

Atlas 14 – Summary of Recommended Code Changes

This document provides a summary of the proposed Atlas 14 related code amendments in order of appearance in the draft ordinance (dated August 14, 2019). Items that are highlighted are revisions from the first draft of the ordinance posted in December 2018.

Parts 1 and 2 – City Code Section 25-2, Subchapter F (sections 2.2 and 3.4.2)

These sections revise the determination of the maximum building height for a building that is subject to Subchapter F and is in the 100-year floodplain. The maximum building height for a building in the 100-year floodplain increases from 32 feet to 35 feet as measured from natural grade.

Parts 3 and 4 – 25-7-2 (*Definitions*)

- Add a definition of “Atlas 14,” which is referenced in subsequent sections.
- Revise the definitions of “100-year floodplain” and “25-year floodplain” to refer to new code sections that describe how the floodplain areas are determined (see Part 6).

Part 5 – existing City Code Section 25-7-6, renumbered to 25-7-8 (*Computation of Stormwater Runoff*)

- Clarify that the calculation of the 500-year floodplain is based on the existing impervious cover in a watershed or drainage area, rather than the maximum amount of impervious cover allowed under zoning or watershed regulations.

Part 6 – new City Code Section 25-7-6 (*Determination of the 100-Year Floodplain*)

- Revise the methodology for determining the 100-year floodplain to reflect the Atlas 14 rainfall data. This code amendment provides three options for determining the 100-year floodplain in the interim period until floodplain studies have been updated by the city. An applicant can use (1) the Atlas 14 data to calculate the 100-year floodplain under fully developed conditions; (2) use the current FEMA 500-year floodplain; or (3) use the current 500-year rainfall data to determine the limits of the floodplain. The exception to this methodology is the floodplain of the Colorado River; the code amendment specifies that the 100-year regulatory floodplain for the Colorado River remains the same (i.e., the current 100-year floodplain).

New City Code Section 25-7-7 (*Determination of the 25-Year Floodplain*)

- Revise the methodology for determining the 25-year floodplain to reflect Atlas 14 data. This amendment provides two options for determining the 25-year floodplain. An applicant can either use (1) the Atlas 14 data to calculate the 25-year floodplain under fully developed conditions; or (2) use the current 100-year floodplain. The exception to this methodology is the floodplain of the Colorado River; the code amendment specifies that the 25-year regulatory floodplain for the Colorado River remains the same (i.e., the current 25-year floodplain).

Part 7 – City Code Section 25-7-93 (*General Exceptions*)

- Subsection (A)(2) is revised to remove an existing exception and create a new exception for constructing a residential building within the 100-year floodplain. The existing exception allows for the construction of a single-family or duplex residential building within the 100-year floodplain if the lot was platted before September 25, 1983. This provision is removed and replaced with a broader redevelopment exception that allows a new residential building to encroach within the 100-year floodplain if it is replacing an existing legally constructed residential building and does not increase the number of dwelling units on the property – regardless of plat date. The previous language under this section specified that it applies only single-family buildings. This has been revised such that it applies to all residential uses.
- Subsection (A)(4) is revised to expand the existing exception for development within the 100-year floodplain of Lady Bird Lake or the Colorado River to also apply to Lake Austin and Lake Travis.
- Subsection (B) is revised to clarify that development approved under the listed exceptions must meet specific criteria. Current code lists two criteria under this section: floodproofing and no adverse flooding impact. This amendment includes those two criteria and adds two additional criteria: compensation for floodplain volume and freeboard. The compensation for floodplain volume criterion is currently part of the no adverse flooding impact criterion and is added here for emphasis. The freeboard criterion is also part of the current code. However, the freeboard requirement is being increased from one foot to two feet.

Part 8 – City Code Section 25-7-95 (*Requirements for Parking Areas*)

- This section is revised to allow staff to have the administrative authority to approve parking areas in the 25-year or 100-year floodplains that are accessory to buildings that are approved under the exemptions in sections 25-7-93 and 25-7-96.

Part 9 – City Code Section 25-7-96 (*Requirements in the 25-Year Floodplain*)

- Subsection (A) is reworded for clarity.
- Subsection (B)(2) is revised to establish an equivalent redevelopment exception for residential development within the 25-year floodplain (see the description of Part 7, above).
- Subsection (C) is revised to clarify that development approved under the listed exceptions must meet specific criteria, as explained above in Part 7, subsection (B).

Part 10 – City Code Section 25-8-1 (*Definitions*)

- The definition of “floodplain modification” is revised to refer to the new section on determining the 100-year floodplain (Section 25-7-6).

Part 11 – City Code Section 25-8-92 (*Critical Water Quality Zones Established*)

- Subsections (A), (C), and (F) regarding critical water quality zone boundaries are revised to refer to the new section on determining the 100-year floodplain (Section 25-7-6).

Part 12 – City Code Section 25-8-121 (*Environmental Resource Inventory Requirement*)

- Subsection (A) is revised to remove floodplains from the list of property characteristics that require preparation of an environmental resource inventory.

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

- The definitions of “base flood,” “design flood,” “flood hazard area,” and “floodway” are amended to be consistent with the new methodology for determining the 100-year and 25-year floodplains.

Part 14 – Subsection 1612.3 (*Establishment of Flood Hazard Areas*) of City Code Section 25-12-3 (*Local Amendments to the Building Code*)

- Subsection 1 is being revised at the request of FEMA to ensure that the current Flood Insurance Studies and Flood Insurance Rate Maps are referenced.
- Subsection 2 is revised to clarify that the establishment of flood hazard areas is linked back to the definitions of 100-year floodplain and 25-year floodplain.

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. This means that the finished floor elevation of the building must be at least two feet above the 100-year floodplain.

Part 16 – Subsection G103.3 (*Determination of Design Flood Elevations*) of Appendix G (*Flood Resistant Construction*) of City Code Section 25-12-3 (*Local Amendments to the Building Code*)

- Subsection 2 is revised to clarify that the determination of design flood elevations is linked back to the definition of 100-year floodplain.

Part 17 – Subsection 320.2 (*Establishment of Flood Hazard Areas*) of City Code Section 25-12-133 (*Local Amendments to the 2015 Uniform Mechanical Code*)

- Subsection 2 is revised to clarify that the establishment of flood hazard areas is linked back to the definitions of 100-year and 25-year floodplain.

Part 18 – Subsection 321.8 (*Establishment of Flood Hazard Areas*) of City Code Section 25-12-153 (*Local Amendments to the Uniform Plumbing Code*)

- Subsection 2 is revised to clarify that the establishment of flood hazard areas is linked back to the definitions of 100-year floodplain and 25-year floodplain.

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

- Various definitions are revised to be consistent with the revised definitions and new methods of determining the 100-year floodplain and 25-year floodplain.

Part 23 – Subsection R322.2.1 (*Elevation requirements*) of the 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. This means that the finished floor elevation of the building must be at least two feet above the 100-year floodplain.

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

- This section states that the means of egress criteria for residential building permits is determined accordingly:
 - *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.

Parts 25, 26, 27, 28, 29, 30, and 31 – various sections of City Code Chapter 30-4 (*Drainage*) and the 30-5 (*Environment*)

- Corresponding sections of Chapters 30-4 and 30-5 are amended to match the proposed changes to Chapters 25-7 and 25-8.

Part 32 – This section refers to the effective date of the ordinance, which will be determined by the City Council.

ORDINANCE NO.

AN ORDINANCE AMENDING CITY CODE CHAPTERS 25-2, 25-7, 25-8, 25-12, 30-4 AND 30-5 RELATING TO REGULATION OF DEVELOPMENT WITHIN THE 25-YEAR AND 100-YEAR FLOODPLAINS.**BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:**

PART 1. Section 2.2 (*Building Height*) of City Code Chapter 25-2, Subchapter F, is amended to read as follows:

§ 2.2. - BUILDING HEIGHT.

Except where these regulations are superseded, the maximum building height for development subject to this Subchapter is:

- A. 32 feet for development located outside the 100-year floodplain;
and
- B. 35 feet for development located in the 100-year floodplain. [is 32 feet.]

Section 25-2-531 (*Height Limit Exceptions*) does not apply to development subject to this Subchapter, except for a chimney, vent, antenna, or energy conservation or production equipment or feature not designed for occupancy. Building height shall be measured under the requirements defined in Section 3.4.

PART 2. Subsection 3.4.2 of City Code Chapter 25-2, Subchapter F, Section 3.4 (*Height*) is amended to read as follows:

3.4.2. The grade used in the measurement of height for a building or setback plane shall be the lower of natural grade or finished grade, except height shall be measured from natural [~~finished~~] grade if the site is located in the 100-year floodplain. [÷

A. ~~—The site's grade is modified to elevate it out of the 100-year floodplain; or~~

B. ~~—The site is located on the approximately 698.7 acres of land known as the Mueller Planned Unit Development, which was zoned as a planned unit development (PUD) district by Ordinance Number 040826-61.]~~

PART 3. City Code Section 25-7-2 (*Definitions*) is amended to add a definition of “Atlas 14” and to renumber the other definitions in this section accordingly:

- (2) ATLAS 14 means the National Oceanic and Atmospheric Administration’s Precipitation-Frequency Atlas 14 of the United States, Volume 11, Version 2.0: Texas.

PART 4. City Code Section 25-7-2 (*Definitions*) is amended to change the definitions of “100-Year Floodplain” and “25-Year Floodplain” to read as follows:

- (10) 100-YEAR FLOODPLAIN means an area within a floodplain subject to a one percent or greater chance of flooding in any year as calculated in accordance with Section 25-7-6 (*Determination of the 100-Year Floodplain*) ~~[the 100-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual]~~.
- (11) 25-YEAR FLOODPLAIN means an area within a floodplain subject to a four percent or greater chance of flooding in any year as calculated in accordance with Section 25-7-7 (*Determination of the 25-Year Floodplain*) ~~[the 25-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual]~~.

PART 5. City Code Section 25-7-6 (*Computation of Stormwater Runoff*) is amended to read as follows:

§ 25-7-~~8~~[6] - COMPUTATION OF STORMWATER RUNOFF.

(A) Except as provided in Subsection (B), stormwater ~~[Stormwater]~~ runoff shall be computed on the basis of a fully developed contributing drainage area or watershed as determined under the Drainage Criteria Manual.

(B) When determining the runoff generated from the 500-year flood for the purpose of determining the 100-year floodplain under Subsection (B) of Section 25-7-6 (*Determination of the 100-Year Floodplain*), stormwater runoff shall be computed on the basis of an existing developed contributing drainage area or watershed.

PART 6. City Code Chapter 25-7 (*Drainage*) is amended to add a new Section 25-7-6 and 25-7-7 to read as follows:

§ 25-7-6 DETERMINATION OF THE 100-YEAR FLOODPLAIN.

For purposes of this chapter, the 100-year floodplain shall be:

- (A) For areas amended to incorporate Atlas 14 data, the 100-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual as amended to incorporate Atlas 14 data;
- (B) For areas not yet amended to incorporate Atlas 14 data, the 500-year floodplain either as depicted on the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
- (C) For the Colorado River, the 100-year floodplain as depicted on the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

§ 25-7-7 DETERMINATION OF THE 25-YEAR FLOODPLAIN.

For purposes of this chapter, the 25-year floodplain shall be:

- (A) For areas amended to incorporate Atlas 14 data, the 25-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual as amended to incorporate Atlas 14 data;
- (B) For areas not yet amended to consider Atlas 14 data, the 100-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
- (C) For the Colorado River, the 25-year floodplain as calculated under exiting conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14.

PART 7. City Code Section 25-7-93 (*General Exceptions*) is amended to read as follows:

§ 25-7-93 - GENERAL EXCEPTIONS.

(A) A site plan with a proposed building or parking area that encroaches on the 100-year floodplain may be approved if the encroachment is:

(1) a parking area that is smaller than 5,000 square feet or an unoccupied structure that has an area of less than 1,000 square feet, and the director determines that the proposed development:

(a) will not have an adverse effect on the 100-year floodplain or surrounding properties; and

(b) otherwise complies with the requirements of this title;

(2) a new building for residential use that replaces an existing legally constructed building for residential use on the same property and that does not increase the number of legal dwelling units on the property; ~~[a single-family or duplex residential structure in a subdivision;~~

~~(a) recorded before September 25, 1983; and~~

~~(b) in which only one residential structure is built on a single lot;]~~

(3) a building authorized by a waterway development permit issued under Chapter 9-10 before September 25, 1983; or

(4) a building in the 100-year floodplain of:

(a) Lady Bird Lake; ~~[or]~~

(b) the Colorado River downstream from Longhorn Dam;

(c) Lake Austin; or

(d) Lake Travis.

(B) To be approved under this section, [A] development [application that may be approved under this section] must:

(1) be no lower than two feet above the 100-year floodplain, as measured from the lowest floor elevation of any proposed building

[~~comply with the flood proofing requirements of Chapter 25-12, Article 1 (*Building Code*); and~~];

(2) comply with the requirements in Chapter 25-12, Article 1, Section 25-12-3 Appendix G (*Flood Resistant Construction*) and Section 1612 (*Flood Loads*);

(3) compensate for the floodplain volume displaced by the development; and

(4) result in no additional adverse flooding impact on other properties, as determined by the director.

PART 8. City Code Section 25-7-95 (*Requirements for Parking Areas*) is amended to read as follows:

§ 25-7-95 - REQUIREMENTS FOR PARKING AREAS.

(A) This section establishes requirements that apply to the development of a parking area.

(B) A development application with a proposed parking area that encroaches on the 100-year floodplain may be approved if:

(1) the level of water detention or waterflow in the parking area during the 100-year storm does not exceed:

(a) an average depth of eight inches; or

(b) a maximum depth of 12 inches at any point; and

(2) appropriate signs, approved by the director, are posted to notify persons that the water detention or waterflow in the parking lot may exceed a depth of eight inches.

(C) Notwithstanding the requirements of Subsection (B), a development application with a proposed parking area that encroaches on the 25-year floodplain or the 100-year floodplain may be approved if the parking area is[÷] accessory to a building approved under 25-7-93 (*General Exceptions*) or 25-7-96 (*Requirements in the 25-Year Floodplain*).

- 1 ~~[(1) accessory to a single-family or duplex residential structure on a lot~~
2 ~~in a subdivision recorded before September 25, 1983;~~
- 3 ~~(2) authorized by a waterway development permit issued under Chapter~~
4 ~~9-10 before September 25, 1983; or~~
- 5 ~~(3) in the 100-year floodplain of:~~
- 6 ~~(a) Lady Bird Lake; or~~
- 7 ~~(b) the Colorado River downstream from Longhorn Dam.]~~

8 **PART 9.** City Code Section 25-7-96 (*Requirements in the 25-Year Floodplain*) is
9 amended to read as follows:

10 **§ 25-7-96 - REQUIREMENTS IN THE 25-YEAR FLOODPLAIN.**

- 11 (A) The [This section establishes] requirements of this section [that] apply to
12 development in the 25-year floodplain.
- 13 (B) A development application with a proposed building or parking area that is
14 located on parkland, a golf course, or other public or recreational land and
15 that encroaches on the 25-year floodplain may be approved if:
- 16 ~~[(1) the building or parking area is located on parkland, a golf course, or~~
17 ~~other public or recreational land;]~~
- 18 (1)~~[(2)]~~ the building, if any, is:
- 19 ~~(a)~~[(i)]~~~~ a restroom or bath facility, concession stand, tool shed, or
20 pump house, wit
- 21 h an area of less than 1,000 square feet; or
- 22 ~~(b)~~[(ii)]~~~~ a dock that is located in the 25-year floodplain of Lady
23 Bird Lake, Lake Walter E. Long, or Lake Austin and
24 constructed, or proposed to be constructed, in compliance with
25 the regulations of this title; and
- 26 (2)~~[(3)]~~ the parking area, if any, is smaller than 5,000 square feet.~~[:]~~

- 27 ~~[(4) the director determines that the proposed development:~~

(a) ~~will not result in additional adverse flooding impact on other properties; and~~

(b) ~~otherwise complies with the requirements of this title.]~~

(C) A development application for a proposed new building for residential use that replaces an existing legally constructed building for residential use may be approved if the building is:

(1) on the same property; and

(2) not increasing the number of legal dwelling units on the property.

(D)[(C)] To be approved under this section, [A] development [application approved under this section] must:

(1) be no lower than two feet above the 100-year floodplain, as measured from the lowest floor elevation of any proposed building;

(2) comply with the requirements in Chapter 25-12, Article 1, Section 25-12-3 Appendix G (*Flood Resistant Construction*) and Section 1612 (*Flood Loads*);

(3) compensate for the floodplain volume displaced by the development;

(4) result in no additional adverse flooding impact on other properties, as determined by the director; and

(5) otherwise comply with the requirements of this title, as determined by the director.

~~[comply with the flood proofing requirements of Chapter 25-12, Article 1 (Building Code).]~~

PART 10. City Code Section 25-8-1 (*Definitions*) is amended to change the definition of “floodplain modification” to read as follows:

(10) FLOODPLAIN MODIFICATION means development that results in any vertical or horizontal change in the cross section of the 100-year floodplain

as determined under Section 25-7-6 (*Determination of the 100-Year Floodplain*) [~~calculated under fully developed conditions as prescribed by the Drainage Criteria Manual~~].

PART 11. Subsections (A), (C), and (F) of City Code Section 25-8-92 (*Critical Water Quality Zones Established*) are amended to read as follows:

(A) In the water supply rural watersheds, water supply suburban watersheds, and Barton Springs Zone, a critical water quality zone is established along each waterway classified under Section 25-8-91 (*Waterway Classifications*).

(1) The boundaries of a critical water quality zone coincide with the boundaries of the 100-year floodplain as determined under Section 25-7-6 (*Determination of the 100-Year Floodplain*), [~~calculated under fully developed conditions as prescribed by the Drainage Criteria Manual~~] except:

(a) for a minor waterway, the boundaries of the critical water quality zone are located not less than 50 feet and not more than 100 feet from the centerline of the waterway;

(b) for an intermediate waterway, the boundaries of the critical water quality zone are located not less than 100 feet and not more than 200 feet from the centerline of the waterway;

(c) for a major waterway, the boundaries of the critical water quality zone are located not less than 200 feet and not more than 400 feet from the centerline of the waterway; and

(d) for the main channel of Barton Creek, the boundaries of the critical water quality zone are located 400 feet from the centerline of the creek.

(2) Notwithstanding the provisions of Subsections (A)(1)(a), (b), and (c), a critical water quality zone does not apply to a previously modified drainage feature serving a railroad or public roadway right-of-way that does not possess any natural and traditional character and cannot

reasonably be restored to a natural condition, as prescribed in the Environmental Criteria Manual.

(C) In an urban watershed, a critical water quality zone is established along each waterway with a drainage area of at least 64 acres. This does not apply in the area bounded by IH-35, Riverside Drive, Barton Springs Road, Lamar Boulevard, and 15th Street.

(1) The boundaries of the critical water quality zone coincide with the boundaries of the 100-year floodplain as determined under Section 25-7-6 (*Determination of the 100-Year Floodplain*), ~~[calculated under fully developed conditions as prescribed by the Drainage Criteria Manual;]~~ provided that the boundary is not less than 50 feet and not more than 400 feet from the centerline of the waterway.

(2) Notwithstanding the provisions of Subsection (C)(1), a critical water quality zone does not apply to a previously modified drainage feature serving a railroad or public roadway right-of-way that does not possess any natural and traditional character and cannot reasonably be restored to a natural condition.

(F) Critical water quality zones are established along and parallel to the shorelines of the Colorado River downstream of Lady Bird Lake.

(1) The shoreline boundary of a critical water quality zone coincides with the river's ordinary high water mark, as defined by Code of Federal Regulations Title 33, Section 328.3 (*Definitions*).

(2) The inland boundary of a critical water quality zone coincides with the boundary of the 100-year floodplain as determined under Section 25-7-6 (*Determination of the 100-Year Floodplain*) ~~[delineated by the Federal Emergency Management Agency]~~, except that the width of the critical water quality zone, measured horizontally inland, is not less than 200 feet and not more than 400 feet.

PART 12. Subsection (A) of City Code Section 25-8-121 (*Environmental Resource Inventory Requirement*) is amended to read as follows:

(A) An applicant shall file an environmental resource inventory with the director for proposed development located on a tract:

- (1) within the Edwards Aquifer recharge or contributing zone;
- (2) within the Drinking Water Protection Zone;
- (3) containing a water quality transition zone;
- (4) containing a critical water quality zone; or
- (5) ~~[containing a floodplain; or~~
- (6)] with a gradient of more than 15 percent.

PART 13. Subsection 202.1 (*Amended Definitions*) of City Code Section 25-12-3 (*Local Amendments to the Building Code*) is amended to delete and replace the definitions of “base flood”, “design flood”, “flood hazard area”, and “floodway” with new definitions to read as follows:

BASE FLOOD. A flood that has the following characteristics:

1. For areas amended to incorporate Atlas 14 data, a flood that has a one percent chance of being equaled or exceeded in any given year (100-year flood) calculated under fully developed conditions as prescribed by the Drainage Criteria Manual as amended to incorporate Atlas 14 data;
2. For areas not yet amended to incorporate Atlas 14 data, a flood that has a 0.2 percent chance of being equaled or exceeded in any given year (500-year flood) calculated under the conditions underlying the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
3. For the Colorado River, a flood that has a one percent chance of being equaled or exceeded in any given year (100-year flood) calculated under the conditions underlying the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

DESIGN FLOOD. A flood that has the following characteristics:

1. For areas amended to incorporate Atlas 14 data, a flood associated with an area of a floodplain subject to a one percent or greater chance of being flooded in any year (100-year flood) based on projected full

development in accordance with the City of Austin Drainage Criteria Manual as amended to incorporate Atlas 14 data;

2. For areas not yet amended to incorporate Atlas 14 data, a flood associated with an area of a floodplain subject to a 0.2 percent or greater chance of being flooded in any year (500-year flood) calculated under the conditions underlying the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
3. For the Colorado River, a flood associated with an area of a floodplain subject to a one percent or greater chance of being flooded in any year (100-year flood) as depicted on the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

FLOOD HAZARD AREA. An area that has the following characteristics:

1. For areas amended to incorporate Atlas 14 data, an area within a floodplain subject to a one percent or greater chance of being flooded in any year (100-year flood) based on projected full development in accordance with the City of Austin Drainage Criteria Manual as amended to incorporate Atlas 14 data;
2. For areas not yet amended to incorporate Atlas 14 data, an area of a floodplain subject to a 0.2 percent or greater chance of being flooded in any year (500-year flood) calculated under the conditions underlying the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
3. For the Colorado River, an area within a floodplain subject to a one percent or greater chance of being flooded in any year (100-year flood) as depicted on the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

FLOODWAY. The channel of the river, creek, or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. An area that has the following characteristics:

1. For the Colorado River, an area with a floodplain subject to a four percent or greater chance of flooding in any year (25-year flood) based on existing developed conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
2. For all other rivers, creeks, and watercourses in areas amended to incorporate Atlas 14 data, an area with a four percent or greater chance of flooding in any year (25-year flood) based on a projected full development in accordance with the City of Austin Drainage Criteria Manual as amended to incorporate Atlas 14 data.
3. For all other rivers, creeks, and watercourses in areas not yet amended to incorporate Atlas 14 data, an area with a one percent or greater chance of flooding in any year (100-year flood) based on a projected full development in accordance with the City of Austin Drainage Criteria Manual using data predating Atlas 14.

PART 14. Subsection 1612.3 (*Establishment of Flood Hazard Areas*) of City Code Section 25-12-3 (*Local Amendments to the Building Code*) is amended to read as follows:

1612.3 Establishment of flood hazard areas. Flood hazard areas are:

1. the areas of special flood hazard areas identified by the Federal Emergency Management Agency in the current [a] scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Williamson County, Texas and Incorporated Areas" dated December 20, 2019, with accompanying Flood Insurance Rate Maps (FIRM) dated December 20, 2019, the current scientific and engineering report entitled "The Flood Insurance Study for Travis County, Texas and Incorporated Areas" dated January 6, 2016, with accompanying Flood Insurance Rate Maps dated January 6, 2016,

and any [~~"The Flood Insurance Study for Austin, Texas," dated January 6, 2016, with accompanying Flood Insurance Rate Maps and Flood Boundary Floodway Maps (FIRM and FBFM) and related supporting data, along with any amendments or~~] revisions [~~thereto,~~] are [~~hereby~~] adopted by reference and declared to be a part of this section; and

2. the 100-year and 25-year floodplains as defined [~~based on projected full development as specified~~] in the Austin City Code and Drainage Criteria Manual are adopted by reference and declared to be part of this section.

PART 15. Subsection 1612.4.1 (*Freeboard*) of City Code Section 25-12-3 (*Local Amendments to the Building Code*) is amended to read as follows:

1612.4.1 Freeboard. A minimum freeboard of two feet [~~one foot~~] shall be added where the design flood elevation or other elevation requirements are specified, unless otherwise specified in Title 25 (*Land Development*).

PART 16. Subsection G103.3 (*Determination of Design Flood Elevations*) of Appendix G (*Flood Resistant Construction*) of City Code Section 25-12-3 (*Local Amendments to the Building Code*) is amended to read as follows:

G103.3 Determination of design flood elevations. If design flood elevations are not specified, the building official is authorized to require the applicant to:

1. Obtain, review and reasonably utilize data available from a federal, state or other source; or
2. Determine the design flood elevation in accordance with the 100-year floodplain as defined in the Austin City Code [~~based on projected full development in accordance with the City of Austin Drainage Criteria Manual~~]. Such analyses shall be performed and sealed by a Professional Engineer licensed by the State of Texas. Studies, analyses and computations shall be submitted in sufficient detail to allow review and approval by the building official. The accuracy of data submitted for such determination shall be the responsibility of the applicant.

PART 17. Subsection 320.2 (*Establishment of Flood Hazard Areas*) of City Code Section 25-12-133 (*Local Amendments to the 2015 Uniform Mechanical Code*) is amended to read as follows:

320.2 Establishment of flood hazard areas. A flood hazard area is:

1. the areas of special flood hazard areas identified by the Federal Emergency Management Agency in the current [a] scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Williamson County, Texas and Incorporated Areas" dated December 20, 2019, with accompanying Flood Insurance Rate Maps (FIRM) dated December 20, 2019, the current scientific and engineering report entitled "The Flood Insurance Study for Travis County, Texas and Incorporated Areas" dated January 6, 2016, with accompanying Flood Insurance Rate Maps dated January 6, 2016, and any ["The Flood Insurance Study for Austin, Texas," dated January 6, 2016, with accompanying Flood Insurance Rate Maps and Flood Boundary Floodway Maps (FIRM and FBFM) and related supporting data, along with any amendments or] revisions [thereto,] are [hereby] adopted by reference and declared to be a part of this section; or
2. a 100-year or 25-year floodplain as defined [~~based on projected full development as specified~~] in the Austin City Code [~~and Drainage Criteria Manual~~].

PART 18. Subsection 321.8 (*Establishment of Flood Hazard Areas*) of City Code Section 25-12-153 (*Local Amendments to the Uniform Plumbing Code*) is amended to read as follows:

321.8 Establishment of flood hazard areas. The City establishes a flood hazard area that includes the following:

1. Areas of special flood [~~flood~~] hazard areas identified by the Federal Emergency Management Agency in the current [a] scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Williamson County, Texas and Incorporated Areas" dated December 20, 2019, with accompanying Flood Insurance Rate Maps (FIRM) dated December 20, 2019, the current scientific and engineering report entitled

"The Flood Insurance Study for Travis County, Texas and Incorporated Areas" dated January 6, 2016, with accompanying Flood Insurance Rate Maps dated January 6, 2016, and any [~~"The Flood Insurance Study for Austin, Texas," dated January 6, 2016, with accompanying Flood Insurance Rate Maps and Flood Boundary Floodway Maps (FIRM and FBFM) and related supporting data, along with any amendments or~~] revisions [thereto,] are [hereby] adopted by reference and declared to be a part of this section; and

2. The 100-year and 25-year floodplains as defined in the Austin City Code [~~based on projected full developments as specified in the City Code and Drainage Criteria Manual~~] are adopted by reference and declared to be part of this section.

PART 19. Subsection R202 (*Definitions*) of City Code Section 25-12-243 (*Local Amendments to the International Residential Code*) is amended to delete and replace the definitions of "25-year flood plain", "base flood", "design flood", "flood hazard area", and "floodway" to read as follows:

25-YEAR FLOODPLAIN means an area that has the following characteristics:

- (A) For areas amended to incorporate Atlas 14 data, the 25-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual as amended to incorporate Atlas 14 data;
- (B) For areas not yet amended to consider Atlas 14 data, the 100-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
- (C) For the Colorado River, the 25-year floodplain as calculated under exiting conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14.

BASE FLOOD means a flood that has the following characteristics:

1. For areas amended to incorporate Atlas 14 data, a flood that has a one percent chance of being equaled or exceeded in any given year (100-year flood) calculated under fully developed conditions as

prescribed by the Drainage Criteria Manual as amended to incorporate Atlas 14 data;

2. For areas not yet amended to incorporate Atlas 14 data, a flood that has a 0.2 percent chance of being equaled or exceeded in any given year (500-year flood) calculated under the conditions underlying the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
3. For the Colorado River, a flood that has a one percent chance of being equaled or exceeded in any given year (100-year flood) calculated under the conditions underlying the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

DESIGN FLOOD means a flood that has the following characteristics:

1. For areas amended to incorporate Atlas 14 data, the flood associated with an area of a floodplain subject to a one percent or greater chance of being flooded in any year (100-year flood) based on projected full development in accordance with the City of Austin Drainage Criteria Manual as amended to incorporate Atlas 14 data;
2. For areas not yet amended to incorporate Atlas 14 data, the flood associated with an area of a floodplain subject to a 0.2 percent or greater chance of being flooded in any year (500-year flood) calculated under the conditions underlying the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
3. For the Colorado River, the flood associated with an area of a floodplain subject to a one percent or greater chance of being flooded in any year (100-year flood) as depicted on the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

FLOOD HAZARD AREA means an area that has the following characteristics:

1. For areas amended to incorporate Atlas 14 data, an area within a floodplain subject to a one percent or greater chance of being flooded in any year (100-year flood) based on projected full development in accordance with the City of Austin Drainage Criteria Manual as amended to incorporate Atlas 14 data;
2. For areas not yet amended to incorporate Atlas 14 data, an area within a floodplain subject to the 500-year floodplain either as depicted on the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
3. For the Colorado River, an area within a floodplain subject to a one percent or greater chance of being flooded in any year (100-year flood) as depicted on the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

FLOODWAY means the channel of the river, creek, or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. An area that has the following characteristics:

1. For the Colorado River, an area with a floodplain subject to a four percent or greater chance of flooding in any year (25-year flood) based on existing developed conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14;
2. For all other rivers, creeks, and watercourses in areas amended to incorporate Atlas 14 data, an area with a four percent or greater chance of flooding in any year (25-year flood) based on a projected full development in accordance with the City of Austin Drainage Criteria Manual as amended to incorporate Atlas 14 data; or
3. For all other rivers, creeks, and watercourses in areas not yet amended to incorporate Atlas 14 data, an area with a one percent or

greater chance of flooding in any year (100-year flood) based on a projected full development in accordance with the City of Austin Drainage Criteria Manual using data predating Atlas 14.

PART 20. Subsection R202 (*Definitions*) of City Code Section 25-12-243 (*Local Amendments to the International Residential Code*) is amended to add a new definition of “100-year flood plain” to read as follows:

100-YEAR FLOOD PLAIN means an area that has the following characteristics:

- (A) For areas amended to incorporate Atlas 14 data, the 100-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual as amended to incorporate Atlas 14 data;
- (B) For areas not yet amended to incorporate Atlas 14 data, the 500-year floodplain either as depicted on the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
- (C) For the Colorado River, the 100-year floodplain as depicted on the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

PART 21. Subsection R322.1.4 (*Establishing the Design Flood Elevation*) of City Code Section 25-12-243 (*Local Amendments to the International Residential Code*) is amended to read as follows:

R322.1.4 Establishing the design flood elevation. The design flood elevation defines areas prone to flooding and describes, at a minimum, the base flood elevation at the depth of peak elevation of flooding based upon: ~~[with the ultimate development of the watershed, which has a one percent (100-year flood) or greater chance of being equaled or exceeded in any given year.]~~

- 1. For areas amended to incorporate Atlas 14 data, the 100-year floodplain calculated under fully developed conditions in accordance with the City of Austin Drainage Criteria Manual as amended to incorporate Atlas 14 data;

2. For areas not yet amended to incorporate Atlas 14 data, the 500-year floodplain either as depicted on the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
3. For the Colorado River, the 100-year floodplain as depicted on the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

PART 22. Subsection R322.2 (*Establishment of Flood Hazard Areas [Including A Zones]*) of City Code Section 25-12-243 (*Local Amendments to the International Residential Code*) is amended to read as follows:

R322.2 Establishment of flood hazard areas (including A Zones). A flood hazard area is:

1. the areas of special flood hazard areas identified by the Federal Emergency Management Agency in the current [a] scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Williamson County, Texas and Incorporated Areas" dated December 20, 2019, with accompanying Flood Insurance Rate Maps (FIRM) dated December 20, 2019, the current scientific and engineering report entitled "The Flood Insurance Study for Travis County, Texas and Incorporated Areas" dated January 6, 2016, with accompanying Flood Insurance Rate Maps dated January 6, 2016, and any ["The Flood Insurance Study for Austin, Texas," dated January 6, 2016, with accompanying Flood Insurance Rate Maps and Flood Boundary Floodway Maps (FIRM and FBFM) and related supporting data, along with any amendments or] revisions ~~[thereto,]~~ are ~~[hereby]~~ adopted by reference and declared to be a part of this section; or
2. a 100-year or 25-year floodplain as defined ~~[based on projected full development as specified]~~ in the Austin City Code ~~[and Drainage Criteria Manual]~~.

PART 23. Subsection R322.2.1 (*Elevation requirements*) of City Code Section 25-12-243 (*Local Amendments to the International Residential Code*) is amended to read as follows:

R322.2.1 Elevation requirements.

1. Unless otherwise specified in the Land Development Code, the lowest floor of a building or structure must be elevated a minimum of two feet [~~one foot~~] above the design flood elevation.
2. Where the design flood elevation or other elevation requirement specifies, a minimum freeboard of two feet [~~one foot~~] shall be added.
3. In areas of shallow flooding (AO Zones), the lowest floor (including a basement) of a building or structure must be elevated higher than the highest adjacent grade as the depth number specified in feet (mm) on the FIRM plus two feet [~~one foot~~], or at least three feet (915 mm) [~~two feet (610 mm)~~] if a depth number is not specified.
4. A basement floor that is below grade on all sides must be elevated at least two feet [~~one foot~~] above the design flood elevation.

Exception: An enclosed area, including a basement, which is below the design flood elevation but not below grade on all sides must meet the requirements in Section R322.2.2 (*Enclosed area below design flood elevation*).

PART 24. Subsection R322.2.6 (*Means of egress*) of City Code Section 25-12-243 (*Local Amendments to the International Residential Code*) is amended to read as follows:

R322.2.6 Means of egress.

1. Unless otherwise approved by the building official, normal access to the building shall be by direct connection with an area that is a minimum of one foot above the design flood elevation.

- 1 2. For a building that is part of a single-family condo regime
2 residential building permit application and part of a site plan that
3 was approved between December 1, 2017, and <INSERT
4 EFFECTIVE DATE OF ORDINANCE>, compliance with this
5 section shall be determined at the time of site plan approval.
- 6 3. For a building that is part of a single-family building permit
7 application and part of (a) a preliminary plan that was submitted for
8 approval between December 1, 2014 and <INSERT EFFECTIVE
9 DATE OF ORDINANCE> or (b) a final plat that was approved
10 between December 1, 2017 and <INSERT EFFECTIVE DATE OF
11 ORDINANCE>, compliance with this section shall be determined
12 at the time of preliminary plan or final plat approval, respectively.
- 13 4. For all other buildings, compliance with this section shall be
14 determined at the time of building permit application.

15 **PART 25.** City Code Section 30-4-1 (*Definitions*) is amended to add a definition of
16 “Atlas 14” and to renumber the other definitions in this section accordingly:

- 17 (9) ATLAS 14 means the National Oceanic and Atmospheric
18 Administration’s Precipitation-Frequency Atlas 14 of the United States,
19 Volume 11, Version 2.0: Texas.

20 **PART 26.** City Code Section 30-4-1 (*Definitions*) is amended to change the definitions
21 of “100-Year Floodplain” and “25-Year Floodplain” to read as follows:

- 22 (10) 100-YEAR FLOODPLAIN means an area within a floodplain subject to
23 a one percent or greater chance of flooding in any year as calculated in
24 accordance with Section 30-4-5 (*Determination of the 100-Year*
25 Floodplain) [the 100-year floodplain calculated under fully developed
26 conditions as prescribed by the Drainage Criteria Manual].
- 27 (11) 25-YEAR FLOODPLAIN means an area within a floodplain subject to a
28 four percent or greater chance of flooding in any year as calculated in
29 accordance with Section 30-4-6 (*Determination of the 25-Year*
30 Floodplain) [the 25-year floodplain calculated under fully developed
31 conditions as prescribed by the Drainage Criteria Manual].

PART 27. City Code Section 30-4-5 (*Computation of Stormwater Runoff*) is amended to read as follows:

§ 30-4-~~7~~[5] COMPUTATION OF STORMWATER RUNOFF.

- (A) Except as provided in Subsection (B), stormwater [~~Stormwater~~] runoff shall be computed on the basis of a fully developed contributing drainage area or watershed as determined under the Drainage Criteria Manual.
- (B) When determining the runoff generated from the 500-year flood for the purpose of determining the 100-year floodplain under Subsection (B) of Section 30-4-5 (*Determination of the 100-Year Floodplain*), stormwater runoff shall be computed on the basis of an existing developed contributing drainage area or watershed.

PART 28. City Code Chapter 30-4 (*Drainage*) is amended to add a new Section 30-4-5 and 30-4-6 to read as follows:

§ 30-4-5 DETERMINATION OF THE 100-YEAR FLOODPLAIN.

For purposes of this chapter, the 100-year floodplain shall be:

- (A) For areas amended to incorporate Atlas 14 data, the 100-year floodplain calculated under fully developed conditions as prescribed by the Drainage Criteria Manual as amended to incorporate Atlas 14 data;
- (B) For areas not yet amended to incorporate Atlas 14 data, the 500-year floodplain either as depicted on the FEMA Flood Insurance Rate Map as of January 6, 2016, as subsequently revised, or as calculated under existing conditions as prescribed by the Drainage Criteria Manual using data predating Atlas 14; or
- (C) For the Colorado River, the 100-year floodplain as depicted on the FEMA Flood Insurance Rate Map dated January 6, 2016, or as subsequently revised.

§ 30-4-6 DETERMINATION OF THE 25-YEAR FLOODPLAIN.

For purposes of this chapter, the 25-year floodplain shall be:

- 1 (A) For areas amended to incorporate Atlas 14 data, the 25-year
2 floodplain calculated under fully developed conditions as
3 prescribed by the Drainage Criteria Manual as amended to
4 incorporate Atlas 14 data;
- 5 (B) For areas not yet amended to consider Atlas 14 data, the 100-year
6 floodplain calculated under fully developed conditions as
7 prescribed by the Drainage Criteria Manual using data predating
8 Atlas 14; or
- 9 (C) For the Colorado River, the 25-year floodplain as calculated under
10 exiting conditions as prescribed by the Drainage Criteria Manual
11 using data predating Atlas 14.

12 **PART 29.** City Code Section 30-5-1 (*Definitions*) is amended to change the definition
13 of “floodplain modification” to read as follows:

- 14 (10) FLOODPLAIN MODIFICATION means development that results in any
15 vertical or horizontal change in the cross section of the 100-year
16 floodplain as determined under Section 30-4-5 (*Determination of the 100-*
17 *Year Floodplain*) [~~calculated under fully developed conditions as~~
18 ~~prescribed by the Drainage Criteria Manual~~].

19 **PART 30.** Subsections (A), (C), and (F) of City Code Section 30-5-92 (*Critical Water*
20 *Quality Zones Established*) are amended to read as follows:

- 21 (A) In the water supply rural watersheds, water supply suburban watersheds,
22 and Barton Springs Zone, a critical water quality zone is established along
23 each waterway classified under Section 30-5-91 (*Waterway*
24 *Classifications*).
- 25 (1) The boundaries of a critical water quality zone coincide with the
26 boundaries of the 100-year floodplain as determined under Section
27 30-4-5 (*Determination of the 100-Year Floodplain*), [~~calculated~~
28 ~~under fully developed conditions as prescribed by the Drainage~~
29 ~~Criteria Manual~~] except:

- (a) for a minor waterway, the boundaries of the critical water quality zone are located not less than 50 feet and not more than 100 feet from the centerline of the waterway;
- (b) for an intermediate waterway, the boundaries of the critical water quality zone are located not less than 100 feet and not more than 200 feet from the centerline of the waterway;
- (c) for a major waterway, the boundaries of the critical water quality zone are located not less than 200 feet and not more than 400 feet from the centerline of the waterway; and
- (d) for the main channel of Barton Creek, the boundaries of the critical water quality zone are located 400 feet from the centerline of the creek.

- (2) Notwithstanding the provisions of Subsections (A)(1)(a), (b), and (c), a critical water quality zone does not apply to a previously modified drainage feature serving a railroad or public roadway right-of-way that does not possess any natural and traditional character and cannot reasonably be restored to a natural condition, as prescribed in the Environmental Criteria Manual.

- (C) In an urban watershed, a critical water quality zone is established along each waterway with a drainage area of at least 64 acres. This does not apply in the area bounded by IH-35, Riverside Drive, Barton Springs Road, Lamar Boulevard, and 15th Street.

- (1) The boundaries of the critical water quality zone coincide with the boundaries of the 100-year floodplain as determined under Section 30-4-5 (*Determination of the 100-Year Floodplain*), ~~[calculated under fully developed conditions as prescribed by the Drainage Criteria Manual;]~~ provided that the boundary is not less than 50 feet and not more than 400 feet from the centerline of the waterway.
- (2) Notwithstanding the provisions of Subsection (C)(1), a critical water quality zone does not apply to a previously modified drainage feature serving a railroad or public roadway right-of-way that does not

possess any natural and traditional character and cannot reasonably be restored to a natural condition.

(F) Critical water quality zones are established along and parallel to the shorelines of the Colorado River downstream of Lady Bird Lake.

(1) The shoreline boundary of a critical water quality zone coincides with the river's ordinary high water mark, as defined by Code of Federal Regulations Title 33, Section 328.3 (*Definitions*).

(2) The inland boundary of a critical water quality zone coincides with the boundary of the 100-year floodplain as determined under Section 30-4-5 (Determination of the 100-Year Floodplain) [~~delineated by the Federal Emergency Management Agency~~], except that the width of the critical water quality zone, measured horizontally inland, is not less than 200 feet and not more than 400 feet.

PART 31. Subsection (A) of City Code Section 30-5-121 (*Environmental Resource Inventory Requirement*) is amended to read as follows:

(A) An applicant shall file an environmental resource inventory with the director for proposed development located on a tract:

(1) within the Edwards Aquifer recharge or contributing zone;

(2) within the Drinking Water Protection Zone;

(3) containing a water quality transition zone;

(4) containing a critical water quality zone; or

(5) [~~containing a floodplain; or~~

(6)] with a gradient of more than 15 percent.

PART 32. Parts 1 through 24 of this ordinance take effect on _____, 2019. Parts 25 through 31 of this ordinance take effect on the effective date of a Travis County ordinance enacting the same or substantially similar provisions.

PASSED AND APPROVED

_____, 2019

§
§
§

Steve Adler
Mayor

APPROVED:

Anne L. Morgan
City Attorney

ATTEST:

Jannette S. Goodall
City Clerk

DRAFT



Affordability Impact Statement

Neighborhood Housing and Community Development Department

LDC Section 25-7-2 - Definitions (Definitions of the 25- and 100-year floodplains)

LDC Section 25-7-6 - Determination of the 100-year Floodplain

LDC Section 25-7-7 - Determination of the 25-year Floodplain

LDC Section 25-7-8 - Computation of Stormwater Runoff

LDC Section 25-7-93 - General Exceptions (Exceptions for buildings in 100-year floodplain)

LDC Section 25-7-96 - Requirements in the 25-Year Floodplain

LDC Section 25-8-1 - Definitions (Definitions of floodplain modification)

LDC Section 25-8-92 - Critical Water Quality Zones Established

LDC Section 25-8-121 - Environmental Resource Inventory Requirement

Corresponding updates to technical codes

25-12-3 Local Amendments to the Building Code, Section 1612 Flood Loads

25-12-133 Local Amendments to the 2015 Uniform Mechanical Code

25-12-153 Local Amendments to the Uniform Plumbing Code

25-12-243 Local Amendments to the International Residential Code

Corresponding updates to Title 30

30-4-1 Definitions

30-4-5 - Determination of the 100-Year Floodplain

30-4-6 - Determination of the 25-Year Floodplain

30-4-7 - Computation of Stormwater Runoff

30-5-1 - Definitions (Definitions of floodplain modification)

30-5-92 - Critical Water Quality Zones Established

30-5-121 - Environmental Resource Inventory Requirement

Background and Proposed Code Amendments

In the fall of 2018, the National Weather Service completed a study of historical rainfall amounts for Texas. The study, called Atlas 14, showed that severe flooding in Austin happens more frequently than previously thought. The proposed code amendments are intended to align City regulations with this new understanding of flood risk.

The proposed code amendments would redefine the existing 100-year and 25-year floodplain boundaries to reflect our new understanding of flood risk identified by the Atlas 14 study. The current 500-year and 100-year floodplains are very close proxies for the Atlas 14 100-year and 25-year floodplains, respectively. The proposed code amendments would therefore, during an interim period, redefine the current FEMA 500-year floodplain as the 100-year regulatory floodplain, and the current fully-developed 100-year floodplain as the 25-year floodplain. This interim period would end when the City updates the floodplain studies, which is expected to be within 2 to 3 years. The total amount of land within the 100-year floodplain would increase from 19,200 acres to 22,700 acres, or from 9% to 11% of the City's full and limited purpose jurisdiction.

The proposed code amendments would also change existing City regulations that govern development in the floodplain. First, all residential development within the 100-year floodplain must have a finished floor elevation of at least two feet above the floodplain. Second, a new "Redevelopment Exception"

provides an administrative permit approval process to allow certain residential properties with existing buildings in the 100-year floodplain to redevelop their properties in a way that reduces their flood risk. Third, the proposed amendments would expand the current exception for encroachment into the 100-year floodplain.

The Land Development Code, both current and proposed, prohibits buildings and parking lots from encroaching into the 100-year floodplain unless the development qualifies for an exception or is approved for a variance. The proposed code amendments would maintain the current exceptions for encroachment into the 100-year floodplain in the central business area, for facilities in parkland, and for parking in areas of shallow flooding of the Colorado River. These regulations would also apply to the 100-year floodplains of Lake Austin and Lake Travis. If a proposed development does not comply with the requirements for an exception, then a variance would be required to construct new buildings and parking lots within the 100-year floodplain on undeveloped tracts.

Land Use/Zoning Impacts on Development

The proposed code amendments would add approximately 550 acres of undeveloped land to the regulatory 100-year floodplain, which is approximately 1.6% of all undeveloped land within the City limits. Of this “new” floodplain area, approximately 65% impacts less than 10% of the properties’ total area. The potential cost impact to undeveloped properties depends on the circumstances of the property and multiple variables, including the size of the property, the total developable area, the portion of the developable area impacted by the floodplain, among others.

Approximately 2,900 single-family and duplex residential buildings are currently located within the City’s regulatory 100-year floodplain. The proposed code amendments would add approximately 2,600 residential buildings to the City’s regulatory 100-year floodplain. In total, the number of single-family and duplex buildings within the current 100-year floodplain and proposed new floodplain areas represents less than 3% of citywide single-family and duplex buildings.

Development on properties within the proposed 100-year floodplain would be subject to new regulations. A City Council variance would be required to increase the number of dwelling units on the site. Additionally, if an existing building is not elevated two feet above the floodplain, it would be classified as a nonconforming use, subject to limits on improvements and repairs. The proposed code amendments would not require existing buildings to come into compliance with the new regulations unless they are being remodeled (in some cases) or redeveloped.

Properties within the proposed 25-year floodplain are already subject to current floodplain regulations since they are within the existing 100-year floodplain. While a large percentage of these properties are already nonconforming uses under the current code, the increase in floodplain depths associated with the proposed code amendment, as well as the increased elevation requirement, will increase the number of nonconforming properties. However, the proposed Redevelopment Exception would provide an administrative process to allow a property owner to bring an existing home into compliance with current code or replace it with a new building that meets code.

Similar to the prior discussion of impacts to undeveloped properties, the cost impact to existing residential properties also depends on the circumstances of the site. For example, if the new area of

100-year floodplain is relatively small and either the existing or proposed house remains outside of the floodplain and at an appropriate elevation, the cost of development on the lot could be insignificant. If a property owner chooses to use the Redevelopment Exception, the cost of development will either increase some (to reflect additional engineering costs if the property was not previously in the 100-year floodplain) or decrease (if the property was previously in the 100-year floodplain but was not eligible for an exception). (See a separate discussion of construction costs, below.)

Impact on Construction Costs

The proposed code amendment would increase the number of existing buildings and developable lots within the regulatory floodplain and increase the required finished floor elevations for new buildings constructed in the floodplain. This will increase constructions costs within the 11% of the City's land area subject to these regulations.

The Neighborhood Housing and Community Development Department estimates that the proposed changes to floodplain depths and associated finished floor requirements would increase average slab on grade foundation costs from \$15,000 to \$30,000 and increase pier and beam foundation costs from \$13,500 to \$19,000.

Additionally, new and redevelopment permitted in the floodplain is required to demonstrate through engineering that the development does not create an adverse flooding impact on other properties, preserves floodplain storage capacity on site, and is structurally designed to withstand flood forces. As the 100-year floodplain expands to include a 2% increase of city land, that area would now be required to provide and bear the cost of producing this documentation, while properties already subject to these requirements may see the costs for such engineering increase due to an increase in flood depths and velocities.

Impact to Affordable Housing

Whether a property encroaches on the 100-year floodplain is a consideration for applications submitted to the City of Austin to access funding for home repair or for accessibility modifications. City staff must evaluate the cost associated with developing a property in the floodplain. Project(s) that would now be in the 100-year floodplain will not be eligible for funding. Any existing projects/buildings seeking funding for rehabilitation could be restricted to 50% of the value of the building. Any buildings in the floodplain that required rehabilitation funding greater than 50% of the value of the building would have to demolish the existing building and build anew. Therefore, the rehabilitation would have to use more funds for construction and engineering. Such an increase in cost could potentially mean the reduction of the number of units provided or restricting the affordability of the units (MFI to be served).

Upon adoption of updated floodplains by FEMA, anyone purchasing a dwelling or re-financing within the new floodplain boundaries will be required to secure flood plain insurance by their mortgage lender. This FEMA's floodplain update process will be completed regardless of the ordinance's adoption.

Developments that are requesting Home Repair Loan Program, Down Payment Assistance, or Architectural Barrier Removal that are located in the proposed 25-year floodplain would no longer be

eligible to receive funds per Federal Funding requirements. Developments that are requesting Home Repair Loan Program, Down Payment Assistance, or Architectural Barrier Removal that are located in the proposed 100-year floodplain would be required to secure floodplain insurance. Developments that are part of the Home Repair Loan Program that are located in the proposed 100-year floodplain that have a building that is a demolition and re-construction candidate (repairs exceed \$65,000), would be cost prohibitive due to the increased cost of foundation construction and engineering to demonstrate flood risk reduction requirements. The total maximum limit for a demolition/re-construction loan is \$130,000 (includes all soft, construction, and loan processing costs).

Other Policy Considerations

While the proposed ordinance does impact the up-front construction costs and development potential of properties within the floodplain, there is also a negative affordability impact associated with not proceeding with the proposed code amendment. Broadly, allowing new development to occur in known high-risk flood areas could lead to future expenditures of City resources on flood mitigation and recovery. Additionally, there are public safety costs associated with allowing new residential buildings in floodplains, including search-and-rescue, first responder safety, and associated costs related to emergency and disaster operations. The costs of these drainage and public safety services are borne by all Austin residents in the form of taxes and service fees. For individual property owners within the floodplain, the proposed ordinance will positively impact long-term affordability in terms of future flood losses and insurance costs. Since Austin joined the National Flood Insurance Program, 83% of all flood insurance claims in the City have come from single-family residential properties, totaling more than \$46.5 million dollars in paid losses. Homes elevated above the floodplain are much less likely to experience flood losses. For families without flood insurance this substantial reduction in flood risk can prevent potentially significant losses: losses that disproportionately impact vulnerable populations.

The Watershed Protection Department is currently initiating the process to produce new floodplain studies for every watershed in the City based upon the Atlas 14 data. This multi-year process will result in new City and FEMA floodplain maps and will be completed irrespective of adoption of this proposed code amendment. At the time those studies and maps are completed, development restrictions based upon current code would automatically go into effect for areas shown to be in the 100- and 25-year floodplains. In some cases, those regulations would be more restrictive than the proposed ordinance, and would limit the ability of property owners to redevelop existing properties. For example, the proposed Redevelopment Exception would grant all existing residential properties the entitlement to redevelop with a building elevated at least two feet above the 100-year floodplain elevation.

Furthermore, once the new FEMA flood insurance rates maps are completed and effective, federally-backed mortgage holders within the 100-year floodplain will be required by their lender to carry a flood insurance policy. In areas being added to the 100-year floodplain, the cost of insurance could be significantly impacted by whether the building was built under today's regulations or those of the proposed ordinance. While flood insurance costs will vary based upon coverage amounts, deductibles, and actions taken by the homeowner to maintain coverage prior to map changes, it is possible to provide examples that demonstrate the potential savings between buildings. For example, a building insured for \$200,000 in building coverage and \$80,000 in contents coverage built at grade would cost

\$1,875 a year or more to insure, depending on how deep it was in the 100-year floodplain. Comparatively, a building with the same coverage levels built with its finished floor 2 feet above the 100-year floodplain, as would be required under the proposed code amendment, would cost \$650 a year to insure. Over the course of a 30-year mortgage, elevating a building confers significant savings and should be considered when examining the costs associated with the proposed ordinance.

Date: 1/18/19

Director's Signature: 



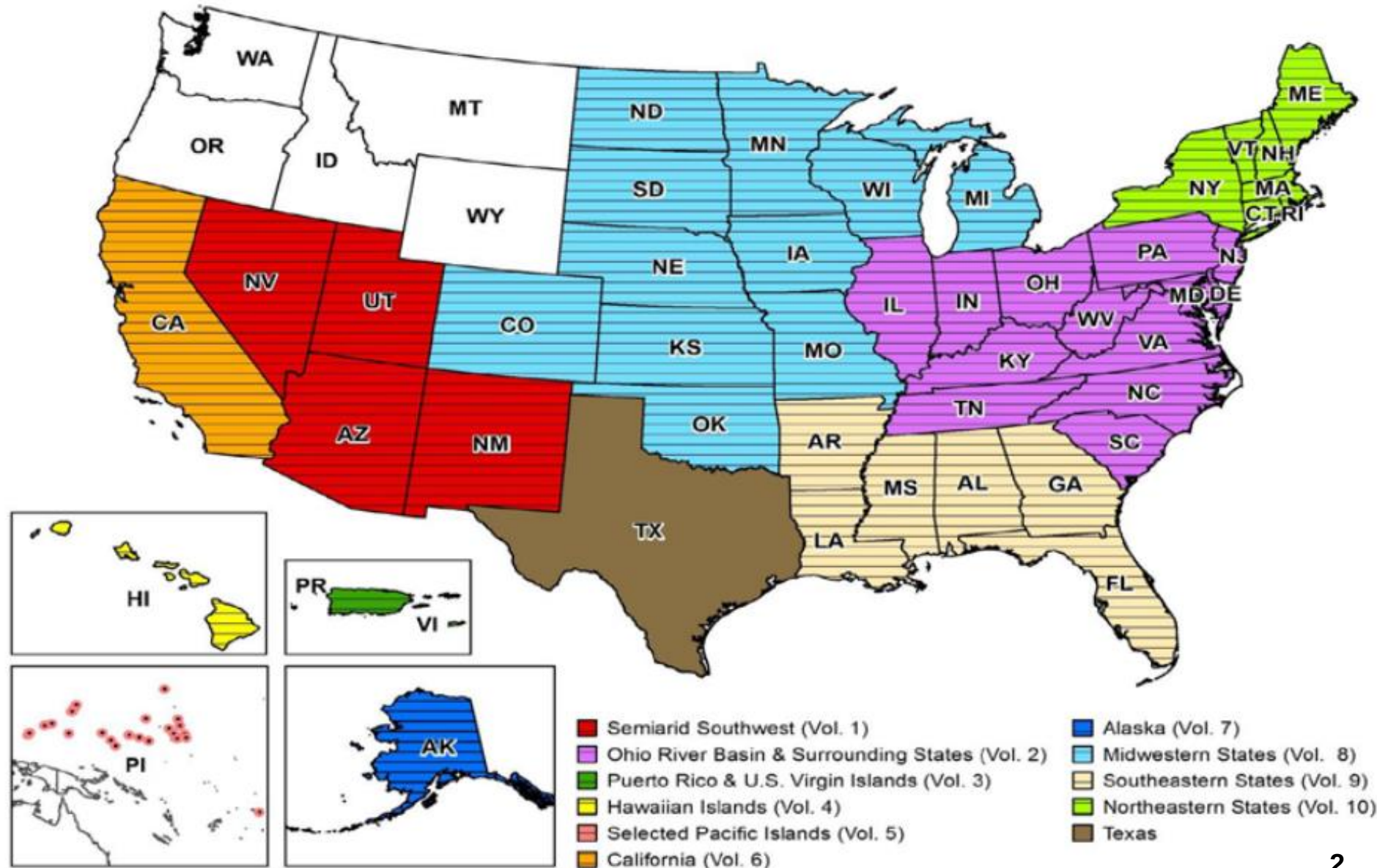
ATLAS 14: AUSTIN'S NEW UNDERSTANDING OF FLOOD RISK

Atlas 14 Background

- Nationwide study of rainfall intensities

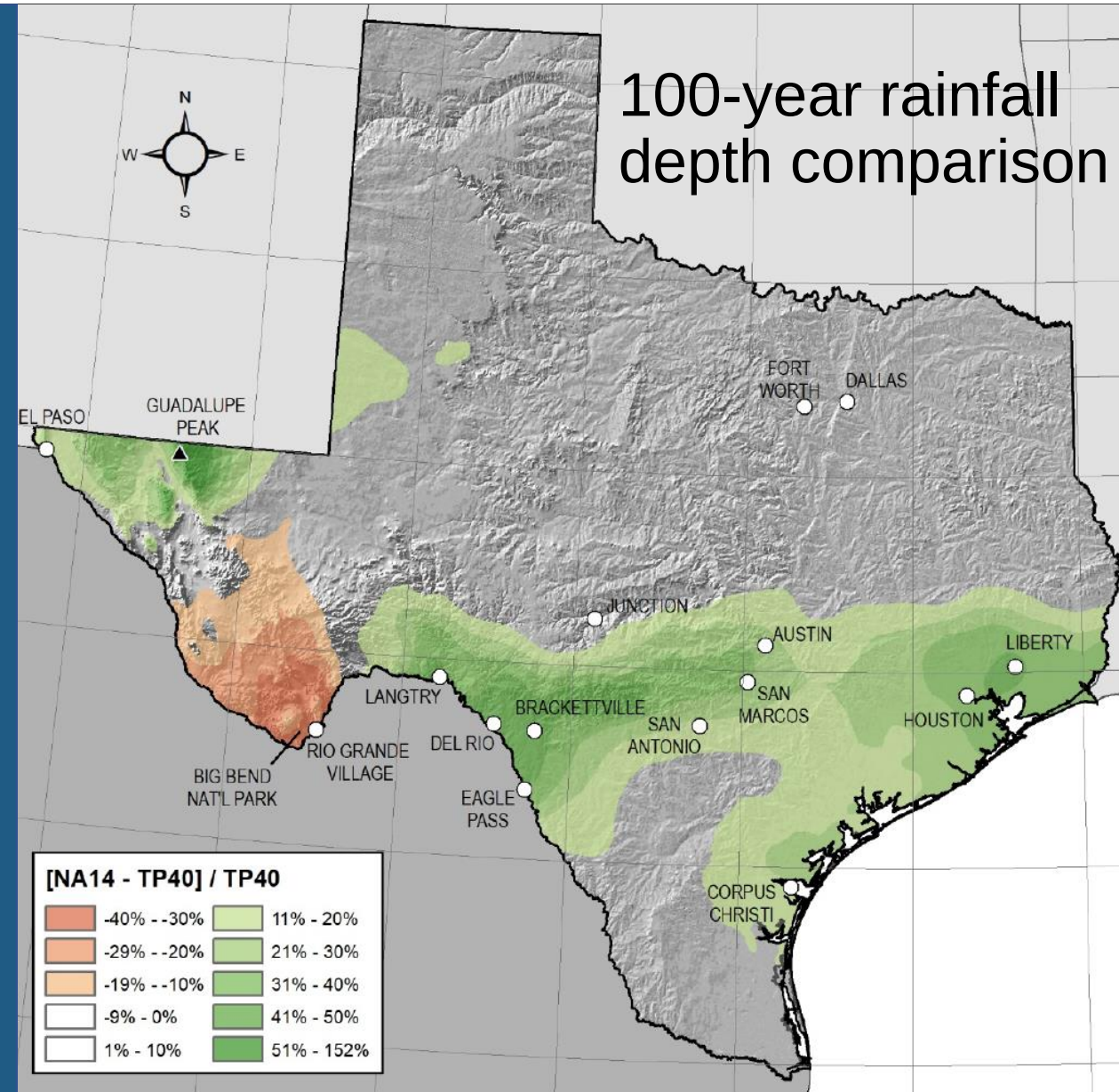
Partners

- 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 – Statewide

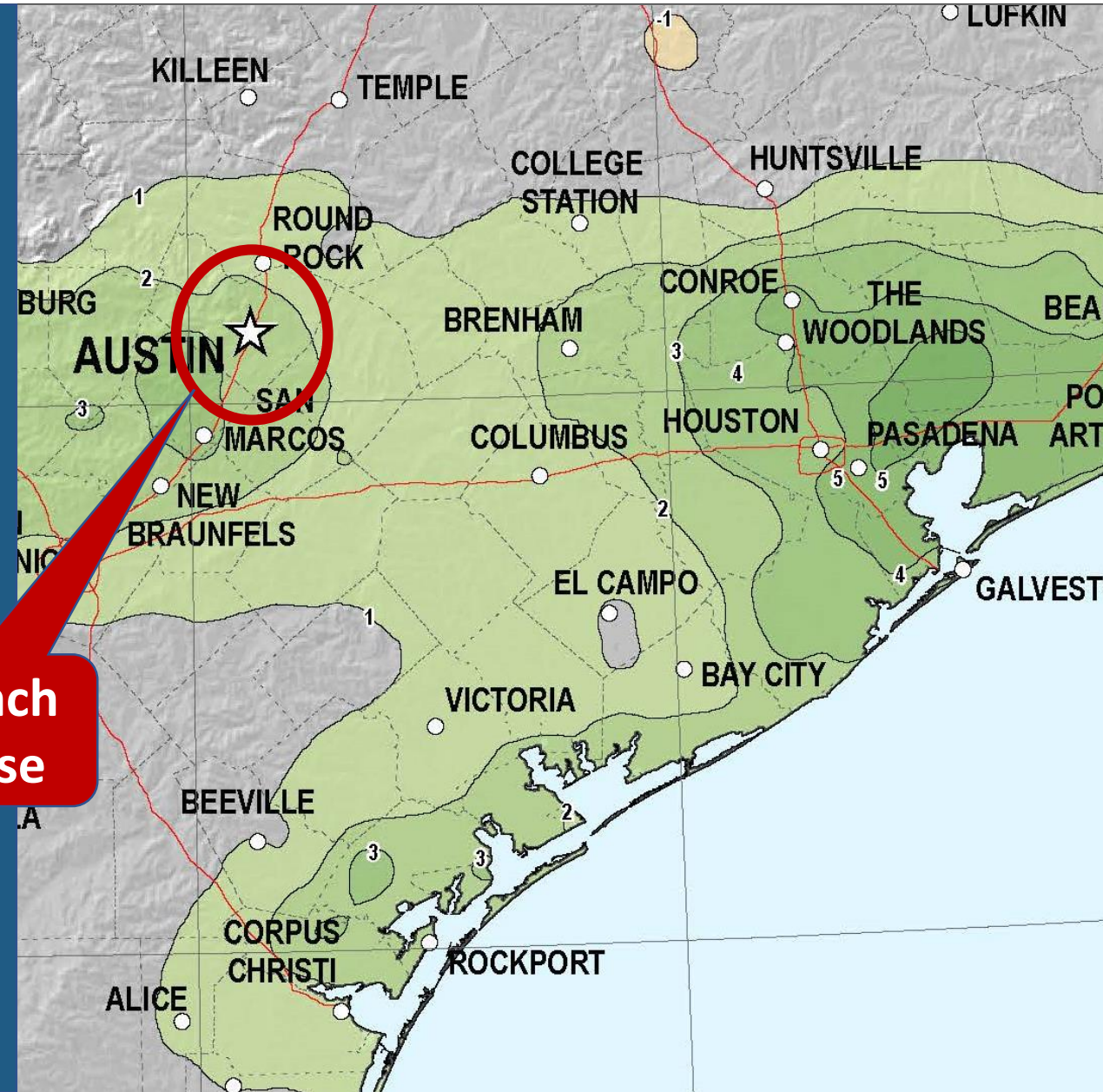
- Nationwide examination of historic rainfall data
- Adds data from 1961 – 2017



Atlas 14 Rainfall Changes – Austin

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

**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.

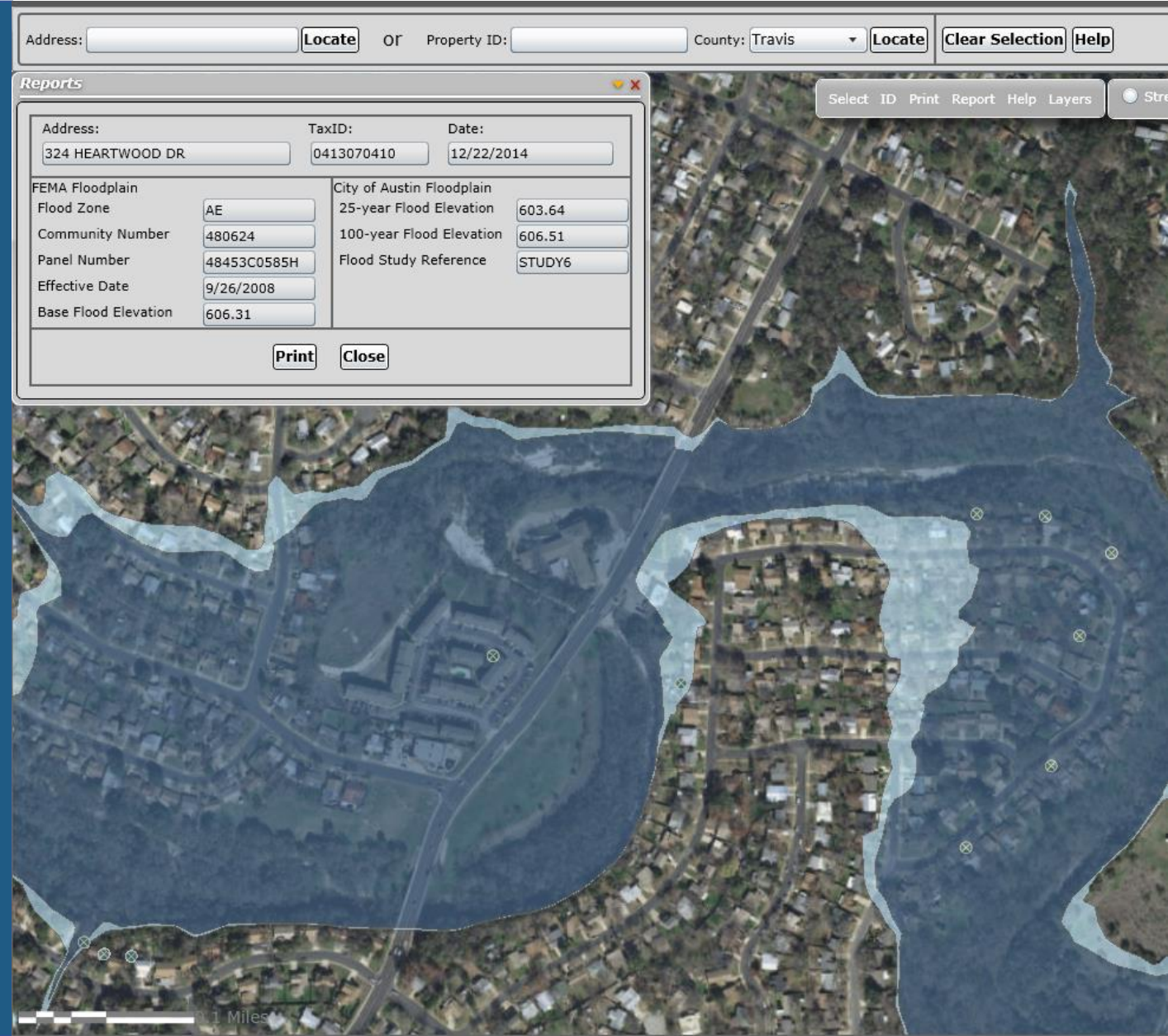


Overview of

Flood Prevention Strategies

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

- Floodplain regulations
- Drainage criteria



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

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

Timeline

Step 1 – LDC

Public Hearings

September 2019 – Boards and Commissions (EC, ZAP, PC, and BFCBA)

October 2019 – proposed City Council meeting

Step 2 – DCM

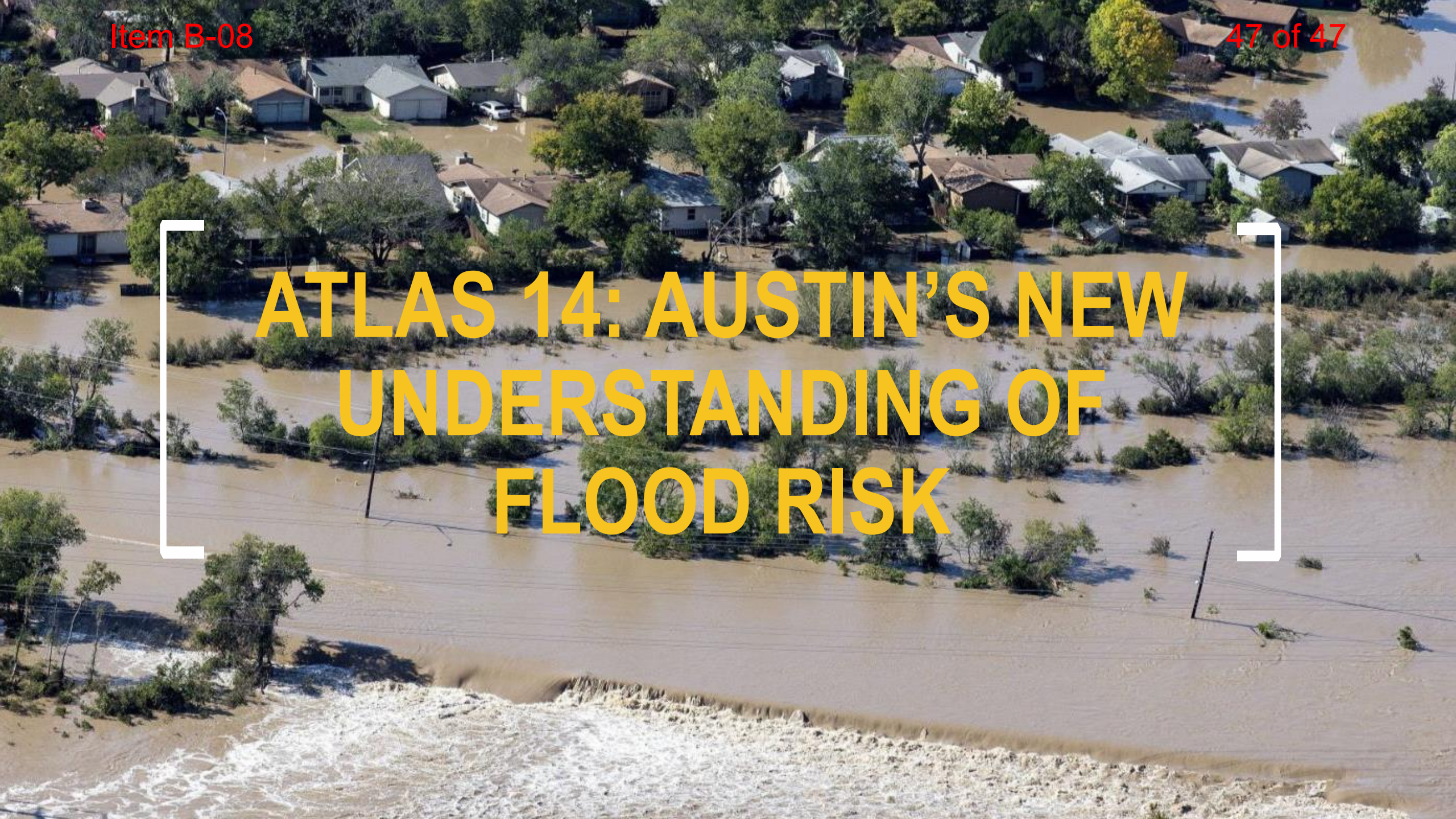
August 2019 – Released draft rules

October 2019 thru January 2020 – Rules change process that includes stakeholder input

Step 3 – Evaluation

2019 to 2021 – Re-mapping of Austin floodplains and infrastructure evaluation

2022 – FEMA map updates



ATLAS 14: AUSTIN'S NEW UNDERSTANDING OF FLOOD RISK