

AGENDA

CITY OF TAYLOR, TEXAS
SPECIAL CALLED CITY COUNCIL WORKSHOP
TAYLOR PUBLIC LIBRARY, 801 VANCE STREET, TAYLOR TX.

NOVEMBER 16, 2021, 6:00 P.M.

CALL TO ORDER AND DECLARE A QUORUM

REGULAR AGENDA; REVIEW/DISCUSS AND CONSIDER ACTION

1. Update, discussion, and direction to staff on the Drainage Master Plan. (Jim Gray/Erika Nordstrom with Halff Associates)

ADJOURN

The Council may vote and/or act upon each of the items listed in this Agenda. The Council reserves the right to retire into executive session concerning any of the items listed on this Agenda, whenever it is considered necessary and legally justified under the Open Meetings Act including: Section 551.071 (Consult with attorney); Section 551.072 (Real Property); Section 551.073 (Gifts and Donations); Section 551.074 (Personnel Matters); Section 551.076 (Security Devices); and Section 551.087 (Economic Development). I certify that the notice of meeting was posted in the Taylor City Hall Lobby before 6:00 p.m. on November 12, 2021 and remained posted for at least 72 hours continuously before the scheduled time of said meeting. I further certify that the following news media was notified of this meeting: Taylor Press.

In compliance with the ADA the City Hall and Council Chambers is wheelchair accessible. Reasonable accommodations will be provided for persons attending city council meetings in need of special assistance. Please contact the City Clerk at least 24 hours prior to the meeting for special assistance.

Posted By:


Lucretia Alvarez, Assistant City Clerk

Date

Nov. 12, 2021



City Council Meeting November 16, 2021 Transmittal Letter

STRATEGIC PILLAR

☒ Streets/Infrastructure

☒ Quality of Life

☐ Economic Vitality

Agenda Item #: 1

Agenda Title: **City Council Workshop for Update,
Discussion, and Direction associated
with the City of Taylor Master Drainage Plan**

Council Action to be taken: Discussion on Local Projects identified by Taylor
Drainage Master Plan

Department Submitted: Public Works

Staff Contact: Jim Gray, Director of Public Works,
Jacob Walker, HDR
Stephen Crawford/Erika Nordstrom, Halff Associates Inc.

1. PURPOSE/DESCRIPTION

City Council workshop which will present local projects identified as part of the City of Taylor Drainage Master Plan. Halff Associates will present a background on the study, information acquired as part of the study, methodology for analysis of the study, and identification of local projects and their prioritization matrix.

2. STAFF ANALYSIS / BACKGROUND / PRIOR COUNCIL ACTIONS

Halff Associates executed a contract in December 2019 for initiation of the development of the City of Taylor Master Drainage Plan. The project was placed on hold in 2020 from April to July 2020 due to COVID and potential funding concerns. Virtual public open house events and surveys were provided to citizens to gather additional input on drainage issues within the City. Upon receipt of all information and close of public information gathering (Nov 2020), Halff analyzed the entire City limits to identify additional locations within the City prone to flooding. Multiple areas were identified throughout the City, many which confirmed public input and opinion.

Halff has identified approximately 22 projects localized throughout the City for consideration as part of the Master Plan efforts. A prioritization matrix was developed for all 22 projects with weighted factors including number of properties impacted, received public input, City staff input and project cost.

3. PROS and CONS

<u>PROS</u>	<u>CONS</u>
• Seek City Council input • Council and staff able to ask questions on preliminary identified projects • Halff to receive direction to finalize a draft of the Master Plan	• Drainage Master Plan project prioritization does not correlate to anticipated City Grant application for Benefit Cost Analysis

4. RECOMMENDATION

Provide direction to Halff on any project prioritization adjustments based on workshop presentation.

5. FUNDING SOURCE

6. TIMELINE

7. OTHER OPTIONS (In order of preference)

8. ATTACHMENTS

1a [Power Point Presentation](#)

- Local Project Overview
- Local Project Detailed information



City of Taylor Drainage Master Plan

Project Prioritization

November 16, 2021

AGENDA

- Drainage Master Plan Overview
- Modeling Overview
 - Identification of Projects
- Recap of Previous Council Meeting
- Prioritization of Local Solutions
- Local Proposed Projects
- Steps to Completion
- Questions



Drainage Master Plan Overview

DRAINAGE MASTER PLAN OVERVIEW

- History of flooding and erosion issues
- Increased development has caused more frequent flood impacts to residents' properties
- Increased number of flood complaints received by the City
- Halff Associates hired December 2019 to develop a comprehensive inventory of existing drainage infrastructure, floodplains, flood problem area identification, and flood mitigation solutions
- Due to COVID-19, DMP temporary hold April – July 2020
- Public virtual forum delay Fall 2020
- Completion delay for final direction on riverine and project prioritization



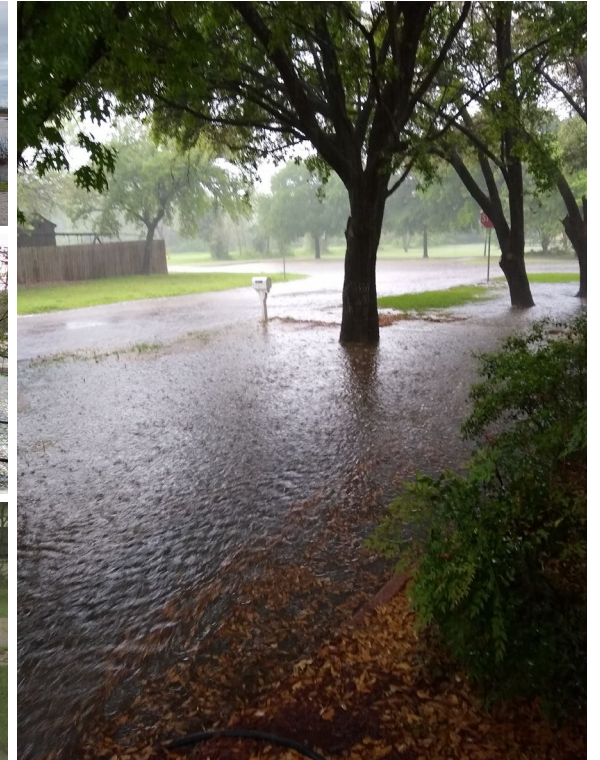
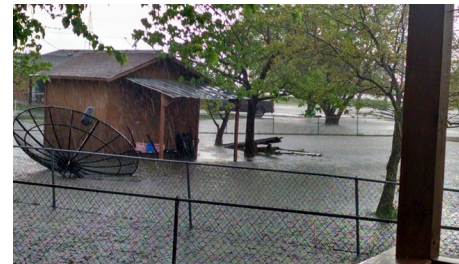
DRAINAGE MASTER PLAN OVERVIEW

- Halff supports the drainage needs of the City
 - 5 years and ongoing under the MDUS
- Developed a comprehensive inventory of existing drainage infrastructure/concerns
- 35 Municipal Drainage Utility System locations previously studied by Halff Associates



DRAINAGE MASTER PLAN OVERVIEW — DATA COLLECTED

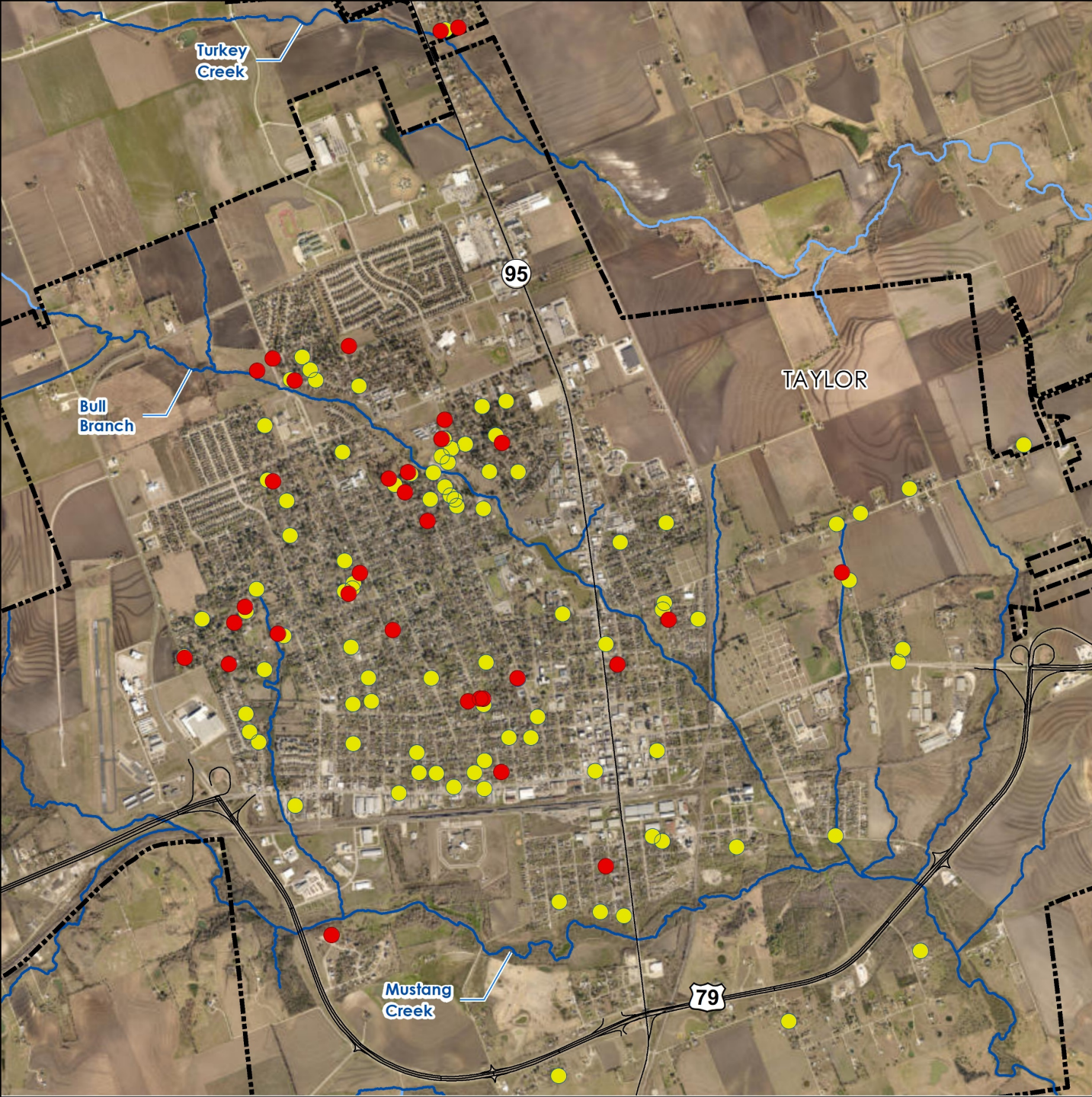
- Road crossing survey and field reconnaissance
- Resident videos, photos, and descriptions of flooding
- Virtual public meeting feedback
- Resident questionnaire via Survey Monkey



DRAINAGE MASTER PLAN OVERVIEW – PUBLIC INPUT

- Virtual Public Meeting
 - Available October 14th – November 12th; Reposted thru November 30th
 - 49 unique log-ins
 - 4 additional flooding areas identified with photos and notes
- Survey Monkey
 - 32 questionnaire responses
- 17 direct emails from residents





Public Input Location

MDUS Location

Study Stream

Non-Study Stream

City Boundary



Modeling Overview

MODELING OVERVIEW

- Goal:
 - Local Flood Risk
 - Identifies ponding in streets, properties
 - Not directly related to riverine flooding
 - Riverine Flood Risk
 - Road overtopping, flooding in excess of stream banks, erosion
 - Turkey Creek, Bull Branch, Mustang Creek, and tributaries

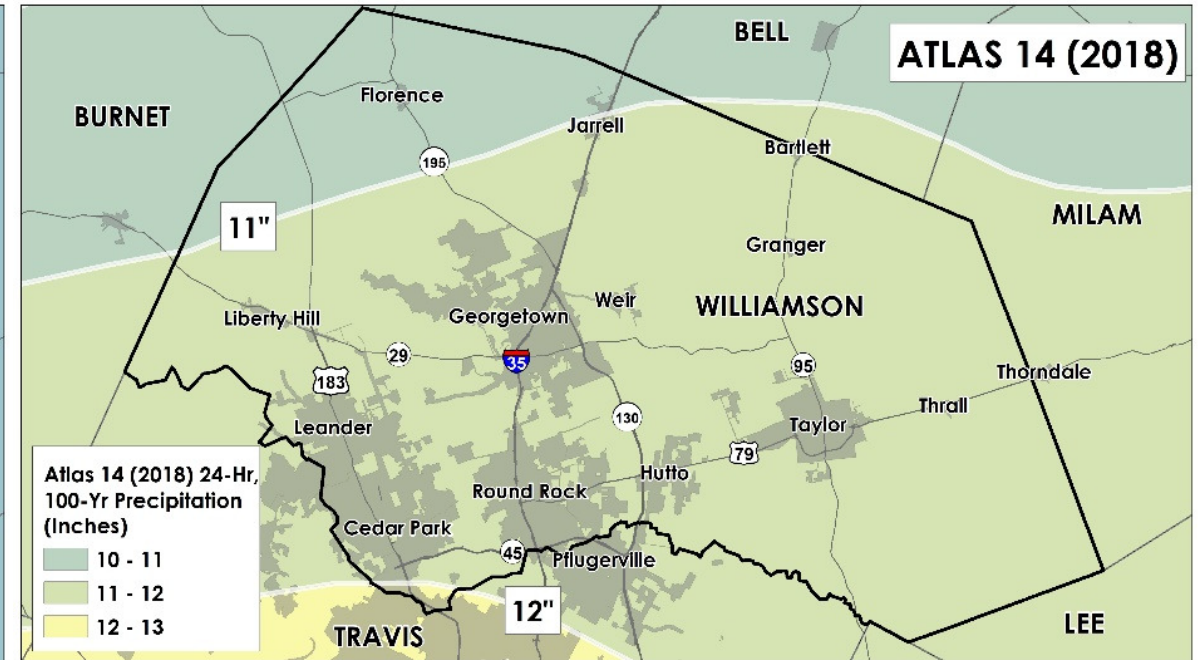
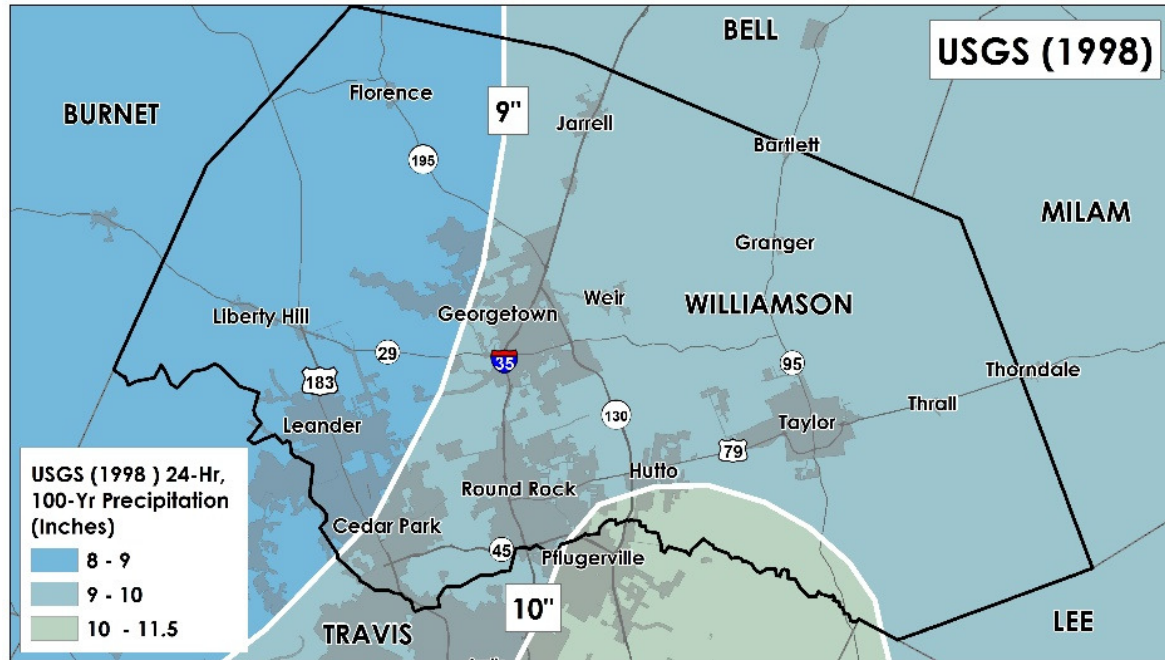


MODELING OVERVIEW - DATA

- 2017 LiDAR
- Atlas 14 Rainfall
- Current Aerial Imagery
- 2020 Survey and Field Reconnaissance
 - Additional site visits and measurements conducted in 2021 for riverine hydraulic structures



MODELING OVERVIEW – RAINFALL DATA



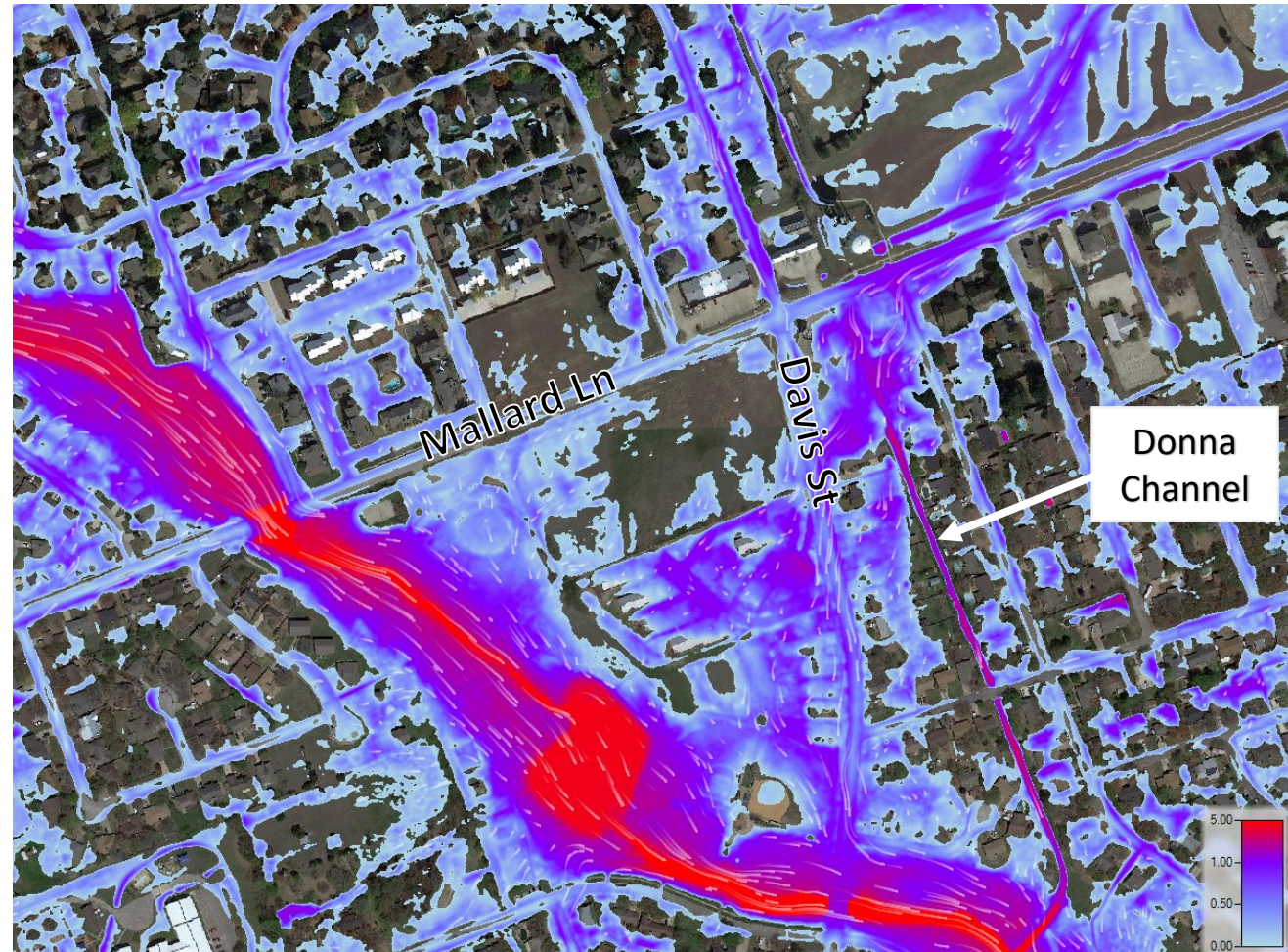
MODELING OVERVIEW – RAINFALL DATA

Frequency Event	Annual Chance Probability	Countywide Average 24-hour Precipitation Depths (inches)	
		USGS (1998)	ATLAS 14 (2018)
500-year	0.2%	12.9	16.1
100-year	1%	9.7	11.1
50-year	2%	8.5	9.5
25-year	4%	7.3	8.0
10-year	10%	5.9	6.3
5-year	20%	4.9	5.1
2-year	50%	3.4	3.9
1-year	100%	1.2	3.1

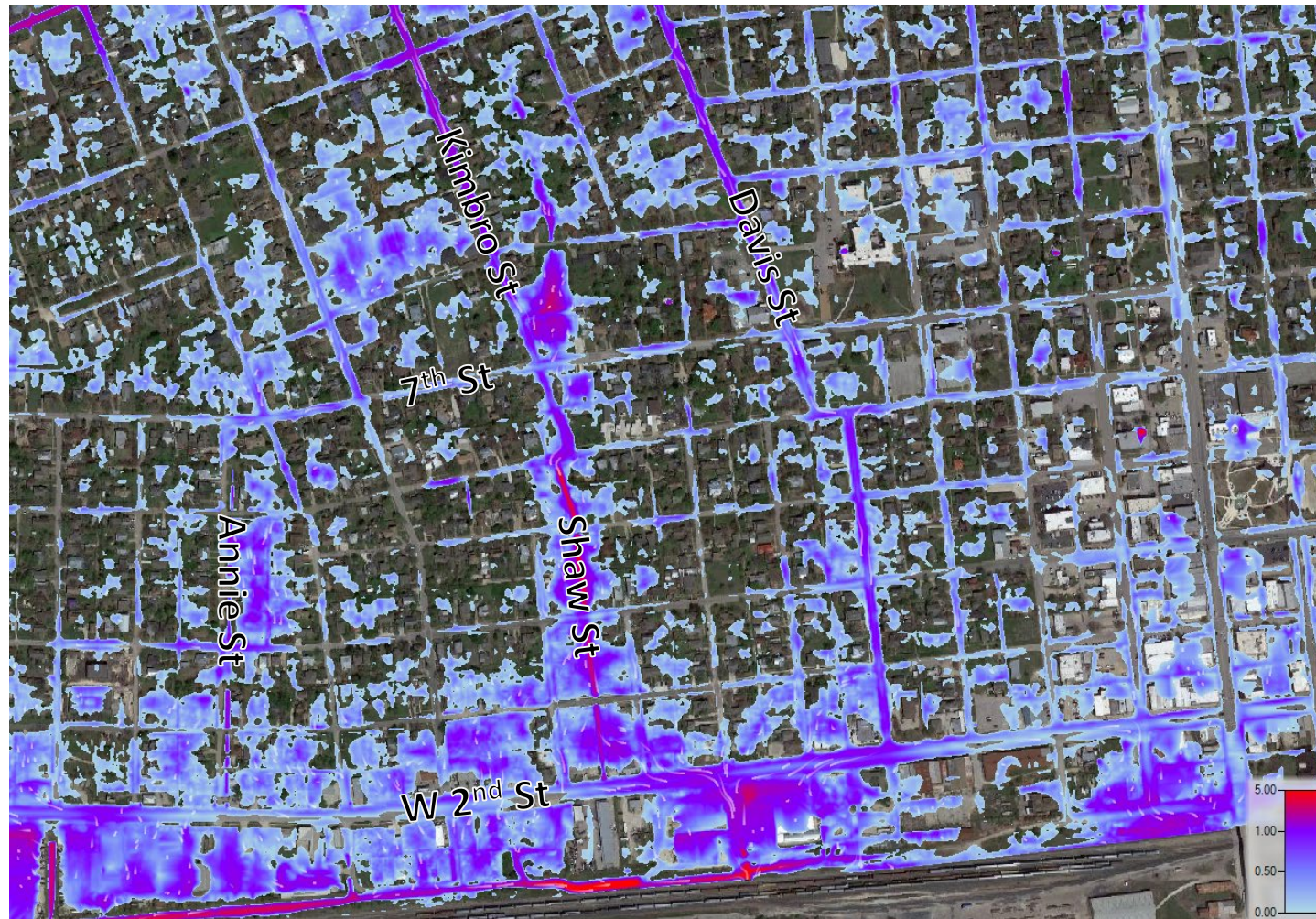


MODELING OVERVIEW – LOCAL FLOOD RISK

- 2D Rapid Assessment
 - Rain-on-mesh
 - 25-yr (4% ACE)
 - 100-yr (1% ACE)
 - 2017 LiDAR
 - Inflow hydrographs



MODELING OVERVIEW – LOCAL FLOOD RISK



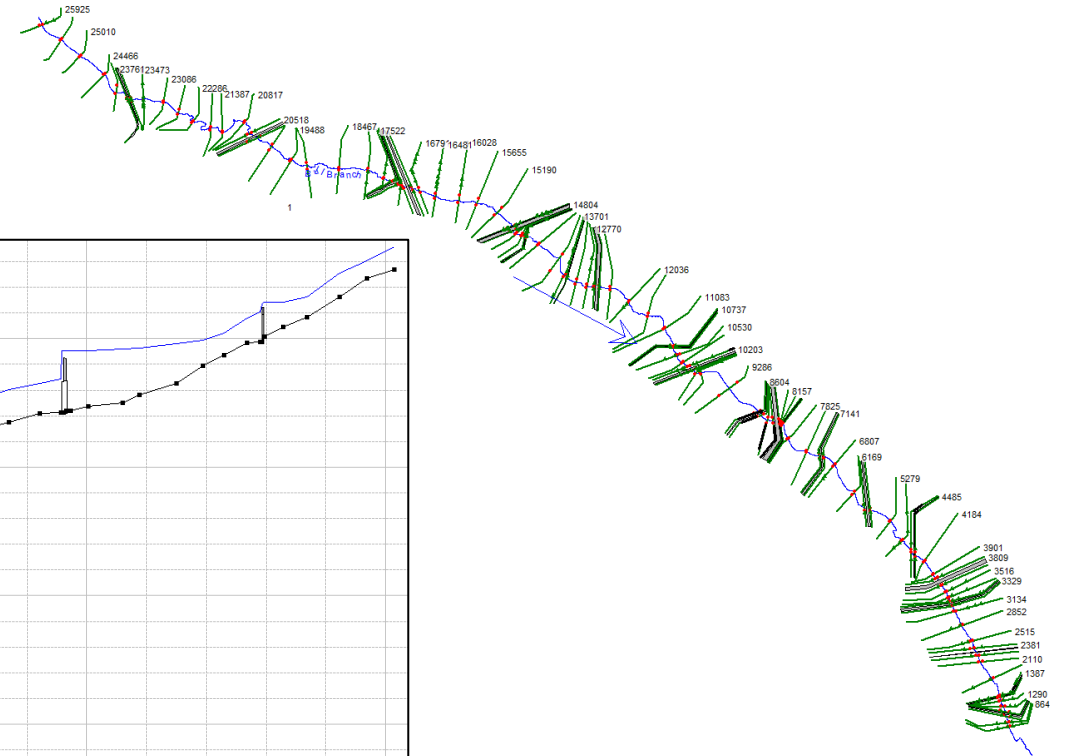
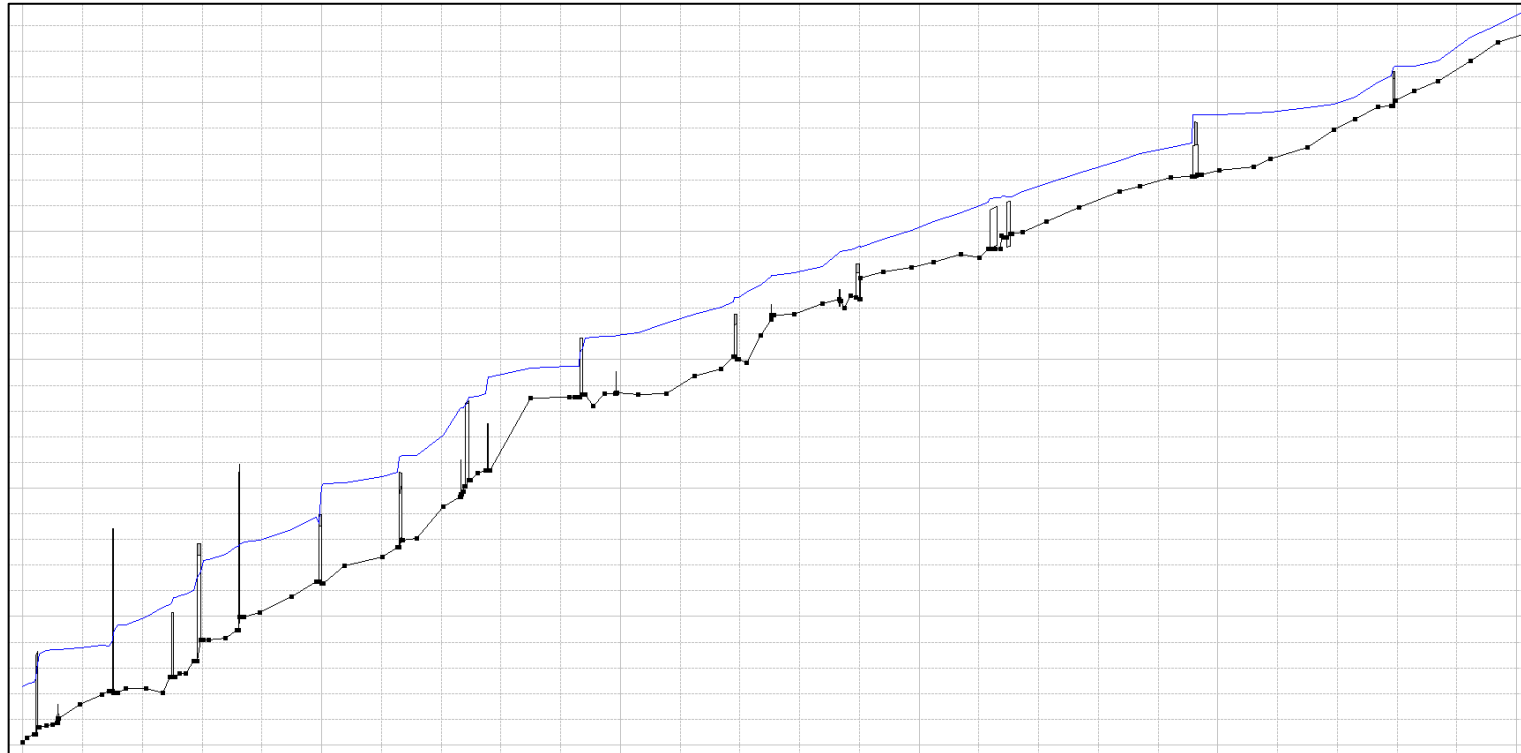
MODELING OVERVIEW – RIVERINE FLOOD RISK

- HEC-RAS
 - Bull Branch and tributaries
 - Mustang Creek and tributaries
 - South Fork Mustang Creek and tributaries
 - North Fork Mustang Creek and tributaries
 - Turkey Creek and tributaries
 - Railroad Lake Draw
 - Gravel Pit Draw
 - Brushy Creek Tributaries
 - Battleground Creek Tributary



MODELING OVERVIEW – RIVERINE FLOOD RISK

- HEC-RAS Hydraulic Riverine Analysis



MODELING OVERVIEW – IDENTIFICATION OF PROJECTS

- Local flooding (25-year)
- Riverine floodplain (100-year)
- MDUS points, direct public input, virtual public meeting data
- Potential Solutions Evaluated
 - Structural
 - Storm drain improvements
 - Channel improvements
 - Road crossing improvements
 - Drainage channels / ditches
 - Non-Structural
 - Voluntary property buyouts



Recap of Previous City Council Meeting

RECAP OF PREVIOUS COUNCIL MEETING

- Workshop with City Council on September 22nd
 - Focused on riverine solutions only
 - Goal: Direction on frequency passing for crossings unable to meet City criteria (100-year)
- Follow-up
 - Internal City coordination with Fire and PD
 - Staff direction: 25-year passing with no impacted structures
 - City Council concurrence pending



RECAP OF PREVIOUS COUNCIL MEETING

- Fire and PD feedback received via HDR on October 12th
 - Access needed at Carlos G Parker and Main St (Highway 95)
 - Interested in flood monitoring, gates, or auto-closures to reduce PD personnel needed during road closures



Prioritization of Local Solutions

PRIORITIZATION OF LOCAL SOLUTIONS

- Number of homes/properties benefited
- Priority of project to City
 - Based on Staff/HDR feedback on 7/8, 7/21, 7/26, 7/27
- Number of public input points addressed
- Cost
- *Note: CIP project prioritization may not align to grant funding Benefit Cost Analysis (BCA) requirements.*

Percent Weight	Category for Prioritization	Points
50%	Properties Improved	
	0-24	1
	25-49	2
	50+	3
30%	City Priority	
	High	3
	Medium	2
	Low	1
15%	Public Input Points Addressed	
	0-2	1
	3-6	2
	7+	3
5%	Project Cost	
	>\$2M	1
	\$1M-\$2M	2
	<\$1M	3



PRIORITIZATION OF LOCAL SOLUTIONS

Project No.	Local Project ID and Location		OPCC	Homes/ Properties Improved	Public Input Points Addressed	Council District
1	BB_05	Donna Channel	\$ 4,619,410	50	9	4
2	MC_07	Kimbrow/Shaw Street - 2nd Street	\$ 4,205,160	55	8	2
3	MC_08	Davis Street South - 2nd Street	\$ 3,923,320	40	4	2
4	MC_06	Annie Street - 2nd Street	\$ 2,298,180	60	3	2
5	BB_03	Bel Air Drive	\$ 1,057,490	25	5	4
6	BB_11	Mallard Lane	\$ 1,916,860	70	4	3
7	BB_10	Burkett Street	\$ 352,530	15	3	1
8	BB_01	TH Johnson Drive	\$ 871,180	9	2	4
9	BB_08	Velma Drive	\$ 1,082,320	25	1	4
10	MC_02	Gabriel Street	\$ 74,330	4	2	4
11	MC_02	North Drive	\$ 665,370	15	1	4
12	MC_01	Tammi Lane	\$ 1,151,740	15	3	3
13	MC_05	McLain Street	\$ 857,630	24	1	4
14	GPD_02	Mariposa Lane	\$ 594,630	22	2	1
15	BB_12	Otis Street	\$ 654,830	17	0	4
16	MC_04	Travis Street	\$ 670,690	16	1	2
17	GPD_01	Old Thorndale Road	\$ 434,050	6	3	1
18	TC_01	Sandy Lane	\$ 3,212,200	12	3	4
19	MC_09	West Mustang Street	\$ 593,930	20	2	1
20	BB_13	North Main Street	\$ 58,660	20	2	2
21	BB_06	Davis Street North	\$ 74,190	7	4	4
22	MC_03	Debus Drive	\$ 1,229,870	40	3	2

Council Districts

	Council District 1
	Council District 2
	Council District 3
	Council District 4



PRIORITIZATION OF LOCAL SOLUTIONS

Small (less than \$1M)		
Local Project ID and Location		OPCC
BB_10	Burkett Street	\$ 352,530
BB_01	TH Johnson Drive	\$ 871,180
MC_02	Gabriel Street	\$ 74,330
MC_02	North Drive	\$ 665,370
MC_05	McLain Street	\$ 857,630
GPD_02	Mariposa Lane	\$ 594,630
BB_12	Otis Street	\$ 654,830
MC_04	Travis Street	\$ 670,690
GPD_01	Old Thorndale Road	\$ 434,050
MC_09	West Mustang Street	\$ 593,930
BB_13	North Main Street	\$ 58,660
BB_06	Davis Street North	\$ 74,190

Medium (\$1M > \$2M)		
Local Project ID and Location		OPCC
BB_03	Bel Air Drive	\$ 1,057,490
BB_11	Mallard Lane	\$ 1,916,860
BB_08	Velma Drive	\$ 1,082,320
MC_01	Tammi Lane	\$ 1,151,740
MC_03	Debus Drive	\$ 1,229,870

Large (greater than \$2M)		
Local Project ID and Location		OPCC
BB_05	Donna Channel	\$ 4,619,410
MC_07	Kimbrow/Shaw Street - 2nd Street	\$ 4,205,160
MC_08	Davis Street South - 2nd Street	\$ 3,923,320
MC_06	Annie Street - 2nd Street	\$ 2,298,180
TC_01	Sandy Lane - Buyouts	\$ 3,212,200

Council Districts	
	Council District 1
	Council District 2
	Council District 3
	Council District 4

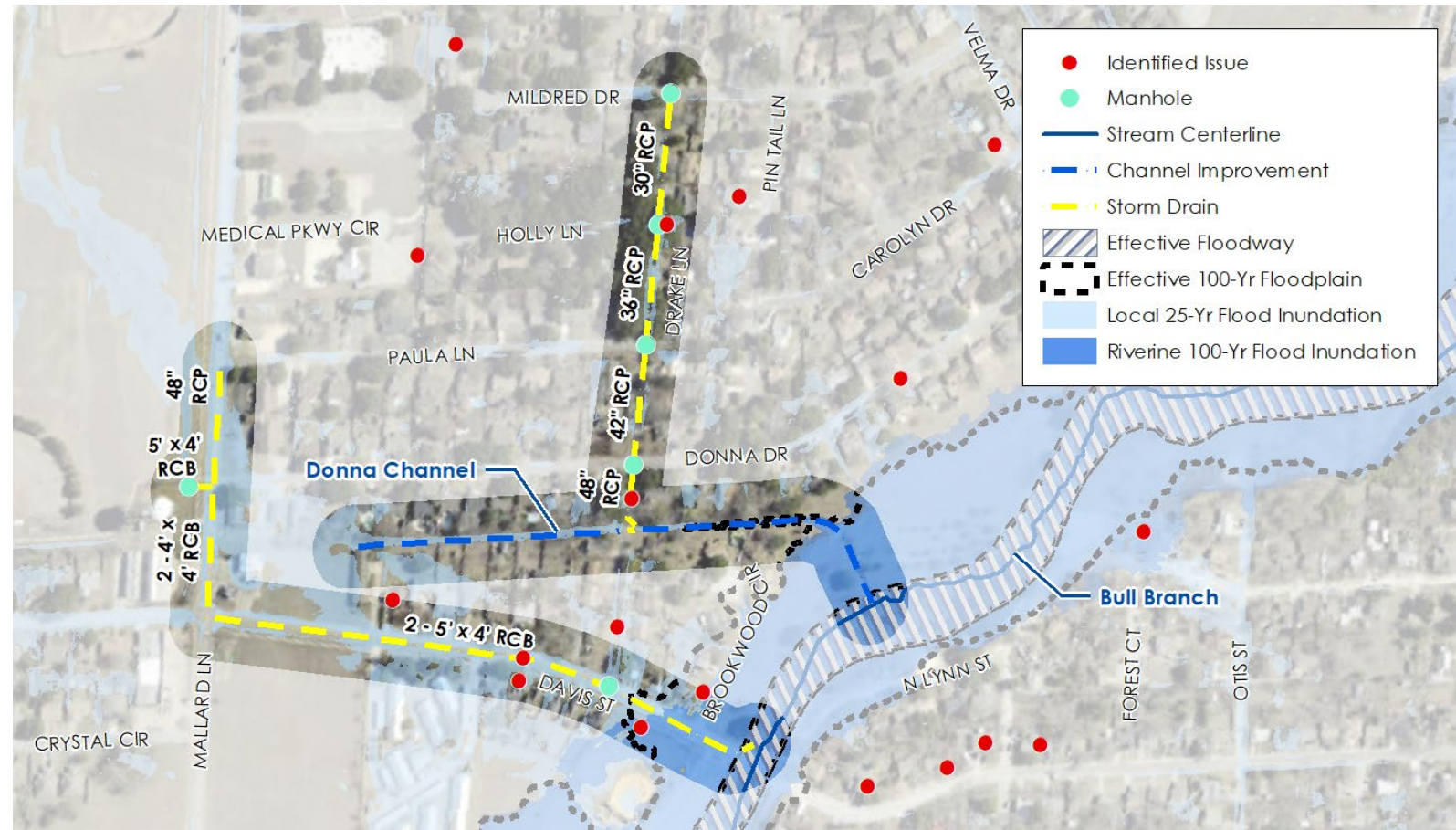
Projects may be addressed as funding is available and not specifically in the order presented.



Local Proposed Projects

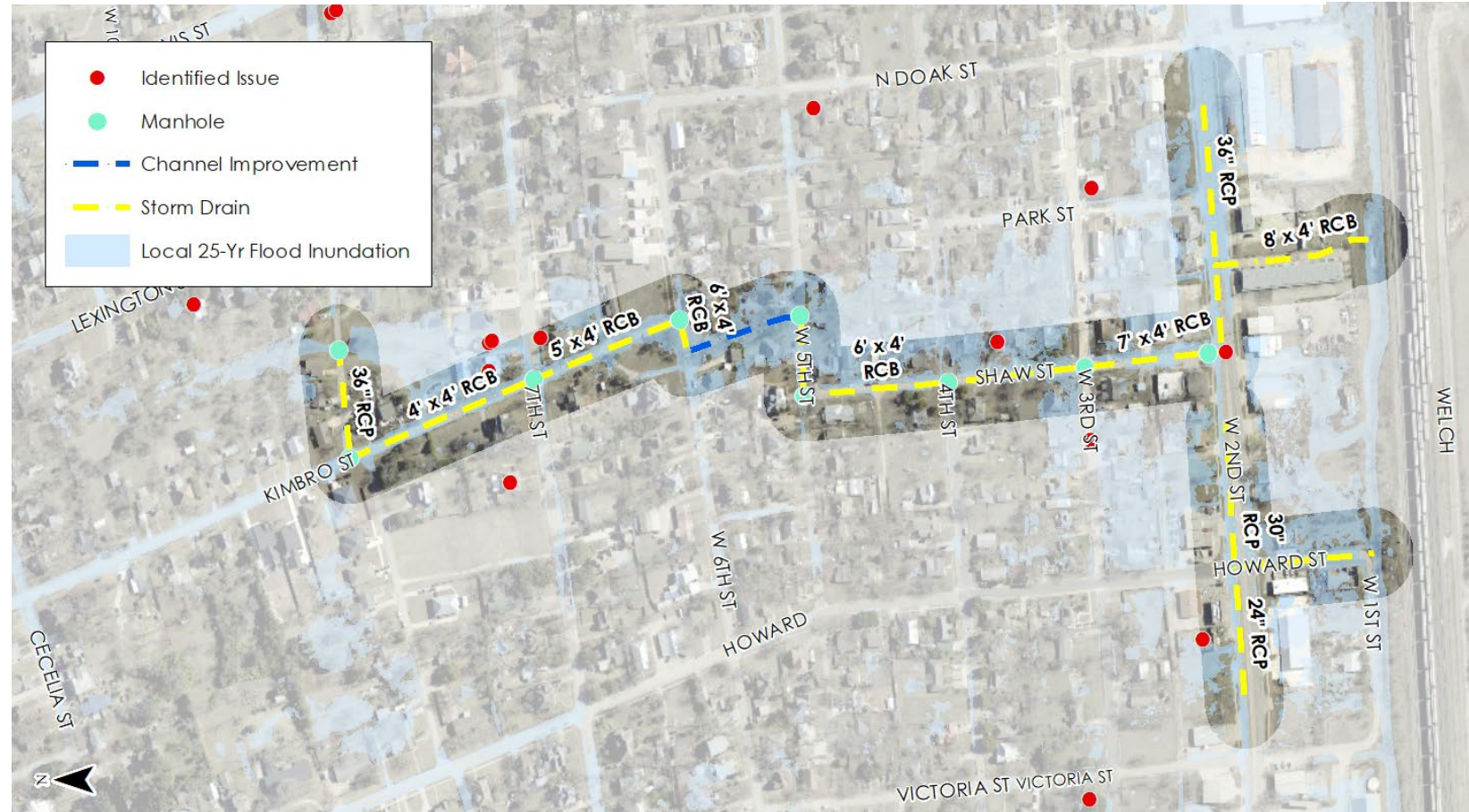
PROJECT REVIEW – 1. DONNA CHANNEL

- Quick Facts
 - 9 public input points addressed
 - 50 properties benefited
 - 3,265 ft of storm drain
 - 1,500 ft of channel improvements
 - Cost: \$4,619,410
- Key Benefits:
 - Alleviates ponding on Davis St, Mallard Ln, Drake Ln
 - Relieves capacity concerns on Donna Channel
 - Reduces private property flood concerns
 - Phased construction allows for budget flexibility
- Note: CDBG-MIT funding received for Donna Channel improvements



PROJECT REVIEW – 2. KIMBRO/SHAW ST – 2ND ST

- Quick Facts
 - 8 public input points addressed
 - 55 properties benefited
 - 4,375 ft of storm drain
 - Cost: \$4,205,160
- Benefits
 - Increase capacity of system
 - Alleviates ponding of streets
 - Reduces private property flood concerns
 - Phased construction allows for budget flexibility



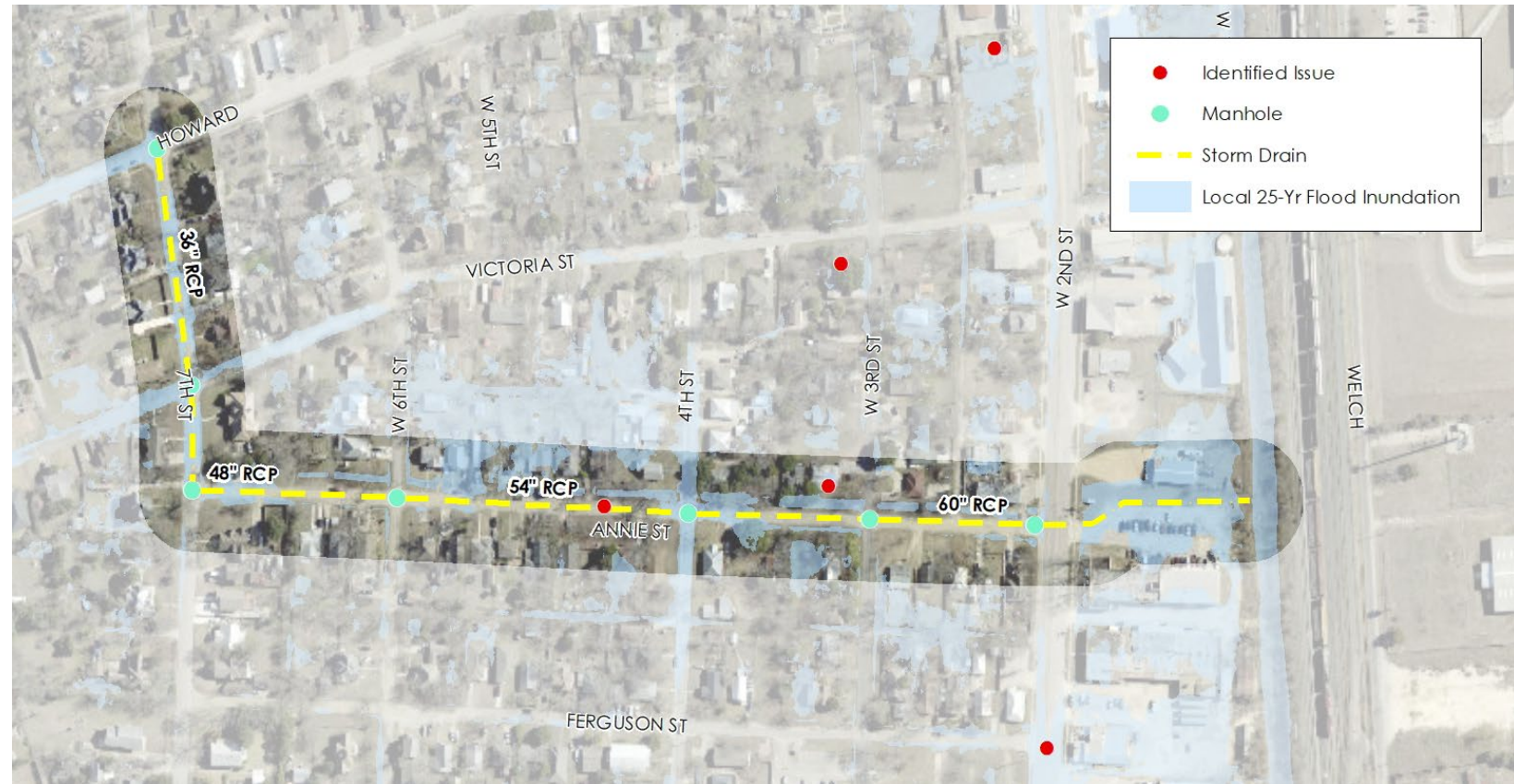
PROJECT REVIEW – 3. DAVIS ST SOUTH – 2ND ST

- Quick Facts
 - 4 public input points addressed
 - 40 properties benefited
 - 3,365 ft of storm drain
 - Cost: \$3,923,320
- Benefits
 - Increase capacity of system
 - Alleviates ponding of Davis St
 - Reduces private property flood concerns
 - Phased construction allows for budget flexibility



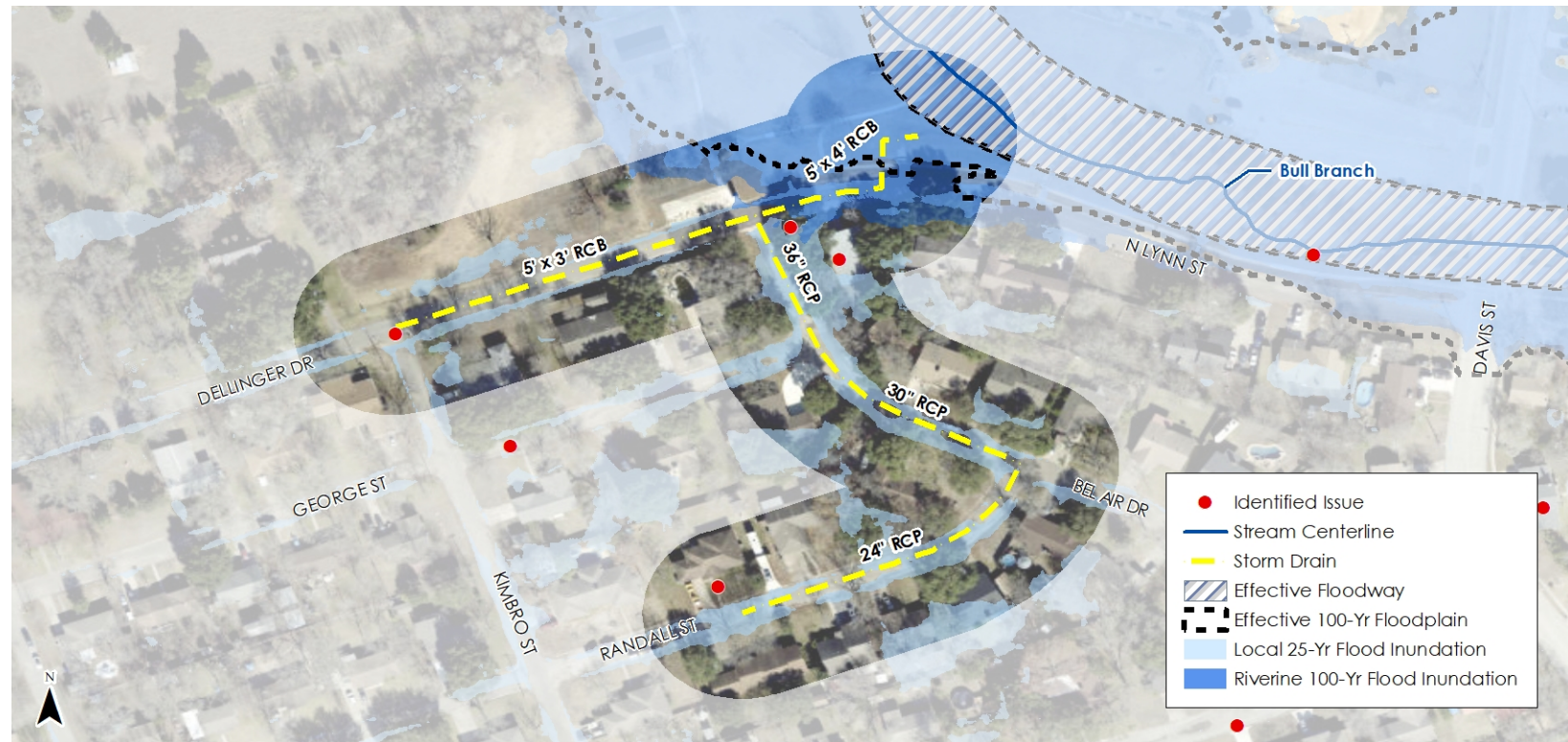
PROJECT REVIEW – 4. ANNIE ST – 2ND ST

- Quick Facts
 - 3 public input points addressed
 - 60 properties benefited
 - 2,550 ft of storm drain
 - Cost: \$2,298,180
- Benefits
 - Alleviates roadway ponding and increases conveyance
 - Reduces private property flood concerns
 - Phased construction allows for budget flexibility



PROJECT REVIEW – 5. BEL AIR DR

- Quick Facts
 - 5 public input points addressed
 - 25 properties benefited
 - 1,365 ft of storm drain
 - Cost: \$1,057,490
- Key Benefits:
 - Alleviates ponding along Bel Air Drive, Dellinger Drive, North Lynn Street, and Randall Street
 - Reduces private property flood concerns
 - Phased construction and budget flexibility



PROJECT REVIEW – 6. MALLARD LN

- Quick Facts
 - 4 public input points addressed
 - 70 properties benefited
 - 1,620 ft of storm drain
 - 490 ft channel improvements
 - Cost: \$1,916,860
- Benefits
 - Alleviates roadway ponding
 - Reduces private property flood concerns
 - Increases capacity of system
 - Phased construction



PROJECT REVIEW – 7. BURKETT ST

- Quick Facts
 - 3 public input points addressed
 - 15 properties benefited
 - 2 new culvert crossings
 - 975 ft ditch improvements
 - Cost: \$352,530
- Benefits
 - Alleviates ponding of Burkett Street
 - Reduces private property flood concerns
 - Increases capacity of system



PROJECT REVIEW – 8. TH JOHNSON DR

- Quick Facts
 - 2 public input points addressed
 - 9 properties benefited
 - 310 ft of culvert improvements
 - Cost: \$871,180
- Benefits
 - Relieve existing capacity concerns
 - Reduces structure flooding concerns
 - Alleviates runoff along TH Johnson Drive
- Note: KB Pond analysis underway in separate contract



PROJECT REVIEW – 9. VELMA DR

- Quick Facts
 - 1 public input points addressed
 - 25 properties benefited
 - 1,500 ft of storm drain
 - Cost: \$1,082,320
- Key Benefits:
 - Alleviates ponding of Velma Drive
 - Reduces private property flood concerns
 - Phased construction allows for budget flexibility



PROJECT REVIEW – 10. GABRIEL ST

- Quick Facts
 - 2 public input points addressed
 - 4 properties benefited
 - Road regrading
 - Cost: \$74,330
- Benefits
 - Alleviates ponding of Gabriel St



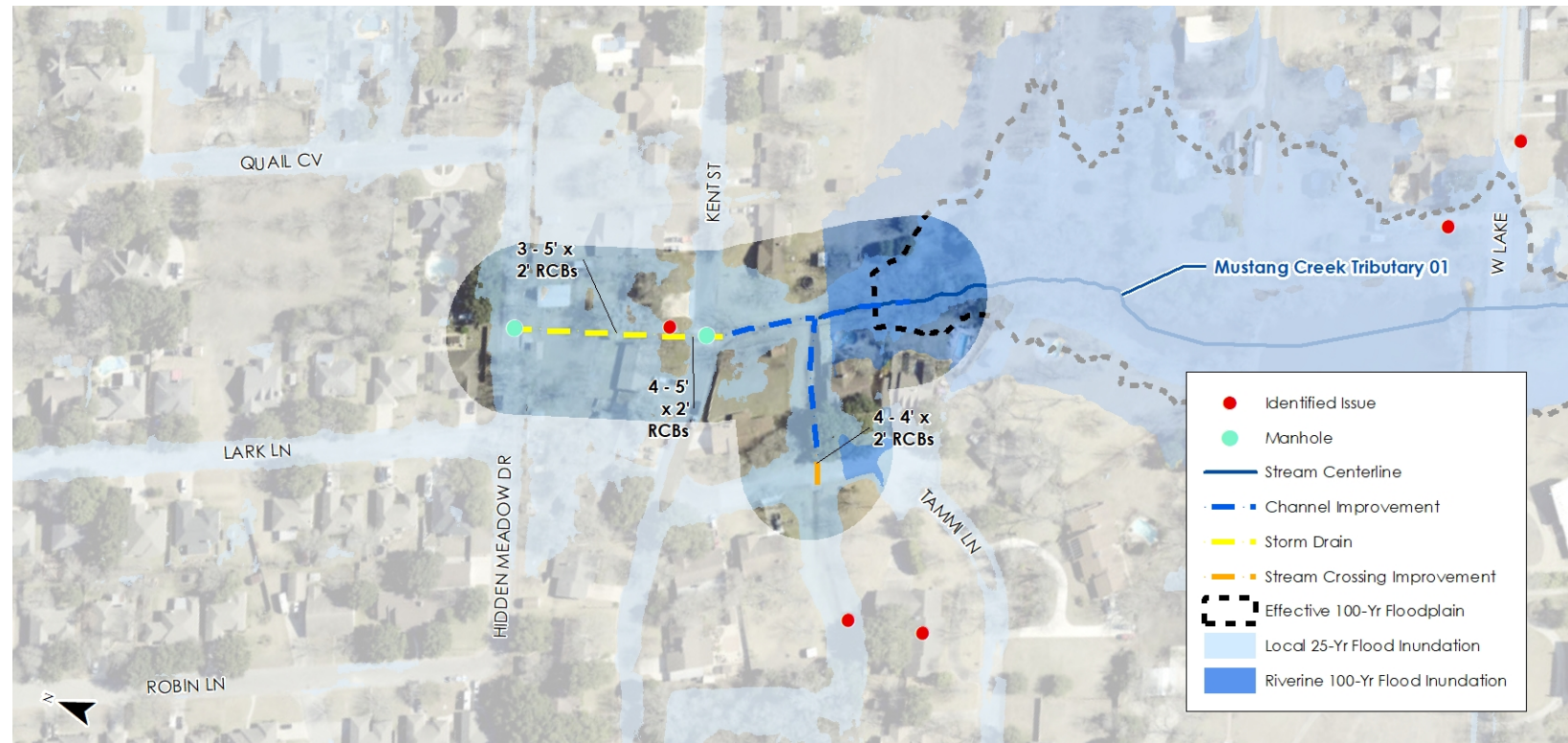
PROJECT REVIEW – 11. NORTH DR

- Quick Facts
 - 1 public input points addressed
 - 15 properties benefited
 - 650 ft of storm drain
 - Cost: \$665,370
 - Potentially require upsizing of existing storm drain system (Not included in cost)
- Benefits
 - Relieves existing capacity concerns
 - Increases capacity of system
 - Alleviates ponding of Gabriel St



PROJECT REVIEW – 12. TAMMI LN

- Quick Facts
 - 3 public input points addressed
 - 15 properties benefited
 - 265 ft culvert improvements
 - 280 ft channel improvements
 - Cost: \$1,151,740
- Benefits
 - Relieve existing capacity concerns
 - Reduce frequent overtopping
 - Reduce depth of overtopping
 - Provide increased channel conveyance
 - Alleviates roadway ponding



PROJECT REVIEW – 13. McLain St

- Quick Facts
 - 1 public input point addressed
 - 24 properties benefited
 - 1,330 ft of storm drain
 - Cost: \$857,630
- Key Benefits:
 - Increases capacity of McLain Street
 - Alleviates ponding of McLain Street
 - Reduces private property flood concerns



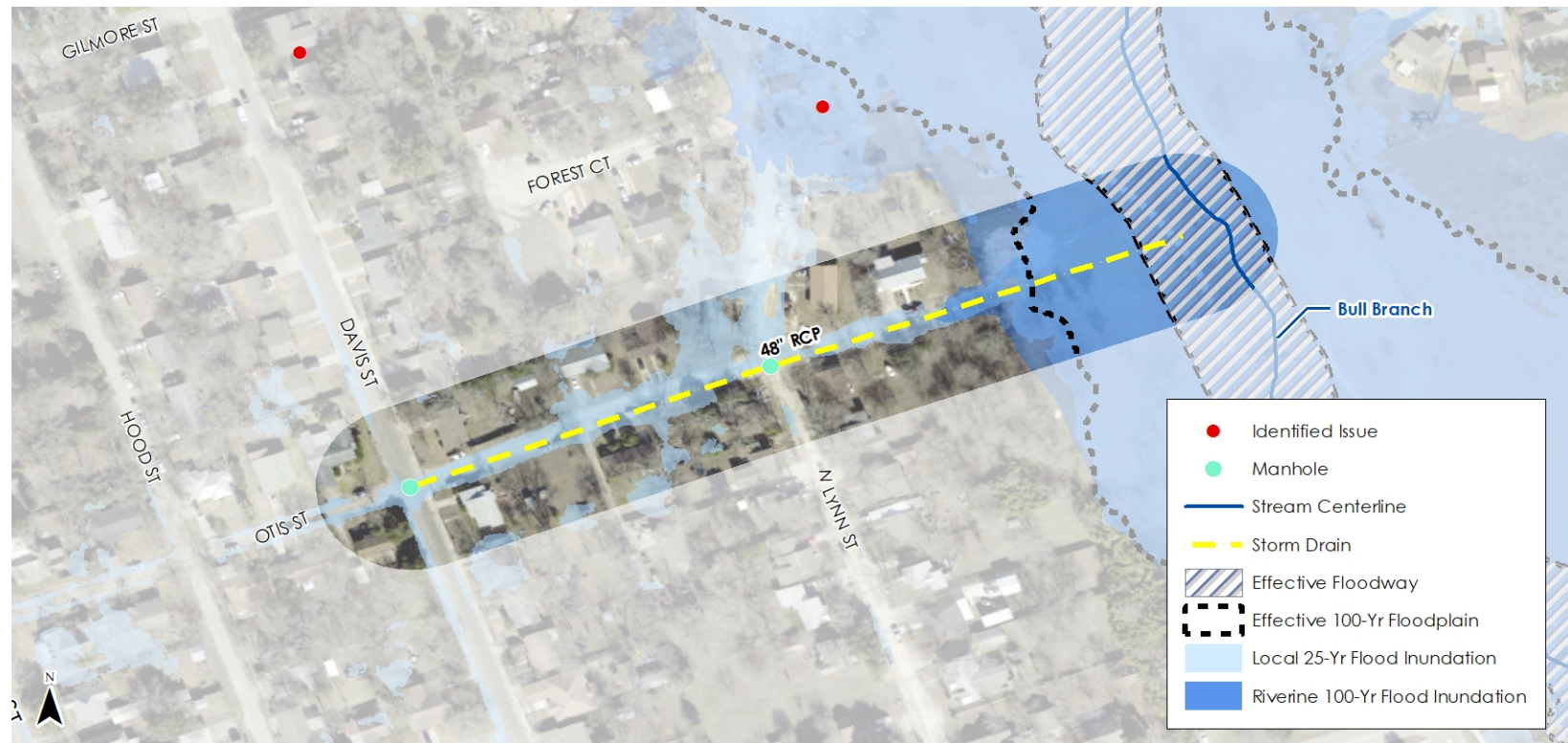
PROJECT REVIEW – 14. MARIPOSA LN

- Quick Facts
 - 2 public input points addressed
 - 22 properties benefited
 - 2 new culverts
 - Cost: \$594,630
- Benefits
 - Reduces private property flood concerns
 - Alleviates ponding of Mockingbird Lane and Mariposa Lane
 - Relieves existing capacity concerns



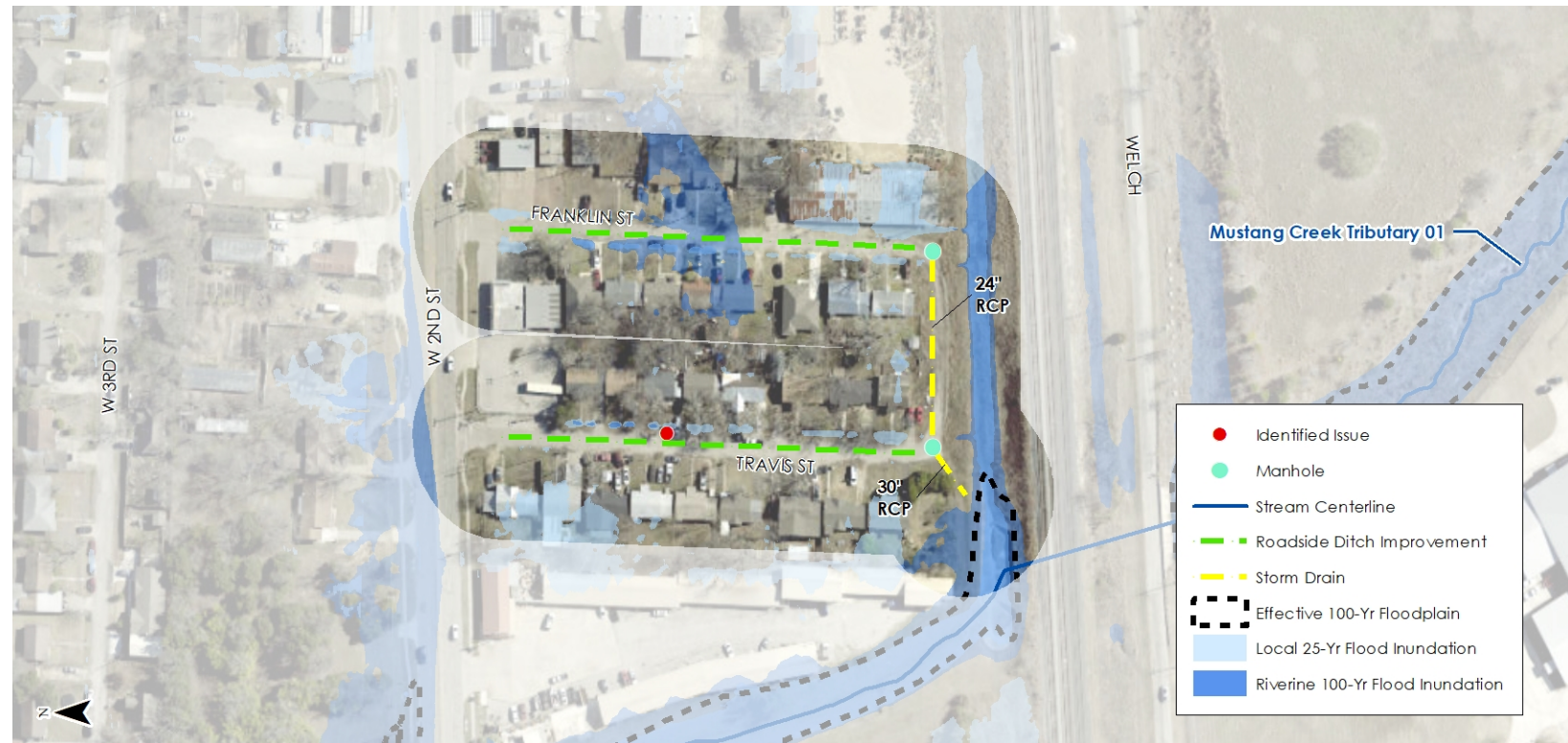
PROJECT REVIEW – 15. OTIS ST

- Quick Facts
 - 0 public input points addressed
 - 17 properties benefited
 - 870 ft of storm drain
 - Cost: \$654,830
- Benefits
 - Alleviates ponding of Otis St
 - Reduces private property flood concerns



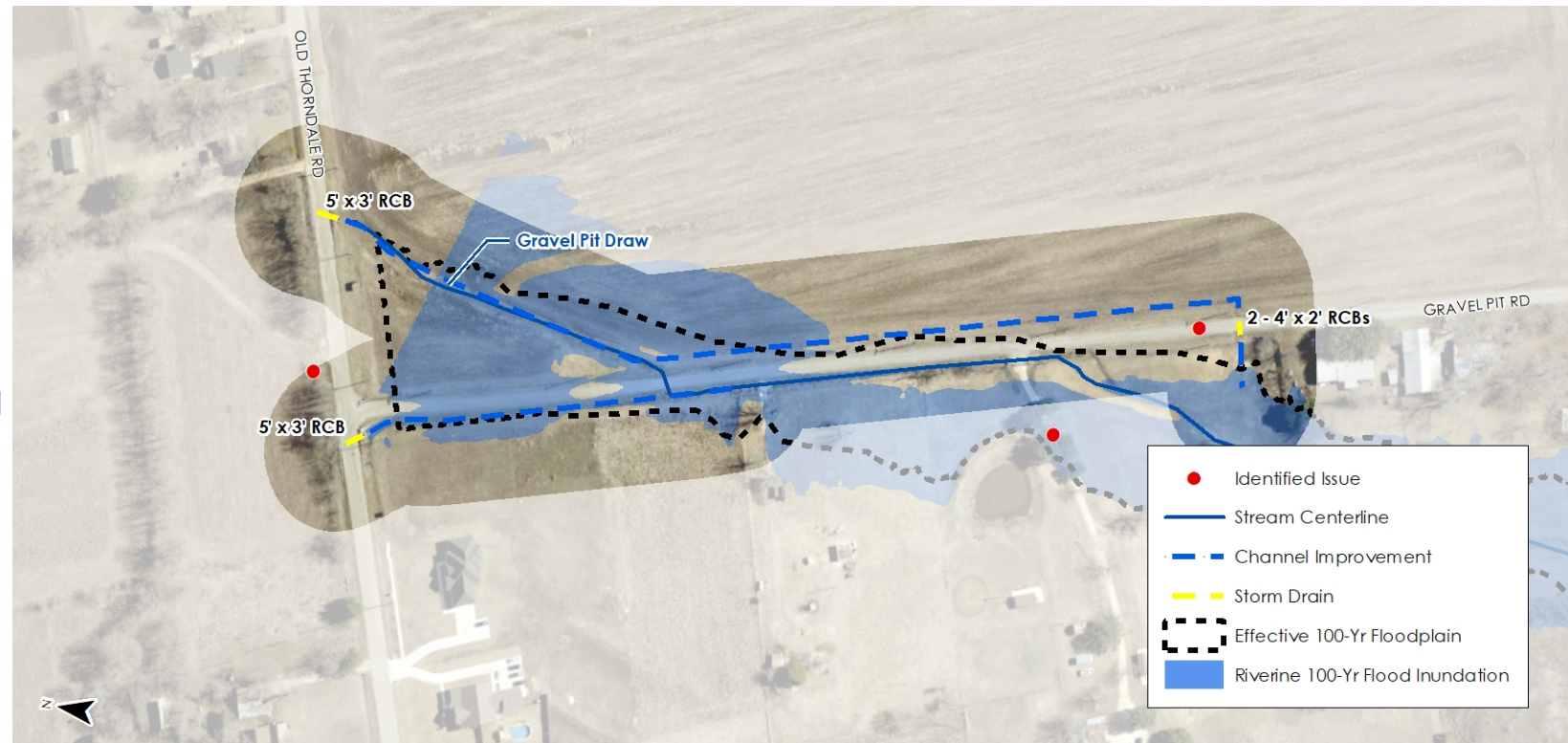
PROJECT REVIEW – 16. TRAVIS ST

- Quick Facts
 - 1 public input point addressed
 - 16 properties benefited
 - 250 ft of storm drain
 - 790 ft ditch improvements
 - Cost: \$670,690
- Benefits
 - Alleviates ponding of Travis and Franklin St
 - Increase capacity of system
 - Reduces private property flood concerns
 - Phased construction allows for budget flexibility



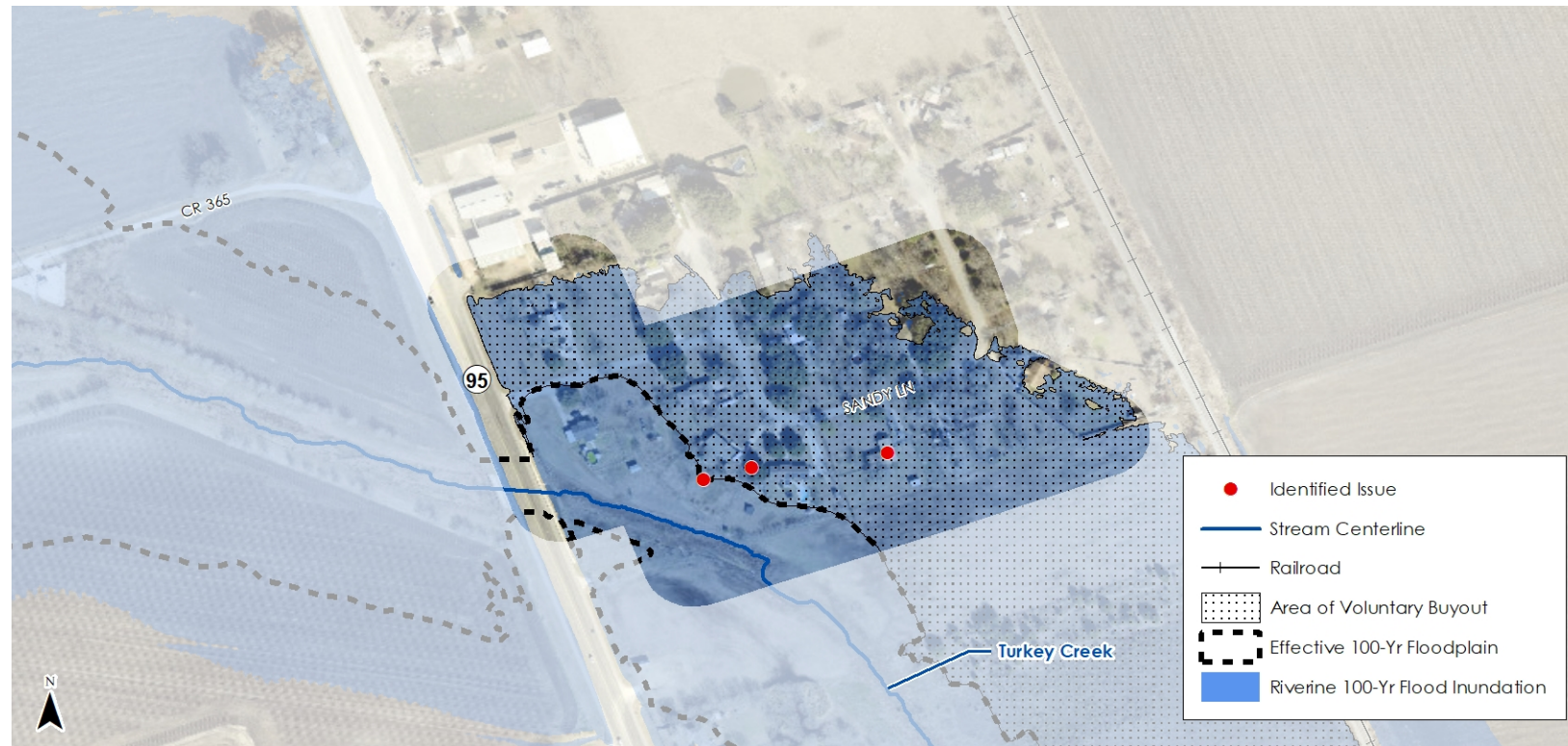
PROJECT REVIEW – 17. OLD THORNDALE RD

- Quick Facts
 - 3 public input points addressed
 - 6 properties benefited
 - 2 replaced culverts
 - 1,680 ft ditch improvements
 - Cost: \$434,050
- Benefits
 - Increase capacity of system
 - Alleviates ponding of Gravel Pit Rd
 - Reduces private property flood concerns



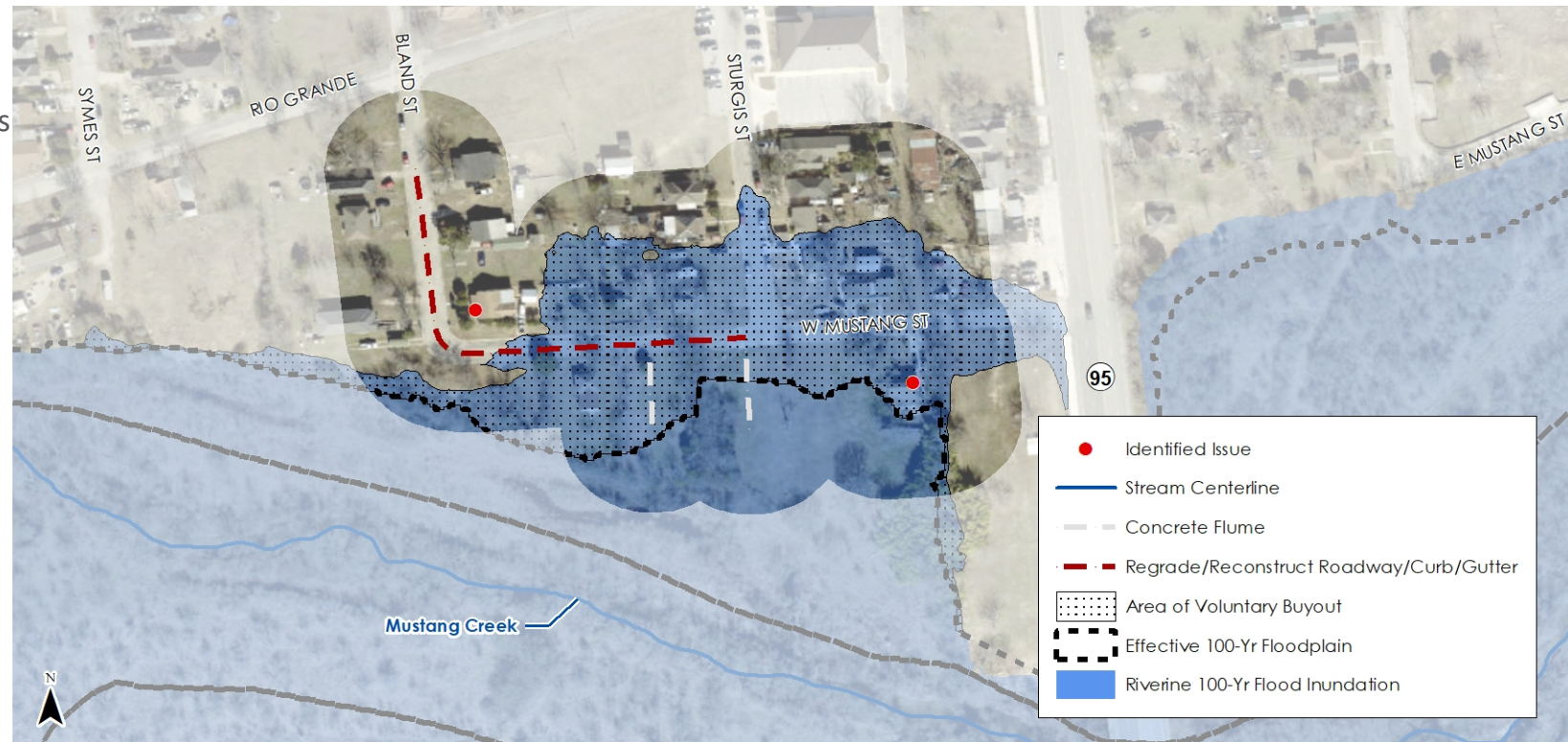
PROJECT REVIEW – 18. SANDY LN

- Quick Facts
 - 3 public input points addressed
 - 12 properties benefited
 - Voluntary buyout
 - Cost: \$3,212,200
- Benefits
 - Reduces private property flood concerns
- Note:
 - FFE survey needed to confirm flood impact for voluntary buyout areas
 - City would need funding source for voluntary buyouts



PROJECT REVIEW – 19. WEST MUSTANG ST

- Quick Facts
 - 2 public input points addressed
 - 20 properties benefited
 - 560 ft of curb & gutter improvements
 - 2 new concrete flume outfalls
 - Voluntary buyout
 - Cost: \$593,930
- Key Benefits:
 - Alleviates roadway ponding
 - Promotes positive drainage
 - Reduces private property flood concerns
- Note:
 - FFE survey needed to confirm flood impact for voluntary buyout areas
 - City would need funding source for voluntary buyouts



PROJECT REVIEW – 20. NORTH MAIN ST

- Quick Facts
 - 2 public input points addressed
 - 20 properties benefited
 - 2,200 ft of curb & gutter improvements
 - Cost: \$58,660
- Benefits
 - Alleviates ponding of North Main St
 - Reduces private property flood concerns



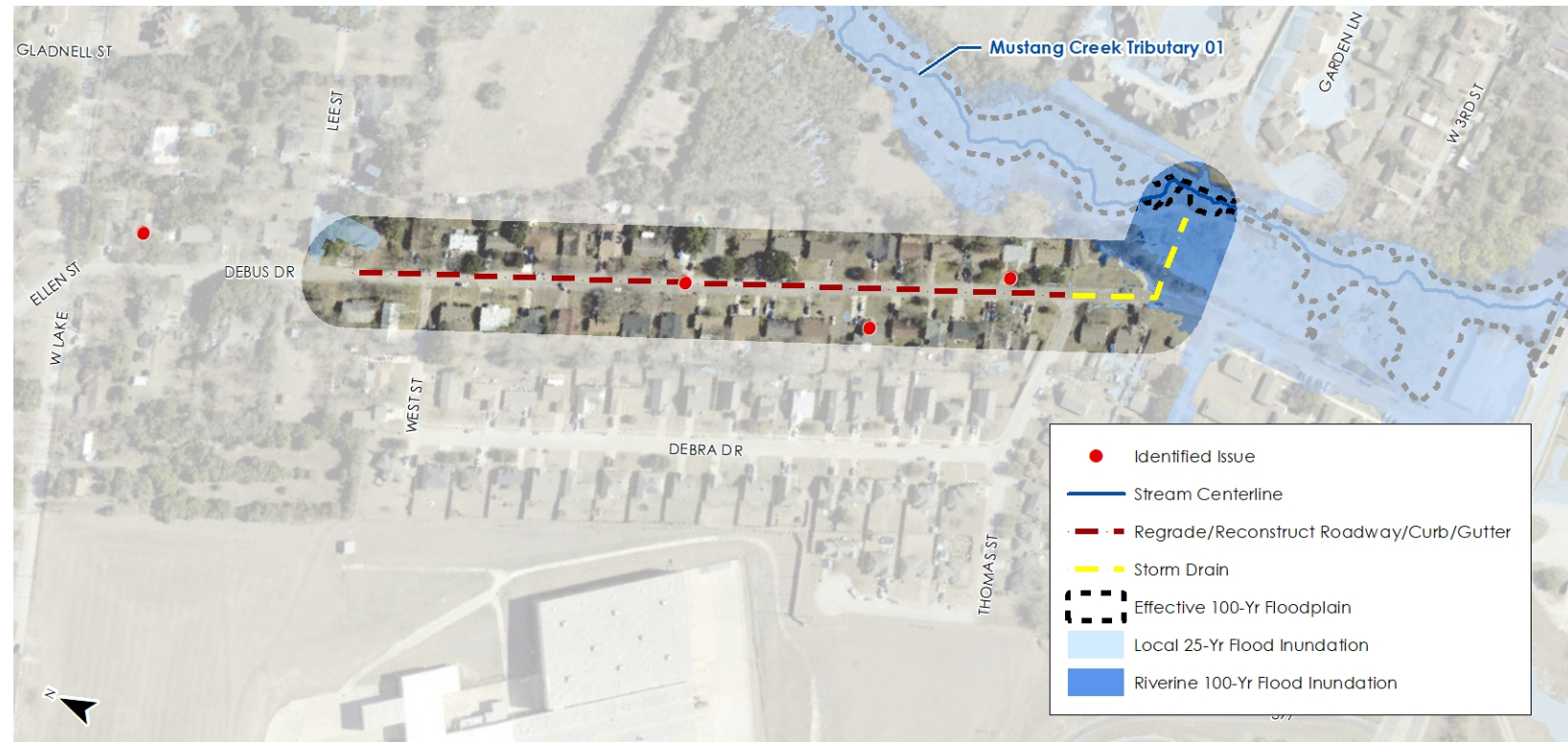
PROJECT REVIEW – 21. NORTH DAVIS ST

- Quick Facts
 - 4 public input points addressed
 - 7 properties benefited
 - 1,600 ft of curb & gutter improvements
 - Cost: \$74,190
- Benefits
 - Alleviates ponding of North Davis St
 - Reduces private property flood concerns



PROJECT REVIEW – 22. DEBUS DR

- Quick Facts
 - 3 public input points addressed
 - 40 properties benefited
 - 175 ft of storm drain
 - 1,500 ft of curb & gutter improvements
 - Cost: \$1,229,870
- Benefits
 - Alleviates ponding of Debus St
 - Reduces private property flood concerns
 - Phased construction allows for budget flexibility



LOCAL PROPOSED PROJECTS

- Summary
 - Local project prioritization based largely on City priority and benefit to properties/residents
 - 21 Structural Improvements
 - Storm drain improvements
 - Ditch improvements
 - Culvert crossings
 - 2 Voluntary buyout areas recommended
 - Sandy Ln
 - West Mustang St



STEPS TO COMPLETION

- Final buy-in from City on prioritization of local drainage projects
- Develop a storm drain maintenance plan as part of DMP in coordination with City Staff
- Evaluate / provide drainage utility fee recommendations
- Draft review December 31, 2021
- Anticipated acceptance January 31, 2022



Questions?
