

ORDINANCE NO. 2192

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SUGAR LAND, TEXAS, AMENDING CHAPTER 5 OF THE SUGAR LAND DEVELOPMENT CODE REGARDING SUBDIVISION REGULATIONS BY AMENDING SECTION 5-36; AMENDING CHAPTER 8 OF THE SUGAR LAND DEVELOPMENT CODE REGARDING FLOOD DAMAGE REDUCTION REGULATIONS BY AMENDING SECTIONS 8-5, 8-19, 8-27, AND 8-28; AND SETTING FORTH OTHER PROVISIONS RELATED THERETO.

WHEREAS, by Ordinance No. 2151 the City Council adopted the National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Precipitation-Frequency Atlas of the United States, Volume 11, Version 2.0: Texas ("Atlas 14") for the City and approved amendments to the City's Development Code regarding the same; and

WHEREAS, the City desires to amend its Development Code to make additional updates to the City's Flood Damage Reduction Regulations, for consistency with Atlas 14; NOW, THEREFORE,

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF SUGAR LAND, TEXAS:

Section 1. That the City Council adopts the findings and recitals set forth in the preamble of this Ordinance.

Section 2. That Chapter 5, Article V, Sections 5-36(A) and (B) of the Sugar Land Development Code are amended to read as follows:

- A. The finish floor elevation for all buildings is to be constructed as indicated in Chapter 8.
- B. All public streets are to be designed as per Chapter 8 and the City's Design Standards.

Section 3. That the definition of Lowest Finished Floor Elevation, or Lowest Floor Elevation in Chapter 8, Article I, Section 8-5 of the Sugar Land Development Code is amended to delete the figure that illustrates the Lowest Finished Floor Elevation.

Section 4. That Chapter 8, Article II, Section 8-19(J) of the Sugar Land Development Code is amended to read as follows:

- J. Under the provision of 44 CFR § 60.3(D)(3) of the National Flood Insurance Program Regulations, it is prohibited any encroachment, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment would not result in any

increase in flood levels within the community during the occurrence of the base flood discharge;

Section 5. That Chapter 8, Article III, Section 8-27(H) of the Sugar Land Development Code is amended to read as follows:

H. The lowest elevation of the first floor of all structures and buildings must be constructed at least 2.0 feet above the 100-year floodplain base flood elevation as established by Atlas 14, Vol. 11, Texas, 1.5 feet above adjacent natural ground, or 1.0 foot above top of curb, whichever is the higher elevation shown on the latest FIRM map panels or the latest available data provided by the City if there is no FIRM that provides for a BFE as indicated in Section 8.3.9. All public streets must be designed so that the lowest top of curb elevation is equal to or above the 100-year floodplain elevation, or, in lieu thereof, the developer may provide documentation satisfactory to the City to show that the lowest public street top of curb elevation is not exceeded by the 100-year floodplain elevation for more than 4 hours. The 100-year floodplain is the 100-year water surface elevation in the outfall channel, receiving stream, or detention facility designated to receive storm runoff from the proposed development as established by Atlas 14, Vol. 11, Texas. For leveed areas subject to multiple outlet condition analyses under the City's Design Standards and the Fort Bend County Drainage District drainage criteria, the requirements in this paragraph must be met for all conditions. Special consideration may be given to tracts containing natural aesthetic amenities within existing developed areas and served by existing outfall drainage facilities, where the addition of fill would result in the destruction of those amenities and for which there is no other feasible method to meet the aforementioned criteria. When base flood elevation data is not available in accordance with Section 8-12 of this Chapter, and reliable base flood elevation data and floodway data is not available from a federal, state or other source, a floodplain study must be provided by a professional engineer that establishes the base flood elevation (BFE) and the floodplain and floodway boundaries prior to the City issuing a development permit; and

Section 6. That Chapter 8, Article III, Sections 8-28(A) and (B) of the Sugar Land Development Code are amended to read as follows:

A. *Residential Construction.* New construction and substantial improvements of any residential structure must have the lowest floor (including basement) elevated a minimum of 2.0 feet above the base flood elevation as established by Atlas 14, Vol. 11, Texas, 1.5 feet above adjacent natural ground, or 1 foot above top of curb, whichever is the higher elevation as indicated in Section 8.3.9. A registered professional engineer, architect or land surveyor will submit a certification to the Floodplain Administrator that the standard of this subsection is satisfied. (See City Design Standards and Subdivision Regulations Ordinance for more details.)

B. *Nonresidential Construction.* New construction and substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated a minimum of 2.0 feet above the base flood level as established by Atlas 14, Vol. 11, Texas, 1.5 feet above adjacent natural ground, or 1 foot

above top of curb, whichever is the higher elevation as established in Section 8.3.9 or, together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads including the effects of buoyancy. A registered professional engineer or architect shall develop and/or review structural design, specifications and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are flood proofed shall be maintained by the Floodplain Administrator.

Section 7. That Chapter 8, Article III, Section 8-28(D)(2) of the Sugar Land Development Code is amended to read as follows:

2. Manufactured homes that are placed or substantially improved within Zones A, AH, and AE on the community's FIRM on sites: (i) outside of a manufactured home park or subdivision, (ii) in a new manufactured home park or subdivision, (iii) in an expansion to an existing manufactured home park or subdivision, or (iv) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the bottom of the chassis of the manufactured home is elevated a minimum of 2.0 feet above the base flood elevation as established by Atlas 14, Vol. 11, Texas, as required in Section 8.3.9, and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

Section 8. That Chapter 8, Article III, Section 8-28(D)(3)(a) of the Sugar Land Development Code is amended to read as follows:

a. The lowest floor of the manufactured home is a minimum of 2.0 feet above the base flood elevation as established by Atlas 14, Vol. 11, Texas, as specified in Section 8.3.9; or

Section 9. That all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed to the extent of such conflict.

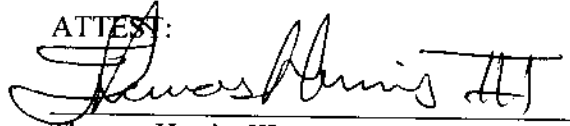
Section 10. That the provisions of this ordinance are severable and the invalidity of any part of this ordinance will not affect the validity of the remainder of the ordinance.

APPROVED on first consideration on April 24, 2020

ADOPTED on second consideration on May 5, 2020.


Joe R. Zimmerman, Mayor

ATTEST:

A handwritten signature in cursive script, appearing to read "Thomas Harris III", written over a horizontal line.

Thomas Harris, III, City Secretary

APPROVED AS TO FORM:

DAnn Shea Smith

**City Council Agenda Request**

MAY 5, 2020

AGENDA REQUEST NO: IILA.**AGENDA OF:** City Council Meeting**INITIATED BY:***Jorge L. Alba, PhD., PE, CFM Senior Engineering Manager***PRESENTED BY:***Jorge Alba, Senior Engineering Manager***RESPONSIBLE DEPARTMENT:** Engineering

AGENDA CAPTION:

SECOND CONSIDERATION: Consideration of and action on **CITY OF SUGAR LAND ORDINANCE NO. 2192:** AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SUGAR LAND, TEXAS, AMENDING CHAPTER 5 OF THE SUGAR LAND DEVELOPMENT CODE REGARDING SUBDIVISION REGULATIONS BY AMENDING SECTION 5-36; AMENDING CHAPTER 8 OF THE SUGAR LAND DEVELOPMENT CODE REGARDING FLOOD DAMAGE REDUCTION REGULATIONS BY AMENDING SECTIONS 8-5, 8-19, 8-27, AND 8-28; AND SETTING FORTH OTHER PROVISIONS RELATED THERETO.

RECOMMENDED ACTION:

Second consideration of Ordinance No. 2192, amending Chapter 8 of the Sugar Land Development Code Flood Damage Reduction Regulations by amending Sections 8-5, 8-19, 8-27, 8-28, adding a reference in Chapter 5 to Chapter 8; and setting forth other provisions related thereto.

EXECUTIVE SUMMARY:

To protect the community and utilize the latest rainfall information for drainage design and development, City Council approved Ordinance No. 2151 in April 2019, formally adopting the Atlas 14 and amending Chapter 8, Article 1, Section 8-3.9 of the City of Sugar Land Development Code.

The Atlas 14, Volume 11, Precipitation-Frequency Atlas of the United States was published on September 2018 by the National Oceanic and Atmospheric Administration (NOAA). Atlas 14 shows that the intensity and frequency of the major rainfall events in Fort Bend County and the City of Sugar Land have increased substantially. For example, Atlas 14 100-year event (1% chance of occurring in any given year) increased from 12.5 inches to 16.5 inches in a 24-hour period. All other design rainfall precipitations used for design also increased in the frequencies observed. The revisions outlined in Ordinance No. 2151 are summarized below:

- In areas located inside the current FEMA floodplain, new buildings are required to have a finish floor elevation that is 2.0 feet above the Atlas 14 100-year Base Flood Elevation, or 1.5 feet above natural ground or 1.0 foot above the top of the curb, whichever is the most restrictive. New streets are required to be built at the Atlas 14 100-year Base Flood Elevation.
- In areas protected by levees, new buildings are required to have a finished floor elevation that is 2.0 feet above the coincidental 100-year ponding elevation using Atlas 14 rainfall information, as provided by the Levee Improvement Districts.

These requirements have been applied to new development and redevelopment areas within the City and ETJ since April 2019. Upon implementation of these changes, City staff has identified the need to include additional clarifications to ensure the City's no adverse impact (zero rise) policy and to include a detailed description of the flood prevention ordinance requirements in the corresponding sections of the Development Code.

Ordinance No. 2192 will modify five sections of the development code to provide further clarification and consistency. The proposed revisions are listed below:

1. Add a reference in Chapter 5, Sections 5-36 (A) and (B) to state that finish floor elevation and public streets are to be constructed as required in Chapter 8.
2. Remove a figure in Section 8-5: The figure describing the lowest finish floor elevation will be removed since the text of the development code describe in better detail what the figure illustrates.
3. Clarify no impact requirement in Section 8-19 (J) to prohibit any encroachment, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic engineering that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.
4. Add detailed requirements in Section 8-27 (H), confirming that the lowest flood elevation of the first floor of all structures and building must be constructed at least 2.0 feet above the Atlas 14 100-yr Base Flood Elevation, 1.5 feet above the adjacent natural ground, or 1.0 foot above top of curb whichever is the most restrictive.
5. Add detailed requirements in Sections 8-28(A), 8-28(B), and 8-28(D) to include similar requirements as in Section 8-27 (H) for residential construction, nonresidential construction and manufactured homes.

The first reading of Ordinance No. 2192 was approved on April 21, 2020.

The Engineering Department recommends that the City Council approve the second reading of Ordinance No. 2192, amending Chapter 8 of the Sugar Land Development Code Flood Damage Reduction Regulations by amending Sections 8-5, 8-19, 8-27, 8-28, and add a reference in Chapter 5 to Chapter 8, and setting forth other provisions related thereto.

BUDGET

EXPENDITURE REQUIRED: N/A

CURRENT BUDGET: N/A

ADDITIONAL FUNDING: N/A

FUNDING SOURCE:N/A

ATTACHMENTS:

	Description	Type
D	<u>Flood Prevention Ordinance No. 2192</u>	Ordinances