Region 3 Trinity Flood Planning Group Meeting
Thursday, November 19, 2026
1:30 p.m.

The Region 3 Trinity Regional Flood Planning Group (R3TRFPG) will hold a public meeting in-person pursuant to Texas Government Code, Section 551.127. This meeting will be conducted in a hybrid format.

In-person:
Trinity River Authority of Texas – General Office
5300 S Collins St
Arlington, TX 76018

Virtually:
Via WebEx videoconference at:
https://trinityra.webex.com/trinityra/j.php?MTID=ma6cfa61d1d517ec4cf8a27c22b575009
Webinar number: 2493 439 7128

or via phone at 1-408-418-9388
Webinar password: Trinity (249 343 97128 when dialing from a phone or video system)

Members of the public may attend, participate and/or address the RFPG in-person, or they may virtually access the meeting using the videoconference link or teleconference information provided above. Members of the public wishing to address the Trinity RFPG during the meeting are encouraged to follow the registration and comment procedures found below.

MEETING AGENDA

1. Call to order
2. Roll call
3. * Approval of minutes from the previous meeting
4. Acknowledgement of written public comments received
5. Receive registered public comments on specific agenda items – limit 3 minutes per person
6. TWDB Update
   a. Task 5B Update on TWDB FMEs by TWDB consultant
7. Update from Region 3 Technical Consultant
   a. Chapter 4 updates
      i. Task 4C Performance of FMEs
   b. Chapter 5 updates
      i. Task 5A Recommended FMEs, FMPs and FMSs updates on new FMX requests received through October 30, 2026

c. *Consider approving draft Chapter 7 Flood Response
d. Chapter 8 Admin, Regulatory and Legislative Recommendations update
    i. *Consider convening Chapter 8 Recommendations Subcommittee (previously called the Policy Subcommittee) and update subcommittee composition
e. Chapter 9 Infrastructure Financing update
f. Task 10 Outreach update
g. Project schedule

8. Updates from liaisons for adjoining coastal regions
    a. Region 5 Neches RFPG
    b. Region 6 San Jacinto RFPG
9. Updates from Planning Group Sponsor
10. Receive registered general public comments – limit 3 minutes per person
11. Announcements
12. Confirm meeting date for next meeting(s)
13. Adjourn

** Denotes Action Item*

ORAL PUBLIC COMMENTS

If you wish to provide oral public comments at the meeting, you are encouraged to register in advance by emailing info@trinityrfpg.org no later than 12:30 p.m. on November 19, 2026, providing your name, phone number, email address and who are you representing, and indicating if you wish to comment on a specific agenda item or provide general comments. During the meeting, those who have registered to speak, either in-person or virtually, will be called upon by the Chair during the appropriate comment period. At the discretion of the Chair, unregistered attendees who wish to speak may also have the opportunity to provide oral comments during the public comment periods of the agenda.

- Those participating by videoconference will be asked to use the "raise hand" function, visible by hovering the cursor over the attendee's name onscreen, to indicate their interest in speaking during the appropriate public comment period.
- Those participating by teleconference will be asked to enter *3 to indicate their interest in speaking and to be placed into the queue in order to be called upon during the appropriate public comment period.

WRITTEN PUBLIC COMMENTS

If you wish to provide written comments prior to or after the meeting, please email your comments to info@trinityrfpg.org and include "Region 3 Trinity Flood Planning Group Meeting" in the subject line of the email.

Additional information may be obtained from:

Alexis Long at: (817) 467-4343 or by email at: longas@trinityra.org
Physical location: 5300 South Collins Street, Arlington, TX 76018

REGION 3 TRINITY
REGIONAL FLOOD PLANNING GROUP

November 19, 2026



1. Call to order

2. Roll call

3. Approval of minutes

Region 3 Trinity Flood Planning Group Meeting
Monday, August 10, 2026
2:00 p.m.

The Region 3 Trinity Flood Planning Group convened a public meeting, in person as well as virtual, on Monday, August 10, 2026, 2:00 p.m.

Chairman Glenn Clingenpeel opened the meeting at 2:00 P.M.

Voting Members Present:

Melissa Bookhout
Glenn Clingenpeel
Scott Harris
Sean Howard, Arrived after roll call
Andrew Isbell, Absent
Jordan Macha
Rachel Ickert
Galen Roberts
Matt Robinson, Arrived after roll call
Lissa Shepard
Eduardo Valerio for Sarah Standifer

8 voting members were present at the time of roll call, constituting a quorum.

Ex Officio Members Present:

Susan Alvarez
Mark Northcut
John Blount, Absent
Justin Bower, Absent
Todd Burrer, Absent
Humberto (Bert) Galvan, Absent
Lonnie Hunt, Absent
Neely Kirkland
Katie Koslan
Andrea Sanders, Absent
Bret Higginbotham, Absent
Lisa McCracken, Absent
Mark Northcut
Larry Voice, Absent
Greg Waller, Absent
Adam Whisenant, Absent
Amanda Young, Arrived after roll call

Approval of the Minutes for the May 11, 2026 Meeting

Motion: Rachel Ickert moved to approve the minutes as presented;
Second: Lissa Shepard; Action: Minutes were unanimously approved.

Acknowledgement of written public comments received

No written public comments were received.

Receive registered public comments on specific agenda items

No registered public comments were received.

TWDB Update – Katie Koslan, TWDB

Katie Koslan provided an update on behalf of TWDB. TWDB sent an email blast that provided clarification regarding how FMEs from Task 4C: Performance of Flood Management Evaluations and Task 5B: Recommend a List of Flood Management Evaluations to be Performed by TWDB are related to Task 5A: Recommendation of Flood Management Evaluations, Flood Mitigation Projects, and Flood Management Strategies. All R3RFPG recommended FMEs that have not been completed at the time of the delivery of the draft regional flood plans, either under Task 4C or Task 5B (by TWDB), should be included as recommended FMEs under Task 5A.

Task 5B items from the March and April deliverables are currently under review. TWDB will reach out to any requests for information and will also inform you when those deliverables have been found to be administratively complete.

R3RFPG intends to host an upcoming Chairs conference call and a payment request webinar on a date and time to be determined. We will share additional details when we have more information.

Updates from Region 3 Technical Consultant

a. Chapter 4 Updates

   i. Task 4C Performance of FMEs – Audrey Giesler-Klump, Halff

Audrey Giesler-Klump, Halff, introduced the updates on FMEs being advanced toward FMPs on behalf of the R3RFPG.

Phase #2 Stormwater Master Plan

Ms. Giesler-Klump reported that work for the City of Denton focused on Cooper Creek. The consultant team was completing post-processing and cost estimates to support benefit-cost analysis. The resulting materials would be provided to the City and the R3RFPG for review. The scope had been refined in coordination with the City, and the underlying FME would remain on the recommended FME list.

Project 14 – Ridgeway Circle and Ridgeway Drive System

Mr. David Rivera, Freese and Nichols (FNI), reported that the consultant team was reviewing the City of Richardson's proposed drainage system improvement to confirm whether the project would cause adverse impacts and, if necessary, identify measures to mitigate them. The effort was expected to produce one FMP. The size of the hydraulic model had extended the time required for the analysis.

Ellis County Drainage Master Plan

Ms. Julie Jones, Nathan D. Maier (NDM), reported that the consultant team's work focused on locations along Grove Creek and Red Oak Creek. The Grove Creek model had been converted from HEC-2 to HEC-RAS, and the team was updating model information and preparing comparisons of existing and proposed conditions. Additional hydrologic and hydraulic models had been requested from FEMA. Work on the Red Oak Creek locations awaited receipt of those models.

Woody Branch Floodplain Management Study

Dr. Nick Fang, Morning Star Strategies (MSS), described the study area within the City of Dallas and the modeling information received from the City. He explained that flooding near the area identified as Area 39 was affected by inadequate drainage infrastructure and downstream water levels. Because several projects were underway in the watershed, the consultant team intended to consider their combined effects when evaluating potential improvement.

b. Chapter 5 Updates

   i. Task 5A Recommended FMEs, FMPs and FMSs – Audrey Giesler-Klump, Halff

Ms. Giesler-Klump reviewed the recommendation approach that was approved by R3RFPG on June 3, 2026 and the lists evaluated by the Technical Subcommittee. She reported that the materials identified 546 recommended FMEs and 100 recommended FMPs. She corrected the FMP total shown in the previously distributed slides and stated that an updated slide deck would be provided. She also identified FMXs requiring additional sponsor confirmation, data, or other follow-up. Those actions could be considered after another Technical Subcommittee review in early 2027.

Twenty-two FMPs require additional follow-up and are expected to be considered for approval by the Technical Subcommittee in 2027. The primary reasons for their current non-recommendation include modeling insufficiencies and limited data availability necessary to support the proposed projects.

Of the more than 118 FMSs reviewed, 5 new communities submitted and were currently awaiting recommendations, while 46 FMSs required follow-up for potential approval by the Technical Subcommittee in early 2027. Many of these FMSs required only minimal effort to complete, and it has been suggested that they could be addressed through additional templates provided by the TWDB. Additionally, several FMSs were being questioned by TWDB regarding their eligibility for FIF funding.

R3RFPG members discussed why the available recommended FMXs were being presented before the regional solicitation period closed. Ms. Giesler-Klump explained that approving the completed recommendations would allow the consultant team to proceed with subsequent plan tasks and sponsor coordination while the remaining FMXs were reviewed.

ii. *Consider approving lists of FMEs, FMPs, and FMSs for inclusion as recommended actions in the 2028 Flood Plan

Chairman Clingenpeel called for a motion to approve the lists of FMEs, FMPs, and FMSs that were recommended by the Technical Subcommittee.

Motion: Scott Harris moved to approve the lists of FMEs, FMPs, and FMSs that were recommended by the Technical Subcommittee;
Second: Lissa Shepard; Action Motion was unanimously approved.

iii. Task 5B Update on TWDB FMEs by TWDB consultant - David Rivera, FNI (TWDB Consultant)

Mr. David Rivera, FNI, provided an update on FMEs being performed for small communities concurrently with development of the regional flood plan. He reported that work in Kaufman County built on modeling was completed through an earlier FIF study. Four areas of concern had been selected in coordination with the County, and field data had been collected. Existing conditions work and an evaluation of alternatives were planned for the following months. It is anticipated that the four study areas will result in one FMP each.

Mr. David Rivera also reported on the FME in Westworth Village. Coordination with the City continued to define its priority areas and the scope of work. The two FMEs were expected to provide information in time for the draft 2028 Regional Flood Plan.

c. Chapter 6 introduction

i. Task 6A Impacts of Flood Plan - Audrey Giesler-Klump, Halff

Ms. Audrey Giesler-Klump introduced Tasks 6A, which would evaluate the effects of implementing the regional flood plan on flood risk, including changes to floodplain area, affected structures, and population.

ii. Taks 6B Contributions and Impacts to Water Supply - David Rivera, FNI

Mr. David Rivera introduced Task 6B, which would assess whether recommended flood management actions could contribute to or affect water supply. The analysis would consider the overlap between the Trinity flood planning region and regional water planning areas.

d. Chapter 7 Flood Response introduction - Julie Jones, NDM

Ms. Julie Jones introduced the planned Chapter 7 discussion of flood preparedness, response, recovery, and mitigation. The chapter would describe the roles of local, regional, state, and federal entities and update information from the prior planning cycle.

e. Chapter 8 Admin, Regulatory and Legislative Recommendations update - Audrey Giesler-Klump, Halff

Ms. Audrey Giesler-Klump reviewed its running list of potential recommendations for improving flood planning and implementation. A proposed addition called for TWDB to

provide communities with further ordinance templates and draft language, following the Technical Subcommittee's discussion of smaller FMS requests.

Alison Hanson, City of Dallas, asked about the deadline for submitting recommendations for Chapter 8. Ms. Audrey Giesler-Klump responded that recommendations for Chapter 8 may be submitted up until the chapter is presented to the R3RFPG for consideration and shared that any administrative, regulatory, or legislative recommendations must first be reviewed and approved by the R3RFPG before they can be advanced. A schedule outlining the process for completing the draft plan will be presented later in the meeting. It was further explained that at least one R3RFPG meeting must be held to allow the group to review and provide approval of any proposed administrative recommendations before Chapter 8 is presented for final approval.

Members discussed the length of time between identifying a flood management action and obtaining potential funding. They also discussed whether a recommendation subcommittee should be reestablished to consider administrative, regulatory, legislative, and funding issues. Chairman Clingenpeel requested that the possible subcommittee be placed on a future agenda.

f. Chapter 9 Infrastructure Financing introduction - David Rivera, FNI

Mr. Rivera introduced the financing analysis and explained that sponsors of recommended actions would be surveyed about anticipated local, state, and federal funding sources. Members discussed the assumption to use when a sponsor did not respond. The group retained, for the time being, the prior planning cycle assumption that a nonresponding sponsor would provide 10 percent of the funding and would seek the remaining 90 percent from other sources. Ms. Koslan indicated that assumptions used across regions could be discussed during a TWDB Chairs' call.

Discussion was held regarding available FIF and the timing of grant application cycles. Mr. David Rivera noted that approximately $312 million is expected to be available during Fiscal Years 2026-2027, while the Fiscal Year 2024-2025 funding cycle remains active. Communities are still being engaged and are preparing full applications under the previous funding allocation of approximately $375 million.

Mr. David Rivera provided an overview of key changes anticipated for the upcoming funding cycle. One significant change is that sponsors will be limited to two abridged applications per funding category. The intent of this change is to distribute available funding more broadly among the flood planning regions. Two exceptions to this limitation were noted. First, projects seeking federal match funding will continue to be evaluated through a separate process. Second, if funding remains available after the initial review cycle, sponsors may be permitted to submit an additional application.

Mr. David Rivera also highlighted a change to the project selection process. Rather than funding projects strictly according to the statewide ranking list from top to bottom, the program will first seek to fund at least one FMX from each region before assigning additional projects to the same region. He noted that this approach is intended to provide each region's highest-priority FMXs with a greater opportunity to receive funding. Under this structure, competition will initially occur within each region, with statewide ranking considerations playing a larger role once each region has had the opportunity to receive funding. He added that the revised funding approach will significantly benefit sponsors whose projects may rank highly within their region but lower on the statewide priority list.

Under the previous process, projects ranked lower statewide faced a reduced likelihood of receiving funding. The new approach increases opportunities for projects from each region to be considered for funding.

Chairman Glenn Clingenpeel clarified that the ranking referenced is the TWDB's funding prioritization process and not the ranking process of the R3RFPG. He emphasized that the R3RFPG does not rank projects or FMXs. Instead, the group's role is to determine whether proposed strategies qualify for inclusion in the regional flood plan. Once submitted for funding consideration, project prioritization is conducted separately by the TWDB.

Ms. Rachel Ickert, TRWD, asked for additional clarification regarding the first exception related to federal match projects. Mr. David Rivera explained that, under the current funding cycle, projects are generally invited to submit full applications based on their position on the funding priority list. However, some projects with relatively low rankings may still receive invitations if they already have federal funding committed and are seeking state funds to satisfy the required local match component. He noted that these projects are treated differently because they provide an opportunity to leverage and bring additional federal dollars into Texas. As a result, projects with existing federal funding commitments may receive higher consideration and can be advanced outside of the standard ranking process. While the exact evaluation methodology was not discussed in detail, members observed that projects with federal funding are identified separately within the funding lists and, in some cases, have been invited to proceed despite lower overall rankings. Members concluded that these projects are effectively considered within a separate category because of the added benefit of leveraging federal funding resources.

g. Task 11 Comparison to 2023 Flood Plan introduction - Audrey Giesler-Klump, Halff

Ms. Audrey Giesler- Klump introduced the new chapter comparing the 2028 Regional Flood Plan with the 2023 plan. The comparison would document changes in recommended actions, progress toward regional goals, and the status of previously identified flood management actions. Information collected through prior sponsor outreach would support the analysis, with further follow-up where needed.

Ms. Audrey Giesler-Klump explained that Table 22 is a required table under Task 11 and is intended to document how FMEs progress to FMPs. The table identifies the funding sources and implementation mechanisms that support the advancement of a project and explains why and how that progression occurred. She noted that members of the group had previously expressed concern about whether the regional flood planning process adequately captures the awareness and momentum generated for flood mitigation needs. While not a complete measure of those benefits, Table 22 helps demonstrate how planning efforts contribute to project advancement. The table also documents situations in which project sponsors move initiatives forward independently, secure alternative funding sources, or take other actions to implement recommendations identified through the planning process. Participants agreed that this information provides useful insight into the outcomes and effectiveness of the regional flood planning effort.

h. Task 10 Outreach updates - Owen Ramsey, Cooksey Communications

Mr. Owen Ramsey reported that Cooksey Communications continued to maintain the regional stakeholder contact list, distribute meeting information and FMX solicitation notices, and update the R3RFPG website and social media channels. Additional solicitation outreach was planned before the submission deadline. He also reported that Stephanie Griffin, Halff, and Lissa Shepard, Dallas County, presented to July's local American Society of Civil Engineers Joint Branch Chapter Meeting.

i. Project Schedule

The consultant team reiterated that the regional FMX solicitation period would close on Friday, October 30, 2026, and that submissions received after that date would not be considered for the 2028 Regional Flood Plan. The anticipated schedule included consideration of Chapter 7 in November 2026, another Technical Subcommittee review in January 2027, and additional R3RFPG actions in early 2027. The draft regional flood plan was due May 26, 2027.

Updates from liaisons for adjoining coastal regions

a. Region 5 Neches RFPG: No updates
b. Region 6 San Jacinto RFPG: No updates

Update from Planning Group Sponsor – Chairman Glenn Clingenpeel, TRA

a. *Consider revisions to RFPG Bylaws regarding election officers

Chairman Glenn Clingenpeel discussed a potential revision of the R3RFPG bylaws to align officer terms with the regional flood planning cycle. He explained that draft language was being developed but had not yet been provided to members for review. Any proposed amendment would be distributed before the R3RFPG was asked to consider formal action.

Receive registered public comments – limit 3 minutes per person

There were no registered public comments.

Announcements

There were no announcements.

Confirm meeting date for next meeting

Thursday, November 19th in the PM

Adjourn

3:23 PM adjourned

THE ABOVE AND FOREGOING ARE CERTIFIED TO BE TRUE AND CORRECT MINUTES OF THE REGULAR MEETING OF THE REGION 3 TRINITY FLOOD PLANNING GROUP HELD AUGUST 11, 2026.

_____ _____

SCOTT HARRIS, Secretary Date
REGION 3 TRINITY FLOOD PLANNING GROUP

_____ _____

GLENN CLINGENPEEL, Chair Date
REGION 3 TRINITY FLOOD PLANNING GROUP

4. Acknowledgement of written comments received

UPPER TRINITY
REGIONAL WATER DISTRICT

P.O. Box 305 • Lewisville, TX 75067
(972) 219-1228 • www.utrwd.com

October 6, 2026

Trinity Regional Flood Planning Group

RE: Comments on the Draft 2028 Regional Flood Plan

Dear Members,

The Upper Trinity Regional Water District (UTRWD) appreciates the opportunity to provide comments on the Trinity Regional Flood Planning Group's legislative, regulatory, administrative, and flood planning recommendations for the 2028 Draft Regional Flood Plan.

As a wholesale drinking water and wastewater treatment provider, UTRWD understands the important role that natural infrastructure and Nature-Based Solutions (NBS) play in protecting water quality and reducing flood risk. UTRWD manages a Regional Watershed Protection Program, on behalf of its Customers, to provide education and outreach to residents on the importance of stewarding our watersheds to prevent pollution, as well as monitoring water quality in five creeks as part of the Clean Rivers Program. UTRWD is helping residents understand how prairies, wetlands, floodplains, riparian corridors, farms, ranches, and other natural working lands can capture and slow stormwater, reduce upland and streambank erosion, and provide space for floodwaters while providing additional benefits for people, agriculture and wildlife.

UTRWD believes NBS provide tremendous long-term benefits for our communities and should be considered equally for funding with conventional grey infrastructure projects. For a project to truly be a NBS, natural systems and processes should be an integral part of the solution and materially contribute to its flood-risk-reduction function.

Examples include:

- Conserving natural floodplains through acquisition or conservation easements so they remain available to store and convey floodwaters;
- Protecting farms and ranches in flood-prone areas so they remain undeveloped and continue providing floodplain storage and infiltration;
- Restoring riparian corridors, natural stream channels, and connections between streams and their floodplains; and
- Green stormwater infrastructure projects, such as bioretention areas in parking lots, that incorporate natural processes from soil and plants to capture and filter stormwater.

The Upper Trinity Conservation Trust, Denton County and UTRWD developed the Denton County Greenbelt Plan in 2017 to identify high-priority stream corridors in need of preservation to protect water quality in the water supply reservoirs located in Denton County. The Greenbelt Plan

emphasizes strategies such as conservation easements, development ordinances and green stormwater infrastructure that also have significant flood reduction capability. Building on this effort, Upper Trinity partnered with the North Central Texas Council of Governments on the 'Transportation and Stormwater Infrastructure Initiative' to identify strategies to better coordinate transportation development with stormwater management practices that reduce flood risks in communities. NBS and related strategies were found to have a favorable benefit/cost ratio and provide many secondary benefits while helping to avoid future risks and promote long-term sustainability.

The attached Word document identifies the updated or new recommendations for the 2028 Draft Regional Flood Plan that UTRWD believes will help balance the rapid development occurring around the Dallas/Fort Worth Metroplex with the preservation of natural and working lands. Striking this balance is crucial to support continued economic growth while protecting water quality and reducing flood risks in our communities and for downstream neighbors.

Taken together, we believe these recommendations would help Texas more fully incorporate natural infrastructure and Nature-Based Solutions into flood planning and investment and allow them to compete more fairly with traditional infrastructure projects.

We appreciate the Trinity Regional Flood Planning Group's consideration of our comments and its recognition of the important role that natural infrastructure, conservation, and Nature-Based Solutions can play in our region's long-term flood resilience. If you have any questions at any time, feel free to contact Jason Pierce, Director of Governmental Affairs and Communications, or Blake Alldredge, Water Conservation Manager, at 972-219-1228 or balldredge@utrwd.com.

Sincerely,

Larry N. Patterson
Executive Director

Enclosure: Recommendations for Updated or New Language to be included in the 2028 Region 3 Flood Plan.

CC: Lyle Dresher, Board President, UTRWD
Lissa Shepard, Member, Trinity Regional Flood Planning Group
Thomas Muir, Board President, Upper Trinity Conservation Trust

Recommendations for Updated or New Language to be included in the 2028 Region 3 Flood Plan.

LEGISLATIVE RECOMMENDATIONS

ID	Recommendation	Discussion
8.1.2	Adopt or encourage more current statewide building standards, including recent International Building Code and International Residential Code editions and appropriate freeboard or higher flood standards.	Without a mandatory state building code, local entities in Texas do not score competitively for some federal funding programs, such as FEMA's Building Resilient Infrastructure and Communities (BRIC) Grant. Updated building standards, including requirements to build above expected flood levels, can reduce damage to new development and help prevent the creation of additional flood risk.
8.1.4	Develop and fund programs to assist public and private dam owners, including NRCS dam owners, with evaluation, repair, maintenance, upgrades, and decommissioning studies where appropriate.	Aging dams can present increased downstream risk, especially where development has occurred since construction. Private owners and small public entities may lack resources for major repairs. Funding for evaluation, repair, maintenance, upgrades, and appropriate decommissioning can help address risks from aging dams before failures occur.
NEW	Provide funding and incentives for conservation easements, land conservation, restoration, riparian protection, wetland protection, and landowner stewardship practices in flood-prone areas.	Build on TWDB's Nature-Based Solutions Guidance Manual as well as providing funding and incentives for conservation easements, land conservation, restoration, riparian protection, wetland protection, and landowner stewardship practices in flood-prone areas. Conservation easements, land conservation, restoration, and protection of wetlands and riparian areas can preserve natural flood storage, slow runoff, and prevent development from increasing future flood risk. Conservation easements can ensure that the property remains in private hands and on the tax rolls. Conservation easements are generally much less expensive than buying land in fee and do not require ongoing maintenance by the easement holders.
NEW	Allow non-governmental organizations to apply for and receive funding for conservation easements, land conservation, restoration, riparian protection, wetland protection, and landowner stewardship practices in flood-prone areas.	Nonprofit organizations have substantial experience implementing conservation projects that provide public benefits and can often complete these projects efficiently. Requiring nonprofits to secure a governmental partner can unnecessarily limit the number of worthwhile projects that move forward, particularly when governmental entities lack the staff capacity or resources to sponsor and administer additional projects. Allowing qualified nonprofit organizations to apply directly for funding would remove this barrier and expand the number of conservation and Nature-based Solutions that can be implemented.

REGULATORY AND ADMINISTRATIVE RECOMMENDATIONS

ID	Recommendation	Discussion
NEW	Leverage the NBS manual to promote, incentivize, and provide training and technical resources for nature-based solutions, green infrastructure, natural floodplain preservation, conservation, and hybrid structural/nature-based approaches.	Natural floodplains provide flood risk reduction benefits by slowing runoff and storing flood water. They also provide other benefits of considerable economic, social, and environmental value that are often overlooked when local land-use decisions are made. Building on the State's Nature-based Solutions guidance can help communities better understand when conservation and natural systems can provide effective flood-risk-reduction solutions – at times at a lower cost both in terms of upfront costs as well as long-term maintenance costs.
NEW	Incentivize voluntary buyout programs, turning repetitively flooded properties/neighborhoods into green space, parkland, or any other flood risk mitigation measure as a potential alternative to large-scale construction projects.	Buyouts can permanently remove people and structures from areas of repeated flood risk while creating opportunities to restore floodplain functions and provide green space. Buyouts can also serve adjacent populations further by reclaiming environmentally beneficial floodplain land or providing a location for other community needs such as parkland. Many communities however are not supportive of buyouts, typically due to loss of tax revenue and other unintended consequences. Incentives should be developed to encourage this type of permanent flood mitigation and offset some of these consequences, especially in areas where structural mitigation projects cannot meaningfully reduce flood risk.

FLOOD PLANNING RECOMMENDATIONS

ID	Recommendation	Discussion
NEW	Scoring criteria and methodology for projects that benefit agricultural activities should be updated to allow for these types of projects to compete with urban focused projects.	The scoring or award of funding for projects that benefit agricultural activities based on a traditional benefit-cost ratio will not feasibly allow for these projects to compete against more urban projects with higher value infrastructure or damage. Protection of agricultural land use can also help to maintain their use as beneficial floodplains. Guidance should be developed and provided on a TWDB-preferred methodology to account for benefits to agricultural areas and activities and include consideration of agricultural benefits when ranking projects in the State Flood Plan. In addition, farms and ranches can provide important floodplain storage and watershed benefits even though traditional benefit-cost analyses may undervalue them because they contain fewer high-value structures.

NEW	Apply the insights from the NBS guidance manual to help develop stand-alone scoring criteria for nature-based solutions so they can be competitive with non-nature-based projects.	Nature-based projects should not be disadvantaged by criteria developed primarily for gray infrastructure. Scoring should recognize how natural systems reduce flood risk as well as the additional long-term benefits they provide. Goal is to develop stand-alone metrics for nature-based projects.
NEW	Designate a separate pool of funds designated for nature-based solutions where the natural systems and processes are an integral component of the solution and materially contribute to the project's primary purpose, such as conservation easements, land conservation, restoration, riparian protection, wetland protection, and living shorelines among others.	Nature-based solutions provide additional benefits to the community that are not adequately scored in the ranking criteria, and natural systems provide additional long-term sustainability benefits to the community which are difficult to measure. A separate funding pool would allow projects in which natural systems and processes are integral to flood-risk reduction to compete against comparable projects rather than exclusively against gray infrastructure. It would also help ensure that simply adding a natural feature to a conventional project is not enough to qualify as a Nature-based Solution.

5. Public comments on agenda items

6. TWDB update

Task 5B Update on TWDB FMEs by TWDB Consultant

FME Program for Small Communities Progress Report – Region 3

November 19, 2026

TEXAS WATER DEVELOPMENT BOARD

FREESE AND NICHOLS

Introductions – TWDB Region 3 Team



Melissa Hislop, EIT, CFM, CTCM
Manager
FME for Small Communities
Melissa.Hislop@twdb.texas.gov



Katie Koslan, CFM, CTCM
TWDB Region 3 Planner
Katie.PietschKoslan@twdb.texas.gov

Introductions – FNI Team



David Rivera, PhD, PE, CFM
Project Manager



Bethany Fleitman, PE, CFM
Assistant Project Manager



Tanner Helweg, PE, CFM
Region 3 Lead



Mat Leclair, PE, CFM
Lead Engineer



Ericka Reyes, EIT
Staff Engineer



Jorge Gallosa, PE, CFM
Lead Engineer



Sage Priest, EIT
Staff Engineer

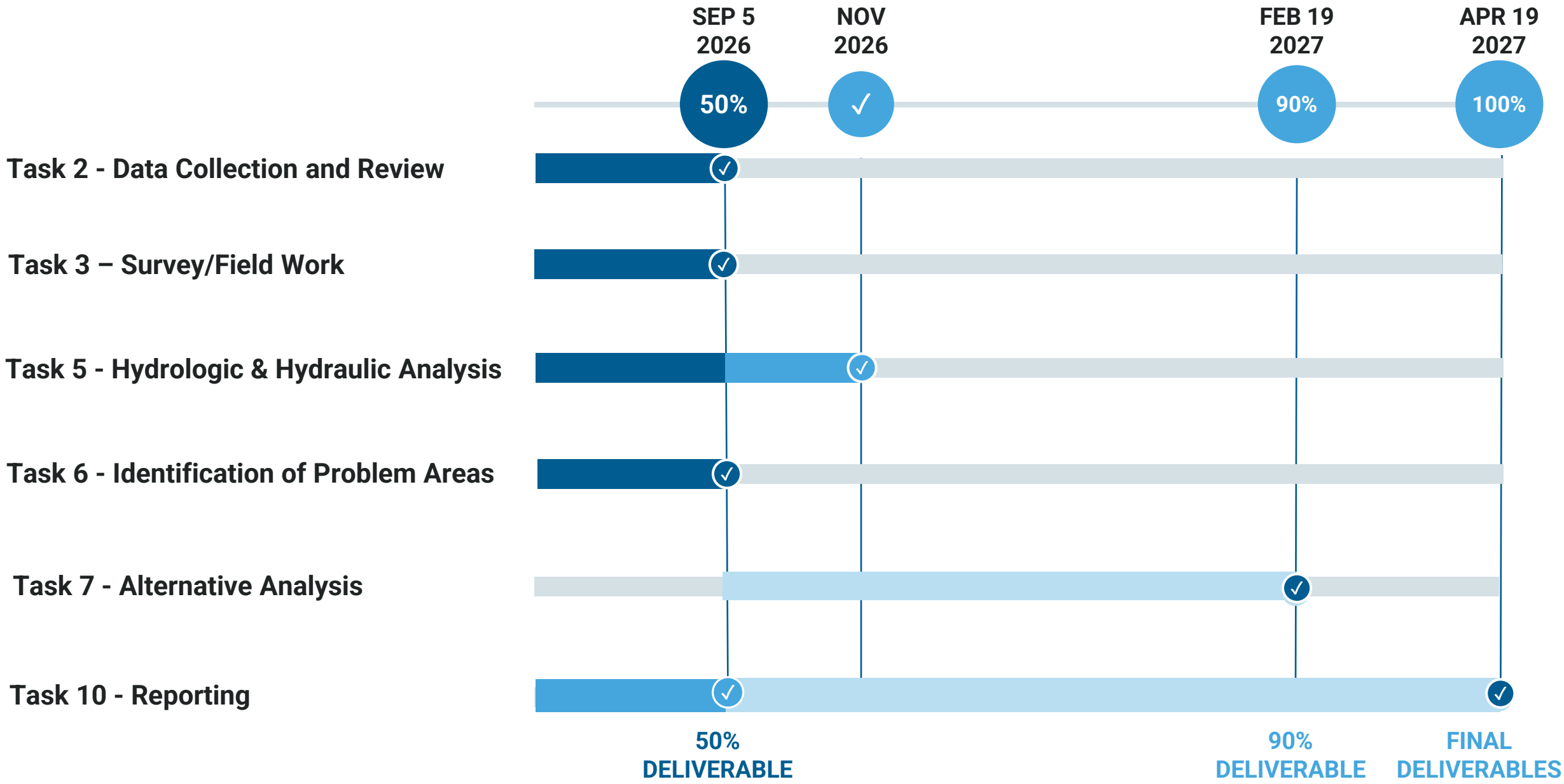
FME Program Overview

FME for Small and Rural Communities Program

- **Origin**: Trinity RFPG (Region 3) identified and recommended to TWDB under **Task 5B** for consideration within the program.
- **Overall Goal**: Help communities develop future FMXs for inclusion in the Regional Flood Plan.
- **Timeline**: Final Submittal by **April 19, 2027**
- **This Effort:** Evaluation of flood mitigation solutions for flooding at:
  - City of Westworth Village
  - Kaufman County

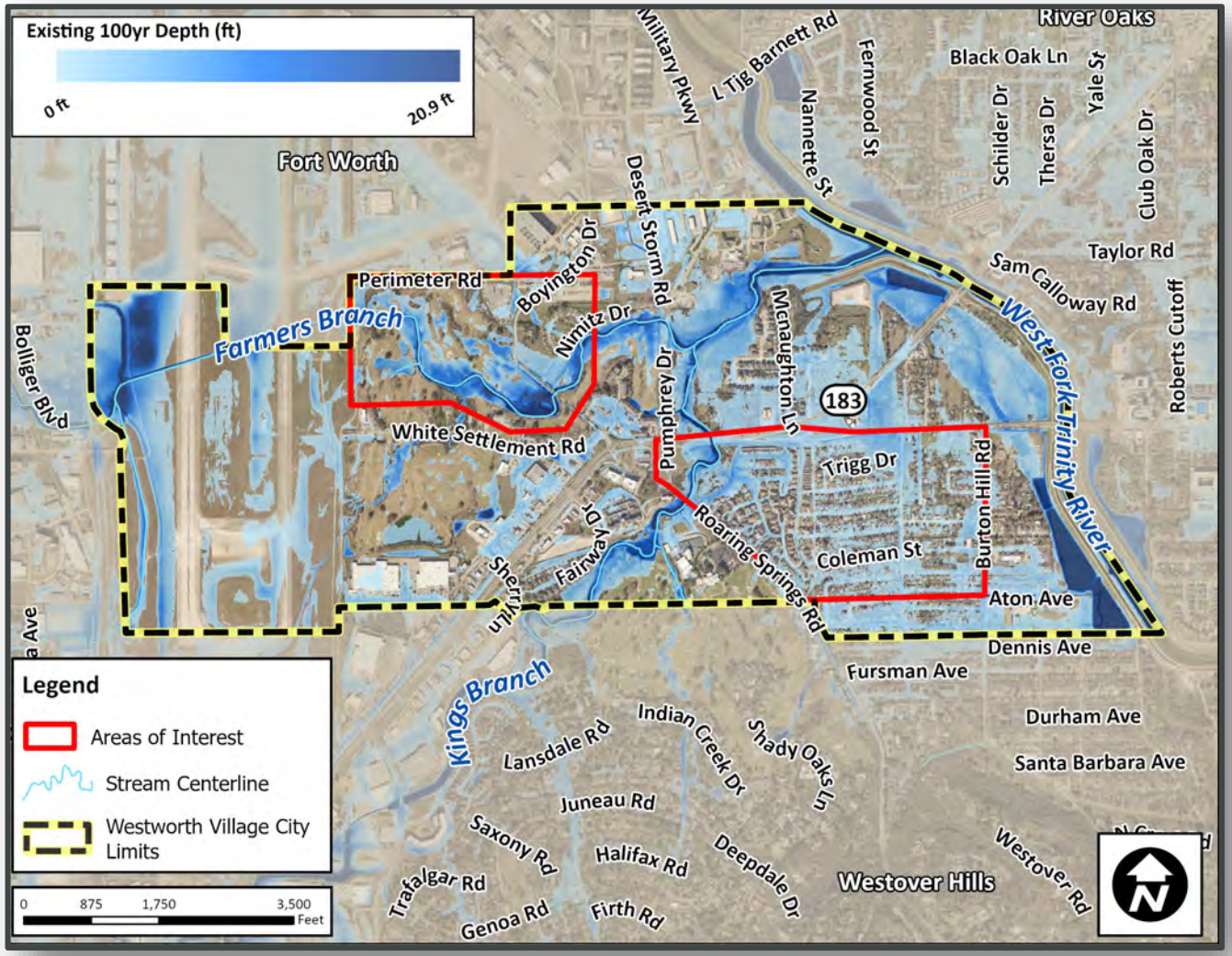


Project Scope and Schedule



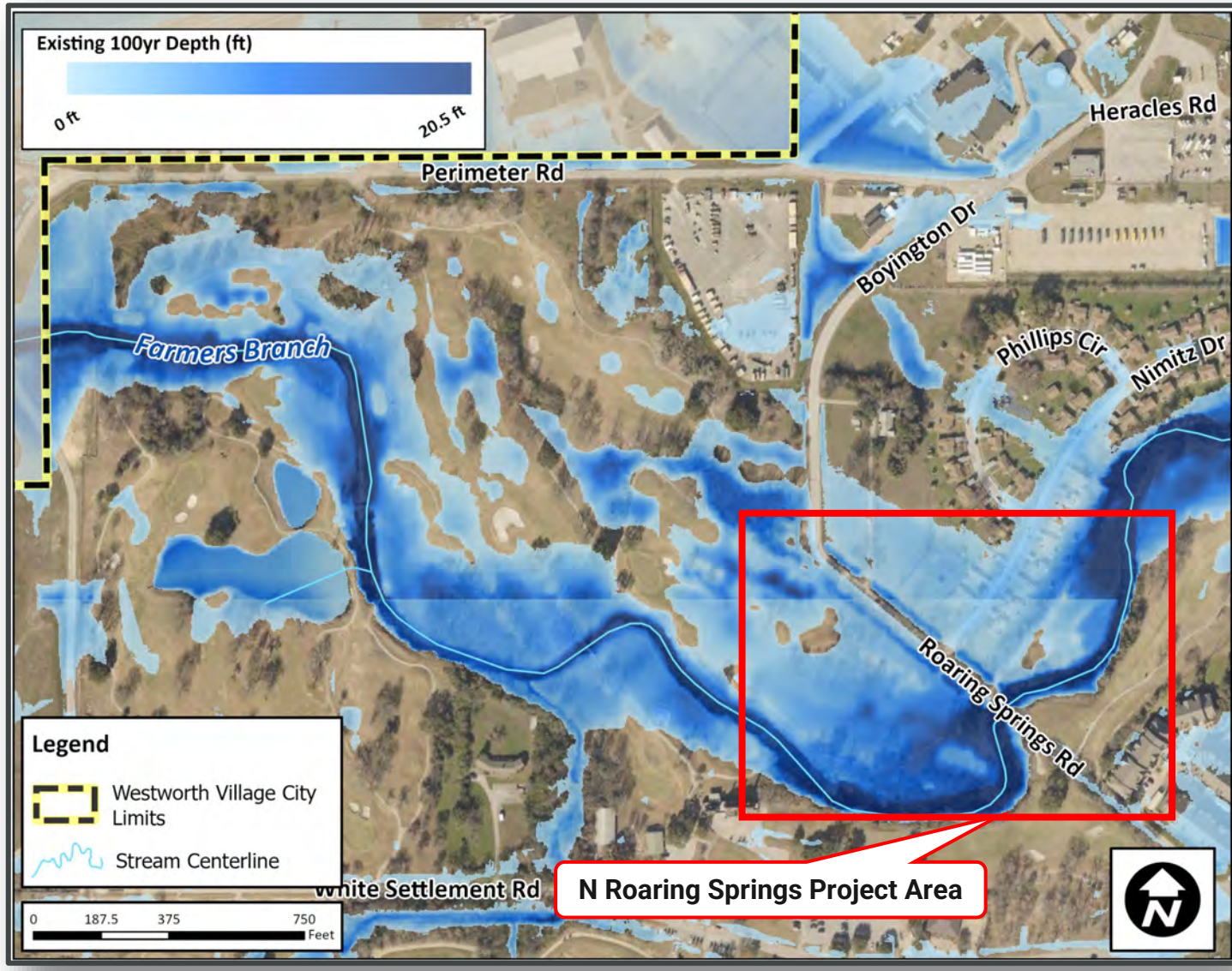
Hydrologic & Hydraulic Analysis – Westworth Village

- Hydrology
  - Existing regional flood-model data (2D BLE)
  - Atlas 14 rainfall
- Hydraulics
  - Truncated model to study area
  - Added bridges, culverts, and storm drains
  - Site visit to gather detailed data
  - Terrain edits to reflect how water moves between areas.
  - Updated land-cover to recent data



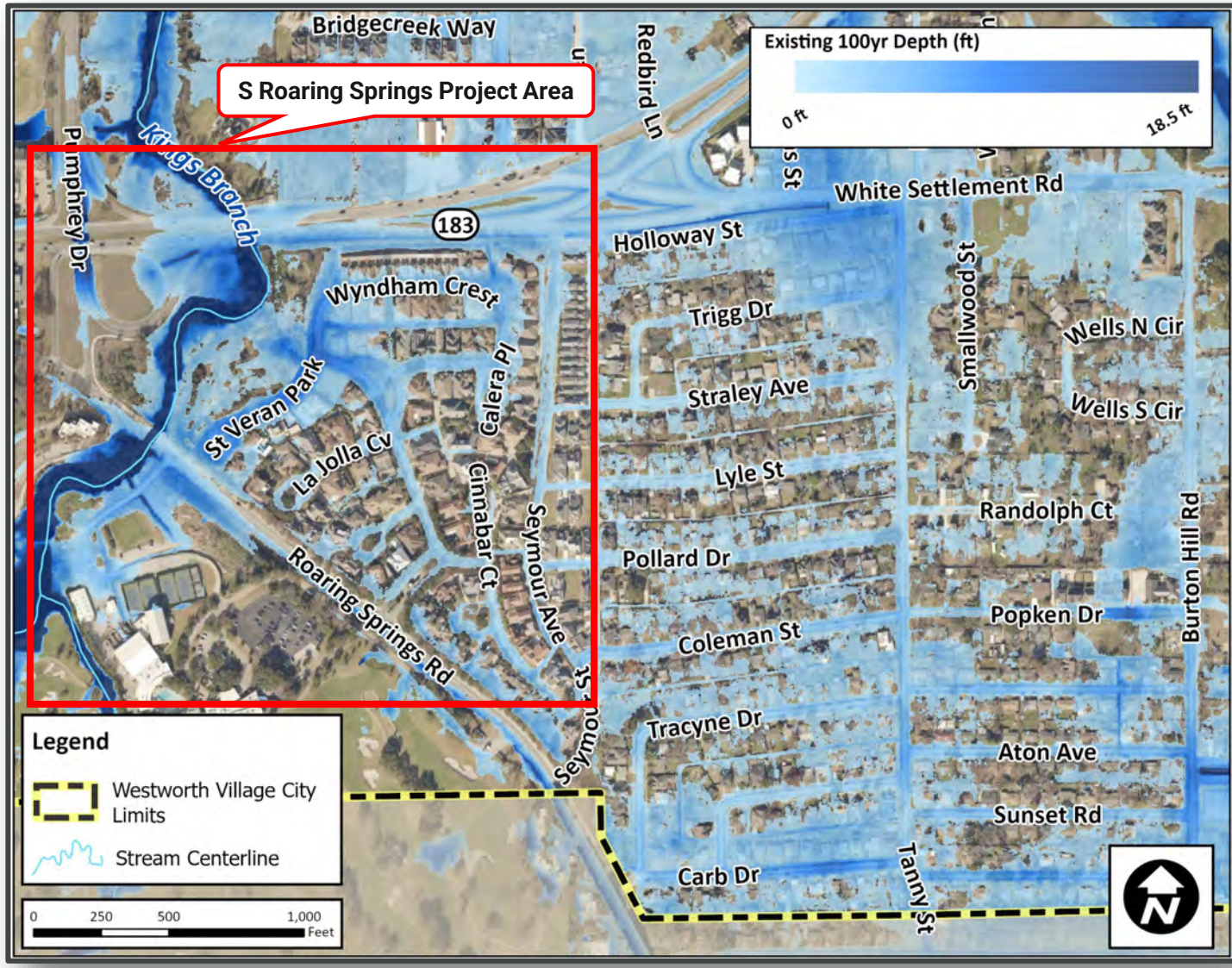
Area of Interest 1 – N Roaring Springs Rd

- Infrastructure:
  - Existing bridge at N Roaring Springs Road over Farmers Branch
- Issues:
  - Roaring Springs Road closed along Farmers Branch
  - Significant backwater and head loss at bridge
  - Bridge overtops between the 10-year and 50-year events
- Proposed Plan:
  - Evaluate bridge replacement
  - Evaluate bridge opening expansion coupled with channel improvements or detention
  - Reduce head loss at bridge and create storage capacity for overflows



Area of Interest 2 – S Roaring Springs Rd

- Infrastructure:
  - Roaring Springs Rd bridge crossing at Kings Branch
  - Local drainage system paralleling the roadway and within residential area
- Issues:
  - S Roaring Springs Rd roadside ditch overflow enters Westworth Park Neighborhood
  - Bridge overtopping occurs at Kings Branch
  - 20 structures at risk in the 100-year
- Proposed Plan:
  - Evaluate bridge and local drainage capacity
  - Evaluate roadway, drainage and/or conveyance improvements
  - Reduce roadway overtopping and limit overflow into adjacent neighborhood



Hydrologic & Hydraulic Analysis – Kaufman County

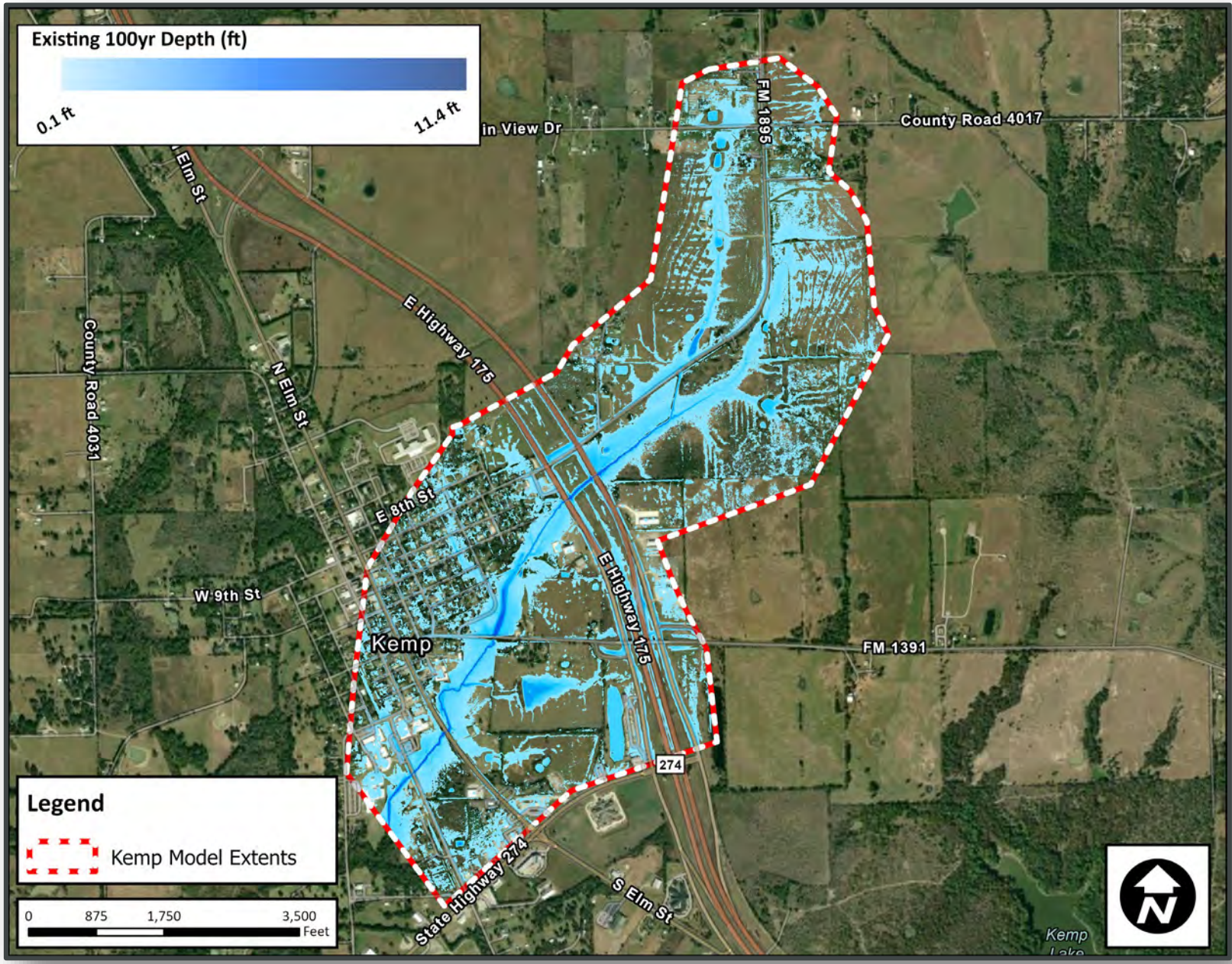
- Hydrology
  - Continuation of the County's Phase 1 efforts completed in 2023.
  - Includes approximately 1,000 square miles of flood modeling.

- Hydraulics
  - Developed 4 separate 2D truncated models
  - Included bridges, culverts, and storm drains
  - Site visits to gather detailed data
  - Updated land-cover to recent (2024) dataset



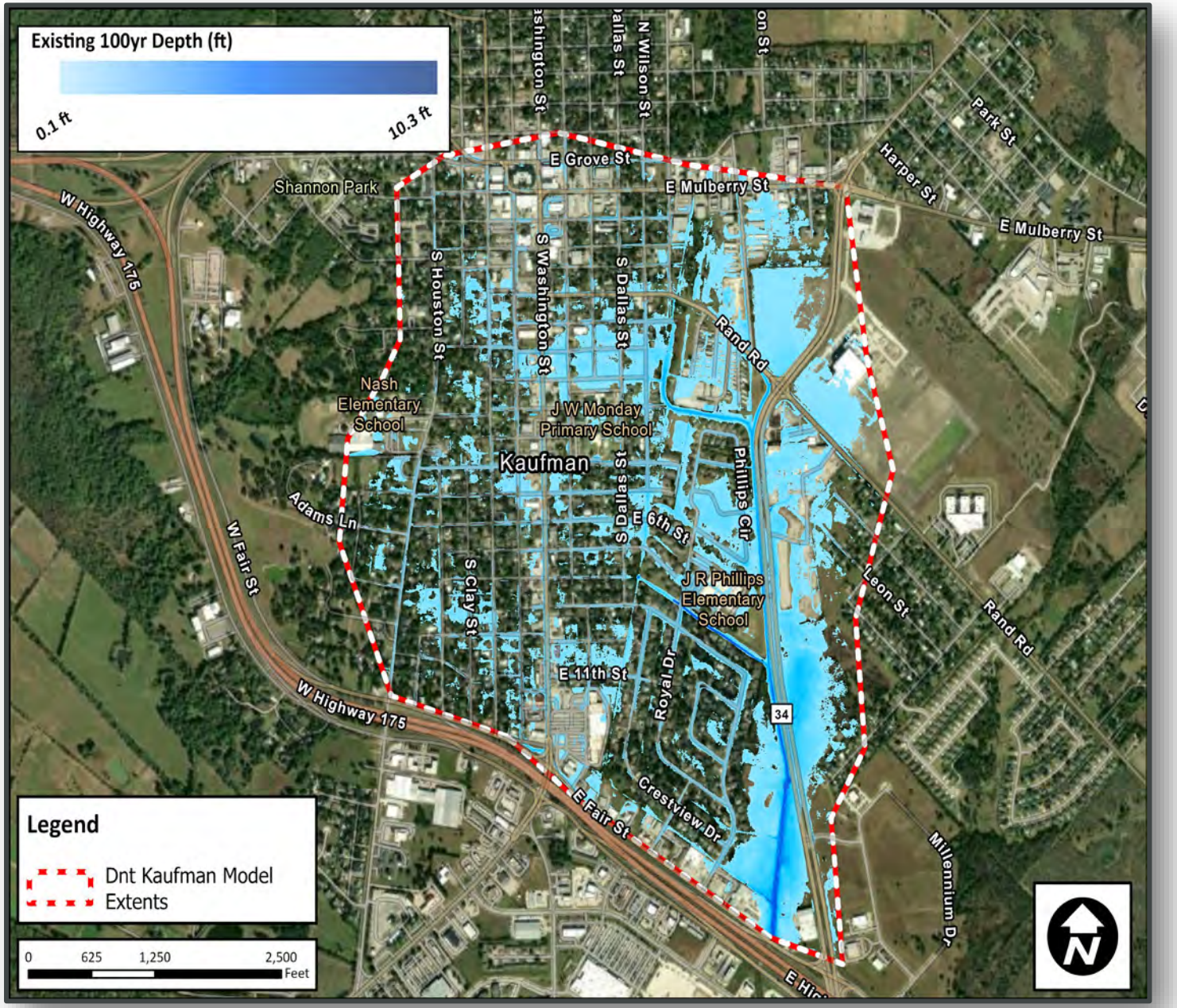
Area of Interest 1 – Kemp

- Infrastructure:
  - Existing culvert at Arcadia Rd
- Issues:
  - Undersized culverts at Arcadia Rd
  - 22 structures at risk in the 100-year
- Proposed Plan:
  - New culvert at Arcadia Rd
  - Evaluate voluntary buyouts, home elevation, creek conveyance improvements, or detention for main residential home flooding



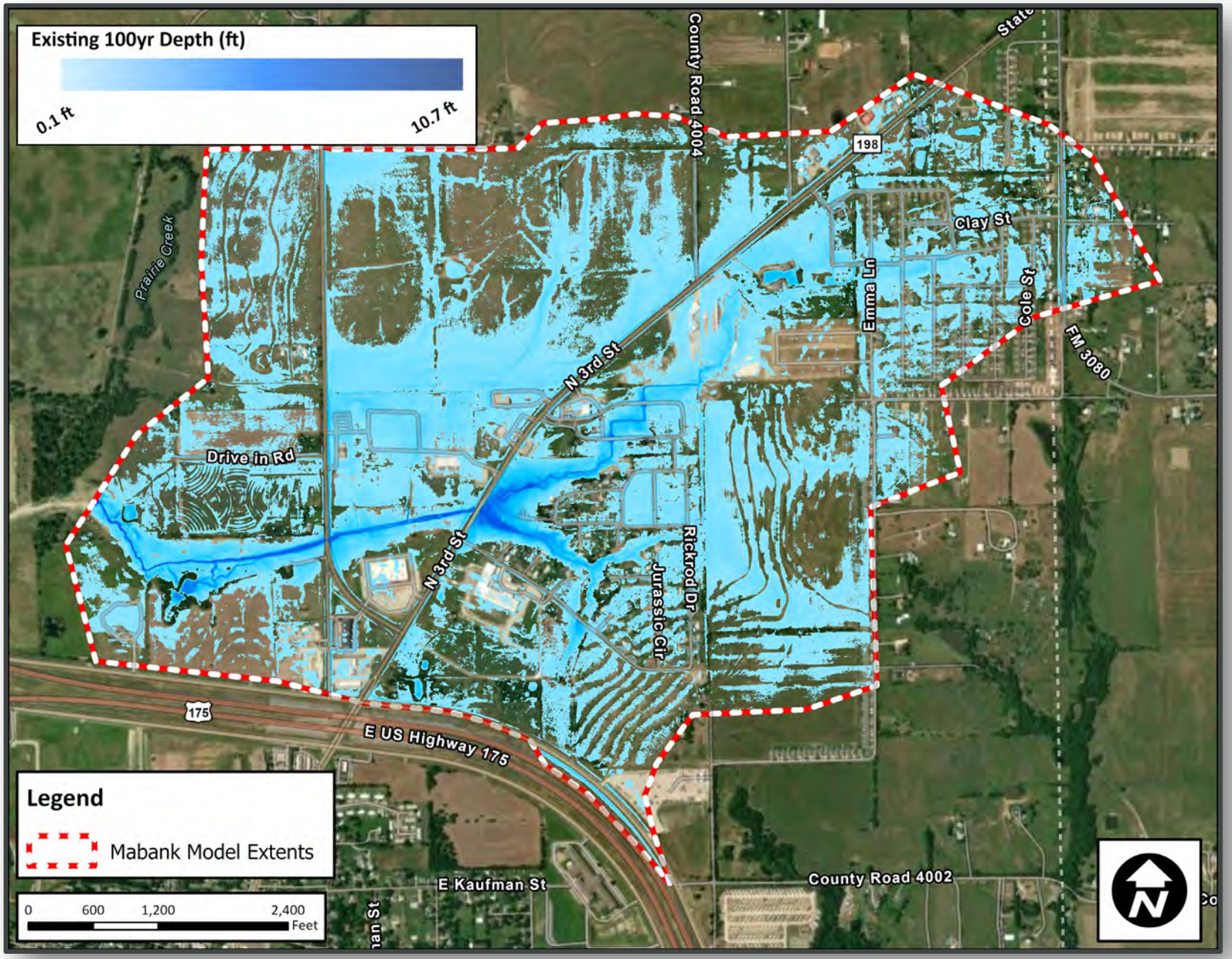
Area of Interest 2 – Downtown Kaufman

- Infrastructure:
  - Culvert crossings along Highway 34
  - New culvert crossing and channel grading at Royal Dr
  - Local storm drain network along locations at Philips Cir, Royal Dr, and Washington St
- Issues:
  - Limited inlet and storm drain capacity
  - Undefined overland drainage paths and roadside conveyance
  - 110 structures at risk in the 100-year
- Proposed Plan:
  - Increase storm drain capacity and add inlets along Phillips Cir
  - Create defined channels near Janet Cir to carry flow
  - Evaluate East 6th St and Royal Dr to increase runoff interception with inlets, ditches, or cross-drainage culverts



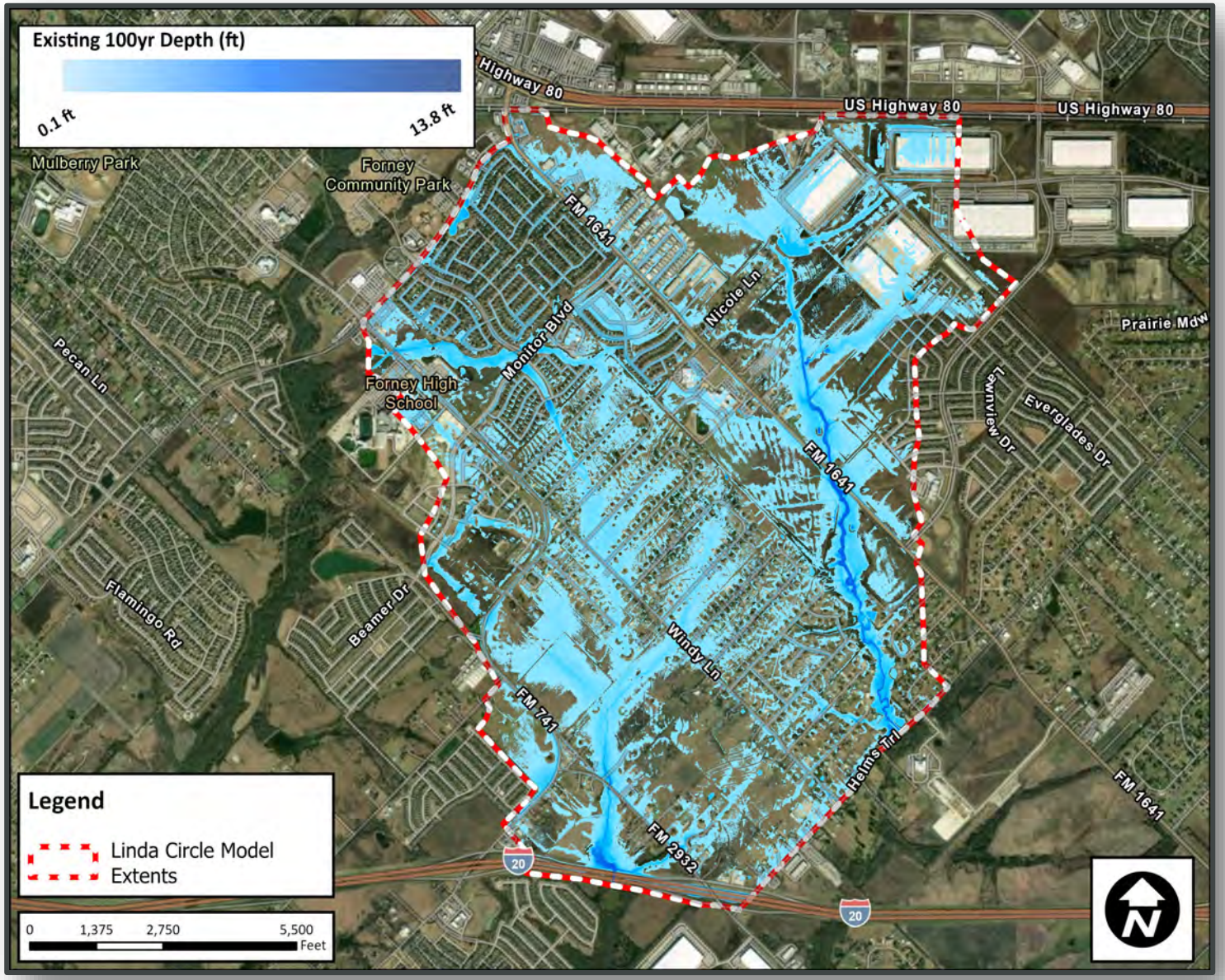
Area of Interest 3 – Mabank

- Infrastructure:
  - Culvert crossing at North 3rd St
  - Local drainage system paralleling the roadway
- Issues:
  - Widespread flooding of residential properties within the study area as flows converge toward North 3rd St
  - 70 structures at risk in the 100-year
- Proposed Plan:
  - Increase undersized culverts
  - Evaluate ditch network and replace collapsed or undersized culverts
  - Combine culvert, channel, ditch and storage improvements to increase system capacity

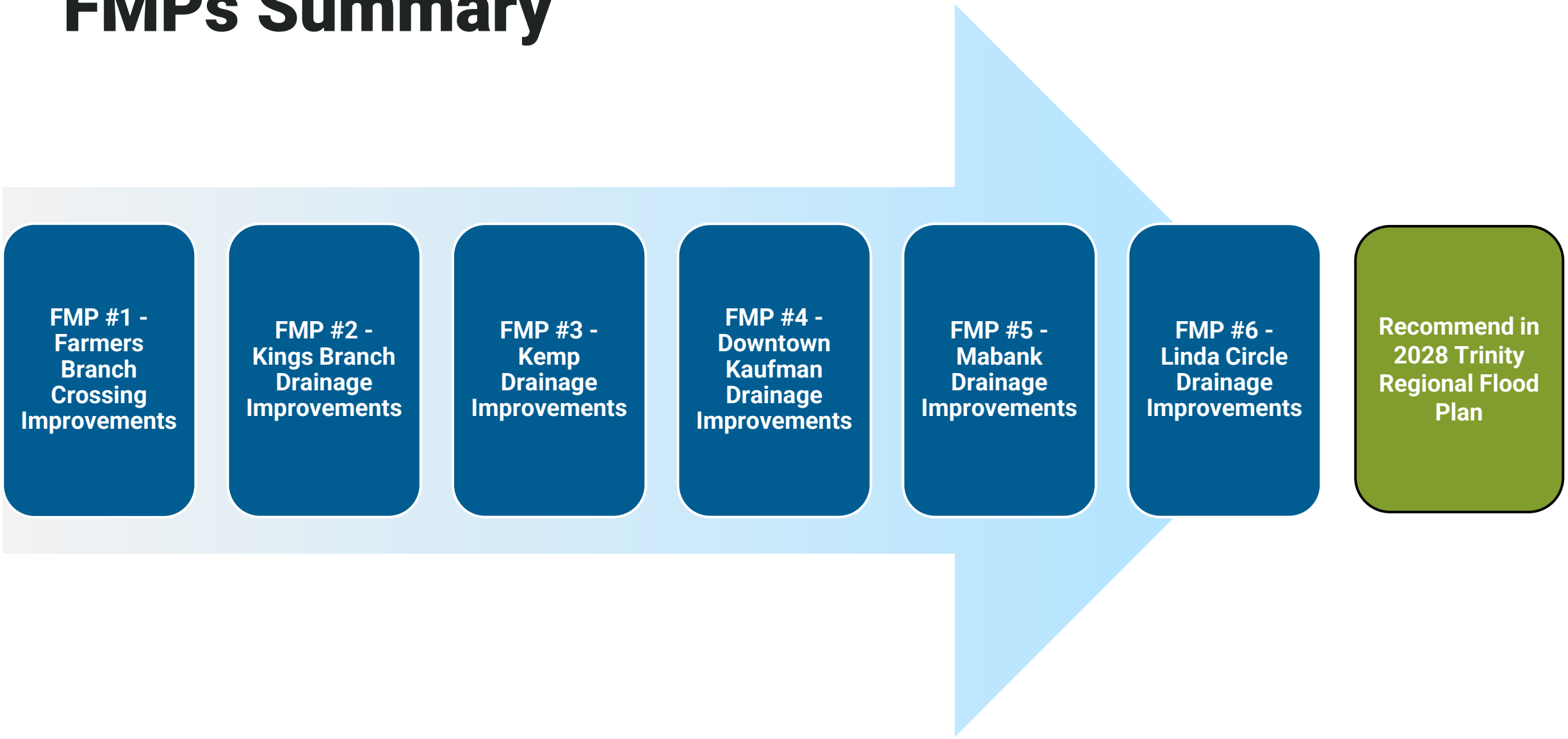


Area of Interest 4 – Linda Circle

- Infrastructure:
  - Local drainage system paralleling the roadway
  - Cross-drainage structures near Richard Cir, Windy Ln, Jennifer Cir, and Llano Dr
- Issues:
  - Natural drainage paths lack defined conveyance
  - Limited roadside drainage and insufficient cross-drainage capacity
  - 11 structures at risk in the 100-year
- Proposed Plan:
  - Regrade and deeper roadside ditches along Richard Cir/Country View Ln
  - Create defined channels along lot lines around Old Military Trail and Windy Ln
  - Add new cross culverts at the Country View Ln cul-de-sac
  - Upsize culverts along and beneath Windy Ln



FMPs Summary



Next Steps

- Perform alternative analysis on the 6 AOIs to recommend FMPs, with consideration for NBS
- Hold Kaufman County public meeting
- Westworth Village held on October 29th
- Continue coordination with sponsors on proposed improvements.
- Create necessary documentation to include in the 2028 Trinity RFP for future funding opportunities
- Ensure continuity of program by commencing next two FMEs in early 2027



Questions?

Thank you

FREESE AND NICHOLS

7. Consultant update



CONSULTANT UPDATE

- Chapter 4 Update
  - Update of Task 4C – FMEs Performed by the RFPG
- Chapter 5 Update
  - Update of Task 5A – Recommended FMXs
- *Chapter 7 Approval
- Chapter 8 Update
- Chapter 9 Update
- Chapter 10 Update
- Project schedule

* Denotes Action Item

Chapter 4

Task 4C FME to FMP Conversions

FME Progression Update

Phase #2 of Stormwater Master Plan

City of Denton

Development Status: **Finalizing BCA**

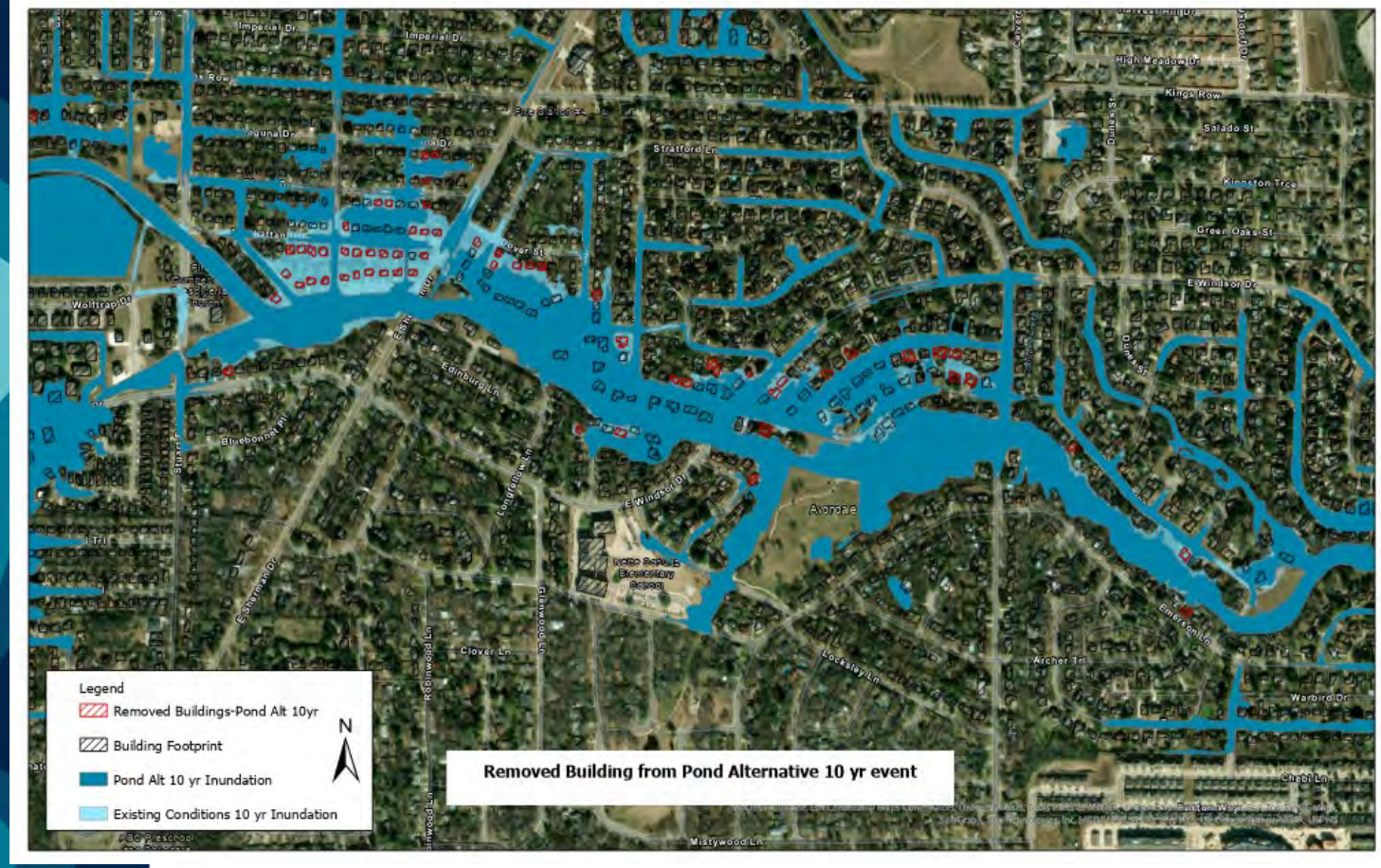
- All modeling is complete
- Finalized BCA and write-up are all that remains outstanding.

Number of FMPs Expected: 2

Additional Details

- City has requested for the FME to not be removed from the 2028 Regional Flood Plan

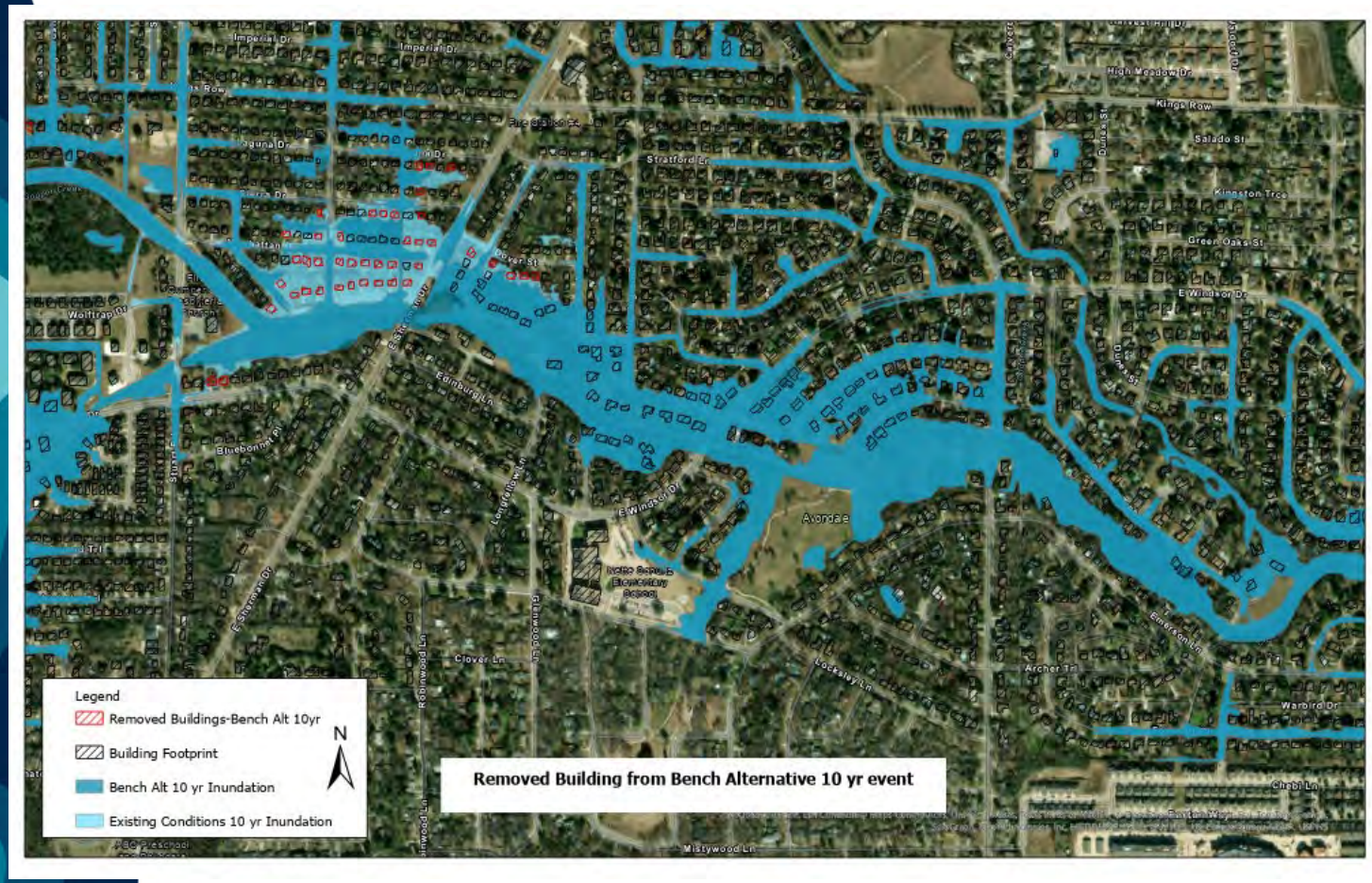
City of Denton Phase #2 SWMP



- Based on project proposed by USACE
- 9-acre detention with earthen weir
- Intake and outfall in Cooper Creek
- Widening of crossings at Stuart Dr. and Sherman Dr.

- 61 structures removed from 10-yr flood risk
- 88 structures removed from 100-yr flood risk
- Anticipated implementation issues due to environmental constraints on detention site (trees), so second FMP developed…

City of Denton Phase #2 SWMP



- Benching of city-owned overbank from Stuart Dr. to Sherman Dr.
- Additional excavation downstream of Sherman Dr. to remove adverse WSE impacts
- Widening of crossings at Stuart Dr. and Sherman Dr.

- 42 structures removed from 10-yr flood risk
- 54 structures removed from 100-yr flood risk
- Utility relocates may be necessary, but feasible, based on this analysis.

FME Progression Update

Project 14 – Ridgeway Circle and Ridgeway Drive System

City of Richardson

- Status:
  - Existing & proposed hydraulic modeling analysis **complete**
  - No adverse impacts analysis **complete**
- Anticipated Benefits:
  - **7 residential structures** removed
  - Approx. **0.18 miles of roadway** removed

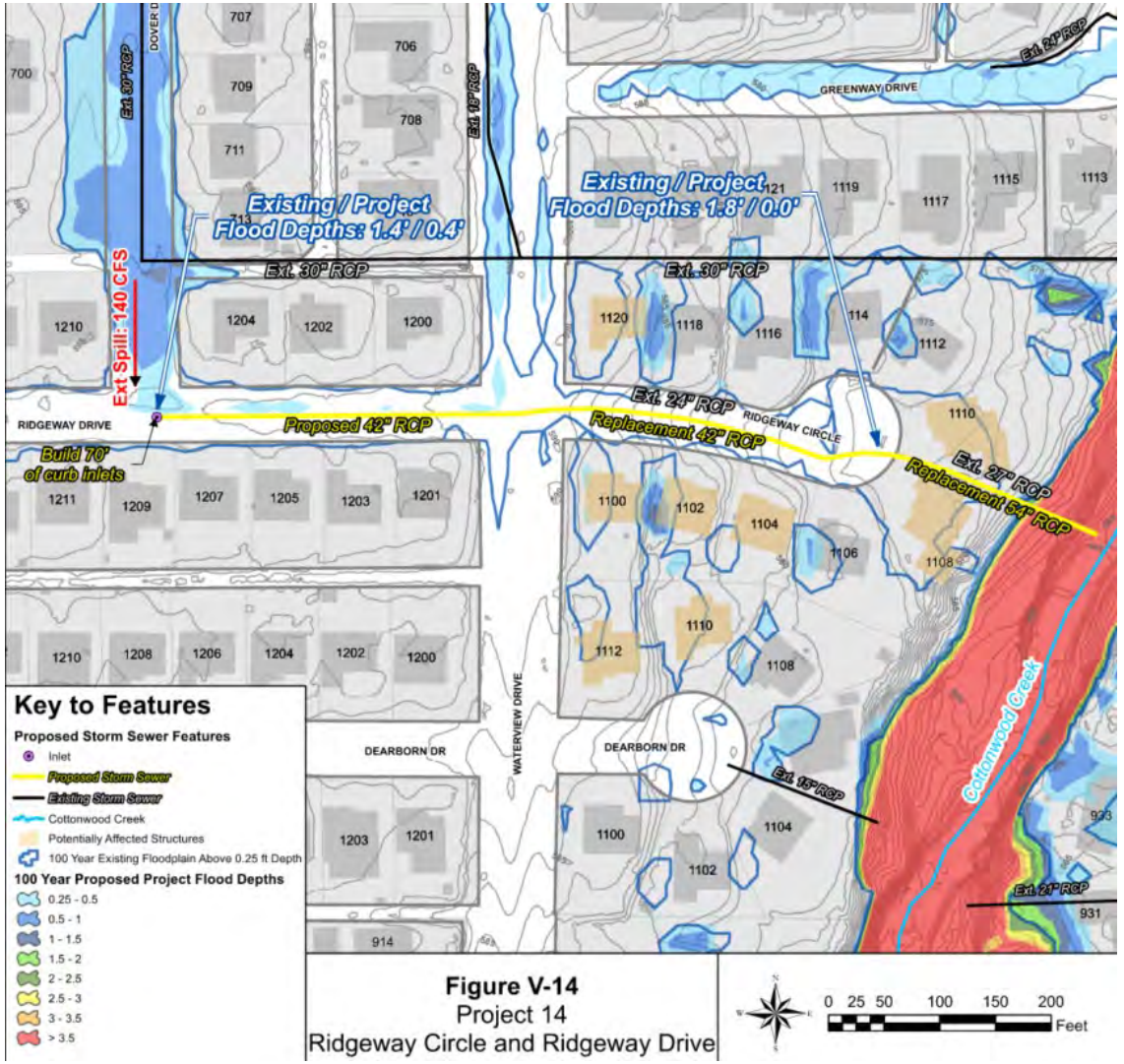


Figure V-14
Project 14
Ridgeway Circle and Ridgeway Drive

Project 14 – 100-year Existing vs. Proposed

Pre-Project Conditions



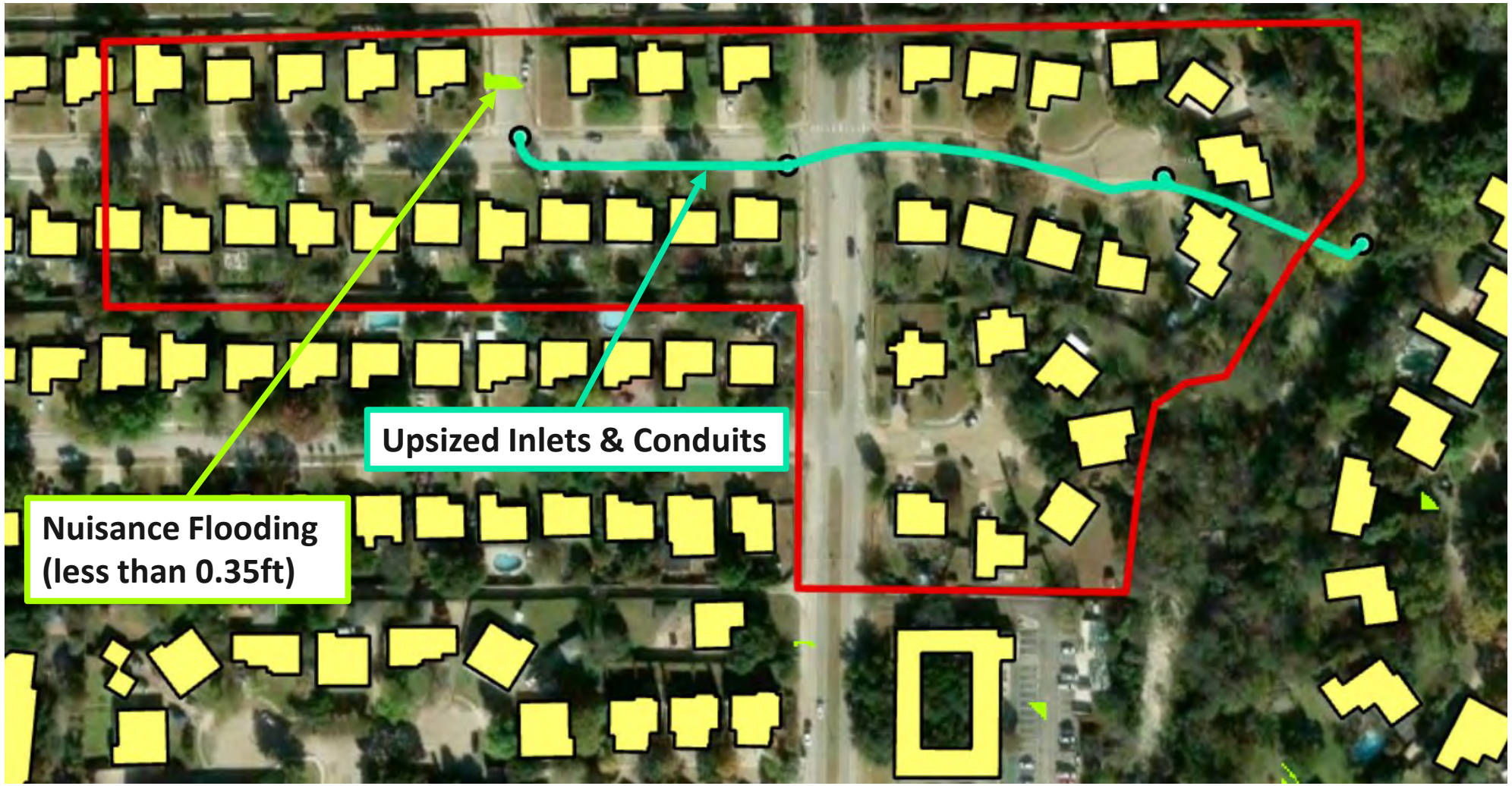
Structures Impacted: 14
Length of Roadway Impacted: 0.23 mi.

Post-Project Conditions



Structures Removed: 7
Structures with Reduced Flood Risk: 7
Length of Roadway Removed: 0.18 mi.

Project 14 – No Adverse Impacts

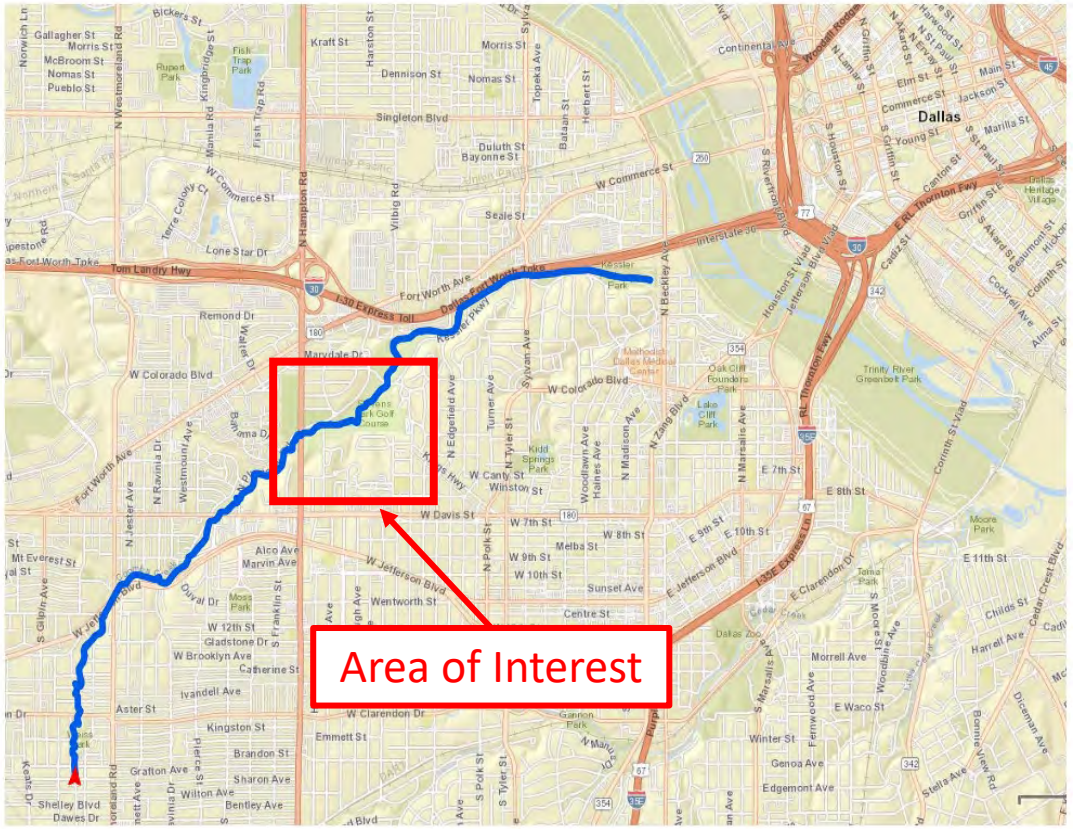


FME Progression Update

Coombs Creek Bridge at Hampton

City of Dallas

- Development Status:
  - Reviewing existing hydraulic models (HEC-RAS)
  - Leveraging previous studies & models to inform analysis and scoping
  - **Next steps:** begin alternatives analysis
- Number of FMPs Expected: 1
- Additional Details
  - Met with City of Dallas (9/29/2026) to verify project need
  - Began reviewing City data to identify potentially feasible alternative(s)



The blue line above represents Coombs Creek. The headwaters can be identified by the red arrow located at the bottom left corner of the map.

Image Source: https://www.coombscreek.org/creek-overview

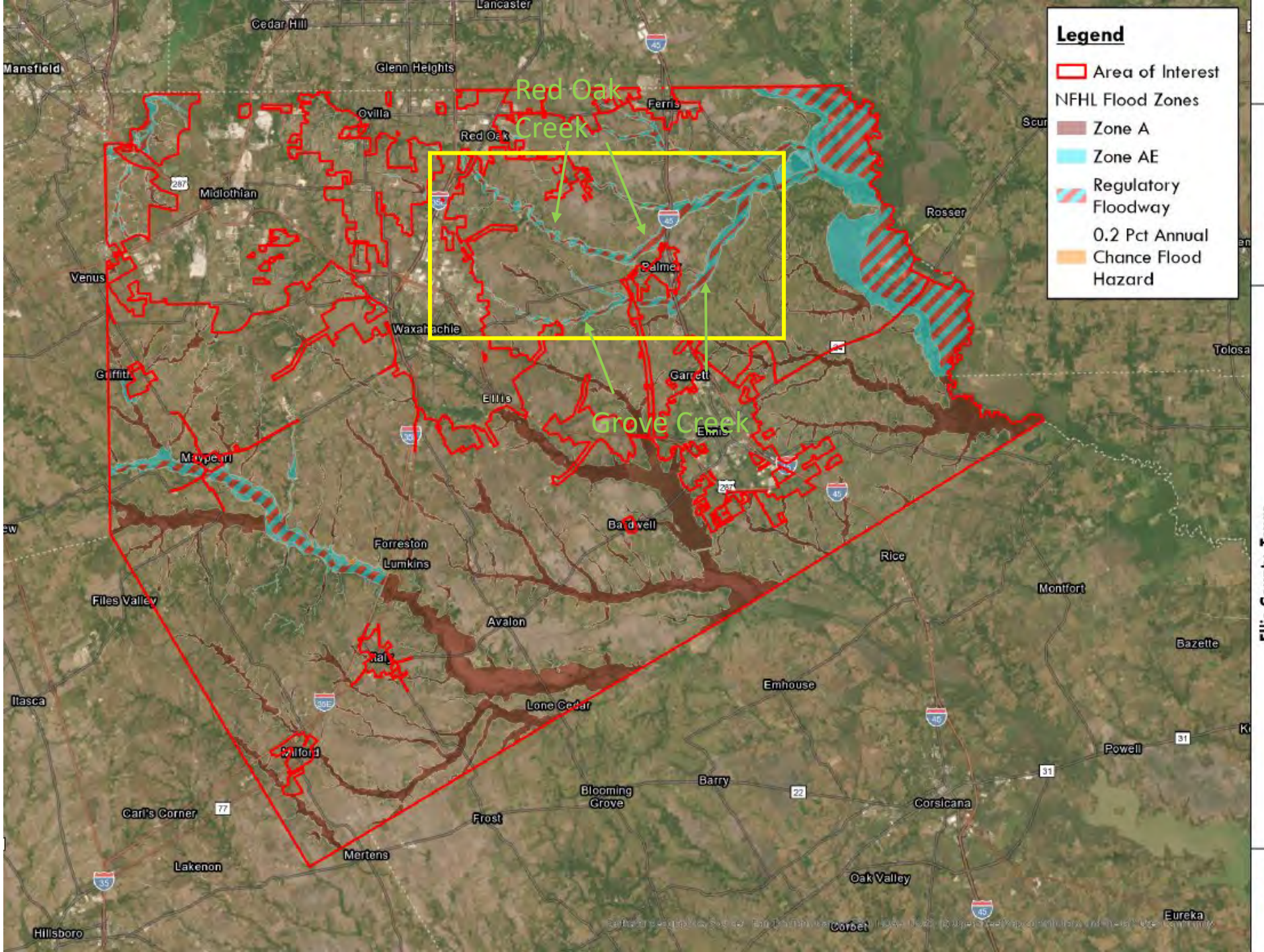
FME Progression Update

Ellis County Drainage Master Plan

Development Status: Existing Conditions Modeling and Mapping

Additional details

- Focused on Red Oak Creek and Grove Creek
- Grove Creek
  - Received HEC-2 model from City of Waxahachie, converted model to HEC-RAS
  - Developing Workmap layout and comparison tables of HEC-2/HEC-RAS sections
  - Submitted model requests to FEMA to obtain hydrologic and hydraulic models for Grove Creek, but have not heard back
- Red Oak Creek
  - Received HEC-RAS model, but no hydrologic model received.
  - Currently designing alternatives to relieve flooding on this creek
  - Developing Workmap layout
- If no hydrologic models are obtained
  - Updating both models to HEC-RAS 6.6 format
  - Adding in current surfaces to the models to update cross sections
  - Looking at options within HEC-RAS, but cannot fully assess no negative impact



TEXAS WATER DEVELOPMENT BOARD

Ellis County, Texas

Trinity Regional Flood Plan FME Submittal

Exhibit 1

Ellis County Unincorporated Areas

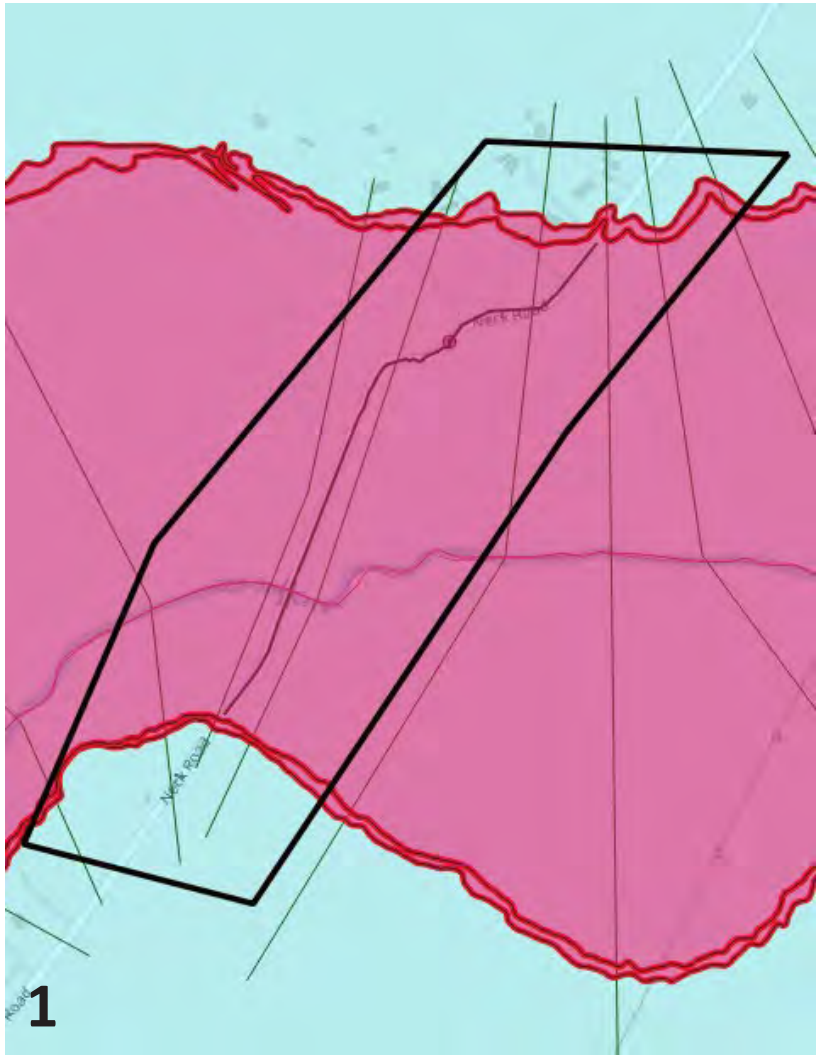
September 2025

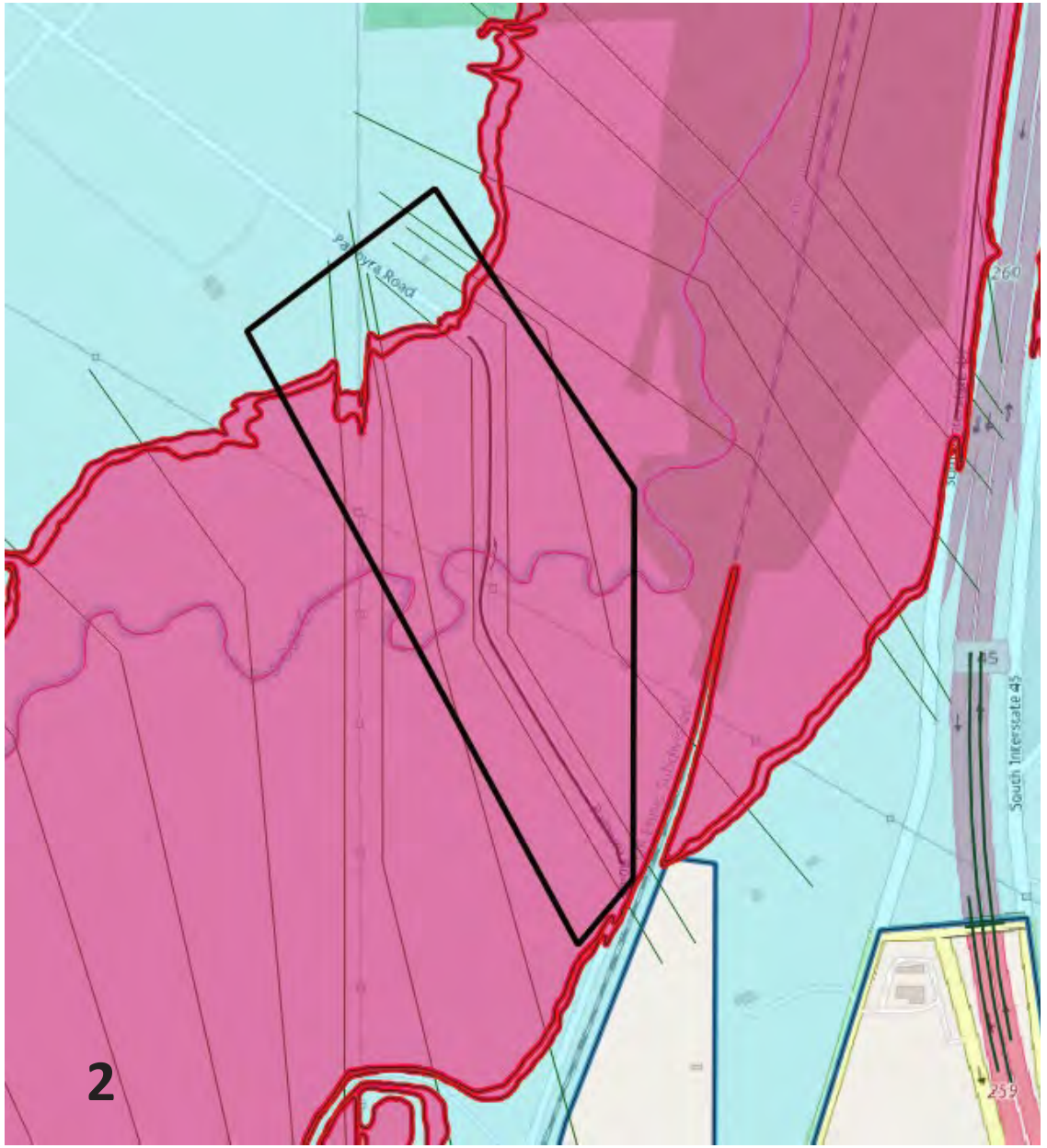
tnp

Date Saved: 9/23/2025

Red Oak Creek Potential Sites

1. Neck Rd
2. Palmyra Rd





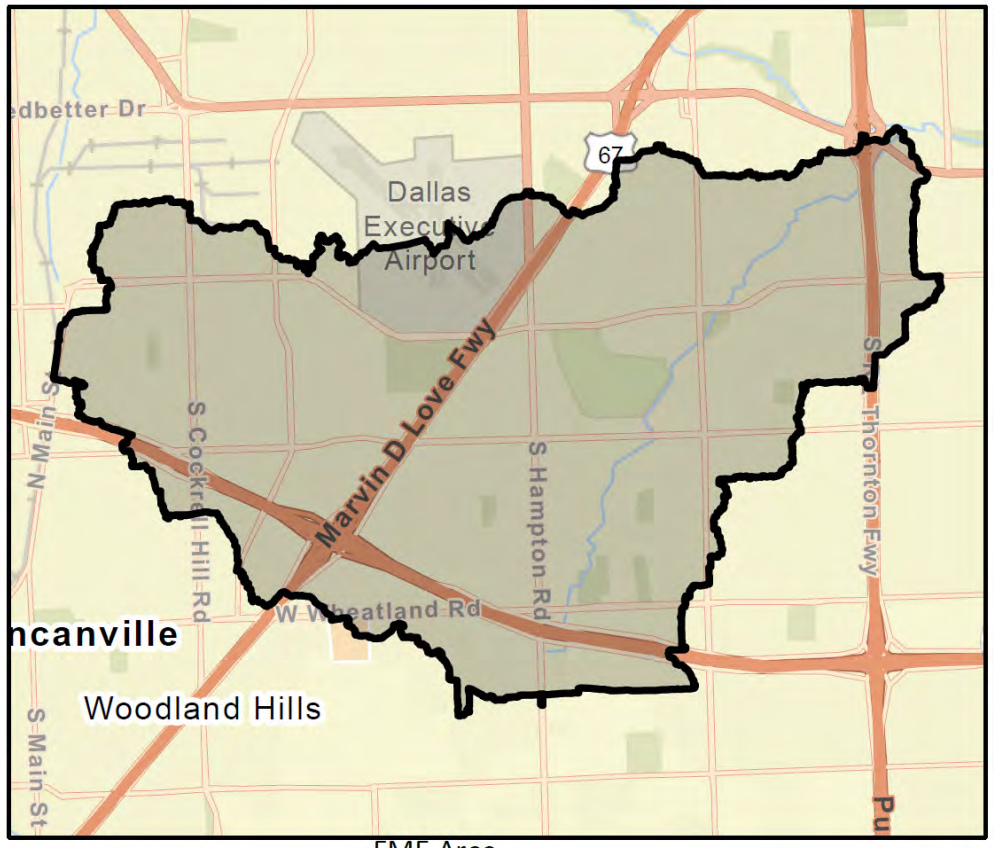
FME Progression Update

Woody Branch Floodplain Improvements

City of Dallas

- Development Status: Existing Conditions Modeling
  - Regulatory models received from City
  - **Next steps:** investigate models to determine best locations for erosion stability projects
- Number of FMPs Expected: 1+
- Additional Details:
  - Met with City of Dallas (4/22/2026) to verify need and scope
  - Information from City received 4/28/2026
  - Information of the Golf Course Improvement project received 5/21/2026
  - Additional models from City received 5/26/2026
  - Information of historic erosion control projects received 6/18/2026
  - Additional models with pipe information received 9/28/2026

Woody Branch Floodplain Management Study

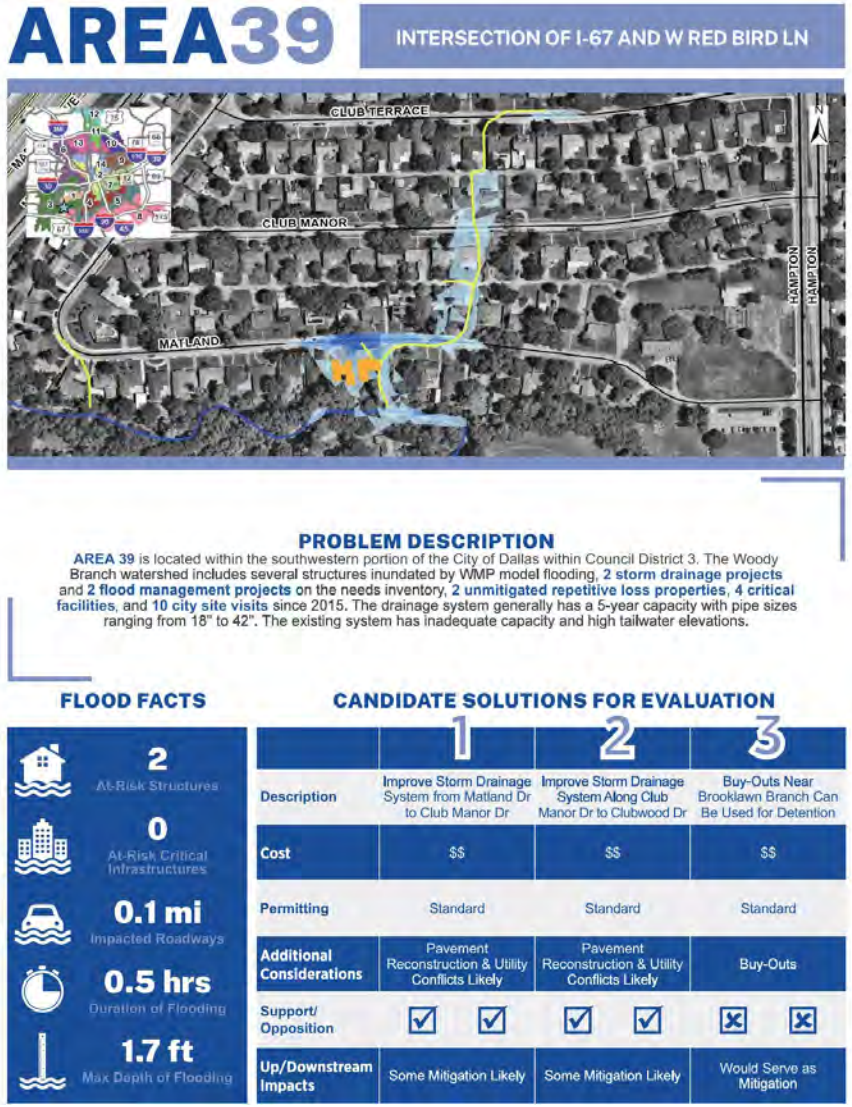


FME Area



Regional view of FME area

Woody Branch Floodplain Management Study



FME ID: 03-51-0000000426
Name: Woody Branch Floodplain Management Study
Sponsor: City of Dallas
Study Area: Approximately 10 square miles in Dallas County along Woody Branch, a tributary of Five Mile Creek

Flooding Concern:
Riverine flooding has been reported at five residential properties along Woody Branch

Planning Level Study Cost: $250,000
Currently Identified Funding: $25,000

Area 39 – General Stormwater Drainage Information



System 1
→ OT_Area39_0001

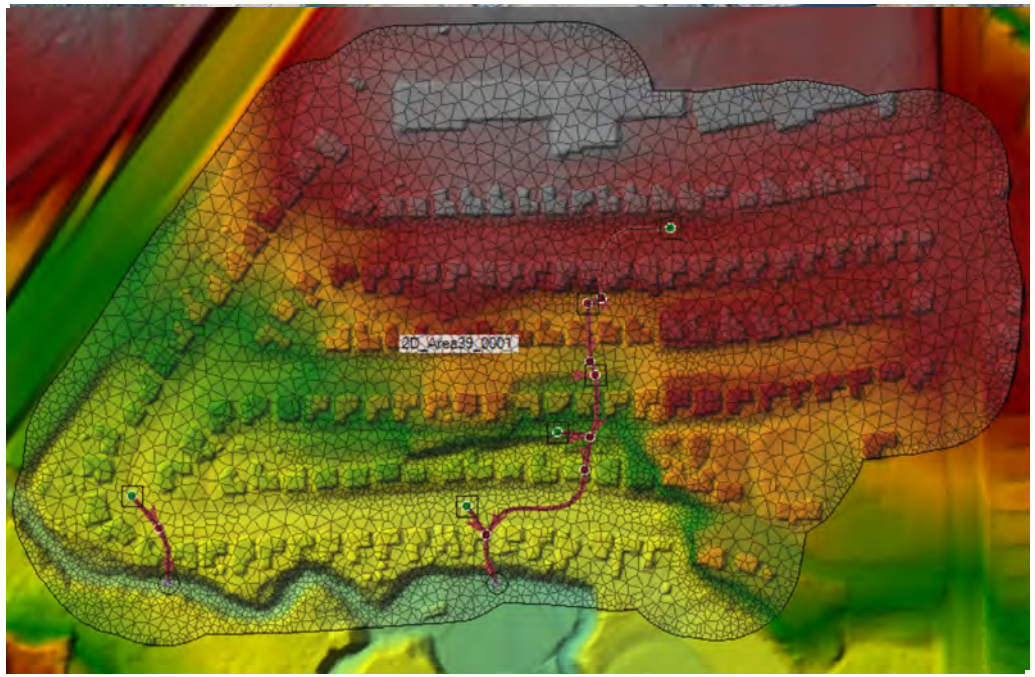
System 2
→ OT_Area39_0002

Parameter	System 1 → OT_Area39_0001	System 2 → OT_Area39_0002	Total network	Units
Size and layout				
Conduits	2	10	**12**	–
Pipe length (share of total)	236.0 (15%)	1,342.8 (85%)	**1,578.8**	ft
Nodes linked to 2D mesh	3	11	**14**	–
Inlets (grouped + single)	1	5	**6**	–
Junction manholes	1	5	**6**	–
Outfalls	1	1	**2**	–
Pipes				
Diameters (no. of pipes)	39 (2)	18 (2), 21 (1), 24 (3), 27 (1), 33 (2), 42 (1)	**18 – 42**	in
Pipe slope	1.7 – 5.8	1.8 – 13.0	**1.7 – 13.0**	%
Full-flow capacity	109 – 199	14 – 216	**14 – 216**	cfs
Network-wide ranges				
Individual pipe length	**34.2 – 322.6**			ft
Ground elevation at nodes	**555.7 – 606.4**			ft
Invert elevation	**556.0 – 601.7**			ft
Depth of cover	**1.7 – 12.3**			ft
All conduits: circular · Manning's n = 0.013 · pipe material not specified				

Key points

- Two independent systems (**System 1** and **System 2**), each with its own outfall
- **System 2** holds 10 of 12 pipes and 85% of total pipe length
- All 14 nodes are coupled to the 2D mesh

Area 39 – Model Conversion: InfoWorks ICM to HEC-RAS



InfoWorks ICM model

↓

Mesh extraction

↓

Mesh boundary & centroids

↓

HEC-RAS boundary & mesh

↓

Terrain without buildings

↓

Terrain with buildings

↓

Pipe nodes & conduits

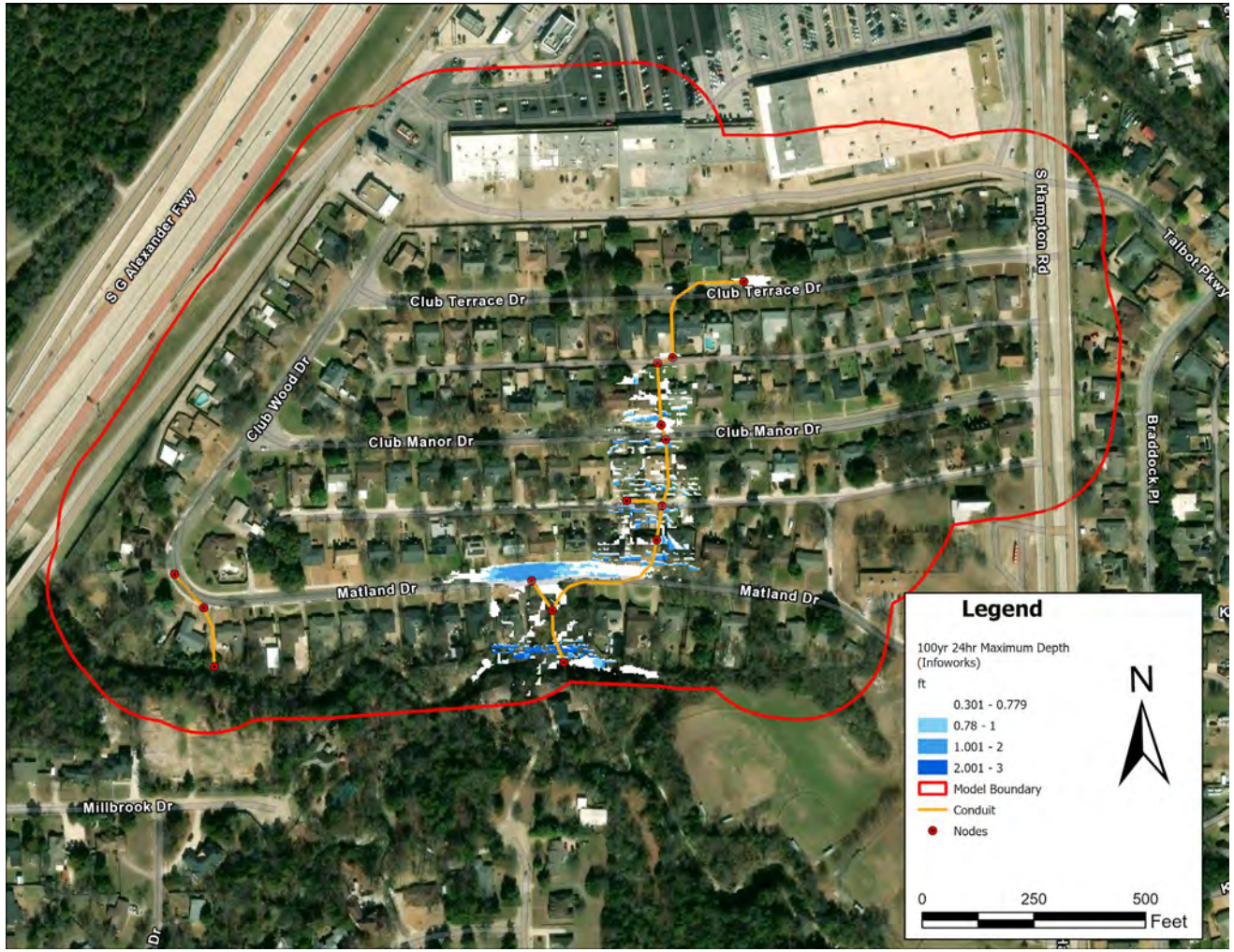
↓

Inlets & outfalls

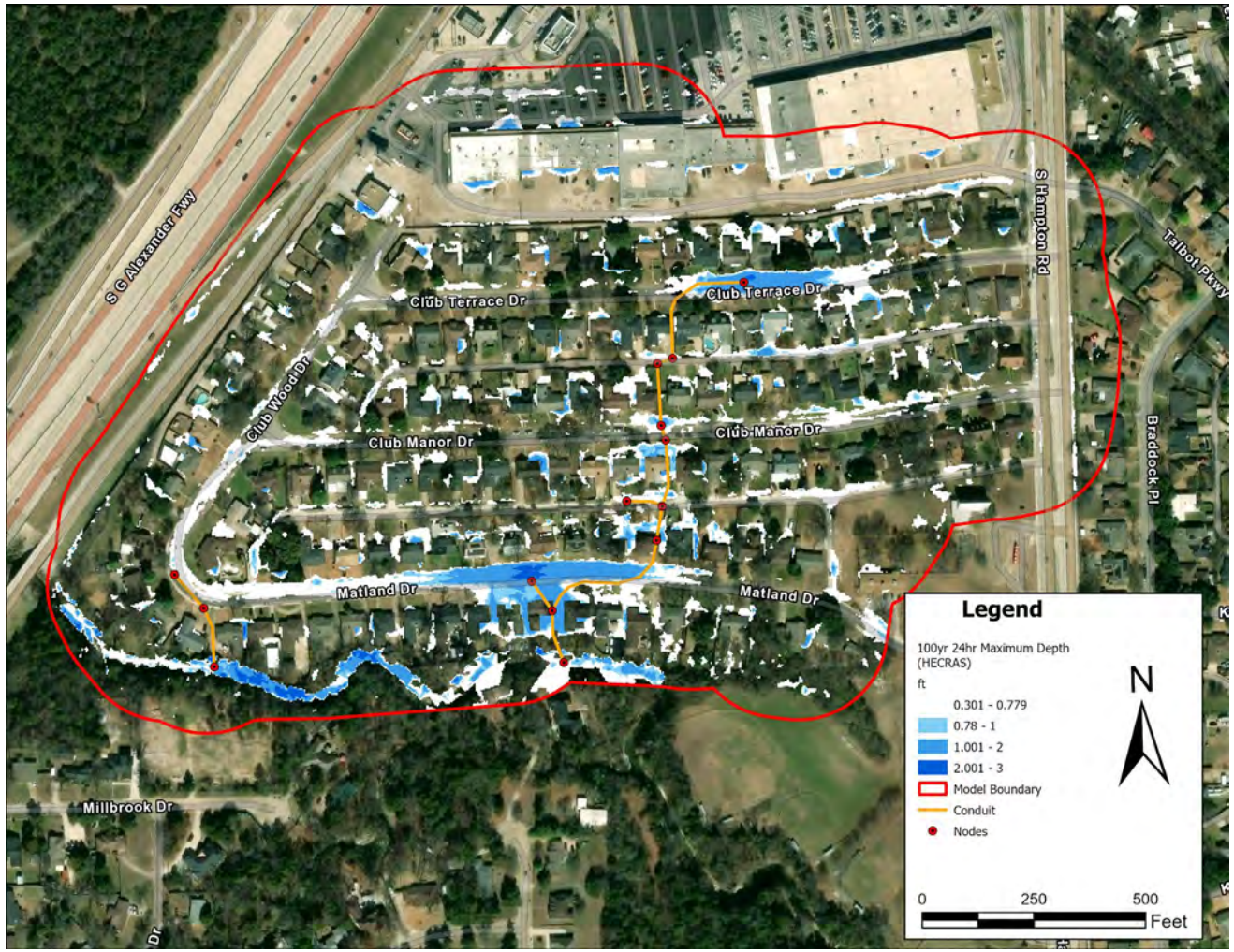
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HEC-RAS 2D model

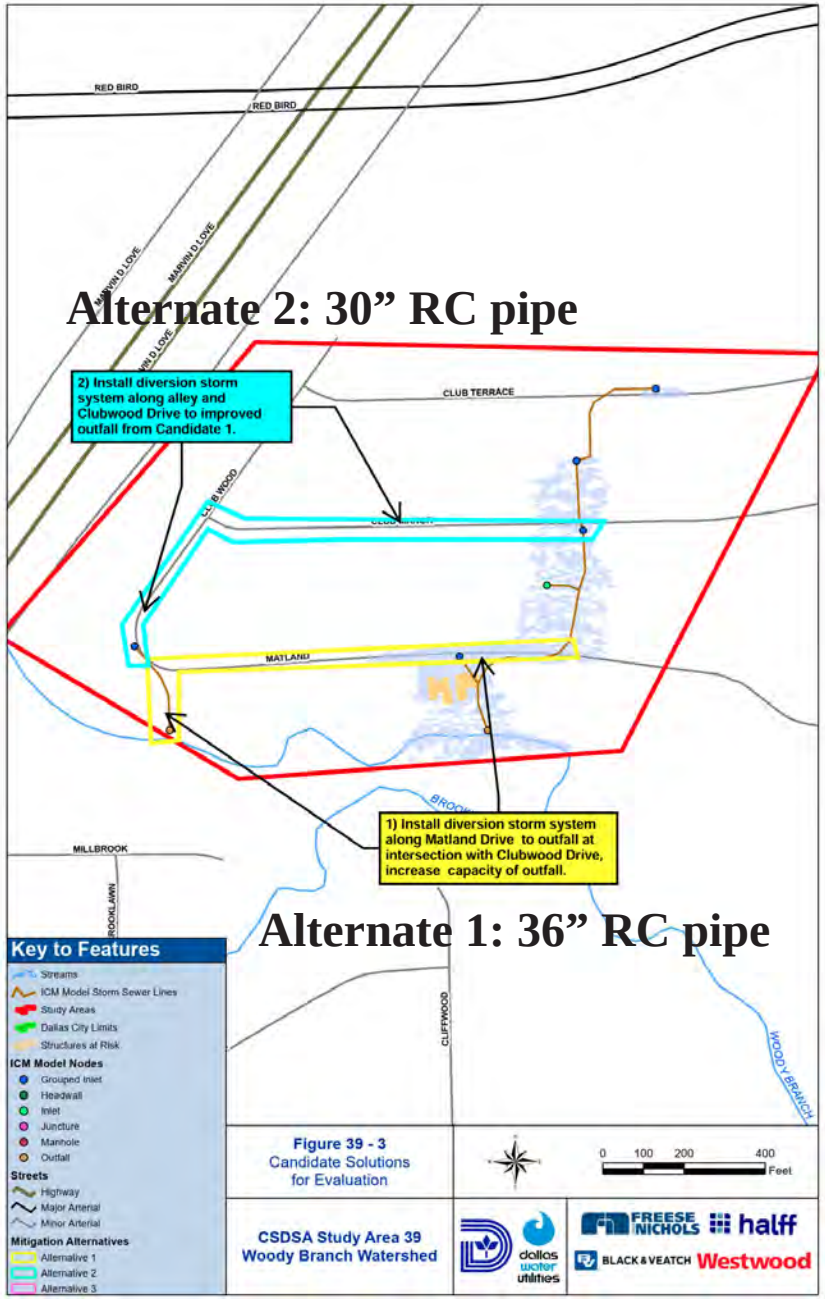
Area 39 – 100-yr 24-hour Maximum Inundation - Infoworks

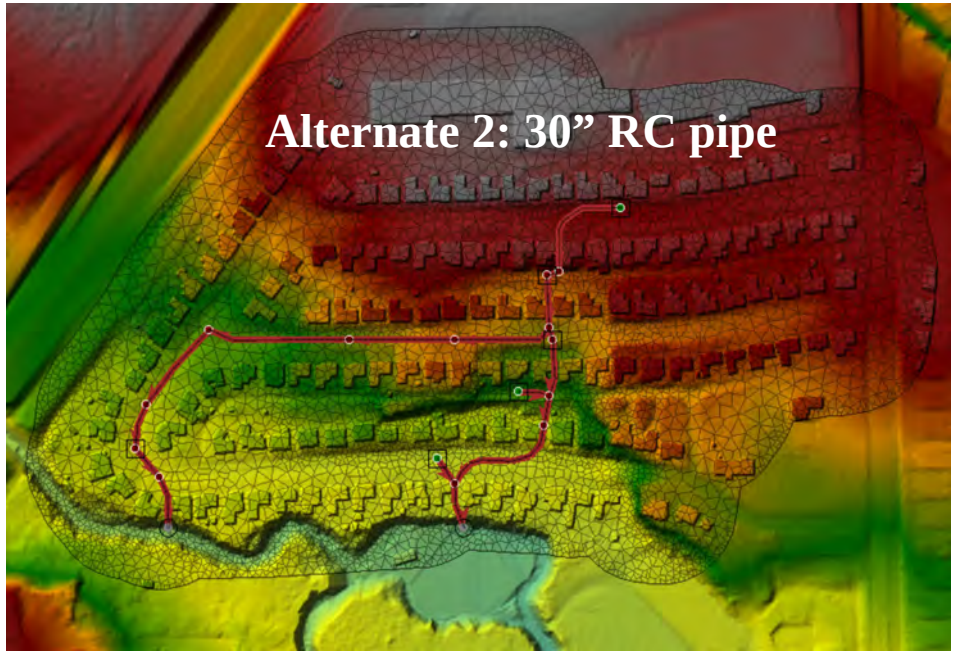


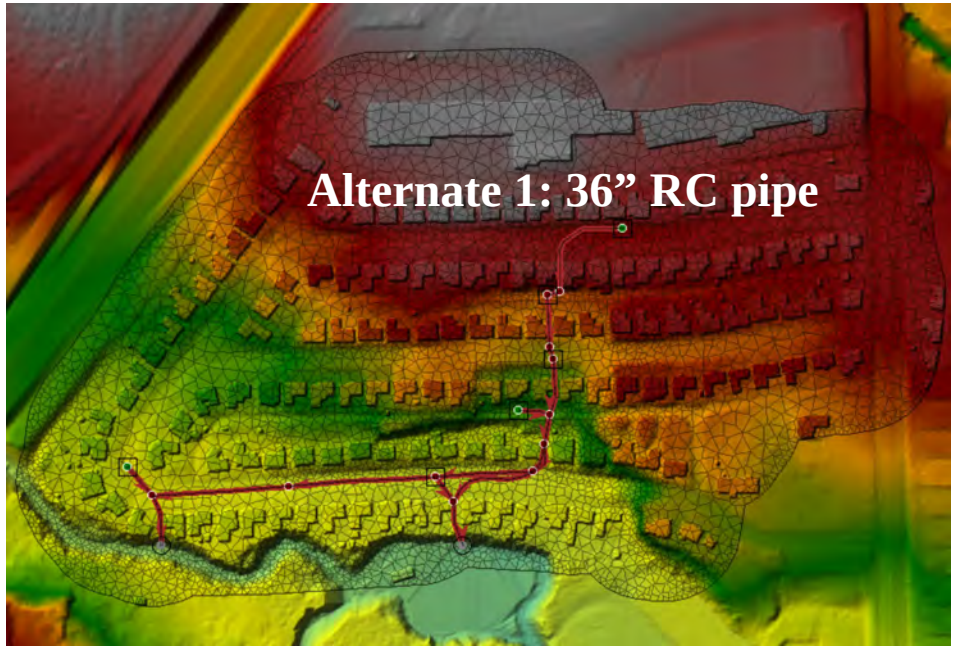
Area 39 – 100-yr 24-hour Maximum Inundation – HEC-RAS



Area 39 – Proposed Alternatives (#1 and #2)







Chapter 5

Task 5A – Recommended FMEs, FMPs and FMSs

Potentially Feasible FMEs

Potentially Feasible FMEs		
2023 RFP (Final)	2028 RFP (Prior to 6/2026)	2028 RFP (As of 10/2026)
522	574	601

- **27 new FMEs; 14 revisions to previous submittals**
- 15 communities submitted by deadline
- 9 new communities participated (Goal IDs #73 and #74)
- Majority of submittals are in support of an FMP or are master plans that would presumably result in one or more FMPs.

Potentially Feasible FMPs

Potentially Feasible FMPs		
2023 RFP (Final)	2028 RFP (Prior to 6/2026)	2028 RFP (As of 10/2026)
100	140	164

- **24 new FMPs; 3 revisions to previous submittals**
- 18 communities submitted by deadline
  - Third-party submittals from NCTCOG (TSI-West and TSI-North efforts) and GLO
- 16 new communities participated (Goal IDs #73 and #74)
- Majority of FMPs are creek crossing improvements

Potentially Feasible FMSs

Potentially Feasible FMSs		
2023 RFP (Final)	2028 RFP (Prior to 6/2026)	2028 RFP (As of 10/2026)
151	177	178

- **1 new FMS; no revisions to previous submittals**
- 1 community submitted by deadline
- 1 new community participated (Goal IDs #73 and #74)
- FMS submittal is development of a drainage design manual for a city.

Tasks 4, 5A & 5B Next Steps

- Late January 2027
  - Technical Subcommittee meets to recommend remaining FMXs.
- Late February 2027
  - RFPG meets to approve TS recommendation and conditionally approve draft Chapter 4.
- March 2027
  - Draft Chapter 5 will be provided to the RFPG; expectation is reviews are completed by April.
- April 2027
  - RFPG meets to approve draft Chapters 5 & 6.
  - Final Task 5B datasets are provided.
- Early May 2027
  - Summary of changes to Chapter 4, 5, & 6 based on Task 5B submittals.

Chapter 7 Flood Response

Overview of Chapter 7

- Types of Flooding
  - Coastal
  - Riverine/Fluvial
  - Local/Pluvial
  - Flash
- Four Phases of Emergency Management
- Flood Preparedness Response, and Recovery
- Relevant Entities in the Trinity Region
- Entities in Preparation of a Flood Event
- Plans to be Considered
- Potential Regulatory Recommendations
  - Provided in Chapter 8

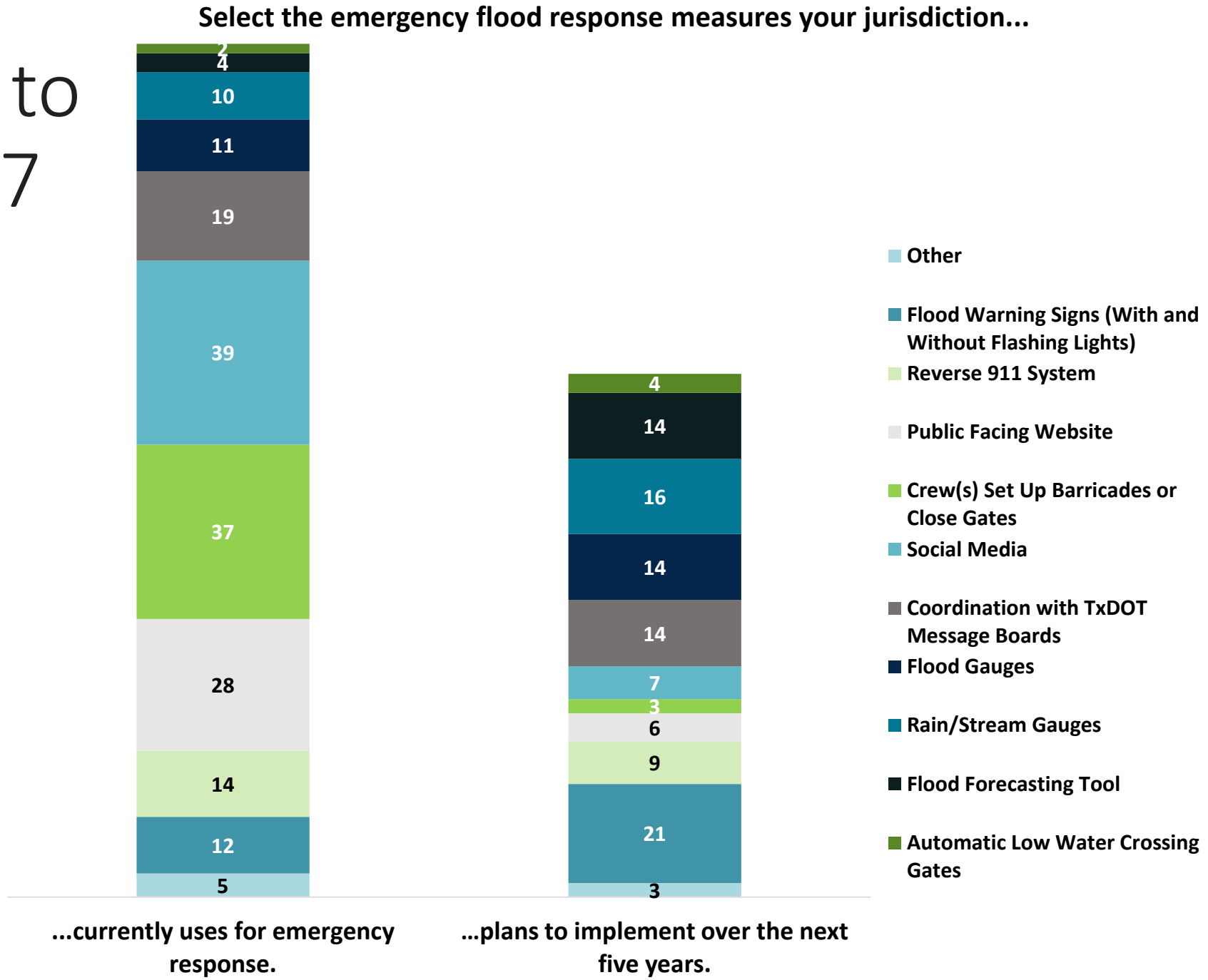


Flood Preparedness Response, and Recovery Mitigation Actions

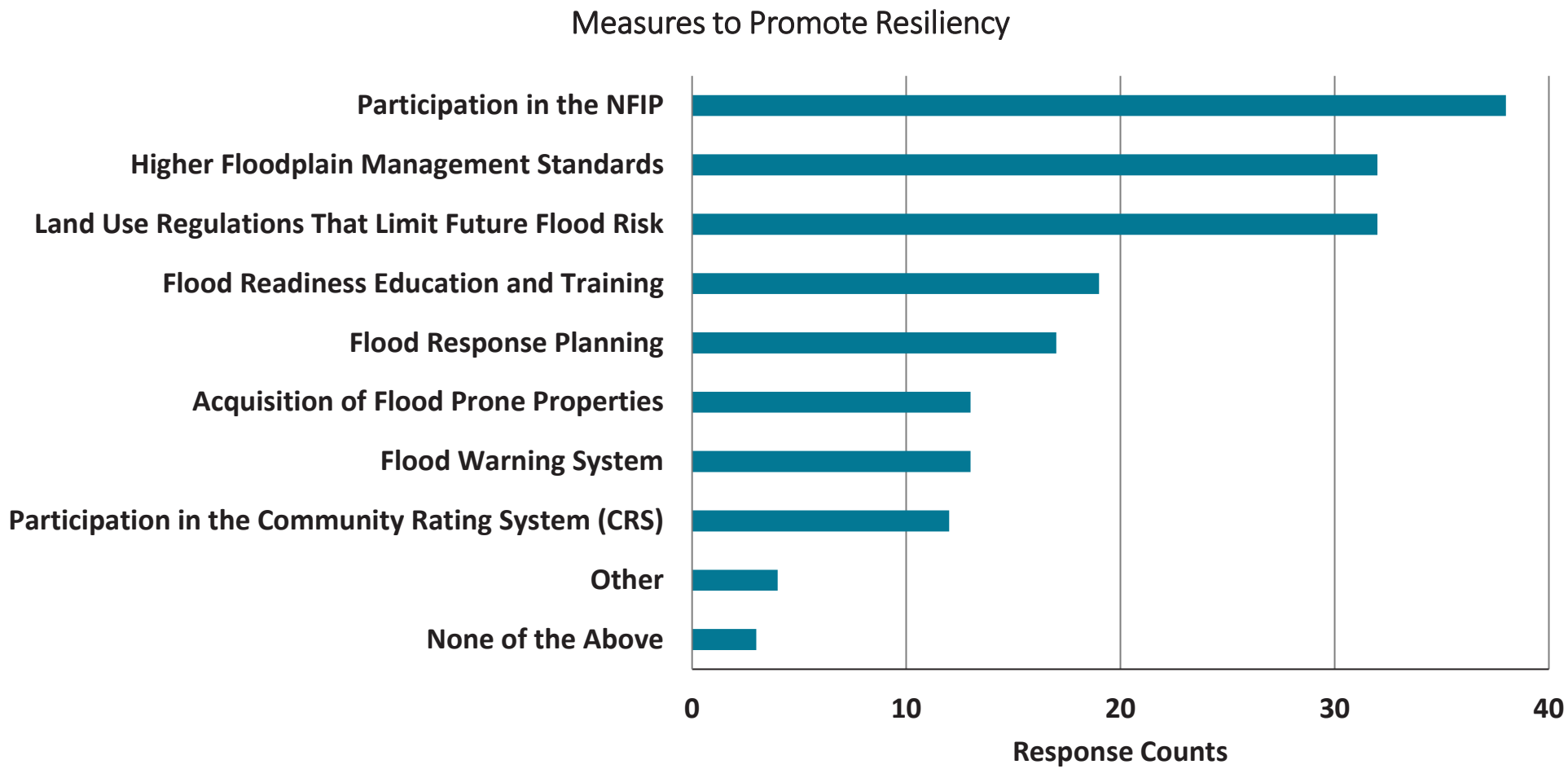
HMPs can include the following types of actions:

- Buyout/acquisition/elevation projects
- Drainage control and maintenance
- Education and awareness for citizens
- Equipment procurement for response
- Erosion control measures
- Flood insurance education
- Flood study/assessment
- Infrastructure improvement
- Installation/procurement of generators
- Natural planning improvement
- Outreach and community engagement
- Technology improvement
- Urban planning and maintenance

Updates to Chapter 7



Updates to Chapter 7

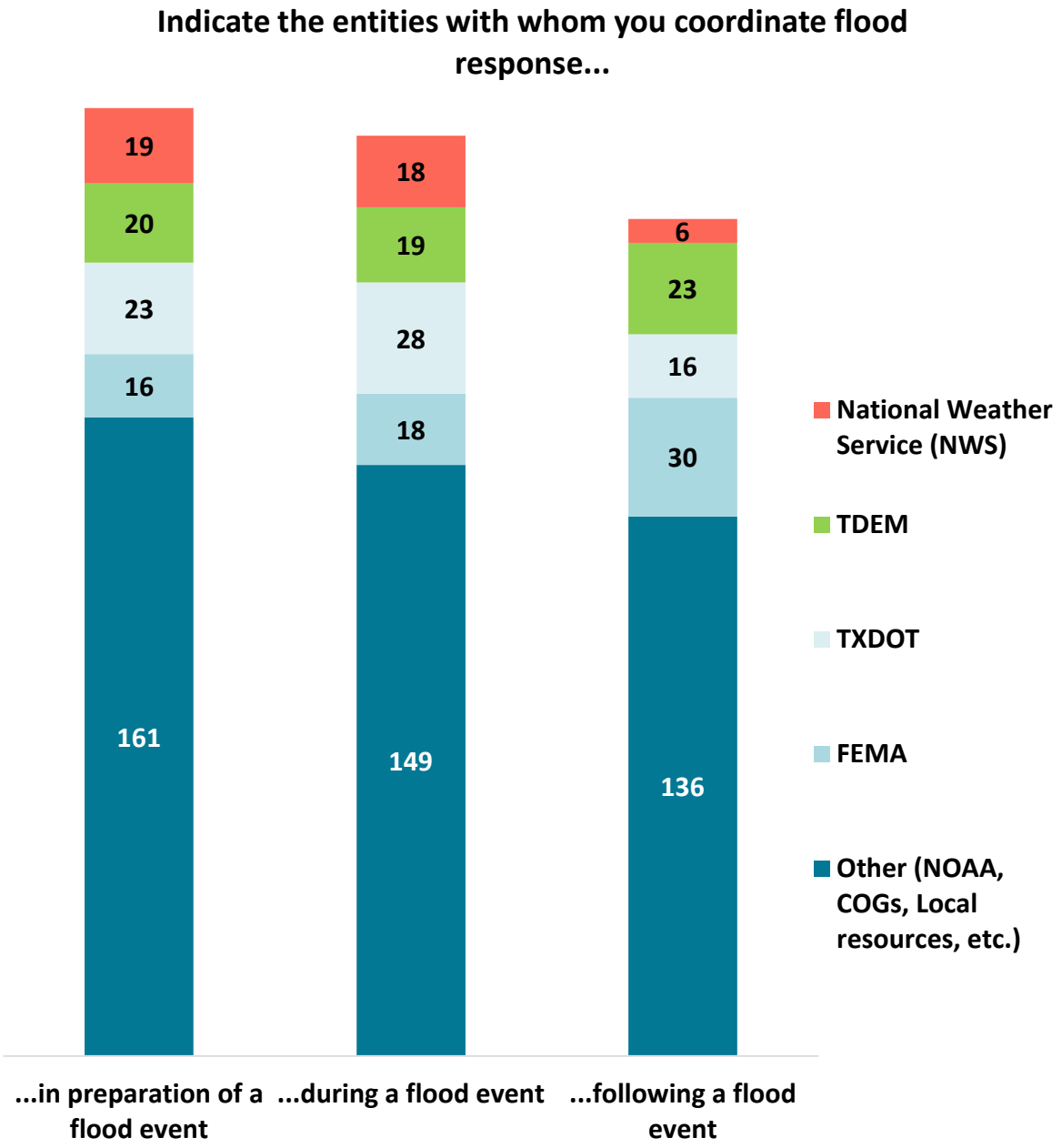


Updates to Chapter 7

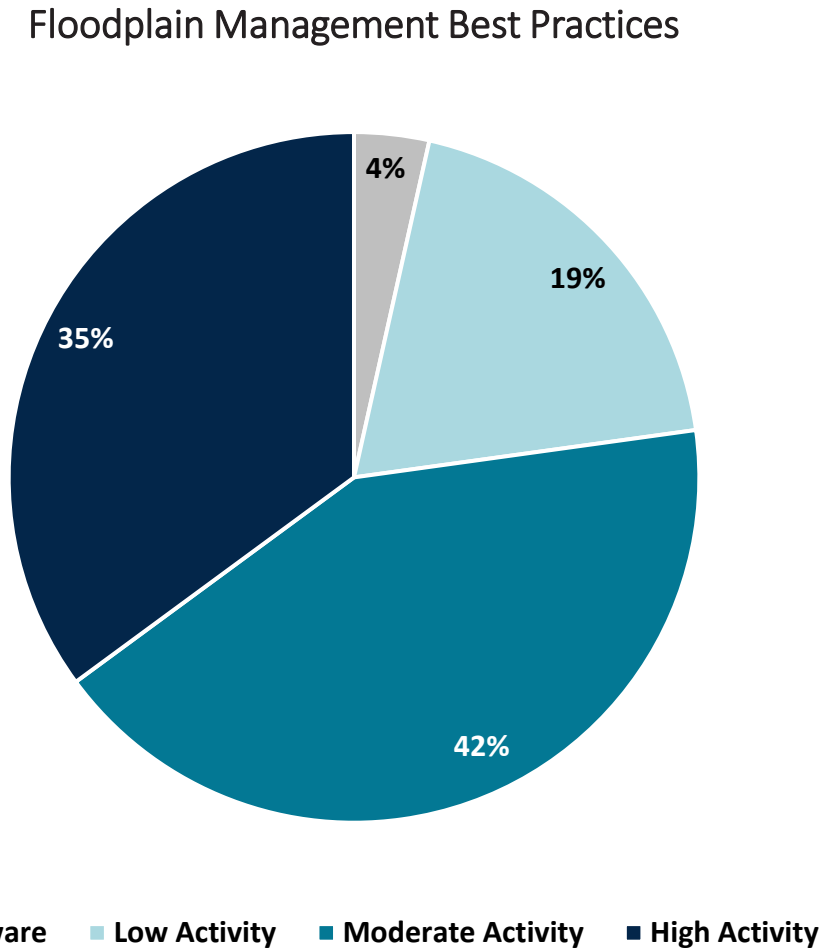
Relevant Entities in the Trinity Region

- Local
- Regional
- State
- Federal

Updates to Chapter 7



Updates to Chapter 7



Updates to Chapter 7

Entities in Preparation of a Flood Event

- Before the Emergency
  - Emergency Management Plans
  - Hazard Mitigation Plans
  - Flood Planning Studies from Entities – Watershed Master Plan
- Emergency Information Dissemination
  - Rain and Stream Gauges
  - Emergency Alert Systems from National Weather Service or Local Media
  - Integrated Public Alert & Warning System – FEMA's EAS
  - Reverse 911 System
  - School Emergency Alert Systems



Consider approval of Draft Chapter 7

FLOOD RESPONSE IINFORMATION & ACTIVITIES

How the Trinity Region prepares for, responds to and recovers from flooding.

01 PRIMARY FLOOD HAZARDS IN THE TRINITY REGION

Coastal
FAR SOUTH PORTION OF THE REGION

Driven by wave action, high tide, storm surge or heavy rain pushing sea/ocean water onto dry land.

Local / Pluvial
RAINFALL-DRIVEN

Independent of river channels. Occurs when excess rainfall overwhelms local drainage systems or saturates rural soil.

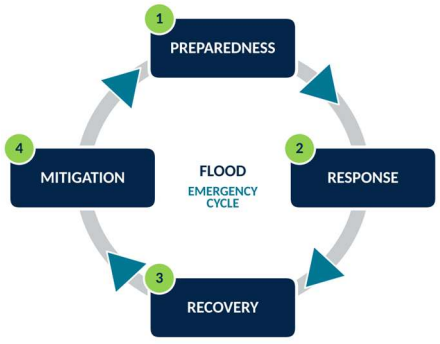
Flash
LITTLE TO NO WARNING

Rapid rising water from extreme sudden rain or dam/levee failure with little warning. Dangerous to life and property.

Riverine / Fluvial
OVERTOPPED BANKS

Occurs when river channels overtop banks due to persistent basin-wide precipitation, flooding nearby land.

02 THE FOUR PHASES OF EMERGENCY MANAGEMENT



Source: FEMA Framework

1 Preparedness Actions before a flood, aside from mitigation: plans, drills, supplies.
e.g., warning systems, radio equipment, response training

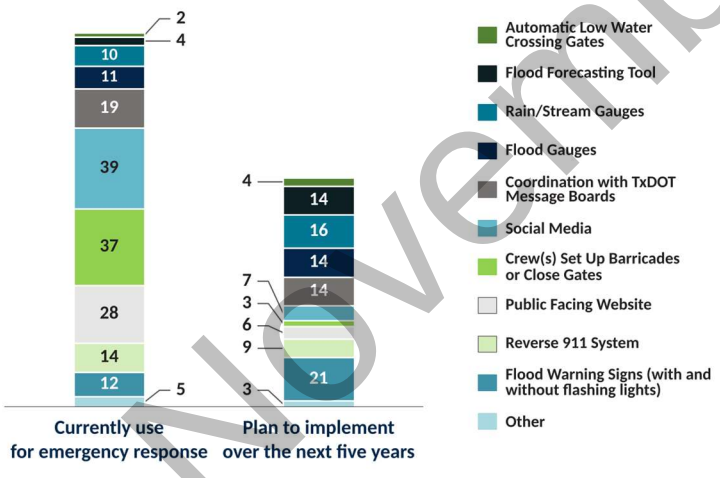
2 Response Actions during and right after: plans activated, search and rescue.
e.g., closing gates at Low Water Crossings, signage, sandbags

3 Recovery Damage evaluation and repairs back to pre-event conditions.
e.g., debris management, rebuilding, permanent housing, utilities

4 Mitigation Structural and non-structural actions that reduce risk to life and property.
e.g., planning & zoning, floodplain protection, buyouts, outreach

Mitigation is the primary focus of regional flood planning: identifying Flood Management Evaluations (FMEs), Flood Management Strategies (FMSs) and implementing Flood Mitigation Projects (FMPs).

03 FLOOD RESPONSE MEASURES IN THE TRINITY REGION



Source: Trinity Region data collection survey, as of March 31, 2025.

39 **MOST USED TODAY**
Social media leads; crews to set up barricades or close gates; and public-facing websites

21 **PLANNED IMPLEMENTATION**
Flood warning signs; rain/stream gauges; TxDOT message boards; flood gauges; flood forecasting tools

14 **REVERSE 911**
14 entities use it now
9 entities plan to implement it
Also, Hazard Mitigation Plans (HMPs) show continued regional interest in adding it.

While social media and barricade crews dominate current responses, entities are heavily prioritizing Flood warning signs and forecasting tools over the next 5 years.

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04 SHARED RESPONSIBILIY: WHO IS INVOLVED?

LOCAL

- **Municipalities:** Cities, Towns, and Villages
- **Counties:** Counties
- **Flood Control Entities:** Flood Planning entity or political subdivisions with flood related authority

These local entities are directly involved with local emergency preparedness, response, and recovery activities.

REGIONAL

- **COGs:** Councils of Governments provide flood data and recovery tools. NCTCOG runs the Trinity River Corridor Development Certificate.
- **Districts:** Regional water supply, utility, and flood control entities
- **River Authorities:** Regional entities that conserve, store, and distribute water. Develop water management plans.

STATE

- **TWDB:** Water and flood planning. Provides funds for flood and water studies/projects.
- **GLO:** Administers HUD CDBG-DR and CDBG-MIT funds.
- **TDEM:** Coordinates state and local disaster response and recovery.
- **TxDOT:** Provides real-time road and low-water crossing closures.

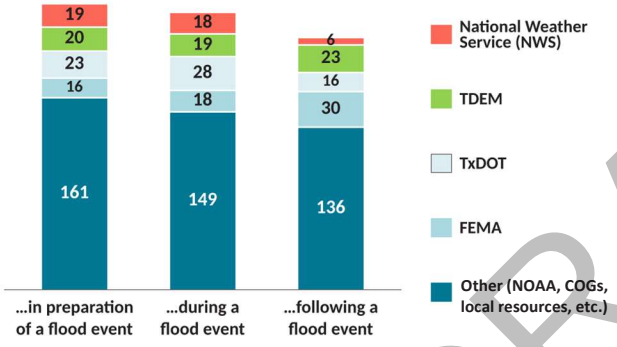
FEDERAL

- **FEMA:** Manges NFIP. Supports disaster response & recovery. Provides funding.
- **NWS:** Monitors weather and water data. Issues flood watches, warnings, & emergency notices.
- **NOAA:** Maintains historical flood data, precipitation atlas, coastal data.
- **USACE:** Provides flood risk management through waterways, dams, & levees.

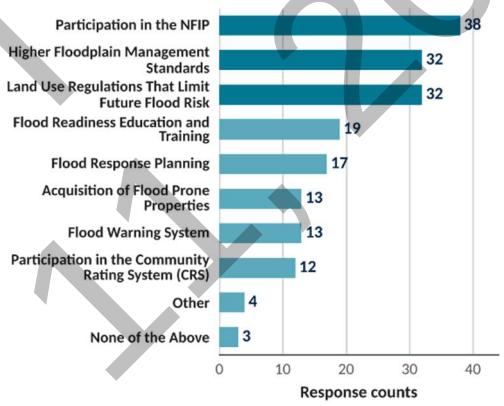
05 COORDINATION & RESILIENCE READINESS

(Data Source in Section 05 from Trinity Region data collection survey, as of March 31, 2025)

Entities coordinated with on flood response...

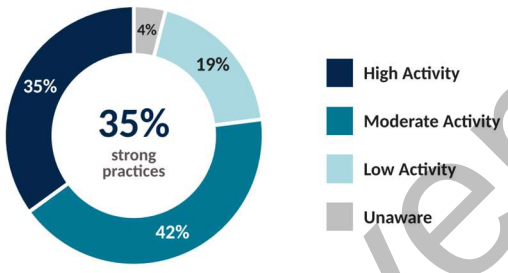


Measures taken to promote resilience

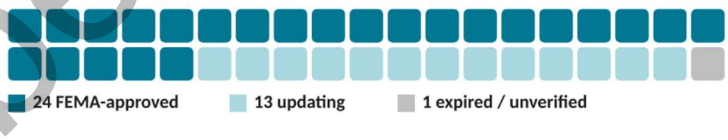


FLOODPLAIN MANAGEMENT PRACTCICES

Self-reported strength of floodplain management



HMP STATUS ACROSS 38 COUNTIES IN THE TRINITY REGION



35% of respondents report strong floodplain practices; 4% are unaware

9 cities hold HMPs, 2 of which have expired

Current HMPs are key to assessing risk and choosing mitigation actions.

06 EMERGENCY INFORMATION DISSEMINATION FRAMEWORK

System/Tool	Operating Entities	Operational Function & Coverage in Trinity Region
Rain & Stream Gauges	USGS, NWS, River Authorities, Local	Continuous hydrologic flow and stage measurement; provides inputs for River Forecast Center models.
EAS & IPAWS	FEMA, TDEM, NWS, Local, EOCs	National alert protocol sending direct Wireless Emergency Alerts (WEA) to cell phones; active in 32 counties.
Reverse 911 Systems	County & Municipal (Local)	Georeferenced recorded voice and text alerts sent to targeted resident lists in high-risk, low-water zones.
TexasFlood.org	TWDB, TDEM, GLO	Central public portal featuring real-time lake levels, TexMesonet weather data, and Flood Viewer alerts.
Graphical Warnings (GWARN)	NCTCOG, NWS	Overlays warning polygons onto local demographic data to calculate population at risk instantly.

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Chapter 7: Flood Response Information and Activities

The following chapter summarizes the flood response preparations in the Trinity Region using historical, projected, and current statistical data from the previous chapters, and by documenting survey responses received from entities through the online data collection website. The Texas Water Development Board (TWDB) stated that the Regional Flood Planning Groups (RFPGs) "shall not perform analyses or other activities related to planning for disaster response or recovery activities." Therefore, this chapter documents the information obtained from entities within the Trinity Region regarding existing preparations for flood response activities, existing recovery efforts, and approved administrative or policy recommendations (with other potential recommendations included in more detail in Chapter 8).

Types of Flooding in the Trinity Region

There are four types of floods that impact the Trinity Region:

- Coastal floods
- Local/ Pluvial floods
- Flash floods
- Riverine/ Fluvial floods

Whenever a coastal process such as large waves, high tide, storm surge, or heavy rainfall causes flooding of adjacent dry land, it is referred to as coastal flooding. Coastal flooding tends to be the most extreme when the storm surge is high. Storm surge is an abnormal rise of water generated by a storm, over and above the predicted astronomical tides. Coastal flooding is concentrated in the very south portion of the Trinity Region.

Pluvial floods, or local flooding, happen when flooding is independent from an overflowing body of water, due to excessive rainfall. The most common example of this is flash flooding. Urban pluvial flooding occurs when the drainage system is overwhelmed, and the excess water floods streets and surrounding properties. For a rural area, pluvial flooding occurs when the soil becomes oversaturated leading to heavy rainfall runoff.

Flash floods are caused by heavy rainfall over a brief period of time or sudden release of water like a dam failure often occurring with little to no advanced notice. The flood water can be immensely powerful, making it extremely dangerous.

Riverine floods, or fluvial floods, occur when excess rainfall overtops the riverbank. This overtopping then spills water onto nearby land.

When such flood events occur, it is imperative that plans are in place to combat the effects of the flooding to protect people and property.

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The Four Phases of Emergency Management

As shown in ***Figure 7.1***, emergency management involves four phases (FEMA, 1998):

- **Flood Preparedness:** Actions, aside from mitigation, which are taken before flood events to prepare for flood response activities.
- **Flood Response:** Actions taken during and in the immediate aftermath of a flood event.
- **Flood Recovery:** Actions taken after a flood event involving repairs or other actions necessary to return to pre-event conditions.
- **Flood Mitigation:** The implementation of both structural and non-structural solutions to reduce flood risk to protect against the loss of life and property.

Figure 7.1: Four Phases of Emergency Management



When a severe rain event is projected to occur, steps must be taken for preparedness. Disaster preparedness plans are in place, drills and exercises are performed, an essential supply list is created, and potential vulnerabilities are assessed. Examples of preparedness actions include installing disaster warning systems, purchasing radio communication equipment, or conducting emergency response training.

During the response phase, disaster plans are implemented, search and rescue activities may occur, and/or temporary command and relief stations may be erected. Response examples include addressing immediate flood needs through actions such as placing temporary barriers or closing gates at Low Water Crossing (LWC), installing signage near overtopped roads, or using sandbags to divert water.

In the recovery phase, evaluation of flood damage occurs. Examples of recovery activities can include comprehensive debris management, rebuilding damaged structures, moving displaced residents to more permanent housing, and utilities restoration.

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The most crucial step of the four phases of emergency management is mitigation, which can decrease or eliminate current risk. Examples of mitigation actions include planning and zoning, floodplain protection, property acquisition and relocation, and public outreach projects (FEMA, 2013, January). Hazard mitigation is defined by the Federal Emergency Management Agency (FEMA) as any sustained action taken to reduce or eliminate the lasting risk to life and property from hazard events. It is an ongoing process that occurs before, during, and after disasters and seeks to break the cycle of damage and restoration in hazardous areas (FEMA, n.d.). Flood mitigation is the primary focus of the regional flood planning process and plan development efforts regarding identifying and recommending Flood Management Evaluations (FMEs), Flood Management Strategies (FMSs), and Flood Mitigation Projects (FMPs) by the RFPG.

Flood Preparedness, Response, and Recovery in the Trinity Region

Some cities and counties have Hazard Mitigation Plans (HMPs) that support the preparedness, response, recovery, and mitigation phases. Currently, out of the 38 counties within the Trinity Region, 63% of county HMPs are approved by FEMA, with 13 being updated for the latest HMP cycle and one unable to be verified past a previous HMP cycle.

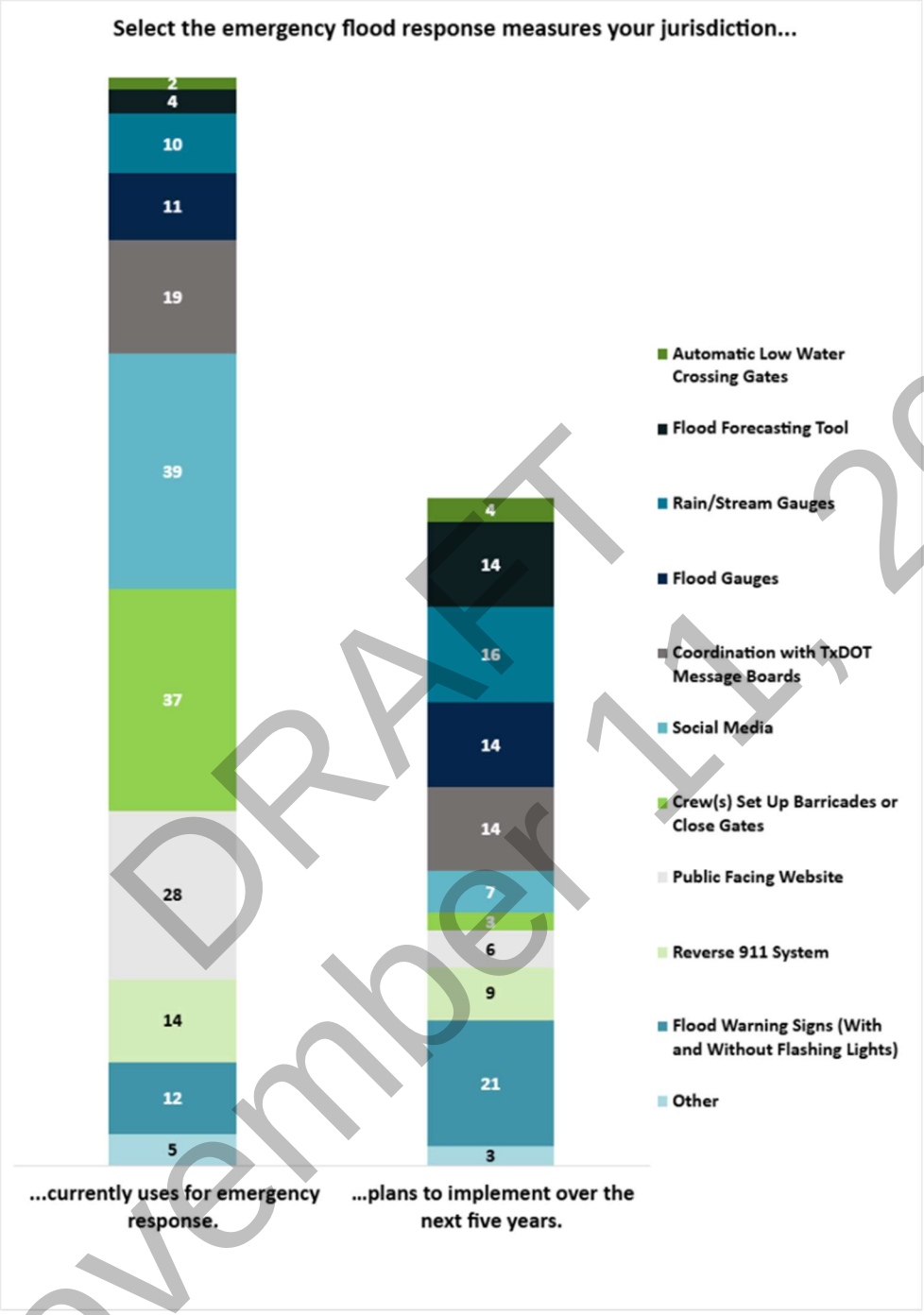
Mitigation actions from HMPs can include the following types of actions:

- Buyout/acquisition/elevation projects
- Drainage control and maintenance
- Education and awareness for citizens
- Equipment procurement for response
- Erosion control measures
- Flood insurance education
- Flood study/assessment
- Infrastructure improvement
- Installation/procurement of generators
- Natural planning improvement
- Outreach and community engagement
- Technology improvement
- Urban planning and maintenance

As discussed in ***Chapter 1***, the Trinity RFPG performed a data collection outreach effort up to March 31, 2025, that included survey questions applicable to multiple chapters within this plan. The survey responses received from entities in the Trinity Region indicated that several types of actions listed were in place or being implemented within the next five years including flood warning signs, a Reverse 911 system, a public facing website, crews to set up barricades or close gates, social media, portable and/or temporary traffic message boards, and flood gauges. ***Figure 7.2*** summarizes the responses to the survey to which participants were able to select all the options that apply to their entity.

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Figure 7.2: Flood Response Measures



Source: Trinity Region data collection survey results as of March 31, 2025, with additional research online

Once the event is over and the response measures are in place, recovery can begin. Depending on the duration and extent of the event, various recovery actions may be needed. In the recovery process it is key to have clear communication with relevant entities to communicate needs and with citizens to communicate risks. It is also essential to have trained professionals

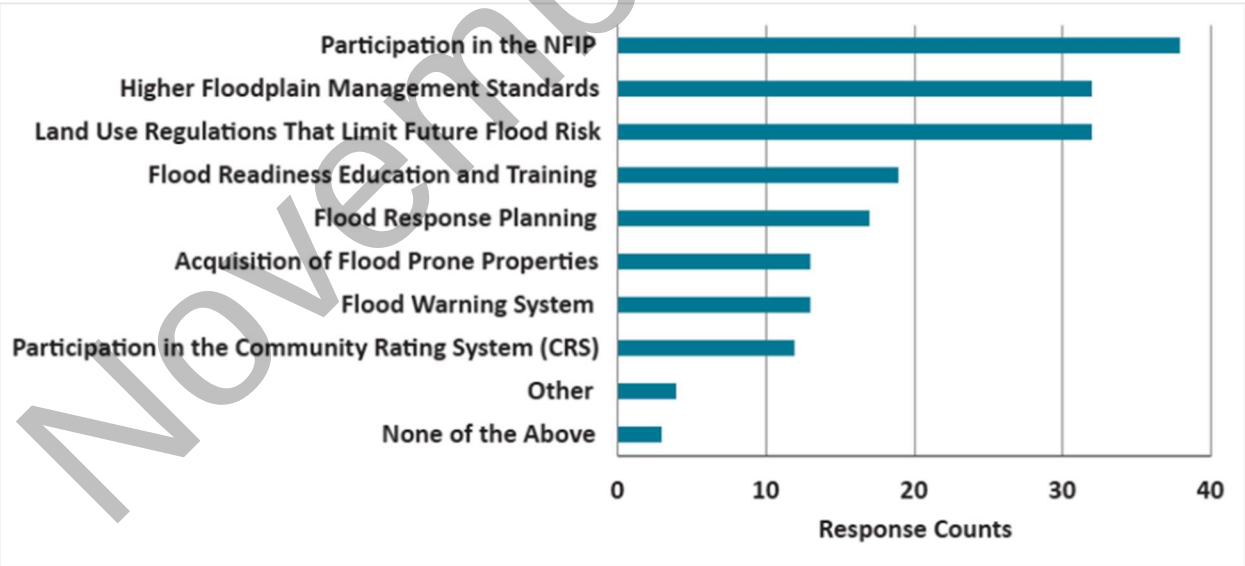
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who can respond to and recover from disasters efficiently and effectively. Debris management and utility maintenance and/or restoration through public works are necessary and time sensitive services. If flooding occurs within a structure, communication with the local floodplain administrator may be required to obtain permits before beginning repairs.

The Texas Flood website, www.texasflood.org, is a collaboration between TWDB, Texas Department of Emergency Management (TDEM), and the General Land Office (GLO) to provide information and resources after a flood event. The website provides helpful information and resources for both communities and individuals seeking post event financial assistance. Through this website, the Texas Geographic Information Office (TxGIO) Flood Viewer displays lake levels, river heights, and other real time weather conditions across Texas. Any Texan can subscribe and set up notifications that will alert them when water is rising in a river near their house or property. The Texas Water Development Board TexMesonet displays real time and seasonal data from weather stations across the state including precipitation, soil moisture, and other measurements. The Interactive State Flood Plan Viewer complements Texas' 2024 State Flood Plan by providing downloadable statewide flood risk, infrastructure, and mitigation information. It helps individuals assess local flood risks and support planning decisions. The Interagency Flood Risk Management (InFRM) Flood Decision Support Toolbox shows real-time weather information and includes the estimated depth of water in hypothetical flooding scenarios (TexasFlood, n.d.).

Additional measures indicated by the survey responses include measures taken by entities include promoting the participation in the National Flood Insurance Program (NFIP), focusing on higher standards for floodplain management, and utilizing land use regulations that limit future flood risk. ***Figure 7.3*** summarizes participant responses to these resiliency measures (multiple responses could be selected).

Figure 7.3: Measures to Promote Resilience



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Source: Trinity Region data collection survey results as of March 31, 2025, with additional research online

As noted in ***Chapter 1, Table 1.9,*** 38 respondents indicated participation in the NFIP was key to promoting resilience, 32 respondents indicated land use regulations that limit future flood risk were important, and 32 respondents stated taking measures to promote higher standards for floodplain management were key.

Relevant Entities in the Trinity Region

The purpose of flood risk management is to help prevent or reduce flood risk by using either structural or non-structural means or a combination of the two. Responsibility for flood risk management is shared between federal, state, and local government agencies; private-sector entities; and the general public. In ***Chapter 1***, the various communities contacted to provide data via the survey included: agricultural agencies, cities, counties, Councils of Government (COGs), river authorities, districts such as Municipal Utility Districts (MUDs) and Special Utility Districts (SUDs), flood control districts, and state and federal agencies. The various contributing entities and partners are discussed here.

Local Entities

Cities, or municipalities, generally take responsibility for parks and recreation services, police and fire departments, housing services, emergency medical services, municipal courts, public transportation services, and public works (streets, sewers, snow removal, signage, and so forth) services. The Trinity Region includes all or portions of 290 municipalities.

The major responsibilities of the 38 county governments in the Trinity Region include providing public safety and justice; holding elections at every level of government; maintaining Texans' most important records; building and maintaining roads, bridges, and in some cases, county airports; providing emergency management services; providing health and safety services; collecting property taxes for the county and sometimes for other taxing entities; issuing vehicle registrations and transfers; and registering voters.

The preparedness role for a city or county can involve creating an emergency preparedness plan, educating and training community members on flooding, encouraging people and businesses to purchase flood insurance, and setting up emergency communication lines. In the flood response phase, the entities are to implement the disaster preparedness plan, monitor high water at high-risk locations, alert the community to unsafe conditions, conduct road closures, perform search and rescue missions, update Geographic Information System (GIS) mapping as needed, and contact the federal government for disaster relief. When it is time to implement the recovery phase, each entity should update old or damaged infrastructure, work with the federal government to assess damages, communicate with volunteers and local leaders, and utilize free advisory services that can aid in the recovery process.

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In the aftermath of a flood event, cities and counties coordinate to provide recovery services for residents including but not limited to debris clean up, vital resource distribution, medical care, short-term shelter, buyout programs for flooded properties, and local infrastructure improvements to mitigate future risk in long-term implementation. Cities and counties can provide increased resiliency through the successful implementation of mitigation projects to reduce the impact of floods.

Regional Entities

Agricultural extension agents (or "ag extension agents") are employed by land-grant universities and work for the citizens of that particular state by serving as an expert or teacher on the topic of agriculture. Ag extension agents can provide valuable information on preparation and recovery from flood events specific to agricultural entities. The Trinity Region has a significant agricultural footprint that makes working closely with ag extension agents crucial in preparing for disasters, learning about types of disasters and how to prepare for them, and accessing disaster recovery information. There are pockets of working lands throughout the Trinity Region with large sections located within the far north and south counties of the Upper Subregion, such as Ellis, Hill, Grayson, and Cooke.

Texas Association of Regional Councils assists state and federal partners by coordinating and improving regional homeland security preparedness, planning, and response activities across jurisdictional boundaries. The TDEM works with the regional COGs to verify that all regional and local emergency plans are up-to-date and compliant with Texas Government Code. Regional councils also work with TDEM in the event of a disaster within their region to access state resources in a timely manner.

The nine COGs located within the region are part of the Texas Association of Regional Councils and are voluntary associations that represent member local governments, mainly cities and counties, and seek to provide cooperative planning, coordination, and technical assistance on issues of mutual concern that cross jurisdictional lines. COGs typically aid in the preparedness phase and can serve as a resource for flood data, flood planning, and floodplain management. COGs can also be recipients of federal and state grants and have their own response programs. During recovery from a flood event, COGs serve as a valuable resource by providing information, services, training, and tools for communities. COGs facilitate recovery through public engagement and community outreach, planning of regional infrastructure studies, and the development of plans to aid in recovery and resilience.

The North Central Texas Council of Governments (NCTCOG) within the Trinity Region includes the Public Works Emergency Response Team (PWERT). This team provides aid during an emergency or disaster when local public works departments are overwhelmed and request assistance. Additionally, NCTCOG provides a Local Disaster and Recovery Framework and Toolkit which includes post-disaster recovery checklists, local plan templates, as well as other documents to aid in the recovery process. NCTCOG coordinated the Regional Flood Warning

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Software Program which "provides each participating entity with enterprise-level hydrologic and flood warning software. The program leverages existing gauging networks within the region to provide a centralized platform to view and disseminate information of real-time gauge conditions. NCTCOG has entered into an agreement with three companies (HydroLynx, OneRain, and TriLynx) to provide products and/or services to participating TxShare entities. Participating entities must first complete an interlocal agreement with TxShare, a program of NCTCOG, to access these products and services." (NCTCOG, 2026)

NCTCOG also manages the Corridor Development Certificate Program (CDC) process which "aims to stabilize flood risk along the Trinity River. The CDC process does not prohibit floodplain development but ensures that any proposed development within the floodplain along the corridor will not raise flood water levels or reduce flood storage capacity. A CDC certificate is required prior to developing land within an agreed upon boundary along the Trinity River known as the Regulatory Zone, which is similar to the 100-year floodplain." (NCTCOG, 2026)

Four Trinity Region COGs (Brazos Valley Council of Governments, Deep East Texas Council of Governments, South East Texas Regional Planning Commission, and Houston-Galveston Area Council) received Community Development Block Grants for Disaster Recovery (CDBG-DR) allocated by the United States Department of Housing and Urban Development (HUD) for Hurricane Harvey housing recovery assistance. These funds provide for housing, infrastructure, and planning support through state and local programs. The COGs also assisted with CDBG-DR for Hurricane Beryl in 2024 with separate HUD funding given to the City of Houston and Harris County.

River authorities or districts in the State of Texas are public agencies established by the state legislature that are authorized to develop and manage the waters of the state. The Trinity Region has seven river authorities within its region that have the power to conserve, store, preserve, utilize, and distribute the waters of a designated geographic region for the benefit of the public. The river authorities or districts are essential partners in floodplain management and create their own regulatory and management plans for water use and retention.

Water districts are local government entities that provide water and sewer service and sometimes roads to its customers and residents, depending on the type of district. Three of types of districts are located within the Trinity Region. These are water districts, water supply and utility districts, and flood control districts.

Water districts play a role in the water quality and distribution and can aid in the construction of drainage and infrastructure. In relation to flood preparedness and response, water districts actively monitor water levels of the flood control systems they operate. They are active in flood planning, protection, and outreach efforts within the region.

Water supply and utility districts can include MUDs, Freshwater Supply Districts (FWSDs), Municipal Water Districts (MWDs), Soil and Water Conservation Districts (SWCDs), and Special Utility Districts (SUDs). A water supply district is a special district that provides water and sewer

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services to a community (AWBD-TX, 2026). Utility districts are political subdivisions that provide infrastructure and services such as water, sewer, and stormwater drainage in areas where city services are not available. Throughout the Trinity Region, there are a total of 195 of these districts with 107 MUDs, 45 FWSDs, 1 MWD, 30 SWCDs, and 12 SUD. They can be useful in the containment and release of flood waters before or during a flood event. During the recovery phase of an event, districts can provide access to services such as water, sewer, and stormwater drainage.

A flood control district is a special purpose district created by the Texas Legislature and governed by its own board or the county commissioners court depending on the establishing legislation. It is a government agency established to reduce the effects of flooding. They utilize flood control infrastructure, such as levees, seawalls, and tide gates to work as physical barriers to prevent areas from flooding. Other measures, such as pump stations and channels, help reduce flooding. There are 38 flood control districts in the region that provide flood control. Flood control districts oversee construction and maintenance of the levees, storm water pump stations, canals, ponds, and other storm drainage management facilities to protect residents, businesses, and their respective assets from the impact of flood-related damage.

Daily river forecasts are issued by the 13 River Forecast Centers (RFCs) using hydrologic models based on rainfall, soil characteristics, precipitation forecasts, and several other variables. Some RFCs, especially those in mountainous regions, also provide seasonal snowpack and peak flow forecasts. These forecasts are used by a wide range of users, including those in agriculture, hydroelectric dam operation, and water supply resources. The forecasts can provide essential information on river levels and conditions for flood preparation and potential evacuations.

“Dams and levees are owned and operated by individuals, private and public organizations, and the government. The responsibility for maintaining a safe dam rests with the owner. A dam failure resulting in an uncontrolled release of the reservoir can have a devastating effect on people and property downstream.” It is critical that the owners are part of the flood planning process to promote collaborative and cohesive flood planning (ASDSO, 2025).

State Entities

“The mission of the TWDB is to lead the state's efforts in providing a secure water future for Texas and its citizens.” TWDB provides water planning, data collection and dissemination, financial assistance, and technical assistance services to the citizens of Texas (TWDB, n.d.). TWDB is statutorily responsible for administering the regional water planning process and preparing and adopting the State Water Plan every five years (TWDB, n.d.). Additionally, TWDB offers a variety of cost-effective loan and grant programs that provide for the planning, acquisition, design, and construction of flood related infrastructure, watershed studies, flood warning systems, flood awareness and outreach programs, and water quality improvements. TWDB also works with the Texas Natural Resources Information Systems (TNRIS) to provide real time flooding information through www.texasflood.org.

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The GLO is the oldest state agency in Texas. The GLO manages state lands, preserves historic landmarks like the Alamo, helps Texans recover from natural disasters, helps fund Texas public education through the Permanent School Fund, provides benefits to Texas Veterans, and manages the vast Texas coast. GLO, through the community development and revitalization division, aids communities in rebuilding, restoring critical infrastructure, and mitigating future damage through resilient community planning. The GLO administers both CDBG-DR and Mitigation (CDBG-MIT) funds from the HUD on behalf of the State of Texas.

The TDEM, a division of the Texas Department of Public Safety (DPS), is charged with coordinating state and local responses to natural disasters and other emergencies in Texas. TDEM is intended to verify the state, and its local governments, respond to and recover from emergencies and disasters, as well as implement plans and programs to help prevent or lessen the impact of emergencies and disasters. TDEM's Recovery and Mitigation divisions work closely with local entities, state agencies, and federal partners to confirm that Texans successfully navigate recovery processes and become more resilient for future disasters. The Disaster Recovery Task Force was created to assist entities that have been impacted by an emergency or disaster, to recover more efficiently by starting the recovery process early in the response phase.

There are eight TDEM regions within Texas. In those regions, Section Chiefs and District Chiefs serve as the division's "field response personnel stationed throughout the state. They have multiple roles as they carry out emergency preparedness activities, coordinate emergency response operations, support recovery efforts and aid in mitigation measures. In their preparedness role, they assist local officials in carrying out emergency planning, training, and exercises. They also develop emergency teams and facilities and teach a wide variety of emergency management training courses. In their response role, they deploy to incident sites to assess damages, identify urgent needs, advise local officials regarding state assistance, and coordinate the deployment of state emergency resources to assist local emergency responders" (TDEM, n.d.). The Trinity Region is primarily in TDEM Regions 2 and 3, with some counties extending into TDEM Regions 4 and 8.

Though the public face of the agency is generally associated with the construction and maintenance of the state highway system, the Texas Department of Transportation (TxDOT) is also responsible for overseeing aviation, rail, and public transportation systems. TxDOT can provide real-time road closure and LWC information in the response and recovery phases of a flood event. Users can access this data through TxDOT's Drive Texas website, www.drivetexas.org.

Federal Entities

FEMA is an agency of the United States Department of Homeland Security (DHS). FEMA's mission is "helping people before, during and after disasters." While on-the-ground support of disaster recovery efforts is a major part of FEMA's charter, the agency provides state and local

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governments with experts in specialized fields and funding for rebuilding efforts; they also provide relief funds for infrastructure by directing individuals to access low-interest loans, in conjunction with the Small Business Administration. In addition to this, FEMA provides funds for training of response personnel, establishes accessible flood hazard limit information, participates in flood outreach and awareness activities, provides floodplain management standard guidance, and works with local, regional, and state floodplain administrators as part of the agency's preparedness efforts. FEMA provides recovery resources and a National Disaster Recovery Framework to assist after disasters.

The mission of the National Weather Service (NWS) is to provide weather, water, environmental, and climate data, as well as forecasts, warnings, and impact-based decision support services for the protection of life and property and enhancement of the national economy. NWS provides flash flood indicators through watches, warnings, and emergency notices to inform the public of potential flood risks. NWS also provides preparedness and response guidance to local and state groups.

The National Oceanic and Atmospheric Administration (NOAA) is an American scientific and regulatory agency within the United States Department of Commerce that forecasts weather, monitors oceanic and atmospheric conditions, charts the seas, conducts deep sea exploration, and manages fishing and protection of marine mammals and endangered species in the United States exclusive economic zone. . This agency documents and analyzes in and outside of the United States. NOAA's National Center for Environmental Information (NCEI) provides historical data that can help communities determine their future probability of flood events and is key in the planning and mitigation process. For coastal flood events, NOAA's Office for Coastal Management plays a key role in providing information, technology, and flood management strategies especially coastal management programs, funding, and coordination of ocean, coastal and Great Lakes natural resources. NOAA also provides the National Precipitation Frequency Atlas of the United States for development of flooding models to be used to predict flooding.

The United States Army Corps of Engineers (USACE) is essential to the nation's military. The agency is responsible for a wide range of efforts in the United States including addressing safety issues related to waterways, dams, and canals, but also environmental protection, emergency relief, hydroelectric power, and much more. USACE is composed of several divisions, with the Trinity Region being in the Southwest Division and the Galveston and Fort Worth districts.

The USACE Flood Risk Management Program (FRMP) focuses on the policies, programs, and expertise of USACE to help reduce overall flood risk. This includes the appropriate use and resiliency of structures such as levees and floodwalls, as well as promoting other approaches (e.g., land acquisition, flood proofing, etc.) to reduce the risk of loss of life, reduce long-term economic damages to the public and private sector, and improve the natural environment.

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USACE responds to disasters each year by deploying hundreds of trained personnel and providing resources nationwide. USACE works under the direction of FEMA as a member of the federal team to support state and local governments in responding to major disasters.

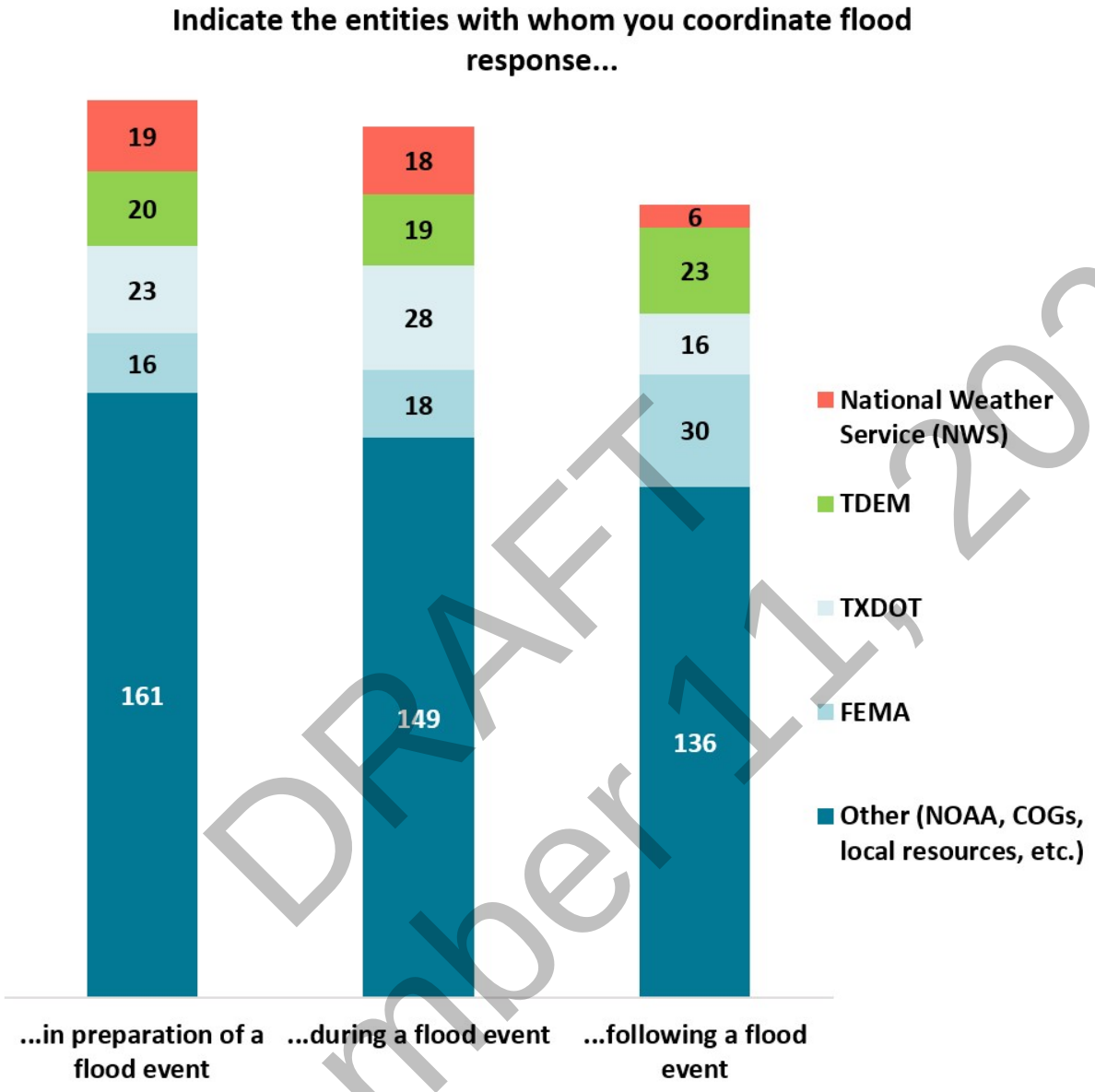
Entities in Preparation of a Flood Event

It is important to consider flood planning in preparation, during, and following a flood event to assess the entities that provide the respondents with assistance and support. Of the survey responses received, the top six entities in which coordination was indicated as key were county, city, TDEM, TxDOT, NWS, and FEMA with all other entities accounting for much smaller responses.

Figure 7.4 shows the breakdown of survey responses regarding entities that contribute most significantly in the preparation, the response, and the recovery efforts within the Trinity Region's various jurisdictions. Respondents could select all that apply in their responses. For example, all of the survey participants responded that during a flood event, they coordinate with other entities, such as NOAA, COGs, etc.

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Figure 7.4: Flood Event Entities



Source: Trinity Region data collection survey results as of March 31, 2025, with additional research online

Emergency Information Dissemination

There are various means by which data can be collected and disseminated before and during a flood event.

Two types of gauges used are rain gauges and stream gauges. “A rain gauge is a meteorological instrument used to measure and record rainfall over a specific area of time in a specified area” (KestrelMet, 2023, May1). It collects water falling on it and records the change over time in the rainfall depth. Stream gauging is a technique used to measure a stream’s discharge or the

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volume of water moving through a channel per unit of time. The height of water in the stream channel, known as a stage or gauge height, can be used to determine the discharge in a stream.

In addition to the NWS, local media such as news or radio stations are vital components in relaying real time information to local residents about inclement weather and flooding. Local media can also alert residents of LWC closings, dam or levee breaches, and other potential dangers. They typically relay NWS messages regarding flood watches, warnings, and emergency notifications. Some media outlets have created their own weather apps that include real-time weather alerts including rain and flood notices. NWS provides data for Emergency Alert Systems (EAS) to alert individuals to imminent or dangerous weather conditions.

In the Trinity Region, "the Graphical Severe Weather Warnings project (GWARN) represents a collaborative effort between the NWS Fort Worth office, the NWS Southern Region Headquarters, and NCTCOG. Using the warning polygon area, a demographic database at NCTCOG is queried to determine characteristics of the population at risk. This has served as a model for numerous other integrations of demographics data into weather impacts" (NCTCOG, n.d.).

"Messages from an EAS can interrupt radio and television to broadcast emergency alert information. Messages cover a large geographic footprint" including the entirety of the Trinity Region. "Emergency message audio/text may be repeated twice, but EAS activation interrupts programming only once, then regular programming continues" (FEMA, 2023, October 30). According to the county websites, 32 counties within the Trinity Region are currently enrolled in some type of EAS program.

"The Integrated Public Alert & Warning System (IPAWS) is FEMA's national system for local alerting that provides authenticated emergency and life-saving information to the public through mobile phones using Wireless Emergency Alerts, to radio and television via the Emergency Alert System, and on the National Oceanic and Atmospheric Administration's Weather Radio." IPAWS was designed to modernize these systems by enabling alerts to be aggregated over a network and distributed to the appropriate system for public dissemination concurrently. IPAWS uses the Common Alerting Protocol (CAP) for message formatting and distribution (FEMA, 2026, May 22).

A local entity can invest in a reverse 911 system that allows the entity to pull up a map on a computer, define the area of interest, and send a recorded phone message to each business or residence in that area. The reverse 911 program participants can opt to receive text messages or calls through this system. Per the survey and in reviewing data from the HMPs, entities within the Trinity Region have indicated interest in pursuing the reverse 911 system to provide data to residents regarding flood dangers in their area.

School emergency alert systems are tools that allow schools to communicate quickly to staff, students, first responders, and others so that they can take appropriate action in the event of

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an emergency situation. Various versions of this tool are used in schools throughout the region from daycares to K-12 grade schools and universities.

Plans to be Considered

Local Plans

In the Trinity Region's data collection effort and survey tool that closed March 31, 2025, publicly available local emergency management and emergency response plans were requested. An emergency management plan is a course of action developed to mitigate the damage of potential events that could endanger an organization's ability to function. These plans include measures that provide for the safety of personnel and, if possible, property and facilities (LinkedIn, 2019, July 20). Some emergency plans are protected by law and are not available to the general public. The region obtained all available emergency management plans, HMPs, and other regional and local flood planning studies from county and local entities.

The Trinity Region has several region-wide plans and regulations in place that dictate a community's capabilities for implementing mitigation and preparedness actions. While each of the region's counties have a HMP, only 24 of 38 county plans are currently approved by FEMA, as they are to be updated on a five-year cycle. One plan has expired with no indication of an update to their plan. Thirteen (13) counties have a plan in development or being updated. Additionally, nine cities have HMPs, with two of them being expired. Having an up-to-date HMP is key to assessing risk and developing mitigation actions.

Other plans to consider include Emergency Action Plans (EAPs) and watershed master plans. An EAP provides the basis for coordinated planning and management of types of emergencies and disaster events. Watershed master plans promote collaboration among all community sectors to create a resilient flood hazard area.

"Hazard mitigation planning reduces loss of life and property by minimizing the impact of disasters. It begins with state, tribal, and local governments identifying natural disaster risks and vulnerabilities in their area. After identifying these risks, they develop long-term strategies for protecting people and property from similar events. Mitigation plans are key to breaking the cycle of disaster damage and reconstruction" (FEMA, 2025, March 24).

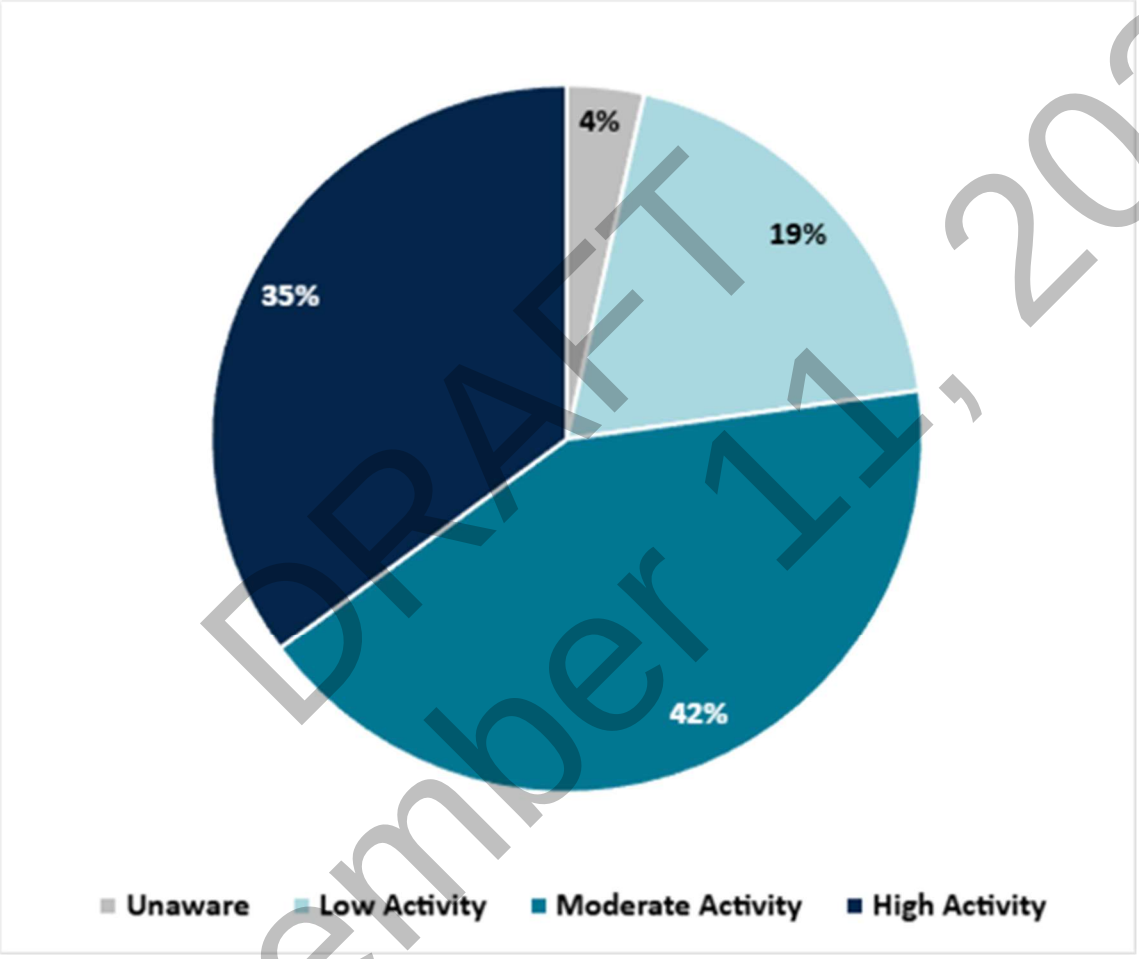
In the private sector, "an EAP is a written document required by the Occupational Safety and Health Administration (OSHA) standards. The purpose of an EAP is to facilitate and organize employer and employee actions during workplace emergencies" (OSHA, n.d.). EAPs are essential in emergency management for critical facilities and for dams. EAPs for dams are essential for identifying potential emergency conditions and specifying preplanned actions to be followed to minimize property damage and loss of life.

These plans are critical components in creating and maintaining strong floodplain management practices in the region. When asked which of the following best describes the activity of your

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entity in floodplain management practices, only 35% of survey respondents indicated that their entity maintained strong practices. At the other end of the survey results, 4% were unaware of practices in their entities. All entities had some form of activity, indicating interest in establishing and maintaining improved floodplain management practices throughout the region. ***Figure 7.5*** summarizes the survey responses regarding the self-reported strength of local floodplain management practices.

Figure 7.5: Floodplain Management Practices



Source: Trinity Region data collection survey results as of March 31, 2025, with additional research online

The Trinity Region's ability to prepare, respond, recover, and mitigate disaster events is determined by several factors. With a clear understanding of the plans that determine a community's capabilities, a recognition of the entities with whom coordination is key, and knowledge of the actions sustained to promote resiliency, the region can be better equipped to implement sound measures for flood mitigation and preparedness.

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Regional and State Plans

"Working with the Commission on State Emergency Communications, regional councils (of government) in Texas have fully deployed advanced 9-1-1 services for wireless callers. Many regional councils with 9-1-1 responsibilities have also developed sophisticated data and mapping programs, which have allowed for the deployment of more advanced regional and local emergency notification systems" (Texas Association of Regional Councils, 2026). As part of NCTCOG, the Regional Emergency Preparedness Program (REPP) brings together urban, suburban, and rural entities to "facilitate information sharing, collaboration, and cooperation among entities" (NOTCOG, n.d.). Preparedness is defined by the DHS and FEMA as "a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response" (DHS, 2022). The REPP accomplishes this through networking, standardization of policies and procedures, and coordination efforts with entities.

FEMA's Regional Catastrophic Preparedness Grant Program (RCPGP) provides funding "to close gaps in housing, logistics, and supply chain management; encourages innovative regional solutions to issues related to catastrophic incidents; and builds on existing regional efforts" (FEMA, 2022).

The State HMP can "reduce losses by reducing the impact of disasters on people and property. Mitigation efforts cannot eliminate all potential impacts of disastrous events" (Minnesota Department of Public Safety, 2026). However, the implementation of HMPs can significantly reduce the anticipated impacts of hazardous events.

The plan evaluates, profiles, and ranks natural and human-caused hazards affecting Texas by event frequency, economic impact, deaths, and injuries. The plan:

- Assesses hazard risk through a risk and vulnerability assessment,
- Reviews current state and local hazard mitigation and climate adaption capabilities,
- Develops mitigation strategies, and
- Identifies potential actions for state agencies (and other entities) to address state and regional needs.

Potential Regulatory Recommendations

In the Trinity Region, improvements could be made to further the effectiveness of emergency actions, especially preparedness. Recommendations made by the Trinity RFPG are included in ***Chapter 8*** and promote the creation and use of floodplain mapping, education of local entity officials regarding flooding, and encouragement of local regulations. A couple of recommendations also address emergency mitigation, such as encouraging entities to work towards common flood mitigation goals and the establishment of a dam safety program. Furthermore, recommendations such as preparing a statewide database of disaster-related

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fatalities can assist entities with emergency recovery and preparation for future flooding events.

Aligning common goals and objectives in the region can facilitate the efficiency of plans and actions taken. Having more robust floodplain practices both locally and regionally creates an ideal flood mitigation scenario and promotes good floodplain management practices.

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Chapter 8 Administrative, Regulatory & Legislative Discussion



Potential Ideas for Future Cycles

- Administrative & Regulatory
- Funding Opportunities
- Legislative
- Other

Administrative Ideas Previously Discussed

- Budget allocation formula review should consider amount of available data, region size (acreage), population of region.
- Exhibits C and D should be provided with scopes of work.
- Clarification that floodplain management practices does not have to be “all or nothing”.
- Acknowledgment of FMXs accomplished outside the regional flood plan and/or Flood Infrastructure Fund
- Additional ordinance templates & draft language for communities through TWDB.

Recommendations Recently Received

Included in your meeting materials!

- Received letter from UTRWD with requested ideas
  - Reinforcement of two legislative recommendations from the 2023 Plan
  - Two, new legislative recommendations
  - Two, new regulatory/administrative recommendations
  - Three, new flood planning recommendations
- Eligibility of political subdivisions and nonprofit water supply corporations operating under Chapter 67 of TWC.
  - Currently only eligible for FME sponsorship (not FMS, FMP)

Next Steps

- Review recommendations in 2024 State Flood Plan
  - Identify 2023 Flood Plan recommendations included/completed
- Review recommendations by other regions
  - Identify those that may be relevant to Region 3

*Convene a Chapter 8 Recommendations Subcommittee to review and propose recommendations to the full RFPG

  - Previously called the Policy Subcommittee
  - Consider updates to subcommittee composition



Consider updates to Subcommittee composition

Chapter 9 Flood Infrastructure Financing Analysis

Task 9 – Flood Infrastructure Financing Analysis

Purpose:

1. **Assess** how recommended FMXs are expected to be financed
2. **Estimate** the anticipated need for local, state, and/or federal funding
3. **Document** available funding sources

Cycle 2 Survey Approach: 2 Phases of Sponsor Outreach

1st Round (Nov 2026)

- Distribute survey to Sponsors whose **FMXs have already been approved and recommended** by the RFPG.
- Expecting responses by **December 18, 2026.**

2nd Round (Feb 2027)

- Conduct a second round of outreach **to account for additional FMXs submitted by the October 30th deadline** that are subsequently approved and recommended by the RFPG at the next February meeting.

Sponsor Outreach E-mail Example

Flood Mitigation Action ID	Flood Mitigation Action Type[2]	Flood Mitigation Action Name	Flood Mitigation Action Total Estimated Cost*	Sponsor Funding		Percent of Other Funding Needed** (including state, federal and/or other funding)
				Anticipated Source of Sponsor Funding	Percent of Funding that Could be Financed by Sponsor**	

*Costs are based on high level engineering estimates and assumptions.

**Percent funding financed by sponsor and other funding needed MUST equal 100%.

Chapter 10 Outreach Update

Public Outreach & Engagement

- Stakeholder Outreach
  - Updated stakeholder contact list
  - Sent stakeholder reminder e-blasts reopening FMX submission on Sept. 30 and Oct. 26.
  - Sent stakeholder notifications for the following:
    - Posting of meeting agenda and meeting materials to the Trinity RFPG website ahead of the Nov. 19 RFPG meeting
  - Took in multiple FMX submission inquiries via the TRFPG inbox, forwarded to appropriate contacts for response or action
  - Received written comments via the TRFPG inbox

Public Outreach & Engagement

- Website and Social Media
  - Updated meeting information on website, LinkedIn and X for Nov. 19 RFPG meeting
  - Updated FMX submission announcement to website, LinkedIn and X
- Media Outreach
  - Updated media list of more than 100 key media contacts throughout the Upper, Middle and Lower Trinity
  - Reached out to media contacts to invite coverage of regional flood planning process ahead of upcoming Draft Regional Flood Plan deadline (May 26, 2027)

LOOK-AHEAD

January 2027

- **Technical Subcommittee** to review additional FMXs received

Late February 2027 🎯

- Approve Draft Chapter 4 Potentially Feasible FMXs
- Approve Draft Chapter 9 Financing Analysis
- Update on outstanding tasks

April 2027 🎯

- Approve Draft Chapter 5 Recommended FMXs
- Approve Draft Chapter 6 Impacts of the Plan
- Update on outstanding tasks

Early May 2027 🎯

- Approve Draft Chapter 8 Admin Recommendations
- Approve Draft Chapter 10 Public Participation
- Approve Draft Chapter 11 Plan Implementation

May 26, 2027: Draft Plan due to TWDB

Summer 2027 Road Show

Notes: 🎯 indicates target date.

Yellow highlight indicates hard deadline.

8. Updates from adjoining coastal regions

9. Updates from Planning Group Sponsor

10. Receive registered general public comments

Limit 3 minutes per person

11. Announcements

12. Consider meeting date for next meeting

Determined during Look-Ahead discussion.

13. Adjourn