

PUBLISH

ORDINANCE NO. 2021-082

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF TEXARKANA, TEXAS, UPDATING THE CITY'S "DRAINAGE MANUAL" BY AMENDING CHAPTER 120 ("MINIMUM DRAINAGE CRITERIA") OF THE CODE OF ORDINANCES OF THE CITY OF TEXARKANA, TEXAS, TOGETHER WITH CORRESPONDING TECHNICAL REVISIONS TO SPECIFIC SECTIONS OF CHAPTERS 130 ("STREETS AND SIDEWALKS") AND 135 ("SUBDIVISION REGULATIONS") OF THE CODE OF ORDINANCES; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR PUBLICATION; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, on July 8, 2019, the City Council approved the appointment of area residents to serve on a Drainage Code Advisory Committee to review and comment on proposed changes to the City's drainage manual and ordinance; and

WHEREAS, the City contracted with HALFF and Associates to prepare an updated drainage manual in coordination with Committee and City staff feedback and comments; and

WHEREAS, the updated manual requires a complete revision of Chapter 120 of the Code of Ordinances ("Minimum Drainage Criteria") together with corresponding technical revisions to specific sections of Chapter 130 ("Streets and Sidewalks") and Chapter 135 ("Subdivision Regulations").

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF TEXARKANA, TEXAS:

SECTION 1: Chapter 120, "Minimum Drainage Criteria", of the Code of Ordinances of the City of Texarkana, Texas, is hereby amended in its entirety by deleting the current provisions of said chapter and replacing with the amended provisions set forth in **ATTH 01** attached hereto and incorporated herein by reference for all purposes.

SECTION 2: Section 130-149(b) of Chapter 130, "Streets and Sidewalks", of the Code of Ordinances of the City of Texarkana, Texas, is hereby amended by deleting the term "three-fourths" and replacing it with "0.75", and by deleting the term "one-half" and replacing it with "0.50".

SECTION 3: Section 130-150(e) of Chapter 130, "Streets and Sidewalks", of the Code of Ordinances of the City of Texarkana, Texas, is hereby amended by deleting the entirety of subsection (e)(1) and replacing with the following:

- (1) Drainageways parallel with streets shall be designed to meet the requirements of section 120-5.

SECTION 4: Section 130-150(e) of Chapter 130, "Streets and Sidewalks", of the Code of Ordinances of the City of Texarkana, Texas, is hereby amended by deleting in subsection (e)(5) the phrase "as shown in section 130-155".

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SECTION 5: Section 135-12 of Chapter 135, "Subdivision Regulations", of the Code of Ordinances of the City of Texarkana, Texas, is hereby amended by deleting in subsections (5) and (7) each occurrence of the numerical measurement "606.96" and replacing each with "600", and deleting in subsection (7) the numerical measurement "1000.66" and replacing it with "1,000".

SECTION 6: Section 135-13 of Chapter 135, "Subdivision Regulations", of the Code of Ordinances of the City of Texarkana, Texas, is hereby amended by deleting in subsection (a) the numerical measurement "78.74" and replacing it with "80", deleting in subsections (b), (c), and (d) each occurrence of the numerical measurement "59.06" and replacing each with "60", deleting in subsection (c) the numerical measurement "150.92" and replacing it with "150", deleting in subsections (c) and (d) each occurrence of the numerical measurement "49.21" and replacing each with "50", deleting in subsection (e) the numerical measurement "19.69" and replacing it with "20", deleting in subsection (f) the numerical measurement "118.11" and replacing it with "120", deleting in subsection (g) the phrase "three-tenths hectares, 32.291.7 square feet or 0.7413" and replacing it with "0.75", and deleting in subsection (g) the numerical measurement "124.67" and replacing it with "125".

SECTION 7: Section 135-15 of Chapter 135, "Subdivision Regulations", of the Code of Ordinances of the City of Texarkana, Texas, is hereby amended by deleting in subsection (a) the numerical measurement "9.84" and replacing it with "10", deleting in subsection (a) the numerical measurement "4.92" and replacing it with "5", and deleting in subsection (b) the sentence, "Drainage easements shall be located so that lot lines parallel to the easement shall not divide the easement."

SECTION 8: Section 135-17 of Chapter 135, "Subdivision Regulations", of the Code of Ordinances of the City of Texarkana, Texas, is hereby amended by deleting in subsection (d) the numerical measurement "14.76" and replacing it with "15".


SECTION 9: That in case a section, clause or sentence or part of this ordinance shall be deemed or adjudged by a court of competent jurisdiction to be invalid, then such invalidity shall not affect, impair or invalidate the remainder of this ordinance.

SECTION 10: The City Secretary shall give notice of the passage of this ordinance as provided in Article XI, Section 3 of the Charter of the City of Texarkana, Texas.

SECTION 11: This Ordinance shall be in full force and effect **January 1, 2022.**

PASSED AND APPROVED in Regular Council Session on this the 27th day of September, 2021.

ATTEST:


VICKY COOPWOOD, ASST. CITY SECRETARY


BOB BRUGGEMAN, MAYOR

6:37 p.m.

Chapter 120 - MINIMUM DRAINAGE CRITERIA

Sec. 120-1. - Definitions.

For the purposes of this chapter, the words and phrases below shall have the following meanings, except where the context clearly indicates a different meaning:

- (a) Channel means a natural or manmade (i.e., improved channel, sanitary sewer, box culvert) feature that provides for the conveyance of rainfall runoff or stream flow in a concentrated form exclusive of street drainage and cross drainage.
- (b) Cross drainage means any structure, such as pipe, box culvert or bridge, utilized for transporting water in a subsurface manner across a public or private street or driveway.
- (c) Private drainageway means any eligible channel (less than 50-acre drainage area) or cross drainage for a private street, that the developer, by choice, elects to designate as private as opposed to dedicating an easement. All maintenance responsibility shall rest with the individual property owner or owner's association.
- (d) Q means the volume of stormwater discharge calculated on various storm frequencies. (i.e., Q 2 , Q 5 , Q 10 , Q 25 , etc.)
- (e) Sanitary sewer means a pipe system utilized for the conveyance of water, generally below the ground surface, comprised of Class III concrete pipe or other approved material. A sanitary sewer may be utilized for street drainage, cross drainage or channel purposes.
- (f) Significant drainageway means any manmade feature, regardless of size, flow or any natural feature providing for conveyance of water flows in a channel type format with a Q 25 flow rates of two cfs or greater on any portion of the feature.
- (g) Street drainage means that rainfall runoff that travels to the street and then parallel with the street to a release point. This drainage is carried at the curb on urban section streets and in parallel ditches on rural section streets.
- (h) Street low point, sag or sump means the lowest point in the profile of a street which normally coincides with the natural low at which point street drainage is discharged. (Code 1961, § 32-13; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Commented [AB1]: Is this how the City currently operates?

Sec. 120-2. - General requirements.

- (a) The current adopted City of Texarkana Stormwater Management Design Manual, shall be used for drainage calculations. Other criteria and methods of calculation may be utilized if approved by the Director of Public Works.
- (b) The runoff coefficient ("C" factor) shall be based on the weighted value of the existing land use conditions and the value of the proposed land use improvements for each new development.
- (c) Compliance with the minimum requirements of this chapter in no way shall be construed as relieving the property owner of any liability which the owner may incur as a result of damage to downstream or upstream properties resulting from the development of the site.

(Code 1961, § 32-1; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Commented [AB2]: Intro states: "Source materials used in the preparation of the Code were the 1961 Code, as updated by ordinances subsequently adopted by the City Council through September 8, 2014" Do we need to keep this, update it? Applies to every section.

Sec. 120-3. - Street drainage.

- (a) The following are criteria for street drainage:

Commented [PB3R2]: We should review all references as I'm not certain what to do with these.

Street Type	Min. Back to Back Width (ft)	Section Type	Closed Conduit Design Storm (min)	Inlet Type		Flow Spread Limits (ft)
				Recessed or Non-Recessed	Depressed or Non-Depressed	
Residential Urban Street	31	Rooftop	10 yr	Either	Either	Top of Curb or Roadway Centerline
Urban Collector	37	Rooftop	10 yr	Either	Either	One 12' Lane Clear
Arterial	50	Rooftop	10 yr	Either	Either	One 12' Lane Clear (each side)
Residential Boulevard	20/20*	Rooftop	10 yr	Either	Either	One Lane Clear (each side)
Collector Boulevard	25/25*	Rooftop	10 yr	Either	Either	One Lane Clear (each side)

* Each Side

- (b) In sag or sump conditions, the storm drain and sump inlets should be sized to intercept and convey the 25-year storm, provided that a positive overflow is provided for the remainder of the 100-year storm.

(c) The 100-year storm is the design storm for the combination of the closed conduit and surface drainage system. 100-year flows must be contained within the street right-of-way or drainage easements.

(Code 1961, § 32-2; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Sec. 120-4. - Cross drainage; bridges and culverts.

(a) The following are criteria for cross drainage of bridges and culverts:

Street Classification	Design Storm	Runoff Depth and Other Requirements
All Streets	Q 100	Upstream water surface elevation (WSEL) 1' minimum below the adjacent curb

(b) Cross drainage structures shall be Class III reinforced concrete pipe or Class "A" concrete box culvert, high-performance polypropylene, steel reinforced polyethylene, and high-density polyethylene pipe (HDPE), or approved equal.

(Code 1961, § 32-3; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Sec. 120-5. - Channels.

(a) The following are criteria for engineered drainage channels:

(1) Drainage channels shall be designed to convey the 100-year storm for fully developed watershed conditions. For roadside ditches, the 10-year storm shall be conveyed in the ditch and 100-year storm conveyed in the roadway right-of-way.

(2) One (1) foot of freeboard must be provided, within drainage easements, above the 100-year fully developed water surface elevation at all locations along channels.

(3) The use of vegetated or permeable channels are encouraged, lined channels must have approval of the Director of Public Works.

(4) Additional channel design requirements are listed in the Stormwater Management Design Manual Section 4.4.3.

(b) A natural drainageway shall meet the following criteria:

(1) Limits of the Q 100 flood boundary are determined and indicated on the final plat or site plan and no improvements shall be constructed within that established boundary unless plans for such improvements have been approved by the Director of Public Works.

(2) If applicable, all FEMA flood hazard boundaries such as floodway and floodplain limits shall be indicated on the final plat or site plan.

Commented [PB4]: Inconsistent with easement section below that says 100 year ultimate should be drainage easement. I prefer to leave this section and change the easement section. DISCUSS WITH CITY

(3) In general, no easement will be required for natural drainageways and maintenance shall rest with the property owner.

(Code 1961, § 32-4; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Commented [AB5]: Ben, our DCM states that a minimum drainage easement based on the 4:1 slope is required along natural or constructed earthen channels. Should I replace this language, or should we revise the requirements of the DCM to match this?

Sec. 120-6. - Designation of the Q 100 flood boundary.

(a) For all cross drainage and other significant drainageways, whether publicly or privately maintained:

- (1) The limits of the 100-year flood boundary shall be determined.
- (2) Finish floor minimums adjacent to 100-year overflow open channel ditches and easements shall be shown on the final plat and on the grading plans as required to protect structures from flooding. If practical, structure finish floors shall be higher than the curb height at the property line. Otherwise, grading plans shall show that front yard swales are adequate for directing the 100-year storm around the structure.

(b) This information shall be indicated on the following:

- (1) Subdivision plats, before they are filed for record.
- (2) Individual site plans.

(Code 1961, § 32-5; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Sec. 120-7. - Easement requirements.

(a) All engineered or constructed stormwater facilities shall be contained in either private or public drainage easements. The drainage easements shall be dedicated by plat when possible. The drainage easements may be dedicated by separate instrument when the plat is already filed or when on adjacent property.

Commented [AB6]: Do we need to keep in the reference to over and under 100 acres ? Does Texarkana still use this criteria?

Commented [PB7]: DISCUSS WITH CITY

(b) In instances where there are existing easements, such easements shall be modified as necessary to accommodate the required channel section and conform to all requirements in this subsection.

(c) Such drainage easements shall be initially cleared of any obstructions which would prevent routine maintenance of the drainageway by motorized equipment. No obstruction, including trees, is to be placed in the drainage easement which would prevent routine maintenance of the drainageway by motorized equipment.

(d) Fencing shall be allowed across earthen channels. Fencing across earthen channels shall not impede the design flow of the channel, and fence materials and spacing shall be used that will provide sufficient open area. The developer / owner shall provide for debris removal at these locations. Fencing shall not be allowed across lined channels.

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(e) Each reach of a channel requiring vehicular access for maintenance must have a ramp. Variances for ramp requirements shall be considered on a case by case basis by the Director of Public Works.

(f) For public drainage easements, the minimum requirements shall be:

(1) Easements shall be dedicated to the public for drainage areas of 50 acres or more, and once the drainage channel or pipe enters a public easement or right-of-way. Stormwater facilities located within a public drainage easement or public right-of-way shall be the property of the City.

(2) Minimum easement requirements for closed conduit systems are listed in the Stormwater Management Design Manual Section 3.4.

(3) Drainage easements for open channels or overflow paths shall be of sufficient width to contain one (1) foot of freeboard above the 100-year fully developed water surface elevation, and shall meet the minimum width requirements listed in the Stormwater Management Design Manual Section 4.4.3.

(g) Private drainage easements are required for some private infrastructure. The Director of Public Works may choose to require a private easement for any facilities or drainage paths that would impact the public if not maintained. Facilities that require private easements include, but are not limited to:

(1) Stormwater Storage Facilities (detention or retention ponds);

(2) Post-construction water quality features;

(3) Drainage systems within developments with private roads if the drainage is entirely contained within the site and does not extend to the upstream boundaries of the subdivision; and

(4) Residential development stormwater facilities contained in a common open area owned and operated by a property owner's association.

(Code 1961, § 32-6; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Sec. 120-8. - Required submittal data.

(a) Developers and/or design engineers shall submit plans and calculations of proposed stormwater facilities or existing stormwater facilities to remain for City of Texarkana review and approval per the submittal schedule defined in the Stormwater Management Design Manual Section 1.1 and Appendix A. Those submittals shall include the following, at a minimum:

(1) The areas, time of concentration, runoff coefficients and rainfall intensities used to calculate runoff indicated on the drainage area map. In lieu of this, the designer may submit a copy of drainage calculations performed.

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- (2) Minimum floor-slab elevations and limits of Q 100 flood boundary where required, indicated on plats which are to be filed for record or on individual site plans, whichever is applicable.
- (3) If adequate drainage easements do not exist, the designer shall submit acceptable instruments of dedication for required easements.
- (4) Size, location and typical section for all drainage facilities.
- (5) Plan-profile of all channels, ditches and sanitary sewers will be required.
- (6) Cross-sections of all channels will be required.
- (7) Certification by a state-registered professional engineer or architect, qualified by education and experience in the field of hydrology and hydraulics, that all requirements of the criteria have been met.

(Code 1961, § 32-7; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Sec. 120-9. - Appeals.

Any person contesting any disapproval and/or interpretation and/or application of any rule, standard, regulation, determination, requirement of necessity set forth in this chapter by the Director of Public Works, shall have the right to appeal such decision. Any person so appealing who is in disagreement with the decision of the Director of Public Works, shall within ten days of that decision, file an appeal with the City Manager. The appeal should state what areas, in the opinion of the person adversely affected, the decision of the Director of Public Works disagrees with provisions or the intent of this chapter. It shall be the duty of the city council to hear any such appeal within 30 days from the date received by the City Manager.

(Code 1961, § 32-8; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Sec. 120-10. - Waiver of drainage regulations.

The Director of Public Works is authorized to waive compliance with any part of this policy in those instances wherein it is neither technically reasonable nor feasible or where it is technically impossible to comply with such part. This waiver authority shall be strictly construed.

(Code 1961, § 32-9; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Sec. 120-11. - Incorporation of provisions into chapter 135; applicability as provided by state statutes.

The provisions of this chapter are hereby incorporated into and made a part of chapter 135, Subdivision Regulations, of this Code and as such are applicable to and enforceable within platted subdivisions in the extraterritorial jurisdiction area of the city as well as within the city limits.

(Code 1961, § 32-10; Ord. No. 079-07, § 1(exh. A), 4-23-2007)

Sec. 120-12. - Withholding of permits to enforce provisions.

The Director of Public Works shall withhold the issuance of certificate of compliance, electrical, plumbing and/or building permits or issuance of certificate of occupancy as deemed necessary to enforce the provisions of this chapter based on policy as follows:

- (1) For all subdivision type developments the drainage plan shall be submitted for approval along with the street plans for such subdivision. For industrial, commercial or institutional subdivision type developments wherein individual site development may vary in size and amount of impervious cover, the drainage plan shall be submitted with calculations based on a "C" factor of 0.75 minimum for full development. Construction of required drainage improvements shall be accomplished in conjunction with the street construction and both street and drainage facilities must be constructed to a level of completion adequate to function effectively at their design capacity prior to issuance of any permits. If stage development is proposed, each stage must be designed and constructed to the extent necessary to ensure effective functioning independent of future planned stages, prior to permit issuance.
- (2) For singular site type developments, the drainage plan shall be submitted along with the site and construction plans for total development. Construction of required drainage improvements shall be accomplished in conjunction with the site development and shall be constructed to a level of completion adequate to function effectively at the design capacity prior to the issuance of any certificate of occupancy connected with such site development.

(Code 1961, § 32-11; Ord. No. 079-07, § 1(exh. A), 4-23-2007)