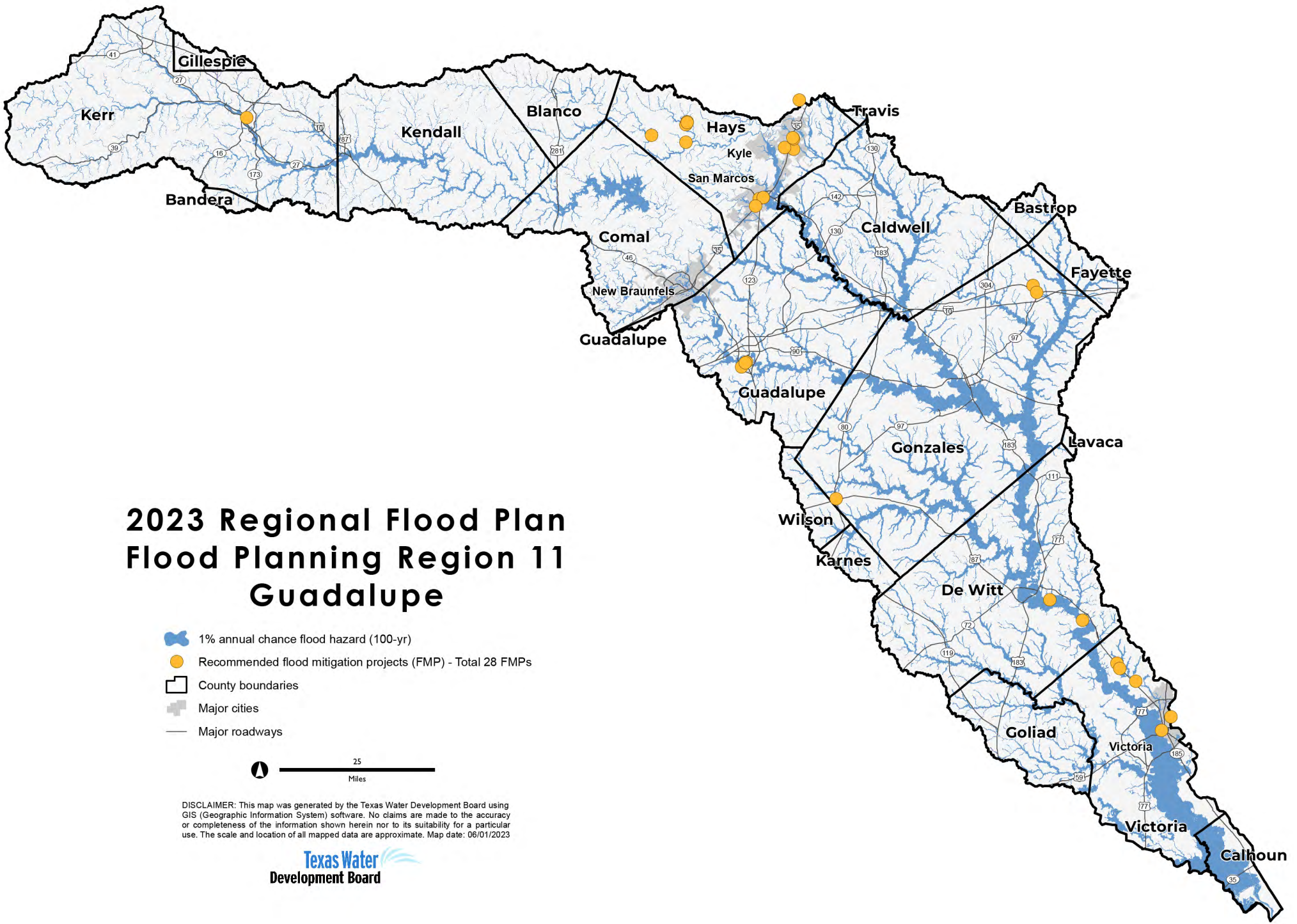
Guadalupe

-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  Unknown flood hazard
-  County boundaries
-  Major cities
-  Major roadways



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2023 Regional Flood Plan

Flood Planning Region 11

Guadalupe

-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 28 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 12

Summary of 2023 Region 12 San Antonio Regional Flood Plan

The Region 12 San Antonio RFPG initially convened on November 2, 2020, and subsequently held 43 public meetings (including RFPG and subcommittee meetings) mostly in San Antonio prior to their plan submission. The RFPG selected the San Antonio River Authority as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The San Antonio Flood Planning Region (Region 12) encompasses an area of over 4,400 square miles and includes a population of approximately 2.21 million. Approximately 18 percent of the region (800 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 3 percent (120 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 500 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

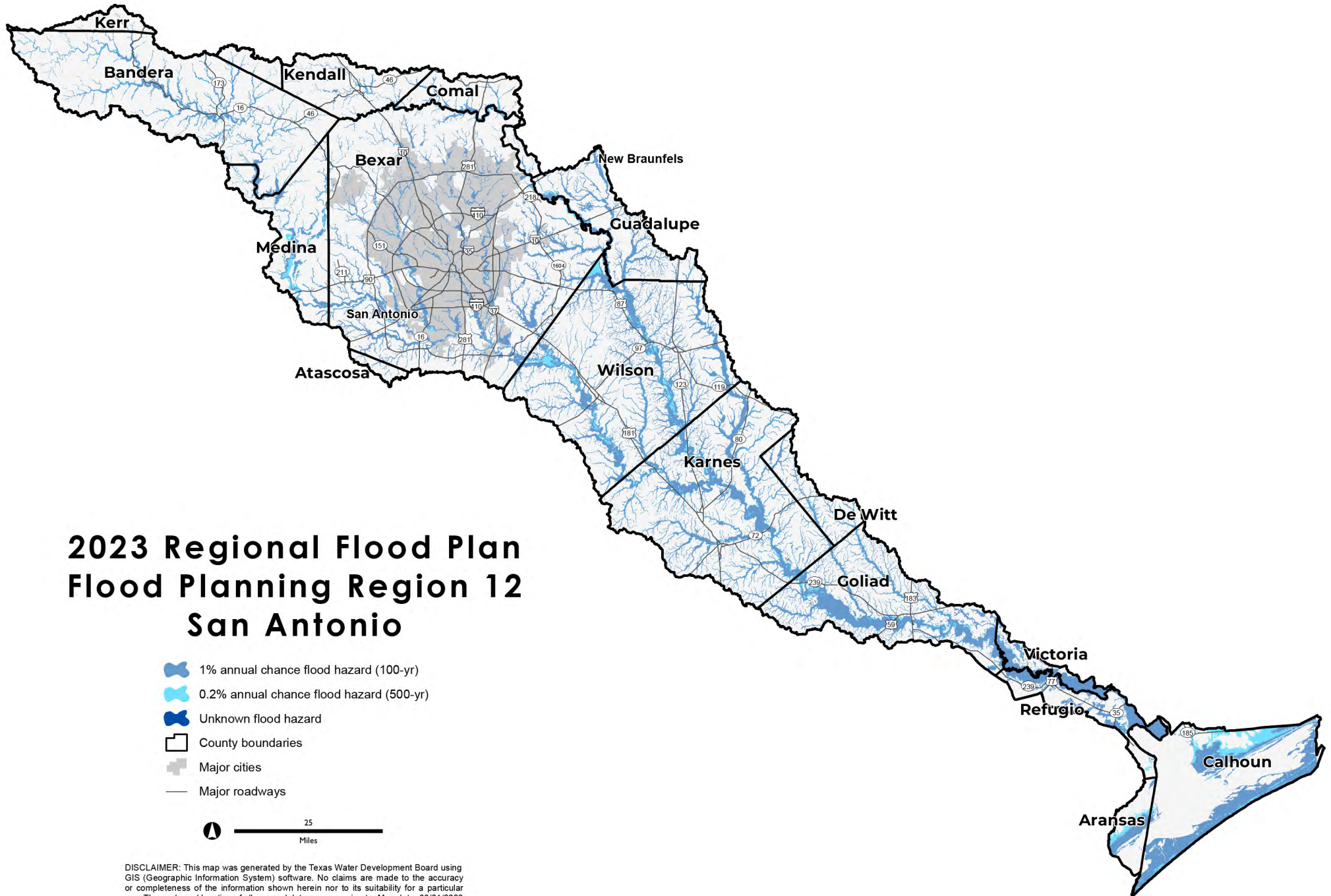
Table 1: Estimated Existing Flood Risks Identified within Region 12*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	19,100	7,500	26,600
Number of residential buildings	13,700	5,500	19,200
Population	67,700	22,800	90,500
Number of hospitals, schools, and police, fire, and EMS stations	99	24	123
Roadway miles	750	210	960
Agricultural area	80	20	100







**Statistics may be rounded*

The Region 12 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 163 FMEs with a total estimated study cost of approximately \$392,719,000
- 28 FMPs with a total estimated project cost of approximately \$428,746,000
- 19 FMSs with a total estimated cost of approximately \$999,000

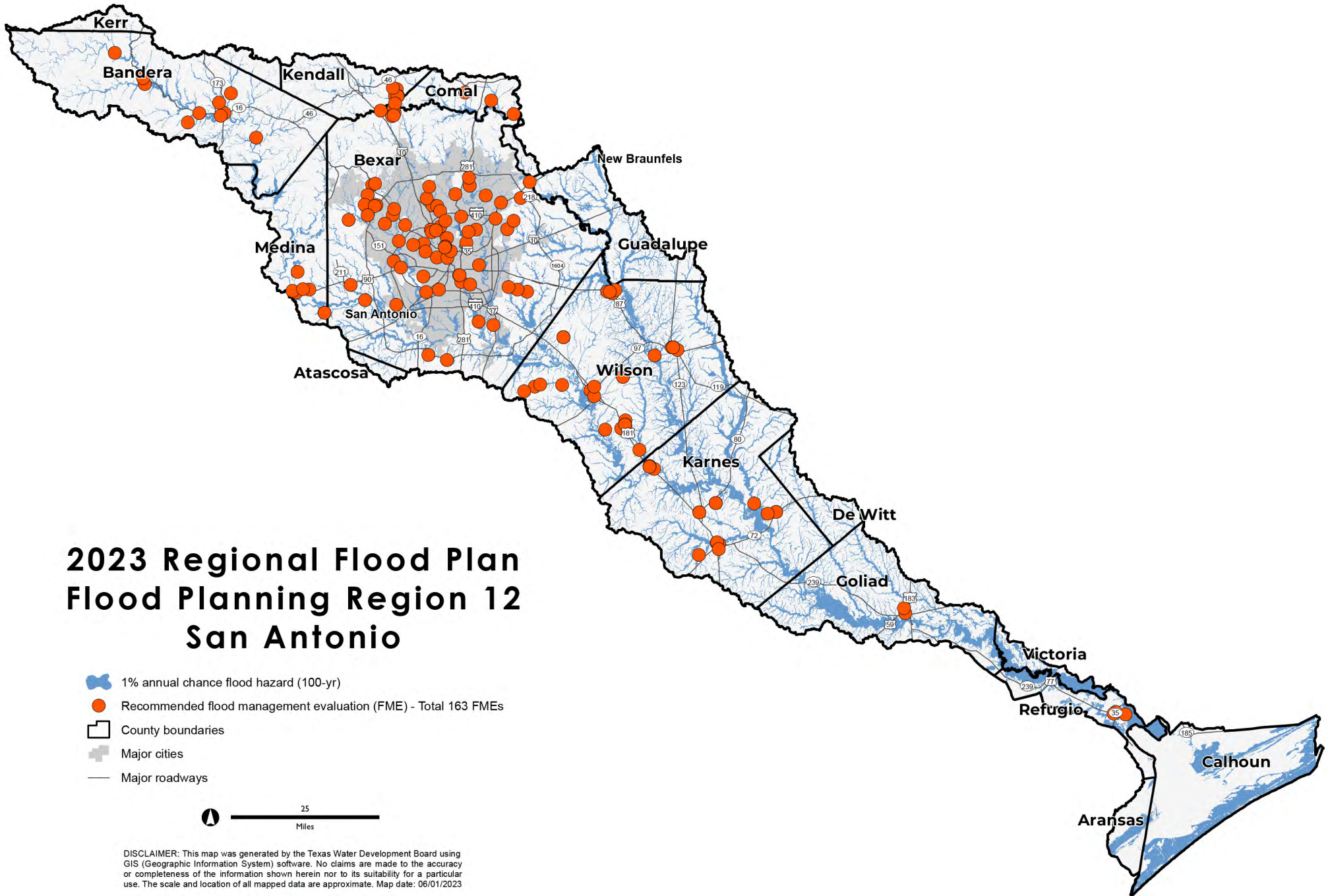


2023 Regional Flood Plan Flood Planning Region 12 San Antonio






-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  Unknown flood hazard
-  County boundaries
-  Major cities
-  Major roadways



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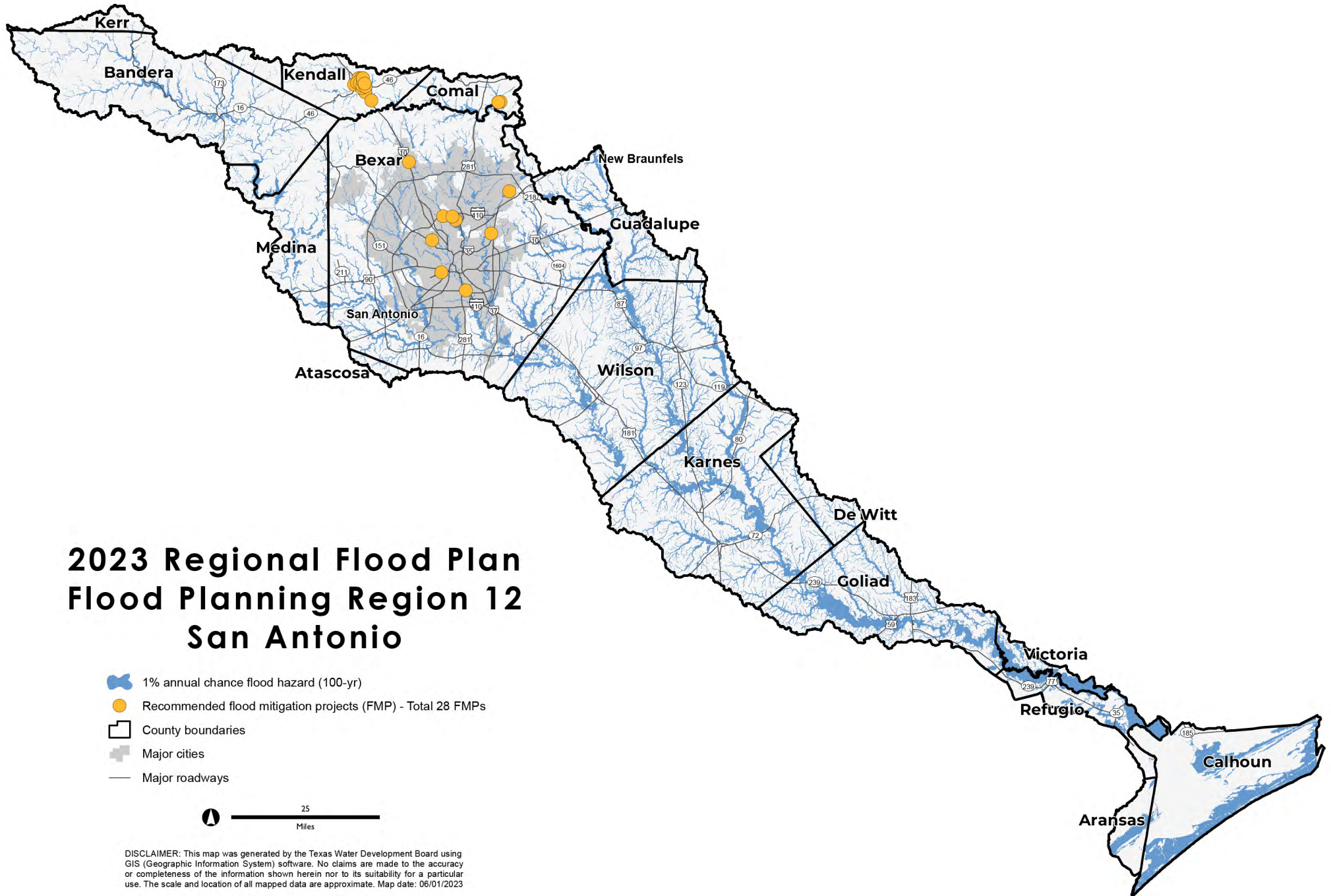


2023 Regional Flood Plan Flood Planning Region 12 San Antonio

-  1% annual chance flood hazard (100-yr)
-  Recommended flood management evaluation (FME) - Total 163 FMEs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 13

Summary of 2023 Region 13 Nueces Regional Flood Plan

The Region 13 Nueces RFPG initially convened on November 4, 2020, and subsequently held 21 public meetings (including RFPG and subcommittee meetings) mostly in Tilden prior to their plan submission. The RFPG selected the Nueces River Authority as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Nueces Flood Planning Region (Region 13) encompasses an area of over 24,000 square miles and includes a population of approximately 1.14 million. Approximately 19 percent of the region (4,580 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 5 percent (1,290 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 580 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

Table 1: Estimated Existing Flood Risks Identified within Region 13*

Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	60,900	37,100	98,000
Number of residential buildings	43,000	27,700	70,700
Population	144,100	100,400	244,500
Number of hospitals, schools, and police, fire, and EMS stations	318	248	566
Roadway miles	3,210	1,580	4,790
Agricultural area	390	110	500

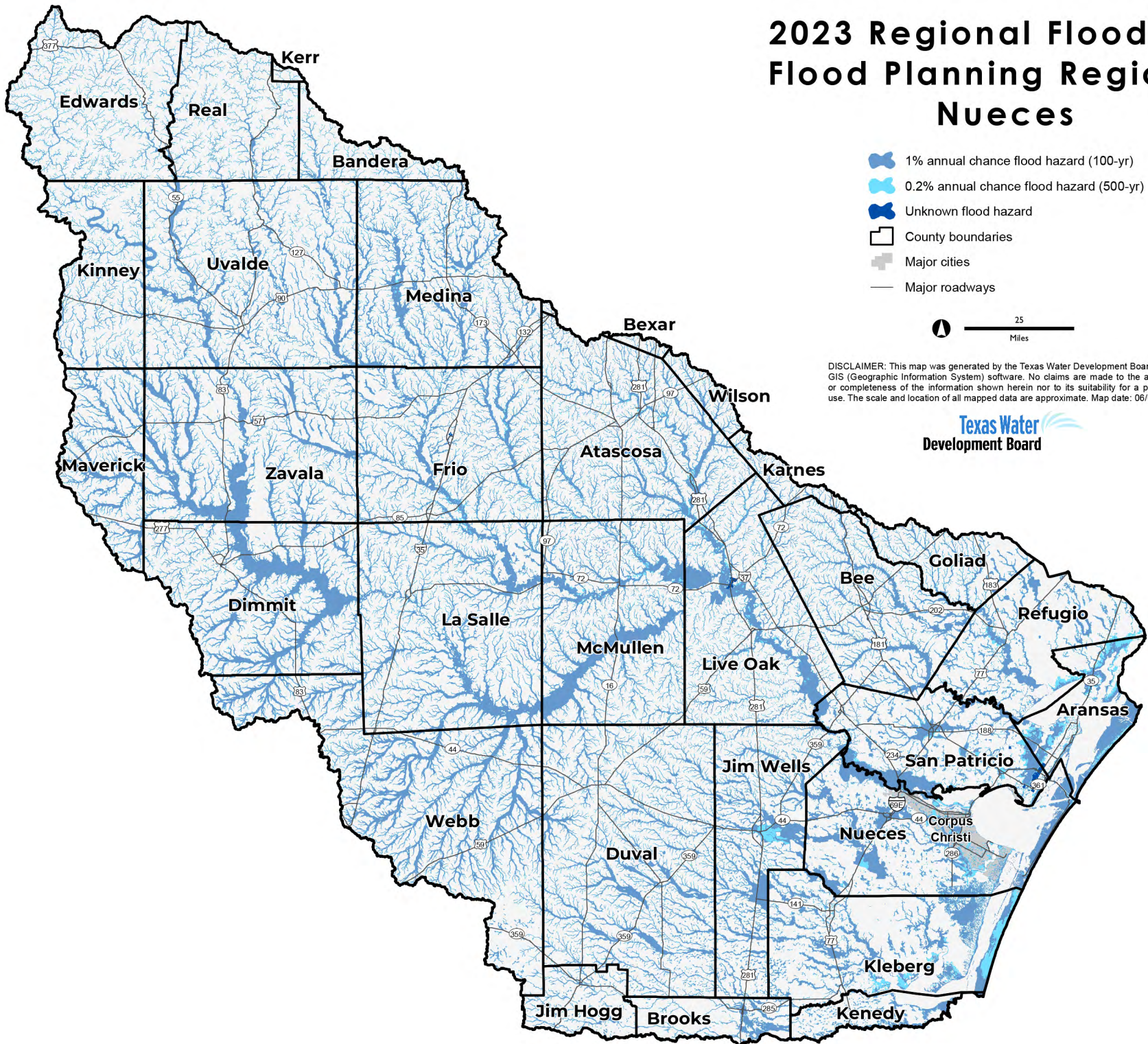
**Statistics may be rounded*







The Region 13 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 163 FMEs with a total estimated study cost of approximately \$282,331,000
- 40 FMSs with a total estimated cost of approximately \$20,286,000

At this time, the Region 13 Regional Flood Plan did not recommend any FMPs although it is anticipated that its forthcoming amendment will include some recommended FMPs.

2023 Regional Flood Plan Flood Planning Region 13 Nueces



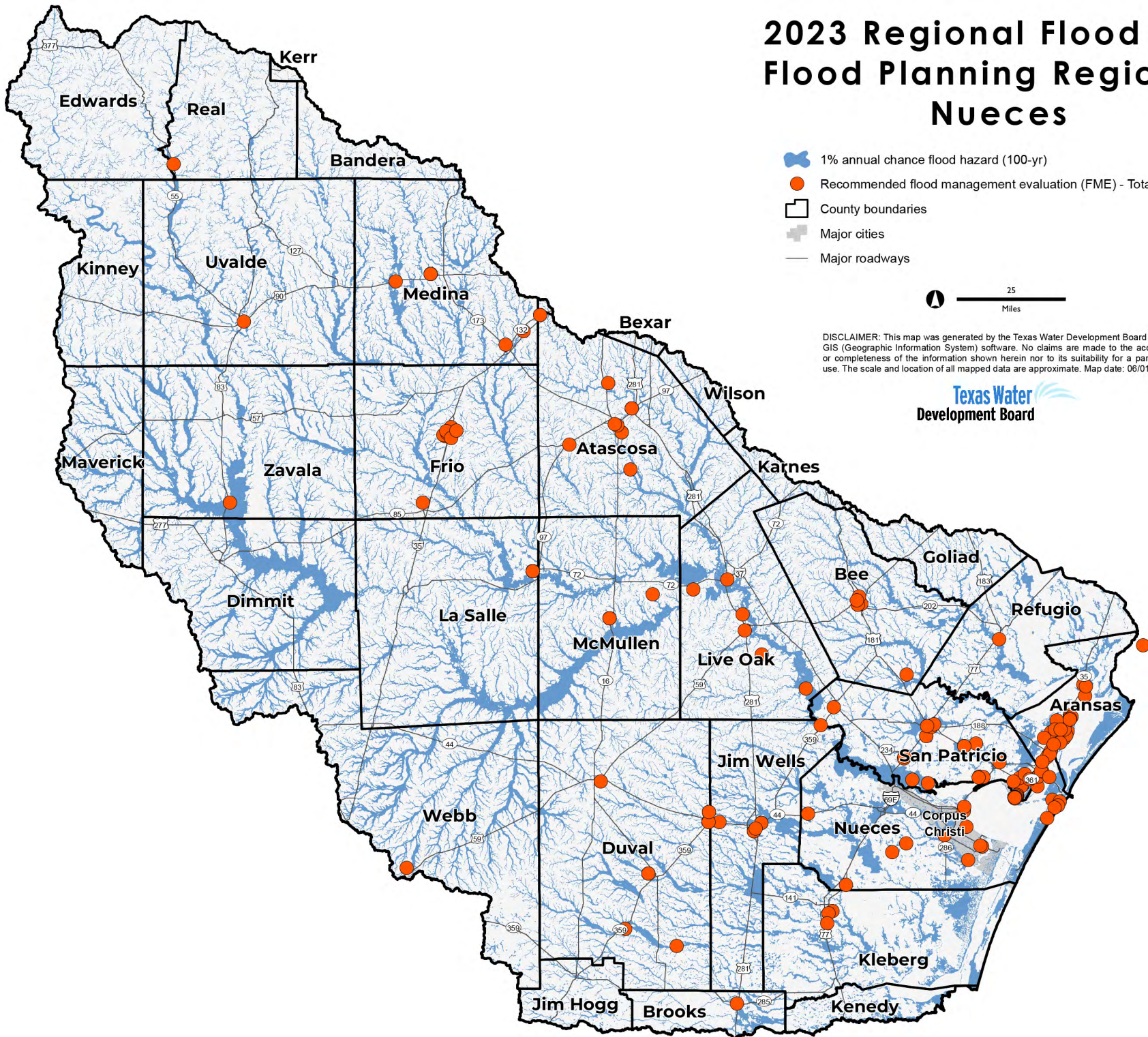
-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  Unknown flood hazard
-  County boundaries
-  Major cities
-  Major roadways








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2023 Regional Flood Plan Flood Planning Region 13 Nueces



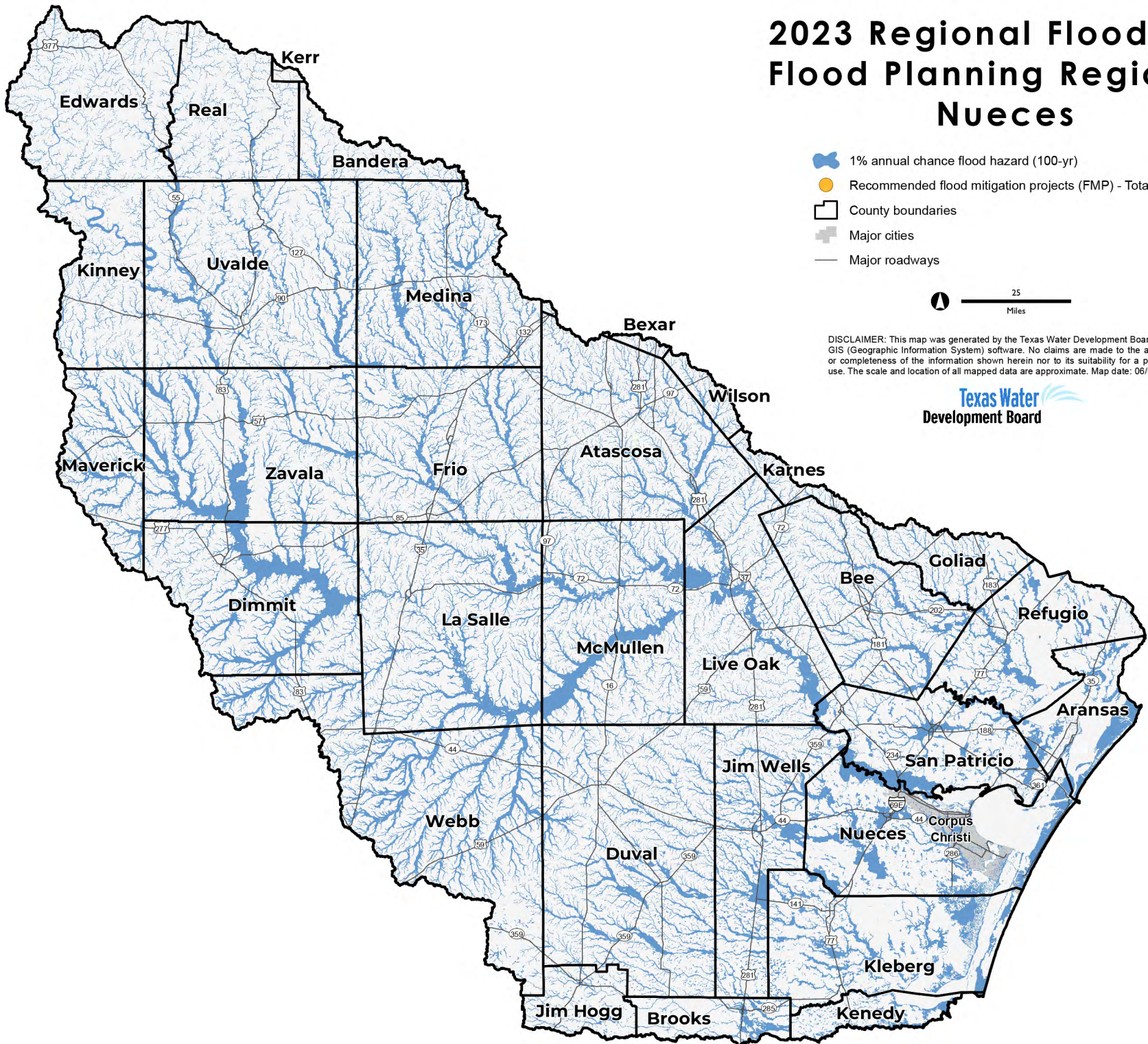
-  1% annual chance flood hazard (100-yr)
-  Recommended flood management evaluation (FME) - Total 163 FMEs
-  County boundaries
-  Major cities
-  Major roadways

 25
Miles

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2023 Regional Flood Plan Flood Planning Region 13 Nueces



- 1% annual chance flood hazard (100-yr)
- Recommended flood mitigation projects (FMP) - Total 0 FMPs
- County boundaries
- Major cities
- Major roadways



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Attachment 14

Summary of 2023 Region 14 Upper Rio Grande Regional Flood Plan

The Region 14 Upper Rio Grande RFPG initially convened on November 5, 2020, and subsequently held 48 public meetings (including RFPG and subcommittee meetings) mostly in El Paso prior to their plan submission. The RFPG selected the Rio Grande Council of Governments as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Upper Rio Grande Flood Planning Region (Region 14) encompasses an area of over 43,000 square miles and includes a population of approximately 1.04 million. Approximately 22 percent of the region (9,280 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 4 percent (1,760 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 1,580 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

Table 1: Estimated Existing Flood Risks Identified within Region 14*

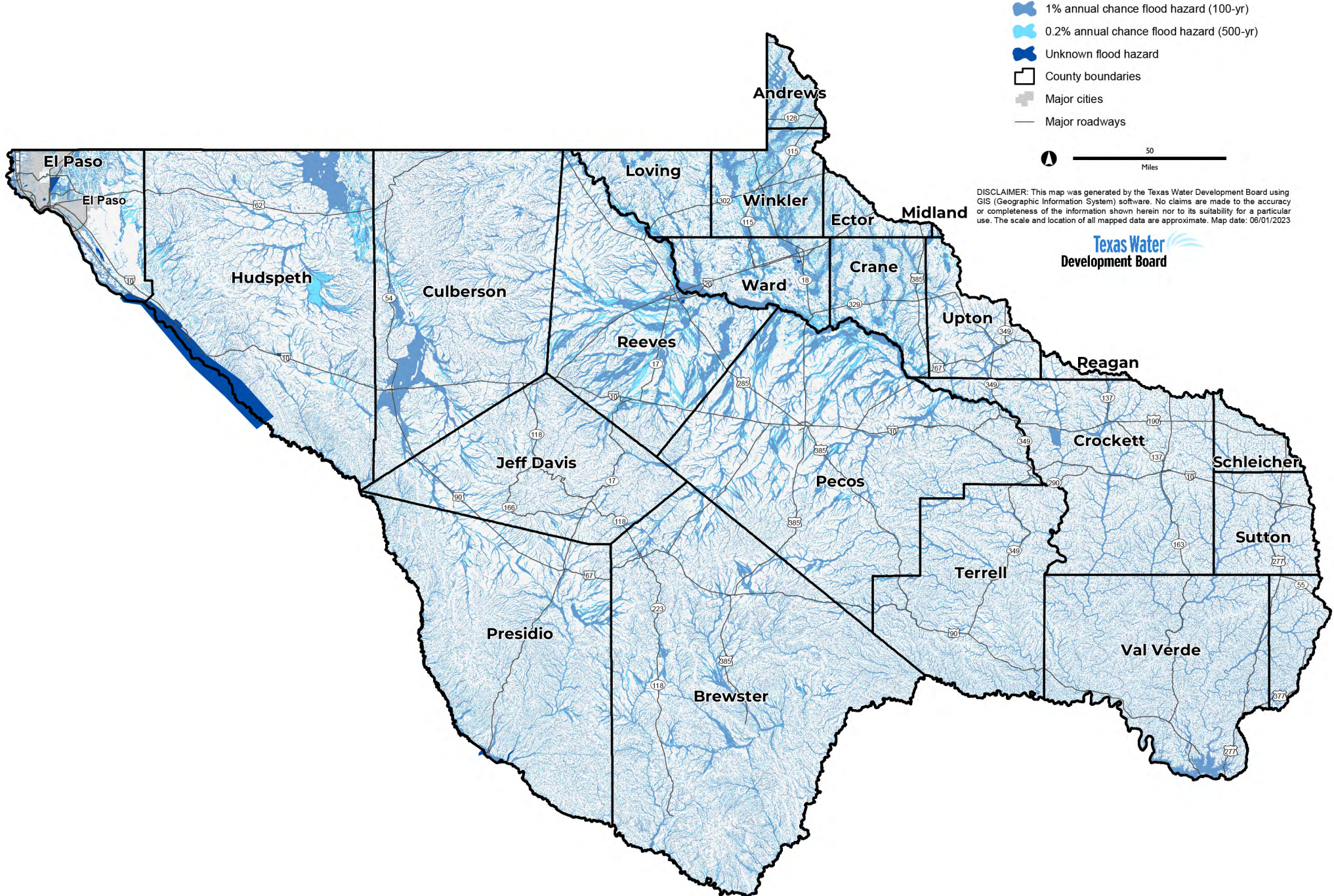
Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	40,100	14,300	54,400
Number of residential buildings	24,900	9,100	34,000
Population	115,500	48,000	163,500
Number of hospitals, schools, and police, fire, and EMS stations	57	34	91
Roadway miles	3,050	750	3,800
Agricultural area	610	130	740

**Statistics may be rounded*






The Region 14 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

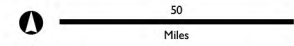
- 22 FMEs with a total estimated study cost of approximately \$7,510,000
- 14 FMPs with a total estimated project cost of approximately \$149,204,000
- 22 FMSs with a total estimated cost of approximately \$3,578,000

2023 Regional Flood Plan Flood Planning Region 14 Upper Rio Grande

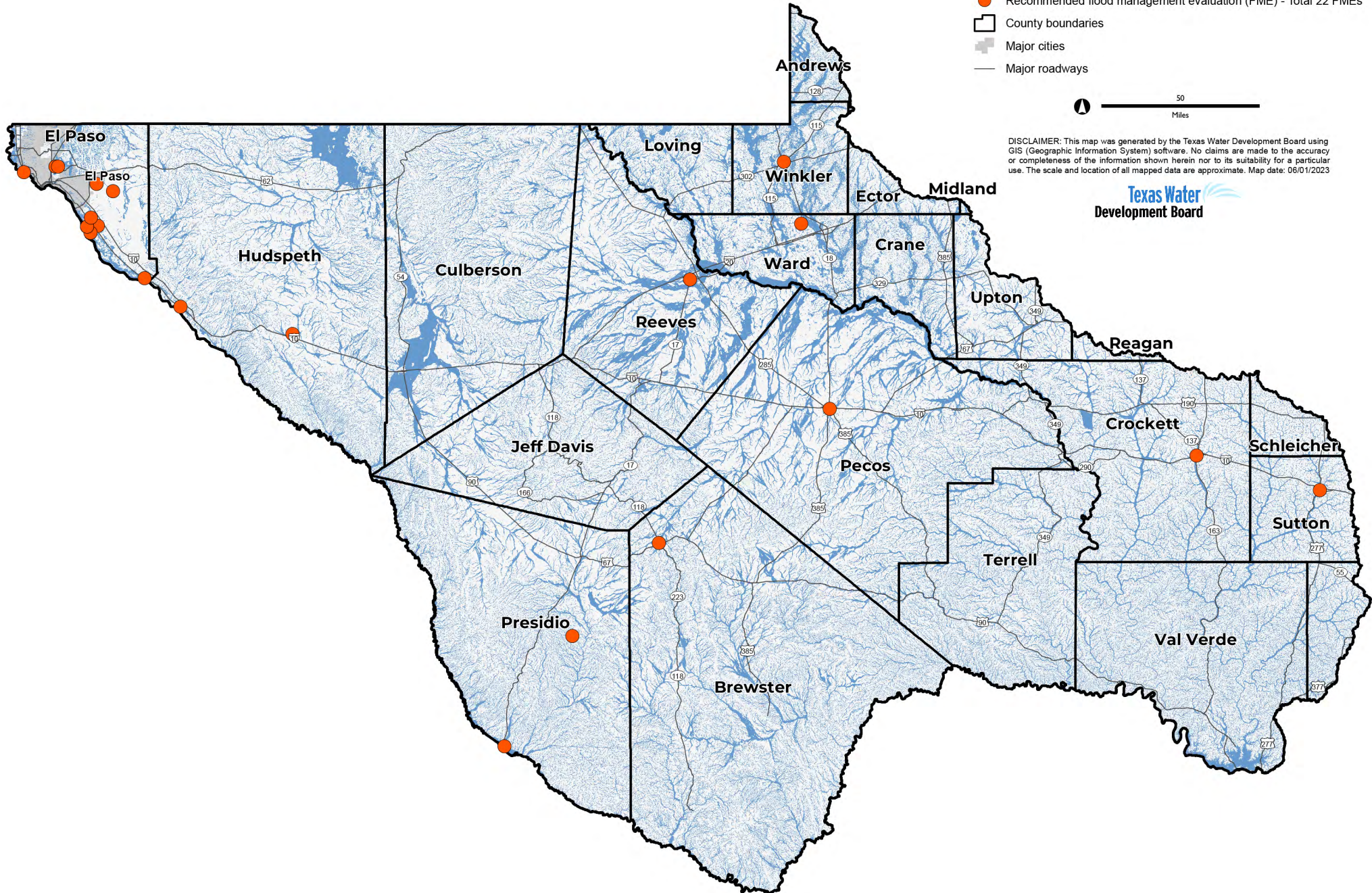


2023 Regional Flood Plan Flood Planning Region 14 Upper Rio Grande






-  1% annual chance flood hazard (100-yr)
-  Recommended flood management evaluation (FME) - Total 22 FMEs
-  County boundaries
-  Major cities
-  Major roadways



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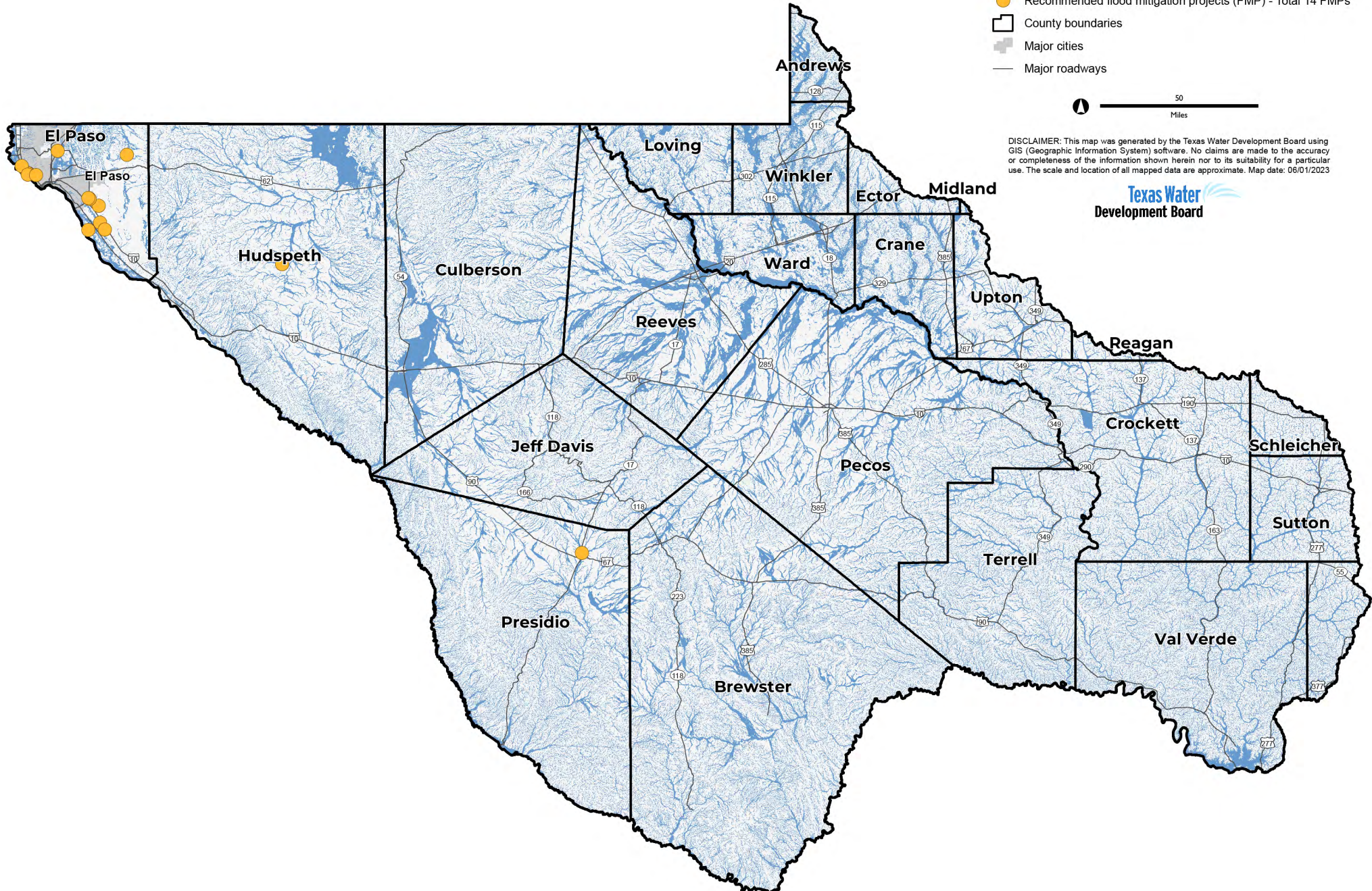


2023 Regional Flood Plan Flood Planning Region 14 Upper Rio Grande

-  1% annual chance flood hazard (100-yr)
-  Recommended flood mitigation projects (FMP) - Total 14 FMPs
-  County boundaries
-  Major cities
-  Major roadways



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Attachment 15

Summary of 2023 Region 15 Lower Rio Grande Regional Flood Plan

The Region 15 Lower Rio Grande RFPG initially convened on 11/5/2020, and subsequently held 23 public meetings (including RFPG and subcommittee meetings) mostly in San Benito prior to their plan submission. The RFPG selected the Hidalgo County Drainage District No. 1 as its sponsor, which is responsible for managing the regional flood planning grant agreement with TWDB. The RFPG adopted and submitted their final RFP by the statutory deadline of January 10, 2023.

The Lower Rio Grande Flood Planning Region (Region 15) encompasses an area of over 12,400 square miles and includes a population of approximately 2.04 million. Approximately 33 percent of the region (4,080 square miles) falls within the extent of the 1-percent annual chance floodplain and an estimated additional 10 percent (1,210 square miles) falls within the in the 0.2-percent annual chance floodplain extent. The RFPG identified approximately 130 low water crossings located within the flood planning region. There are a variety of associated flood risks faced by the region including those summarized as follows in Table 1.

Table 1: Estimated Existing Flood Risks Identified within Region 15*

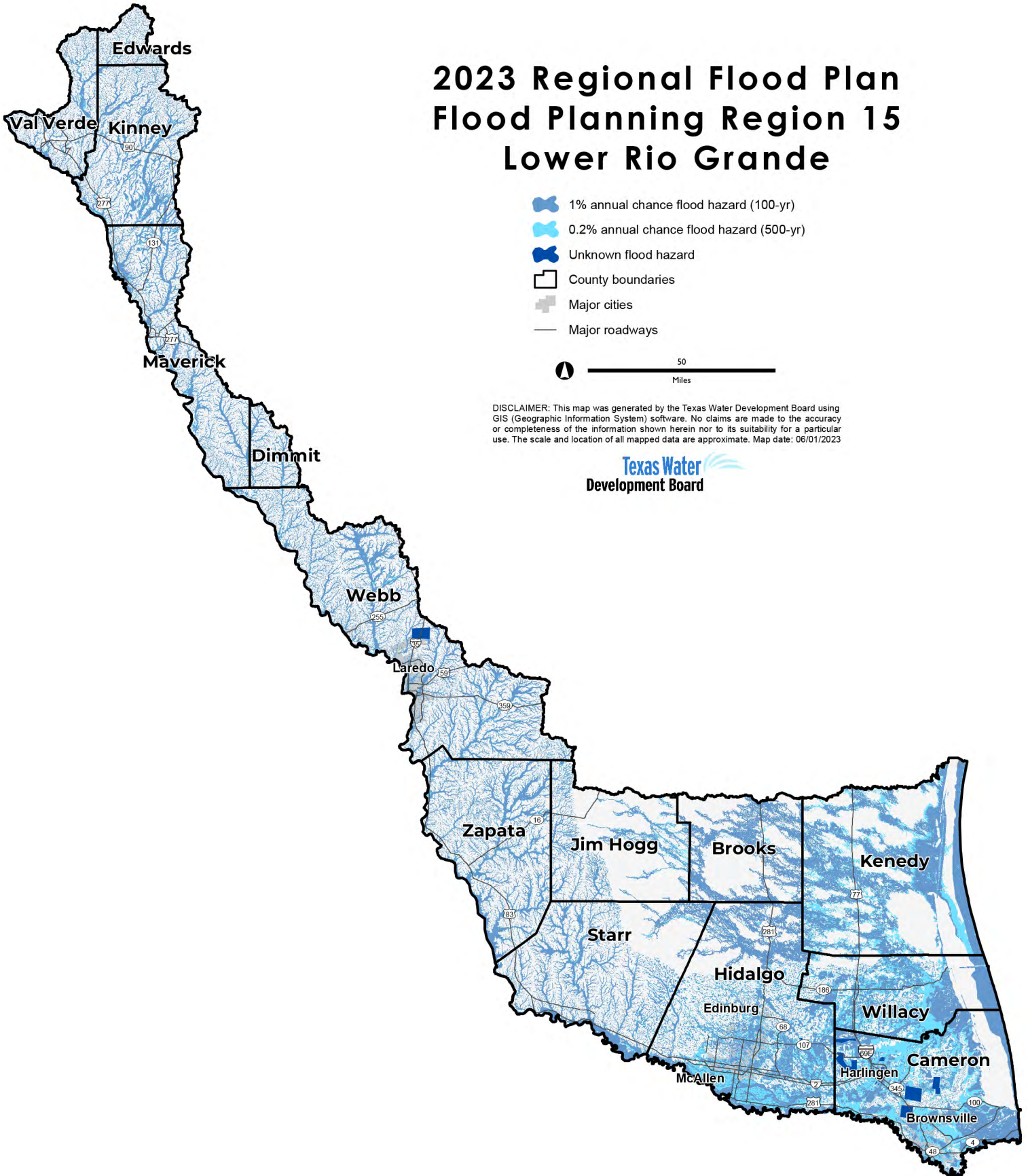
Flood risk components	1-percent annual chance (100-year) floodplain	0.2-percent annual chance (500-year) floodplain	Total
Total number of buildings	114,300	174,100	288,400
Number of residential buildings	91,500	142,300	233,800
Population	362,600	637,000	999,600
Number of hospitals, schools, and police, fire, and EMS stations	110	376	486
Roadway miles	3,790	6,380	10,170
Agricultural area	1,230	1,790	3,020







**Statistics may be rounded*

The Region 15 Regional Flood Plan includes a variety of recommendations to mitigate flood risks to people and property, including:

- 95 FMEs with a total estimated study cost of approximately \$57,005,000
- 2 FMPs with a total estimated project cost of approximately \$13,782,000
- 51 FMSs with a total estimated cost of approximately \$4,105,000

2023 Regional Flood Plan Flood Planning Region 15 Lower Rio Grande



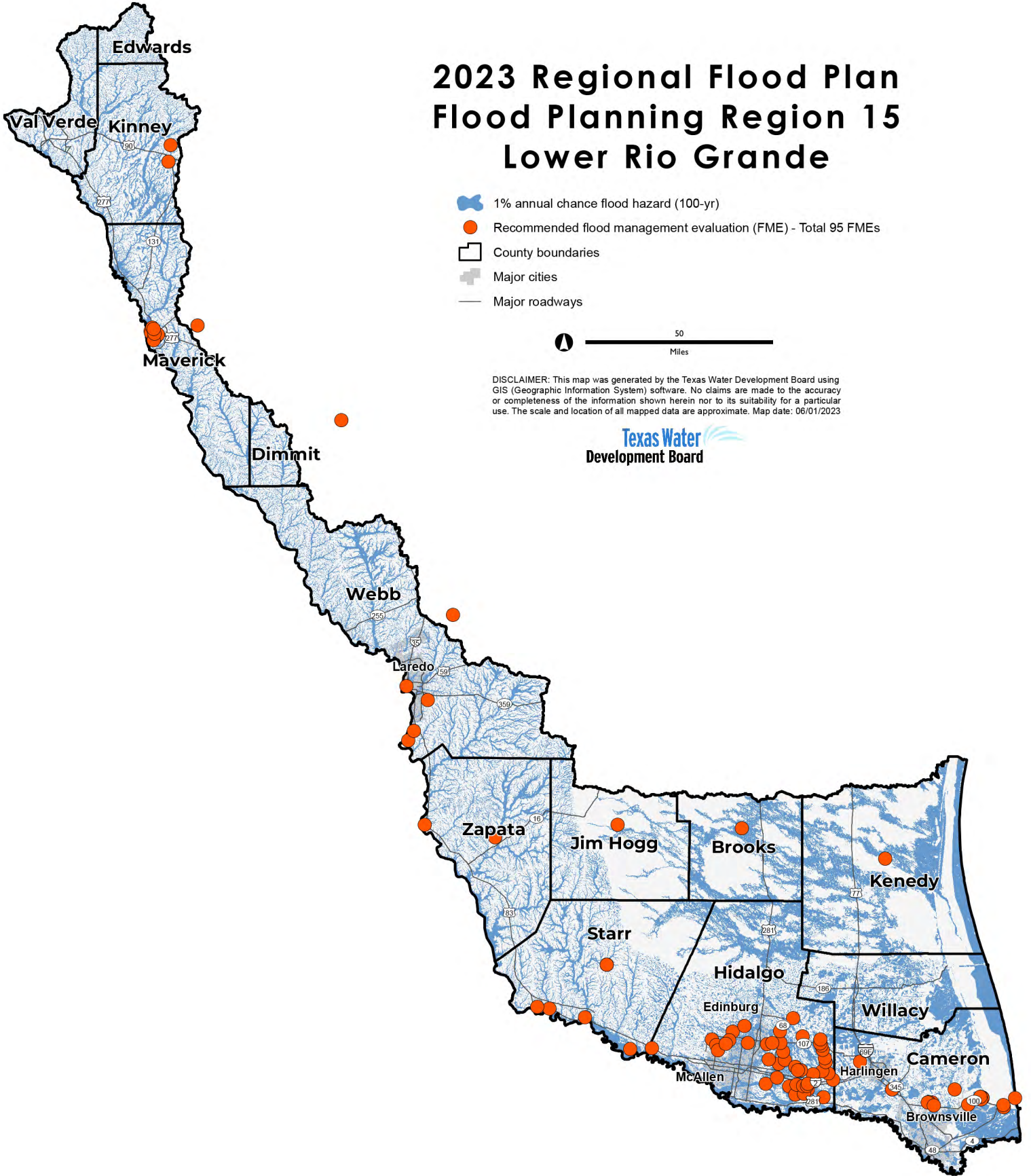
-  1% annual chance flood hazard (100-yr)
-  0.2% annual chance flood hazard (500-yr)
-  Unknown flood hazard
-  County boundaries
-  Major cities
-  Major roadways



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2023 Regional Flood Plan Flood Planning Region 15 Lower Rio Grande



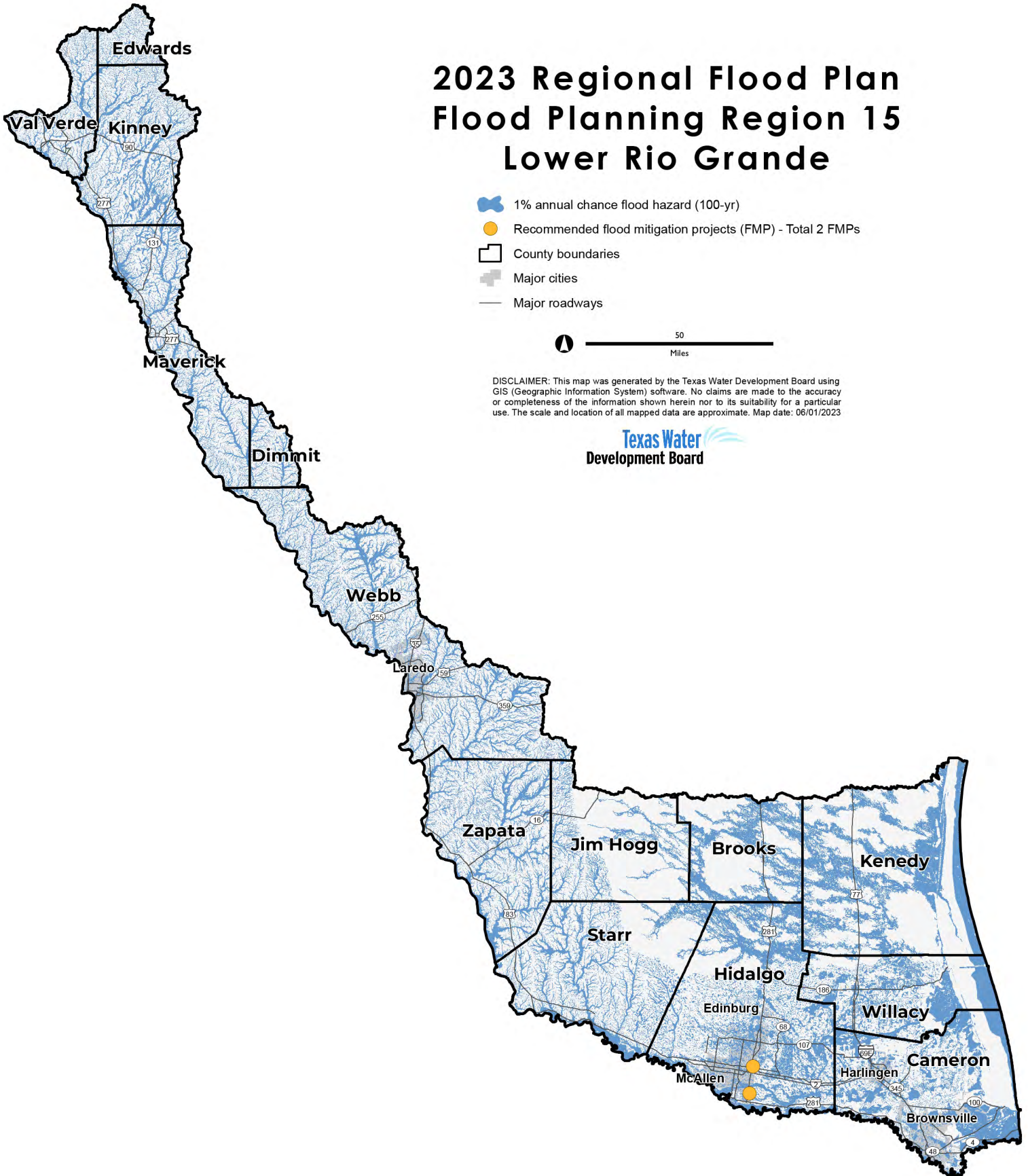
- 1% annual chance flood hazard (100-yr)
- Recommended flood management evaluation (FME) - Total 95 FMEs
- County boundaries
- Major cities
- Major roadways



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2023 Regional Flood Plan Flood Planning Region 15 Lower Rio Grande



- 1% annual chance flood hazard (100-yr)
- Recommended flood mitigation projects (FMP) - Total 2 FMPs
- County boundaries
- Major cities
- Major roadways



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