

# Article 15

## FLOODPLAIN MANAGEMENT

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*ADOPTED: June 17, 2014*

*CASE NUMBER: TA140605*

*ORDINANCE NO. 9732-2014*

# ARTICLE 15: FLOODPLAIN MANAGEMENT

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## SECTION 1 - STATUTORY AUTHORIZATION

- 15.1.1 The Legislature of the State of Texas has in the Flood Control Insurance Act, Texas Water Code, Section 16.315, delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses. Therefore, the City Council of The City of Grand Prairie, Texas, does ordain as follows:
- 15.1.2 The National Flood Insurance Program (NFIP) is a federal program established by Congress in 1968 that allows property owners to purchase federally backed flood insurance within communities that participate in the program. The City of Grand Prairie is a participant. In return for this protection, the City of Grand Prairie must implement floodplain management measures to reduce flood risk to new and existing development in accordance with federal regulations.

## SECTION 2 - FINDINGS OF FACT

- 15.2.1 The flood hazard areas of The City of Grand Prairie are subject to periodic inundation, which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which may adversely affect the public health, safety and general welfare.
- 15.2.2 These flood losses are created by the cumulative effect of obstructions in floodplains which cause an increase in flood heights and velocities, and by the occupancy of flood hazard areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, flood proofed or otherwise protected from flood damage.

## SECTION 3 - STATEMENT OF PURPOSE

- 15.3.1 The purpose of floodplain regulations is to promote the public health, safety, and welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:
- A. Protect human life and health;
  - B. Minimize expenditure of public money for costly flood control projects;
  - C. Minimize the need for rescue and relief efforts associated with flooding that are generally undertaken by the City at the expense of the general public;
  - D. Minimize prolonged business interruptions;
  - E. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
  - F. Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas; and

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- G. Help potential buyers become aware of property that is subject to flooding.

### SECTION 4 - LANDS TO WHICH THIS ORDINANCE APPLIES

15.4.1 This article applies to all areas of special flood hazard within the City of Grand Prairie and its extraterritorial jurisdiction. The City will not approve a final plat that does not conform to the minimum FEMA regulations regarding floodplain management.

### SECTION 5 - BASIS FOR ESTABLISHING AREAS OF SPECIAL FLOOD HAZARD

15.5.1 The areas of special flood hazard are:

- A. The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Tarrant County, Texas and Incorporated Areas," dated September 25, 2009, with accompanying Flood Insurance Rate Maps dated September 25, 2009, "The Flood Insurance Study (FIS) for Dallas County, Texas and Incorporated Areas," dated July 7, 2014, with accompanying Flood Insurance Rate Maps dated July 7, 2014, "The Flood Insurance Study (FIS) for Ellis County, Texas and Incorporated Areas," dated June 3, 2013, with accompanying Flood Insurance Rate Maps dated June 3, 2013, and any revisions thereto are hereby adopted by reference and declared to be a part of this ordinance.
- B. Those areas, which have not yet been delineated on the FEMA maps, but are known to constitute a special flood hazard.

### SECTION 6 - FLOODWAYS

15.6.1 Located within those areas of special flood hazard are areas designated as floodways. The floodway could possibly be an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles, and erosion potential; therefore the following provisions shall apply:

- A. Encroachments are prohibited, including fill, new construction, substantial improvements of non-conforming structures and other development unless it has been demonstrated to the satisfaction of the Floodplain Administrator by a professional registered engineer that the encroachment, individually or collectively, shall not result in any increase in flood flows or damages and shall not increase the floodway elevation (zero feet) during the occurrence of the 100-year fully-developed flood discharge.
- B. If the immediately preceding subsection is satisfied, all construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this Article.
- C. Where it is anticipated that additional runoff incident to the development of the

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subdivision will overload an existing downstream drainage facility, within the “Zone of Influence” of the development, whether natural or man-made, and result in hazardous conditions, the Planning and Zoning Commission may withhold approval of the subdivision until appropriate provision has been made to accommodate the problem, and plans shall be provided which include all necessary off-site improvements, including storm drainage systems, channel grading, driveway adjustments, culvert improvements, etc.

### SECTION 7 - COMPLIANCE

15.7.1 No structure or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this Article and other applicable regulations of this Code.

### SECTION 8 - ABROGATION AND GREATER RESTRICTIONS

15.8.1 This Article is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions. However, where this Article and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

### SECTION 9 - INTERPRETATION

15.9.1 In the interpretation and application of this Article, all provisions shall be considered as minimum requirements and shall be liberally construed in favor of the City and shall not be deemed a limitation or repeal of any other powers granted by Texas statutes.

### SECTION 10 - WARNING AND DISCLAIMER OF LIABILITY

15.10.1 The degree of flood protection required by this Article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On rare occasions greater floods can and will occur and flood heights may be increased by manmade or natural causes. This Article does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages.

15.10.2 This Article shall not create liability on the part of the City or any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made there under. In no case shall responsibility or liability arise from the design or operation of drainage facilities dedicated to the City.

### SECTION 11 - DISCLOSURE OF FLOODPLAIN DESIGNATION

15.11.1 Any person or agent of any person who sells a house, lot tract, or parcel of land in any area designated as a floodplain in accordance with this Article shall reveal in writing to the buyer thereof that said property is located in a floodplain. Any lending institution which handles the commercial paper related to said transaction shall inform the borrower that flood insurance is

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available for said house, lot tract, or parcel of land. This information should be provided no later than two (2) working days prior to closing.

15.11.2 Any person who is found guilty of violating this section by a court of competent jurisdiction shall be fined as provided elsewhere in this Code. The penalty provided herein shall be in addition to any other remedy a buyer may have.

### SECTION 12 - DESIGNATION OF FLOODPLAIN ADMINISTRATOR

15.12.1 The City Manager is hereby appointed the Floodplain Administrator to administer and implement the provisions of this ordinance and other appropriate sections of 44 CFR (Emergency Management and Assistance - National Flood Insurance Program Regulations) pertaining to floodplain management. The City Manager may delegate all or part of the responsibilities as Floodplain Administrator to a person on staff.

### SECTION 13 - DUTIES & RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR

15.13.1 Duties and responsibilities of the Floodplain Administrator shall include, but not be limited to, the following:

- A. Maintain and hold open for public inspection all records pertaining to the provisions of this Article.
- B. Review building permit applications as required by Article 13, "Building Permits" for sites located in, or adjacent to, the regulatory floodplain to determine whether proposed building sites will be reasonably safe from flooding.
- C. Review, approve, or deny all application for floodplain permits required by this Article. In addition, the Parks and Recreation Department will review any development or disturbance of topography within 500 feet of the centerline of the waterway.
- D. Review of permits required by subsection shall include reasonable assurance that all other necessary permits have been obtained from those Federal, Texas, or local governmental agencies (including Section 404 of the Federal Water Pollution Control Act Amendments of 1972) from which prior approval is required. However, these assurances do not assume any responsibility on the part of the Floodplain Administrator or the City of Grand Prairie to enforce the conditions and requirements of permits issued by agencies other than the City.
- E. Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Floodplain Administrator shall make the necessary interpretation.
- F. In riverine situations, notify adjacent communities prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency

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Management Agency.

- G. Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained.
- H. When base flood elevations data has not been provided in accordance with this Article, the Floodplain Administrator shall obtain, review and reasonably utilize any base flood elevation data and floodway data available from a Federal, Texas, or other source, in order to administer the provisions of Section 5 "Provision of Flood Hazard Reduction," of this Article.
- I. When a regulatory floodway has not been designated, the Floodplain Administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the City's Flood Insurance Rate Maps (FIRM) unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

### SECTION 14 - FLOODPLAIN PERMIT PROCEDURES

15.14.1 A City of Grand Prairie Floodplain Development Permit shall be required for all proposed development in an area of special flood hazard (floodplain), to ensure conformance with the provisions of this Article. It shall be issued by the Engineering Department.

15.14.2 Application for a Floodplain Permit shall be presented to the Floodplain Administrator on forms furnished by him and shall include but not be limited to, plans in duplicate drawn to scale showing the location, dimensions, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of special flood hazard. Additionally, the following information is required:

- A. Permit required showing necessary approval of other agencies: A permit is required for all proposed development, including single structures in any area of special flood hazard. Any development in a floodplain will comply with the floodplain regulations.
- B. If the parcel of land, or lot, is less than 30 lots, of which less than three (3) acres is within the delineated floodplain, then the floodplain permit can be included with the building permit. Permits shall be reviewed for proposed development to assure that all other necessary permits have been obtained from those federal, Texas or local governmental agencies from which prior approval is required.
- C. Elevation (in relation to mean sea level) of the lowest floor (including basement) of all new and substantially improved structures;
- D. Elevation in relation to mean sea level to which any non-residential structure shall be flood proofed;

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- E. A certificate from a registered professional engineer or architect that the nonresidential flood proofed structure shall meet the flood-proofing criteria of this Article;
- F. Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development;
- G. Maintain a record of all such information in accordance with Section 15.13.1.A of this article.
- H. Base flood elevation data for subdivision proposals and other proposed development which consist of greater than 30 lots or three acres, whichever is lesser, if not otherwise provided;
- I. When requested, three or more valley cross sections including the channel of the stream at points specified by the Floodplain Administrator, topographic information for areas adjoining sides of the channel, cross sections for land to be occupied by the proposed development, high water information, and other pertinent details may be required;
- J. When requested, estimates of the discharge for the regulatory flood and determination of the specific flooding threat at the site of the proposed development and whether the proposed development is located in a floodway or flood fringe area may be required to be demonstrated by providing:
  - 1. Calculation of water surface elevations and flood protection elevations based upon a hydraulic analysis of the capacity of the stream channel and over bank areas to convey the regulatory flood.
  - 2. Flood protection elevations (Finished Floor Elevations) shall be the greater of one foot above the water surface elevations of the regulatory base flood (taking into account future full development of the basin) or two feet above the FEMA FIRM 100-year base flood elevation (utilizing existing land use conditions), whichever is higher. This information shall be shown for all proposed structures within 200 feet of the regulatory floodplain, on the plat.
  - 3. Computation of the floodway is required to convey this flood without increasing flood heights to an extent, which would cause substantial upstream or downstream damage to existing or reasonably anticipated future development.
  - 4. Computation of the floodway elevations shall be based upon the reasonable assumption that there will be an equal degree of encroachment and reduction in conveyance on both sides of the stream within that reach.
  - 5. Generally, any increase in flood stages attributable to encroachments on the existing floodplain of any river or stream shall not exceed one foot in any one reach or for the cumulative effect of several reaches and zero increase for the ultimate flow conditions.
  - 6. There shall be no loss of valley storage within the fully developed 100-year floodplain.

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- K. After construction is completed, Elevation Certificates shall be provided to the Floodplain Administrator by a licensed surveyor or engineer in Texas for all buildings constructed within 200 feet of the 100-year floodplain to confirm compliance with this ordinance before occupation of the buildings can be approved.

15.14.3 Approval or denial of a Floodplain Permit by the Floodplain Administrator shall be based on all of the provisions of this Article and the following relevant factors:

- A. The danger to life and property due to flooding or erosion damage;
- B. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- C. The danger that materials may be swept onto other lands to the injury of others;
- D. The compatibility of the proposed use with existing and anticipated development;
- E. The safety of access to the property in times of flood for ordinary and emergency vehicles;
- F. 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;
- G. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site.
- H. The necessity to the facility of a waterfront location where applicable;
- I. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use; and
- J. The relationship of the proposed use to the Comprehensive Plan and floodplain management program for the area.
- K. Erosive velocities created by the project.
- L. Loss of valley storage within the fully developed 100-year floodplain.

15.14.4 Floodplain Permit Fee:

***Reference Article 22 "Fee Schedule" of the Unified Development Code for required fees.***

### SECTION 15 - PROVISION FOR FLOOD HAZARD REDUCTION

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#### **General Standards**



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15.15.1 In all areas of special flood hazards the following provisions are required for all new construction and substantial improvements:

- A. All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- B. All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
- C. All new construction or substantial improvements shall be constructed by materials resistant to flood damage;
- D. All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
- E. All new and replacement water supply systems shall be designed to minimize or eliminate infiltrations of flood waters into the system;
- F. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters; and
- G. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- H. Air conditioning pads shall have the same elevation as the Finished Floor Elevation of the structure.

### SECTION 16 - SPECIFIC STANDARDS FOR HABITABLE STRUCTURES

15.16.1 In all areas of special flood hazards where base flood elevations data has been provided asset forth in this Article, the following provisions are required:

- A. Residential Construction - New construction and substantial improvements of any residential structure shall have the lowest floor (including basement) elevated to the higher of not less than one foot above the base flood elevation (taking into account the effects of future full development) or two feet above the FEMA FIRM base flood elevation (utilizing existing land use conditions). A registered surveyor or registered professional engineer shall submit a certification to the Floodplain Administrator that the standard of this subsection as proposed in Section 15.14.2 "Floodplain Permit Procedures" of this Article has been followed.
- B. Nonresidential Construction - New construction and substantial improvements of any commercial, industrial, or other non-residential structure shall either have the lowest floor

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(including basement) elevated to the higher of not less than one foot above the base flood level (taking into account the effects of future full development) or two feet above the FEMA FIRM base flood elevation (utilizing existing land use conditions), or, together with attendant utility and sanitary facilities, be designed so that below two feet above the base flood level the structure is water tight with walls substantially impermeable to the passage of water and with structural components having the capability or resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

1. A registered professional engineer shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection.
2. 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.
3. For structures located on fills within the floodplain of the base flood but outside of floodway areas, required fill areas must extend 15 feet beyond the limits of intended structures and, if the area is not to be sewerred, must include areas for on-site waste disposal.
4. The lowest floor of structures for commercial, industrial and non-residential use may be permitted at a lower elevation than specified in this Section, if the area is protected to the higher of a height of not less than one foot above the base flood elevation (taking into account the effects of future full development), or to two feet above the FEMA FIRM base flood elevation, by levees, channel modifications, or other structural protective techniques.

Where flood proofing is used in lieu of elevation, a registered professional engineer is required to certify that the requirements of this Article have been met.

- C. *Enclosures:* 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 exits of floodwaters. Enclosures may only be used for parking of vehicles, building access, or limited storage.

Designs for meeting this requirement must either be certified by a registered engineer or meet or exceed the following minimum criteria:

1. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
2. The bottom of all openings shall be no higher than one foot above grade.
3. Openings may be equipped with screens, louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

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- D. **Manufactured Homes:** No new or substantially improved manufactured home(s), parks, or subdivisions shall be placed within an Area of Special Flood Hazard.

For expansion to existing manufactured home parks and subdivisions; and for manufactured homes not placed in a manufactured home park or subdivision the following shall apply:

1. Stands or lots shall be elevated on compacted fill or on pilings so that the lowest floor (finished floor) of the manufactured home will be one foot above the 100-year fully developed flood level and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement with certification by a registered professional engineer that the improvements will not increase flood flows, heights, or damages. Specific requirements for anchoring shall be per Administrative Rules for the Texas Department of Housing and Community Affairs 10 Texas Administrative Code Chapter 80, as currently amended.
2. Adequate surface drainage and access for a hauler shall be provided.
3. For elevations on pilings, piling foundations shall be placed in stable soil no more than ten (10) feet apart, and reinforcement shall be provided for pilings more than six (6) feet above the ground level.

- E. Recreation Vehicles shall not be parked within an Area of Special Flood Hazard.

### SECTION 17 - STANDARDS FOR SUBDIVISIONS

15.17.1 All subdivision proposals shall be consistent with the provisions of this Article.

15.17.2 All proposals for the development of subdivisions shall meet the Floodplain Permit requirements of this Article.

15.17.3 Base flood elevation data shall be generated for subdivision proposals and other proposed development, which is greater than 30 lots or 3 acres, whichever is lesser, if not otherwise provided pursuant to Article 15, Section 5 or Article 15, Section 14.2 of this ordinance.

15.17.4 All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards.

15.17.5 All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

### SECTION 18 - STANDARDS FOR STREETS, DRAINAGE, AND UTILITIES

15.18.1 The finished elevation of proposed streets shall be no less than two (2) feet above the regulatory flood protection elevation.

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- 15.18.2 Where necessary, profiles and elevations of streets may be required to determine compliance with this requirement.
- 15.18.3 Storm drainage facilities shall be designed to convey the flow of surface waters without causing damage to persons or property.
- 15.18.4 The system shall insure drainage at all points along streets, and provide positive drainage away from buildings and on-site waste disposal sites.
- 15.18.5 Drainage plans shall be consistent with local and regional drainage plans.
- 15.18.6 The facilities shall be designed to prevent the discharge of excess runoff onto adjacent properties.
- 15.18.7 Sewage disposal facilities requiring soil absorption systems are prohibited where such systems will not function due to high groundwater, flooding, or unsuitable soil characteristics.
- 15.18.8 Restrictions on a plat or deed may be required noting that soil absorption fields are prohibited in designated areas.
- 15.18.9 If a sanitary sewer system is located on or near the proposed development, connection to this system may be required where practical.
- 15.18.10 All manholes located in floodplains shall be of watertight construction with sealed manhole lids.
- 15.18.11 An air pressure test or similar testing method may be required to verify the water tightness of the sewer system in the floodplain.
- 15.18.12 All water systems, whether public or private, which are located in flood prone areas, shall be flood proofed to above the flood protection elevation.
- 15.18.13 Connection to an existing public water supply system may be required if practical.
- 15.18.14 All other utilities, such as gas and electric lines, shall be located and constructed so as to minimize or eliminate flood damage.

### SECTION 19 - LEVEE SYSTEMS AND FLOOD RELIEF CHANNELS

- 15.19.1 The levee policy as issued by the Federal Emergency Management Agency (FEMA) and as it may be amended from time to time, is hereby adopted by reference and declared to be a part of this Article. A copy will be kept in the office of the Floodplain Administrator.
- 15.19.2 The owner of any levee system or flood relief channel within the City shall submit a manual of operation and maintenance to the Floodplain Administrator for approval. No levee system or flood relief channel shall be operated in the City without such approval.

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- A. Such manual shall delineate the maintenance procedures to be undertaken on the levee or flood relief channel itself together with the over bank area, as well as the procedures

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for the operation and maintenance of closure structures and pumping facilities, and all such procedures delineated shall meet or exceed such requirements as now exist or may in the future be imposed by the Federal Emergency Management Agency (FEMA).

- B. On or prior to January 31<sup>st</sup> of each year, the owner of any levee system or flood relief channel in the City shall submit to the Floodplain Administrator a report, which states in detail the operation and maintenance procedures which were accomplished in the preceding year. Upon review of the report, the Floodplain Administrator may order such other additional action by the owners as may be reasonably necessary for the protection of the public health, safety, and welfare and may set a reasonable time for completion of said action. Failure by the owner to comply with any such order shall constitute an offense.
- C. Prior to approval by the Floodplain Administrator of any operation and maintenance manual, the owner shall enter into an agreement with the City whereby the owner shall bind himself and subsequent owners and assigns of the levee system or flood relief channel to perform the operation and maintenance of the levee system or flood relief channel in accordance with the provisions of this Section. The contract provided herein shall be prepared in a form sufficient to be recorded in the records of the clerk of the county in which the levee is located.
- D. The City, upon failure by the owner to maintain or operate the private levee system or flood relief channel in accordance with the approved operation and maintenance manual or upon failure of the owner to take such action as may be ordered by the City Engineer, as herein provided, shall by contract or otherwise perform such maintenance, operation or other action as may be required, and shall assess the cost thereof, including all administrative and legal costs against the owner, and all such amount shall be secured by a privileged lien upon the property. This remedy shall be cumulative of any other remedy provided in this chapter.

### SECTION 20 - VARIANCE PROCEDURES

15.20.1 The Appeal Board (Zoning Board of Adjustment), as established by the community, shall hear and render judgment on requests for variances from the requirements of this ordinance.

15.20.2 The Appeal Board (Zoning Board of Adjustment) shall hear and render judgment on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of this ordinance.

15.20.3 Any person or persons aggrieved by the decision of the Appeal Board (Zoning Board of Adjustment) may appeal such decision in the courts of competent jurisdiction.

15.20.4 The Floodplain Administrator shall maintain a record of all actions involving an appeal and shall report variances to the Federal Emergency Management Agency upon request.

15.20.5 Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the Texas Inventory of Historic Places, without

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regard to the procedures set forth in the remainder of this ordinance.

15.20.6 Variances may be issued for new construction and substantial improvements to be erected on a lot of 1/2 acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the relevant factors in Section 15.14.3 of this Article have been fully considered. As the lot size increases beyond the 1/2 acre, the technical justification required for issuing the variance increases.

15.20.7 Upon consideration of the factors noted above and the intent of this ordinance, the Appeal Board (Zoning Board of Adjustment) may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this ordinance (Article 15, Section 3).

15.20.8 Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

15.20.9 Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.

*15.20.10 Prerequisites for granting variances:*

- A. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- B. Variances shall only be issued upon: (i) showing a good and sufficient cause; (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- C. Any application to which a variance is granted shall be given written notice that the structure will be permitted to be built with the lowest floor elevation below the base flood elevation, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
- D. Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that (i) the criteria outlined in Section 20 are met, and (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

*The Floodplain Administrator shall maintain a record of all appeals taken pursuant to this Section.*

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## SECTION 21 - DEFINITIONS

15.21.1 Unless specifically defined below, words or phrases used in this ordinance shall be interpreted to give them the meaning, they have in common usage and to give this ordinance it's most reasonable application.

### -- DEFINITIONS --

**Alluvial Fan Flooding:** Means flooding occurring on the surface of an alluvial fan or similar landform, which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flow paths.

**Apex:** Means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding can occur.

**Appurtenant Structure:** Means a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure.

**Area of Future Conditions Flood Hazard:** Means the land area that would be inundated by the 1% annual chance (100-year) flood based on future conditions hydrology.

**Area of Shallow Flooding:** Means a designated AO, AH, AR/AO, AR/AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a 1% or greater annual chance of flooding to an average depth of one to three 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.

**Area of Special Flood Hazard:** Is the land in the floodplain within a community subject to a 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, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE or V.

**Base Flood:** Means the flood having a 1% chance of being equaled or exceeded in any given year.

**Base Flood Elevation:** The computed elevation to which floodwater is anticipated to rise during the base flood.

**Basement:** Means any area of the building having its floor sub grade (below ground level) on all sides.

**Breakaway Wall:** Means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

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**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.

**Development:** Means any manmade change to improved and unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

**Elevated Building:** Means, for insurance purposes, a non-basement building, which has its lowest elevated floor, raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

**Elevation Certificate:** An administrative tool used by the National Flood Insurance Program (NFIP) to document the elevation of the lowest floor (including basement) of an existing, new or substantially improved building.

**Erosion Hazard Area:** Land adjacent to a watercourse regulated by this Ordinance, which is determined by the Floodplain Administrator to be subject to flood-related erosion losses.

**Erosion Hazard Setback:** The minimum horizontal distance from the toe of the slope of the bank of a watercourse that a structure must be constructed or placed to be outside the erosion hazard area.

**Existing Construction:** Means for the purposes of determining 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. "Existing construction" may also be referred to as "existing structures."

**Existing Manufactured Home Park or Subdivision:** Means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

**Expansion to an Existing Manufactured Home Park or Subdivision:** Means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

**Flood or Flooding:** Means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) The overflow of inland or tidal waters.
- (2) The unusual and rapid accumulation or runoff of surface waters from any source.

**Flood Elevation Study:** Means an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and

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determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

**Flood Insurance Rate Map (FIRM):** Means an official map of a community, on which the Federal Emergency Management Agency has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

**Flood Insurance Study (FIS):** *See Flood Elevation Study.*

**Floodplain or Flood-Prone Area:** Means any land area susceptible to being inundated by water from any source (see definition of flood or flooding).

**Floodplain Management:** Means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

**Floodplain Management Regulations:** Means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such Texas or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

**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 area 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.

**Flood Proofing:** Means any combination of structural and non-structural additions, changes, or adjustments to structures, which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

**Floodway:** *See Regulatory Floodway.*

**Fully Developed:** Means the condition of the watershed after the watershed has under-gone ultimate development.

**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 shipbuilding and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

**Highest Adjacent Grade:** Means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

**Historic Structure:** Means any structure that is:

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- (1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- (2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- (3) Individually listed on a Texas inventory of historic places in Texas with historic preservation programs which have been approved by the Secretary of the Interior; or
- (4) Individually listed on a local inventory or historic places in communities with historic preservation programs that have been certified either:
  - a. By an approved Texas program as determined by the Secretary of the Interior or;
  - b. Directly by the Secretary of the Interior in Texas without approved programs.

**Levee:** Means a manmade 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.

**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.

**Lowest Floor:** Means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking or 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.

**Manufactured Home:** Means a structure transportable in one or more sections, which is built after June 15, 1976, conforming to U.S. Dept. of Housing and Urban Development (HUD) standards, on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

**Manufactured Home Park or Subdivision:** Means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

**Mean Sea Level:** Means, for purposes of the National Flood Insurance Program, the North American Vertical Datum (NAVD) of 1988 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

**New Construction:** Means, for the purpose of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced on or after the effective date of a floodplain

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management regulation adopted by a community and includes any subsequent improvements to such structures.

**New Manufactured Home Planned Development:** Means a Planned Development for manufactured or mobile homes where the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by a community.

**Recreational Vehicle:** Means a vehicle which is (i) built on a single chassis; (ii) 400 square feet or less when measured at the largest horizontal projections; (iii) designed to be self-propelled or permanently tow able by a light duty truck; and (iv) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

**Regulatory Floodway:** Means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

**Riverine:** Means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

**Special Flood Hazard Area:** See Area of Special Flood Hazard

**Start of Construction:** (For other than new construction or substantial improvements under the Coastal Barrier Resources Act (Pub. L. 97-348)), Includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of 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 and/or walkways; nor does it include excavation for basement, footings, 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. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

**Structure:** Means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

**Substantial Damage:** Means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.

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**Substantial Improvement:** Means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure before "start of construction" of the improvement. This term includes structures, which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either: (1) Any project for improvement of a structure to correct existing violations of Texas or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or (2) Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure."

**Variance:** Means a grant of relief by a community from the terms of a floodplain management regulation. (For full requirements, see Section 60.6 of the National Flood Insurance Program regulations.)

**Violation:** Means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Section 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided.

**Water Surface Elevation:** Means the height, in relation to the North American Vertical Datum (NAVD) of 1988 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

**Watershed:** Means the area contributing storm runoff to a stream or drainage system. Equivalent terms are drainage area, drainage basin, catchment area, and contributing area.

**Zone of Influence:** The "Zone of Influence" is defined as the point downstream of a proposed development where the proposed development has no significant impact on the receiving stream, including; (1) the receiving stream or channel is adequately sized to accommodate the runoff (based on fully developed conditions in the watershed); (2) velocity increases in the channel or stream are not erosive (based on actual channel soils); and (3) there is no rise in the base flood elevation (off of the property being developed).

### SECTION 22 - TRINITY RIVER CORRIDOR DEVELOPMENT CERTIFICATE

#### 15.22.1 Testament of Purpose.

The purpose of this section is to assure the orderly and proper development of the Trinity River Corridor, to provide for the overall health, safety, and welfare of our citizens.

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#### 15.22.2 Definitions.

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**Corridor Development Certificate:** The permit issued by the city prior to development within the Regulatory Zone of the Trinity River Corridor.

**Corridor Development Certificate Manual:** The current manual by that title.

**Regulatory Zone:** The area within the Trinity River Corridor as defined by the current City approved 100-year floodplain based upon fully developed conditions.

**Review Zone:** The area within the Trinity River Corridor that lies between the 100-year floodplain and the Standard Project Flood floodplain line.

**Standard Project Flood (SPF):** The flood having a 0.30% - 0.08% chance of being equaled or exceeded in any given year. The SPF generally has a volume discharge of approximately double the 100-year storm and water surface elevation of four to seven feet higher than the 100-year flood.

**Trinity River Corridor:** The area defined by the bed and banks of the Trinity River and the adjacent river floodplain within the city of Grand Prairie. Also referred to as Corridor.

#### **15.22.3 The Current Edition Corridor Development Certificate Manual adopted.**

The current edition of the Corridor Development Certificate Manual is adopted as the standard for development within the Trinity River Corridor and is incorporated herein by reference.

#### **15.22.4 Certificate Required.**

A person commits a violation by commencing development within the Regulatory Zone without first obtaining a Corridor Development Certificate from the Floodplain Administrator.

#### **15.22.5 Application.**

An application for a Corridor Development Certificate must be filed with the Floodplain Administrator on forms provided by the Engineering Department.

#### **15.22.6 Review of Application; Approval; Denial of Approval.**

The Floodplain Administrator or his duly authorized designee shall be responsible for the review of an application for a Corridor Development Certificate. The application shall be approved if it conforms to the requirements of the Corridor Development Certificate Manual, as amended, or unless exception, variance, or exemption is granted; otherwise, the application shall be denied.

#### **15.22.7 Exemptions, Variances and Exceptions.**

An exemption from the requirements of this section may be obtained if the development

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*involves the following activities:*

Ordinary maintenance of and repair to flood control structures. The construction of outfall structures and associated intake structures if the outfall has been permitted under Texas or Federal Law.

Discharge of material for backfill or bedding for utility lines, provided there is not significant change in pre-existing bottom contours and excess material is removed to an area outside of the Regulatory Zone Bank stabilization.

*Development activity that is:*

- (1) Completely outside of the Regulatory Zone but within the Review Zone, and
- (2) Determined by the U.S. Army Corps of Engineers that no permits are required.

Any project listed in the U.S. Army Corps of Engineers March 1990 Reconnaissance Report which is attached as Appendix A to the Corridor Development Certificate Manual, or any project approved under the provisions of this Division, provided the approval, permit or authorization has not expired and no significant changes have occurred since the approval, permit, or authorization was issued.

Application for an exemption must be made to the Floodplain Administrator on a form provided by the Engineering Department.

If the Floodplain Administrator determines that an application for an exemption falls within one of the categories listed herein, the Floodplain Administrator shall issue a written exemption from the requirements from this Division and approve the application.

**Variations.** If the Floodplain Administrator determines that an application for a Corridor Development Certificate does not comply with the standard established in this Division, the applicant may apply for a variance to the standard. An application for a variance must be made to the Floodplain Administrator, who may schedule the application for consideration by the City Council. The City Council may grant a variance provided the variance will not violate any provision of federal or Texas law, result in increased flood levels, or endanger life or property.

**Exceptions.** Development within the Regulatory Zone of the Trinity River Corridor shall meet the standards provided in Section 1.6 of the Corridor Development Certificate Manual as currently amended.

### SECTION 23 - SEVERABILITY

15.23.1 If any section, clause, sentence, or phrase of this Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way affect the validity of the remaining portions of this Ordinance.

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### SECTION 24 - PENALTIES FOR NONCOMPLIANCE

15.24.1 Any person who violates this ordinance or fails to comply with any of its requirements shall upon conviction thereof be fined in accordance with Section 1-8, City of Grand Prairie Code of Ordinances, for each violation, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the City of Grand Prairie from taking such other lawful action as is necessary to prevent or remedy any violation.

### SECTION 25 - CERTIFICATION OF ADOPTION

**APPROVED:** \_\_\_\_\_  
(Community Official)

**PASSED:** \_\_\_\_\_  
(Adoption Date)

**ORDINANCE BECOMES EFFECTIVE:** \_\_\_\_\_  
(5 Days After Publication)

I, the undersigned, Tom Hart do hereby certify that the above is a true and correct copy of an ordinance duly adopted by the Grand Prairie City Council, at a regular meeting duly convened on \_\_\_\_\_.  
(Meeting Date)

\_\_\_\_\_  
{Signature of Certifying Official}

{SEAL}