



ATLAS 14: AUSTIN'S NEW UNDERSTANDING OF FLOOD RISK

Watershed Protection Department
SRCC Membership Meeting | November 4, 2019



WATERSHED
PROTECTION



Overview

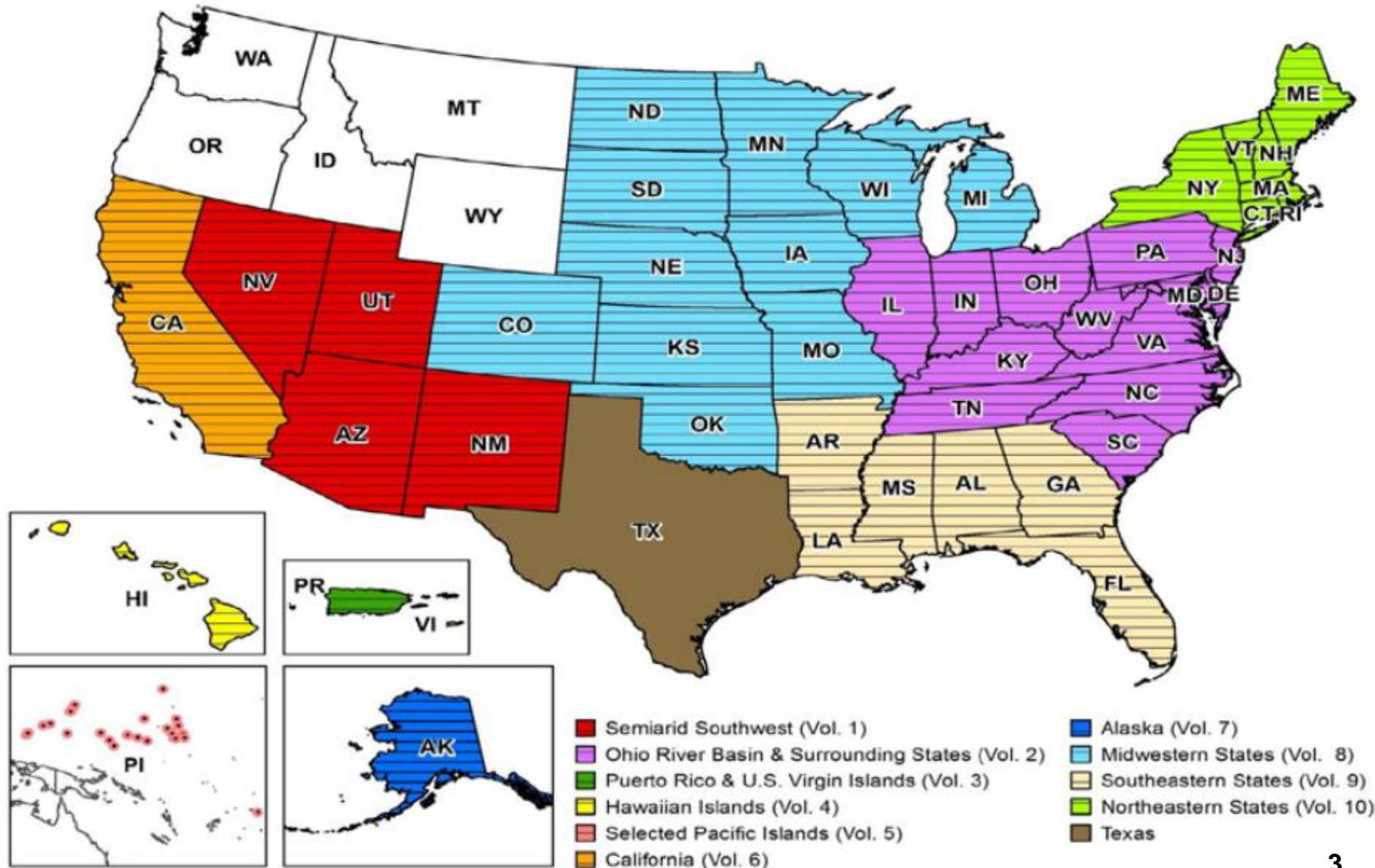
- Study background
- Impacts to floodplains
- Recommended floodplain regulation amendments
- Next steps

Atlas 14 Background

- Nationwide study of rainfall intensities

Partners

- **Federal** NOAA, National Weather Service, U.S. Army Corps of Engineers, Federal Highway Administration
- **State/Local** TxDOT, Harris County Flood Control District, City of Austin, et al.



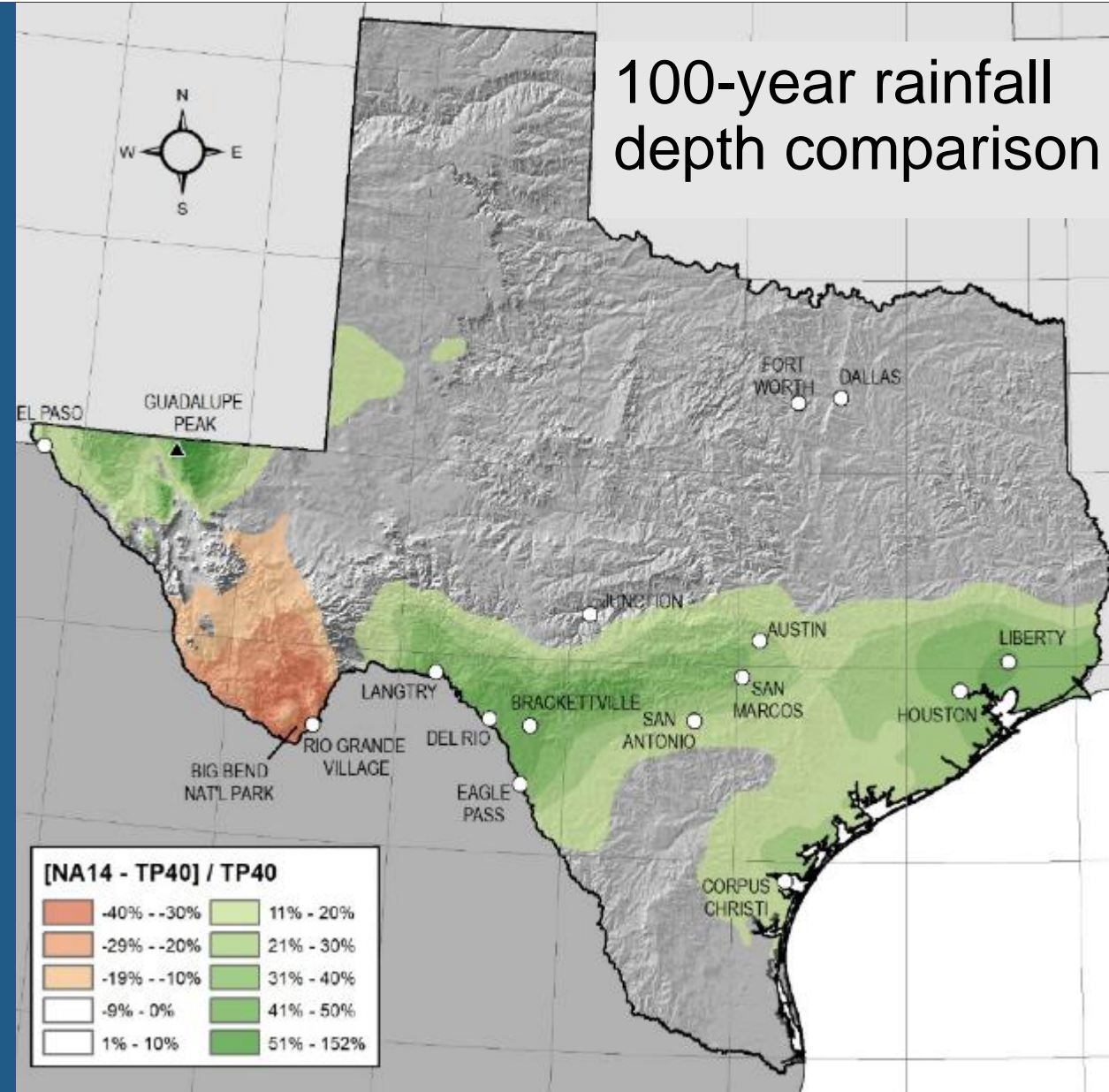
Atlas 14 Rainfall Changes

- Nationwide examination of historic rainfall data
- Adds data from 1961 – 2017

Measure	Current	Updated
100-year rainfall (24-hour)	10.2 inches	Up to 13+ inches
Buildings in 100-year floodplain	4,000	7,200*

*Excludes Colorado River floodplain and associated lakes

100-year rainfall depth comparison



What does the new understanding of
Flood Risk Mean?

- More buildings in the 100-year floodplain
- Depth of flooding increases
- More low water crossings at risk of flooding
- Depth and velocity of flooding over roadways increase

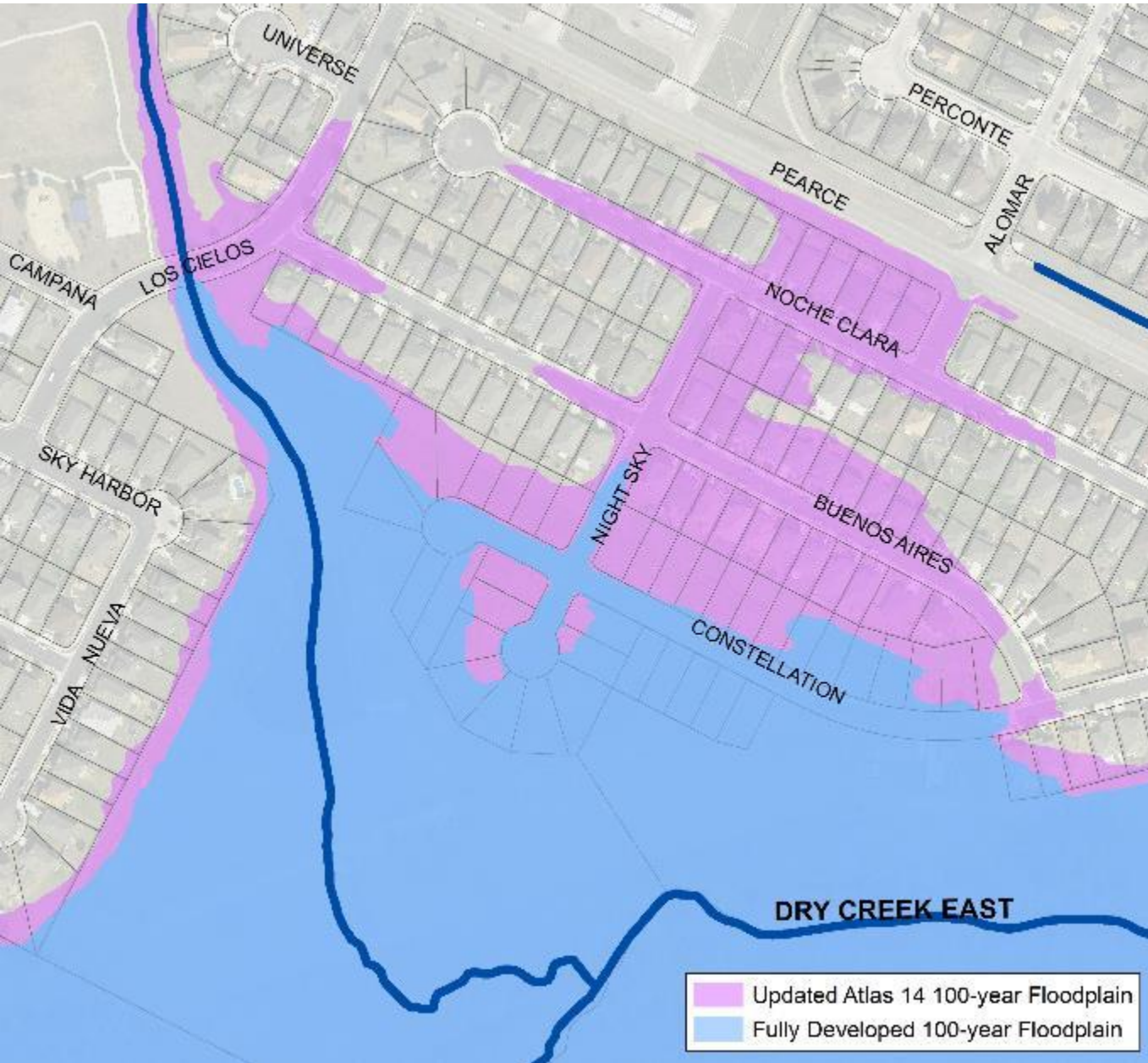


What does a

1% Annual Chance of Flooding Mean?

- A 100-year flood has a 1% chance of happening every year
- It has a 26% chance of happening over a 30-year mortgage
- Can occur multiple times per year; does not occur every 100 years
- FEMA and nationwide standard to map flood hazard areas

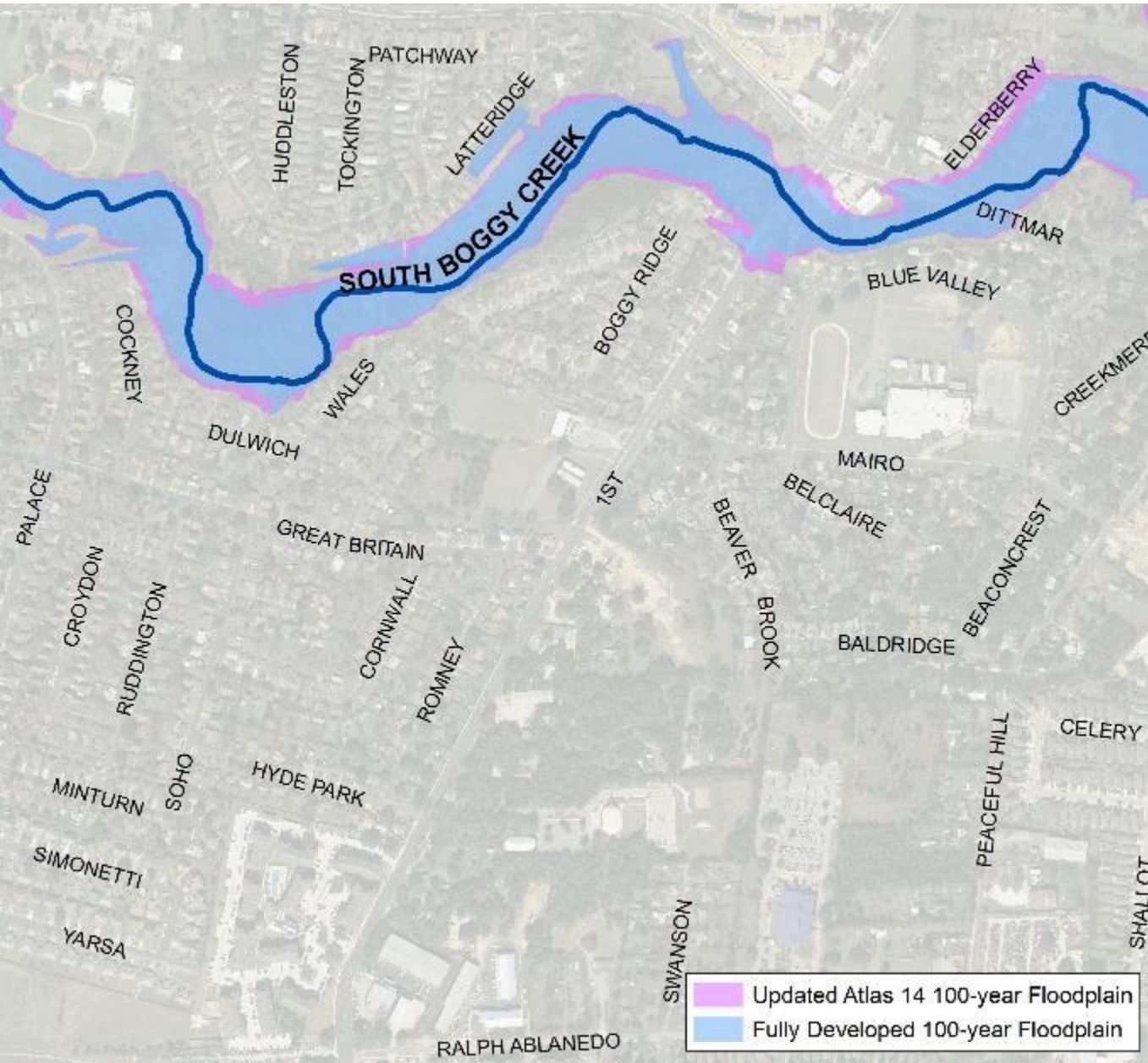




Austin's

Floodplains Will Expand

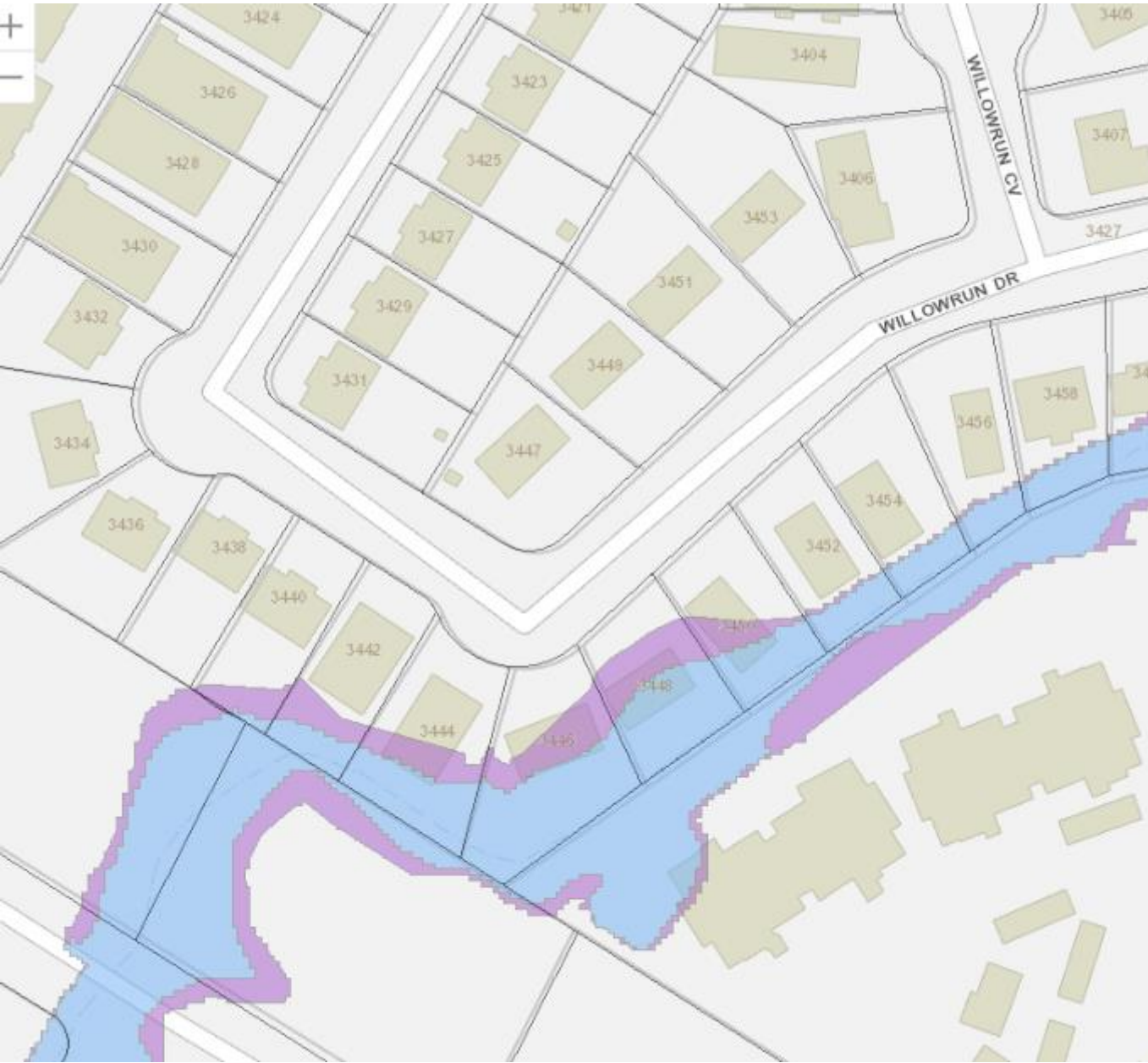
- More homes and businesses are at risk of flooding than previously thought.
- Affects ability to develop, remodel, or redevelop property.
- Affects the need for and the cost of flood insurance.
- Floodplains will need to be re-studied.
- See impacts at ATXfloodpro.com



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FloodPro

Explore Atlas 14 Changes x

I want to...

Atlas 14 Changes

The National Weather Service is completing a historical rainfall study, called Atlas 14. This study shows that Central Texas is more likely to experience larger storms than previously thought. This means that severe flooding is also more likely. To discover if your property has an increased flood risk, please enter an address in the address search below.

■ Interim Atlas 14 100-Year Floodplain
■ Current 100-Year Floodplain

[Atlas 14 website](#)

Address Search

Enter a street address starting with a House Number (Example: 505 Barton Springs Rd).

Street Address: *

Home Layers Explore A... StreetMap 0 50 100ft

Using FloodPro

- Go to ATXfloodpro.com
- Click “I want to...”
- Click “Explore Atlas 14 Changes”
- Enter an address to search

Recommended Response

Step 1

Land Development Code amendments

Step 2

Drainage Criteria Manual revisions

Step 3

Flood Risk Evaluation





Step 1

Land Development Code amendments

- Revise floodplain definitions
- Create a redevelopment exception
- Expand the Colorado River exception
- Increase the freeboard requirement

Revise floodplain definitions

New 100-yr floodplain → Current 500-yr floodplain

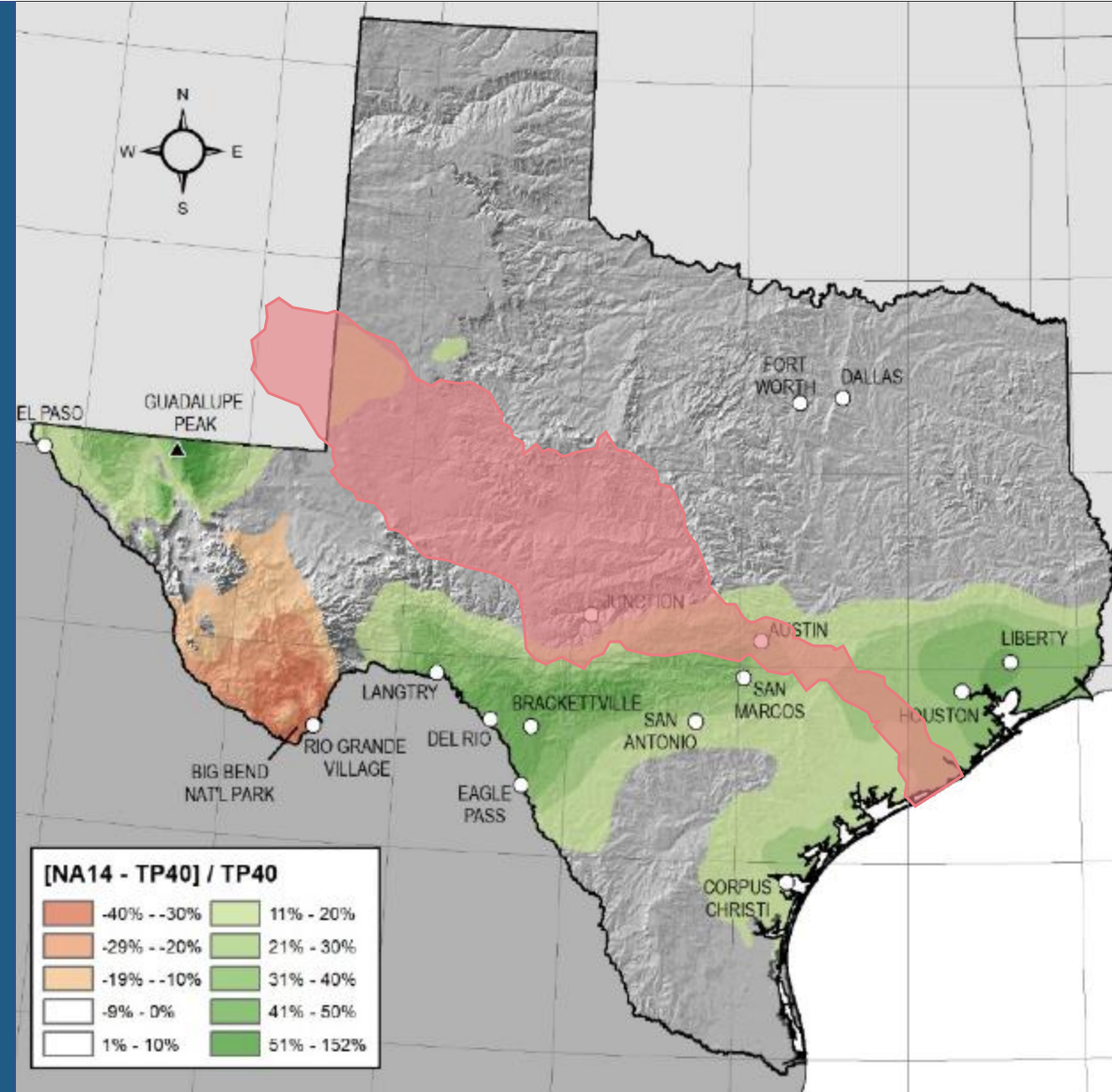
New 25-yr floodplain → Current 100-yr floodplain

- Interim definitions until floodplains are re-mapped in 2 - 3 years
- No change to Colorado River floodplain

Storm Level	Current Rainfall Depth (24 hour storm)	Updated Rainfall Depth (24 hour storm)
25-year (4% chance)	7.6 inches	Up to 9 inches
100-year (1% chance)	10.2 inches	Up to 13+ inches
500-year (0.2% chance)	13.5 inches	Up to 19.5 inches

Atlas 14 Rainfall Changes

- Colorado River watershed upstream of Austin not significantly impacted



Revise floodplain definitions

New 100-yr floodplain → Current 500-yr floodplain

New 25-yr floodplain → Current 100-yr floodplain

- Interim definitions until floodplains are re-mapped in 2 - 3 years
- No change to Colorado River floodplain

Purpose

- Maintain the City's level of flood protection
- Limit construction of new buildings in areas with known flood risk during re-mapping process

Create a redevelopment exception

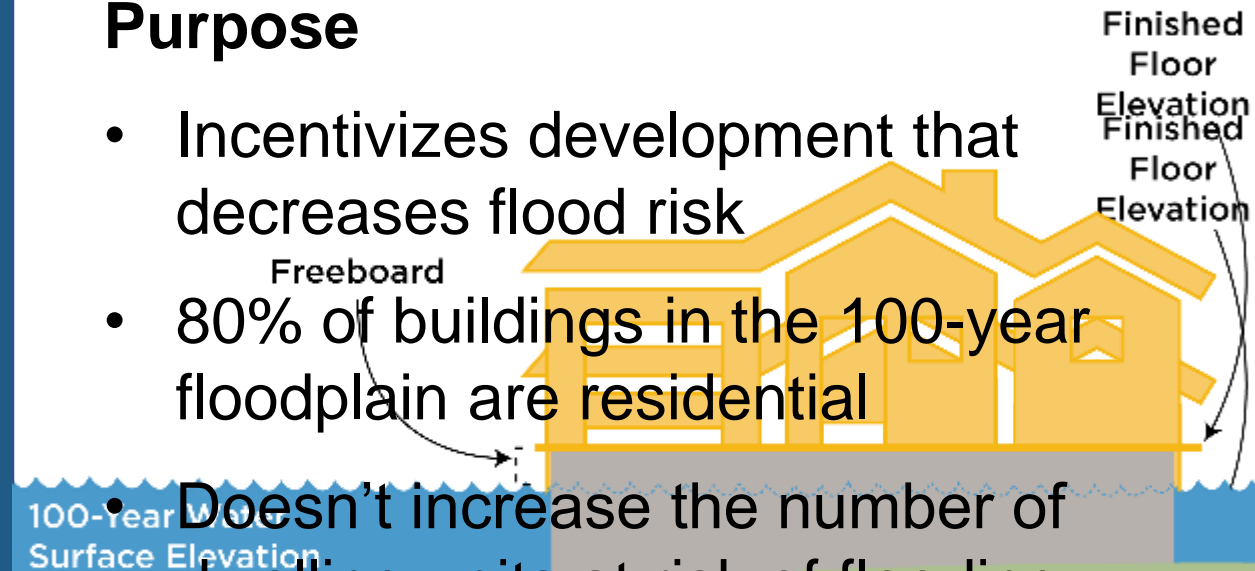
Administrative approval process for a residential building in the floodplain if:

1. Replaces or modifies an existing residential building
2. Finished floor elevation is at least 2 feet above the 100-year floodplain
3. Does not increase number of dwelling units
4. No adverse flooding impact

If these 4 conditions are met, the safe access requirement is waived

Purpose

- Incentivizes development that decreases flood risk
- 80% of buildings in the 100-year floodplain are residential
- Doesn't increase the number of dwelling units at risk of flooding
- Opens up opportunity for grant funding



Provide option for additions to residential buildings

Administrative approval process for an addition to a residential building in the floodplain if:

1. Finished floor elevation of the addition is at least 2 feet above the 100-year floodplain
2. Not a substantial improvement
3. No adverse flooding impact

If these 3 conditions are met, the safe access requirement is waived



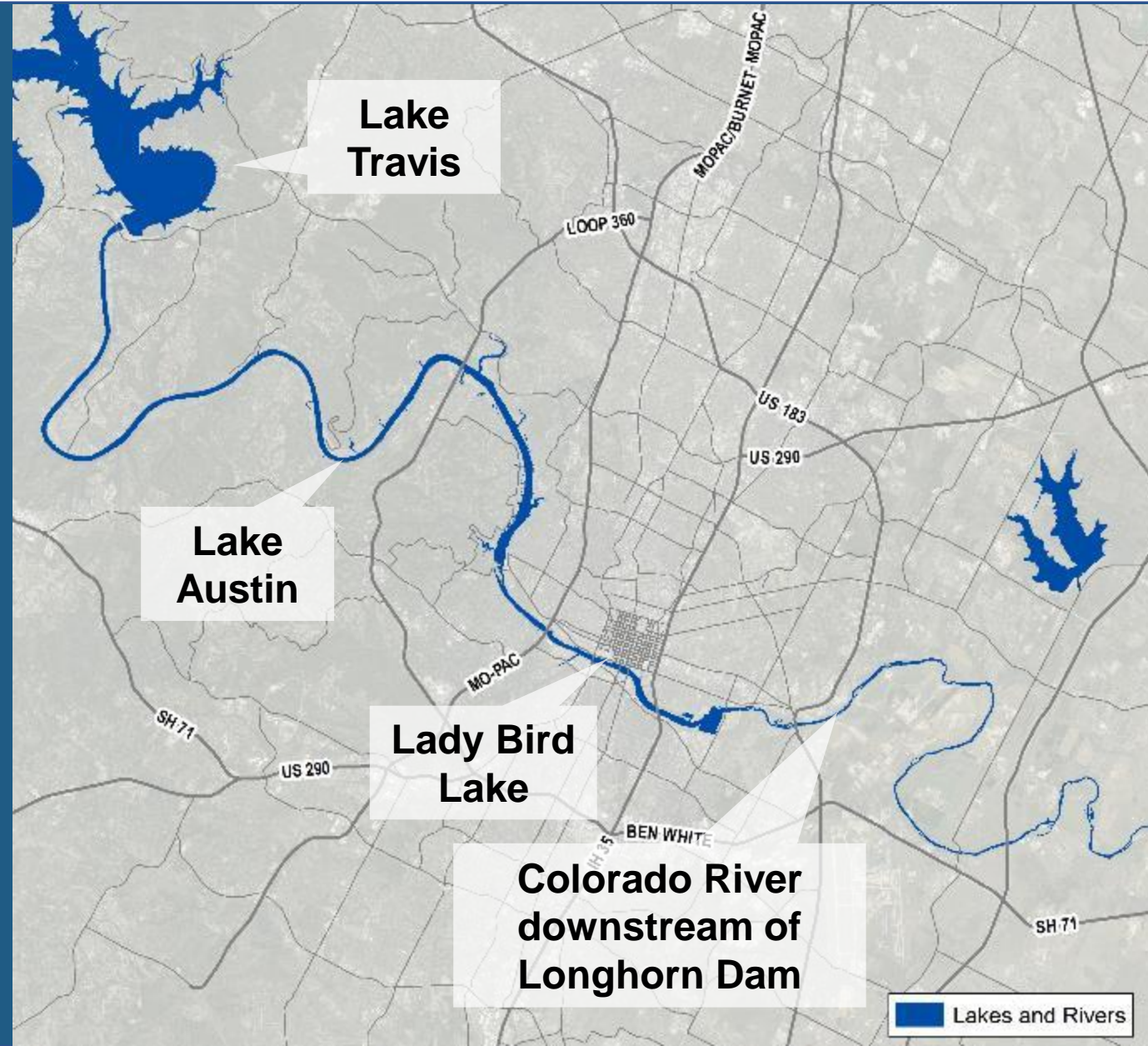
Expand the Colorado River exception

The existing exception allows for a building to encroach on the 100-year floodplain without safe access if it is:

- Downstream of Longhorn Dam
- Along Lady Bird Lake

WPD recommends expanding this exception to include:

- Lake Austin
- Lake Travis



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- Lake Austin
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Purpose

- Provide uniform regulations along Colorado River
- Colorado River flooding is not flash flooding like rest of City

Increase the freeboard requirement

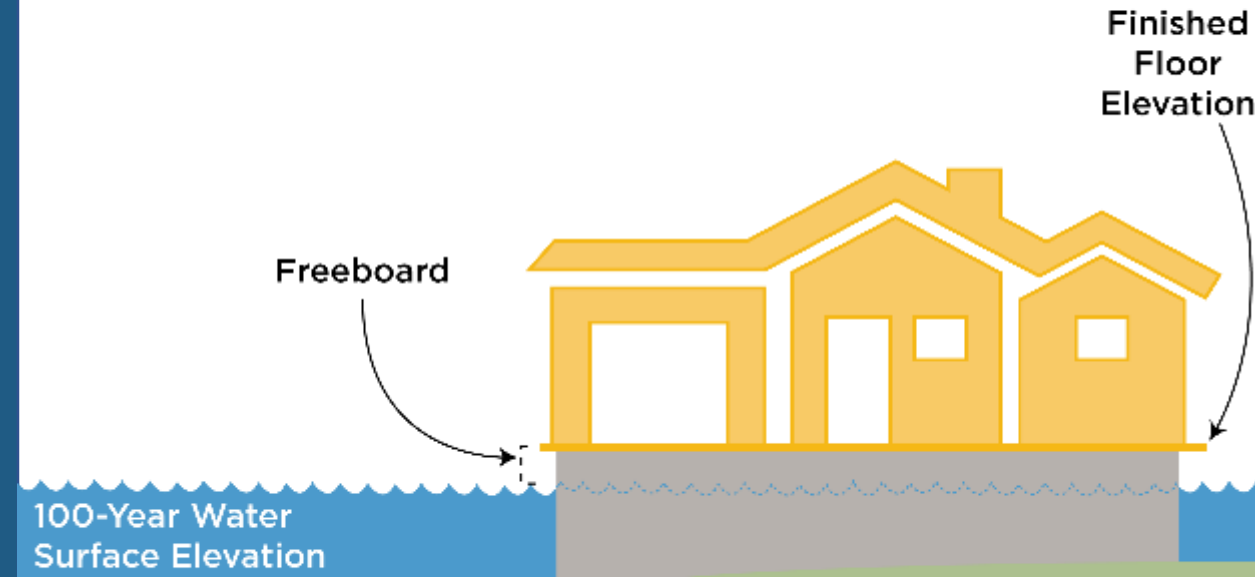
Increase the minimum height between a building's finished floor and the 100-year floodplain from 1 ft to 2 ft

Purpose

- Freeboard is the single-most effective means for reducing flood risk to a building in the floodplain
- Reduce flood insurance premiums

"There's no real substitute for elevation. That's your best bet,"

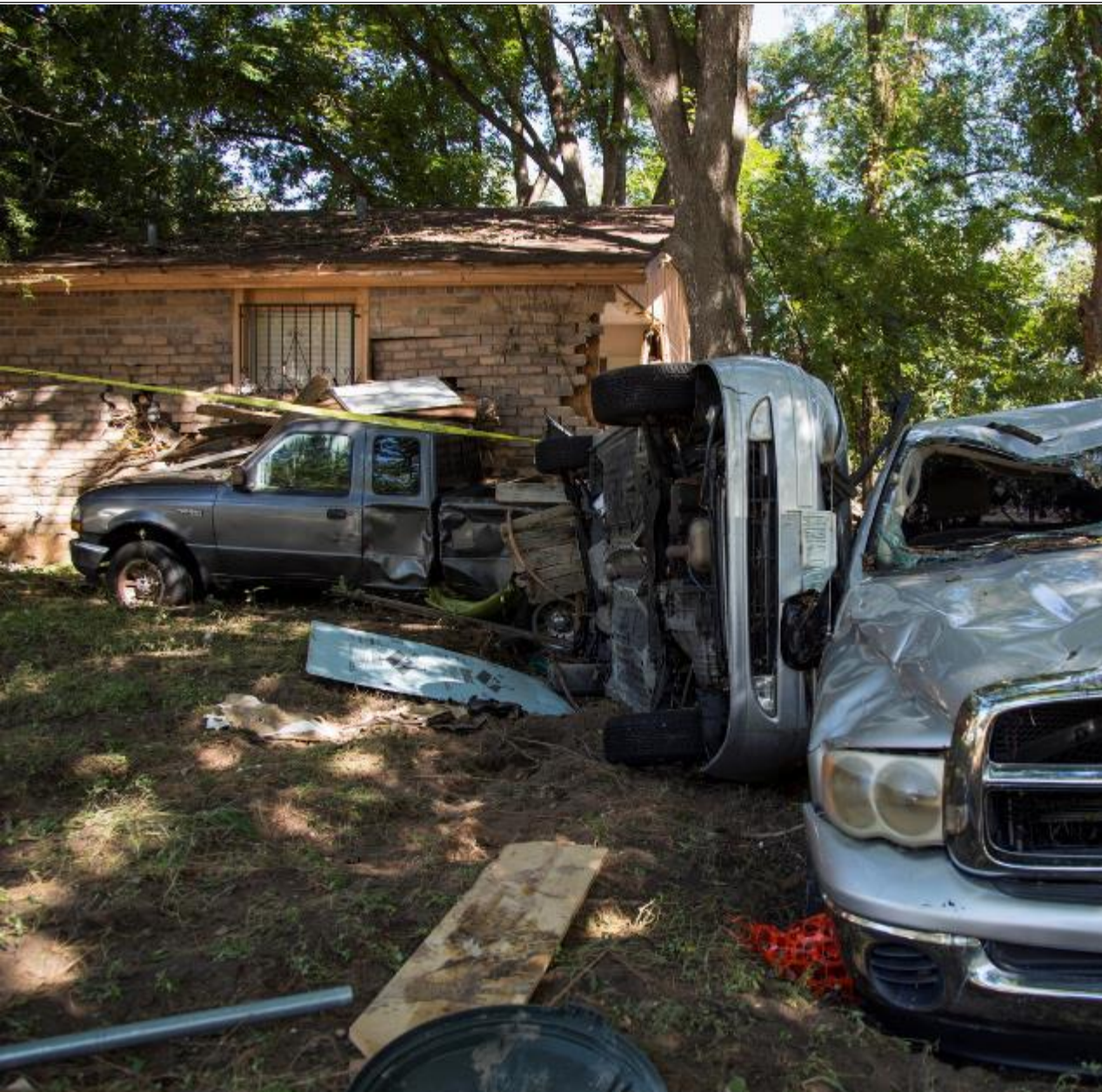
Tim Reinhold, senior vice president and chief engineer of the Insurance Institute for Business and Home Safety (IBHS)



Step 2 Drainage Criteria Manual revisions

- Atlas 14 updates rainfall rates that are used to determine:
 - Floodplain location
 - Size of storm drain pipes, inlets, and ditches
 - Detention pond size
- Rules making process
 - Posting on Dec. 3
 - Stakeholder input





Step 3 Flood Risk Evaluation

Update floodplain studies citywide

- Process to take 2 - 3 years
- Once complete, will provide data to FEMA to update flood insurance maps

Evaluate impacts to existing infrastructure

- Floodwalls
- Channels

FOLLOW OUR PROGRESS

AustinTexas.gov/atlas14

Call to Action

Identify your flood risk

Get a quote on flood insurance

VIEW FLOODPLAINS

ATXfloodpro.com