



ATLAS 14: AUSTIN'S NEW UNDERSTANDING OF FLOOD RISK

Watershed Protection Department
Building and Fire Code Board of Appeals | August 28, 2019





Overview

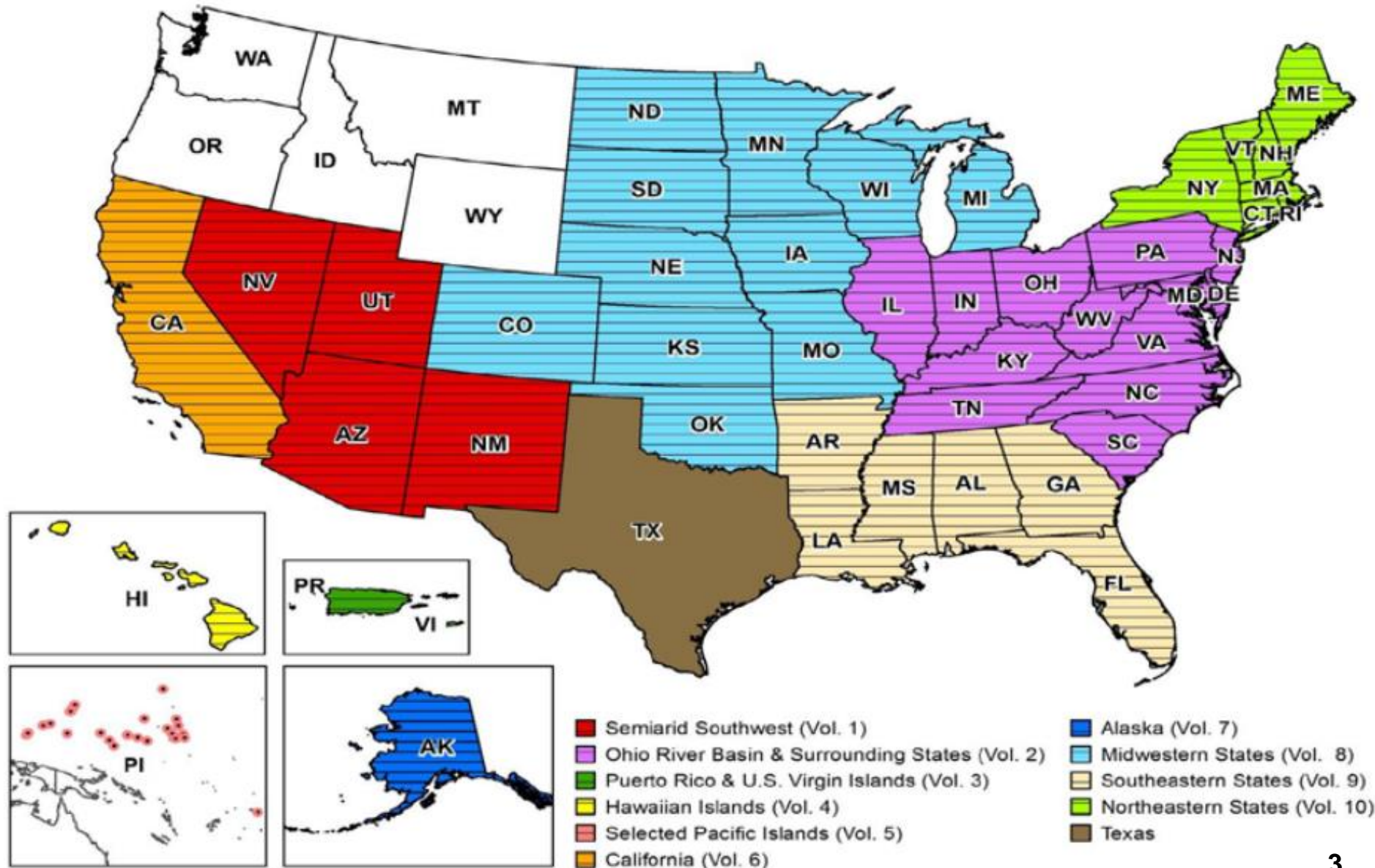
- Atlas 14 background
- Summary of key impacts from Atlas 14
- Recommended response
- Outreach
- Building code changes

Atlas 14 Background

- Nationwide study of rainfall intensities

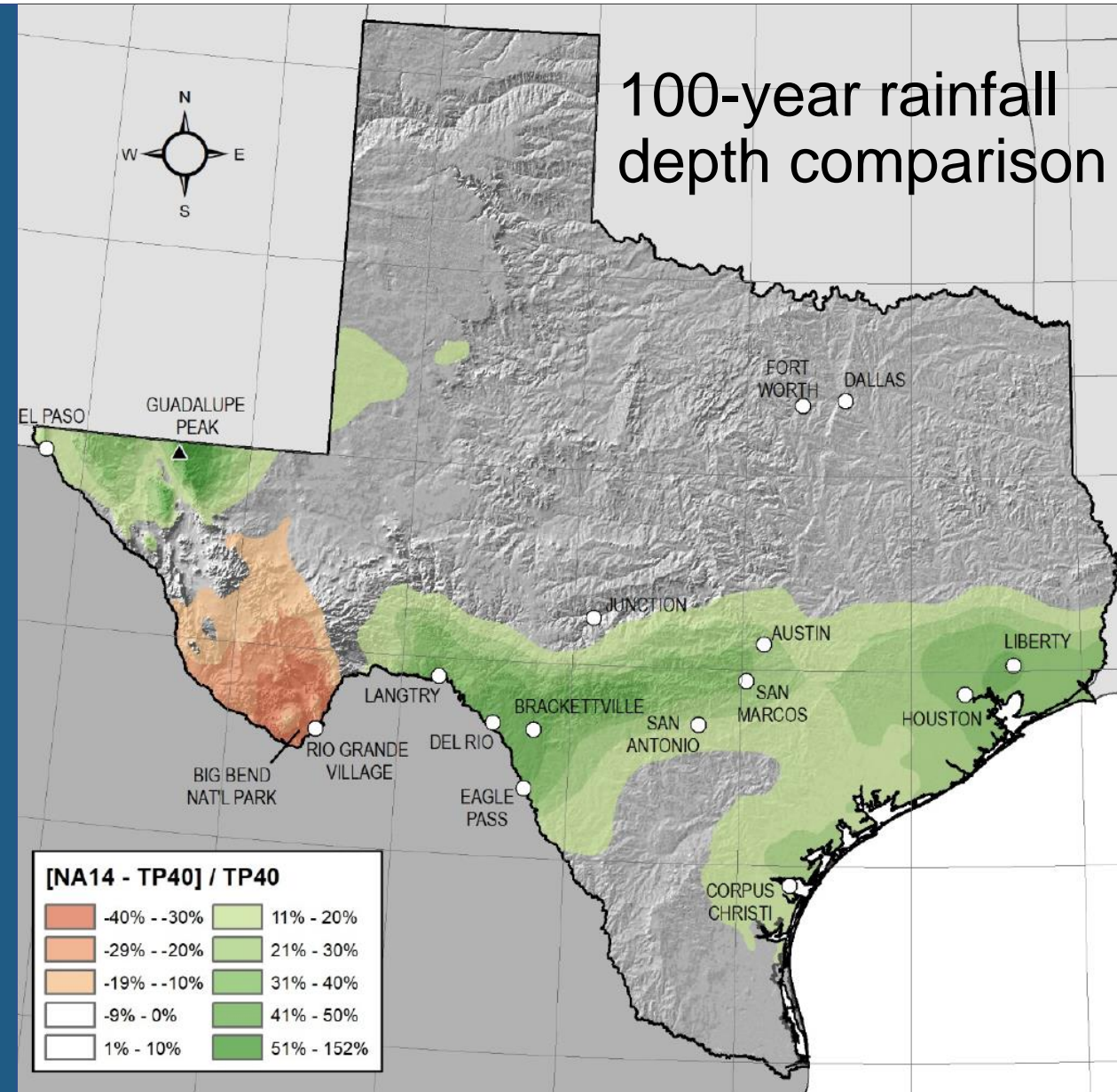
Partners

- **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.



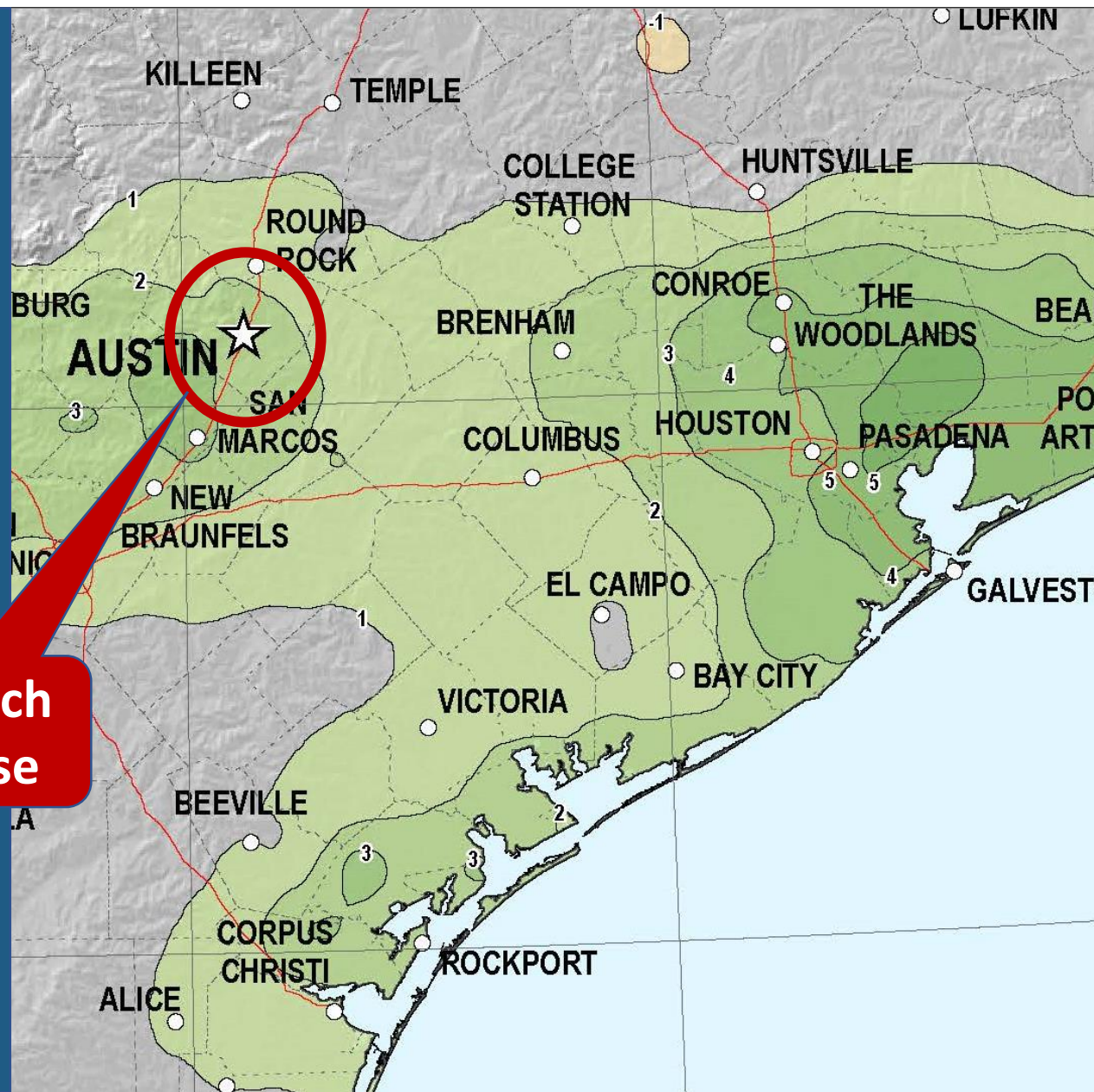
Atlas 14 Rainfall Changes

- Nationwide examination of historic rainfall data
- Adds data from 1961 – 2017
- Colorado River watershed not significantly impacted



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**2 – 3 inch
increase**

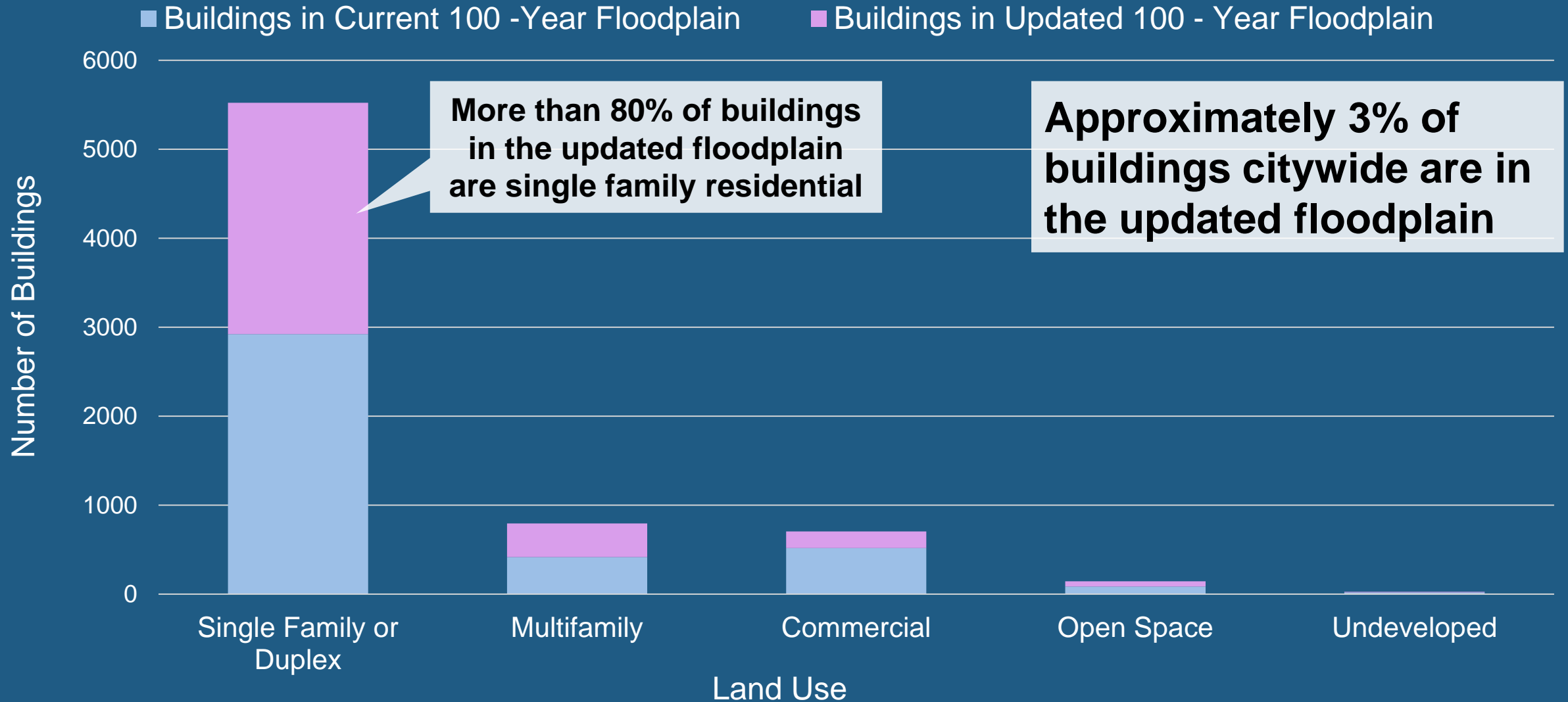
What does the new understanding of

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.



Buildings in the Floodplain

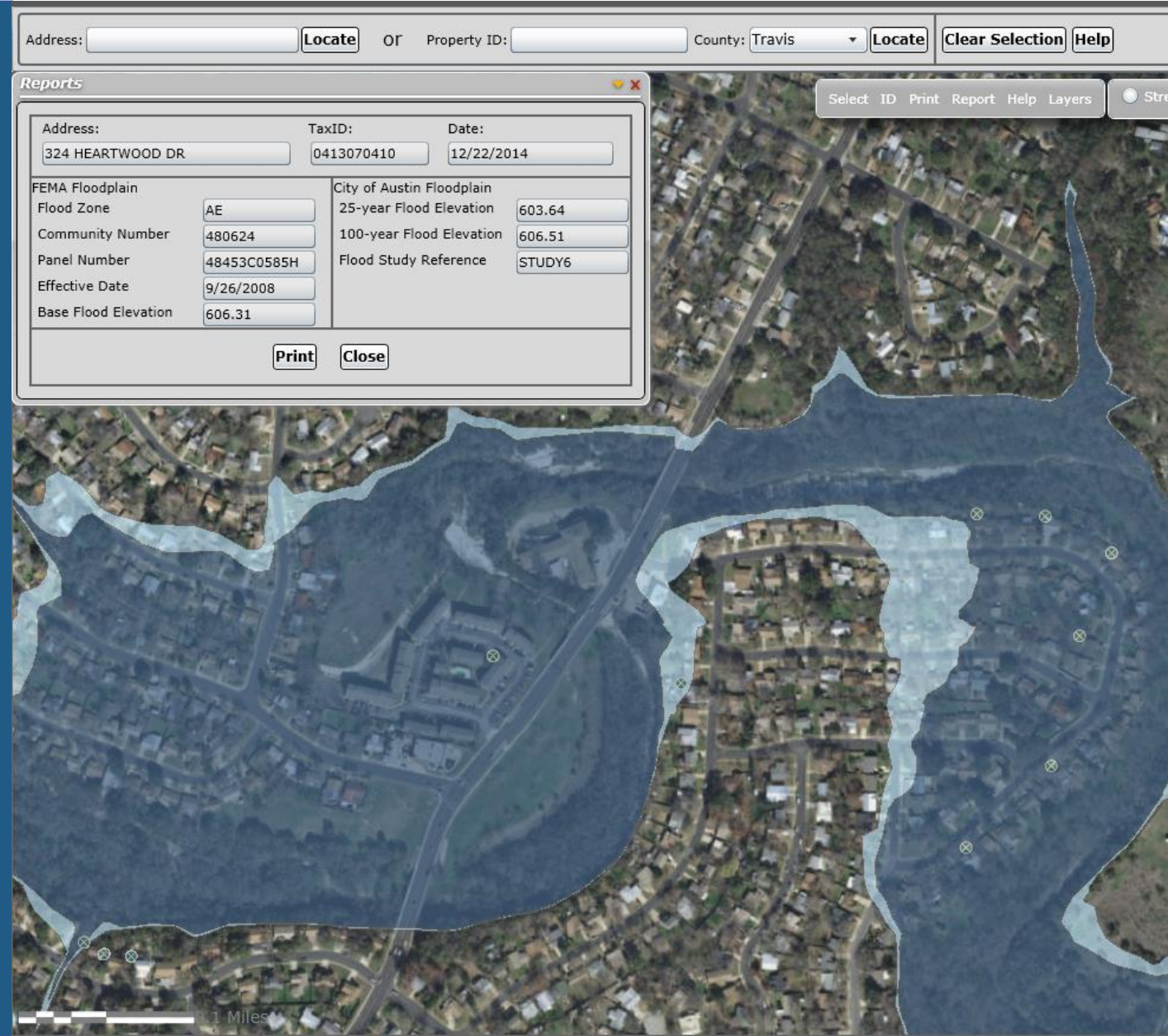


Overview of

Flood Prevention Strategies

How do we ensure that *new* development minimizes its flood risk and the risk to others?

- Floodplain regulations
- Drainage criteria

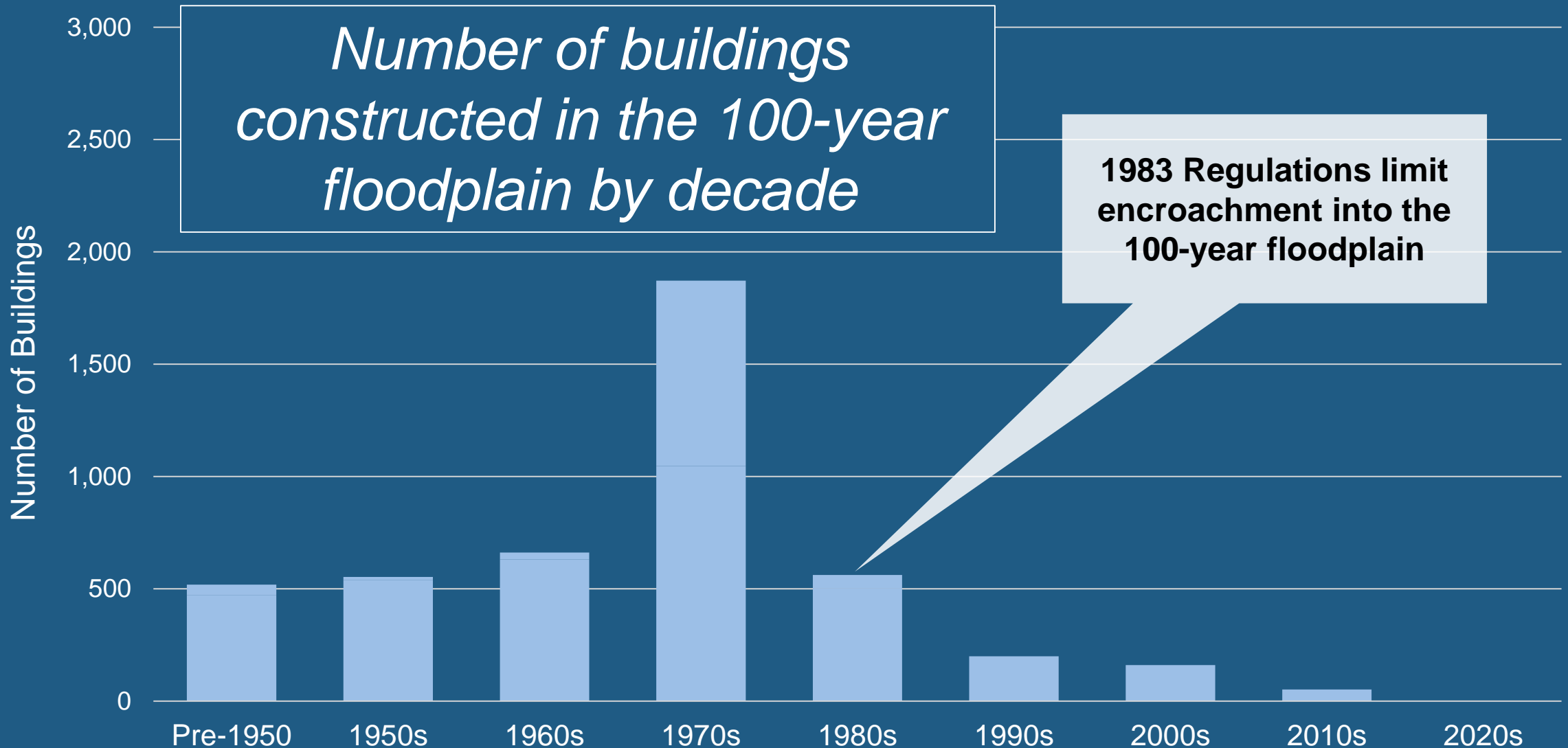


City of Austin

Floodplain Regulation History

- 1975 – Entered FEMA emergency program; first floodplain maps
- 1983 – Entered full National Flood Insurance Program; updated maps and floodplain regulations
- 2003 – Amended regulations to include administrative variance process





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

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

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

Revise floodplain definitions

New 100-yr floodplain → Current 500-yr floodplain

New 25-yr floodplain → Current 100-yr floodplain

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

Purpose

- Limit construction of new buildings in areas with known flood risk during re-mapping process
- Limit creating existing, non-conforming structures

Flood Risk Reduction Challenge

7,200 buildings

53* buildings

135+ years

in the 100-year floodplain
with flood risk reduced each year
to reduce current risk

How can we increase the pace
of flood risk reduction?

Create a redevelopment exception

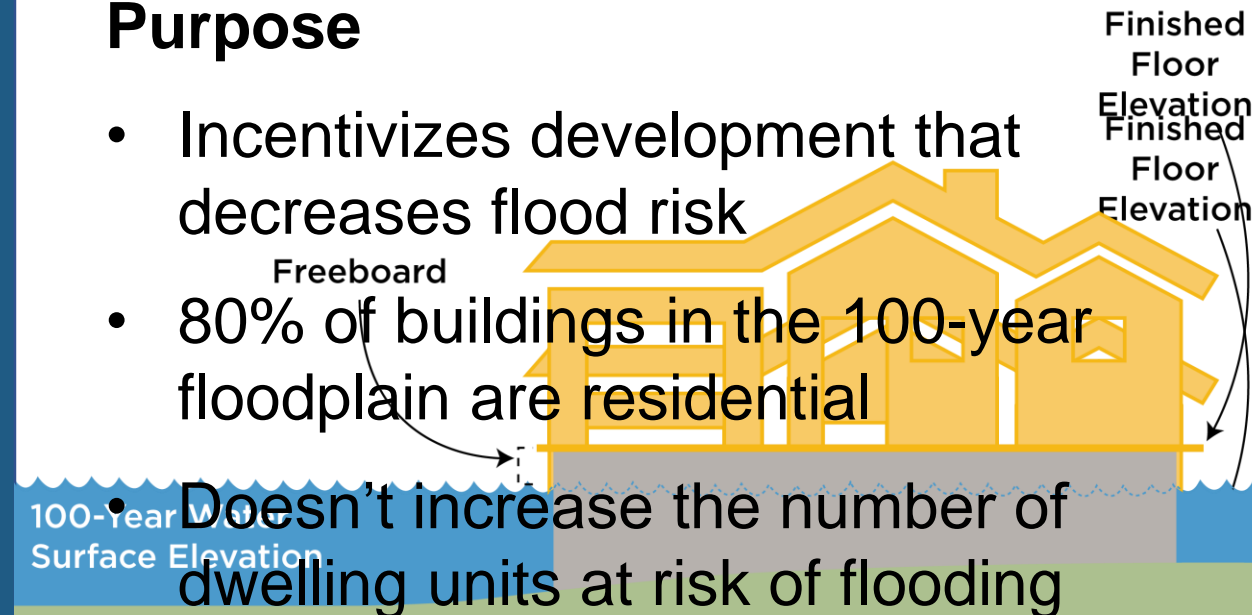
Administrative approval process for a residential building in the floodplain if:

1. Replaces 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



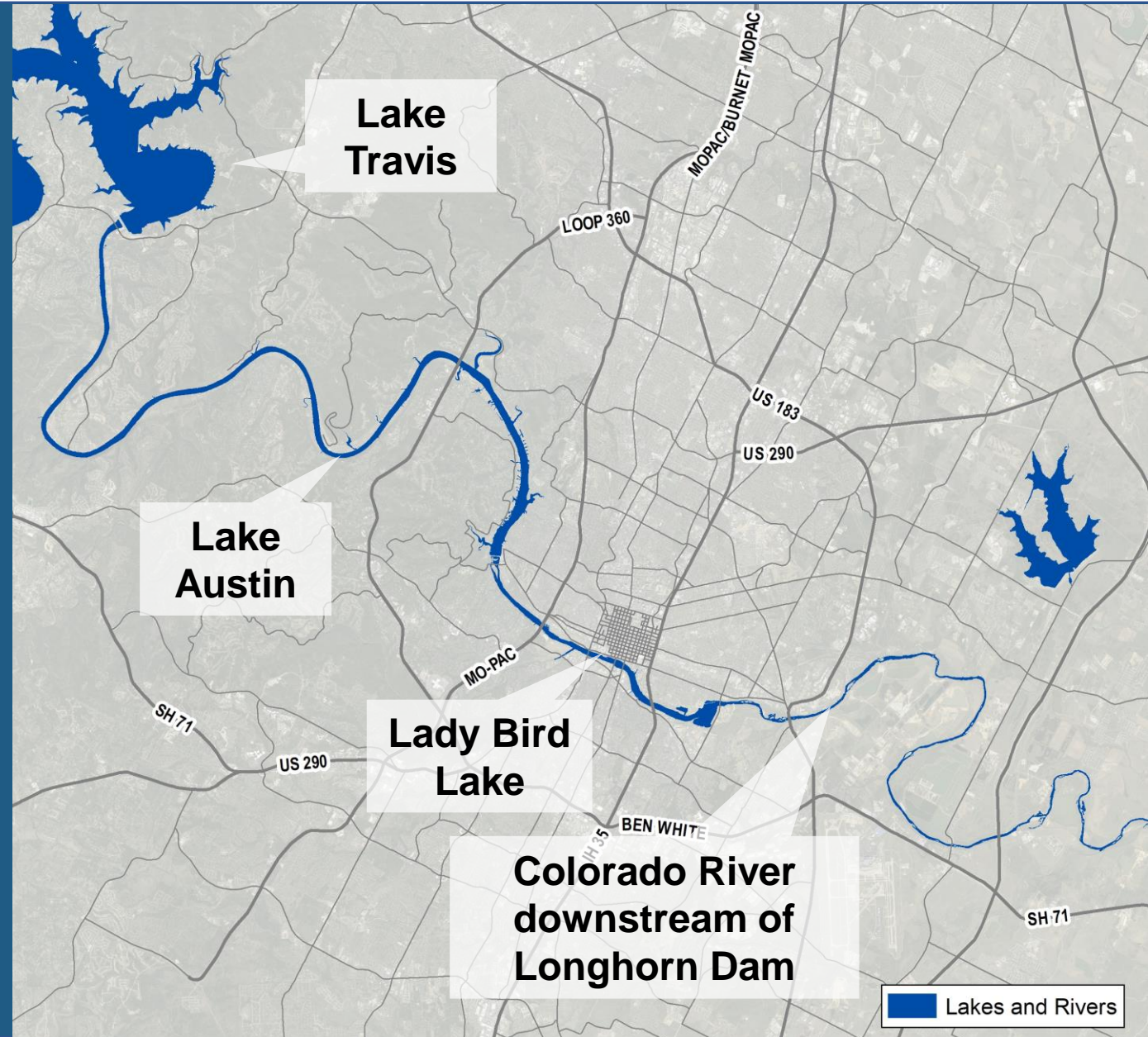
Expand the Colorado River exception

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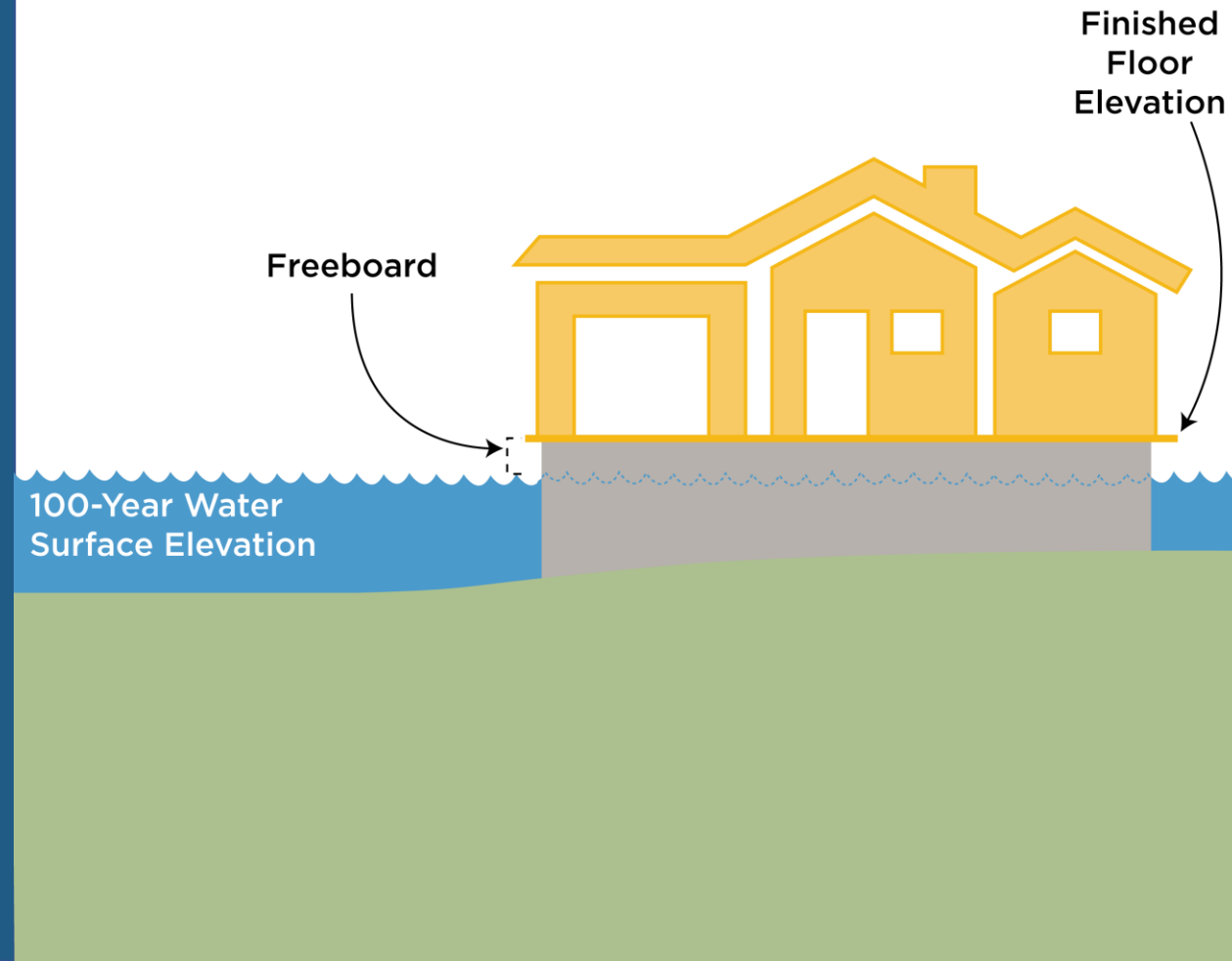
- Provide uniform regulations along Colorado River
- Colorado River flooding is not flash flooding like rest of City

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



Who Have We Talked To?

Contacted more than 2,500 people at 88 different meetings

Public meetings

24,000 postcards sent to residents in the floodplain

Neighborhood groups

Environmental Community

Professional Associations

Development Organizations

Boards and Commissions

Who Have We Talked To?

Internal Departments

- Development Services Department
- Parks and Recreation
- Neighborhood Housing and Community Development
- Corridor Planning Office
- Law
- Public Works Department
- Austin Transportation Department
- Austin Water
- Sustainability
- Office of Real Estate Services
- Equity Office
- Travis County

What We Heard and How We Responded

Timing gap between code amendments and DCM rules

- Eliminated gap – DCM draft rules are released

Building height limitations with Subchapter F

- Increased allowable building height by 2 feet

Losing some entitlements of approved residential subdivisions

- Safe access compliance determined at time of prelim. plan or plat

Drainage infrastructure challenges for phased developments

- Draft DCM rules establish modified criteria for phased developments

Building Code Changes

Part 13 – Subsection 202.1 (Amended Definitions) of City Code
Section 25-12-3 (Local Amendments to the Building Code)

Parts 19, 20, 21, 22 – various sections of City Code Section 25-12-243
(Local Amendments to the International Residential Code)

Definition consistency for:

25-year floodplain, 100-year floodplain, base flood, design flood, flood hazard area, and floodway

Building Code Changes

Part 15 – Subsection 1612.4.1 (Freeboard) of City Code Section 25-12-3 (Local Amendments to the Building Code)

The minimum freeboard requirement for buildings in the floodplain is increased from one foot to two feet

Building Code Changes

PART 23 – Subsection R322.2.1 (Elevation requirements) of City Code Section 25-12-243 (Local Amendments to the International Residential Code)

The minimum freeboard requirement for residential buildings in the floodplain is increased from one foot to two feet

Building Code Changes

Part 24 – Subsection R322.2.6 of City Code Section 25-12-3 (Local Amendments to the International Residential Code)

Means of egress determination

For single-family condo regime buildings: Means of egress is determined at the time of site plan approval if the site plan was approved between December 1, 2017 and the effective date of this ordinance

For single-family buildings: Means of egress is determined accordingly:

- at the time of preliminary plan if the preliminary plan was submitted for approval between December 1, 2014 and the effective date of this ordinance; or
- at the time of final plat if the final plat was approved between December 1, 2017 and the effective date of this ordinance.

Means of egress for residential buildings for all other situations not described above is determined at the time of building permit application.

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
 - Draft DCM released in August
 - 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



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