BASTROP COUNTY TEXAS

ALUM CREEK DRAINAGE IMPROVEMENTS

GENERAL LAND OFFICE CDBG-MIT SUBSTANTIAL APPLICATION FOR POSTING

Road Crossings

The County has selected four roadway crossings where roadway overtopping is a frequent problem. The location of these roadway crossings can be referenced on attached maps**.** An analysis of the following four crossings was conducted to identify potential improvements to reduce risk.

- Alum Creek Cardinal Drive crossing
- Alum Creek Tributary 11 Cardinal Drive crossing
- Alum Creek Tributary 87 Cardinal Drive crossing
- Alum Creek Tributary 8 Ponderosa Loop crossing

The Table below provides details of the existing condition structure and level of service, in addition to the proposed improvement, level of service, and estimate of probable cost for each structure. All structures existing conditions are overtopped during the 50% ACE storm.

TABLE: ROADWAY IMPROVEMENT SUMMARY

Structure ID [Lat., Long.]	Road	Existing Conditions		Proposed Improvement			
		Existing Culvert	Overtopping Event (ACE)	Culvert Improvement	Roadway Improvement	Overtopping Event (ACE)	Probable Cost Estimate
AC_STR_700 **[30.1905, -97.2037]**	Cardinal Drive	2 - 31" x 41" CMPs (west) 1 - 1.25' CMP (east)	50% (2-year)	2 - 4' x 3' RCBs (west) 4 - 4' x 2' RCBs (east)	310 LF of Raised Roadway	10% (10-year)	$545,000
Space left intentionally blank.							
AC_T11_STR_100 [30.1914, -97.2021]	Cardinal Drive	4 - 4' CMPs	50% (2-year)	5 - 7' x 6' RCBs	360 LF of Raised Roadway	4% (25-year)	$719,200
AC_UN_STR_400 [30.1648, -97.2127]	Cardinal Drive	2 - 4' CMPs	50% (2-year)	3 - 8' x 6' RCBs	100 LF of Raised Roadway	0.2% (500-year)	$351,900
AC_T8_STR_300 [30.1822, -97.2096]	Ponderosa Loop	3 - 4' CMPs	50% (2-year)	3 - 8' x 5' RCBs	192 LF of Raised Roadway	4% (25-year)	$430,900

Road Crossing 1 – Alum Creek Cardinal Drive crossing

The crossing on Alum Creek on Cardinal Drive [Lat. 30.1905, Long. -97.2037] and the culvert structure approximately 250 feet west of the crossing [Lat. 30.1903, Long. -97.2044] are located in a residential area north of Highway 21. Hydraulic analysis shows existing condition Alum Creek overtopping Cardinal Drive to a depth of 1.1 feet during the 50% ACE and 3.7 feet during the 1% ACE at both structures.

To help reduce roadway inundation four 4 feet x 2 feet reinforced concrete box culverts on the east, two 4 feet x 3 feet concrete box culverts on the west, and approximately 310 linear feet of roadway profile changes with an elevation increase of 1.0 foot is recommended. No channel improvements were considered for this crossing because there is a stock pond immediately downstream of the road crossing creating back water onto the culverts. The area adjacent to the proposed culverts will need to be widened to accommodate the wider culvert dimensions.

The proposed culverts do not meet the Bastrop County Subdivision Regulations to pass the 4% ACE. However, the water surface elevations for the more frequent 50% and 20% ACE are reduced below the proposed top of road elevations as displayed in attached maps. An estimate of probable cost for the proposed roadway crossing improvements is shown in attached budget which was determined to be $545,000.

Road Crossing 2 – Alum Creek Tributary 1 Gotier Trace Road crossing is not included in this application as the area is not of low-to-mod income.

Road Crossing 3 – Alum Creek Tributary 11 Cardinal Drive crossing

The crossing on Cardinal Drive on Alum Creek Tributary 11 is approximately 600 feet east of the Cardinal Drive crossing on Alum Creek [Lat. 30.1914, Long. -97.2021]. Hydraulic analysis shows the overtopping of Cardinal Drive to a depth of almost 1.0 feet during the 50% ACE and 2.9 feet during the 1% ACE.

To help reduce roadway inundation, five 7 feet x 6 feet reinforced concrete box culverts and approximately 360 linear feet of roadway profile changes with an elevation increase of 1.0 foot are proposed. The channel will need to be widened to accommodate the new culverts.

The proposed culverts do not meet the Subdivision Regulations for Bastrop County to pass the 4% ACE. However, they fully convey the 50%, 20%, and 10% ACE storms, as seen in attached maps. A detailed cost estimate for the proposed roadway crossing improvements is shown in attached budget which was determined to be $719,200.

5.3.4 Road Crossing 4 – Alum Creek Tributary 87 Cardinal Drive crossing

The crossing on Cardinal Drive is approximately a third of a mile off of Highway 21 in a residential area [Lat. 30.1648, Long. -97.2127]. Hydraulic analysis shows the overtopping of Cardinal Drive to a depth of almost 0.2 feet during the 50% ACE and 1.9 feet during the 1% ACE.

To help reduce roadway inundation, three 8 feet x 6 feet reinforced concrete box culverts and approximately 100 linear feet of roadway profile changes with an elevation increase of 1.0 foot are proposed. The channel will need to be widened to accommodate the new culverts.

The proposed culverts meet the Subdivision Regulations for Bastrop County to pass the 4% ACE and fully convey the 50%, 20%, 10%, 4%, 2%, and 1% ACE storms, as seen in attached maps. An estimate of probable cost for the proposed roadway crossing improvements is shown in attached budget which was determined to be $351,900.

5.3.5 Road Crossing 5 – Alum Creek Tributary 8 Ponderosa Loop crossing

The crossing on Ponderosa Loop is located in a residential area north of Highway 21 [Lat. 30.1822, Long. -97.2096]. Hydraulic analysis shows the overtopping of Ponderosa Loop to a depth of almost 0.6 feet during the 50% ACE and 2.7 feet during the 1% ACE.

To help reduce roadway inundation three 8 feet x 5 feet reinforced concrete box culverts and approximately 190 linear feet of roadway profile changes with an elevation increase of 1.0 foot are proposed. The channel will need to be widened to accommodate the new culverts.

The proposed culverts do not meet the Subdivision Regulations for Bastrop County to pass the 4% ACE. However, they fully convey the 50%, 20%, and 10% ACE storms, as seen in attached maps. A detailed cost

estimate for the proposed roadway crossing improvements is shown in attached budget which was determined to be $430,900.

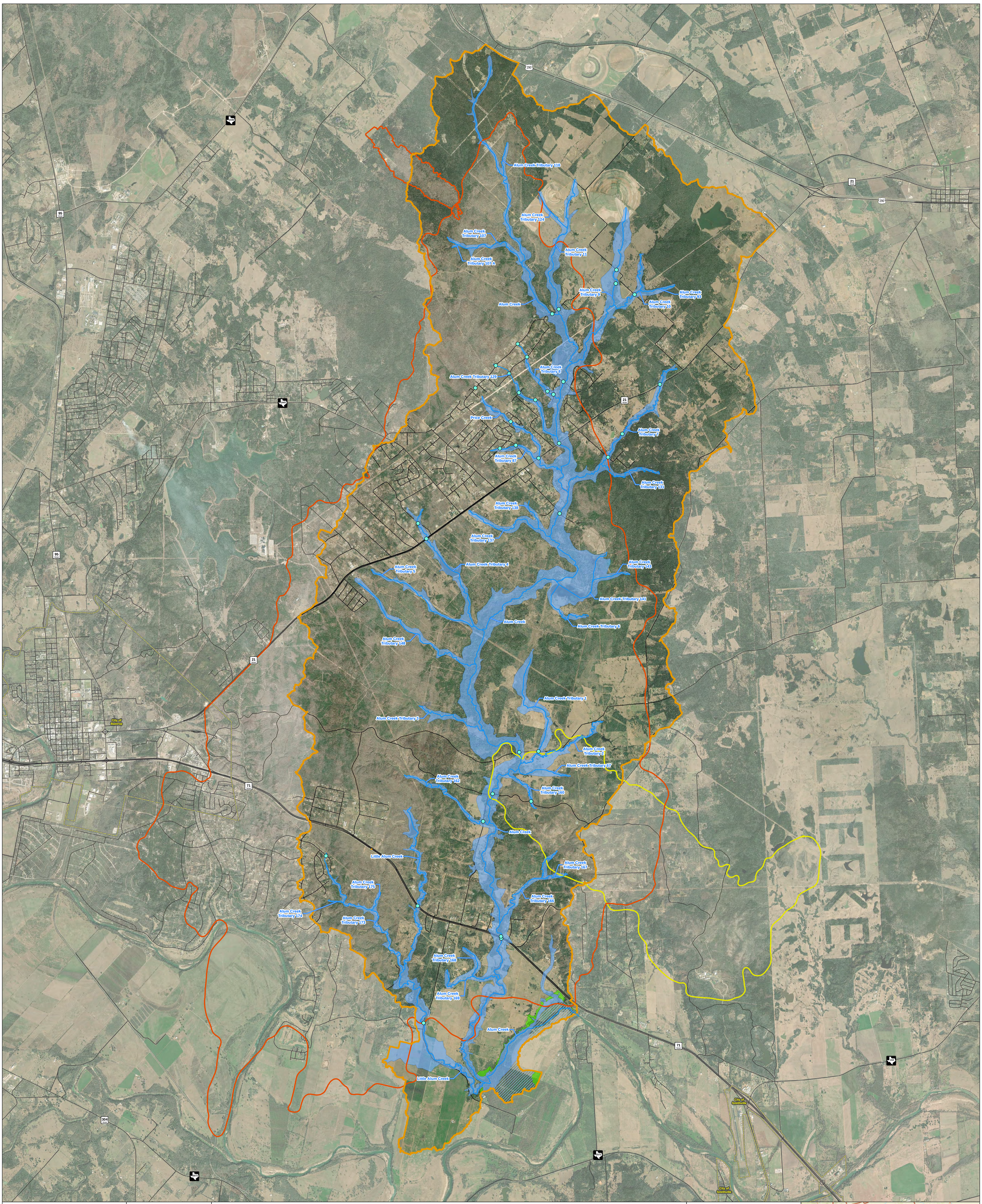
5.4 Regional Detention Pond Alternative

The hydrologic and hydraulic analysis developed in this study was used to identify areas of flood risk. The proposed location for the regional detention is in a sparsely populated area of the County and in a naturally depressed area along Alum Creek. However, there are currently 22 homes within the 1% ACE existing conditions floodplain downstream of the proposed location. A regional detention pond would decrease the existing conditions floodplain elevations that could reduce the flood risk for the residences downstream of the pond.

A conceptual regional detention pond located in the upper portion of the watershed at the confluence of Alum Creek and Alum Creek Tributary 9 is proposed to temporarily detain flow waters and release the flow at a later time. This will reduce peak flows further downstream along Alum Creek to lower flood elevations during a 1% ACE storm. The detention pond would only hold water during a storm event; otherwise, it will be a dry pond. As an in-line structure (dam) along Alum Creek, this potential regional detention would be created within a natural basin that could be spanned by an approximately 1,700-foot long earthen embankment. The regional detention facility would have a contributing drainage area of 12.9 square mile. with a 16-foot high dam (top elevation at 641 feet) that could store approximately 625 acre-feet of water as shown in the attached maps. An earthen embankment of this size would be classified by TCEQ Dam Safety as a Small, High Hazard dam due to homes located downstream of the embankment. This TCEQ classification of dam would require continued maintenance in perpetuity.

Hydrologic analysis of the conceptual detention facility reduced the 1% ACE peak flow at the confluence of Alum Creek and Alum Creek Tributary 9 by approximately 64%. To achieve this 64% reduction, the outfall structure would be designed to release 10,800 cfs during the 1% ACE storm event. This reduction of peak flow was entered into the Alum Creek hydraulic model that resulted in a slight reduction of the 1% ACE flood elevations as shown in the attached maps. The regional detention alternative removes 12 homes from the 1% ACE water elevations. However, the hydrologic and hydraulic evaluation of a conceptual detention facility resulted in minimal reductions to the 1% ACE floodplain.

An estimate of probable cost for the proposed regional detention is shown in Appendix H-3. In addition, due to the height and storage volume of the conceptual regional detention, this detention facility would require design to meet TCEQ Dam Safety requirement.



Alum Creek Watershed

Overview

THE STATE OF TEXAS COUNTY OF BASTROP

Texas Water Development Board

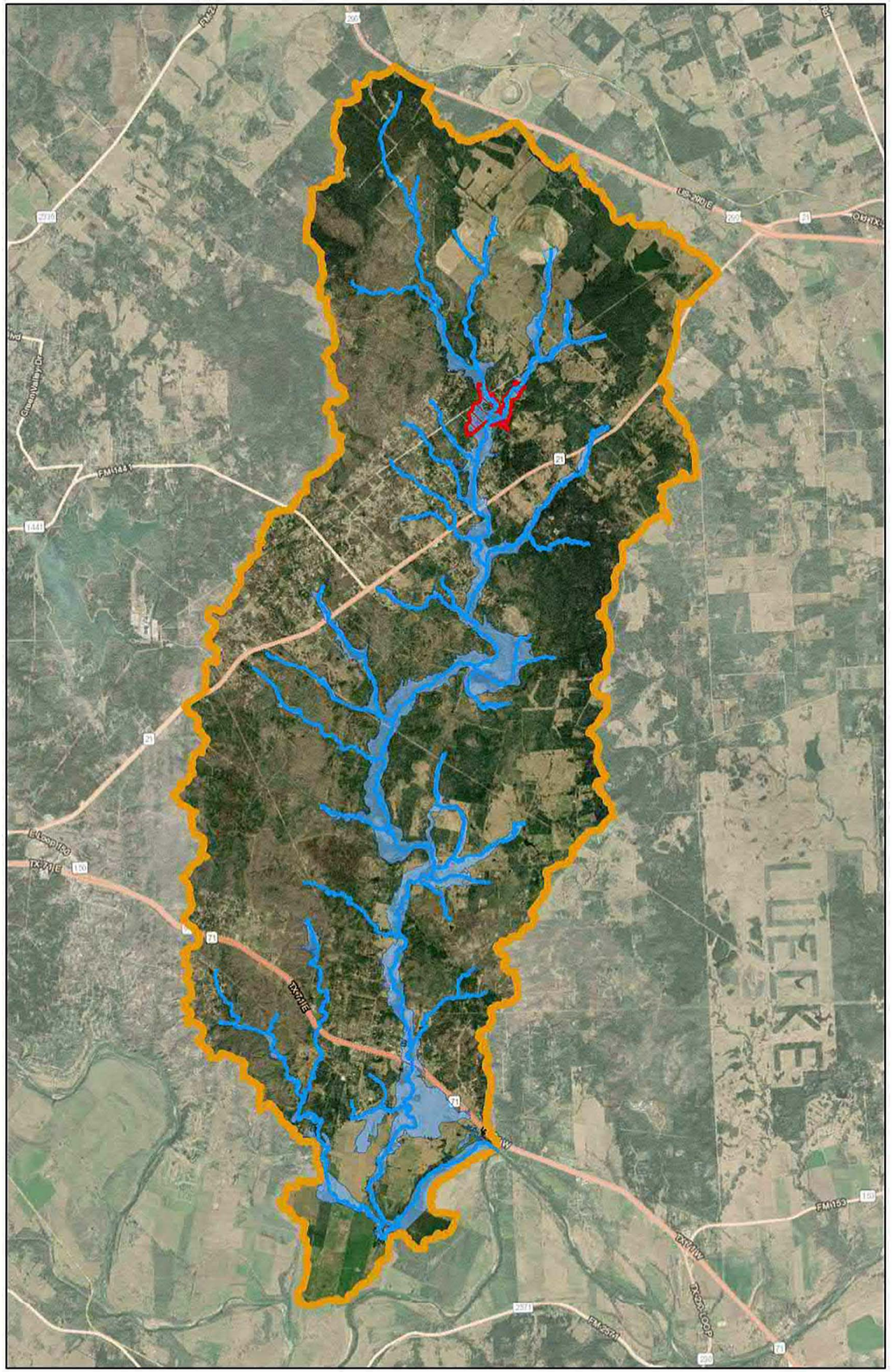
Legend

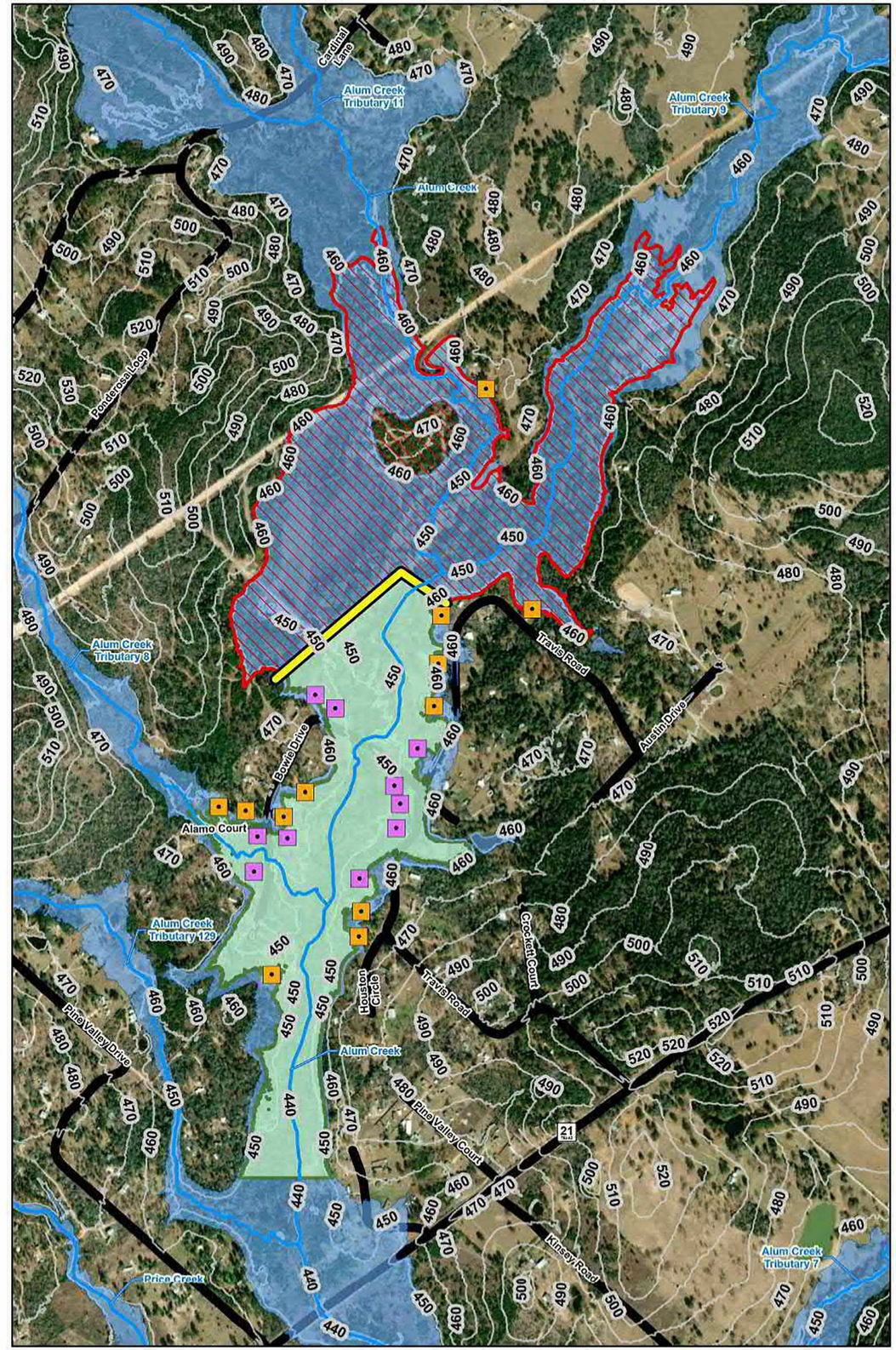
- Road Crossing
- Stream Centerlines
- Roads
- City Boundary
- Watershed Boundary
- Bastrop Complex Fire Perimeter
- Hidden Pines Fire Boundary
- FEMA Floodway
- FEMA Zone A/AE
- FEMA Zone X

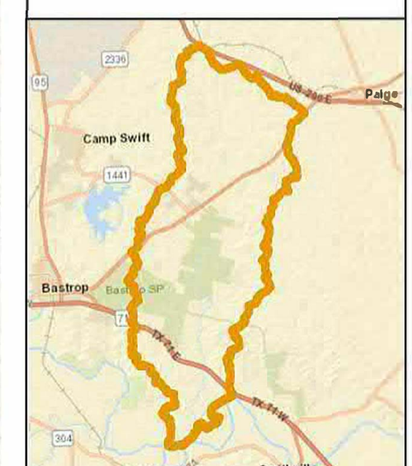
N

Feet
0 2,000 4,000

1 inch = 2,000 feet







THE STATE OF TEXAS
COUNTY OF BASTROP

Regional Detention Pond Alternative

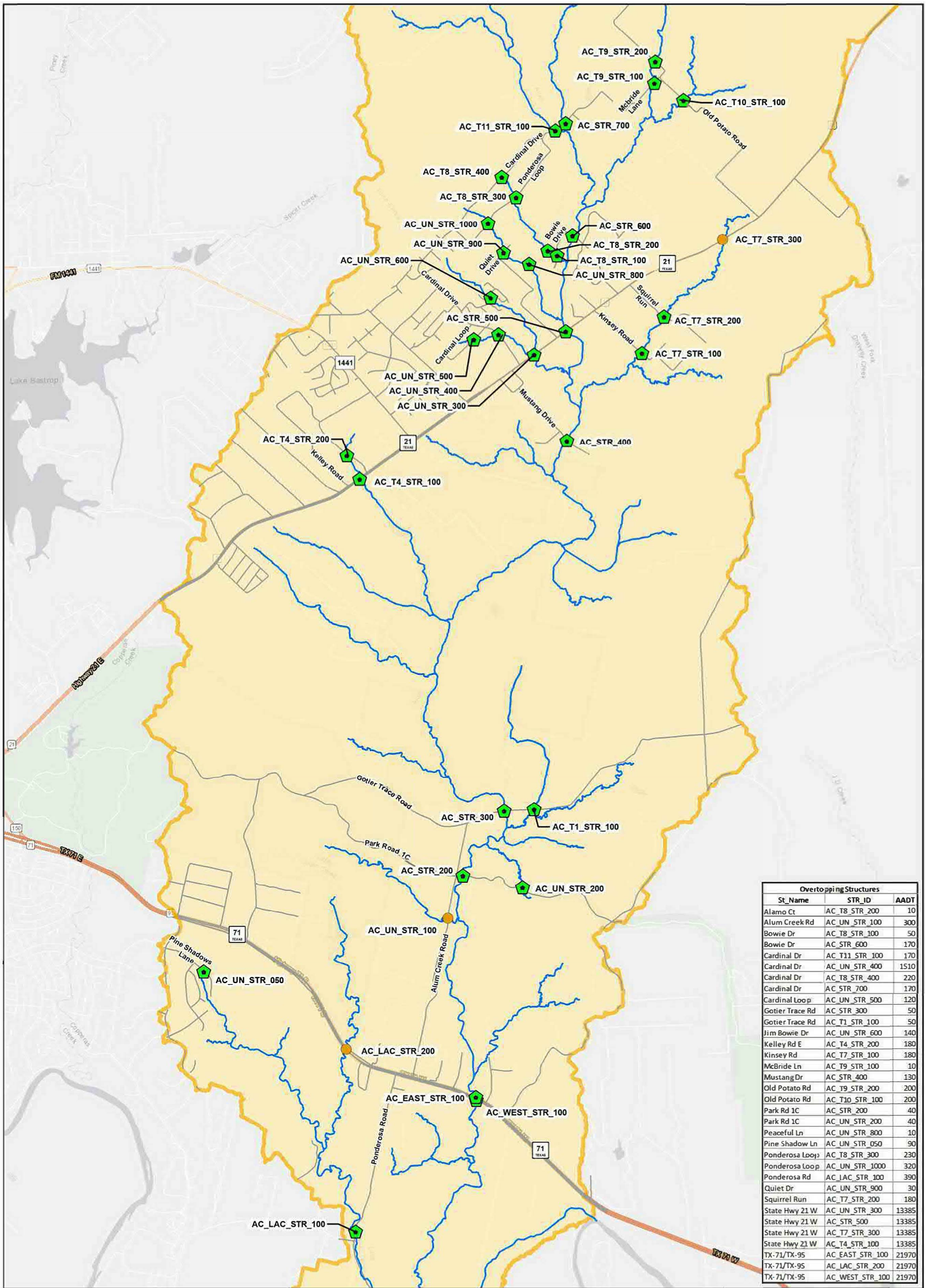
Legend

- Structures Removed from
- Structures Remaining in
- Proposed Embankment
- 10ft Contours
- Proposed Detention
- Proposed 100 Year Floodplain (With
- Proposed 100 Year Floodplain (No
- Alum Creek Watershed

N

1 inch = 1,000 feet

0 1,000 2,000 Feet



Overtopping Structures		
St_Name	STR_ID	AADT
Alamo Ct	AC_T8_STR_200	10
Alum Creek Rd	AC_UN_STR_100	300
Bowie Dr	AC_T8_STR_100	50
Bowie Dr	AC_STR_600	170
Cardinal Dr	AC_T11_STR_100	170
Cardinal Dr	AC_UN_STR_400	1510
Cardinal Dr	AC_T8_STR_400	220
Cardinal Dr	AC_STR_700	170
Cardinal Loop	AC_UN_STR_500	120
Gotier Trace Rd	AC_STR_300	50
Gotier Trace Rd	AC_T1_STR_100	50
Jim Bowie Dr	AC_UN_STR_600	140
Kelley Rd E	AC_T4_STR_200	180
Kinsey Rd	AC_T7_STR_100	180
McBride Ln	AC_T9_STR_100	10
Mustang Dr	AC_STR_400	130
Old Potato Rd	AC_T9_STR_200	200
Old Potato Rd	AC_T10_STR_100	200
Park Rd 1C	AC_STR_200	40
Park Rd 1C	AC_UN_STR_200	40
Peaceful Ln	AC_UN_STR_800	10
Pine Shadow Ln	AC_UN_STR_050	90
Ponderosa Loop	AC_T8_STR_300	230
Ponderosa Loop	AC_UN_STR_1000	320
Ponderosa Rd	AC_LAC_STR_100	390
Quiet Dr	AC_UN_STR_900	30
Squirrel Run	AC_T7_STR_200	180
State Hwy 21 W	AC_UN_STR_300	13385
State Hwy 21 W	AC_STR_500	13385
State Hwy 21 W	AC_T7_STR_300	13385
State Hwy 21 W	AC_T4_STR_100	13385
TX-71/TX-95	AC_EAST_STR_100	21970
TX-71/TX-95	AC_LAC_STR_200	21970
TX-71/TX-95	AC_WEST_STR_100	21970

Road Crossing Map

Legend

Crossing Overtop

- Yes
- No

- Study Streams
- Roads
- Alum Creek Watershed

N

0 2,000 4,000 Feet

1 inch = 4,000 feet

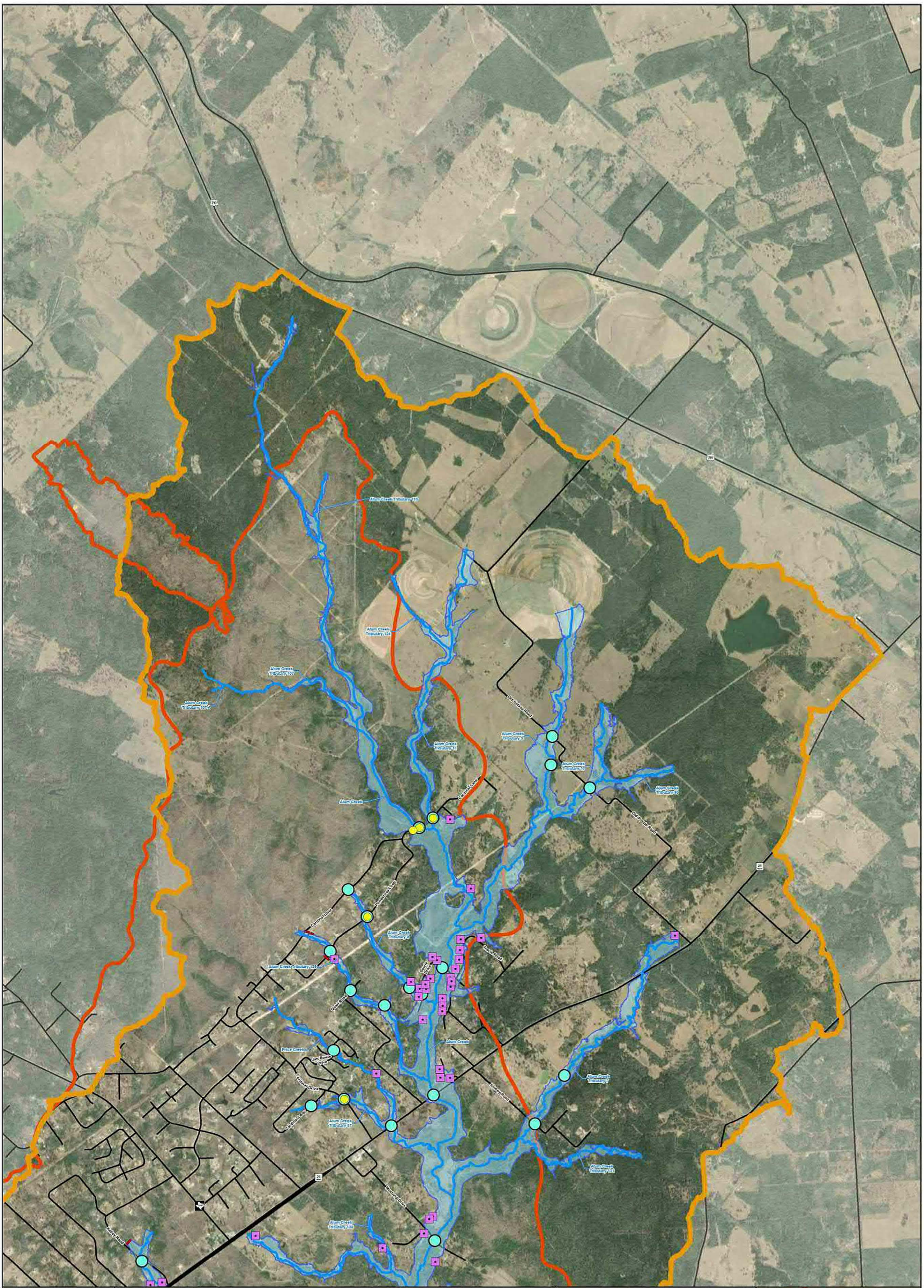


Exhibit A-1 Watershed Overview	Upper Watershed

HALFF

Legend

- Overtopped Road Crossing
- Structures in 100yr Floodplain
- Roadway Improvements
- Stream Centerlines
- Limit of Study
- Roads
- Watershed Boundary
- Floodplain
- Bastrop Complex Fire Perimeter

N

0 3,000 6,000 Feet

1 inch = 3,000 feet

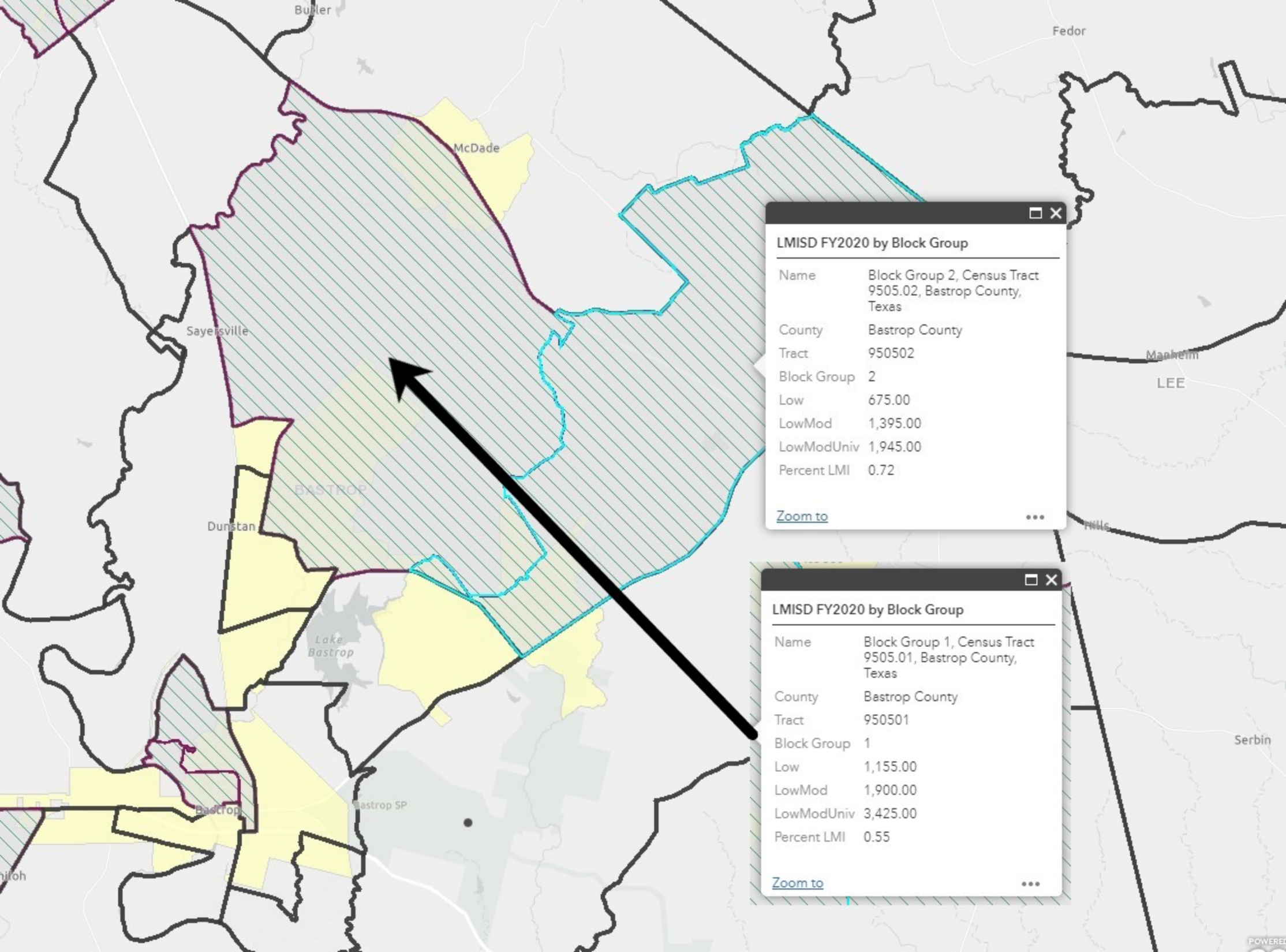

Butler
Fedor
McDade
Sayersville
BASTROP
Dunstan
Lake Bastrop
Bastrop
Bastrop SP
Manheim
LEE
Serbin
LMISD FY2020 by Block Group
Name Block Group 2, Census Tract 9505.02, Bastrop County, Texas
County Bastrop County
Tract 950502
Block Group 2
Low 675.00
LowMod 1,395.00
LowModUniv 1,945.00
Percent LMI 0.72
Zoom to
LMISD FY2020 by Block Group
Name Block Group 1, Census Tract 9505.01, Bastrop County, Texas
County Bastrop County
Tract 950501
Block Group 1
Low 1,155.00
LowMod 1,900.00
LowModUniv 3,425.00
Percent LMI 0.55
Zoom to

TABLE 1 - CONTRACT BUDGET AND BENEFICIARY IDENTIFICATION

Provide comprehensive budget information to include construction, engineering, acquisition, environmental services, and administrative costs. Also include all other funds (FEMA, insurance, local, etc.) committed to the completion of the proposed projects.

A *project* is defined as a discrete combination of: entity (i.e., city or county), activity (i.e., water, sewer, etc.), beneficiary population, and national objective. A *site* is defined as a discrete location for activities within a project. A project can have one or more sites.

BUDGET TABLE:

Project Title:	Total Benes	LMI Benes	LMI %	CDBG-DR Construction	CDBG-DR Engineering	CDBG-DR Acquisition	CDBG-DR Environmental	CDBG-DR Admin	Total CDBG-DR Request	Other Funds	Activity Total
# 033i Alum Creek Drainage Study	5,370	3,295	61.36%	11,130,300	$1,669,545.0	$0.00	$30,000.00	$993,987.60	13,823,832.6	$138,238.33	13,962,070.9
SUMMARY TOTALS:	5,370	3,295	61.36%	11,130,300	$1,669,545.0	$0.00	$30,000.00	$993,987.60	13,823,832.6	$138,238.33	13,962,070.9

Beneficiary Identification Method(s) Per Project:

03i Project Title: Alum Creek Drainage Study

HUD National Objective: Benefiting low- and moderate- (L/M) income persons

Select One Benefit Type:	City-wide Benefit ☐	County-wide Benefit ☐	Area Benefit ☒	Direct Benefit ☐

Select Beneficiary Identification Method:

☐ SURVEY: An approved TxCDBG survey was used to identify the beneficiaries for this activity.

☒ HUD LMISD information was used to identify the beneficiaries for this activity.

☐ The required Census or Texas State Data Center map has been provided.

Provide the number of beneficiaries identified through each of the following methods for this activity:

TxCDBG Survey: 0 HUD LMISD: 5,370 Area Benefit: 0 Housing Activity: 0 Limited Clientele: 0

Race	# Non-Hispanic Beneficiaries	# Hispanic Beneficiaries	Total Activity Beneficiaries
White	2,915	861	3,776
Black African American	406	27	433
American Indian/Alaskan native	24	3	27
Asian	47	2	49
Native Hawaiian / Other Pacific Islander	0	0	0
Black African American/White	13	21	34
American Indian/Alaskan Native/White	12	20	32

Asian/White	3	5	8
American Indian/Alaskan Native/Black African Ame	1	1	2
Other Multi-Racial	54	955	1,009
	3,475	1,895	5,370
Gender	Total Males	Total Females	Total Benes
	2732	2638	5370

Click here to ADD ANOTHER Table 1

Click here to REMOVE the last Table 1

REQUIRED - Census Geographic Area Data

Identify the census tract and block group(s) in which the project will take place

County Code: 021

Census Tract (6-digit)	01	02	03	04	05	06	07	08	09	10
9505.01	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐
Census Tract (6-digit)	01	02	03	04	05	06	07	08	09	10
9505.01	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐

Project: Bastrop Co. Flood Protection Planning
Stream: Alum Creek
Crossing: AC_STR_700 on Cardinal Dr.

Engineer's Estimate of Probable Construction Cost

PAY ITEM	DESCRIPTION	UNITS	UNIT PRICE	QTY	TOTALS
0100 6002	PREPARING ROW	STA	$2,800	3	$8,680
0110 6001	EXCAVATION (ROADWAY)	CY	$20	159	$3,189
0132 6006	EMBANKMENT (DENSITY, TYPE C)	CY	$35	241	$8,439
0161 6017	COMPOST MANUF TOPSOIL (BOS) (4") AND SEEDING	SY	$15	689	$10,333
0400 6006	CUT & RESTORING PAVEMENT (base and HMAC)	SY	$151	896	$134,915
0402 6001	TRENCH EXCAVATION PROTECTION	LF	$29	105	$3,063
0432 6033	RIPRAP (STONE PROTECTION)(D_{50}=18 IN)	CY	$115	178	$20,444
0432 6033	RIPRAP (STONE PROTECTION)(D_{50}=18 IN)	CY	$115	89	$10,222
0462 6003	CONC BOX CULV (4 FT X 2 FT)	LF	$255	160	$40,800
0462 6004	CONC BOX CULV (4 FT X 3 FT)	LF	$315	80	$25,200
0467 6137	SET (TY I)(S= 4 FT)(HW= 3 FT)(3:1) (C)	EA	$6,000	2	$12,000
04676143	SET (TY I)(S= 4 FT)(HW= 4 FT)(3:1) (C)	EA	$3,100	2	$6,200
0496 6006	REMOV STR (HEADWALL)	EA	$2,000	4	$8,000
0496 6007	REMOV STR (PIPE)	LF	$31	78	$2,430
0500 6001	MOBILIZATION (10%)	LS	$32,300	1	$32,300
0502 6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	$4,500	3	$13,500
0506 6002	EROSION CONTROL	LS	$15,400	1	$15,400
				PROJECT SUBTOTAL	**$355,200**
				30% CONTINGENCY	$106,600
				BASE TOTAL	$461,800
				Environmental Permitting (3%)	$13,900
				Engineering Design (15%)	$69,300
				PROJECT TOTAL	**$545,000**

This statement was prepared utilizing standard cost estimate practices. It is understood and agreed that this is an estimate only, and that Engineer shall not be held liable to Owner or third party for any failure to accurately estimate the cost of the project, or any part thereof. Unit prices are in current dollars and should be adjusted as required when letting schedule for project is determined.

Project: Bastrop Co. Flood Protection Planning
Stream: Alum Creek Tributary 11
Crossing: AC_T11_STR_100 on Cardinal Dr.

Engineer's Estimate of Probable Construction Cost

PAY ITEM	DESCRIPTION	UNITS	UNIT PRICE	QTY	TOTALS
0100 6002	PREPARING ROW	STA	$2,800	4	$11,200
0110 6001	EXCAVATION (ROADWAY)	CY	$20	213	$4,267
0132 6006	EMBANKMENT (DENSITY, TYPE C)	CY	$35	320	$11,200
0161 6017	COMPOST MANUF TOPSOIL (BOS) (4") AND SEEDING	SY	$15	800	$12,000
0400 6006	CUT & RESTORING PAVEMENT (base and HMAC)	SY	$155	960	$148,800
0402 6001	TRENCH EXCAVATION PROTECTION	LF	$30	120	$3,600
0432 6033	RIPRAP (STONE PROTECTION)(D_{50}=18 IN)	CY	$115	222	$25,556
0462 6017	CONC BOX CULV (7 FT X 6 FT)	LF	$705	200	$141,000
0467 6256	SET (TY I)(S= 7 FT)(HW= 7 FT)(3:1) (C)	EA	$13,500	2	$27,000
0496 6006	REMOV STR (HEADWALL)	EA	$2,000	2	$4,000
0496 6007	REMOV STR (PIPE)	LF	$35	104	$3,640
0500 6001	MOBILIZATION (10%)	LS	$42,600	1	$42,600
0502 6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	$4,500	3	$13,500
0506 6002	EROSION CONTROL	LS	$20,300	1	$20,300
				PROJECT SUBTOTAL	**$468,700**
				30% CONTINGENCY	$140,700
				BASE TOTAL	$609,400
				Environmental Permitting (3%)	$18,300
				Engineering Design (15%)	$91,500
				PROJECT TOTAL	**$719,200**

This statement was prepared utilizing standard cost estimate practices. It is understood and agreed that this is an estimate only, and that Engineer shall not be held liable to Owner or third party for any failure to accurately estimate the cost of the project, or any part thereof. Unit prices are in current dollars and should be adjusted as required when letting schedule for project is determined.

Project: Bastrop Co. Flood Protection Planning
Stream: Alum Creek Tributary 87
Crossing: AC_UN_STR_400 on Cardinal Dr.

Engineer's Estimate of Probable Construction Cost

PAY ITEM	DESCRIPTION	UNITS	UNIT PRICE	QTY	TOTALS
0100 6002	PREPARING ROW	STA	$2,800	2	$5,600
0110 6001	EXCAVATION (ROADWAY)	CY	$20	33	$652
0132 6006	EMBANKMENT (DENSITY, TYPE C)	CY	$35	77	$2,696
0161 6017	COMPOST MANUF TOPSOIL (BOS) (4") AND SEEDING	SY	$15	231	$3,467
0400 6006	CUT & RESTORING PAVEMENT (base and HMAC)	SY	$151	277	$41,780
0402 6001	TRENCH EXCAVATION PROTECTION	LF	$29	60	$1,750
0432 6033	RIPRAP (STONE PROTECTION)(D_{50}=18 IN)	CY	$115	133	$15,333
0462 6021	CONC BOX CULV (8 FT X 6 FT)	LF	$700	120	$84,000
0467 6283	SET (TY I)(S= 8 FT)(HW= 7 FT)(3:1) (C)	EA	$12,000	2	$24,000
0496 6006	REMOV STR (HEADWALL)	EA	$2,000	2	$4,000
0496 6007	REMOV STR (PIPE)	LF	$35	52	$1,820
0500 6001	MOBILIZATION (10%)	LS	$20,800	1	$20,800
0502 6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	$4,500	3	$13,500
0506 6002	EROSION CONTROL	LS	$9,900	1	$9,900
				PROJECT SUBTOTAL	**$229,300**
				30% CONTINGENCY	$68,800
				BASE TOTAL	$298,100
				Environmental Permitting (3%)	$9,000
				Engineering Design (15%)	$44,800
				PROJECT TOTAL	**$351,900**

This statement was prepared utilizing standard cost estimate practices. It is understood and agreed that this is an estimate only, and that Engineer shall not be held liable to Owner or third party for any failure to accurately estimate the cost of the project, or any part thereof. Unit prices are in current dollars and should be adjusted as required when letting schedule for project is determined.

Project: Bastrop Co. Flood Protection Planning
Stream: Alum Creek Tributary 8
Crossing: AC_T8_STR_300 on Ponderosa Loop

Engineer's Estimate of Probable Construction Cost

PAY ITEM	DESCRIPTION	UNITS	UNIT PRICE	QTY	TOTALS
0100 6002	PREPARING ROW	STA	$2,800	2	$5,376
0110 6001	EXCAVATION (ROADWAY)	CY	$20	60	$1,194
0132 6006	EMBANKMENT (DENSITY, TYPE C)	CY	$35	185	$6,471
0161 6017	COMPOST MANUF TOPSOIL (BOS) (4") AND SEEDING	SY	$15	427	$6,400
0400 6006	CUT & RESTORING PAVEMENT (base and HMAC)	SY	$151	555	$83,561
0402 6001	TRENCH EXCAVATION PROTECTION	LF	$29	130	$3,792
0432 6033	RIPRAP (STONE PROTECTION)(D_{50}=18 IN)	CY	$115	133	$15,333
04626020	CONC BOX CULV (8 FT X 5 FT)	LF	$625	120	$75,000
0467 6279	SET (TY I)(S= 8 FT)(HW= 6 FT)(3:1) (C)	EA	$13,000	2	$26,000
0496 6006	REMOV STR (HEADWALL)	EA	$2,000	2	$4,000
0496 6007	REMOV STR (PIPE)	LF	$31	78	$2,430
0500 6001	MOBILIZATION (10%)	LS	$25,500	1	$25,500
0502 6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	$4,500	3	$13,500
0506 6002	EROSION CONTROL	LS	$12,200	1	$12,200
				PROJECT SUBTOTAL	**$280,800**
				30% CONTINGENCY	$84,300
				BASE TOTAL	$365,100
				Environmental Permitting (3%)	$11,000
				Engineering Design (15%)	$54,800
				PROJECT TOTAL	**$430,900**

This statement was prepared utilizing standard cost estimate practices. It is understood and agreed that this is an estimate only, and that Engineer shall not be held liable to Owner or third party for any failure to accurately estimate the cost of the project, or any part thereof. Unit prices are in current dollars and should be adjusted as required when letting schedule for project is determined.

Project: Bastrop Co. Flood Protection Planning

Stream: Alum Creek

Alternative: Regional Detention Facility

Engineer's Estimate of Probable Construction Cost

PAY ITEM	DESCRIPTION	UNITS	UNIT PRICE	QTY	TOTALS
1	MOBILIZATION (10%)	LS	$267,700	1	$267,700
2	PREPARING ROW	AC	$15,000	5	$76,102
3	EXCAVATION	CY	$20	33,056	$661,111
4	EMBANKMENT	CY	$35	30,000	$1,050,000
5	TOPSOIL AND SEEDING	SY	$12	7,688	$92,253
6	CARE OF WATER	MO	$10,000	12	$120,000
7	SLURRY TRENCH WALL (SEEPAGE CONTROL)	SF	$20	25,500	$510,000
8	OUTFALL STRUCTURE	LS	$50,000	1	$50,000
9	HOUSTON TOAD MONITORING	LS	$40,000	1	$40,000
10	EROSION CONTROL (3%)	LF	$78,000	1	$78,000
				PROJECT SUBTOTAL	**$2,945,200**
				30% CONTINGENCY	$883,600
				BASE TOTAL	$3,828,800
				Environmental Permitting (3%)	$114,900
				Engineering Design (15%)	$574,400
				PROJECT TOTAL	**$4,518,100**

This statement was prepared utilizing standard cost estimate practices. It is understood and agreed that this is an estimate only, and that Engineer shall not be held liable to Owner or third party for any failure to accurately estimate the cost of the project, or any part thereof. Unit prices are in current dollars and should be adjusted as required when letting schedule for project is determined.