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ORDINANCE NO. 1249

AN ORDINANCE OF THE CITY OF MESQUITE, TEXAS, REPEALING CHAPTER 6A OF THE CODE OF THE CITY OF MESQUITE REFERRED TO AS THE COMPREHENSIVE DRAINAGE ORDINANCE OF 1970 AND ADOPTING A NEW CHAPTER 6A TO BE KNOWN AS THE COMPREHENSIVE DRAINAGE ORDINANCE OF 1975 AND PROVIDING FOR DRAINAGE REQUIREMENTS IN THE CITY OF MESQUITE IN ACCORDANCE WITH THOSE OF THE EXISTING ORDINANCE AND PROVIDING ALTERNATIVES TO CERTAIN CHANNEL IMPROVEMENTS CONSISTING OF UTILIZATION OF ALL OR PART OF THE NATURAL FLOOD PLAIN, WITH OR WITHOUT MODIFICATION, IN LIEU OF SOME OR ALL CHANNEL IMPROVEMENTS HERETOFORE REQUIRED; ESTABLISHING CRITERIA FOR DETERMINATION BY THE DIRECTOR OF COMMUNITY DEVELOPMENT OF THE EXTENT AND NATURE OF IMPROVEMENT OF THE NATURAL FLOOD PLAIN; PROVIDING FOR APPEAL OF DECISIONS OF THE DIRECTOR OF COMMUNITY DEVELOPMENT; PROVIDING FOR DEDICATION OF ALL OR PORTIONS OF THE FLOOD PLAIN TO THE CITY; PROVIDING THE PURPOSE AND SCOPE OF SAID CHAPTER; PROVIDING CERTAIN STANDARDS AND CRITERIA FOR DRAINAGE AND RUN-OFF CALCULATIONS; PROVIDING FOR IMPLEMENTATION AND THE LEVYING OF AN ASSESSMENT FOR THE COST OF DRAINAGE PROVISIONS INCLUDING FLOOD PLAIN LAND ACQUIRED FOR WATER STORAGE AND RETENTION; ESTABLISHING THE PROCEDURE FOR LEVYING OF ASSESSMENTS; PROVIDING A SEVERABILITY CLAUSE; PROVIDING A PENALTY NOT TO EXCEED TWO HUNDRED DOLLARS (\$200.00); AND DECLARING AN EMERGENCY.

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

SECTION 1. That Chapter 6A of the Code of the City of Mesquite referred to as the Comprehensive Drainage Ordinance of 1970 and amendments thereto, is hereby repealed.

SECTION 2. That a new Chapter 6A is adopted and made a part of the Code of the City of Mesquite to be called the Comprehensive Drainage Ordinance of 1975 as follows:

6A-1 Adoption; title:

The Comprehensive Drainage Ordinance of 1975 as here-inbelow set out is hereby adopted as the official drainage and flood control ordinance of the City of Mesquite.

6A-2 Purpose and Scope:

The purpose of policies and design standards set forth herein is to insure adequate provisions for storm drainage within the city and to afford flexibility to the landowner or developer by offering alternatives to extensive and costly channel improvement in certain instances. These policies and standards are intended to protect public health and safety, to prevent property damage due to flooding, to equitably distribute the cost of necessary drainage improvements and to minimize the maintenance cost of drainage facilities while improving the quality of life in the city by encouraging utilization of the natural environment. Any development or improvement of property affecting storm drainage in the city is subject to the provisions stated herein.

6A-3 Storm drainage - Standard provisions:

Provisions for storm drainage and flood control in the development of property shall conform to the following standards:

(a) Storm sewer inlets shall be provided along paved streets at such intervals as are necessary to limit the depth of flow as follows:

Spread of Water

Type of Street	Allowable Spread
Major thoroughfare	One traffic lane in each direction to remain open

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Collector street	One moving traffic lane to remain open.
Residential street	Maximum depth for design storm as shown in section 6A-6 is curb deep.

(b) A closed storm sewer system shall be required to accommodate a run-off exceeding the street capacity, as provided above, up to and including the design capacity of a sixty-inch concrete pipe. A closed system, either concrete pipe or box culvert having a capacity greater than that of a sixty-inch pipe, may be installed with the approval of the Director of Community Development.

(c) An open channel shall be required to accommodate run-off exceeding the design capacity of a sixty-inch pipe, except that a closed system as provided above may be used.

(1) Channels draining an area with a "CA" factor (coefficient of run-off x drainage area, as used in the "Rational Formula") of less than six hundred shall be concrete lined to the design depth, plus six inches freeboard, provided that the earthen side slopes above the concrete lined channel section are constructed no steeper than 4:1, horizontal to vertical, and are seeded or sodded to prevent erosion. Concrete lining may be extended above the required depth to natural ground level in lieu of constructing earthen side slopes as provided above.

(2) Channels draining an area with a "CA" factor in excess of six hundred shall be improved to a capacity of the one hundred year design discharge by excavation, straightening and realignment, as required, and also the construction of a concrete lined pilot channel having a width of not less than twelve feet, and concrete lined to a depth of not less than two feet. Concrete pilot channel section shall be designed by Developer's Engineer so as to maintain proper grade and alignment of the channel, and to facilitate drainage during periods of low flow. Earthen channel bottom shall be graded from the edge of the concrete pilot section to the earthen channel side slope on a cross-slope of approximately 15:1, horizontal to vertical, to insure proper direction of drainage into the concrete pilot section during periods of low flow. Earthen side slopes shall be a minimum of 4:1, horizontal to vertical. Both earthen channel bottom and side slopes shall be seeded or sodded to prevent erosion.

(d) Notwithstanding the provisions of Paragraph (c) (1) and (2) herein, the City of Mesquite may, upon the recommen-

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dition of the Director of Community Development or such staff committee as may be designated by the City Manager but which shall include a representative of the Director of Community Development, determine that utilization of the 100 year flood plain as determined by the United States Army Corp of Engineers or such portion thereof as may be practical and feasible, with or without channel improvement or the flood plain modification according to the following guidelines will suffice as flood control provision on major water courses, and may require that all or part of said flood plain be dedicated and/or modified for such purpose in lieu of some or all channel improvement required in Section 6A-3-(C).

Any party aggrieved by such determination may appeal such decision to the City Council as provided herein.

Guidelines to be followed in such determination and the determination of the extent of the flood plain to be utilized or modified for natural type flood control, whether in the initial determination or upon appeal to the City Council shall be as follows:

(1) Development which would increase runoff coefficients should provide detention or other facilities such that quantity and velocity of runoff during peak storm flows remain essentially the same after completion of development as prior thereto.

(2) The primary objective of alternatives stated in this section is to insure Community Flood Control and Protection by limiting modification to the flood plain so that increased quantity or rate of runoff will not create upstream or downstream flooding hazards and problems. Flood Plain modification alternatives that may be considered include channel cleaning, overflow channels, levees, detention and retention ponds or canals.

(e) That the criteria for drainage improvements as hereinabove set forth in subsections (a) through (d) of this section shall be applicable to publicly owned lands solely at the discretion of the city.

6A-4 Responsibility of owner or developer.

(a) The owner or developer of property to be developed shall be responsible for all storm drainage flowing through or abutting their property. This responsibility includes the drainag

directed to that property by prior development as well as drainage naturally flowing through the property by reason of topography. It is the intent of this chapter that provision be made for storm drainage in accordance with section 6A-3, at such time as any property affected is proposed for development or use, except in those instances where it is determined by the City of Mesquite that a more comprehensive program should be undertaken due to economic feasibility, impact on other areas subject to flood hazards or due to a need for drainage planning for a larger area, in which case provision for drainage may be required for a larger segment of the drainage system. Where a property owner proposes development or use of a portion of his property, provision for storm drainage may be required for less than the entire property, depending upon the above factors. The extent of drainage provision required shall be determined by the Director of Community Development with the right of appeal to the City Council.

(b) Where the improvement or construction of a storm drainage facility is required along a property line common to two or more owners, the owner hereafter proposing development or use of his property, shall be responsible for the required improvements at the time of development, including the dedication of all necessary right-of-way or easements, to accommodate the improvements.

(c) That the owner or owners shall dedicate to the City the required drainage easements. Determination of minimum easement required shall be made by the Director of Community Development.

(d) In the event that an owner or developer desires to impound storm water by excavation, filling or construction of a dam within a property, thereby creating a lake, pond, or lagoon as a part of the planned development of that property, the standard provisions for storm drainage as established in section 6A-3 of this chapter shall not be applicable, provided:

(1) That an engineering plan for such construction, accompanied by complete drainage design information, prepared by a Registered Professional Engineer, registered in the State of Texas and experienced in civil engineering work, shall have been approved by the City of Mesquite;

(2) That the owner or developer shall have agreed to retain under private ownership the lake, pond, or lagoon constructed, and to assume full responsibility for the protection of the general public from any health or safety hazards related to

the lake, pond, or lagoon constructed;

(3) That the owner or developer shall have agreed to assume full responsibility for the maintenance of the lake, pond, or lagoon constructed;

(4) That the obligations herein shall run with the land and shall be a continuing obligation.

(e) For any drainage facility privately improved, the City may require private maintenance responsibility. If said improvement deteriorates in condition, the Director of Community Development shall notify said property owner of required corrections and/or maintenance to bring drainage facility up to the standards as originally approved by the City and according to the original improvement. If said maintenance is not accomplished within a reasonable time, then the City of Mesquite may contract for such work and levy an assessment to the property owner for such cost.

In any case where the flood plain is retained by the private owner or developer for private utilization and open space requirements said private owner shall make available to the City an easement for the purpose of egress and ingress across said land for maintenance of the drainage way and open space along the water course on either side of said privately retained land and for egress and ingress to and from other open space area by the public using publicly and privately owned open space in order to provide a continuous link along said water course so that inhabitants of land containing privately retained flood plain area may travel to publicly owned open space and users of publicly owned open space may travel to other publicly owned open space along said water course; provided, however, that the public use shall be limited to travel across the privately retained flood plain and activities normally incident thereto, and shall not allow camping, fishing or stops of long duration unless specifically provided in the conveyance of said easement.

6A-4.1 Responsibility for costs.

Where the natural flood plain is utilized for flood control purposes the cost of such flood control measures shall be borne in the same manner as in the case of concrete or other channel improvements and the same provisions relative to apportionment of costs and assessments for costs applicable to channel

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improvements shall be applicable to flood plain utilization, including the cost or value of land dedicated for this purpose.

Provided, however, that where the entire one hundred year flood plain is dedicated to the City for flood control purposes any channel improvements deemed necessary by the City shall not be the responsibility of the property owner but shall be provided by the City without the right of assessment against said property owner.

Where a portion of the flood plain is dedicated for flood control purposes with the property owner retaining a portion for the purpose of filling or otherwise modifying the natural flood plain, said property owner shall be responsible for any channel improvements necessitated by such flood plain modification.

Provided further, that where there is outright dedication of the flood plain area to the City, the property owner shall not be responsible for the cost of any improvements or development of the greenbelt area, but by agreement with the City may contract to provide the cost of development or improvements of said area in excess of that contemplated by the City, either totally or on a participating basis as may be agreed between the parties, having regard to the benefits accruing to each party.

Where private control is retained over any portion of the flood plain, any improvements for greenbelt purposes shall be the responsibility of the party retaining such control except for such improvements as the City may elect to make relating to the public's right of access across such area.

6A-5 Responsibility and participation of
city in improvements.

(a) The City may in its discretion participate in the cost of flood control measures required herein to the extent that the interests of its residents may be served, including the cost or value of any land devoted to flood control purposes and may levy a special assessment against the lands to be enhanced in value by such improvements or acquisitions.

(b) The city may acquire drainage easements necessary for such improvements by acceptance of dedication, purchase, or condemnation.

6A-6 Engineering Design.

The design of all storm drainage facilities shall be in accordance with the following criteria:

(a) Design frequency:

Drainage Facility	Storm Frequency
Closed storm sewer systems	10 yr.
Closed storm sewer systems at street low point or sag	25 yr.
Culverts and bridges	50 yr.
Earthen channels	100 yr.

(b) Computation of storm water run-off shall be by the "rational method", which is based on the principle that the maximum rate of run-off from a given drainage area for an assumed rainfall intensity occurs when all parts of the area are contributing to the flow at the point of discharge. The formula for calculation of run-off by the "rational method" is:

$Q=CIA$, where

Q=the maximum rate of discharge, expressed in cubic feet per second.

C=the coefficient to run-off, which varies with the topography, land use and moisture content of the soil at the time the run-off producing rainfall occurs. This run-off coefficient shall be based on the ultimate use of the land as recommended in the comprehensive plan for the city, and shall be selected from table 1 of section 530 of paving and drainage specifications of the city. If the land use within an area calls for a coefficient of run-off greater than that demanded by the ultimate use recommended, the greater "C" shall be used.

I=rainfall intensity, expressed in inches per hour. Intensity shall be determined from applicable curves of figure 1 of section 530, of the paving and drainage specifications of the city.

A=the drainage area, expressed in acres, contributing to the run-off at the point in question. Calculation of the drainage area shall be made from a topographic map, a copy of

which shall be submitted with the engineering plans for approval.

Computation of run-off shall be based on a fully developed drainage area, or watershed, in accordance with the land use projected in the current comprehensive land use plan for the city.

(c) The capacity of storm sewers, culverts, bridges, and open channels shall be determined by use of the Manning Formula, and the design of the facility derived accordingly. The Manning Formula is:

$$Q = \frac{1.486 r^{2/3} s^{1/2} A}{n} \text{ where}$$

Q= discharge, expressed in cubic feet per second.

n= roughness coefficient, based on condition and type of conduit lining.

s= slope of hydraulic gradient, expressed in feet of vertical rise per foot of horizontal distance.

r= hydraulic radius (area of flow divided by wetted perimeter).

A= area of flow in conduit, expressed in square feet.

(d) The construction of all concrete improvements shall be in accordance with the standards set forth in the paving and drainage specifications handbook of the city.

(e) Complete engineering plans for storm drainage facilities shall be prepared by a Professional Engineer, registered in the State of Texas, and experienced in civil engineering work. The total cost for such engineering plans and specifications shall be borne by the owner or the developer and shall be furnished to the Director of Community Development for review.

(f) In any development or improvement of property, the owner may be required to provide at his expense a preliminary drainage study for the total area to be ultimately developed. This study shall be submitted to the Director of Community Development, prior to approval of the engineering plans for the total development, or any increment thereof.

6A-7 Construction in areas subject to flooding.

(a) No building or structure shall hereafter be erected or relocated within the one hundred year flood plains of the South Mesquite Creek, North Mesquite Creek and Long Branch Creek; except, that the finished floor elevation shall be a minimum of two feet above the high water elevation calculated for the run-off from a rainfall having a design frequency of one hundred years. In all other areas subject to flooding, the minimum finished floor elevation shall be a minimum of two feet above the high water elevation calculated for the run-off from a rainfall having a design frequency of fifty years. The owner or developer shall furnish at his expense to the Director of Community Development sufficient engineering design information to confirm that the minimum floor elevation proposed is as required by this section.

(b) No building or structure shall be erected or relocated within a flood plain or drainage channel which will obstruct the natural flow of water within the flood plain or channel.

(c) No excavation, filling or construction of embankment, or landscaping shall be permitted within a flood plain or channel which will obstruct the natural flow of water within that flood plain or channel, unless sufficient engineering design information is furnished to the Director of Community Development to indicate that same will not adversely affect flow characteristics within that flood plain or channel, resulting in damage to that or any other property. A developer or owner shall submit to the City sufficient engineering data prepared by a Registered Professional Engineer, registered in the State of Texas and experienced in civil engineering work, reflecting potential effects on downstream and/or upstream properties. Providing further construction or modification to a flood plain shall not commence until the owner or developer has obtained a written permit issued by the Director of Community Development.

6A-8 Building or structure set back requirements.

No building or structure shall hereafter be constructed, reconstructed or relocated within ten feet of any open drainage channel. It is the intent of this section to insure that an unobstructed width of at least ten feet is maintained between the top of the side slope of any such drainage channel and any building or structure.

6A-9 Construction over drainage facilities.

No building or structure shall hereafter be constructed, reconstructed or relocated over or across any storm drainage facility, unless specifically approved by the Director of Community Development, pursuant to that criteria established in subsections (a) and (b) of this section.

(a) Construction of buildings or structures may be permitted over or across closed drainage systems, to include concrete box culverts or reinforced concrete pipe. Engineering plans and specifications shall be prepared by a Professional Engineer registered in the State of Texas and experienced in civil engineering work. The total cost for such engineering plans and specifications shall be borne by the owner or the developer and shall be furnished to the Director of Community Development for his review.

(b) Construction of pedestrian foot bridges or small vehicular crossings may be permitted by the Director of Community Development. Engineering plans and specifications shall be prepared by a Professional Engineer registered in the State of Texas, and experienced in civil engineering work. The total cost for such engineering plans and specifications shall be borne by the owner or the developer, and shall be furnished to the Director of Community Development for his review.

6A-10 Duties of Director of Community Development; appeal to City Council.

The interpretation of the criteria hereinabove set forth in sections 6A-2 through 6A-9 of this chapter shall be made by the Director of Community Development. Any person adversely affected by the decision of the Director of Community Development may, within ten days from the date of such decision, file an appeal in writing. Such appeal shall be returnable to the Director of Community Development and shall define the specific areas of controversy. It shall be the duty of the City Council to hear any such appeal within thirty days from the date received by the Director of Community Development.

6A-11 Denial of building permit for noncompliance.

No building permit shall be issued, nor certificate of occupancy approved for any construction, reconstruction or development upon any land where such construction, reconstruction or development is not in conformity with the requirements and intent of this chapter. Furthermore, any act or omission of any owner or developer of land subject to the provision herein which has as its effect the circumventing of the intent and purpose of this chapter shall be denied a building permit as herein provided.

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6A-12 Implementation of program; assessments levied.

(a) A program of drainage construction and works shall be implemented by the City according to the guidelines and specifications of this chapter, with assessments to be made under authority of Article 1180 V.A.C.S. against property owners within the territory specially benefited.

(b) The following procedures are hereby adopted for levying assessments against the owners of land in the territories benefited by such drainage improvements:

(1) The City Manager with the assistance of the Director of Community Development shall recommend to the City Council particular areas for drainage improvement specifying the type of improvements proposed, the location, length and estimated cost thereof, together with a description of the territory believed to be benefited by such improvements.

(2) Upon receipt of such recommendations the City Council shall call a public hearing for the purpose of determining the necessity of such improvements, the extent thereof and the territory specially benefited thereby; such hearing to be at least ten days after publication of notice of such public hearing and after the mailing of notices to the property owners in the territory recommended according to the tax rolls of the City.

(3) After the public hearing is closed, the Council shall determine the necessity for such improvements, the nature and type of improvement to be made, the location and the estimated cost thereof, the area specially benefited thereby and the percentage of the cost to be assessed against the owners in such territory if it is determined that a necessity for such improvements exists.

(4) After such determinations are made by the City Council a public hearing shall be called to determine the amounts to be assessed against the property owners in the territory specially benefited by the improvements and such public hearing shall be before the City Council unless the governing body has prior to the time of calling the public hearing appointed special commissioners for such purpose.

The procedures for levying assessments against property owners shall be the same, so far as practical, as those for street improvements under Article 1105b, Vernon's Annotated Civil Statutes and such provisions of Article 1105b as are applicable are hereby adopted as a part of this chapter, including the provisions for notice of public hearing, provisions for a lien on the property with the exceptions therein, provisions for appeal; and all the rights given to cities thereunder and to property owners thereunder shall accrue to the respective parties hereunder.

Provided, however, that the Front Foot Rule is deemed inapplicable, but that a determination of the length of improvement abutting a particular tract may be made and considered among other factors such as area of land served, relative value and probable use of such land, elevation, topography and terrain, amount of land reclaimed erosion, proximity to special hazards such as hazardous pools, mosquito breeding, odors and unsightliness; the overriding aim being to reach a fair and equitable assessment based upon benefits and enhancement. In no event shall the cost assessed against any owner exceed the special benefits in enhanced value to the property in the territory.

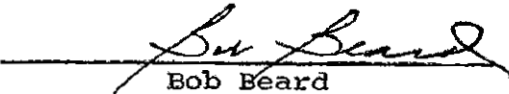
SECTION 3. That all ordinances, or portions thereof, of the City of Mesquite in conflict with the provisions of this ordinance, to the extent of such conflict are hereby repealed. To the extent that such ordinances or portions thereof not in conflict herewith, the same shall remain in full force and effect.

SECTION 4. That should any paragraph, sentence, subdivision, clause, phrase, or section of this ordinance be adjudged or held to be unconstitutional, illegal, or invalid, the same shall not affect the validity of this ordinance as a whole or any part or provision hereof other than the part so decided to be invalid, illegal or unconstitutional and shall not affect the validity of the Comprehensive Zoning Ordinance as a whole.

SECTION 5. That any person, firm, or corporation violating any of the provisions or terms of this ordinance shall be deemed to be guilty of a Class C misdemeanor and subject to the same penalty as provided for in the Comprehensive Zoning Ordinance of 1973, of the City of Mesquite, and upon conviction in the Municipal Court shall be punished by a fine not to exceed Two Hundred Dollars (\$200.00) for each offense.

SECTION 6. Whereas, the fact that present ordinances of the City of Mesquite do not adequately protect the public from the hazards of flooding and do not encourage the preservation of open space in its natural state creates an urgency and an emergency for the preservation of the public health, safety, and welfare and requires that this ordinance shall take effect immediately from and after its passage and publication of the caption of said ordinance, as the law in such cases provides.

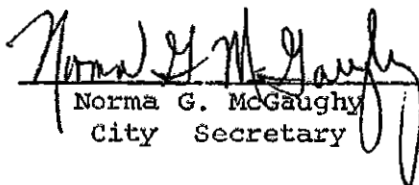
DULY PASSED AND APPROVED by the City Council of the City of Mesquite, on the 16th day of June , A.D., 1975.



Bob Beard
Mayor

ATTEST:

APPROVED AS TO FORM:



Norma G. McGaughey
City Secretary

Elland Archer
City Attorney