



Atlas 14 Implementation

Fort Bend County

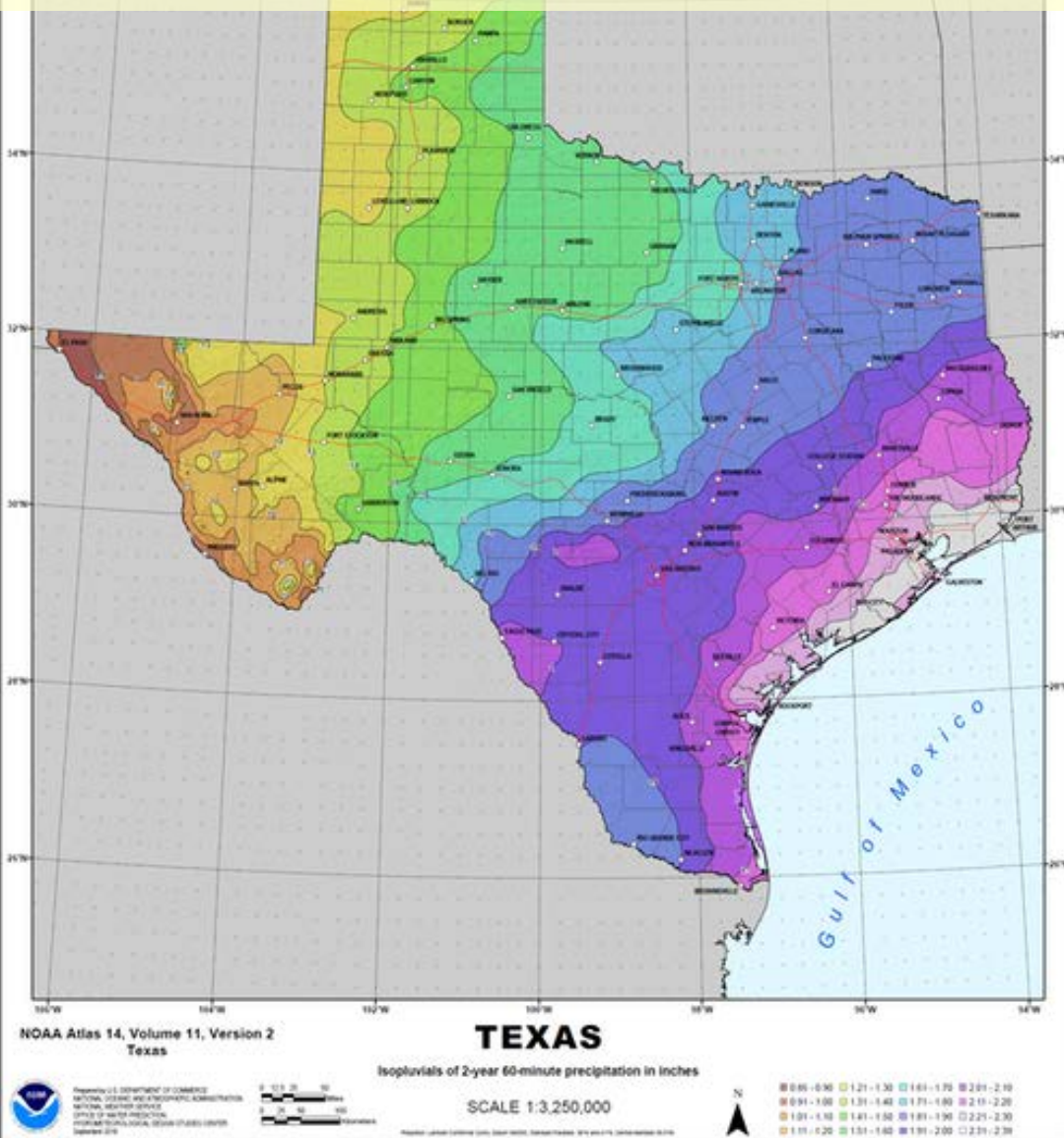
01/01/2020

Atlas 14 Overview

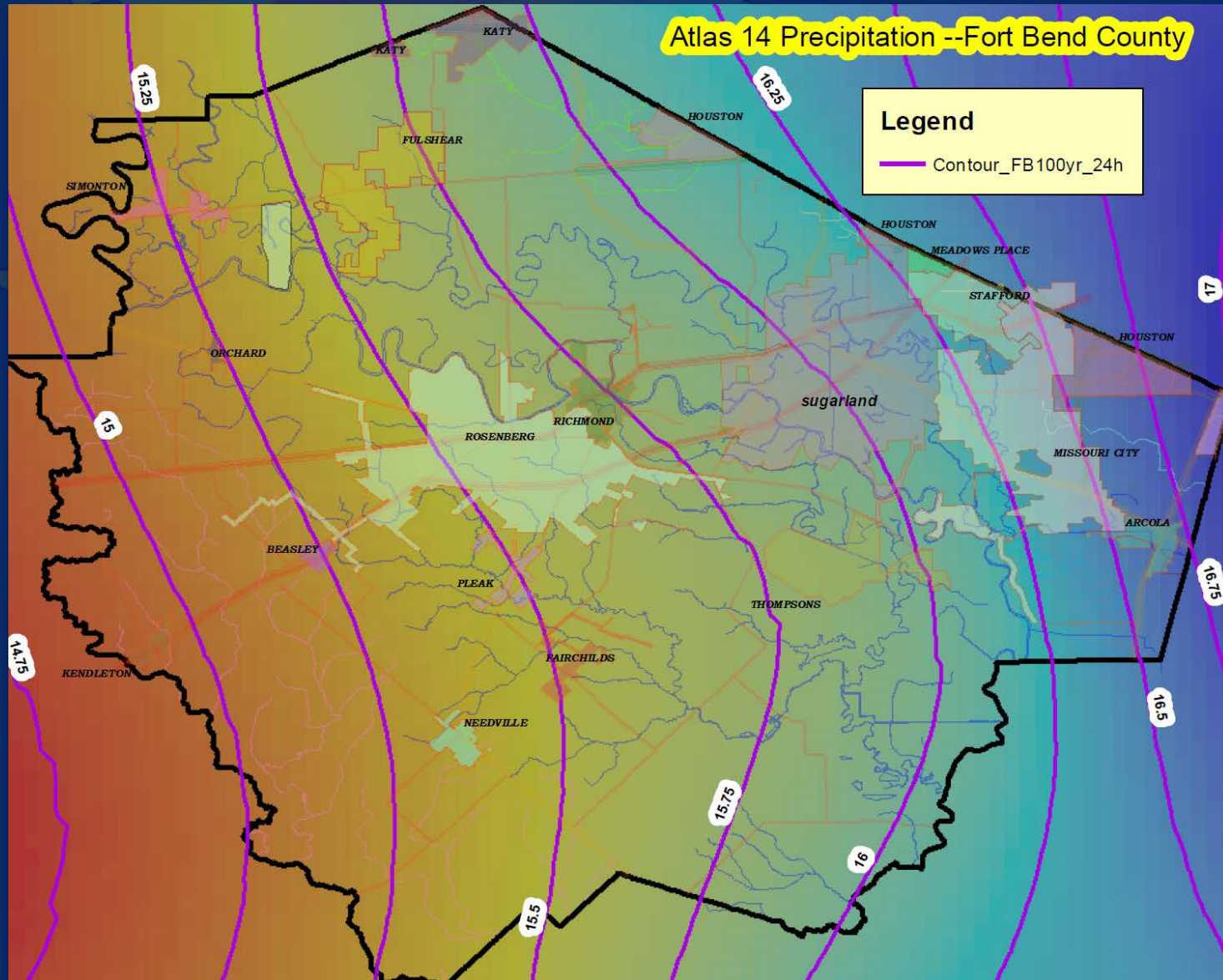
- A historical rainfall study completed by The National Weather Service.
- Published on September 28, 2018.
- This study shows that Central Texas is more likely to experience larger storms than previously thought.
- For example, for Fort Bend County:
 - 100-yr 24 hour rainfall changed from 12.5in to 16.5in.
- NOAA Atlas 14 rainfall values are used for infrastructure design and planning activities under federal, state and local regulations.
- They also help delineate flood risks and manage development in floodplains for FEMA's National Flood Insurance Program.

NOAA Atlas 14, Volume 11, Version 2

Data can be downloaded from the following web site:
<https://hdsc.nws.noaa.gov/hdsc/pfds/index.html>



NOAA Atlas 14 at Fort Bend County



Atlas 14 Rainfall for Fort Bend County

Duration		Rainfall Depths (in)									
		1 yr	2 yr	5 yr	10 yr	25 yr	50 yr	100 yr	200 yr	500 yr	1000 yr
5	min	0.507	0.591	0.727	0.842	1.00	1.13	1.26	1.39	1.57	1.71
10	min	0.802	0.938	1.16	1.34	1.60	1.80	2.01	2.21	2.47	2.66
15	min	1.02	1.19	1.46	1.69	2.00	2.25	2.50	2.76	3.11	3.37
30	min	1.47	1.70	2.08	2.39	2.83	3.16	3.50	3.87	4.40	4.83
1	hr	1.94	2.26	2.78	3.22	3.83	4.30	4.80	5.37	6.20	6.89
2	hr	2.35	2.83	3.53	4.19	5.16	5.99	6.91	7.94	9.45	10.70
3	hr	2.57	3.17	4.00	4.82	6.08	7.19	8.47	9.89	12.00	13.70
6	hr	2.96	3.77	4.86	5.97	7.72	9.33	11.20	13.30	16.30	18.90
12	hr	3.37	4.40	5.79	7.20	9.41	11.40	13.80	16.50	20.50	23.90
1	day	3.82	5.09	6.82	8.55	11.20	13.70	16.50	19.70	24.50	28.50
2	day	4.32	5.86	7.98	10.10	13.40	16.30	19.70	23.20	28.20	32.30
3	day	4.70	6.38	8.72	11.00	14.50	17.70	21.30	24.90	30.00	33.90
4	day	5.03	6.77	9.23	11.60	15.30	18.50	22.10	25.80	30.90	34.80
7	day	5.81	7.64	10.30	12.70	16.50	19.90	23.50	27.20	32.20	36.10
10	day	6.47	8.36	11.10	13.70	17.50	20.90	24.50	28.20	33.20	37.00
20	day	8.57	10.50	13.50	16.20	20.20	23.50	26.90	30.50	35.20	38.80
30	day	10.30	12.40	15.60	18.40	22.40	25.60	28.90	32.30	36.80	40.20
45	day	12.90	15.20	18.80	21.80	25.90	29.10	32.20	35.30	39.40	42.50
60	day	15.30	17.70	21.80	25.00	29.30	32.30	35.30	38.20	41.90	44.70

Fort Bend County Atlas 14 Adoption & Implementation

- Interim Atlas 14 Drainage Criteria Manual and Minimum Slab Elevation Criteria.
- Effective 01/01/2020.
- Document can be downloaded from Fort Bend County website.

Government » Departments A - D »

Drainage District

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Drainage District

Mission Statement

The primary mission of the Fort Bend County Drainage District is to maintain the drainage channels, where the District has easements, in their existing flow conditions. This is accomplished through appropriate structural repairs and vegetation control. Secondly, the District provides a review of plats and drainage plans of new development to be approved by Commissioners Court to assure the elimination of an adverse drainage impact on current and future residents.

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New - Effective 01/01/2020

[Fort Bend County - Interim Atlas 14 Drainage Criteria Manual and Minimum Slab Elevation Criteria](#)

Government » Departments A - D » Drainage District »

Drainage Criteria Manual

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New - Effective 01/01/2020

[Fort Bend County - Interim Atlas 14 Drainage Criteria Manual and Minimum Slab Elevation Criteria](#)

Drainage Criteria Manual (Revised 2011)

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- [Cover Page](#) [PDF]
- [Table of Contents](#) [PDF]
- [1.0 Policy](#) [PDF]
- [2.0 Hydrology](#) [PDF]
- [3.0 Open Flow Channel](#) [PDF]
- [4.0 Culverts and Bridges](#) [PDF]
- [5.0 Storm Sewers and Overland Flow](#) [PDF]

Minimum Slab Elevation Requirements Atlas 14 --- Effective 01/01/2020

For locations with approved DIA using Pre-Atlas 14 rainfall

- **New Structures :**
 - At least 2.0 feet above existing (Pre-Atlas 14) 500-yr water surface elevation.
 - 2.5 feet above the existing (Pre-Atlas 14) 100-yr water surface elevation or maximum ponding elevation based on an existing detention facility designed prior to the adoption of these rules.
 - 2.0 feet above the lowest top of curb elevation within, or adjacent to, each lot or reserve; or, in the absence of a curb, 2.0 feet above the highest natural ground along perimeter of building foundation and 1.0 foot above any down gradient roadway or any down gradient drainage restraint, whichever is higher.
- **New Structures in Zone A floodplain**
 - 4.0 feet above existing (Pre-Atlas 14) estimated 100-yr BFE.

Minimum Slab Elevations Requirements Atlas 14 --- Effective 01/01/2020

For locations with approved DIA using Atlas 14 rainfall

- **New Structures :**
 - At least 2.0 feet above the new (Atlas 14) BFE, and no lower than the new (Atlas 14) 500-yr water surface elevation.
 - Detention and drainage facilities serving the new section(s) should be designed based on Atlas 14 100-yr rainfall.
 - 2.0 feet above the Atlas 14 100-yr water surface elevation or maximum ponding elevation within the detention facility.
 - 2.0 feet above the lowest top of curb elevation within, or adjacent to, each lot or reserve; or, in the absence of a curb, 2.0 feet above the highest natural ground along perimeter of building foundation and 1.0 foot above any down gradient roadway or any down gradient drainage restraint, whichever is higher.

Certification Memorandum for a Pre-Atlas 14 Development

- The purpose of the “certification statement” below is to allow a MUD/LID/Development Engineer of a development (with a Pre-Atlas 14 approved report), to submit a memorandum, with the below statement, to FBCDD which will detail the Pre-Atlas 14 100-yr WSEL and Post-Atlas 14 100-yr WSEL for the drainage system. This memorandum will confirm conformance with section 4(f) of Interim Guidelines and documenting the 1-foot of freeboard from lowest slab elevation to the Atlas 14 100-yr WSEL. This memo will be prepared for each detention basin service area within a Pre-Atlas 14 existing development and will be in lieu of a new formal, Atlas 14 drainage report for said development. This memo is only applicable for conditions where:
 - Ultimate outfall size/configuration, including the extreme event outfall does not change from previously approved (Pre-Atlas 14) analysis/design.
 - Original service area defined by previously approved drainage report (Pre-Atlas 14) has not changed (such as land area or land use density).
 - The intent of section is to promulgate a policy which provides for continued development without modification or increase of the size of the existing outfall structure.

Drainage Impact Analysis Requirements After Atlas 14 --- Effective 01/01/2020

- Simplified Method (<50acre)
 - no changes at this time.
- New developments
 - evaluate using Atlas 14 rainfall to determine pre-development discharges.
 - detention facilities not to exceed pre-development discharges for the 10-yr, 25-yr, and 100-yr events.
 - Additionally, the 500-yr event should be evaluated to ensure no structures will be impacted.
 - Upstream & downstream development coordination required.
- Modification of an existing development's outfall
 - must not result in increases in discharges for the 10-yr, 25-yr, and 100-yr events (8.2", 9.6", and 12.5") from the previous drainage criteria.
- Any special scenarios, please coordinate with FBCDD.

Developments with DIA under Review

All developments under review will be required to use Atlas 14 rainfall (effective 1/1/2020).

