North Central Texas Council of Governments

Integrating Transportation and Stormwater Infrastructure

Inventory of Valley Storage Ordinances and Language

July 2026

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integrating Transportation & Stormwater Infrastructure

Valley Storage Ordinances

BENBROOK:

https://library.municode.com/tx/Benbrook/codes/code_of_ordinances?nodeId=CD_ORD_TIT15BUCO_CH15.40FLHAPR_15.40.600STSUINMAHOPASU

Code of Ordinances, Title 15 – Buildings and Construction, Chapter 15.40 – Flood Hazard Protection

15.40.600 - Standards for subdivisions, including manufactured home parks or subdivisions.

J. *Floodplain Modifications:* Any proposals for modifications of the special flood hazard area shall be accompanied by an application for a conditional letter of map revision (CLOMR), including fees, for submittal to FEMA for approval. The developer shall also be responsible for submitting an application for a letter of map revision (LOMR), including fees, upon approval of the CLOMR and completion of the proposed construction of the floodplain modifications. No construction on the subdivision infrastructure (including grading) shall be permitted until the CLOMR has been approved by FEMA and no structures (including buildings and residences) shall be approved for construction until the CLOMR has been approved by FEMA. Any proposal for floodplain modification shall comply with the following design criteria:

1. There shall be no increase (rise) in the floodway elevation over the effective FIS. No rise shall be defined as an increase of 0.01 of a foot or less.

2. There shall be no loss of valley storage below the base flood elevation. Any fill within the special flood hazard area shall be offset with compensatory storage within the effective hydrologic reach.

3. Channel velocities shall not be increased over existing conditions. No increase shall be designed as one percent or less.

CELINA:

https://www.celina-tx.gov/DocumentCenter/View/11193/2024-Engineering-Design-Standards-Final?bidId=

Engineering Design Standards, page 74

3.15 Floodplain Alterations

A. No new construction is allowed in floodplain areas, unless the building or structure meets the requirements set forth in the following Section and the Floodplain Ordinance. No building or structure shall be erected or relocated within a floodplain or drainage channel which will obstruct the natural flow of water within that floodplain or channel. Construction is allowed in those areas that have been reclaimed from the floodplain. The owner or developer shall furnish, at their

expense, to the Director of Engineering sufficient engineering design information to confirm that proposed construction within the floodplain meets the requirements outlined in this Section and the Floodplain Ordinance.

B. The minimum finished floor elevation for any lot adjacent to a drainage feature shall be two feet (2') above the adjacent 100-year fully developed water surface elevation and shall be shown on the final plat.

C. Floodplain alteration shall be allowed only if all the following criteria are met:

1. Flood studies shall include flows generated for existing conditions and fully developed conditions for the 2, 5, 10, 25, and 100-year storm events.

2. Alterations of the floodplain shall not adversely affect flow characteristics within that floodplain or channel, resulting in damage to that or any other property nearby.

3. Alterations of the floodplain shall not increase (0.00 ft) the water surface elevation of the design flood of the creek on other properties.

4. Alterations shall be in compliance with FEMA guidelines and the City Floodplain Ordinance.

5. Alterations of the floodplain shall meet the requirements of Section 3.03.

6. Alterations shall result in no loss (0%) of valley storage for the 100-year storm for a Major Creek (pdf) (http://www.celina-tx.gov/DocumentCenter/View/1416) and a 15% maximum loss of valley storage for any other tributary for any reach, except at bridge and culvert crossings where it can be proven that there are no detrimental effects downstream.

7. Valley storage loss computations require considering on and off-site storage losses due to reductions in water surface elevation. For the case of impacts upstream from the project site, losses need to be added up to the location at which the proposed conditions water surface profile converges (0.00 ft) with the existing conditions water surface profile.

8. If there is a net loss in valley storage, that volume needs to be provided as compensatory storage in order to comply with the maximum allowable decrease criteria.

9. Any alteration of floodplain areas shall not cause any additional expense in any current or projected public improvements, including maintenance.

10. The floodplain shall be altered only to the extent permitted by equal conveyance on both sides of the natural channel, as defined by the United States Army Corps of Engineers in a HEC-RAS analysis. The right of equal conveyance applies to all owners and uses, including greenbelt, park areas, and recreational areas. Owners may relinquish their right to equal conveyance by providing a written agreement to the City Engineer or designee.

11. A grading permit shall be required to perform any grading activities on site.

12. The toe of any fill shall parallel the natural direction of the flow.

13. Grading activities in the floodplain shall incorporate and consider other City planning documents and ordinances.

D. The above criteria shall be met before any floodplain alteration may occur. Typical projects requiring a floodplain alteration include placing fill, (whether or not it actually raises the property out of the floodplain) constructing a dam, straightening channel sections, making improvements (substantial or otherwise) to existing structures in a floodplain in which the existing outside dimensions of the structure are increased, and temporary storage of fill materials, supplies and equipment.

DENTON:

https://library.municode.com/tx/denton/codes/development_code?nodeId=CITY_DENTONDECO_SUBCHAPTER_7DEST_7.5DR_7.5.3GEDRRE

Development Code, Subchapter 7 – Development Standards

7.5.3 - General Drainage Requirements

H. Floodplain Reclamation-Engineering Criteria.

3. Valley Storage.

a. Encroachments and/or channelization is strongly discouraged along Pecan, Cooper, Hickory Creek, Milam, and Clear Creeks to prevent the reduction of storage capacity of streams and drainage ways and to prevent increasing discharges downstream.

b. The city restricts the valley storage loss to zero percent reduction for all streams serving with a drainage basin of one square mile or greater in the city. For minor tributaries (drainage basins with less than one square mile), a 15 percent maximum reduction in valley storage shall be allowed.

FRISCO:

https://www.friscotexas.gov/DocumentCenter/View/40435/2025-Frisco-Engineering-Standards-FULL-PDF-Opens-in-New-Window?bidId=

Engineering Standards, page 4-30

4.15 Floodplain Alterations

5. Alterations shall result in no loss of valley storage for a Major Creek, as defined by the Subdivision Ordinance, and a 15% maximum loss of valley storage for any other tributary for any reach, except at bridge and culvert crossings where it can be proven that there are no detrimental effects downstream.

LEWISVILLE:

https://www.cityoflewisville.com/home/showpublisheddocument/28505/638606056975670000

Drainage Criteria Manual, pages 37-38

Section 10. Floodplain

G. The following floodplain requirements shall be followed when developing in FEMA regulatory floodplain or the fully developed 100-year floodplain: 1. All development within the floodplain requires review and approval by the City Engineer or their representative. 2. Portions of the 100-year floodplain, based on fully developed watershed conditions, may be reclaimed provided that: i. There is no increase in the water surface elevation 38 ii. Acceptable velocities are maintained iii. Channel stability in the reach being reclaimed is not adversely impacted; and iv. An equivalent volume of valley storage must be provided in the same reach as the proposed development.

LITTLE ELM:

https://library.municode.com/tx/little_elm/codes/code_of_ordinances?nodeId=PTIICOOR_CH107SUOR_APPENDIXENDEST_S3.0DRDERE

Chapter 107 Subdivision Ordinance; Appendix Engineering Design Standards; Sec. 3.0 Drainage design requirements

3.7.2 Compensatory *Storage*

Compensatory *storage* is required for all *storage* lost or displaced in a Regulatory *Floodplain* due to land disturbance. Hydraulically equivalent compensatory *storage* requirements for fill or structures placed in the SFHA and/or within a riverine flood hazard area identified in a Town Council adopted watershed study shall be at least equal to the volume of the *storage* lost or displaced. Such compensation areas shall be designed to drain freely and openly to the channel and shall be located opposite or adjacent to fill areas. The Regulatory *Floodplain storage* volume lost below the existing 10-year frequency flood elevation must be replaced below the proposed 10-year frequency flood elevation. The Regulatory *Floodplain storage* volume lost above the 10-year existing frequency flood elevation must be replaced above the proposed 10-year frequency elevation.

SANGER:

https://ecode360.com/46791592

Code of Ordinances; Land Use Appendix; Appendix SO Subdivision Ordinance; Section 11 Improvements.

D. Drainage and Storm Sewer Improvements.

14. Floodplain Management

l. Construction shall result in no loss of valley storage for Clear Creek, Duck Creek, and Ranger Branch, and a 15% maximum loss of valley storage for any other tributary for any reach, except at bridge and culvert crossings where it can be proven that there are no detrimental effects downstream. City Floodplain Development Permit Application must be submitted including any accompanying materials such as tables, model output, etc.

TROPHY CLUB:

https://ecode360.com/40206991

Chapter 3 Building Regulations; Article 3.13 Flood Damage Prevention; 3.13.007 Flood Hazard Reduction Standards

(b) Specific Standards

6. Floodplain compensation. Whenever any portion of a floodplain is authorized for use, the space occupied by the authorized fill or structure below the base flood elevation shall be compensated for by a hydraulically equivalent volume of excavation taken from below the base flood elevation. All such excavations shall be constructed to drain freely to the watercourse.

(c) Standards for subdivision proposals.

(7) Compensatory storage requirement (cut and fill) is required by developers to compensate for the loss of conveyance (storage) caused by filling in the floodplain fringe by removing the hydraulically equivalent amount of material in the floodplain near the proposed development. This will help to maintain flood storage and ensure that floodwaters will not be displaced onto another property as the result of a floodplain fill.

WESTLAKE:

https://library.municode.com/tx/westlake/codes/code_of_ordinances?nodeId=COOR_CH36ENST_ARTIIIDRFA_S36-73PO

Chapter 36 Engineering Standards; Article III. Drainage Facilities; Sec. 36-73 Policies.

(a) Design policies.
  (1) Development cannot produce any increase in five-, ten-, 50- or 100-year water surface elevations outside of the project boundaries.
  (2) If the peak discharge from any area proposed for development would increase downstream flooding from five-, ten-, 50- or 100-year storm, then such peak discharge must be regulated to the extent necessary to eliminate the increased flooding regulation of peak discharge may be achieved using stormwater management facilities (either on-site or off-site) subject to the approval of the town engineer.

(3) Development shall have no net loss in valley storage (100-year storm) as a result of the proposed development. The developer shall not be required to compensate for the loss of valley storage outside the corporate limits and extra territorial jurisdiction of the town.
(4) Development shall not discharge erosive velocities downstream.

Sec. 36-74 Design standards of closed conduit system.

(b) Engineering design. The engineering design shall conform to the criteria set forth in the City of Fort Worth Drainage Design Manual. The increase in runoff resulting from the development must be detained to result in no increase in runoff downstream of the project unless a regional detention basin is approved. In addition, no loss in valley storage based on the 100-year storm shall be allowed. Technical Paper 40 should be used to compute rainfall intensities. Upon approval of the town engineer, Technical Paper Hydro-35 may be used to compute rainfall intensities. The time of concentration used to compute rainfall intensity shall be as determined by an analysis of the proposed topography but shall not be less than ten minutes.