

# Resolution

Version 2.5 released on 6/29/23



WS0120691

**CITY COUNCIL USE ONLY**

Date Received: \_\_\_\_\_  
 Committee Date: \_\_\_\_\_  
 1<sup>st</sup> Agenda Date: \_\_\_\_\_

Tracking #: \_\_\_\_\_

Committee: \_\_\_\_\_

Hearing Date: \_\_\_\_\_

2<sup>nd</sup> Agenda Date: \_\_\_\_\_**CITY CLERK USE ONLY**

☐ Scanned Date: 07.10.2024  
☐ Posted Item #: 2407.01793

**All department items requiring Council approval must be submitted through the Mayor's Office.****Board Approval**

Other Board Name \_\_\_\_\_

City Council Approval

☒ Yes ☐ No

Department \_\_\_\_\_  
 Water and Sewer \_\_\_\_\_  
 Contact Name \_\_\_\_\_  
 Brooke Caviness \_\_\_\_\_

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 bcaviness@cityoftulsa.org \_\_\_\_\_

Phone \_\_\_\_\_  
 596-9498 \_\_\_\_\_

Resolution Type \_\_\_\_\_  
 Adopting/Amending Maps \_\_\_\_\_

Owner-Grantor \_\_\_\_\_

Amount \_\_\_\_\_

Case Number \_\_\_\_\_

TMAPC Number \_\_\_\_\_

Council District \_\_\_\_\_

Description (Subject) \_\_\_\_\_  
 City of Tulsa Floodplain Atlas Map Revision and Master Plan,  
 Perryman Ditch \_\_\_\_\_

Bid/Project Number \_\_\_\_\_

Section \_\_\_\_\_

Township \_\_\_\_\_

Range \_\_\_\_\_

Addition \_\_\_\_\_

Lot \_\_\_\_\_

Block \_\_\_\_\_

Address \_\_\_\_\_

Funding Source(s) \_\_\_\_\_

Department: \_\_\_\_\_

Legal: \_\_\_\_\_

Board: \_\_\_\_\_

Mayor: \_\_\_\_\_

Other: \_\_\_\_\_

TOTAL:

Date: 7.1.2024  
 Date: JULY 3 XXIV  
 Date: \_\_\_\_\_  
 Date: JUL 10 2024  
 Date: \_\_\_\_\_

**Background Information**

Submitted is a Resolution adopting revisions to the City of Tulsa Regulatory Floodplain Map Atlas panels and Master Drainage Plan for the entire Perryman Ditch. Revisions are based on an update to the Perryman Ditch Master Drainage Plan. As shown on the attached exhibits, the total number of parcels now located in the proposed City of Tulsa Regulatory Floodplain is 152, and the number of parcels in the existing City of Tulsa Regulatory Floodplain is 1929. 1777 parcels have been removed from the City of Tulsa Regulatory Floodplain. The total number of parcels now located in the proposed City of Tulsa Drainage Sensitive Area is 2338, and the number of parcels in the existing City of Tulsa Drainage Sensitive Area is 0. 2338 parcels have been added to the City of Tulsa Drainage Sensitive Area. The Drainage Service Area Ordinance 25244 was adopted by City Council on January 31, 2024.

**Summation of the Requested Action**

Request approval of the Resolution to adopt the January 2024 City of Tulsa Regulatory Floodplain Map Atlas - Panels 37, 38, 47, 48, and 52. TGP: tgp BC: BDC

**Emergency Clause?**☒ Yes☐ No**Reason for Emergency Clause**

The emergency clause being requested for the protection of the public health, safety and welfare, of the citizen of the City of Tulsa.

6/27/24, 9:21 AM

RFA Form System

**Post Execution Processing**

- ☐ Mail vendor copy (addtl signature copies attached)
- ☐ Must be filed with other governmental entity
- ☐ Addtl governmental entity approval(s) required

**Additional Routing and Processing Details**

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(Published in the Tulsa World,

\_\_\_\_\_, 2024.)

RESOLUTION \_\_\_\_\_

A RESOLUTION ADOPTING THE JANUARY 2024 CITY OF TULSA REGULATORY FLOODPLAIN MAP ATLAS FOR TULSA COUNTY AND INCORPORATED AREAS AS THE OFFICIAL CITY OF TULSA FLOODPLAIN MAPS FOR THOSE PARTS OF TULSA COUNTY LYING WITHIN THE CITY OF TULSA'S CITY LIMITS, WHICH MAPS IN HARDCOPY FORM ARE ATTACHED HERETO AND MADE A PART HEREOF; SUPERSEDING THE PREVIOUS TULSA COUNTY AND INCORPORATED AREAS MAPS; PROVIDING THAT COPIES OF SAID MAPS BE FILED AND KEPT IN THE OFFICE OF THE CITY CLERK; MAKING SAID MAPS AVAILABLE TO THE PUBLIC AT A REASONABLE CHARGE; DECLARING AN EMERGENCY, AND SETTING AN EFFECTIVE DATE.

WHEREAS, Title 11-A, Tulsa Revised Ordinances, Section 304, Subsection E requires the Director of Public Works to produce maps defining the regulatory flood plains (or floodplains) within the city limits of the City of Tulsa, and to revise them from time to time;

WHEREAS, the above ordinance provides that upon City Council's approval and adoption of said maps as the official maps of the City of Tulsa, they be filed in the Office of the City Clerk and made available to the public; and

WHEREAS the City of Tulsa Regulatory maps describing the flood plains in Tulsa and incorporated areas lying within the city limits of the City of Tulsa, newly revised as of January 2024 and compiled in hard copy and digital form, have been so prepared and are attached hereto.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF TULSA:

Section 1. That the attached City of Tulsa Regulatory floodplain maps for Tulsa County and incorporated areas, revised as of January 2024, are hereby approved and adopted as the official flood maps for those parts of Tulsa County lying within the city limits of the City of Tulsa. This includes the areas of special flood hazard identified by the City of Tulsa Regulatory Floodplain Atlas and revised in the scientific and engineering re-study of the Perryman Ditch Master Drainage Plan including the following City of Tulsa Regulatory Floodplain Map Atlas panels 46, 47, 51, and 52.

Section 2. That the said official January 2024 City of Tulsa regulatory floodplain map atlas supersedes the previous flood maps of Tulsa and incorporated areas lying within the city limits of the City of Tulsa for the areas shown on the revised maps.

Section 3. For all other incorporated areas lying within the city limits of the City of Tulsa the previously adopted City of Tulsa regulatory floodplain map atlas remains in effect.

Section 4. That copies of said official January 2024 City of Tulsa regulatory floodplain map atlas be filed and kept in the Office of the City Clerk of the City of Tulsa.

Section 5. That copies of the said official January 2024 City of Tulsa regulatory floodplain maps be made available to the public, for a reasonable charge.

Section 6. That an emergency exists for the preservation of the public welfare, wherefore this Resolution shall take effect immediately upon its adoption, approval, and publication.

ADOPTED by the Council \_\_\_\_\_  
Date

\_\_\_\_\_  
Chairman of the Council

ADOPTED as an emergency measure \_\_\_\_\_  
Date

\_\_\_\_\_  
Chairman of the Council

OFFICE OF THE MAYOR

Received by the Mayor: \_\_\_\_\_ at \_\_\_\_\_ : \_\_\_\_\_  
Date Time

G.T. Bynum, Mayor

By: \_\_\_\_\_  
Secretary

APPROVED by the Mayor of the City of Tulsa, Oklahoma: \_\_\_\_\_ Date  
at \_\_\_\_\_  
Time

\_\_\_\_\_  
Mayor

(Seal)

ATTEST:

\_\_\_\_\_  
City Clerk

APPROVED:

\_\_\_\_\_  
City Attorney

OK-MDS

\_\_\_\_\_  
City Engineer



(Published in the Tulsa World,  
February 11, 2023 .)

ORDINANCE NO. 25244

AN ORDINANCE OF THE CITY OF TULSA, OKLAHOMA, AMENDING TITLE 11-A, "STORMWATER MANAGEMENT AND HAZARD MITIGATION PROGRAM", CHAPTER 3, "WATERSHED DEVELOPMENT REGULATIONS", SECTION 301, "SCOPE AND DEFINITIONS", BY THE ADDITION OF A NEW DEFINITION, "11. DRAINAGE SENSITIVE AREA (DSA)"; RENUMBERING THE DEFINITIONS AS NECESSARY; AMENDING TITLE 11-A, SECTION 304, "POLICIES AND STANDARDS FOR APPROVAL OF WATERSHED DEVELOPMENT PERMITS, SUBDIVISION PLATS, LOT SPLITS AND BUILDING PERMITS" BY THE ADDITION OF A NEW SUB-SECTION, SUB-SECTION "F", "DRAINAGE SENSITIVE AREA (DSA) POLICIES AND STANDARDS"; PROVIDING FOR SEVERABILITY; REPEALING ALL ORDINANCES AND PARTS OF ORDINANCES IN CONFLICT HERewith; AND DECLARING AN EMERGENCY.

BE IT ORDAINED BY THE CITY OF TULSA:

*Section 1. That Subsection B, Titled "Definitions", in Section 301, Titled "Scope and Definitions" in Chapter 3, Titled "Watershed Development Regulations, of Title 11-a, Titled "Stormwater Management and Hazard Mitigation Program" of Tulsa Revised Ordinances ("TRO"), be and the same is now amended to read as follows:*

"B. **Definitions.** For purposes of this chapter, the following words and phrases shall have the meanings given herein.

1. **Alter or alteration of a watercourse** means any change to the stormwater drainage system or to the land surface which changes the conveyance capacity of the stormwater drainage system.
2. **Appeal** means a request for a review of the Director's interpretation of any provision of this chapter or a request for a variance.
3. **Area of shallow flooding** means a designated AO, AH or VO zone on the City's Flood Insurance Rate Map (FIRM) with a one percent (1%) or greater annual chance of flooding to an average depth of one (1) to three (3) feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.
4. **Area of special flood hazard** is the land in the flood plain within the City subject to a one percent (1%) or greater chance of flooding in any given year. The area may be designated as Zone A on the Flood Hazard Boundary Map (FHBM). After detailed rate making has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AE, AH, AO, A1-99, VO, V1-30, VE or V. (See Flood Hazard Area)
5. **Base flood** means the flood having a one percent (1%) chance of being equaled or exceeded in any given year and is the regulatory flood.
6. **City Drainage Standards** are the criteria, standards and specifications for stormwater drainage, earth change and flood plain development adopted by the City by resolution.
7. **Critical feature** means an integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

8. **Detention** means the temporary storage and controlled release of stormwater run-off.
9. **Detention facility** means a facility that provides temporary storage of stormwater run-off and controlled release of this run-off.
10. **Development** means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, berming, diking, excavating or drilling operations.
11. **Drainage Sensitive Area (DSA)** is the area outside the designated FEMA Special Flood Hazard Area and outside the designated regulatory floodplain which is subject to flooding during the one percent (1%) or greater annual chance of flooding to calculated depths of 6" or greater where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may not be evident. Such flooding is characterized by ponding or sheet flow.
12. **Earth change** means excavating, grading, regrading, landfilling, berming or diking of land within the City.
13. **Elevated building** means a non-basement building:
  - a. built, in the case of a building in Zones A 1-30, AE, A, A99, AO, AH, B, C, X and D, to have the top of the elevated floor, or in the case of a building in Zones V 1-30, VE or V, to have the bottom of the lowest horizontal structure member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers) or shear walls parallel to the flow of the water, and
  - b. adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood.

In the case of Zones A 1-30, AE, A, A99, AO, AH, B, C, X, D, "elevated building" also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters. In the case of Zones V 1-30, VE or V, "elevated building" also includes a building otherwise meeting the definition of "elevated building," even though the lower area is enclosed by means of breakaway walls if the breakaway walls meet the standards of Section 60.3(e)(5) of the National Flood Insurance Program regulations.
14. **Existing construction or existing structures** means, for the purpose of determining flood insurance rates, structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date.
15. **Federal Emergency Management Agency (FEMA)** means the federal agency responsible for administering the National Flood Insurance Program.
16. **Flood or flooding** means a general and temporary condition for partial or complete inundation of normally dry land areas from:
  - a. the overflow of inland waters, or
  - b. the unusual and rapid accumulation or run-off of surface waters from any source.
17. **Flood hazard area** means an area of special flood hazard.
18. **Flood Insurance Rate Map (FIRM)** means an official map of a community on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.
19. **Flood Insurance Study** is the official report provided by the Federal Emergency Management Agency. The report contains flood profiles, water surface elevation of the base flood and the Flood Boundary-Floodway Map.

20. **Flood plain** means any land area susceptible to being inundated by water from any source. (See definition of flooding.)
21. **Flood protection system** means those physical structural works for which funds have been authorized, appropriated and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the areas within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood-modifying works are those constructed in conformance with sound engineering standards.
22. **Floodway** is that portion of the flood hazard area identified by the Federal Emergency Management Agency as the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the regulatory flood without cumulatively increasing the water surface elevation more than one (1) foot.
23. **Full development/full urbanization** is full potential urbanization of the contributing watershed considering the Comprehensive Plan and land use regulations.
24. **Full development flood fringe** is that portion of the flood plain area between the outer boundary of the flood plain and the outer boundary of the flood hazard area. This area reflects the effects of full development of the watershed and extends to where the contributory drainage area is forty (40) acres or more.
25. **Functionally dependent use** means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.
26. **Highest adjacent grade** means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.
27. **Levee** means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of water so as to provide protection from temporary flooding.
28. **Levee system** means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.
29. **Lowest floor** means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirement of Section 60.3 of the National Flood Insurance Program regulations.
30. **Manufactured home** means a structure transportable in one (1) or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For flood plain management purposes, the term "manufactured home" also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than one hundred eighty (180) consecutive days. For insurance purposes, the term "manufactured home" does not include park trailers, travel trailers or other similar vehicles.
31. **Mean sea level** means the National Geodetic Vertical Datum (NGVD) of 1929, or other datum, to which base flood elevations are shown.
32. **Natural state** means the cover and topography of land before any development or, in areas where there has already been development, the state of the area and topography of land on the date of December 22, 1977.



33. **New construction** means, for flood plain management purposes, structures for which the "start of construction" commenced on or after the effective date of a flood plain management regulation adopted by the City.
34. **One hundred year frequency rainstorm** is the rainstorm having an average statistical frequency of occurrence in the order of once in one hundred (100) years, although the rainstorm may actually occur in any year.
35. **Regulatory flood** is the flood having a one percent (1%) chance of being equaled or exceeded in any given year.
36. **Regulatory flood plain** is the area subject to flooding by the regulatory flood based on the full development of the watershed and where the contributing drainage area is forty (40) acres or more as designated by the City.
37. **Sedimentation facilities** include debris basins, sedimentation traps, berms, interceptor ditches, land terraces, hay bales and vegetation ground cover.
38. **Start of construction** includes substantial improvement and means the date the building permit was issued, provided that the actual start of construction, repair, reconstruction, placement or other improvement was within one hundred eighty (180) days of the permit date. The actual start means either the first placement of permanent construction or a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets or walkways; nor does it include excavation for basement, footing, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.
39. **Stormwater Drainage Advisory Board** is the Advisory Board established in Chapter 1 of this title.
40. **Stormwater Technical Advisory Group** is the Technical Advisory Group established by the Stormwater Drainage Advisory Board for the purpose of reviewing and recommending to the Stormwater Drainage Advisory Board on issues pertaining to drainage standards, Watershed Development Permit appeals and requests for variances.
41. **Stormwater run-off** is that portion of the rainfall that is drained into the stormwater drainage system.
42. **Structure** means a walled and roofed building that is principally above ground, including a gas or liquid storage tank, as well as a manufactured home.
43. **Substantial improvement** means any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds fifty percent (50%) of the market value of the structure, either before the improvement or repair is started or, if the structure has been damaged and is being restored, before the damage occurred. For purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include any projects for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions, or any alterations of a structure listed on the National Register of Historic Places or State Inventory of Historic Places.
44. **Variance** means a grant of relief to a person from the requirements herein when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by this chapter. (For full requirements, see Section 60.6 of the National Flood Insurance Program regulation.)

45. **Violation** means the failure of a structure or other development to be in full compliance with the City's flood plain management regulations. A structure or other development without the elevation certificate, other certifications or other evidence of the compliance required in Section 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4) or (e)(5) of the National Flood Program regulations is presumed to be in violation until such time as that documentation is provided.
45. **Watercourse** means any depression serving to give direction to a current of stormwater where the drainage area above the same is five (5) acres or more.
46. **Watershed** means the physical area from which water drains into a creek.
47. **Water surface elevation** means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929 (or other datum, where specified) of floods of various magnitudes and frequencies in the flood plains of coastal or riverine areas.

*Section 2. That new sub-section, Subsection F, Titled "Drainage Sensitive Area (DSA) policies and standards", be added to Section 304, "Policies and Standards for Approval of Watershed Development Permits, Subdivision Plats, Lot-Splits and Building Permits" in Chapter 3, "Watershed Development Regulations, of Title 11-a, "Stormwater Management and Hazard Mitigation Program" of Tulsa Revised Ordinances ("TRO"), and the same is now amended to read as follows:*

- F. Drainage Sensitive Area (DSA) policies and standards.** The Director shall, from time to time, prepare maps defining the one hundred (100) year, fully urbanized Drainage Sensitive Areas within the City. When DSA areas are mapped and adopted by the governing body of the City, the maps shall be made available to the public.

The provisions of this subsection shall apply to development within the identified Drainage Sensitive Areas graphically shown by the maps adopted by the City of Tulsa.

1. **Drainage Sensitive Area policies.**
  - a. Development which is dangerous to health, safety or property in times of flood or which would cause excessive increases in flood heights or velocities shall be restricted or prohibited.
  - b. Uses vulnerable to floods, including facilities which serve such uses, shall be protected against flood damage at the time of initial construction.
  - c. The alteration of natural Drainage Sensitive Areas, stream channels and watercourses shall be controlled.
  - d. Filling, grading, dredging and other development which may increase flood damage shall be controlled.
  - e. The construction of barriers which will unnaturally divert runoff waters or which may increase flood hazards to other lands in and outside the City shall be prevented or regulated.
  - f. The approval or denial of a Drainage Sensitive Watershed Development Permit by the Director shall be based on the provisions of this chapter and the following relevant factors:
    - (1) the danger to life and property due to flooding damage;
    - (2) the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
    - (3) the compatibility of the proposed use with existing and anticipated development;
    - (4) the safety of access to the property in times of flood for ordinary and emergency vehicles;

- (5) the costs of providing governmental services during and after flood conditions, including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical and water systems;
- (6) the expected heights, duration, and rate of rise of the floodwaters expected at the site;
- (7) the availability of alternative locations not subject to flooding damage for the proposed use; and
- (8) the relationship of the proposed use to the comprehensive plan for that area.

**2. Drainage Sensitive Areas standards.**

**a. General requirements within Drainage Sensitive Areas.**

- (1) All new construction including placement of prefabricated buildings and manufactured homes shall be designed (or modified) and adequately elevated and anchored to prevent flotation, collapse or lateral movement of the structure.
- (2) All new construction shall be by methods and practices that minimize or eliminate flood damage.
- (3) All new construction shall utilize materials and utility equipment resistant to flood damage.
- (4) All new and replacement water supply systems shall be floodproofed.
- (5) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.
- (6) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- (7) Filling or development which diminishes the flood storage capacity of any Drainage Sensitive Area shall be compensated for as specified in the City drainage standards.

Compensatory storage calculations for Drainage Sensitive Areas shall be determined for flood depths of at least six inches.

**b. Development requirements in the Drainage Sensitive Areas.**

- (1) All new construction of any residential structure shall have the lowest floor, including basement, all electrical and mechanical equipment and ductwork, elevated at least one (1) foot above the regulatory flood elevation with full urbanization. A registered professional engineer or land surveyor shall submit a certification to the Director that the elevation requirement has been met.
- (2) All new construction of any commercial, industrial or other non-residential structure shall either have the lowest floor, including basement, all electrical and mechanical equipment and ductwork, elevated at least one (1) foot above the regulatory flood elevation with full urbanization, or together with attendant utility and sanitary facilities, be floodproofed so that at least below one (1) foot above the level with full urbanization, 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 and effects of buoyancy. A registered professional engineer shall submit certification to the Director that this standard regarding floodproofing has been satisfied. A registered professional engineer or land surveyor shall submit a certification to the Director that the elevation requirement has been met.
- (3) All new construction of any structures that contain essential facilities and services necessary for emergency response and recovery, or that pose a substantial risk to the

community at large in the event of failure, disruption of function, or damage by flooding, as defined in ASCE 24-14, shall have the lowest floor, including basement, all electrical and mechanical equipment and ductwork, elevated at least two (2) feet above the regulatory flood or elevation with full urbanization. Alternatively the structure together with attendant utility and sanitary facilities, can be flood proofed so that at least below two (2) feet above the regulatory flood with full urbanization, the structure is watertight with walls substantially impermeable to the passage of water. All structural components shall have the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer shall submit certification to the Director that this standard regarding floodproofing has been satisfied. A registered professional engineer or land surveyor shall submit a certification to the Director that the elevation requirement has been met.

- (4) All manufactured homes shall be elevated and anchored to prevent flotation, collapse or lateral movement from the regulatory flood with full urbanization. Acceptable methods of elevating and anchoring shall be set out in the City drainage standards. Methods of anchoring may include but are not limited to use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.
- (5) All manufactured homes to be placed in the Drainage Sensitive Area shall have the bottom of the lowest horizontal framing member, all ductwork, electrical and mechanical equipment, elevated at least one (1) foot above the regulatory flood with full urbanization. A registered professional engineer or land surveyor shall submit a certification to the Director that the elevation requirement has been met.
- (7) Placement of manufactured homes within the Drainage Sensitive Area is prohibited except in a legally pre-existing manufactured home park or subdivision.
- (8) All new construction and substantial improvements, with fully enclosed areas below the lowest floor that are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or meet or exceed the following minimum criteria:
  - (a) a minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding shall be provided,
  - (b) the bottom of all openings shall be no higher than one (1) foot above grade; and
  - (c) openings may be equipped with screens, louvers, valves or other coverings or devices, provided that they permit the automatic entry and exit of flood waters.

**c. Standards for subdivision proposals in Drainage Sensitive Areas.**

- (1) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood effects and shall comply with the provisions of this chapter and the City drainage standards.
- (2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
- (3) Drainage Sensitive Area delineation shall be clearly shown on all preliminary plats and final plats submitted for approval.
- (4) All subdivision proposals, including manufactured home parks greater than fifty (50) lots or five (5) acres, whichever is lesser, shall show the water surface elevation of the base flood with full urbanization.

**4. Special flood hazard area notice.**



- a. Every owner of real property, any part of which is located in a Drainage Sensitive Area as depicted and shown on the City of Tulsa regulatory flood map adopted by the City, is hereby required to notify in writing every tenant of the real property of the location of the property in a designated Drainage Sensitive Area and to obtain and keep for inspection upon request by the Director or his authorized representative written acknowledgment of the receipt of the notice signed by each of the tenants.

The notice shall be given, and the acknowledgment thereof obtained prior to any of the tenants taking possession of or occupying the real property or, in the case of property already rented or leased prior to the effective date of this provision, within sixty (60) days after its adoption and publication. The notice and acknowledgment shall be in a separate document and not a part of any other document, such as a lease, and it shall be substantially in the form described in Section 304.E.4:

**Section 3. SEVERABILITY CLAUSE.** *If any section, subsection, paragraph, subparagraph, sentence, clause or phrase of this Ordinance shall be declared invalid for any reason whatsoever, such decision shall not affect the remaining portions of the Ordinance, which shall remain in full force and effect, and to this end, the provisions of this Ordinance are hereby declared to be severable.*

**Section 4. REPEAL OF CONFLICTING ORDINANCES.** *That all other ordinances or parts of ordinances in conflict herewith be, and the same are now, expressly repealed.*

**Section 5.** *That an emergency is now declared to exist for the preservation of the public peace, health and safety, by reason whereof this Ordinance shall become effective immediately from and after its adoption, approval and publication.*

ADOPTED by the Tulsa City Council, this 31st Day of January 2024

Jeannie Cue, Chair of the City Council

APPROVED by the Mayor of the City of Tulsa, Oklahoma, this 7th Day of February 2024

G. T. Bynum, Mayor

ATTEST: Jazmin J. Byrd, Deputy City Clerk

APPROVED: Jack Blair, City Attorney





## Timeline

### Perryman Ditch Watershed

#### Master Drainage Plan and Mapping Updates

January 4, 2017	Agreement executed and Notice to Proceed given
February 2018	Consultant began preparing updated Hydrologic Models, 1D Open Channel Models, and 2D Closed System and Overland Flow Models
January 23, 2018	Public Meeting – Tulsa Rose Garden Center  (mailed information sheet and invite to approximately 2,600 parcels in or adjacent to the floodplain. Had 29 attendees sign the sign-in sheets)
November 2018	Consultant provided preliminary floodplain maps to City staff for review
January 2019	Consultant began identifying Problem Areas and Performing Alternative Analyses
January 2020	Consultant submitted draft report to City staff for review
November 14, 2022	Public Meeting – SpiritLife Church  (mailed information sheet and invite to approximately 1,600 parcels in or adjacent to the floodplain for areas north of 46 <sup>th</sup> Street South. Had 12 attendees sign the sign-in sheets)
November 29, 2022	Public Meeting – SpiritLife Church  (mailed information sheet and invite to approximately 1,100 parcels in or adjacent to the floodplain for areas south of 46 <sup>th</sup> Street South. Had 20 attendees sign the sign-in sheets)
January 4, 2023	Consultant presented Perryman Ditch information to the Brookside Businesses Association
February 2023	Consultant began finalizing mapping updates and performing research for the development of the future Ordinance 25244
August 2023	Consultant began finalizing report to incorporate the final mapping changes and discussion about the Drainage Sensitive Areas
October 17, 2023	SDHMAD approved the Ordinance 25244 language
January 2024	Consultant submitted final report and backup information to City staff
January 31, 2024	Council and Mayor approved Ordinance 25244
February 20, 2024	Presented the Perryman Ditch Master Drainage Plan to the SDHMAB

# Meeting Minutes

## Stormwater Drainage and Hazard Mitigation Advisory Board

### February 20, 2024, at 1:30pm

175 E 2<sup>nd</sup> Street | North Presentation Room (03-317) | Tulsa, Oklahoma 74107

Attendees:

MEMBERS		
Name	PRESENT	ABSENT
Brierly	X	
Childers	X	
Grogan	X	
Walman		X
Williams	X	

OTHER		
Name	Organization	Email Address
Destinee Love	COT	<a href="mailto:dlove@cityoftulsa.org">dlove@cityoftulsa.org</a>
Dawn Warrick	Freese and Nichols, Inc.	<a href="mailto:dawn.warrick@freeseandnichols.com">dawn.warrick@freeseandnichols.com</a>
Barrett Waller	Propeller	<a href="mailto:barrett@thinkpropeller.com">barrett@thinkpropeller.com</a>
Joan Gausvik	COT	<a href="mailto:jgausvik@cityoftulsa.org">jgausvik@cityoftulsa.org</a>
Terry Ball	COT	<a href="mailto:tball@cityoftulsa.org">tball@cityoftulsa.org</a>
Caleb Perkins	COT	<a href="mailto:cperkins@cityoftulsa.org">cperkins@cityoftulsa.org</a>
Aaron Johnson	COT	<a href="mailto:ajohnson@cityoftulsa.org">ajohnson@cityoftulsa.org</a>
Trey Wilson	COT	<a href="mailto:lwilson@cityoftulsa.org">lwilson@cityoftulsa.org</a>
Dustin Wright	COT	<a href="mailto:dwright@cityoftulsa.org">dwright@cityoftulsa.org</a>
Brooke Caviness	COT	<a href="mailto:bcaviness@cityoftulsa.org">bcaviness@cityoftulsa.org</a>
Gary McCormick	COT	<a href="mailto:gmccormick@cityoftulsa.org">gmccormick@cityoftulsa.org</a>
Paul Zachary	COT	<a href="mailto:pzachary@cityoftulsa.org">pzachary@cityoftulsa.org</a>
Eric Lee	COT	<a href="mailto:elee@cityoftulsa.org">elee@cityoftulsa.org</a>
Roy Teeters	COT	<a href="mailto:rteeters@cityoftulsa.org">rteeters@cityoftulsa.org</a>
Tom Prag	COT	<a href="mailto:tprag@cityoftulsa.org">tprag@cityoftulsa.org</a>
Janet Meshek	Meshek & Associates	<a href="mailto:jmeshek@meshekengr.com">jmeshek@meshekengr.com</a>
Alison Whitsitt	Meshek & Associates	<a href="mailto:awhitsitt@meshekengr.com">awhitsitt@meshekengr.com</a>

- I. Chairman Brierly called the meeting to order at 1:34PM.
- II. Kyle Brierly asked for review and approval of October 17, 2023, SDHMAB minutes. No corrections or revisions was requested. Board Member Childers moved to approve the minutes; Board Member Williams seconded the motion. Minutes were approved unanimously.

### III. Reports

#### a. Development Services Report – Dustin Wright

Dustin Wright presented the Development Services Report for January and February 2024. Mr. Wright noted 19 total Floodplain Permit Reviews were completed with 12 being in the City regulatory floodplain and seven being in the FEMA 1% (100-year) floodplain.

Mr. Wright also noted that there was one commercial elevation certificate and two residential certificates issued. Mr. Wright also noted that there were no violations in the floodplains between January and February 2024.

Questions were welcomed.

#### b. Stormwater & Land Management Report – Scott VanLoo and Roy Teeters

Roy Teeters presented the Stormwater & Land Management Report rendered from October 1, 2023 to December 31, 2023. Mr. Teeters noted 3110 total Work Orders were processed and 762 cubic yards of homeless debris were removed. Mr. Teeters also noted that there were 79,328lbs of Household Pollutants collected. Mr. Teeters noted that he will put together a more in-depth report and schedule for the next quarterly report.

Questions were welcomed.

#### c. PPI Report – Barrett Waller

Barrett Waller presented the PPI Report Update. Mr. Waller noted future adjustments for the PPI Report including:

1. Updating the letters that are sent out to citizens.
2. Updating the Flood Insurance Brochure.

Questions were welcomed.

#### d. Hazard Mitigation Plan Update – Dawn Warrick

Dawn Warrick presented the Hazard Mitigation Plan Update. Ms. Warrick presented a recap of Hazard Mitigation events including three stakeholder workshops, a public meeting, and a meeting with Partner Tulsa.

Ms. Warrick also noted the 29 Action Items that are in need of being refined- each hazard must have at least one action item attached to it, per FEMA guidelines. Ms. Warrick noted that an update will be presented to the Board during the March 2024 Board meeting.

Questions were welcomed.

IV. **ISSUES FOR DISCUSSION AND/OR ACTION**

a. Perryman Ditch Master Drainage Plan Reports – Meshek & Associates

Grant Moore presented the Perryman Ditch Master Drainage Plan Reports. Mr. Moore noted the differences between the 1990 Master Drainage Plan and the 2024 Update to the Master Drainage Plan. The updates included an SCS Curve Number Hydrology with NOAA Atlas 14 Rainfall, 1D HEC-RAS hydraulic modeling at riverine streams, and a 2D PCSWMM hydraulic modeling for storm sewer and overland flow combined. Mr. Paul Zachary noted that the updates will provide a closer estimate of the base flood elevation.

Questions were welcomed.

Motion to approve Board Member Williams, Board Member Grogan seconded the motion.

Approved, unanimously.

V. New Business

[NOTE: "New business" is restricted to any matter not known about or which could not have been reasonably foreseen prior to the time of posting. *Oklahoma Open Meeting Act*, 25 O.S.2001, §311(9)]

None.

VI. Public Comments

Joan Gausvik noted the news conference regarding the BRIC Grant for Fulton Creek will be held at 43<sup>rd</sup> and Sheridan (6500 E. 44<sup>th</sup> St) from 1-3PM on February 26, 2024.

VII. Next Meeting, March 19, 2024, at 1:30PM.

VIII. Adjournment at 2:40PM.



# Meeting Minutes

## Stormwater Drainage and Hazard Mitigation Advisory Board

### October 17, 2023 at 1:30pm

2317 S Jackson Ave. | Conference Room S213 | Tulsa, Oklahoma 74107

Attendees:

MEMBERS		
Name	Organization	Email Address
Kyle Brierly	SDHMAB Chair	<a href="mailto:kyle@rotorooterok.com">kyle@rotorooterok.com</a>
Michael Grogan	SDHMAB Member	<a href="mailto:michael.grogan3@gmail.com">michael.grogan3@gmail.com</a>
Steve Walman	SDHMAB Member	<a href="mailto:steve@walmancommercial.com">steve@walmancommercial.com</a>
David Williams	SDHMAB Member	<a href="mailto:david.joe.williams@gmail.com">david.joe.williams@gmail.com</a>
Anna Childers	SDHMAB Member	<a href="mailto:anna.childers@benham.com">anna.childers@benham.com</a>

OTHER		
Name	Organization	Email Address
Barrett Waller	Propeller	<a href="mailto:barrett@thinkpropeller.com">barrett@thinkpropeller.com</a>
Allison Whitsitt	Meshek	<a href="mailto:awhitsitt@meshekengr.com">awhitsitt@meshekengr.com</a>
Chandler Trotter	Meshek	<a href="mailto:ctrotter@meshekengr.com">ctrotter@meshekengr.com</a>
Janet Meshek	Meshek	<a href="mailto:jmeshek@meshekengr.com">jmeshek@meshekengr.com</a>
Gary McCormick	City of Tulsa	<a href="mailto:gmccormick@cityoftulsa.org">gmccormick@cityoftulsa.org</a>
Roy Teeters	City of Tulsa	<a href="mailto:rteeters@cityoftulsa.org">rteeters@cityoftulsa.org</a>
Scott VanLoo	City of Tulsa	<a href="mailto:svanloo@cityoftulsa.org">svanloo@cityoftulsa.org</a>
Paul Zachary	City of Tulsa	<a href="mailto:pzachary@cityoftulsa.org">pzachary@cityoftulsa.org</a>
Destinee Love	City of Tulsa	<a href="mailto:dlove@cityoftulsa.org">dlove@cityoftulsa.org</a>
Mark Swiney	City of Tulsa	<a href="mailto:mswiney@cityoftulsa.org">mswiney@cityoftulsa.org</a>
Brooke Caviness	City of Tulsa	<a href="mailto:bcaviness@cityoftulsa.org">bcaviness@cityoftulsa.org</a>
Joan Gausvik	City of Tulsa	<a href="mailto:jgausvik@cityoftulsa.org">jgausvik@cityoftulsa.org</a>
Dustin Wright	City of Tulsa	<a href="mailto:DWWright@cityoftulsa.org">DWWright@cityoftulsa.org</a>
Joshua White	City of Tulsa	<a href="mailto:JoshuaWhite@cityoftulsa.org">JoshuaWhite@cityoftulsa.org</a>
Jarrold Moore	City of Tulsa	<a href="mailto:JLMoore@cityoftulsa.org">JLMoore@cityoftulsa.org</a>
Katie Mayes	City of Tulsa	<a href="mailto:kmayes@cityoftulsa.org">kmayes@cityoftulsa.org</a>
Patrick Huycke	City of Tulsa	<a href="mailto:phuycke@cityoftulsa.org">phuycke@cityoftulsa.org</a>
Trey Wilson	City of Tulsa	<a href="mailto:twilson@cityoftulsa.org">twilson@cityoftulsa.org</a>
Jack Neely	City of Tulsa	<a href="mailto:jneely@cityoftulsa.org">jneely@cityoftulsa.org</a>
Terry Ball	City of Tulsa	<a href="mailto:TBALL@cityoftulsa.org">TBALL@cityoftulsa.org</a>
Freddy Dahmash	City of Tulsa	<a href="mailto:fdahmash@cityoftulsa.org">fdahmash@cityoftulsa.org</a>
Michael Ling	City of Tulsa	<a href="mailto:MLing@cityoftulsa.org">MLing@cityoftulsa.org</a>
Lara Weber	City of Tulsa	<a href="mailto:LWeber@cityoftulsa.org">LWeber@cityoftulsa.org</a>
Jacob Hagen	City of Tulsa	<a href="mailto:JHagen@cityoftulsa.org">JHagen@cityoftulsa.org</a>
Chris Hill	City of Tulsa	<a href="mailto:CHill@meshekengr.com">CHill@meshekengr.com</a>
Don Hinson	City of Tulsa	<a href="mailto:DHinson@cityoftulsa.org">DHinson@cityoftulsa.org</a>
Michael Skates	City of Tulsa	<a href="mailto:mshakes@cityoftulsa.org">mshakes@cityoftulsa.org</a>

- I. Chairman Kyle Brierly called the meeting to order at 1:33PM.



- II. Chairman Brierly asked for review and approval of August 15, 2023, SDHMAB minutes. No corrections or revisions was requested. Mr. Williams moved to approve the minutes; Grogan seconded the motion. Minutes were approved unanimously.

III. Reports

i. Development Services Report – Dustin Wright

- i. Dustin Wright presented the Development Services report noting that there were 15 permits issued, and one commercial elevation certificate was issued.

Questions were welcomed.

ii. Stormwater Finance Quarterly Report – Jarrod Moore and Katie Mayes

- i. Katie Mayes presented the Stormwater Finance Quarterly Report noting that there was more than \$11M in total revenue. Ms. Mayes also noted that total revenues were \$204,000 over the budget estimate.

Questions were welcomed.

iii. Parks Department Quarterly Report – Dave Zuconi

- i. **No discussions or actions were taken on this item 3c.**

iv. FEMA CRS Verification Update – Janet Meshek and Gary McCormick

- i. Gary McCormick presented the Community Rating System 2023 Reverification Report noting that there is a meeting on October 18, 2023, with the FEMA team to look at floodplains and channels.
- ii. Gary McCormick also noted that the City will know its CRS score in April 2024, after which prep will start for the 2024 certification.

Questions were welcomed.

v. Hazard Mitigation Plan Update – Annie Vest

- i. Annie Vest presented the Hazard Mitigation Plan Update noting that there would be a Special PPI Meeting held on November 2, 2023, at 1:00PM at Veteran's Park. Ms. Vest reminded everyone to take the Stakeholder Survey and relayed that we are on track to submit the Hazard Mitigation Plan in February 2024.

Questions were welcomed.

IV. **ISSUES FOR DISCUSSION AND/OR ACTION**

- i. Drainage Sensitive Area Ordinance Revision/Perryman Ditch MDP Update – Gary McCormick
- i. Gary McCormick presented the Ordinance Revision and Perryman Ditch MDP Update. Mr. McCormick noted the City of Tulsa Legal Department has approved the revisions.

Questions were welcomed.

Motion to approve Williams, Childers seconded the motion.

- ii. Low Impact Development Reference Guide – Gary McCormick and Scott VanLoo  
Gary McCormick and Scott VanLoo presented the LID Reference Guide. Dr. Williams noted the importance of providing training to the builder community. Dr. Williams also recommended shortening the document format for training purposes.

Motion to approve Grogan, Walman seconded the motion.

- iii. Substantial Damage Management Plan – Allison Whitsitt and Gary McCormick
  - i. Gary McCormick presented the Substantial Damage Management Plan. This document was presented for information purposes only.

Questions were welcomed.

- iv. Eagle Creek and Quarry Creek FEMA Letter of Map Revision – Gary McCormick
  - i. Gary McCormick presented the FEMA Letter of Map Revision. Mr. McCormick noted that there were no additions made to the floodplain. Mr. McCormick also noted that there were no improvements to culverts, just a cleanup of what currently exists.

Motion to approve Walman, Childers seconded the motion.

V. New Business

None.

VI. Open Discussion (All)

None.

VII. Next Meeting, November 21, 2023, at 1:30pm.

VIII. Adjournment

- i. Chairman Brierly adjourned 2:46PM.