

# DALLAS COUNTY INLAND PORT FLOOD PLANNING

**STUDY**  
SAME INFRASTRUCTURE FORUM  
FEBRUARY 9, 2024

John Wiley Price  
Dallas County  
Commissioner, District 3



# AGENDA

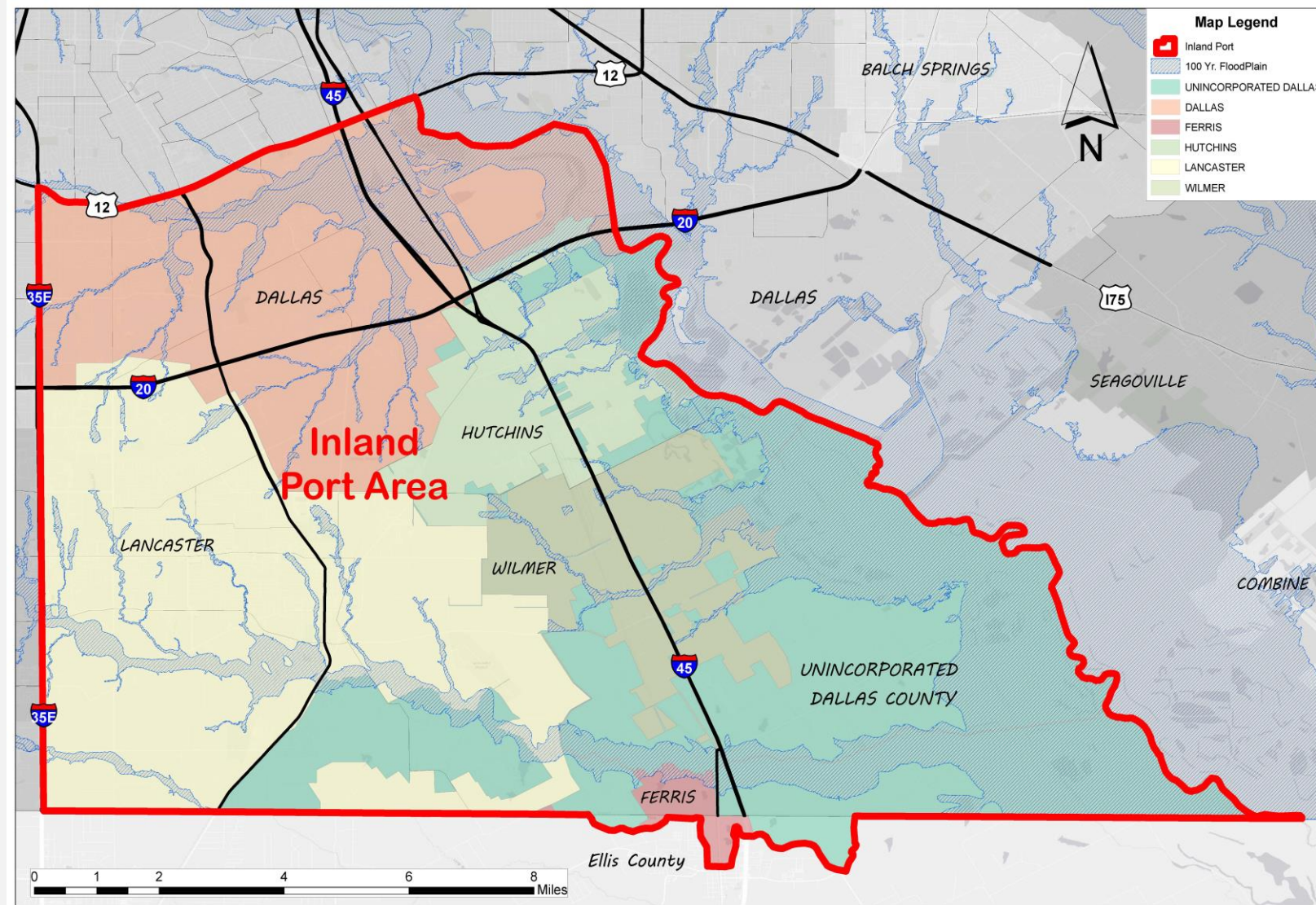
- Welcome
- Dallas County Inland Port-Background
- Project's Conception
- Stakeholders
- Purpose
- Scope
- Schedule
- Status
- How to get Involved
- Next Steps





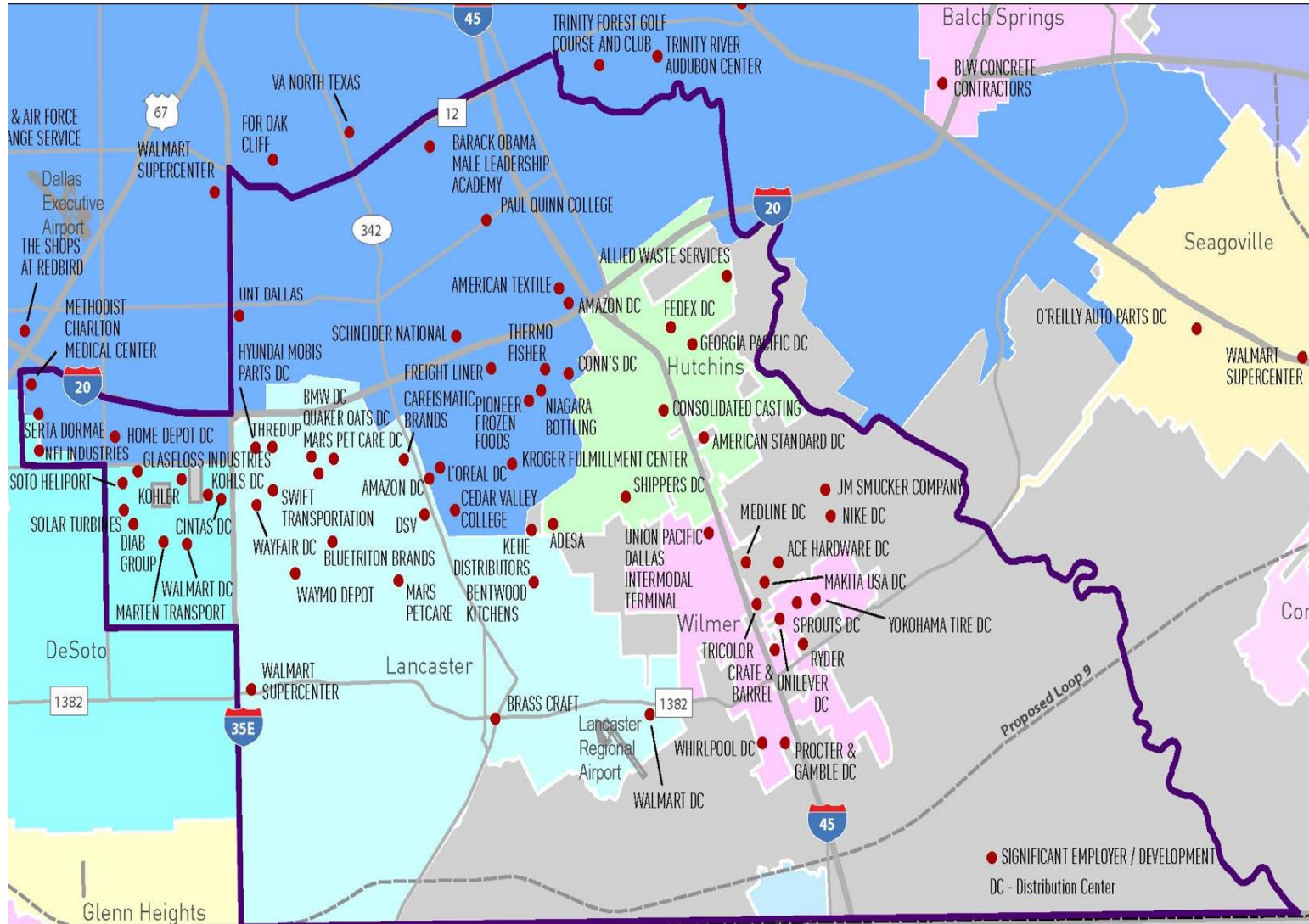
**DALLAS COUNTY INLAND PORT**

# ABOUT THE INLAND PORT



- 78,000 Acre area
- Includes Union Pacific's \$100 million intermodal facility.
- No formal boundaries.
- Located in several cities and in Dallas County's unincorporated area.
- Privately-owned and developed; no special governmental entity or port authority involved.
- Receive goods from the West Coast, the East Coast, and the Gulf of Mexico.
- 2,000,000 people live within 30 minutes.
- Proximity to intersection of major east-west and north-south interstate highways.
- Access to major markets and points of entry.
- Centralized U.S. location w/ Proximity to major airports.
- Inland Port Transportation Management Association

# BUSINESSES IN THE SOUTHERN DALLAS COUNTY INLAND PORT



# Dallas County

Inland Port - Current

Legend

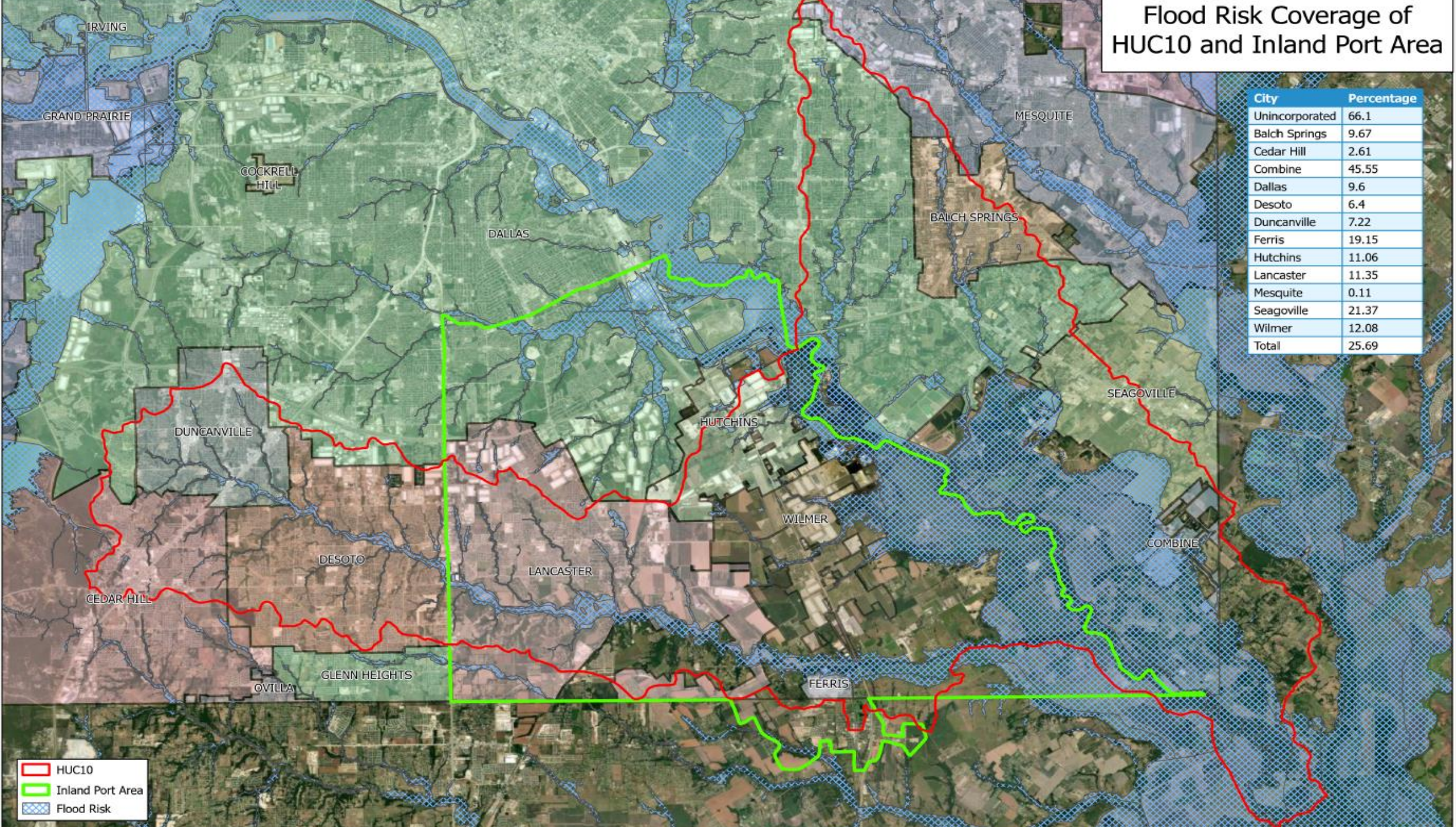


Google Earth

Image © 2023 Airbus  
Image © 2023 Maxar Technologies

## INLAND PORT GROWTH

# Flood Risk Coverage of HUC10 and Inland Port Area



City	Percentage
Unincorporated	66.1
Balch Springs	9.67
Cedar Hill	2.61
Combine	45.55
Dallas	9.6
Desoto	6.4
Duncanville	7.22
Ferris	19.15
Hutchins	11.06
Lancaster	11.35
Mesquite	0.11
Seagoville	21.37
Wilmer	12.08
<b>Total</b>	<b>25.69</b>

- HUC10
- Inland Port Area
- Flood Risk





HOW THE PROJECT WAS CONCEIVED

# TEXAS WATER DEVELOPMENT BOARD (TWDB) FLOOD INFRASTRUCTURE FUND (FIF)

- Passed by the Legislature and approved by Texas voters through a constitutional amendment in 2019, the FIF program provides financial assistance in the form of loans and grants for flood control, flood mitigation and drainage projects and the State Flood Plan.
- In 2020, TWDB had received approximately \$800 Million to provide grants to communities for Flood Mitigation and Prevention
- Dallas County received funding for the Dallas County Inland Port Flood Planning Study using Category I Funding from the TWDB





# DALLAS COUNTY INLAND PORT FLOOD PLANNING STUDY

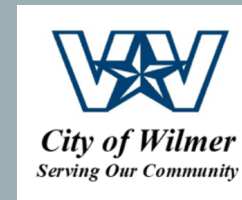
# STAKEHOLDERS



City of Combine



City of Dallas



# STAKEHOLDERS



FEMA

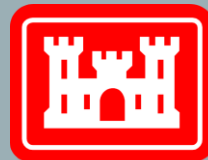


NORTH  
TEXAS  
MUNICIPAL  
WATER  
DISTRICT

Natural Resource  
Conservation Service



Texas Water  
Development Board



US Army Corps  
of Engineers®





# WHY THIS PROJECT IS IMPORTANT



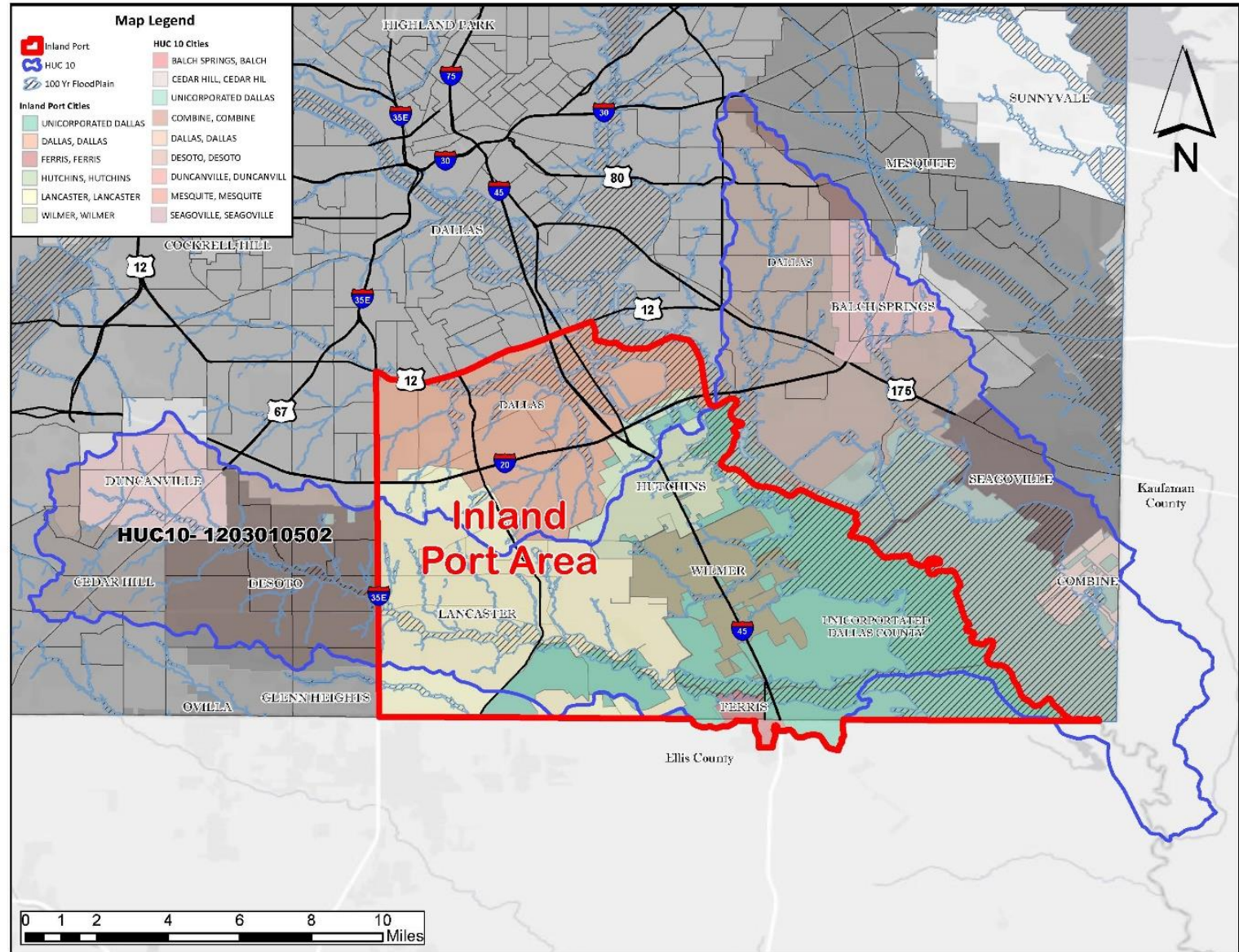
## PURPOSE OF THE STUDY

- Minimize Loss of Life
- Minimize Loss of Property
- Determine Approach to Minimize Flooding
- Submit Projects to the State for Funding
- August 22, 2022 Flooding - 2nd most rain in 24 hours in Dallas County since records kept



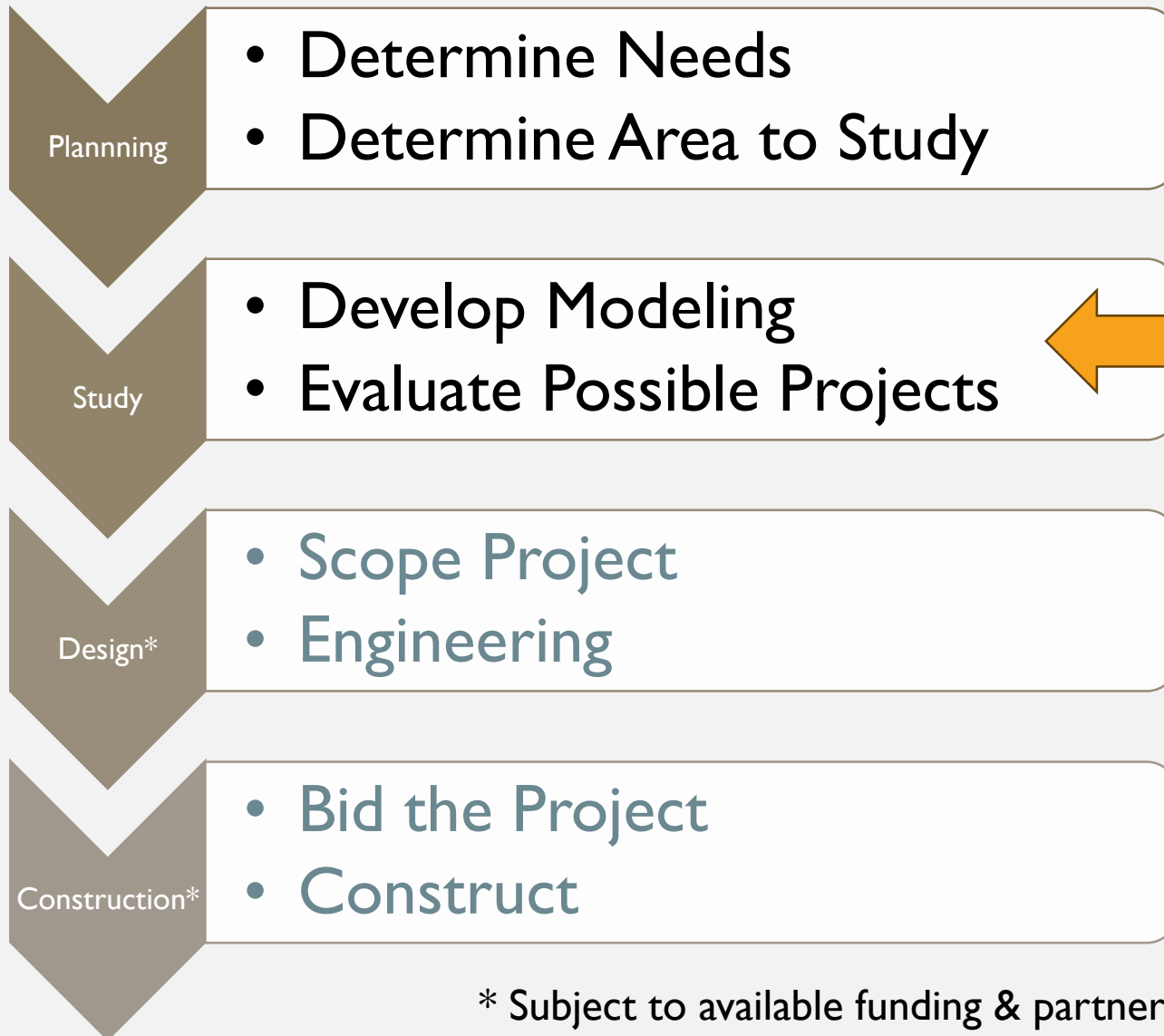
# PROJECT LOCATION

- Hydraulic Unit Code (HUC-10) 1203010502
- Dallas County Inland Port
- Approx. 230 sq. miles
- Major Tributaries
  - Trinity River
  - Ten Mile Creek





# PROJECT LIFECYCLE



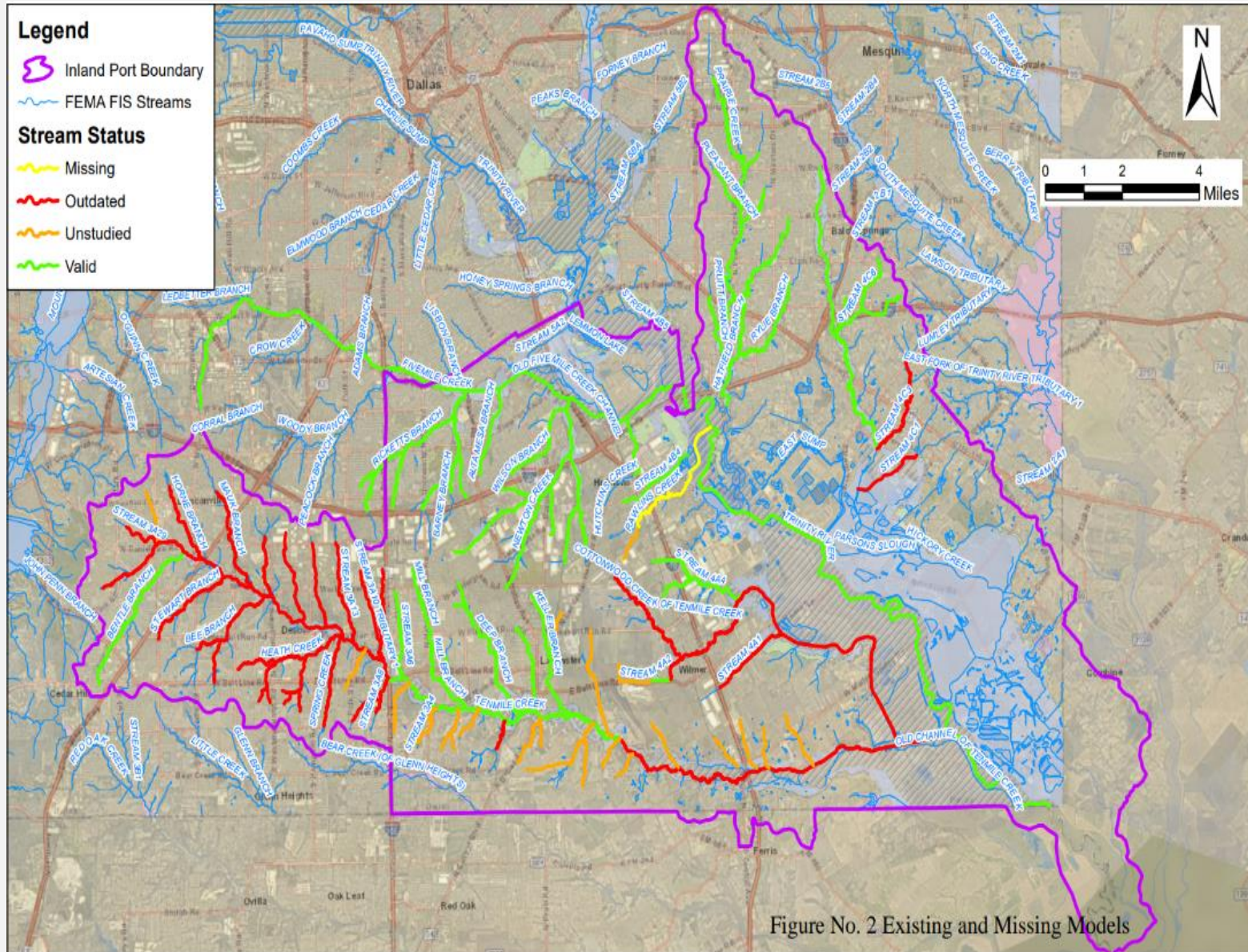
## TERMINOLOGY

- **FME** – Flood Mitigation Evaluation
- **FMP** – Flood Mitigation Project
- **Flood Risk** – Areas flooded during Storm Events
- **Floodplain** – Area shown as flooded
- **Removed from Flood Plain** – flood risk significantly reduced
- **Freeboard** – Difference between water surface elevation and bottom of Bridge

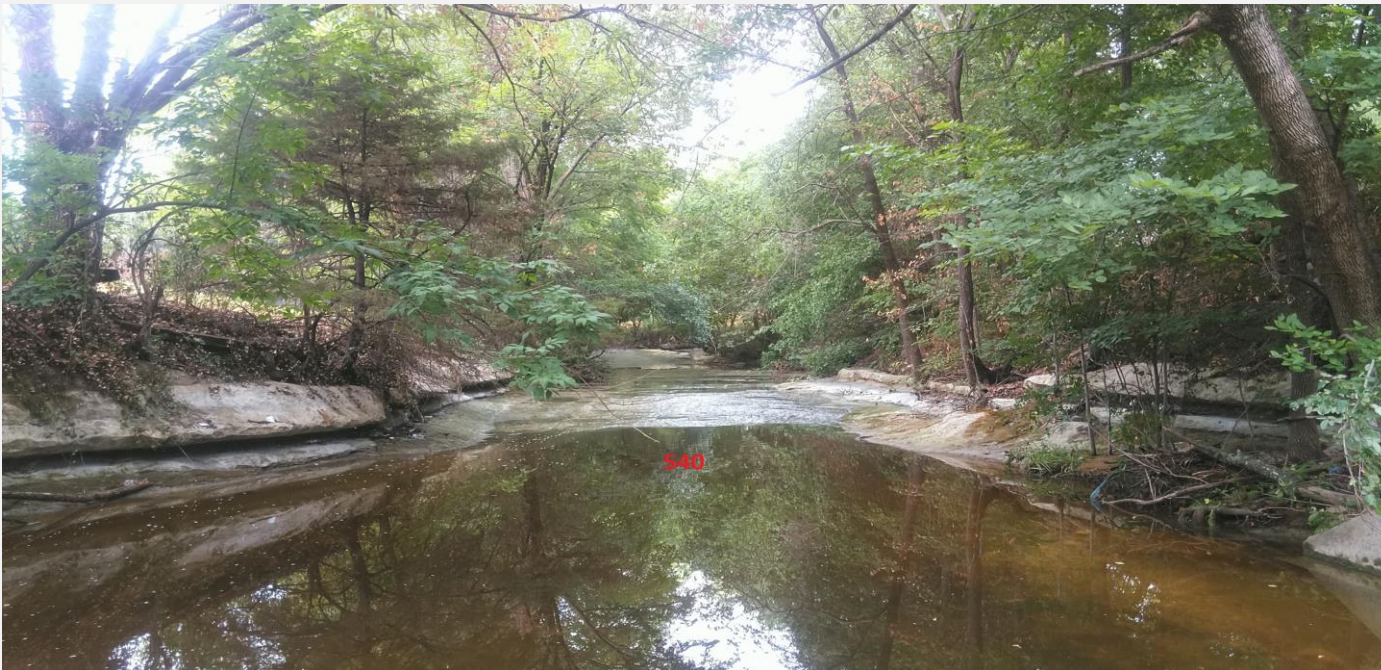
# CONSULTANT TEAM



# PROJECT SCOPE



- **H&H study of the overall HUC-10 area including:**
  - Ten Mile Creek,
  - Cottonwood Creek,
  - Rawlins Creek
- **Hydraulic (stormwater) study of the Inland Port area –Trunk Lines**
  - Tasks:
    - Floodplain Mapping
    - Review of design criteria
    - Identify Potential projects



# CURRENT STATUS

## Surveying

- Hutchins Creek
- Inland Port Storm Sewer

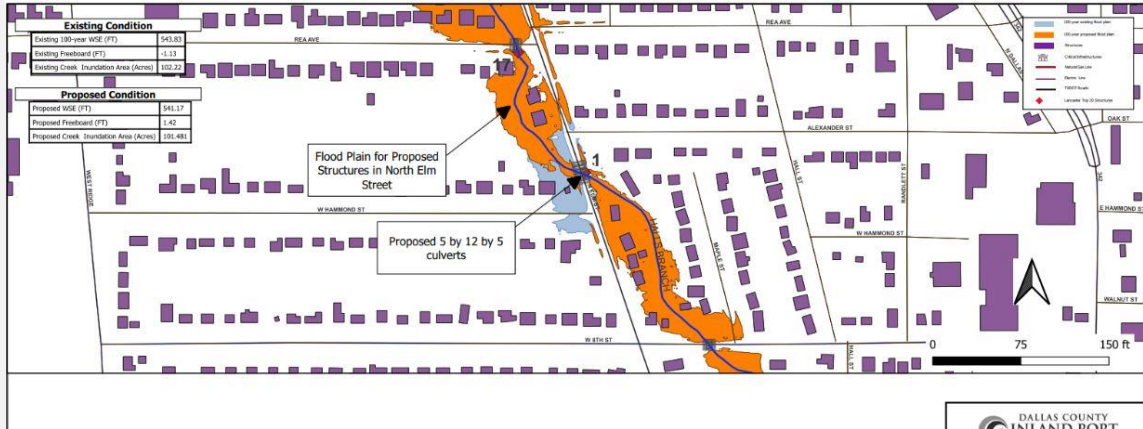
## Modeling

- Finalize Data Input
- Creek Modeling
  - Hutchins Creek
  - Rawlins Creek
- Inland Port Modeling
  - Storm Sewer Systems

## Analysis

- Evaluate Mitigation Projects
- Critical Needs Assessment
- Develop Schematic Plans
- Develop Probable Cost

# PROJECT EVALUATIONS



DALLAS COUNTY  
INLAND PORT  
FLOOD PLANNING DEPT

APM & Associates, Inc.  
Engineering - Planning - GIS Services  
STATE LICENSE NUMBER: 3001

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DATE: P.E. NO. DATE

COUNTY OF DALLAS, TEXAS  
DEPARTMENT OF PUBLIC WORKS

Halls Branch North Elm Street



Develop Mapping of modeling

- Effective Model Floodplain
- Floodplain with Improvements

Calculate Flood data

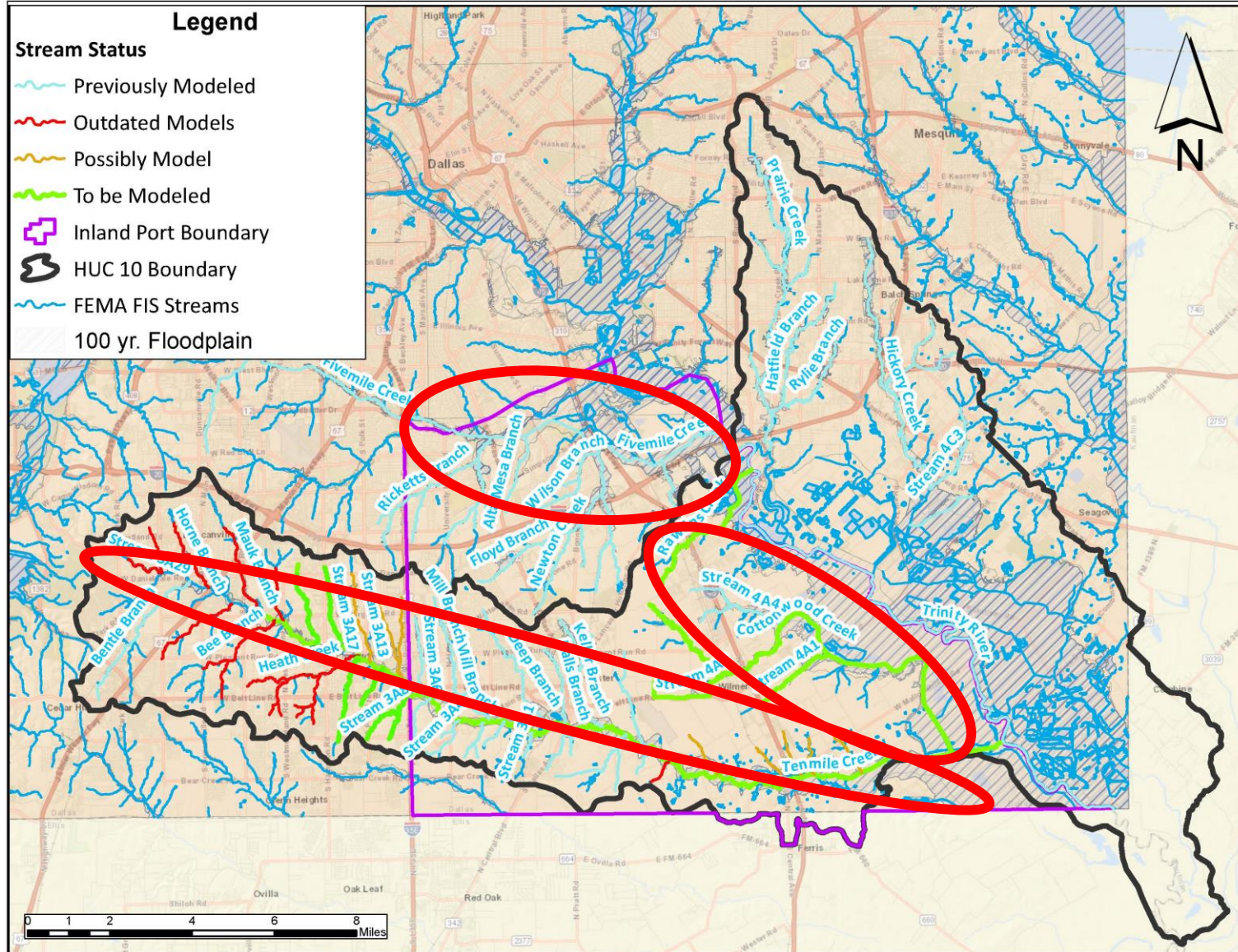
- Acres Removed
- Structures Removed
- Critical Facilities Removed
- Roadway Removed
- Others

No Impact Analysis

- No Increase in velocity
- No loss of valley storage
- No change in WS elevation



# DRAINAGE BASINS



- Five Mile Creek
- Ten Mile Creek
- Cottonwood Creek
- Rawlins Creek

# FIVE MILE CREEK DIVIDE

- Length approximately 17.3 miles

Includes:

5 Cities

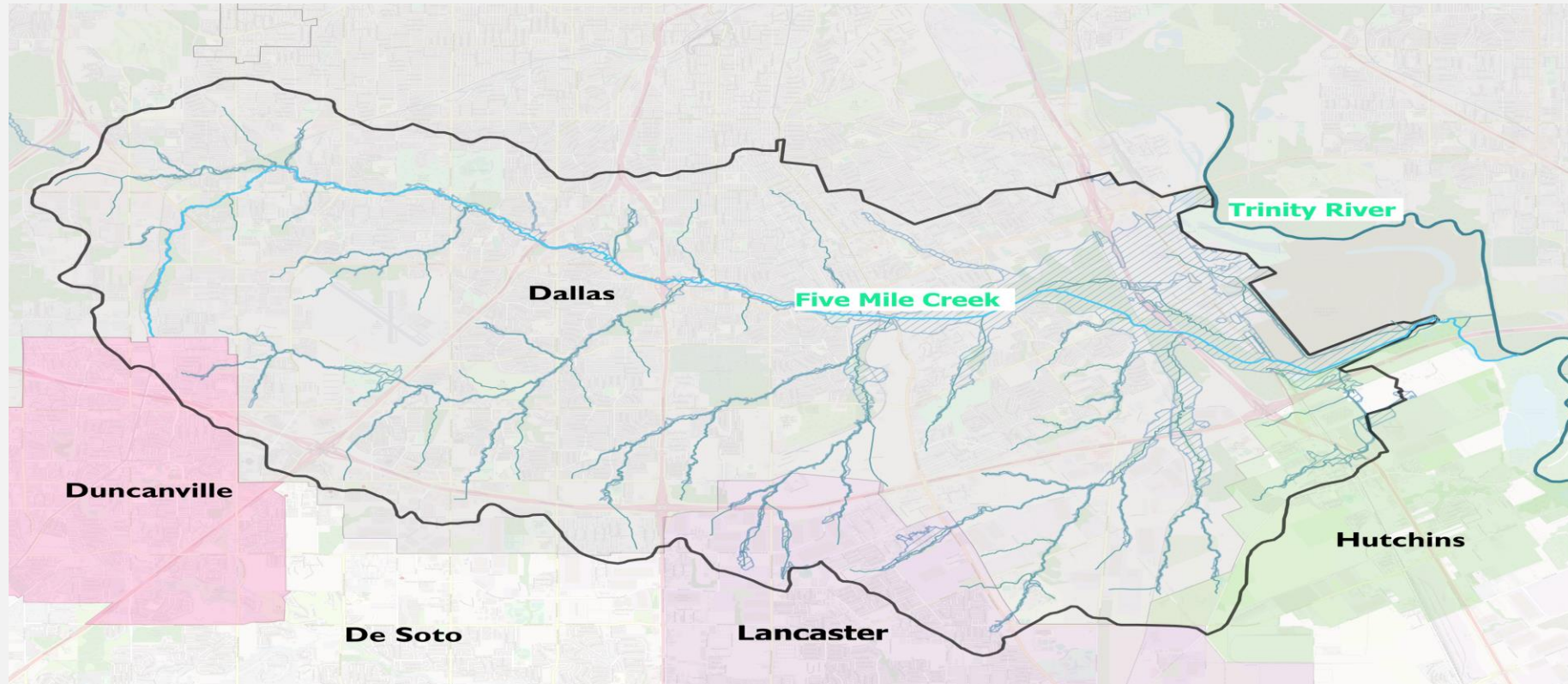
5 Culvert Crossings

60.8 Square Mile Watershed

17 Tributaries

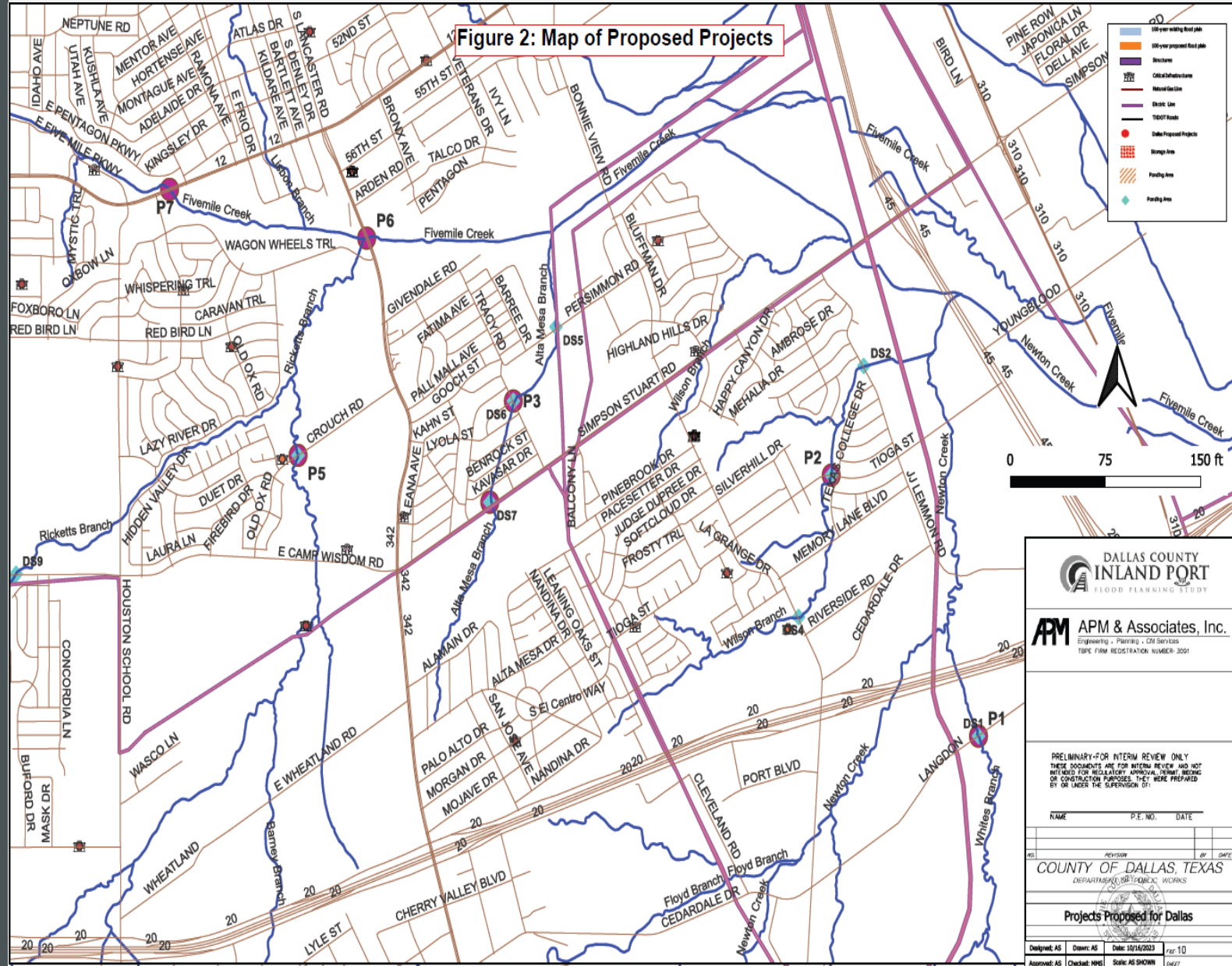
40 Bridge Crossings

5.6 Square Miles of Flood Risk



# FIVE MILE BASIN TRIBUTARIES

- Wilson Branch
- Ricketts Branch
- Newton Creek
- Alta Mesa
- Runyon Springs



**DALLAS COUNTY INLAND PORT**  
FLOOD PLANNING STUDY

**APM & Associates, Inc.**  
Engineering - Planning - GIS Services  
TYPE FIRM REGISTRATION NUMBER: 3091

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NAME	P.E. NO.	DATE

DESIGNED BY: AS    DRAWN BY: AS    DATE: 10/16/2023    REV: 10  
APPROVED BY: AS    CHECKED BY: MMS    SCALE: AS SHOWN    SHEET: 10/17

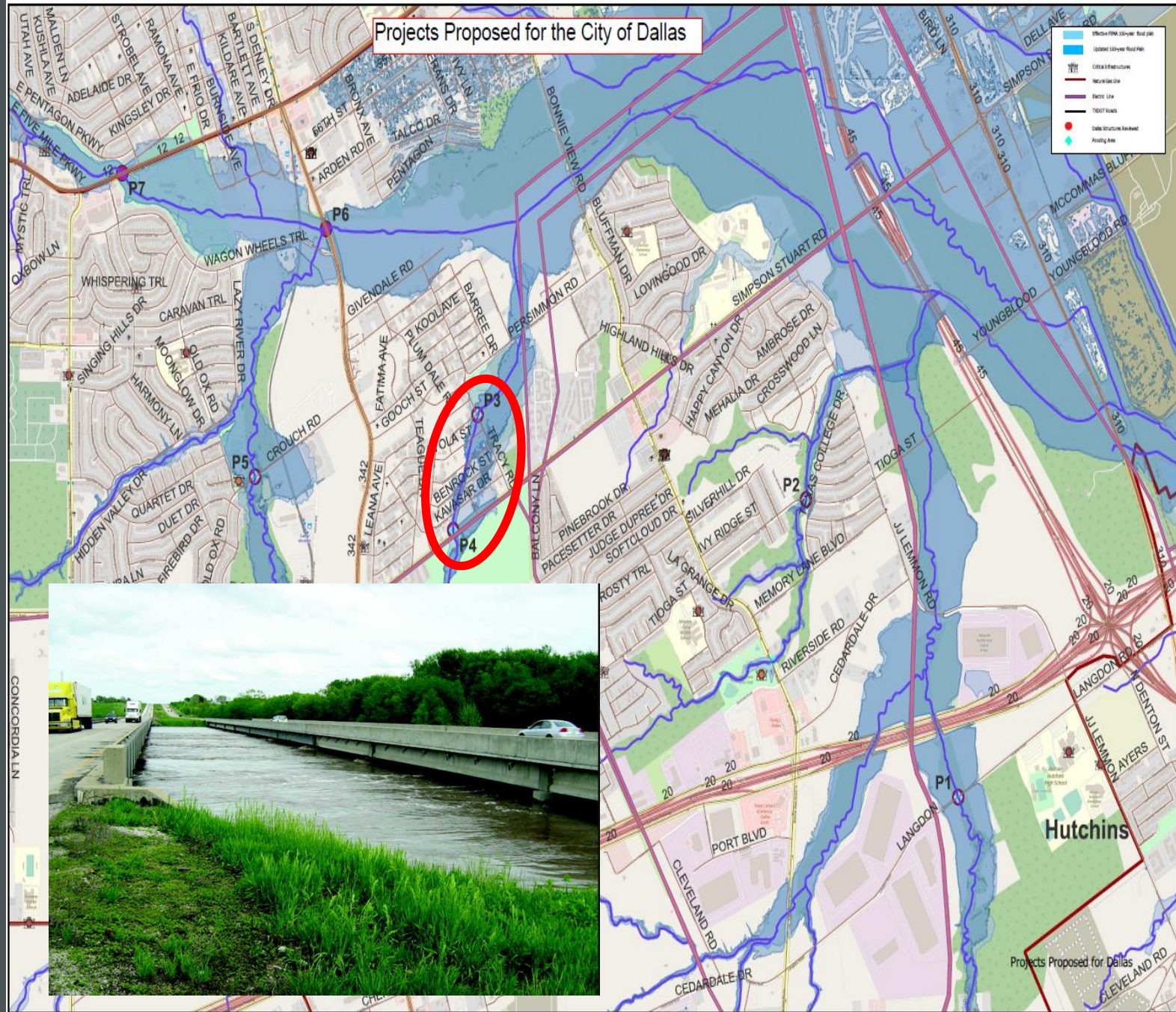
COUNTY OF DALLAS, TEXAS  
DEPARTMENT OF PUBLIC WORKS

Projects Proposed for Dallas



# FIVE MILE BASIN

- Initially Considered 16 crossings.
- Final 7 crossings for FME.
- Alta Mesa
  - Length: 1.2 Miles
  - Area Drained: 8.3 SqM
- Projects Evaluated
  - Tracy Road
  - Stuart Simpson



# PROJECT EVALUATIONS

**Proposed Structure: 60 foot Bridge on Alta Mesa Branch Tracy Road and Storage**

Flood Plain Area Removed (Acre-ft)	24.3
Storage Area	12.17
Number of Structures removed from Flood Plain	5
Number of Critical Structures Removed from Flood Plain	1
Length of Road Removed from Flood Plain (FT)	1150
Maximum Increase in Water Surface Elevation (FT)	0.02
Maximum Increase in Velocity (FPS)	6.95
Total Increase in Storage Volume	22.7
Total Increase in Flow (CFS)	-1.5

- 100-Y Effective Flood plain
- 100-Y existing flood plain
- 100-Y proposed flood plain
- Structures
- Critical Infrastructures
- Natural Gas Line
- Electric Line
- TxDOT Roads
- Storage Area
- Ponding Area
- Channel Erosion Protection

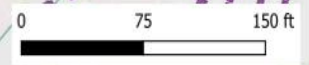
Existing 4x3.75 feet Diameter Culverts  
Proposed 60 foot Bridge

Fully Developed 100-year Flood Plain for Proposed Structure in Tracy Road

Storage Area 12.17 Acres

Existing 2x10 foot Culverts  
Proposed 240 foot Bridge

Channel Erosion Protection  
250 ft



DALLAS COUNTY INLAND PORT FLOOD PLANNING STUDY

APM & Associates, Inc.  
Engineering - Planning - CM Services  
TSPC FIRM REGISTRATION NUMBER: 3091

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NAME: \_\_\_\_\_ P.E. NO.: \_\_\_\_\_ DATE: \_\_\_\_\_

COUNTY OF DALLAS, TEXAS  
DEPARTMENT OF PUBLIC WORKS

Alta Mesa Tracy Road

Designed: AS Drawn: AS Date: 11/29/2023 PLOT:  
Approved: AS Checked: HRS Scale: AS SHOWN 5/8" = 1'

## Alta Mesa Creek Analysis

- Tracy Road
- Simpson Stewart Road

## Improvements

- Tracy Rd.
  - Proposed 60- foot Bridge
- Simpson Stewart Road
  - Proposed 240 Foot Bridge

## Impact

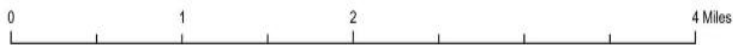
- Floodplain Removed - 24.3 Acs
- Roadway Removed – 1150 LF
- Structures Removed – 6 (1 critical)

## DALLAS EXISTING STORM SEWER PIPING



### Map Legend

— Storm Lines



# STORM SEWER LINE EVALUATIONS

## Trunk Lines 24" Larger

- Doesn't Include
- Inlets
- Laterals
- Lines < 24" dia

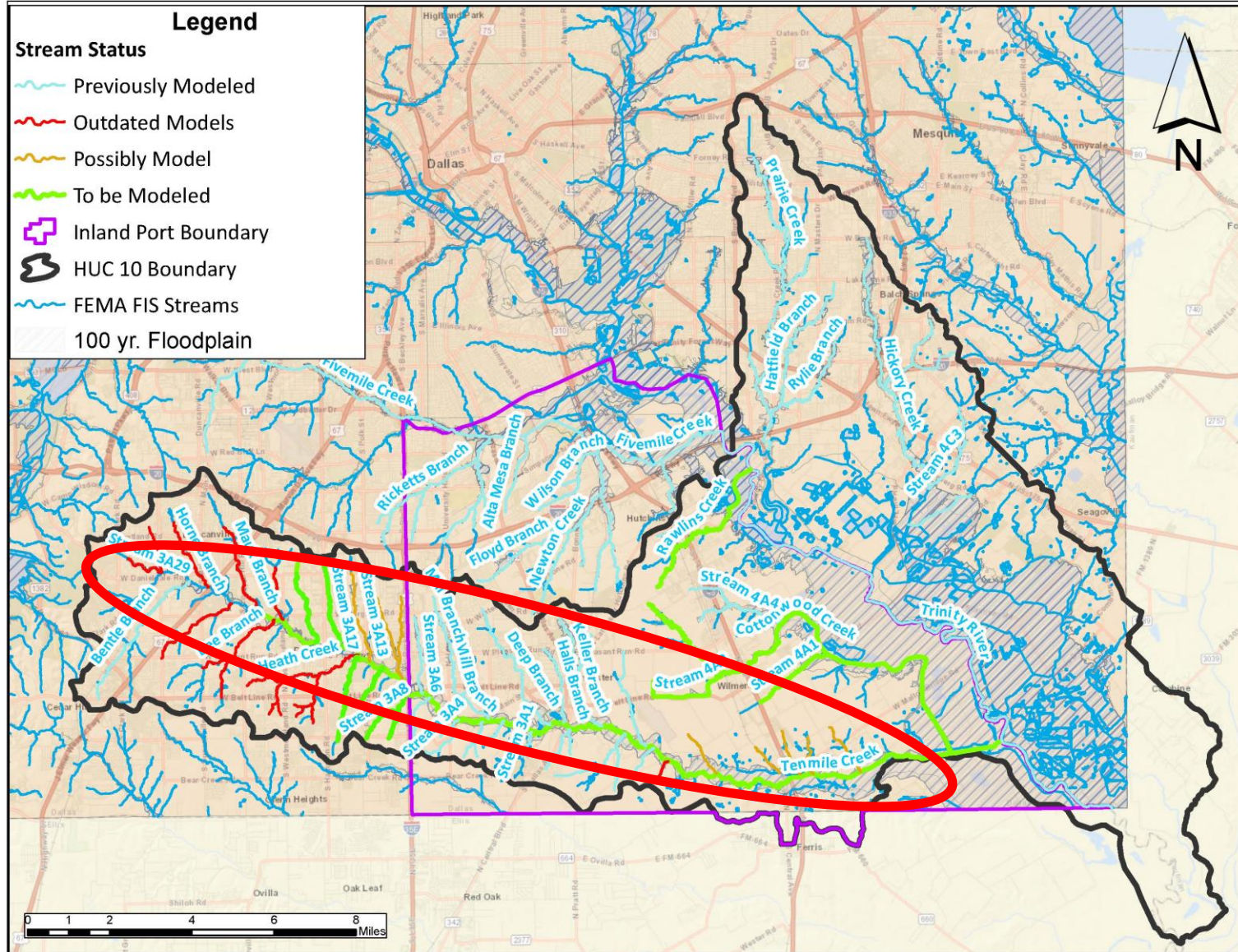
## Systems Evaluated.

- Larger Diameter Lines
- Flooded Lines
- Discharging in Flooded Creeks

## Possible Solutions

- Construct Larger Lines
- Look at other options
- Storm Water Detention
- Green solutions

# DRAINAGE BASINS



- Five Mile Creek
- Ten Mile Creek
- Cottonwood Creek
- Rawlins Creek

# TEN MILE CREEK DIVIDE

Approximately 28.5 miles long

Includes:

7 Cities

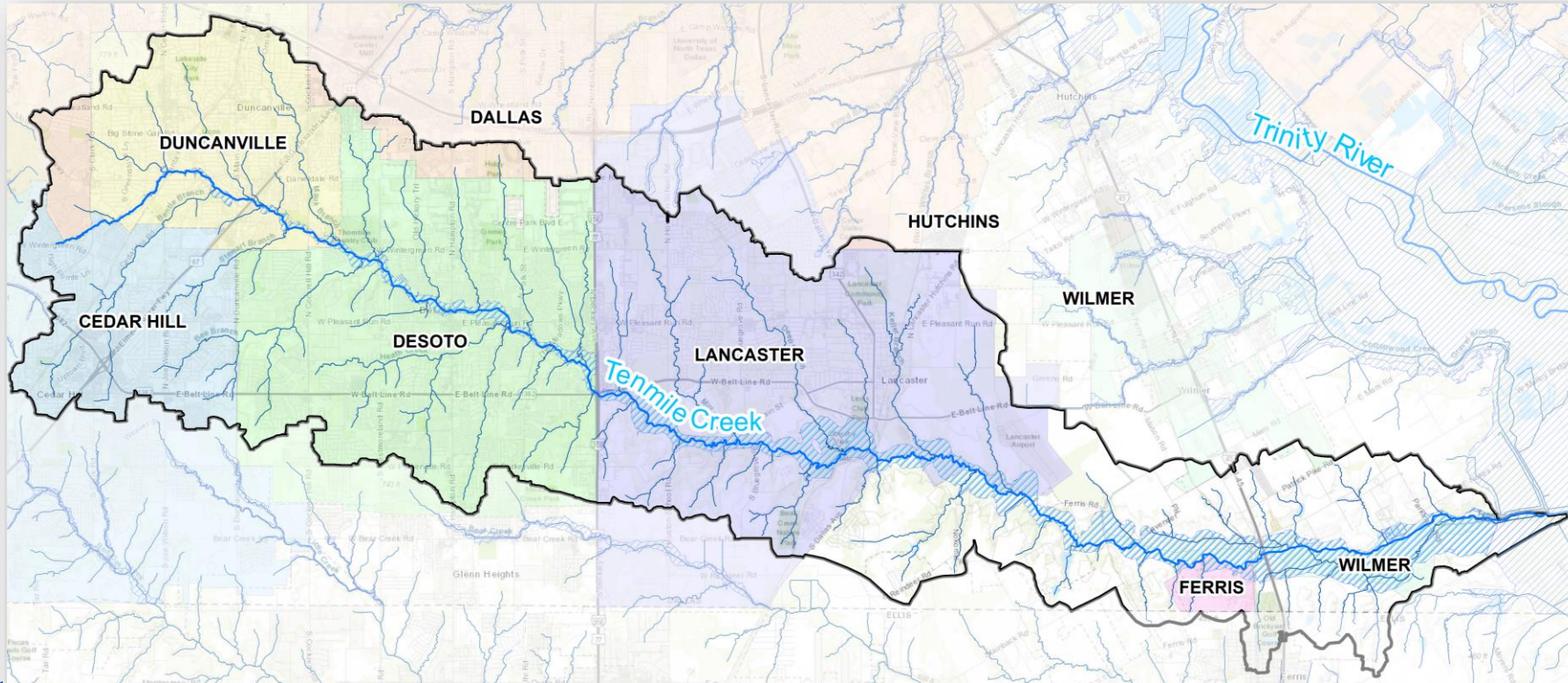
2 Culvert Crossings

78 Square Mile Watershed

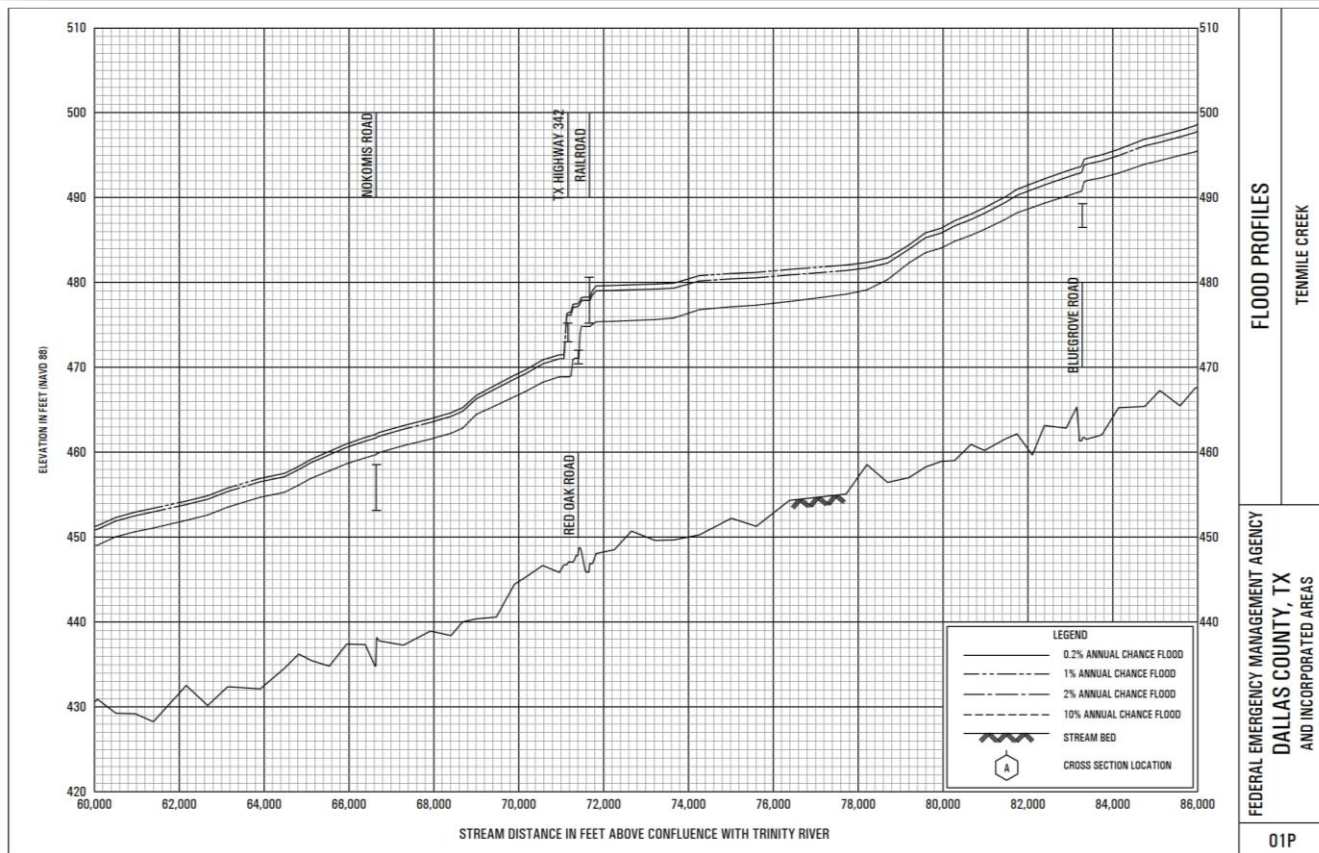
49 Tributaries

32 Bridge Crossings

6 Square Miles of Flood Risk



# PROJECT EVALUATIONS



## Structures at Risk

- 10 Overtopped Roads
- 226 at Risk Buildings
- 14 Threatened Bridges

## Potential Improvements

- Bridge Improvements @ Briar Hill Circle, Beaver Creek Drive, Wintergreen Road, Houston School Road, Bluegrove Road, and Old Red Oak Road
- Channel Improvements
- Detention



Ferris Road



The Meadows Parkway

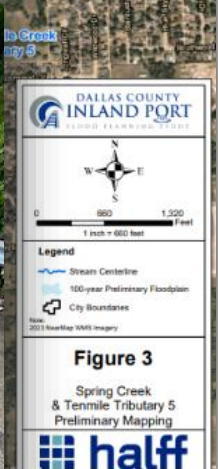
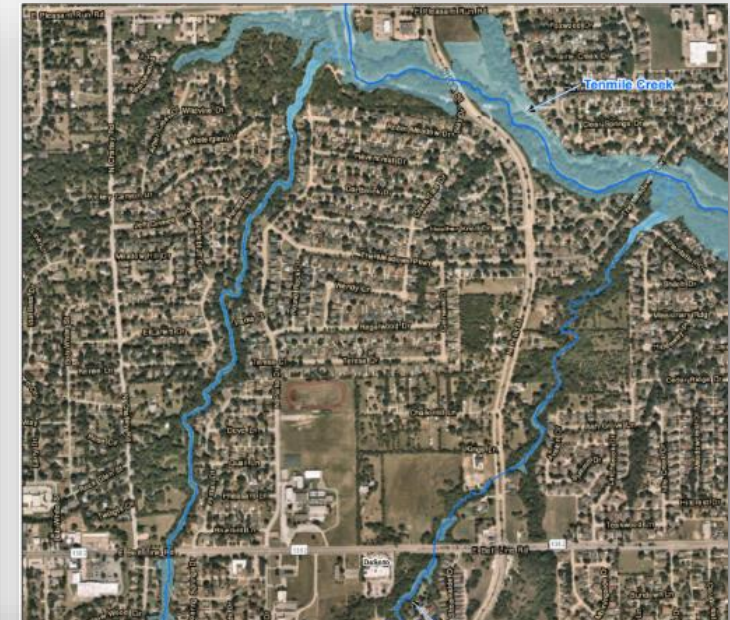
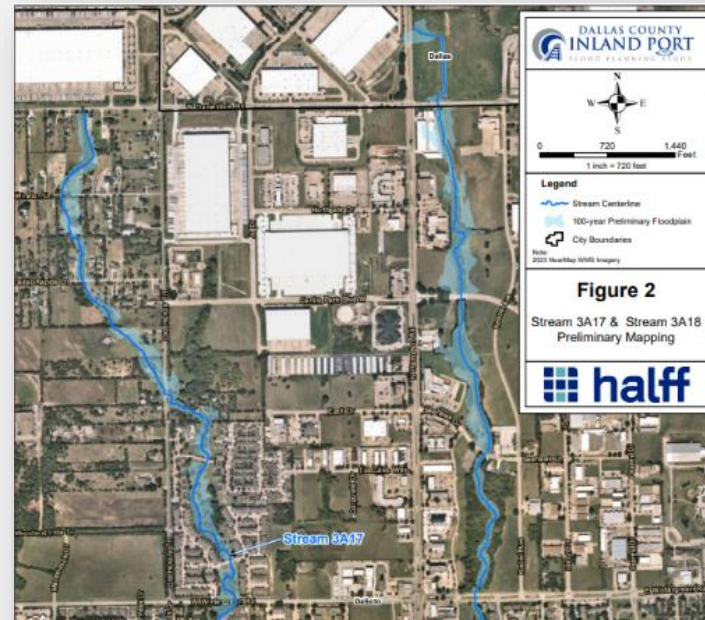
# DESOTO TRIBUTARIES

## Desoto Tributaries

- Spring Creek, Stream 3A17, Stream 3A18, Stream 3A8, Stream 3A8 Tributary I, and Tenmile Creek Tributary I

## Structures at Risk

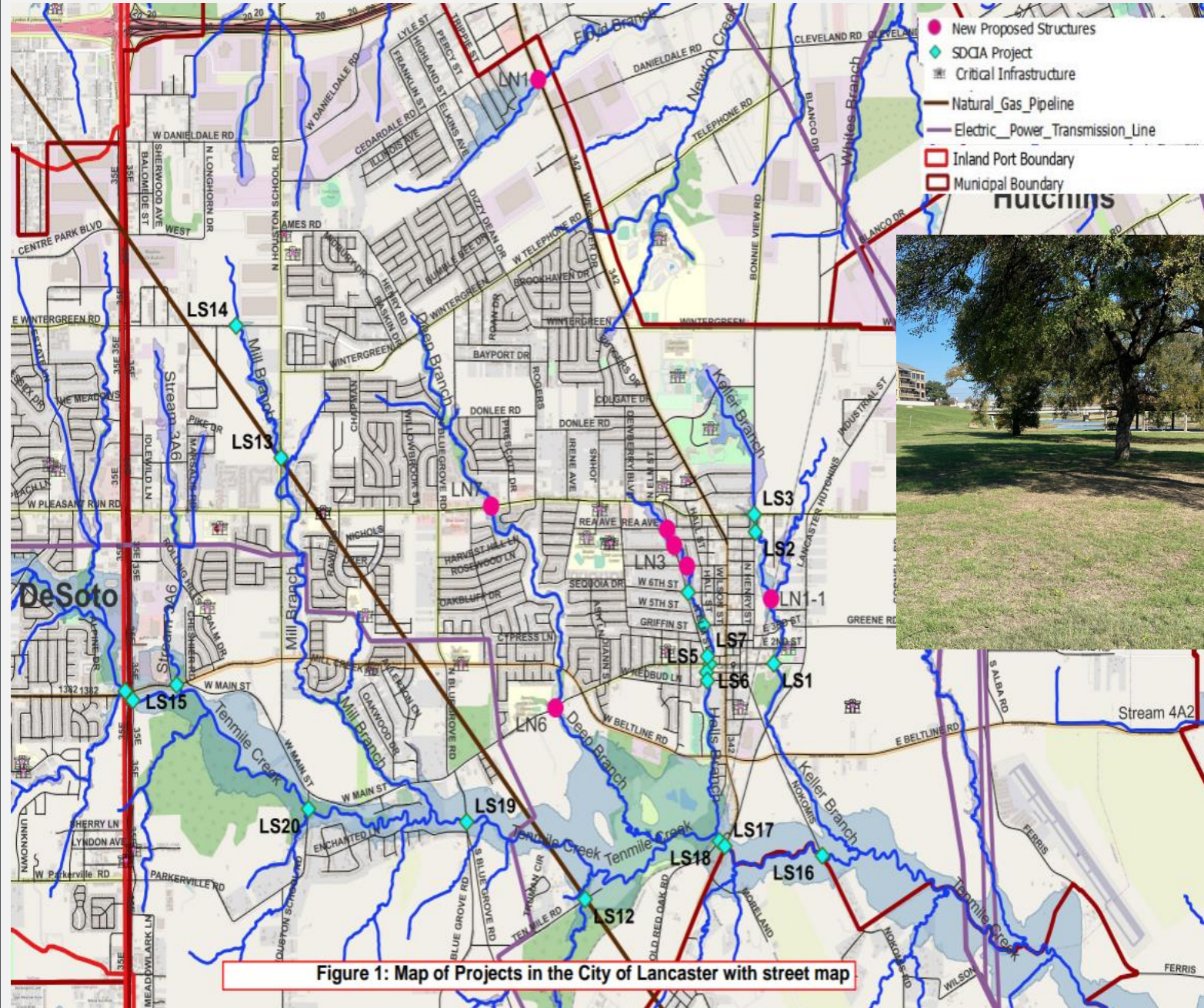
- 18 Overtopped Roads
  - 67% of total road crossings
- 24 at Risk Buildings



Terrace Drive – Flood Damage

# LANCASTER TRIBUTARIES

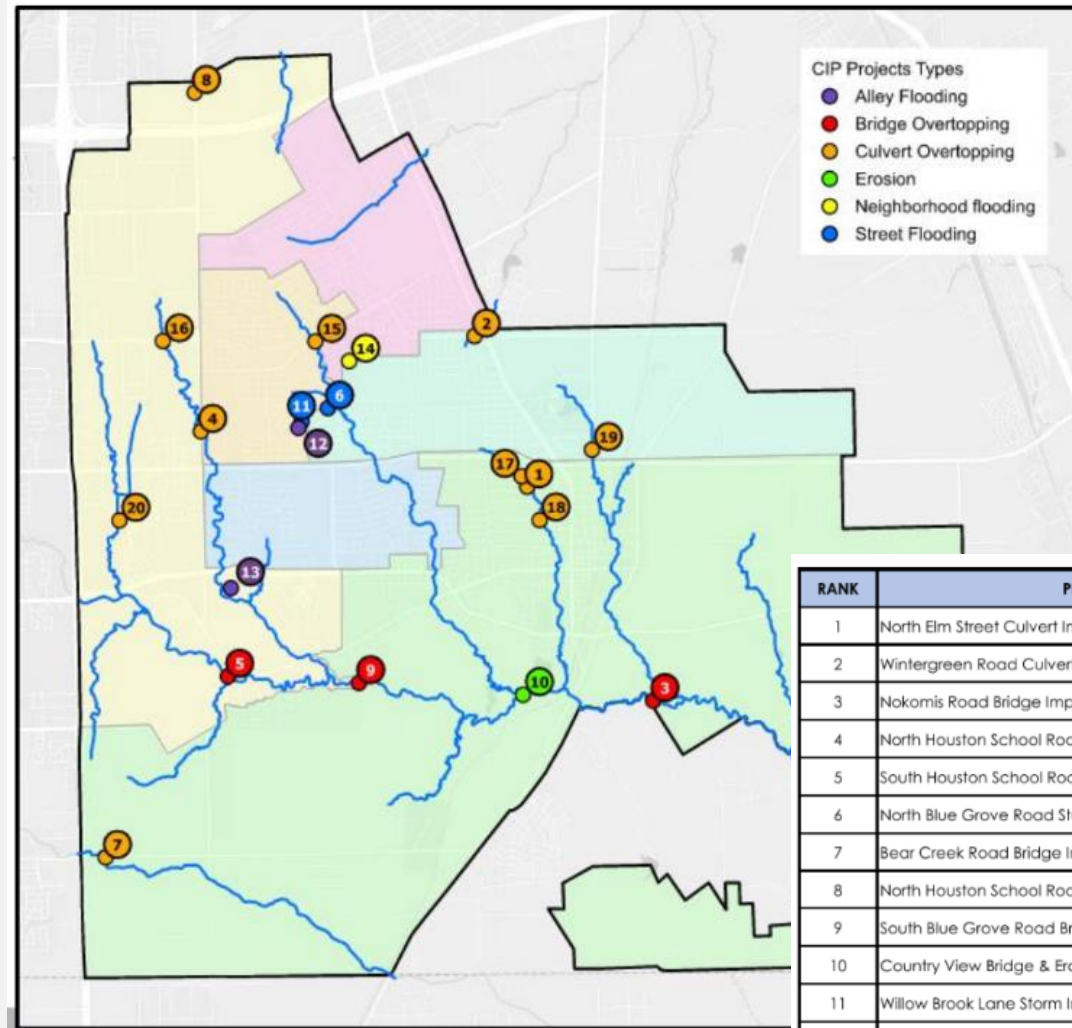
- Deep Branch
- Halls Branch
- Keller Branch
- Mill Creek
- Streams 3A5 & 6
- Unnamed Tribs 1,2&3





# LANCASTER

- Updated Master Plan
- Updated Models
- Top Projects
- Both Creek Crossing and Storm Piping Systems



RANK	PROJECT DESCRIPTION
1	North Elm Street Culvert Improvements
2	Wintergreen Road Culvert Improvements (Newtown)
3	Nokomis Road Bridge Improvements
4	North Houston School Road Culvert Improvements
5	South Houston School Road Bridge Improvements
6	North Blue Grove Road Storm Improvements
7	Bear Creek Road Bridge Improvements
8	North Houston School Road Culvert Improvements
9	South Blue Grove Road Bridge Improvements
10	Country View Bridge & Erosion Improvements
11	Willow Brook Lane Storm Improvements
12	Willow Brook Street (Alley) Storm Improvements
13	Mill Creek Road Storm Improvements
14	Bayport Drive Ditch Improvements
15	Wintergreen Road Culvert Improvements (Deep)
16	Wintergreen Road Culvert Improvements (Mill)
17	Rea Avenue - Upgrade Halls Branch Crossing
18	6th Street Culvert Improvements
19	Park Place Culvert Improvements
20	Rolling Hills Place Culvert Improvements

# EXISTING LANCASTER STORM SEWER PIPING

## STORM SEWER LINE EVALUATIONS

### Trunk Lines 24" Larger

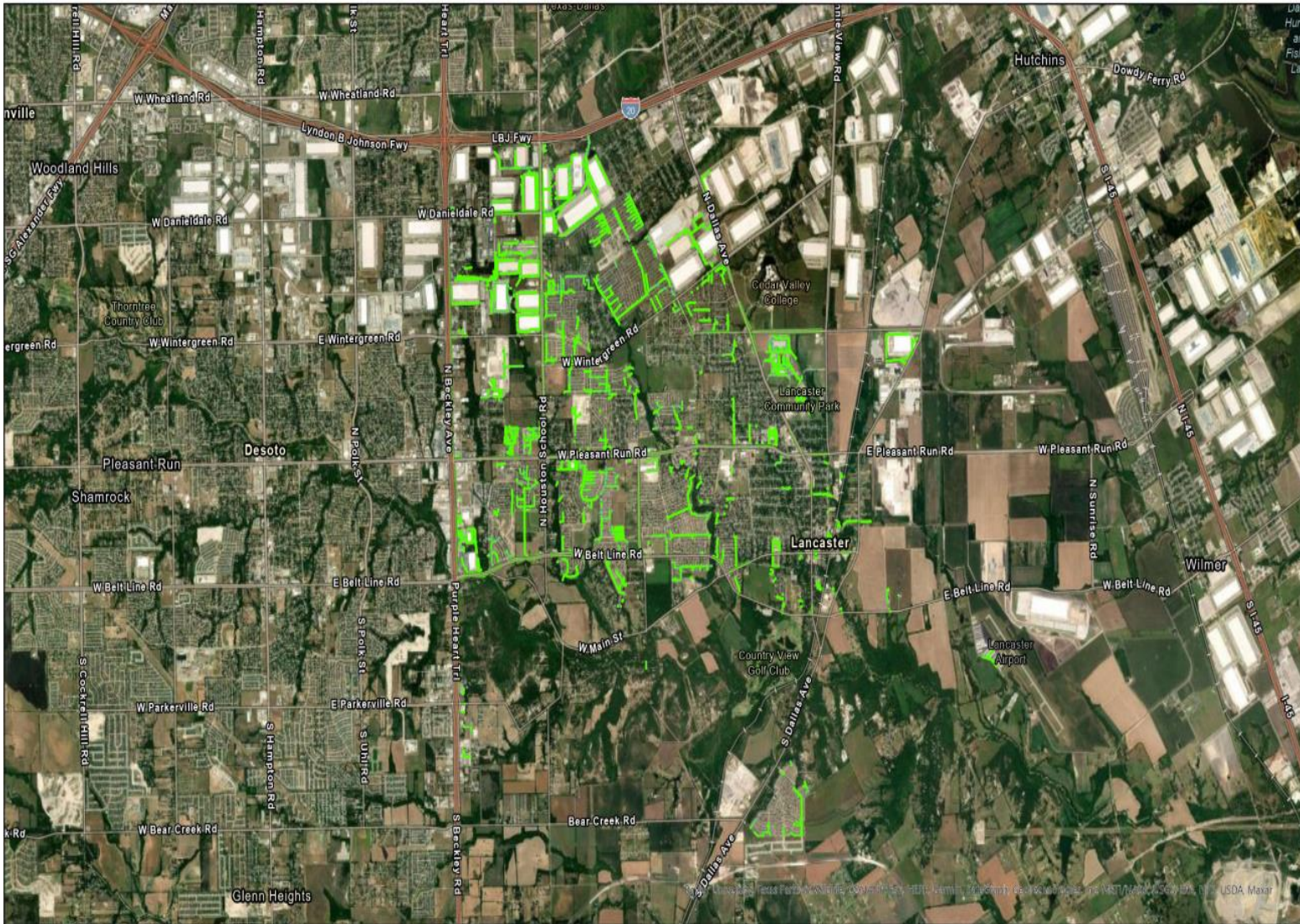
- Doesn't Include
- Inlets
- Laterals
- Lines < 24" dia

### Systems Evaluated.

- Larger Diameter Lines
- Flooded Lines
- Discharging in Flooded Creeks

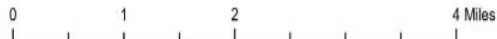
### Possible Solutions

- Construct Larger Lines
- Look at other options
- Storm Water Detention
- Green solutions

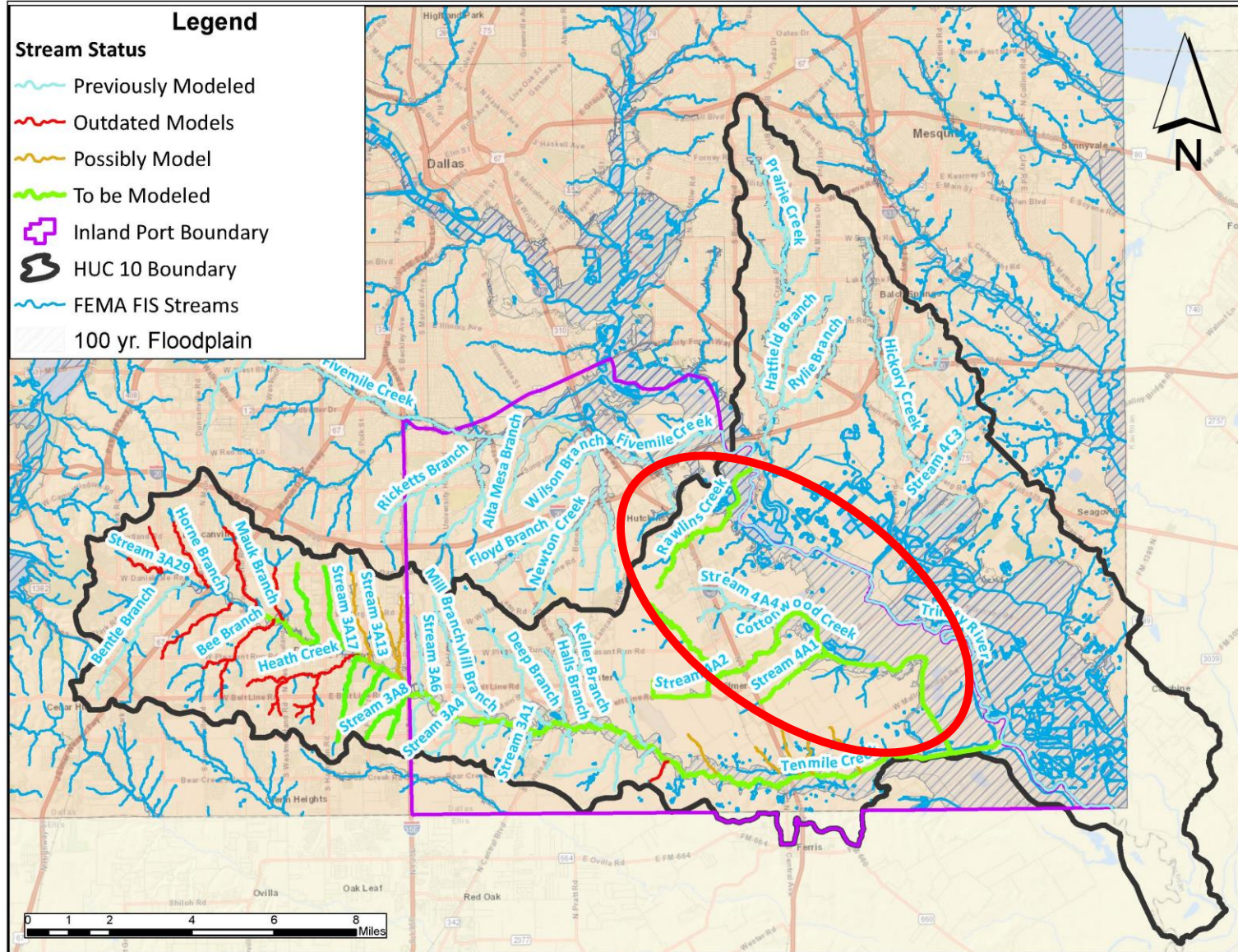


### Map Legend

— Lancaster Storm Lines



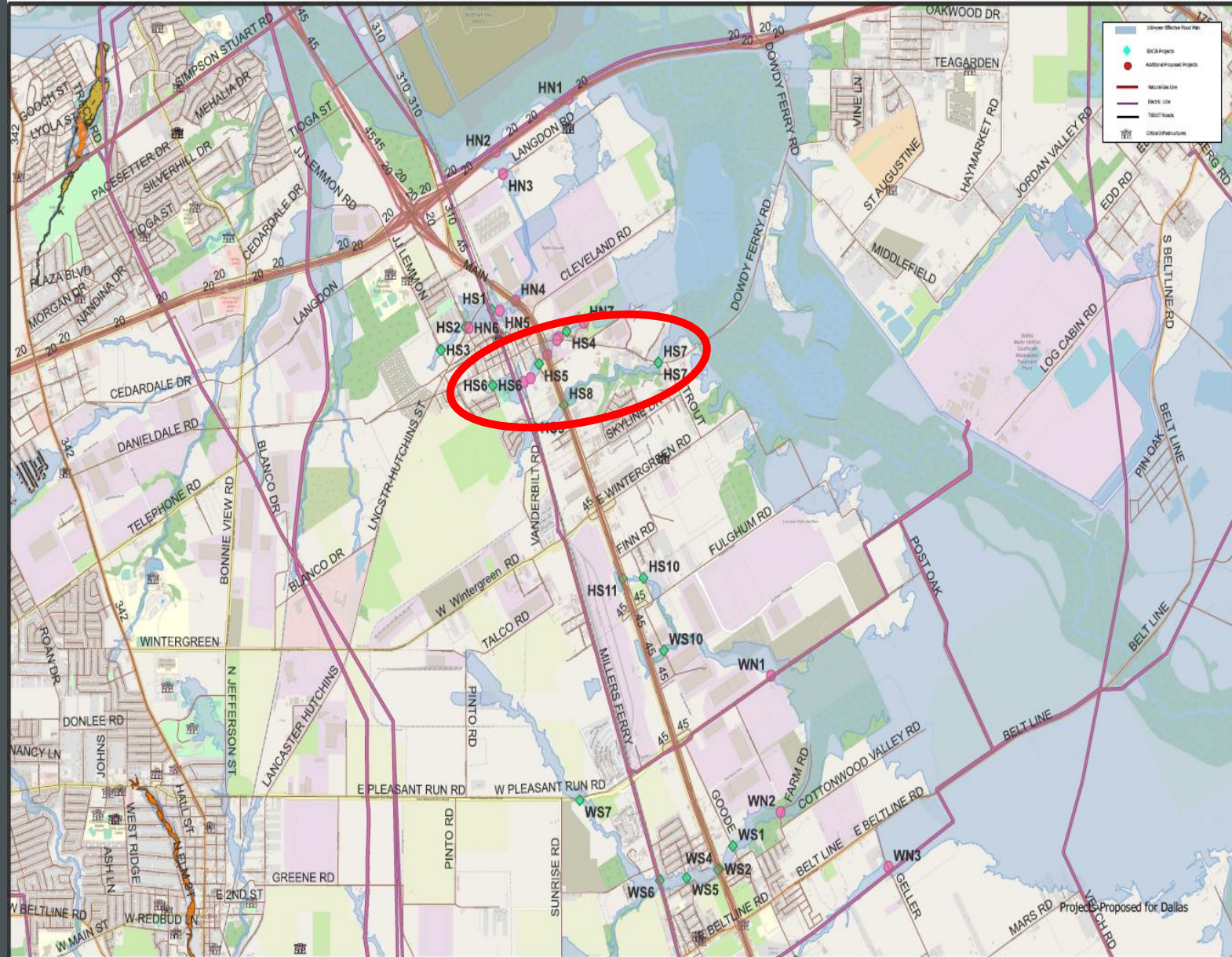
# DRAINAGE DIVIDES



- Five Mile Creek
- Ten Mile Creek
- Cottonwood Creek
- Rawlins Creek

# WILMER/HUTCHINS

- Streams
- Rawlins Creek
- Hutchins Creek
- Cottonwood Creek
- 4-A-1 & 4-A-2
- 4-B-4
- 4-A-4



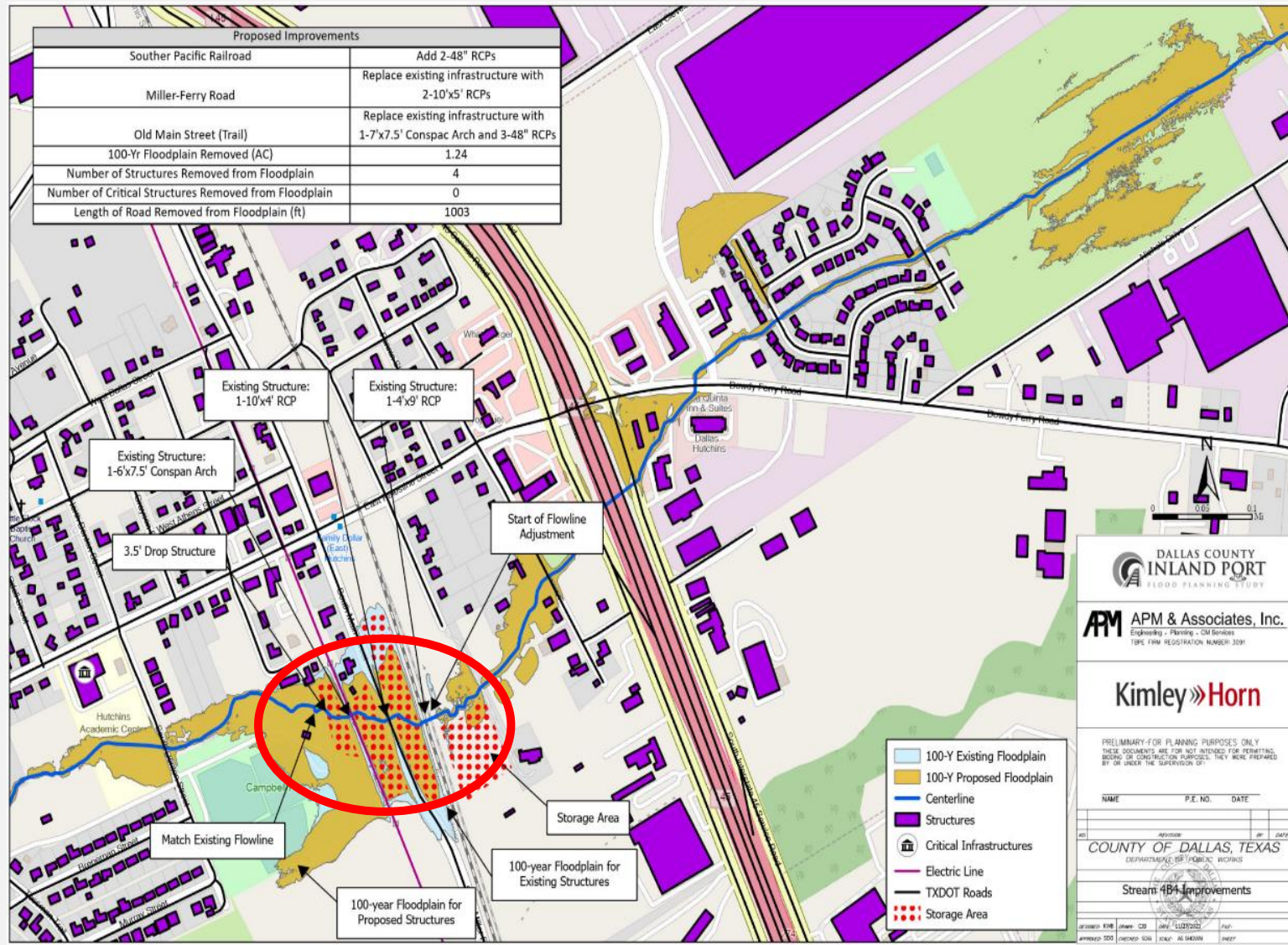
# STREAM 4-B-4

## Stream 4-B-4 Divide

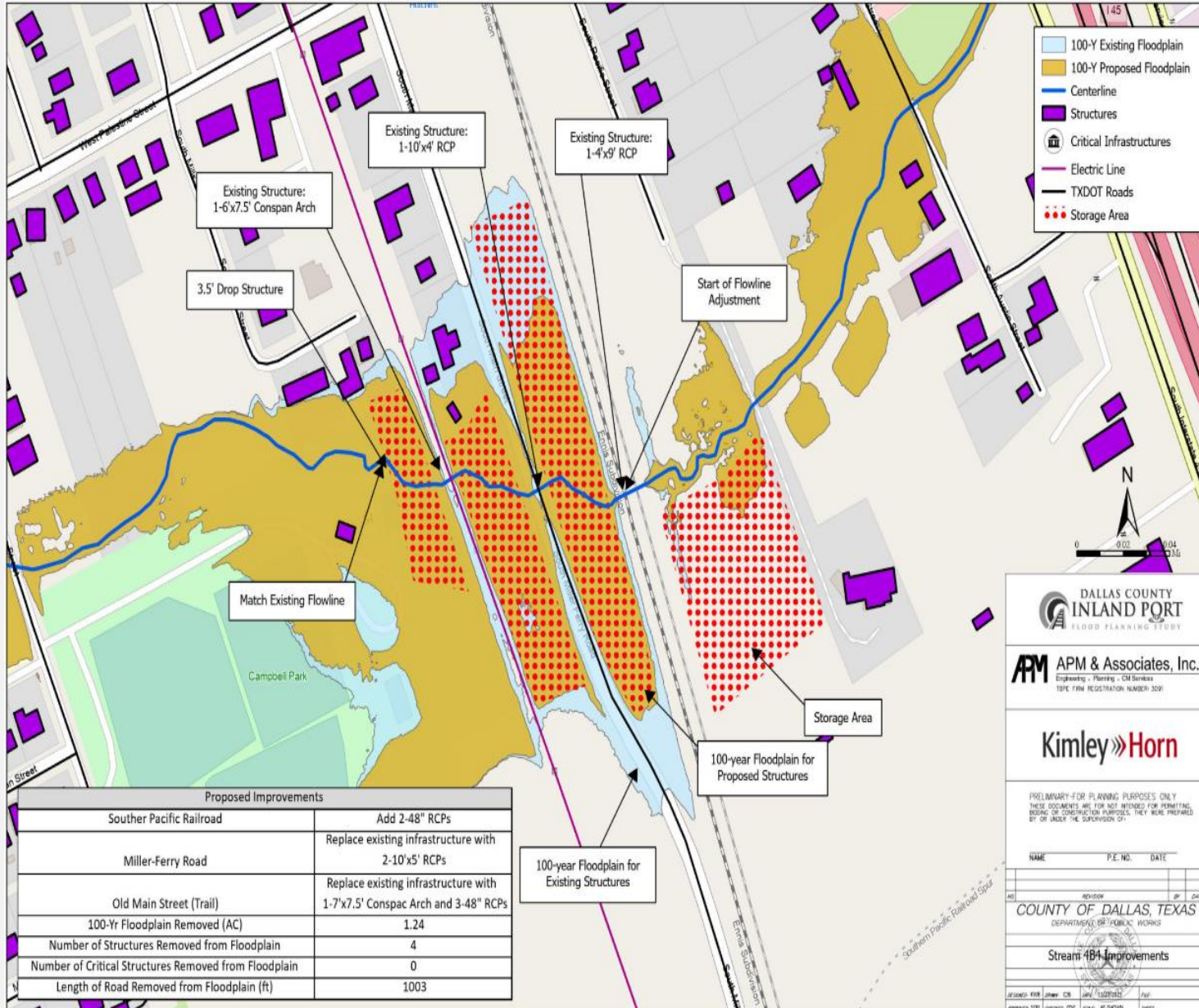
- Length – 0.75 miles
  - Area Drained: 1.7 SM
- Major Streets
- IH45
  - Dowdy Ferry Rd

## Improvements Evaluated

- Union Pacific RR
- Old Main Street
- Millers Ferry Rd



# PROJECT EVALUATIONS



## Creek 4-B-4 Analysis

- Union Pacific Railroad
- Miller Ferry Rd
- Old Main Street

## Improvements

- Union Pacific Railroad – add 2-48" RCP's
- Miller Ferry Rd - add new 2-10x5 RCB
- Old Main Street - new 1-7x7.5 Conspan Arch and 3-48" RCP's

## Impact:

- Floodplain Removed - 1.24ac
- Roadway Removed – 1003 LF
- Structures Removed -4

DALLAS COUNTY  
INLAND PORT  
FLOOD PLANNING STUDY

APM & Associates, Inc.  
Engineering • Planning • CM Services  
TYPE FIRM REGISTRATION NUMBER: 2001

Kimley»Horn

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REVISION: \_\_\_\_\_ BY: \_\_\_\_\_ DATE: \_\_\_\_\_

COUNTY OF DALLAS, TEXAS  
DEPARTMENT OF PUBLIC WORKS

Stream 4B4 Improvements

DESIGNED: KKR CHECKED: CB DATE: 11/20/2023 PLOT: \_\_\_\_\_  
APPROVED: TSM CHECKED: SDG SCALE: AS SHOWN SHEET: \_\_\_\_\_

# STORM SEWER LINE EVALUATIONS

### Trunk Lines 24" Larger

- Doesn't Include
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- Laterals
- Lines < 24" dia

### Systems Evaluated.

- Larger Diameter Lines
- Flooded Lines
- Discharging in Flooded Creeks

### Possible Solutions

- Construct Larger Lines
- Look at other options
- Storm Water Detention
- Green solutions



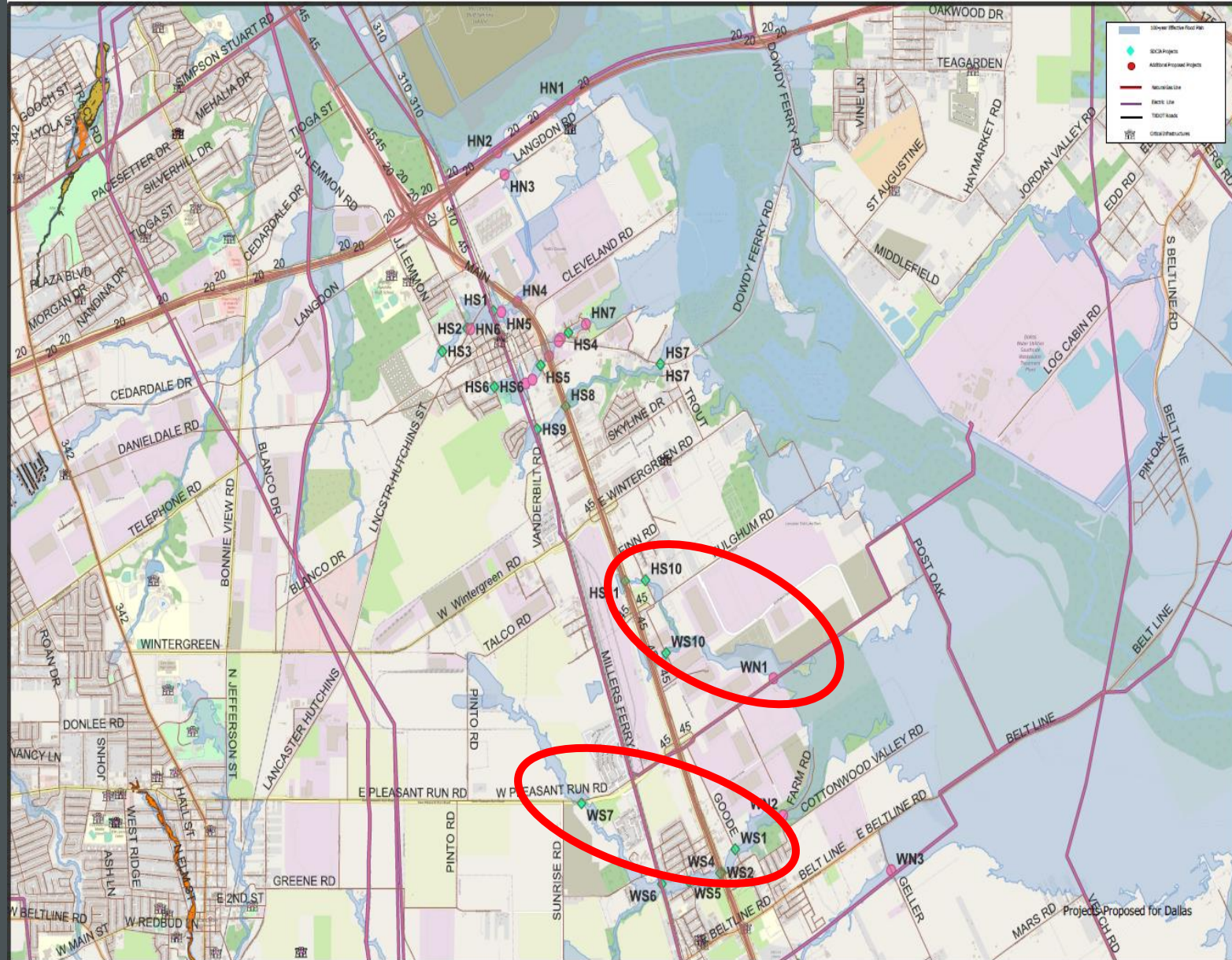
**Map Legend**

- Stormlines
- /// DetentionPonds



# WILMER/HUTCHINS

- Streams
- Cottonwood Creek
  - Miller Ferry Road
  - Anderson Street
- 4-A-4
  - Pleasant Run Road





# COTTONWOOD CREEK DIVIDE

Approximately 13.1 miles long

Includes: Lower Portion controlled by the Trinity River Flooding

3 Cities and Unincorporated Dallas County

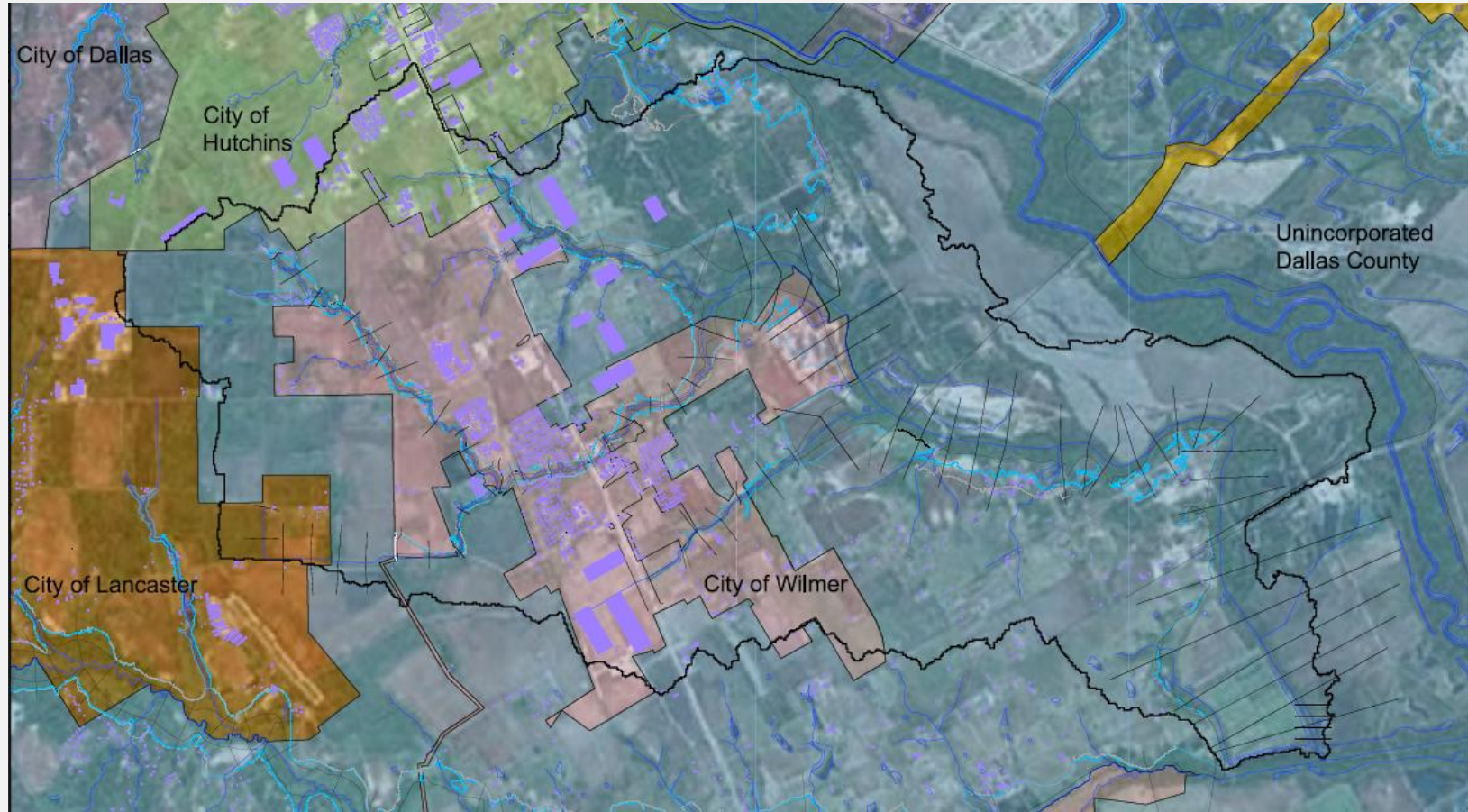
6 Culvert Crossings

24 Square Mile Watershed

7.7 Square Miles of Flood Risk

11 Tributaries

12 Bridge Crossings



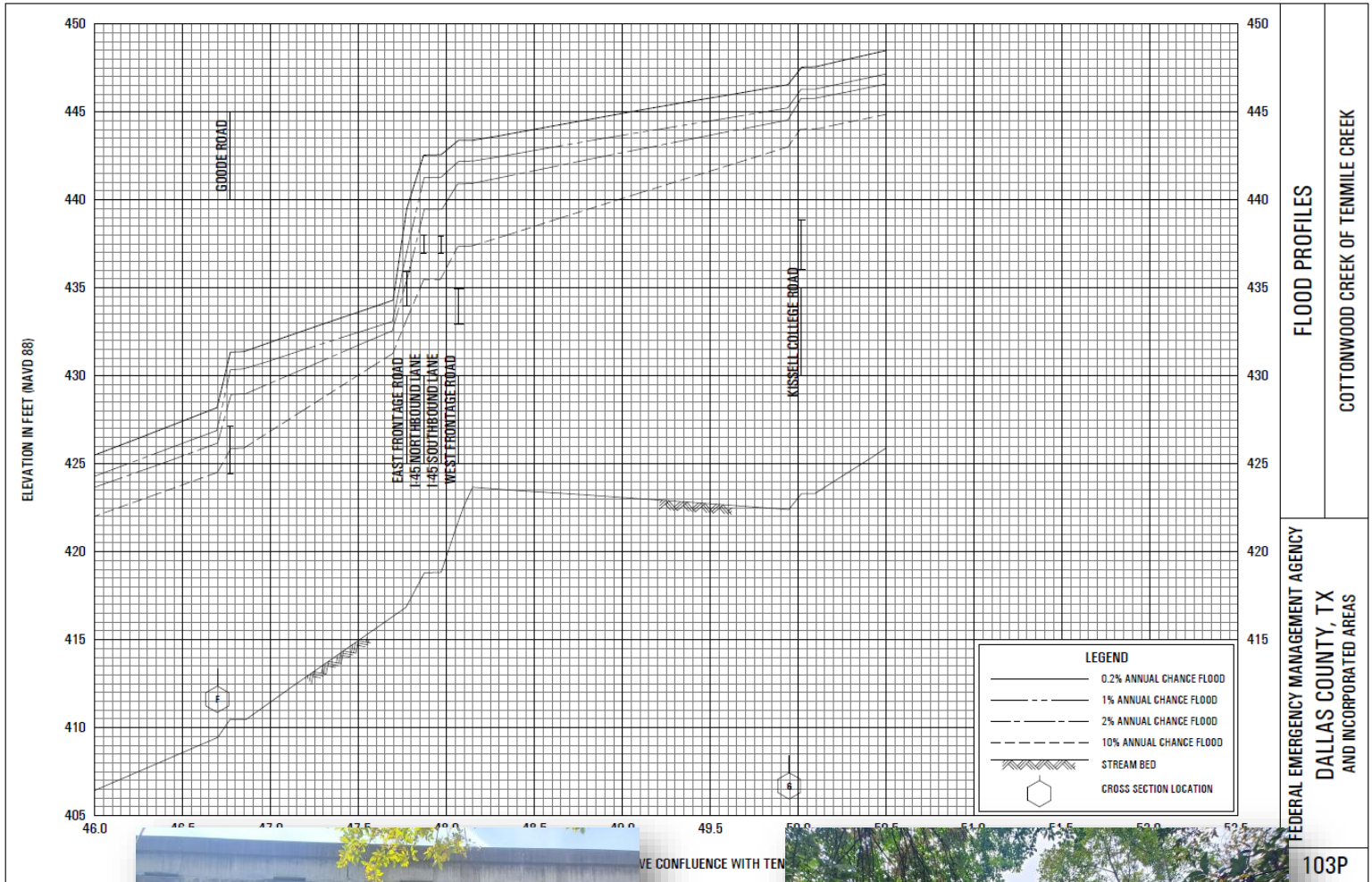
# PROJECT EVALUATIONS

## Structures at Risk

- 12 Overtopped Roads

## Potential Improvements

- Focusing on improvement above the area Controlled by the Trinity River
  - E. Beltline Road and Upstream
- Goode Road , I-45 and Kissell College Road Section Bridge and Channel Improvements
- Other areas there will be
  - Bridge/Culvert Improvements
  - Channel Improvements
  - Possible Detention



Goode Road



Kissell College Road

# ESTIMATED PROJECT SCHEDULE

## Major Milestones:

1. Data Acquisition – Finishing
2. Public Meeting 1/Fall 2022
3. Survey – Winter 2022 -Winter 2023
4. Modeling – Winter 2023 Spring 2024
5. Public Meeting 2/Findings – Fall 2023
6. Preliminary Study Report- Fall 2024
7. Public Meeting 3 – Winter 2024
8. Final Study Report – January 2025



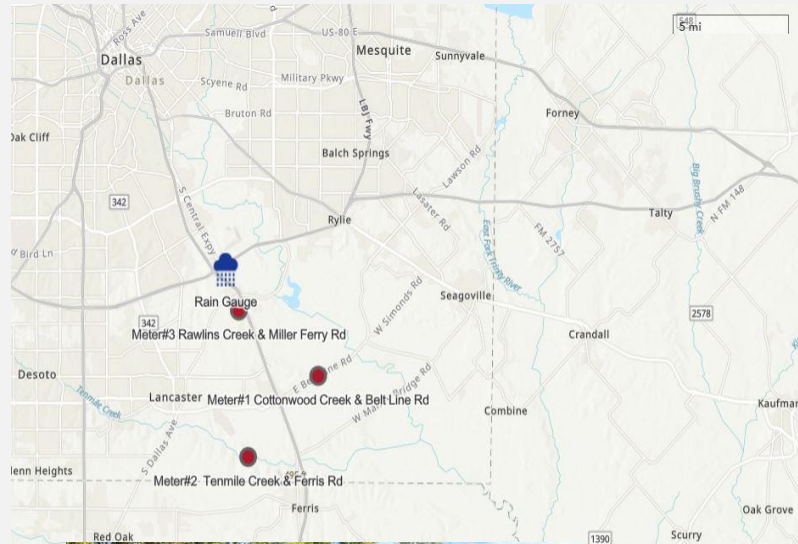


## WHAT'S NEXT

- Continue to work with the stakeholders
- Coordinate with ongoing modeling efforts in the City's
- Develop drainage evaluations for Priority Projects that meet the state criteria
- Develop Cost/Benefit Ratios
- Submit list of qualified projects to State



# MODEL VALIDATION



Click for more info.

Rendering Options

Standard

- Default
- Last Maintenance
- Last Confirmation
- Work Order Status
- Collect Status
- Alarms (0)

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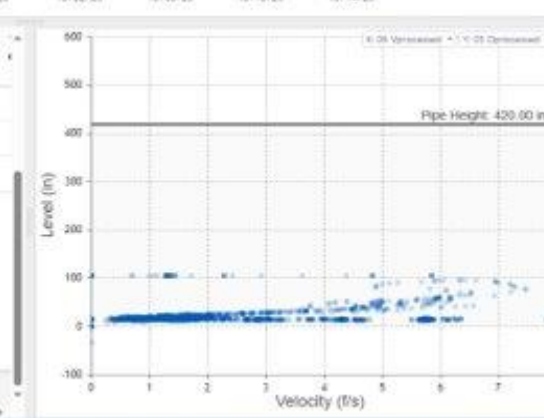
Search...

- Meter#1 Cottonwood Creek & Belt Line Rd
- Meter#2 Tenmile Creek & Ferris Rd
- Meter#3 Rawlins Creek & Miller Ferry Rd



Time	Power Level	Supply	Surchage Level 2	Surchage Velocity	O6 Dprocessed	O6 Vprocessed
9/12/23 5:25 AM						
9/12/23 5:30 AM		12.305	0.000		105.488	105.488
9/12/23 5:35 AM						
<b>Total</b>		11.873	0.088	-4.010	13.262	13.588
<b>Minimum</b>		11.101	-0.380	-4.010	-33.631	-33.633
<b>Maximum</b>		12.456	0.240	-4.010	105.689	105.689
<b>Time of Min.</b>		10/10/23 10:05 AM	10/5/23 8:25 AM	9/11/23 2:40 PM	9/11/23 2:40 PM	9/11/23 2:45 PM
<b>Time of Max.</b>		5/11/23 4:10 PM	10/5/23 6:55 AM	9/11/23 2:40 PM	9/11/23 7:45 PM	9/11/23 7:45 PM

\*Provisional data subject to revision.



## Continuous - 3 Months

- Ten Mile Creek
  - Ferris Rd
- Cottonwood Creek
  - Beltline Road
- Rawlins Creek
  - Miller's Ferry Road

## Monitoring

- Depth
- Flow
- Velocity
- Rain

# Dallas County Inland Port Flood Planning Study

Managing Flood Risk to Reduce Loss of Life and Property from Flooding



## DALLAS COUNTY INLAND PORT

The Dallas County Inland Port Flood Protection Study is partially being funded with the Flood Infrastructure Fund from the Texas Water Development Board (TWDB) to determine flood prone areas and to identify improvements to alleviate flooding. This study focuses on the Inland Port area in the southern Dallas area, but also includes the entire watershed in the vicinity known as the HUC-10 which includes over 230 square miles. Both of these areas are indicated on the map. The study has an anticipated completion date of Summer of 2024. The purpose of the study is to determine the most critical areas that flood and to identify modifications to the stormwater drainage system to reduce economic losses due to flooding.

# HOW TO GET INVOLVED

➤ Visit website

- [dallasinlandportfps.org](https://dallasinlandportfps.org)

➤ Attend public meetings

➤ Submit Comments

PUBLIC MEETINGS

## UPCOMING MEETINGS

November 30, 2023



## PAST MEETINGS

- Meeting Presentation - 11/9/22
- Meeting Recording - 11/9/22



THANKS  
FOR  
YOUR TIME!

