

Memorandum



DATE 20 March 2015

TO The Honorable Members of the Transportation and Trinity River Project Committee:
Vonciel Jones Hill (Chair), Lee Kleinman (Vice Chair), Deputy Mayor Pro Tem Monica Alonzo,
Mayor Pro Tem Tennell Atkins, Sandy Greyson, and Sheffie Kadane

SUBJECT Elm Fork of the Trinity River Flood Protection Status Update

On Monday, 23 March 2015, you will be briefed on the Elm Fork of the Trinity River Flood Protection Status Update. Attached you will find the briefing materials for your information.

Please feel free to contact me if you need additional information.



Jiff A. Jordan, P.E.
Assistant City Manager

Attachment

c: Honorable Mayor and Members of the City Council
A.C. Gonzalez, City Manager
Warren M.S. Ernst, City Attorney
Craig D. Kinton, City Auditor
Rosa A. Rios, City Secretary
Daniel F. Solis, Administrative Judge
Ryan S. Evans, First Assistant City Manager

Eric D. Campbell, Assistant City Manager
Mark McDaniel, Assistant City Manager
Joey Zapata, Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Sana Syed, Public Information Officer
Elsa Cantu, Assistant to the City Manager – Mayor & Council

Elm Fork of the Trinity River Flood Protection Status Update

Transportation and Trinity River Project
Committee
23 March 2015



THE TRINITY
DALLAS

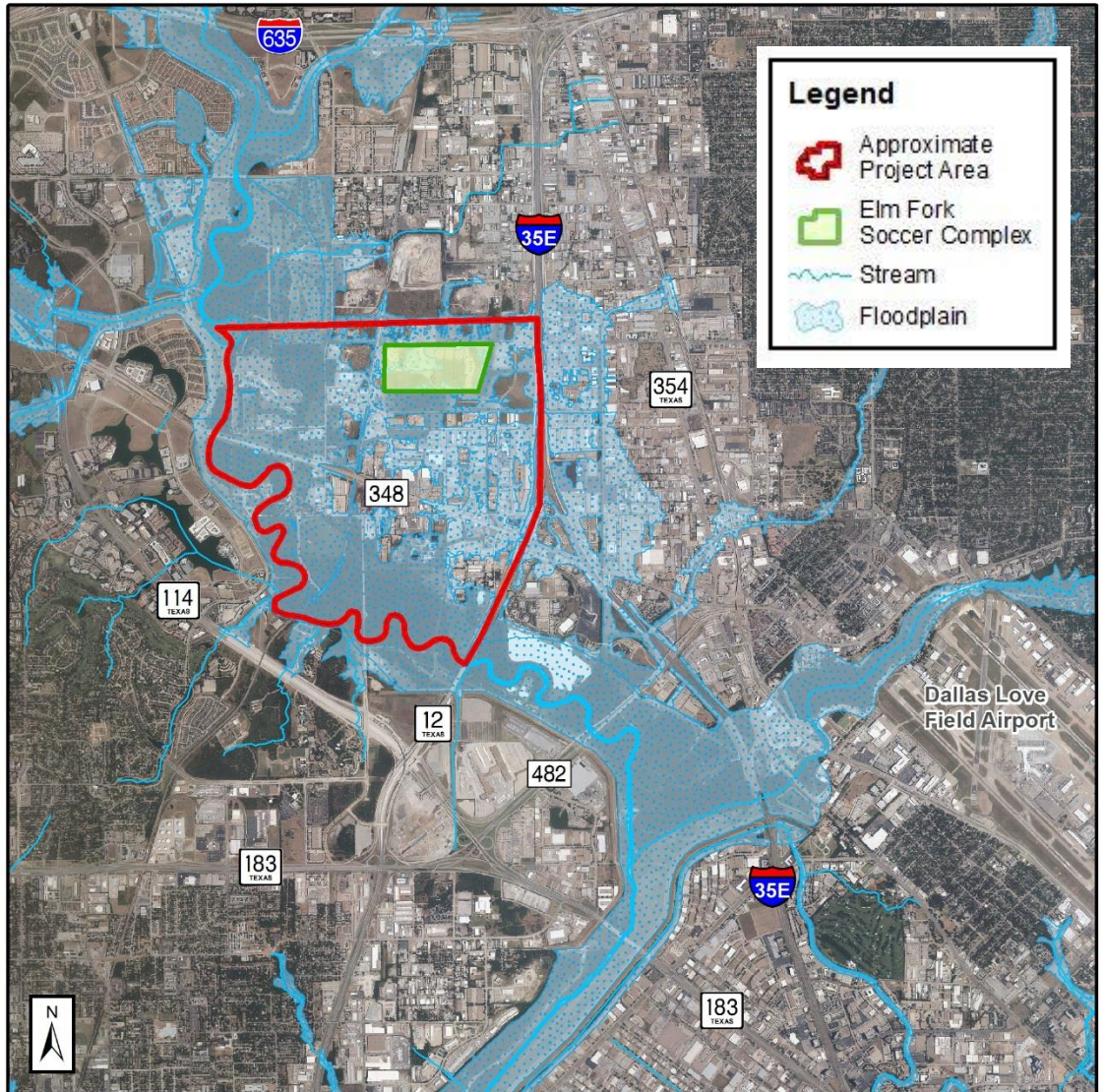


Purpose

- Provide update on Elm Fork Flood Protection Project
- Present recommendations for moving forward
- Request Committee Action

Background: Elm Fork Flood Protection Area

- Project encompasses 2,150 acres in the 100-year floodplain
- Area includes Stemmons North Industrial District
- Structural flooding occurred in 1998



History

Elm Fork Project History

- 1965: United States Army Corps of Engineers [“USACE”] proposed levee along Luna Road
- 1998: Proposition 11 Dallas Bond Program allocated \$30 Million cost share for the Elm Fork Levee Project with USACE
- 1999: USACE indicated that levee project did not meet cost/benefit criteria for federal participation
- 1999: USACE removed the Elm Fork Project from the study

Elm Fork Project History

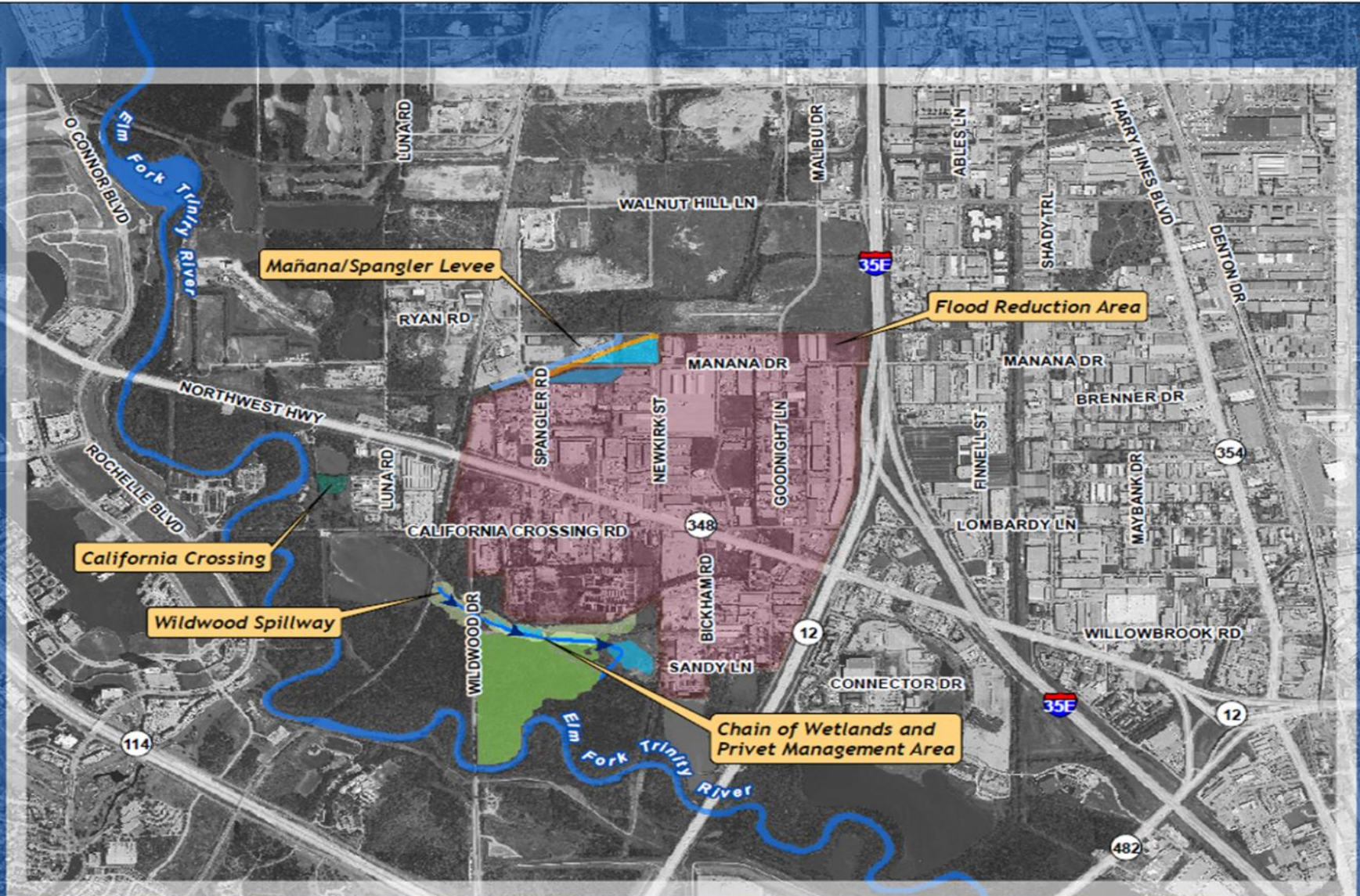
- 2000 to 2004: City of Dallas moves forward with City-only Elm Fork Project
- 2004: Elm Fork Floodplain Management Study considers options for flood protection and recreation projects
- 2005: Design began on the Elm Fork Flood Protection Project and \$12.4 Million allocated for Elm Fork Soccer Park (Moneygram Park)

Elm Fork Project

Flood Protection Components

- 2005: Project scope includes
 - Mañana/Spangler Levee
 - Wildwood Spillway enhancements
 - Wetland creation – between Wildwood Drive and Newkirk Street
 - Removal and control of invasive vegetation in the floodway (Chinese privet bushes)
- Estimated budget: \$14.8 Million

Elm Fork Project Flood Protection Components



Elm Fork Project History

- 2008-2009: Plans completed and submitted to North Central Texas Council of Governments [“NCTCOG”] Trinity Corridor Development Certificate [“CDC”] process
 - Opposed by two CDC cities because it did not meet valley storage requirements
 - USACE was uncomfortable with the design as presented in the 404 Permit application

Elm Fork Project History

- 2009: Periodic Inspection #9 of Dallas Floodway Levee System by USACE finds levees to be “Unacceptable”
- 2009: City delays Elm Fork Project to reserve funding to augment levee remediation, if needed

Elm Fork Project History

- 2010: NCTCOG and USACE begin update of CDC floodplain models for the Trinity River system.
- 2013: USACE completes Risk Assessment of Dallas Floodway
 - Required levee remediation less than originally anticipated

Elm Fork Project History

- 2014: USACE released update of the CDC hydraulic models for Elm Fork
- 2014: Dallas assesses original Elm Fork Project (that was placed on hold) relative to new NCTCOG/USACE CDC Floodplain Model

Current Review

Elm Fork Project

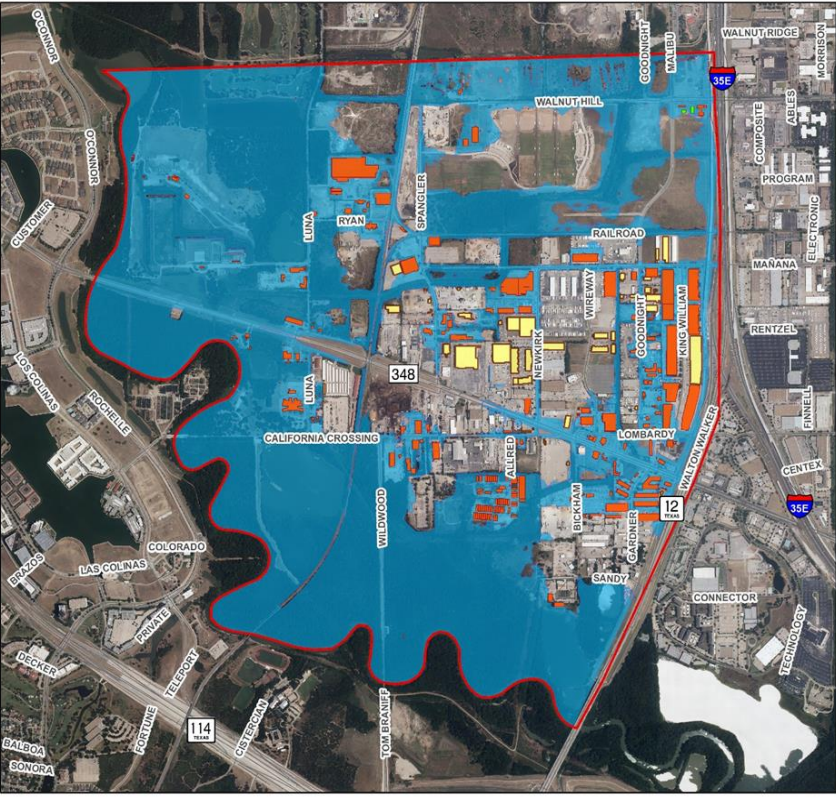
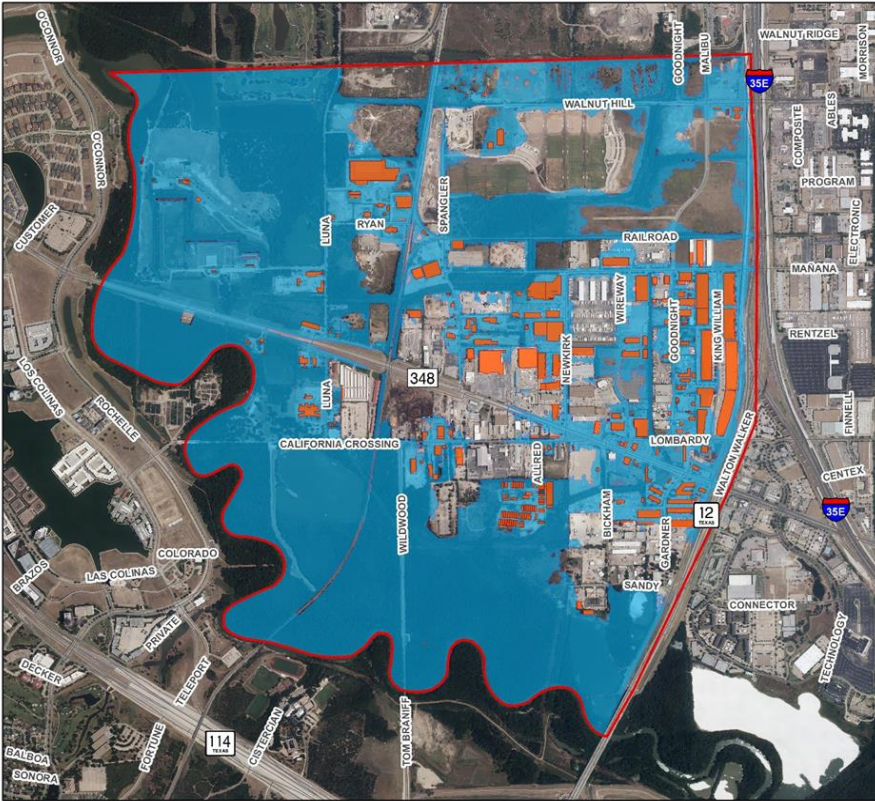
Current Review

- Analysis of the new flood model and topography show different results when compared to the original project
- New CDC model and updated terrain diminish project benefits and there is little difference between pre-project and proposed-project floodplain limits
- Review indicates projects will be less effective than previously anticipated
- Only provides protection to 10 percent more structures in the event of inundation

2014 CDC Model Project Comparison

No Project

With Elm Fork Project



Elm Fork Flood Protection Project

Figure H: CDC Model (2014) with Elm Fork Flood Protection Project on 2010 LIDAR

Legend

- Approximate Project Area
- Inundated Buildings
- Buildings No Longer Inundated
- Buildings Now Inundated
- Flooding Extents
- Roads

Note: Flooding extents determined using 2010 TNRIS LIDAR data and water surface elevations from USACE CDC Model revised January 1, 2014 with split flow removed. Model includes Elm Fork Flood Protection Project. Map printed 1/15/2015.

N

0 1,500 Feet

65% Buildings Inundated

55% Buildings Inundated

Elm Fork Project

Current Review

- Permitting Elm Fork Project is unlikely because valley storage remains reduced
- Due to permitting issues and limited benefits, the Elm Fork Drainage Project needs to be canceled and the funds reallocated
- Project Funds: \$12.2 Million

Consequences

Consequences

Cancelling the project will essentially leave the existing conditions as-is.

- Portions of the Stemmons North Industrial Area remain prone to local flooding
- Businesses will continue to be subject to flood insurance premiums
- Development and/or redevelopment in the Elm Fork floodplain will continue to require CDC permits

Reprogramming Options

Reprogramming Options

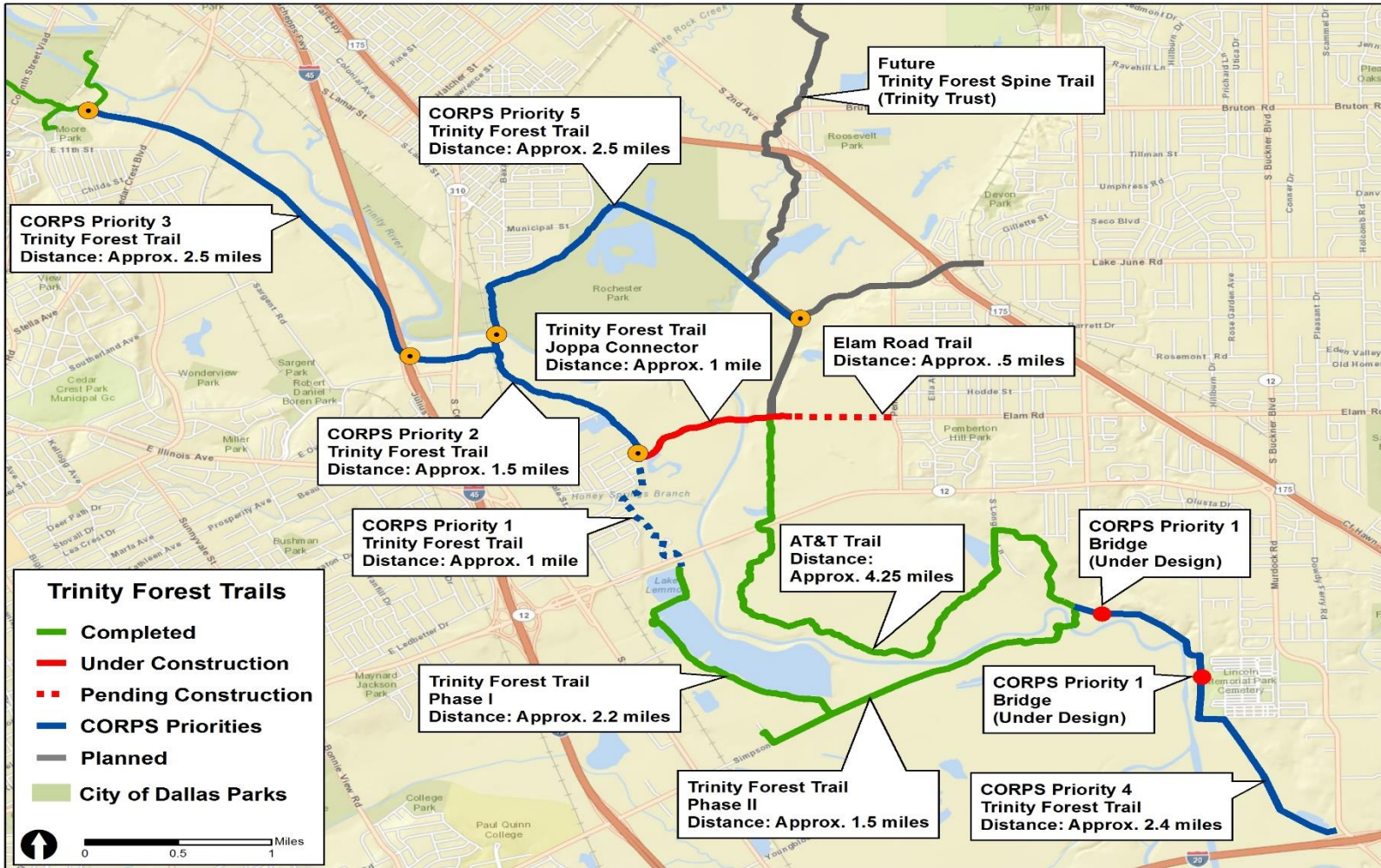
- Reprogramming these funds could address other unfunded projects consistent with the intent of the 1998 Trinity Proposition
- Funds must be used in the Trinity River Corridor
- Options include:
 - Complete projects in the Dallas Floodway Extension [“DFE”]
 - Address drainage in MoneyGram Park
 - Use of any remaining funds would be discussed after construction of these projects. Examples include:
 - Trails along the Elm Fork
 - Elm Fork Levee Flattening

Reprogramming Options

DFE Opportunity

- USACE presented City with a potential opportunity to complete additional portions of the DFE project in their next two annual work plans:
 - Repair erosion at 1-45 and Trinity River near Lower Chain of Wetlands
 - Complete construction of joint-use maintenance roads/trails in the DFE (see map next page)

Reprogramming Options



Reprogramming Options

DFE Opportunity

- If USACE receives funding, then the City will need to match up to approximately \$7 Million
 - Match is 50% Corps/50% City for maintenance roads and trails
 - Match is 65% Corps/ 35% City for erosion control work
- City must commit to match within four (4) to six (6) weeks of the opportunity being presented
- Time sensitive: if match is not received, the opportunity goes away

Reprogramming Options: MoneyGram Soccer Complex

- Phase 1 opened to public in 2014
- Future phases include drainage improvements:
 - Install a drainage saturation zone to increase infiltration to expedite field usage after heavy rains
 - Drainage saturation zone creates a water reservoir for the turf during hot weather to reduce water use
- Drainage improvements can be addressed with up to \$5.1 Million which is consistent with previous expenditures from the 1998 Trinity Bond Proposition for the soccer complex

Reprogramming Options Moneygram Soccer Park



Summary

- The recent changes in floodplain and topography show that if built today, the project only provides a ten (10) percent improvement in inundated area.
- Funding for completion of the DFE Projects and drainage improvements at MoneyGram Soccer Complex would improve functionality of the soccer fields, fix erosion along the Trinity and expand the DFE maintenance road/trail network

Requested Council Action

Requested Council Action

- City Council to direct Elm Fork Project funding to be reallocated for the City's cost-share in the DFE area and drainage improvements at the MoneyGram Soccer Park

Attachments

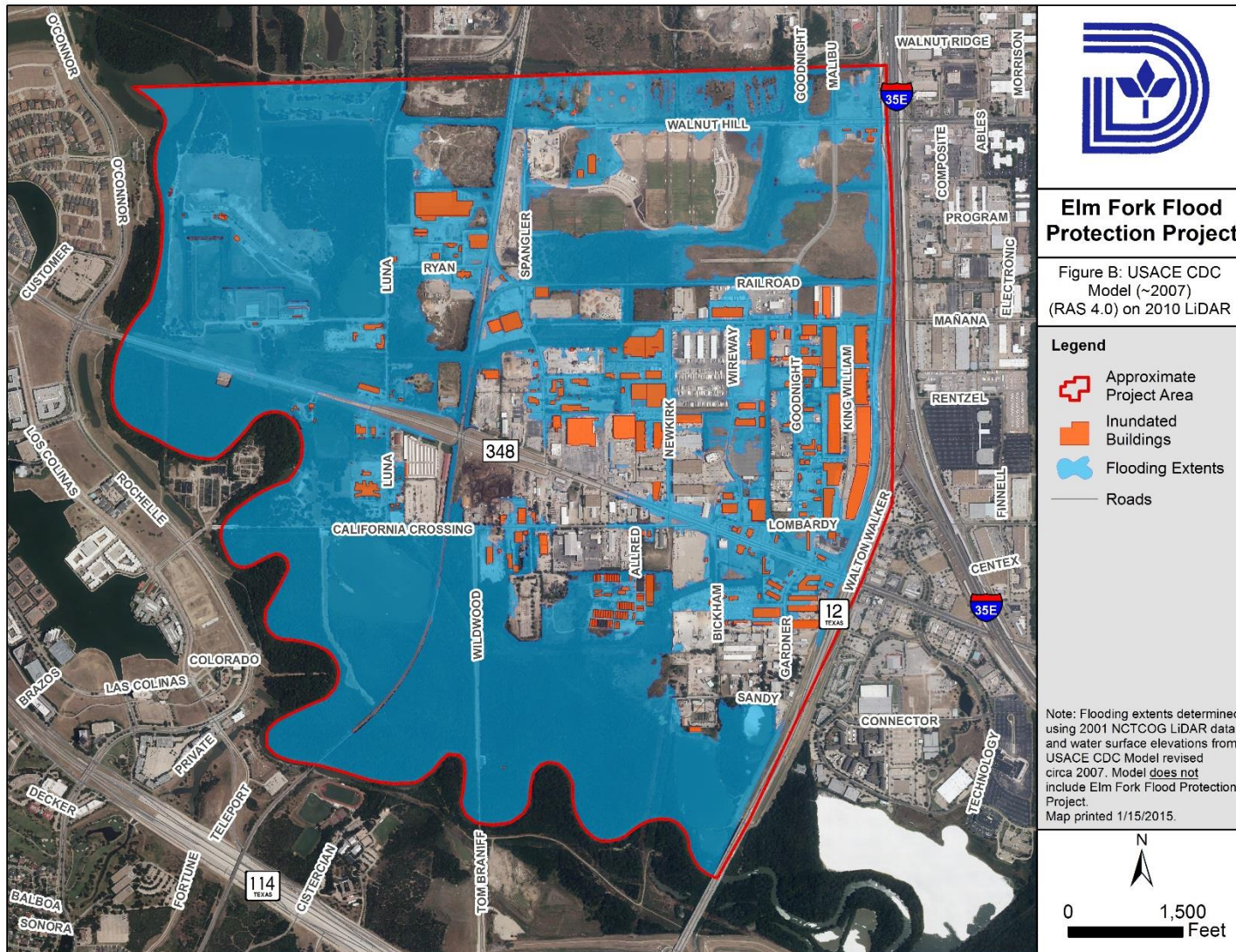
- 2014 Review of Elm Fork Project:
 - 2007 CDC Model, No Project
 - 2007 CDC Model, With Project
 - 2014 CDC Model, No Project
 - 2014 CDC Model, With Project
- CDC Process

2014 Review of Project

2007 CDC Model

No Project

61% Buildings Inundated



Elm Fork Flood Protection Project

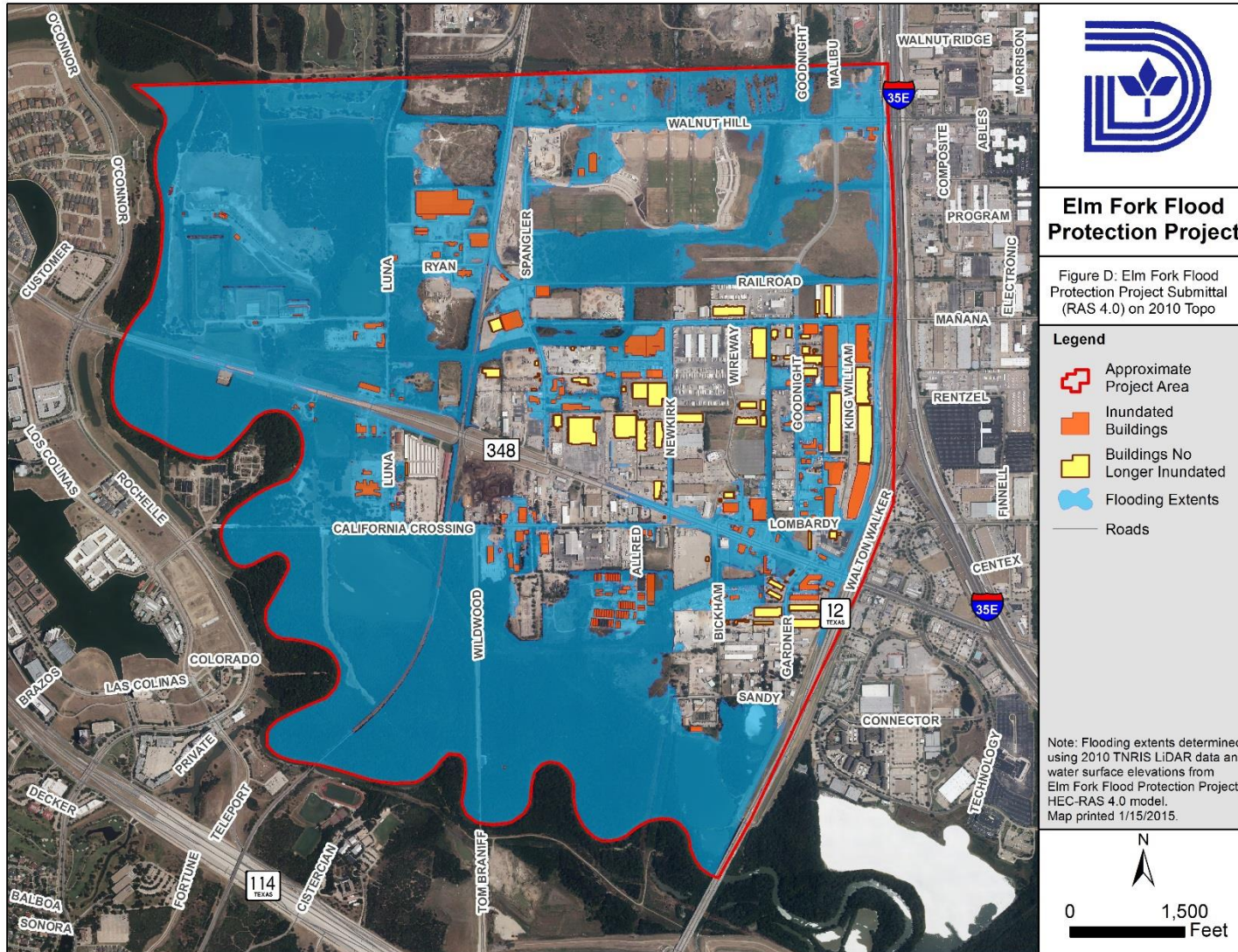
Figure B: USACE CDC Model (~2007) (RAS 4.0) on 2010 LiDAR

2014 Review of Project

2007 CDC Model

With Elm Fork Project

47% Buildings Inundated



Elm Fork Flood Protection Project

Figure D: Elm Fork Flood Protection Project Submittal (RAS 4.0) on 2010 Topo

Legend

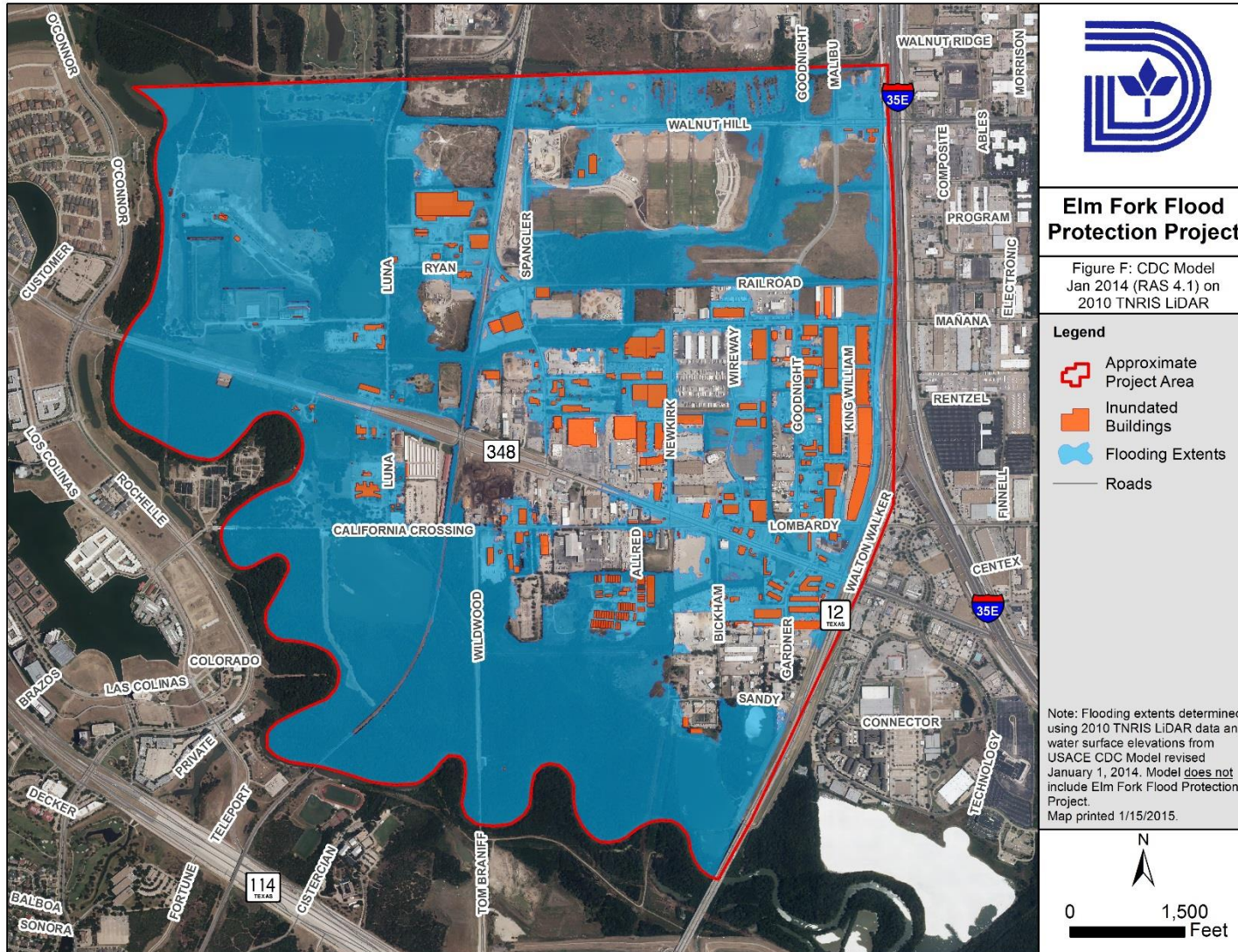
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2014 Review of Project

2014 CDC Model

No Project

65% Buildings Inundated

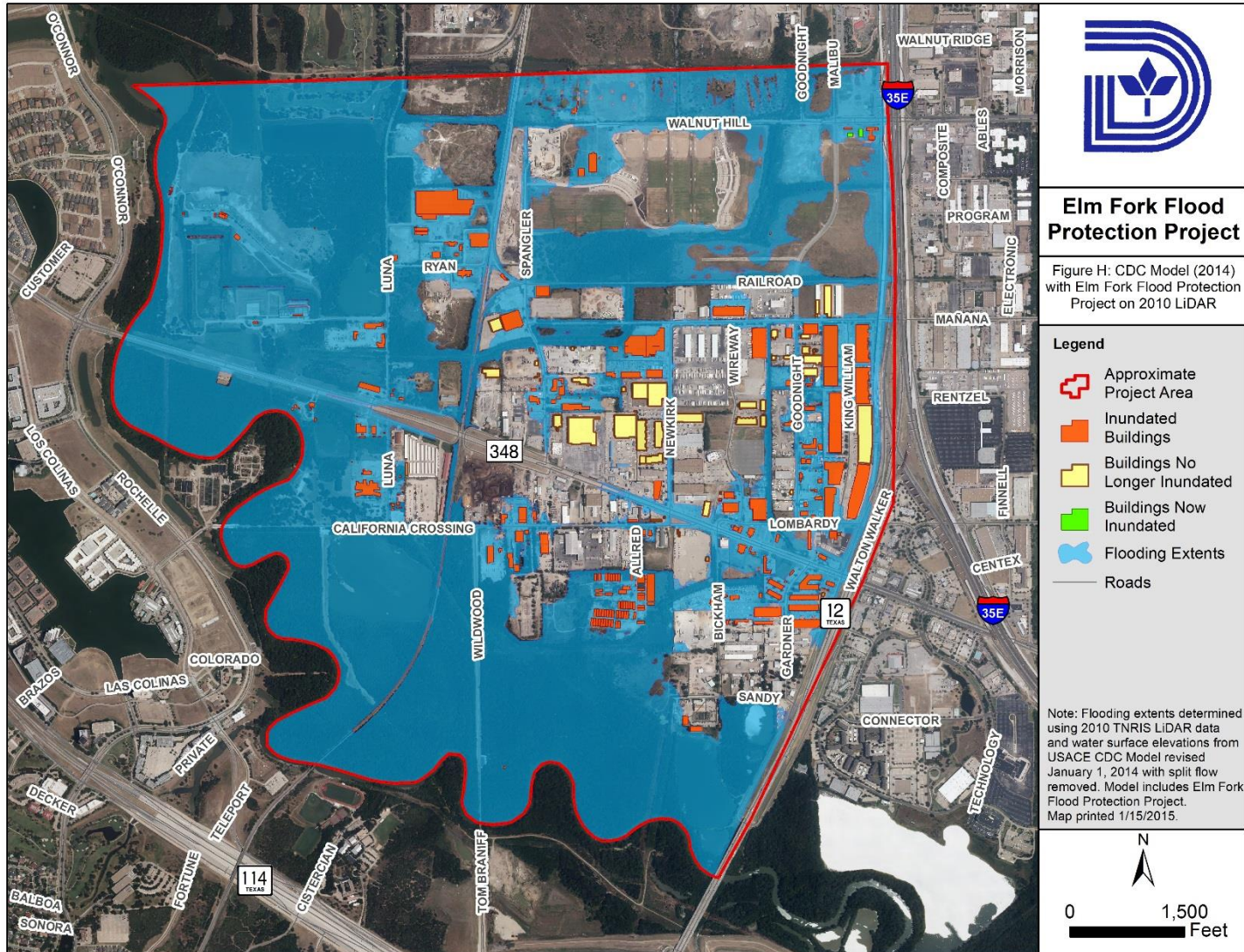


2014 Review of Project

2014 CDC Model

With Elm Fork Project

55% Buildings Inundated



Elm Fork Flood Protection Project

Figure H: CDC Model (2014) with Elm Fork Flood Protection Project on 2010 LiDAR

Background: Corridor Development Certificate (CDC) Process

- North Central Texas Council of Governments (NCTCOG) and U.S. Army Corps of Engineers (USACE) facilitate CDC process for local communities/counties.
- CDC permit required to develop land within a specific area of the Trinity floodplain called the Regulatory Zone.
- Other participating cities and counties along the Trinity River are given the opportunity to review and comment on projects.

Background: Corridor Development Certificate (CDC) Process

- Basically a regional version of the City's Floodplain Fill Permit process
- Any fill in the floodplain has to be offset by corresponding excavations for valley storage (ponds, channels and other excavation)
- Any improvements have to result in no changes to flood levels or loss of valley storage for the Standard Project Flood