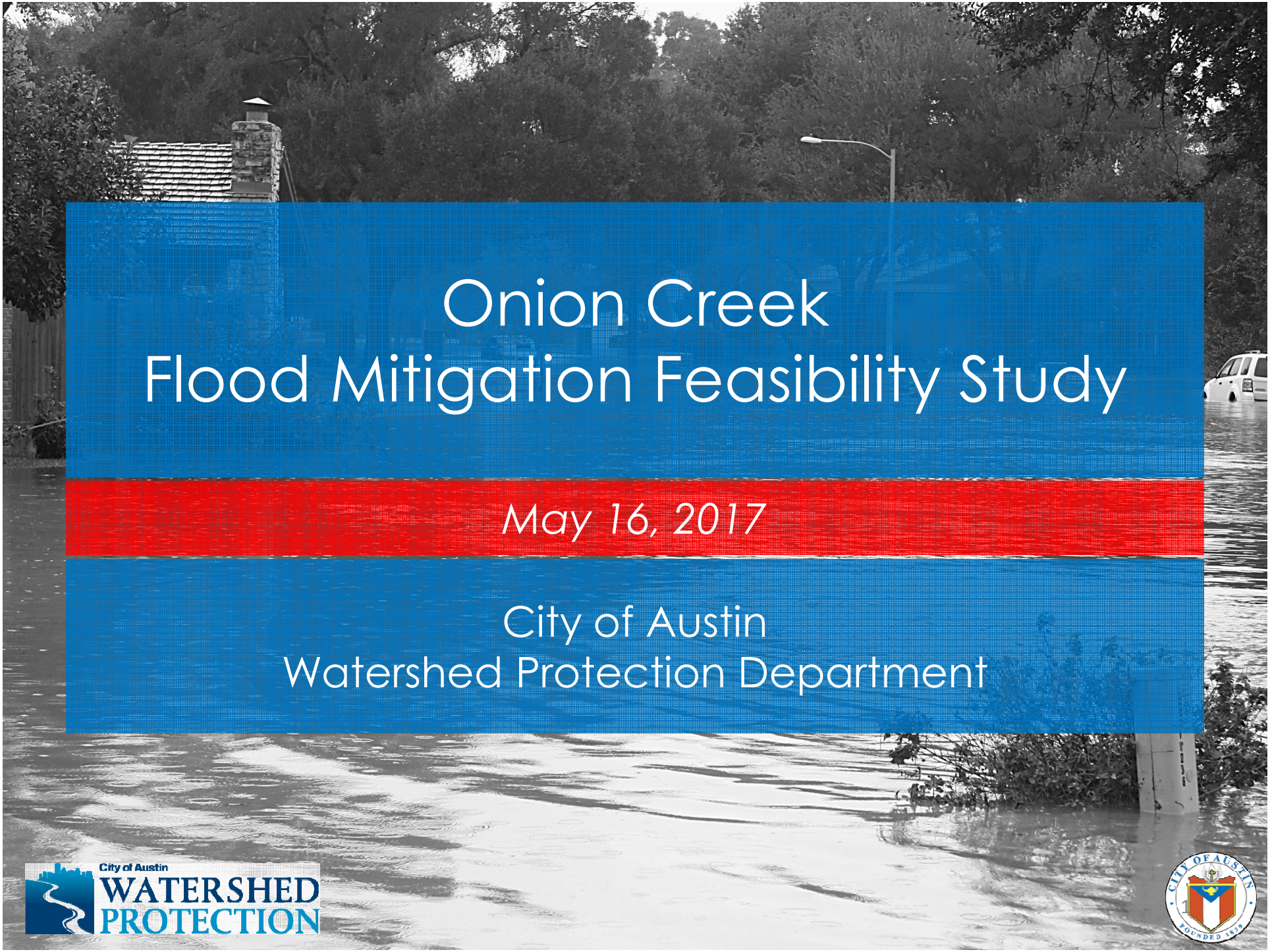


Onion Creek
Flood Mitigation Feasibility Study

May 16, 2017

City of Austin
Watershed Protection Department

City of Austin
WATERSHED
PROTECTION

Meeting Agenda

- Project Team
- Background & Risk
- Alternatives Analysis
  - Final Alternatives considered
  - Evaluation Criteria
- Key Issues & Next Steps
- Q & A

Project Team

- **Watershed Protection Department**
  - Mike Personett, Assistant Director
  - Pam Kearfott, P.E., Supervising Engineer
  - Karl McArthur, P.E., Supervising Engineer
  - Kacey Paul, P.E., Engineer C

- **Halff Associates**
  - Michael Moya, P.E., Vice President
  - Cindy Engelhardt, P.E., Austin Water Resources Lead
  - Ashley Lowrie, Water Resources Engineer

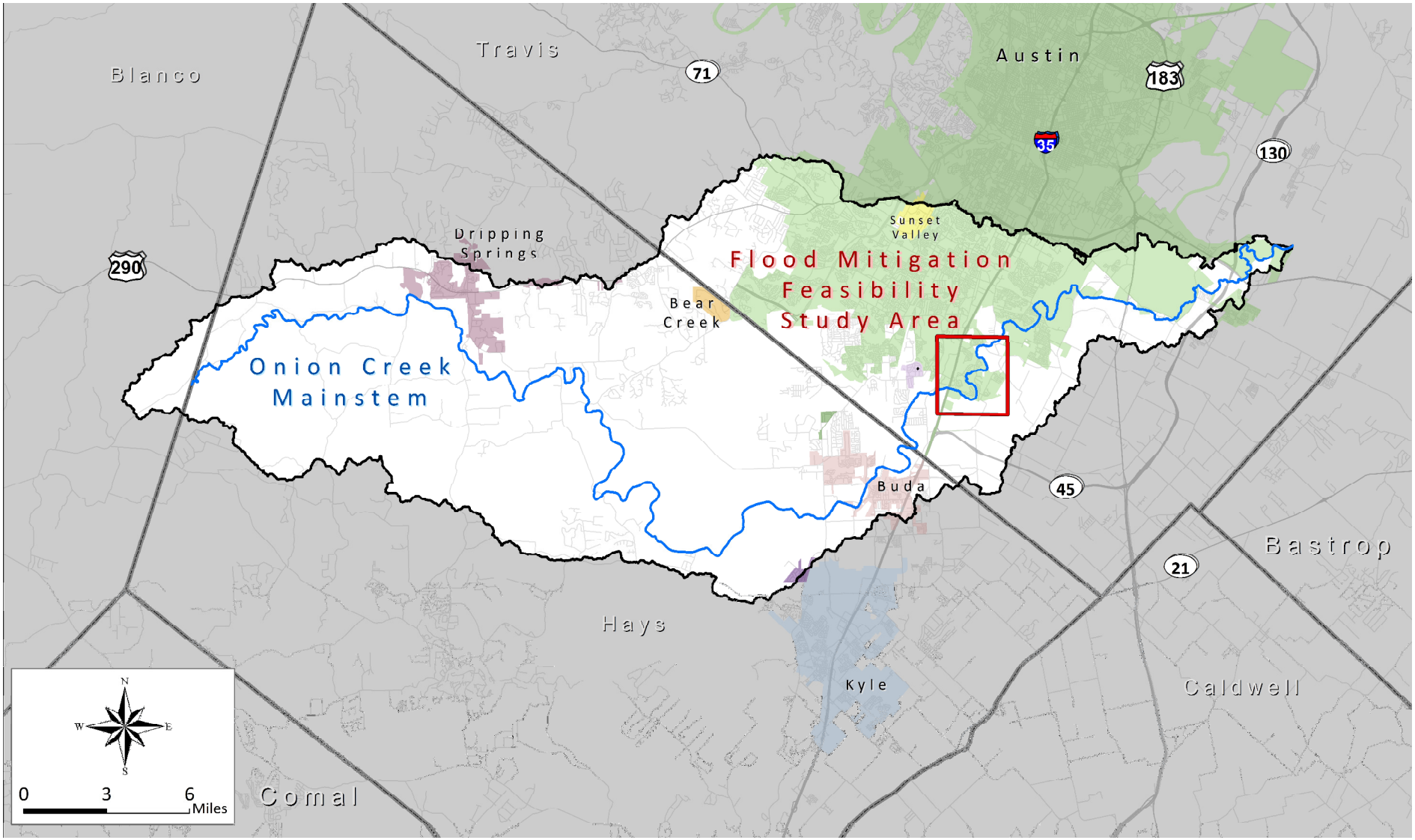
Background & Risk

City of Austin
WATERSHED PROTECTION

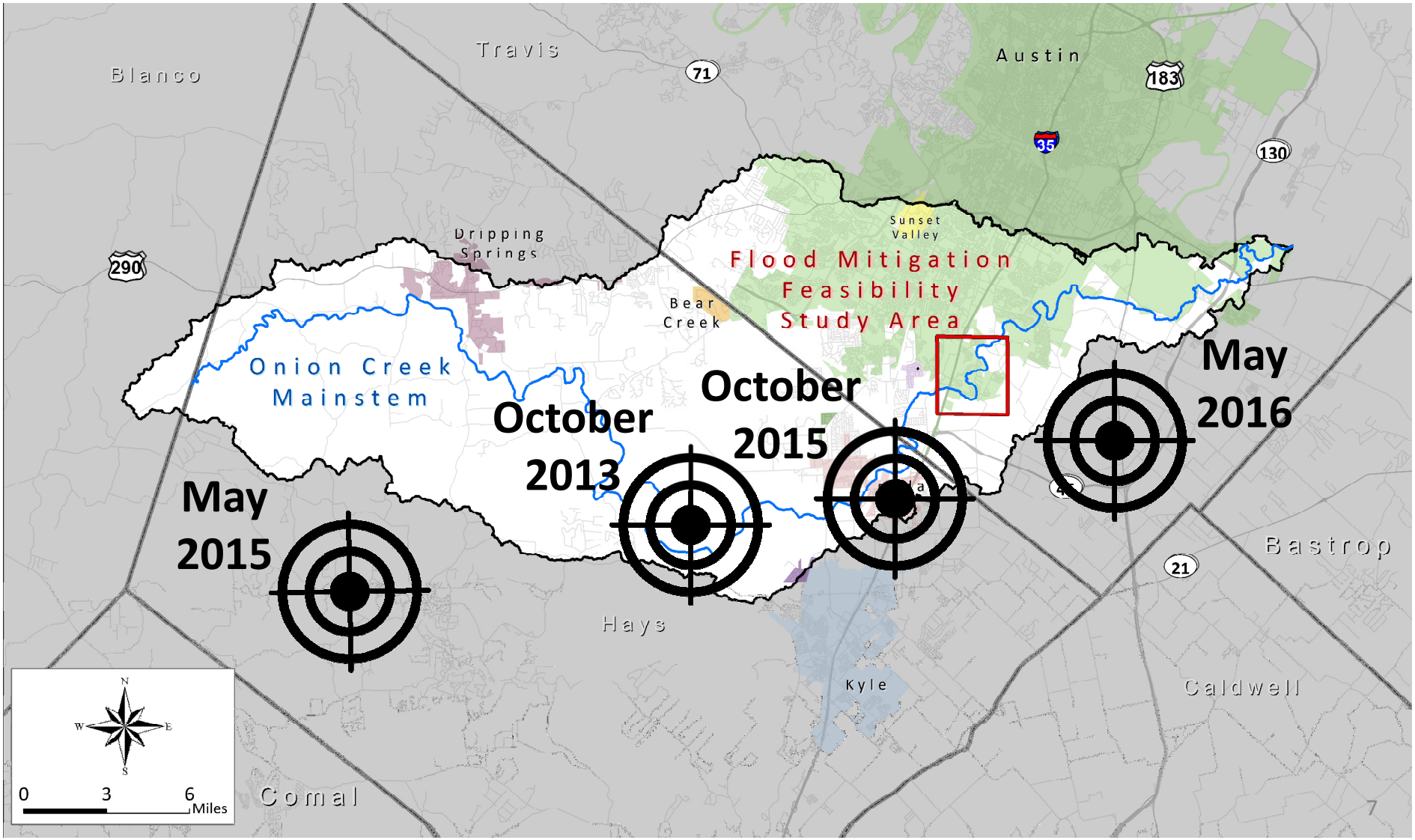
Flood Risk

Amount of rainfall (24 hour)	Houses at risk in project area	Houses at risk citywide	Category of flood	Chance of occurring in any year
3.4 inches	0	50	2-year	50%
7.6 inches	0	900	25-year	4%
10.2 inches	139	2,400	100-year	1%

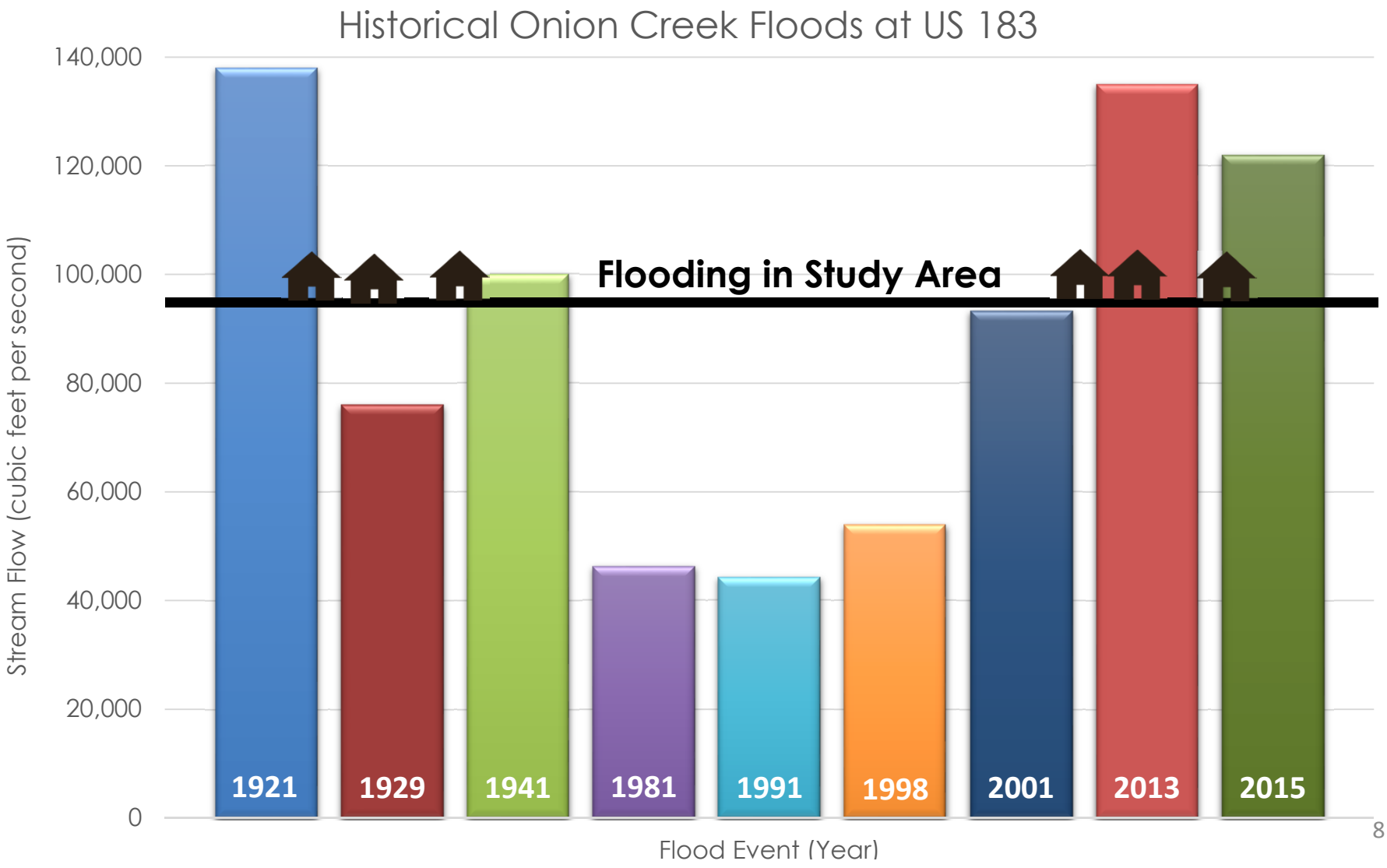
Onion Creek Watershed



Risk: Where the rain falls matters

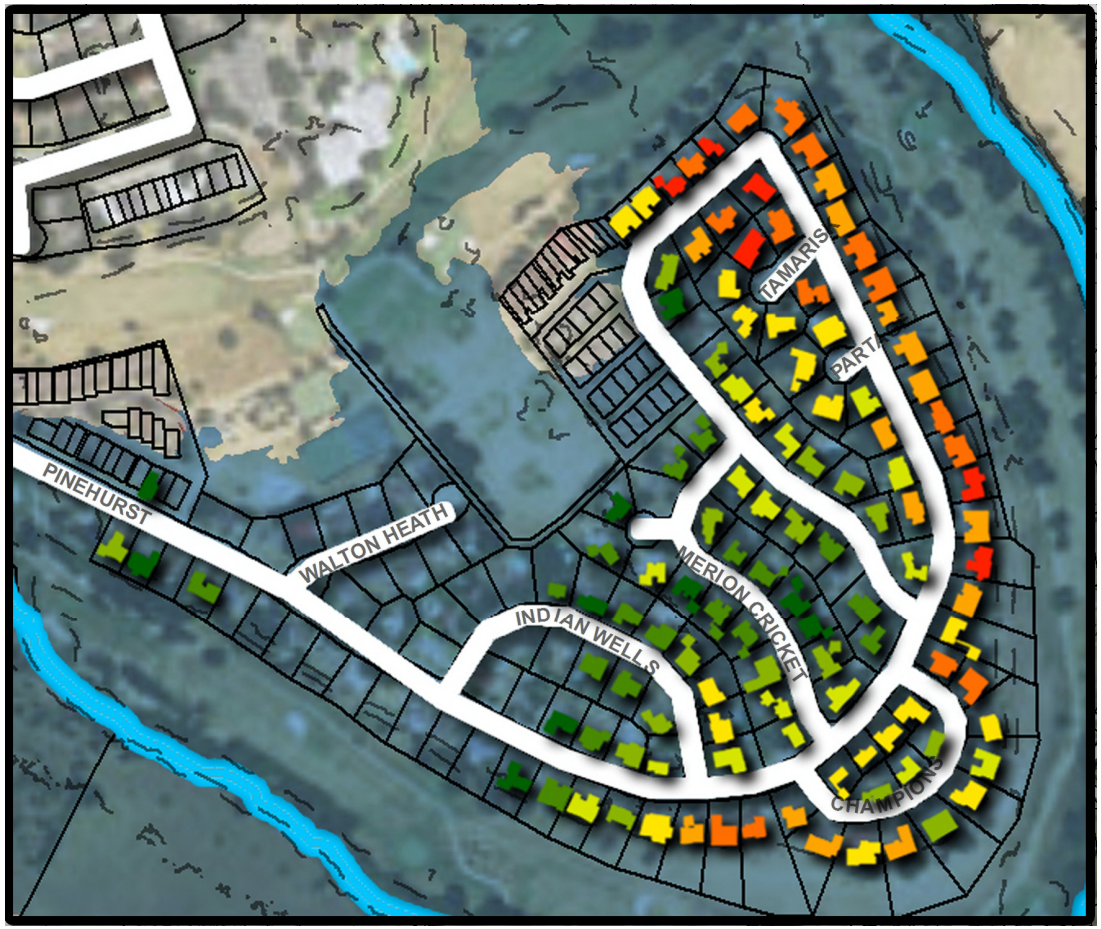


Risk: How much rain matters



Existing Condition 100-year Flood Risk

- Pinehurst Neighborhood (116 houses at risk)



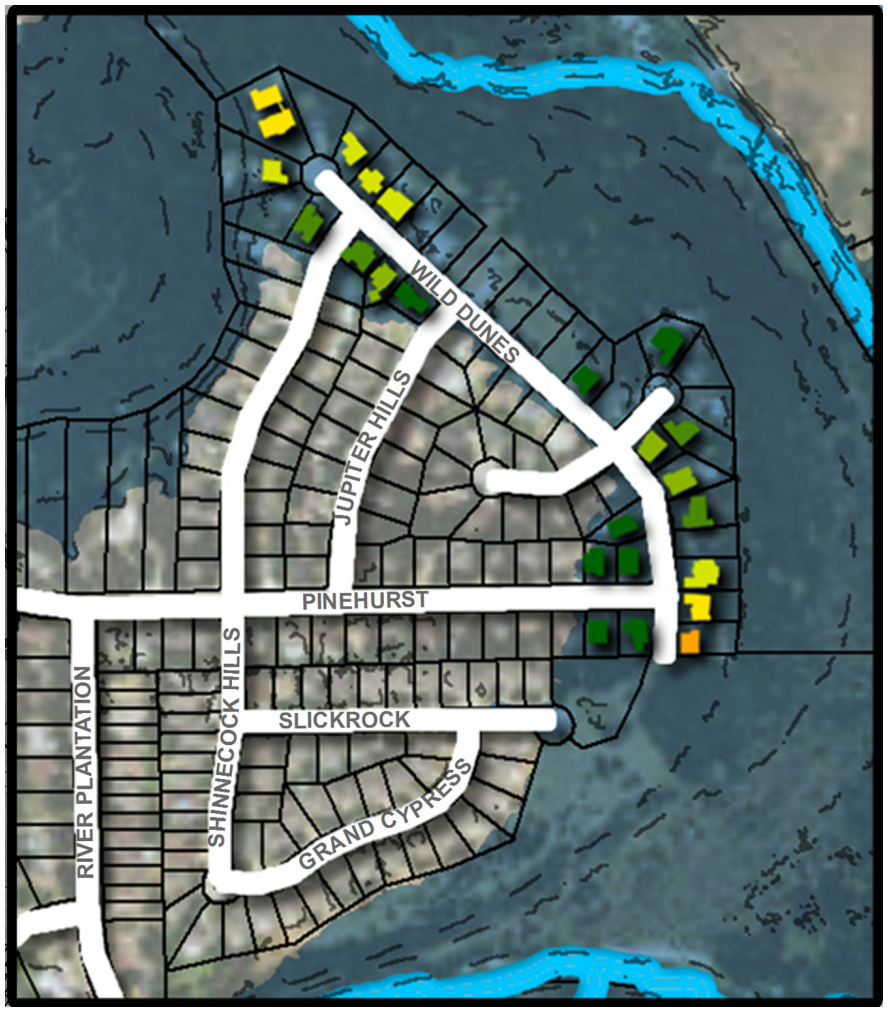
LEGEND

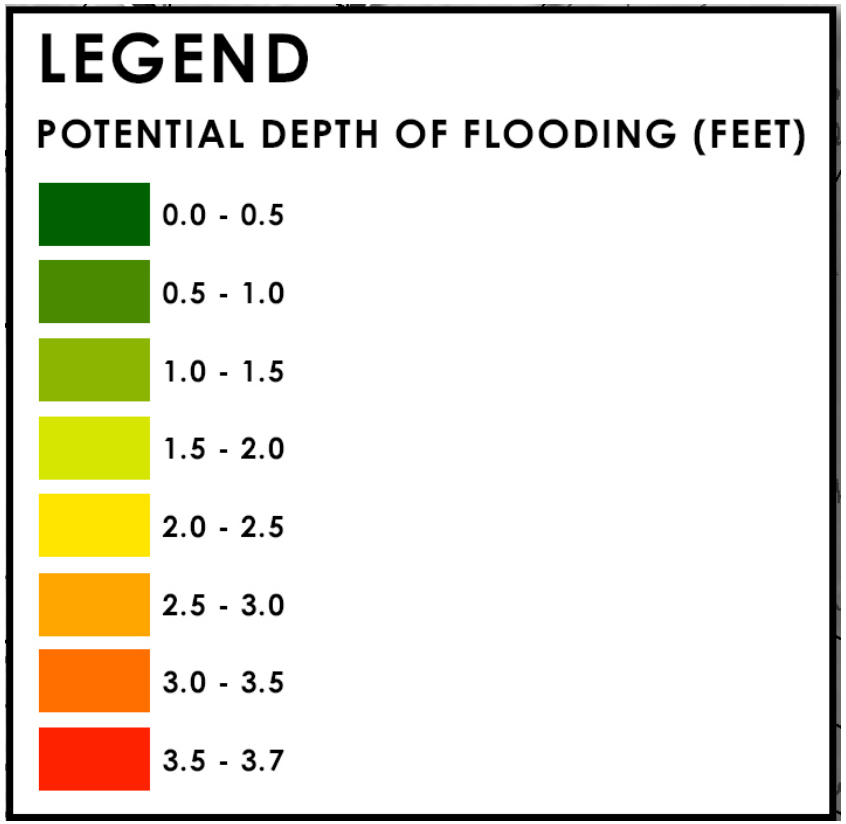
POTENTIAL DEPTH OF FLOODING (FEET)

- 0.0 - 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5
- 2.5 - 3.0
- 3.0 - 3.5
- 3.5 - 3.7

Existing Condition 100-year Flood Risk

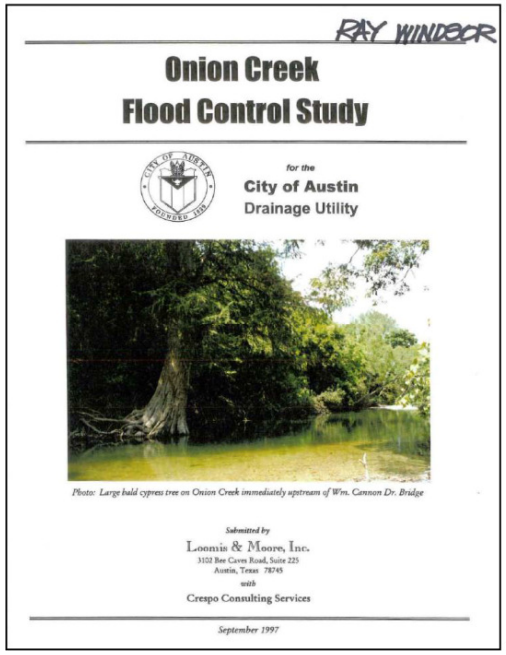
- Wild Dunes Neighborhood (23 houses at risk)





Previous Studies

- 1997 – Loomis and Moore
- 2006 – U.S. Army Corps of Engineers
- 2013 – U.S. Army Corps of Engineers, Hays County


RAY WINDECR

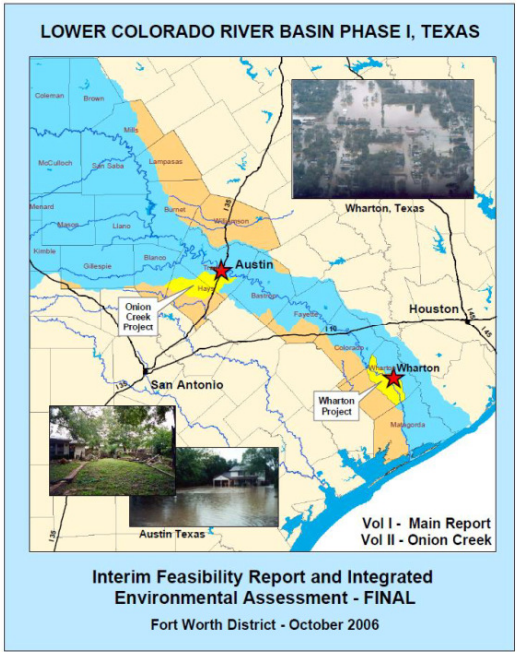
Onion Creek
Flood Control Study

for the
City of Austin
Drainage Utility

Photo: Large bald cypress tree on Onion Creek immediately upstream of Wm. Cannon Dr. Bridge

Submitted by
Loomis & Moore, Inc.
3102 Bee Caves Road, Suite 225
Austin, Texas 78745
with
Crespo Consulting Services

September 1997

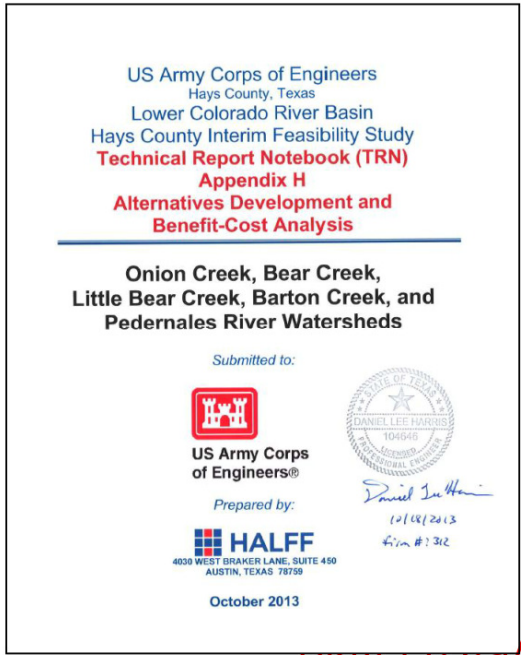

LOWER COLORADO RIVER BASIN PHASE I, TEXAS

Wharton, Texas
Austin
Houston
Onion Creek Project
San Antonio
Wharton
Wharton Project
Austin Texas

Vol I - Main Report
Vol II - Onion Creek

Interim Feasibility Report and Integrated
Environmental Assessment - FINAL

Fort Worth District - October 2006


US Army Corps of Engineers
Hays County, Texas
Lower Colorado River Basin
Hays County Interim Feasibility Study
Technical Report Notebook (TRN)
Appendix H
Alternatives Development and
Benefit-Cost Analysis

Onion Creek, Bear Creek,
Little Bear Creek, Barton Creek, and
Pedernales River Watersheds

Submitted to:

US Army Corps
of Engineers®

Prepared by:

HALFF
4030 WEST BRAKER LANE, SUITE 450
AUSTIN, TEXAS 78759

October 2013

Alternatives Analysis

City of Austin
WATERSHED PROTECTION

Final Alternatives Considered

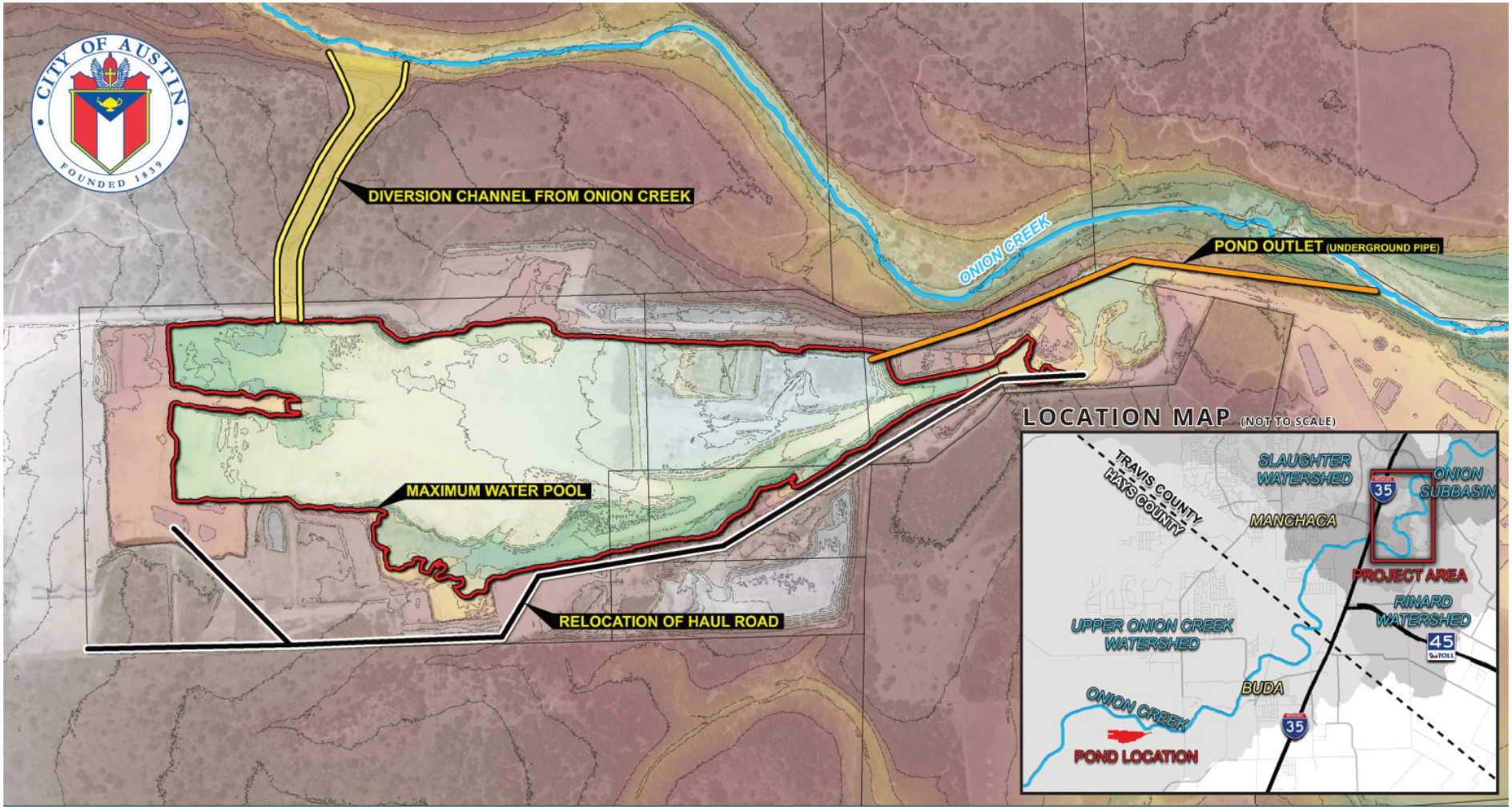
- **Stand-Alone Options**
  - Regional Detention Ponds
  - Channel Clearing
  - Voluntary Buyouts
    - Pinehurst Neighborhood
    - Wild Dunes Neighborhood

- **Combined Options**
  - Centex West Detention Pond with Channel Modifications
  - Pinehurst Flood Protection Wall with Voluntary Buyouts
  - Pinehurst Flood Protection Wall with Channel Modifications

Evaluation Criteria

- Benefits & Costs
- Environmental Impacts
- Land & Easement Acquisition Required
- Complexity of Permitting
- Funding Constraints
- Time of Implementation
- Neighborhood Input

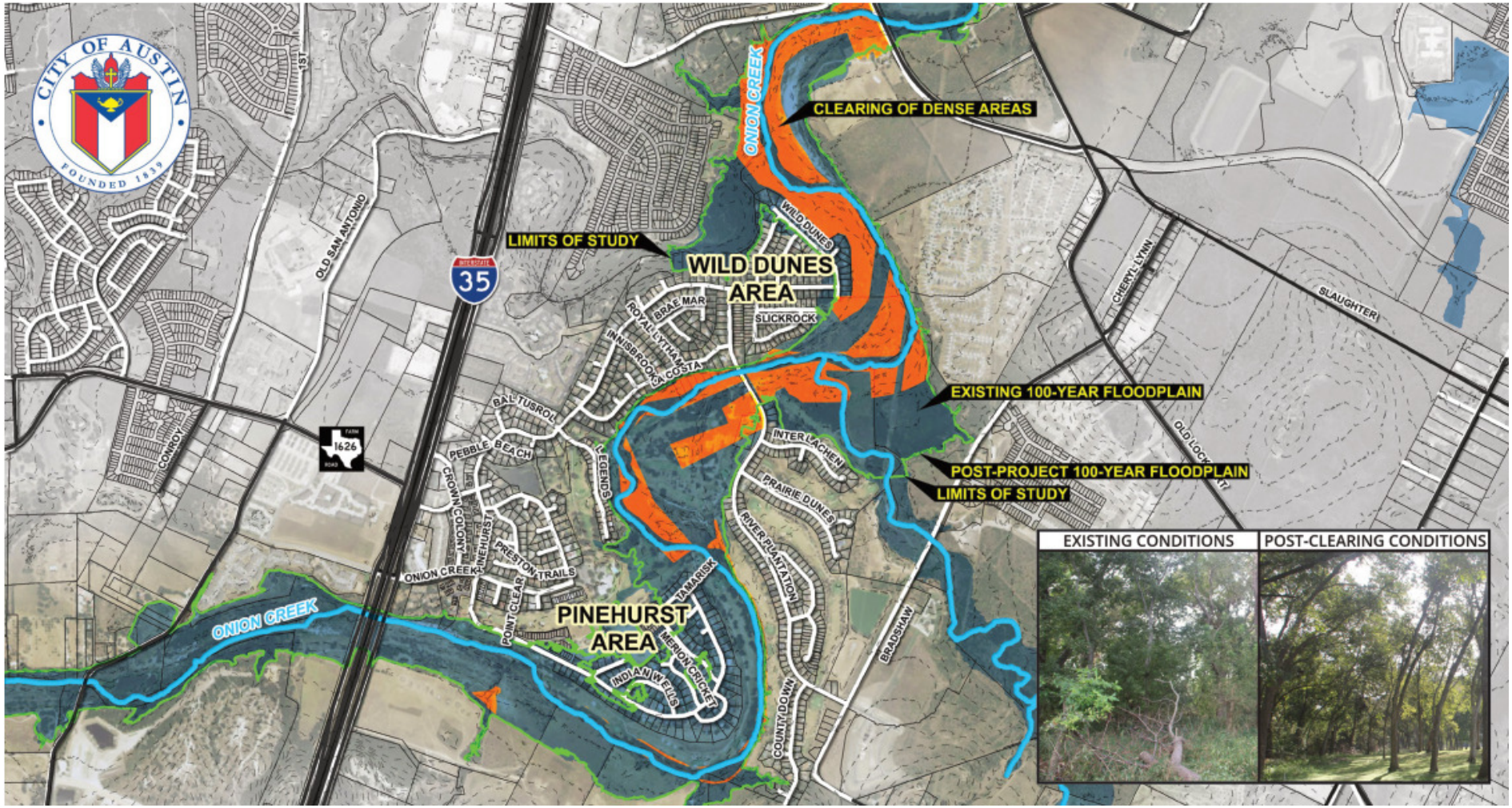
Centex West Regional Detention Pond



Centex West Regional Detention Pond

Project Cost	$51 million
Time of Completion (if funded)	Over 10 years
Protected from 100-year flood	79 houses
Still at risk in 100-year flood	60 houses

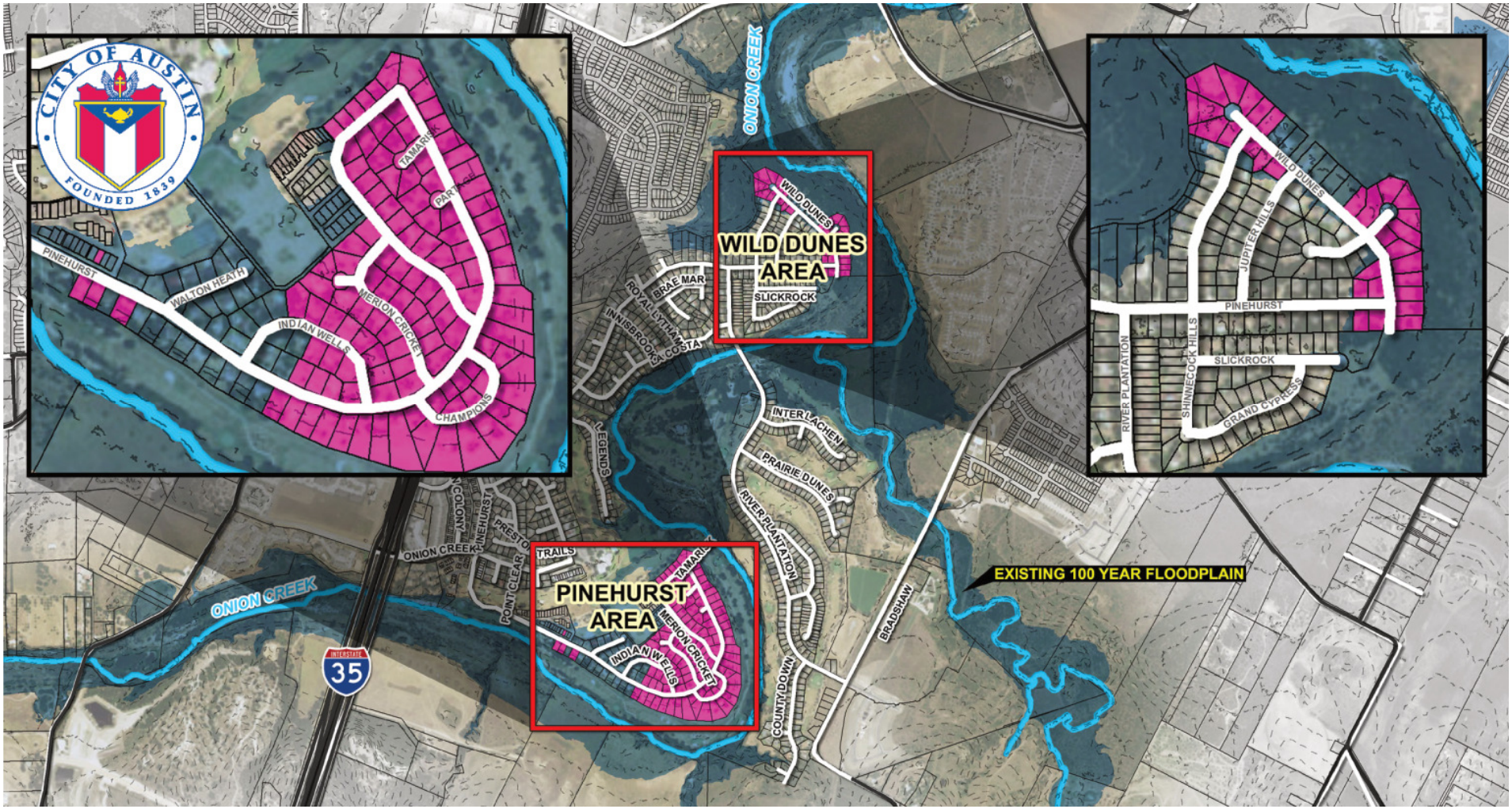
Channel Clearing



Channel Clearing

Project Cost	$36 million
Time of Completion (if funded)	2 to 5 years (plus perpetual, intensive maintenance)
Protected from 100-year flood	52 houses
Still at risk in 100-year flood	87 houses

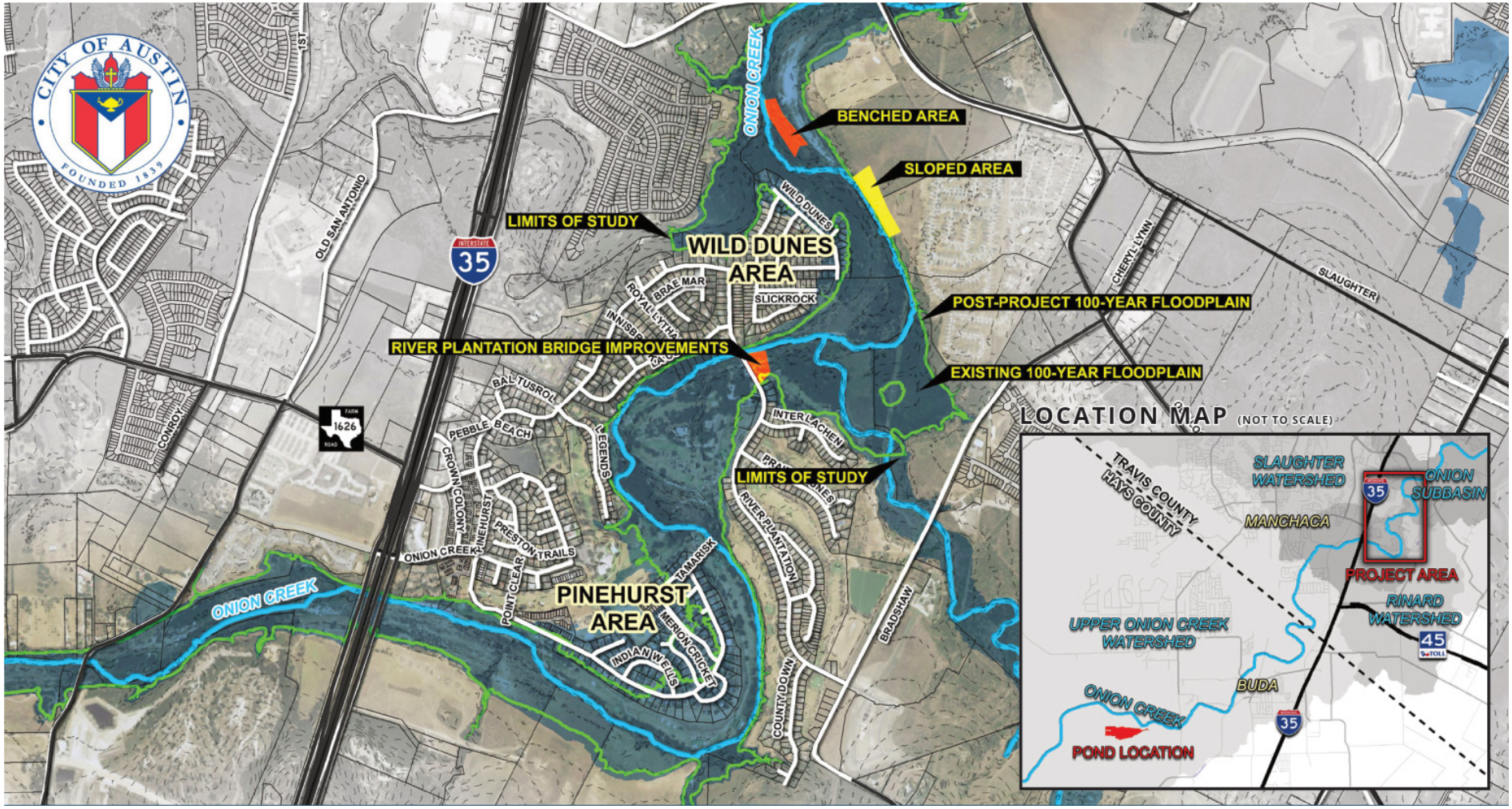
Voluntary Buyouts



Voluntary Buyouts

Project Cost	$99 million
Time of Completion (if funded)	2 years
Protected from 100-year flood	139 houses
Still at risk in 100-year flood	0 houses

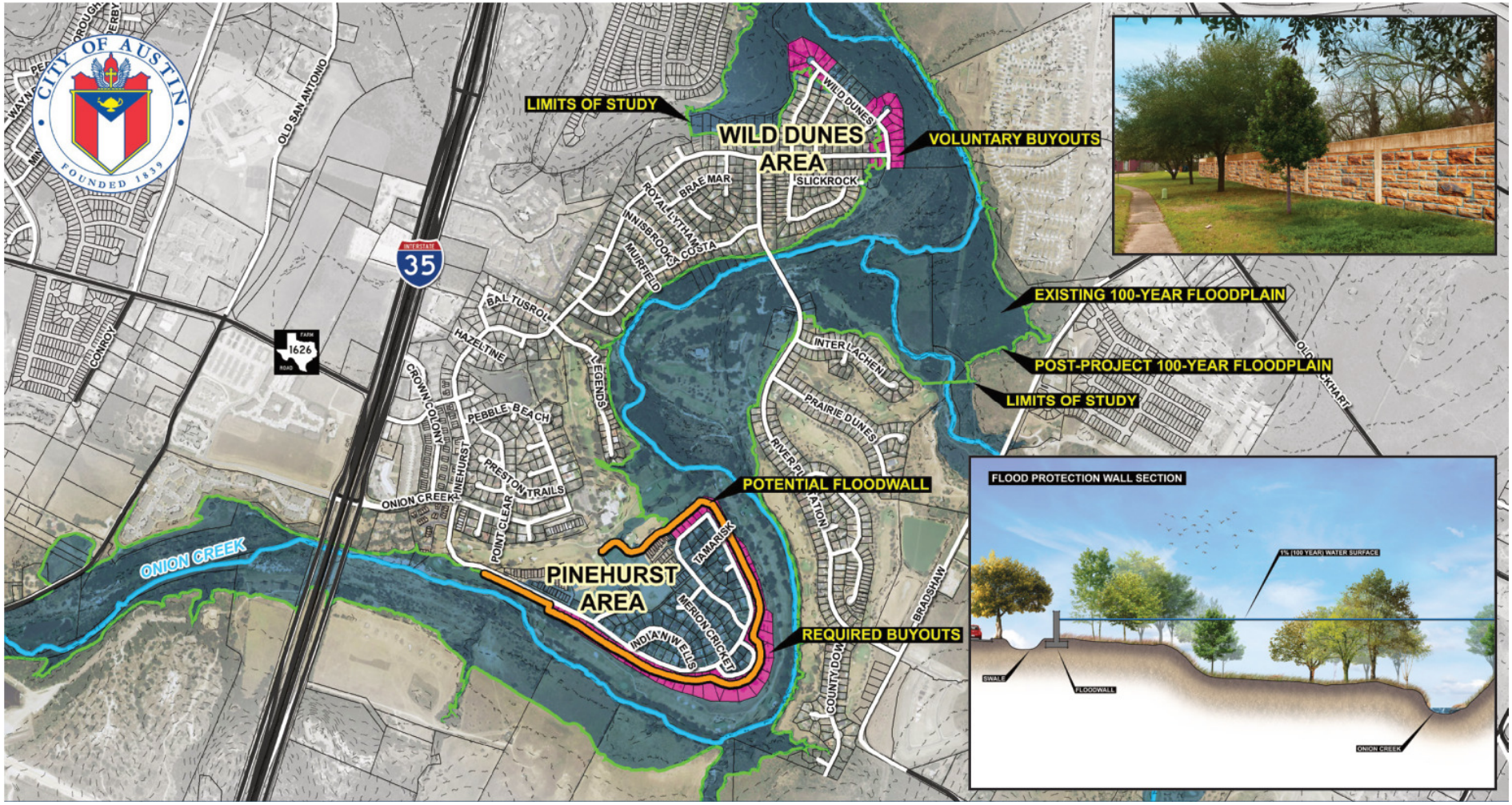
Centex West Detention Pond with Channel Modifications



Centex West Detention Pond with Channel Modifications

Project Cost	$71 million
Time of Completion (if funded)	Over 10 years
Protected from 100-year flood	111 houses
Still at risk in 100-year flood	28 houses

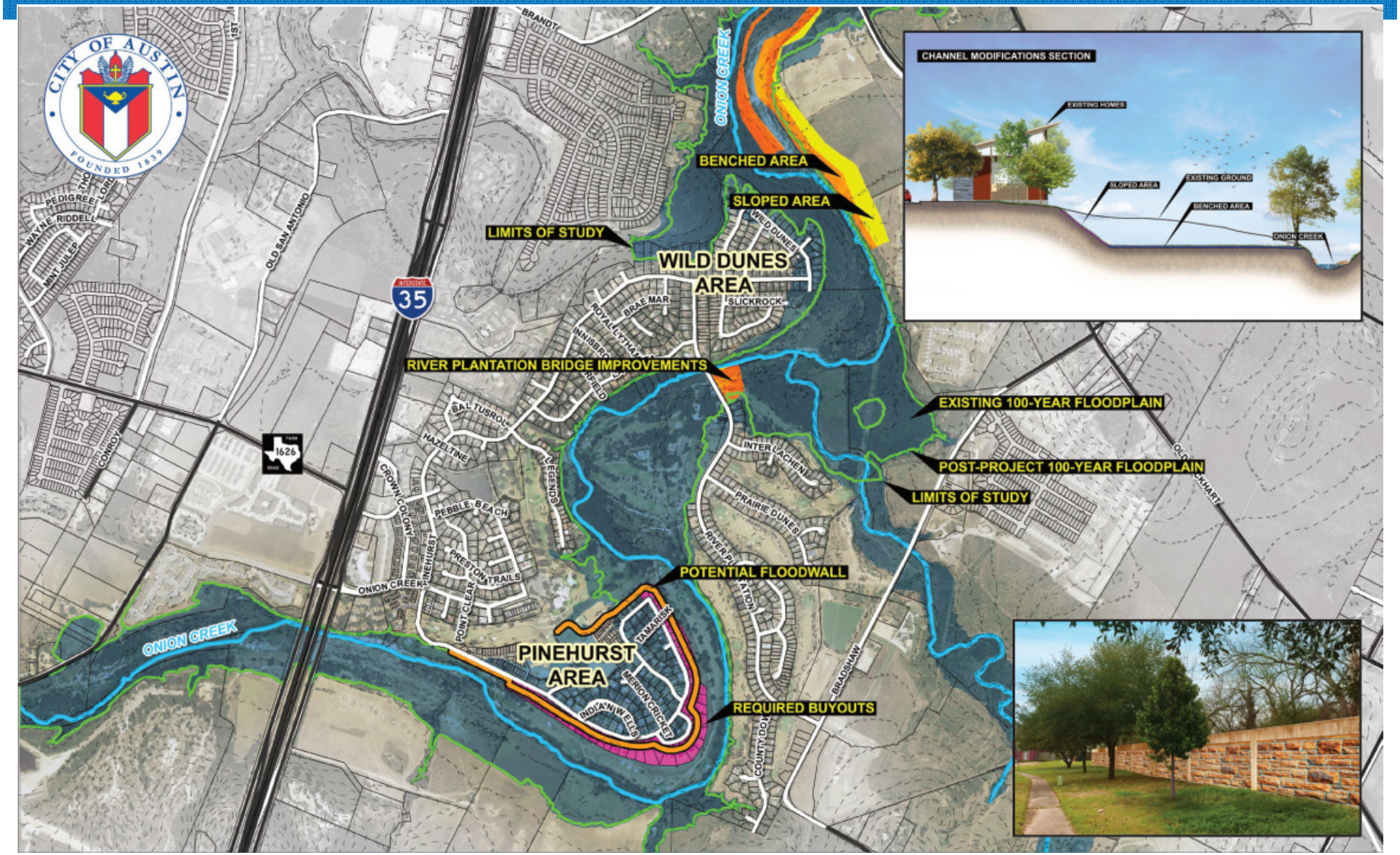
Pinehurst Flood Protection Wall with Voluntary Buyouts



Pinehurst Flood Protection Wall with Voluntary Buyouts

Project Cost	$62 million
Time of Completion (if funded)	5 to 7 years
Protected from 100-year flood	139 houses
Still at risk in 100-year flood	0 houses

Pinehurst Flood Protection Wall with Channel Modifications



Pinehurst Flood Protection Wall with Channel Modifications

Project Cost	$88 million
Time of Completion (if funded)	7 to 10 years
Protected from 100-year flood	139 houses
Still at risk in 100-year flood	0 houses

Evaluation Criteria

- Benefits & Costs
- Environmental Impacts
- Land & Easement Acquisition Required
- Complexity of Permitting
- Funding Constraints
- Time of Implementation
- Neighborhood Input

Criteria: Summary

Criteria	Best		Worst
Benefits and Costs	• Wall with Buyouts	• Wall with Chl. Mods. • **Voluntary Buyouts**	• Centex West Pond • **Pond with Chl. Mods.** • Channel Clearing
Environmental Impacts	• **Voluntary Buyouts**	• Centex West Pond • **Pond with Chl. Mods.** • Wall with Buyouts	• Wall with Chl. Mods. • Channel Clearing
Time of Implementation	• **Voluntary Buyouts**	• Wall with Buyouts • Wall with Chl. Mods. • Channel Clearing	• Centex West Pond • **Pond with Chl. Mods.**
Land Acquisition Required	• **Voluntary Buyouts**	• Wall with Buyouts • Wall with Chl. Mods.	• Centex West Pond • **Pond with Chl. Mods.** • Channel Clearing
Complexity of Permitting	• **Voluntary Buyouts**	• Wall with Buyouts • Wall with Chl. Mods. • Channel Clearing	• Centex West Pond • **Pond with Chl. Mods.**
Neighborhood Input	• Centex West Pond • **Pond with Chl. Mods.** • Channel Clearing	• Wall with Chl. Mods. • **Voluntary Buyouts**	• Wall with Buyouts
Funding Constraints	• **Voluntary Buyouts**	• **Pond with Chl. Mods.** • Wall with Buyouts • Wall with Chl. Mods. • Channel Clearing	• Centex West Pond

Key Issues & Next Steps

City of Austin
WATERSHED PROTECTION

Key Issues

Level of Protection

(Benefit vs. Cost)

Funding Limitations

- Ineligible for federal and state funding
- City sources:
  - Drainage Utility Fund (City Council approval)
  - Bonds (City Council and/or voter approval)

Time of Implementation

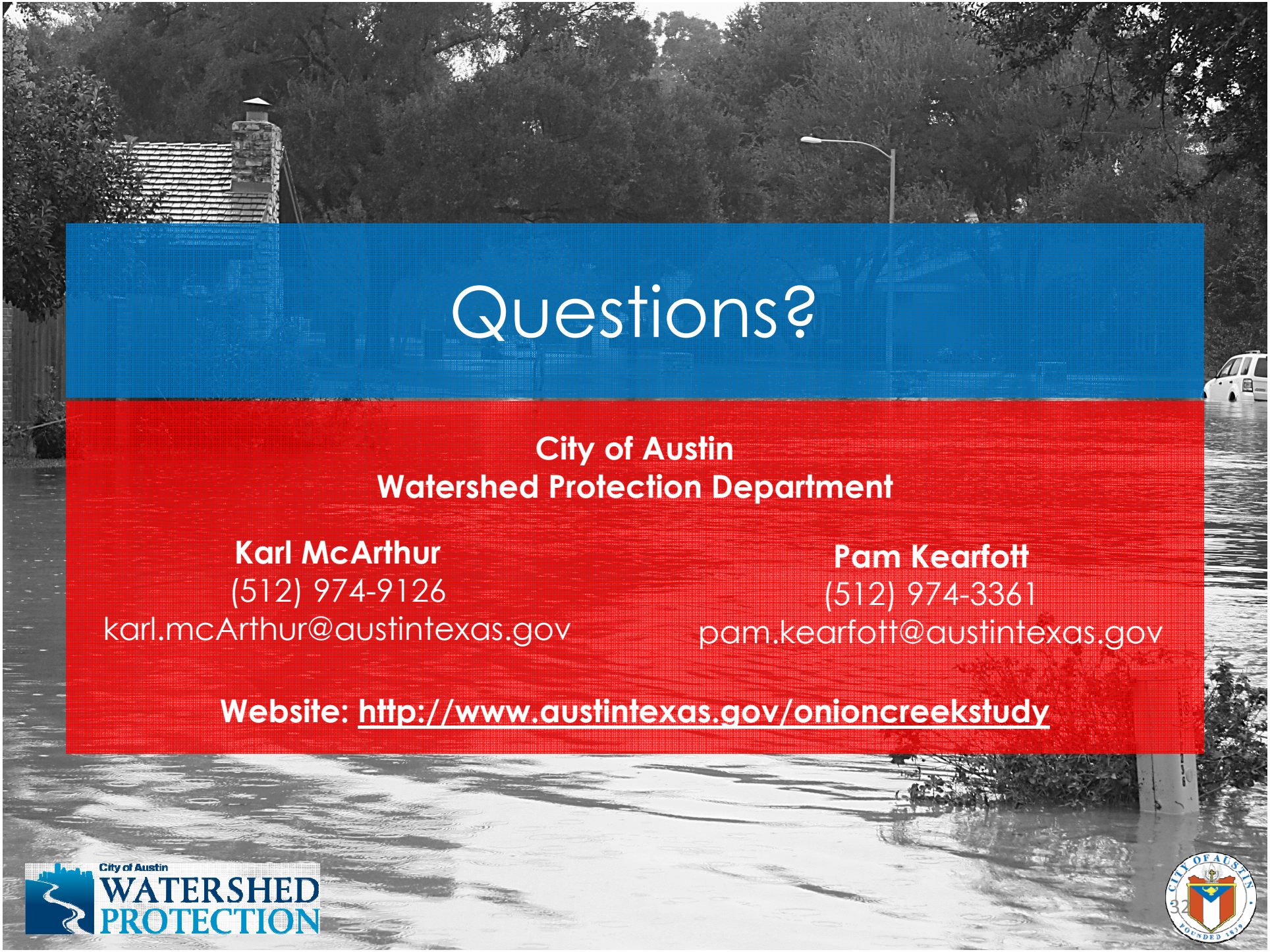
Next Steps

Finalize feasibility study

Present to Environmental Commission subcommittee

June 7th

Present to City Council



Questions?

City of Austin
Watershed Protection Department

Karl McArthur
(512) 974-9126
karl.mcArthur@austintexas.gov

Pam Kearfott
(512) 974-3361
pam.kearfott@austintexas.gov

Website: http://www.austintexas.gov/onioncreekstudy

City of Austin
WATERSHED PROTECTION