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ORDINANCE NO. 858

AN ORDINANCE OF THE CITY OF MESQUITE, TEXAS PROVIDING FOR THE REPEAL OF ORDINANCES NO. 790 AND 846; PROVIDING FOR THE ADOPTION OF A COMPREHENSIVE DRAINAGE POLICY FOR THE CITY OF MESQUITE; BY PROVIDING A TITLE; BY DECLARING PURPOSE AND SCOPE; BY PROVIDING REQUIREMENTS FOR CONSTRUCTION IN FLOOD AREAS; BY PROVIDING STANDARDS FOR STORM DRAINAGE; BY FIXING RESPONSIBILITY FOR DRAINAGE IMPROVEMENTS; BY PROVIDING REQUIREMENTS FOR ENGINEERING DESIGN; BY PROVIDING FOR BUILDING OR STRUCTURE SET-BACK REQUIREMENTS; BY PROVIDING FOR CONSTRUCTION OVER DRAINAGE FACILITIES; BY FIXING DUTIES OF THE DIRECTOR OF PUBLIC WORKS AND PROVIDING FOR AN APPEAL TO THE CITY COUNCIL; BY PROHIBITING THE ISSUANCE OF BUILDING PERMITS FOR NON-COMPLIANCE; BY PROVIDING FOR CONFLICTS; BY PROVIDING A SEVERABILITY CLAUSE; BY PROVIDING A PENALTY NOT TO EXCEED TWO-HUNDRED DOLLARS (\$200.00) FOR VIOLATION AND DECLARING AN EMERGENCY.

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

SECTION I. REPEAL

That Ordinances No. 790 and 846 heretofore adopted by the City Council of the City of Mesquite, Texas, shall be, and the same are hereby repealed.

SECTION II. ADOPTION-TITLE

That this Comprehensive Drainage Ordinance of 1970, as hereinbelow set out shall be, and the same is hereby adopted, as the official drainage and flood control Ordinance of the City of Mesquite.

SECTION III. PURPOSE AND SCOPE

That purpose of policies and design standards set forth herein is to insure adequate provisions for storm drainage within the City of Mesquite. 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 constructed. Any development or improvement of property affecting storm drainage in the City of Mesquite is subject to the provisions stated herein.

SECTION IV. STANDARD PROVISIONS FOR STORM DRAINAGE

Provisions for storm drainage 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

<u>Type of Street</u>	<u>Allowable Spread</u>
Major Thoroughfare	One traffic lane in each direction to remain open.
Collector Street	One moving traffic lane to remain open.
Residential Street	Maximum depth for design storm as shown in Section VII herein 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 (60") 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 Public Works.
- C. An open channel shall be required to accommodate run-off exceeding the design capacity of a sixty-inch pipe, as provided below:
 - (1) Channels draining an area with a "CA" factor (coefficient of run-off and drainage area, as used in the "rational formula") of less than 600 shall be concrete lined to the design depth, plus six inch freeboard except that a closed system as provided above may be used.
 - (2) Channels draining an area with a "CA" factor in excess of 600 shall be improved to a capacity of the 100 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 at least two feet. Earthen side slopes shall be no steeper than 3:1, horizontal to vertical, and shall be sodded to prevent erosion.
- D. In lieu of the improvements of channel draining an area with a "CA" factor in excess of 600, the City Council may elect to accept the dedication of all land within the natural 100-year flood plain of the existing drainage channel as a permanent drainage right of way.

- E. That the criteria for drainage improvements as hereinabove set forth in Paragraphs A through D of this section shall be applicable to publicly owned lands solely at the discretion of the City of Mesquite.

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SECTION V. RESPONSIBILITY OF OWNER OR DEVELOPER FOR STORM DRAINAGE

- 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 drainage directed to that property by prior development as well as the drainage naturally flowing through the property by reason of topography. It is the intent of this Ordinance that provision be made for storm drainage in accordance with Section IV above, at such time as any property effected is proposed for development or use.
- 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. Where a property owner proposes development or use of only a portion of his property, provision for storm drainage in accordance with Section IV above shall only be required in that portion of the property proposed for immediate development or use, except as construction or improvements of a drainage facility outside that designated portion of the property is deemed essential to the development or use of that designated portion.
- D. 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 Public Works.

SECTION VI. RESPONSIBILITY AND PARTICIPATION OF THE CITY IN STORM DRAINAGE IMPROVEMENTS

- A. That the City may in its sound discretion participate in the cost of such improvements as are required by this Ordinance in an amount not to exceed 20%.
- B. That the City may in its sound discretion participate in any project of improvements by the levy of a special assessment against the lands to be enhanced in value by such improvements.
- C. That the City may acquire drainage easements necessary for such improvements by acceptance of dedication, purchase, or condemnation.

D. That the City shall, upon acquisition of the drainage easement and the completion of improvements as hereinabove provided, assume full responsibility for the maintenance of such drainage facilities.

SECTION VII. ENGINEERING DESIGN

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

A. Design Frequency:

<u>Drainage Facility</u>	<u>Storm Frequency</u>
Closed Storm Sewer Systems	10 yr.
Closed Storm Sewer Systems at Street Low Point or Sag	25 yr.
Culverts and Bridges	50 yr.
Concrete Lined Channels	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 of Mesquite, and shall be selected from Table 1 of Section 530 of Paving and Drainage Specifications of the City of Mesquite. 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 of Mesquite.

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 of Mesquite.

- 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 of Mesquite.

- 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 Public Works for his 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 Public Works, prior to approval of the engineering plans for the total development, or any increment thereof.

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SECTION VIII. CONSTRUCTION IN AREAS SUBJECT TO FLOODING

- A. No building or structure shall hereafter be erected or relocated within the 100-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 100 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 50 years. The owner or developer shall furnish at his expense to the Director of Public Works sufficient engineering design information to confirm that the minimum floor elevation proposed is as required by this paragraph.
- 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 that 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 natural flow of water within that flood plain or channel, unless sufficient engineering design information is furnished to the Director of Public Works 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 nearby.

SECTION IX. BUILDING OR STRUCTURE SET-BACK REQUIREMENT

No building or structure shall hereafter be constructed, reconstructed, or relocated within ten (10) feet of any open drainage channel. It is the intent of this provision to insure that an unobstructed width of at least ten (10) feet is maintained between the top of the side slope of any such drainage channel and any building or structure.

SECTION X. 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 Public Works, pursuant to that criteria established in Paragraphs 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 Public Works for his review.

- B. Construction of pedestrian foot bridges or small vehicular crossings may be permitted by the Director of Public Works. 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 Public Works for his review.

SECTION XI. DUTIES OF THE DIRECTOR OF PUBLIC WORKS AND APPEAL TO THE CITY COUNCIL

The interpretation of the criteria hereinabove set forth in Sections III, IV, V, VI, VII, VIII, IX, and X of this Ordinance shall be made by the Director of Public Works. Any person adversely effected by the decision of the Director of Public Works may, within 10 days from the date of such decision, file an appeal in writing. Such appeal shall be returnable to the Director of Public Works and shall define the specific areas of controversy. It shall be the duty of the City Council to hear any such appeal within 30 days from the date received by the Director of Public Works.

SECTION XII. BUILDING PERMITS TO BE WITHHELD

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 Ordinance. 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 ordinance shall be denied a Building Permit as herein provided.

SECTION XIII. CONFLICTS

That all provisions of all ordinances in conflict with the provisions hereof, shall be, and the same are hereby specifically repealed. That all ordinances and all provisions of such ordinances not in conflict with the provisions hereinabove set out shall remain in full force and effect.

SECTION XIV. SEVERABILITY

That if any section, paragraph, clause, phrase or provision of this Ordinance shall be adjudged invalid or held unconstitutional, the same shall not affect the validity of this Ordinance as a whole or any part or provision thereof, other than the part so decided to be invalid or unconstitutional; nor shall such unconstitutionality or invalidity have any effect on any other ordinances or provisions of ordinances of the City of Mesquite.


SECTION XV. PENALTY

That any person who shall violate the provisions of this Ordinance shall be deemed guilty of a misdemeanor and upon conviction therefor shall be subject to a fine not to exceed Two Hundred (\$200.00) Dollars.

SECTION XVI. EMERGENCY

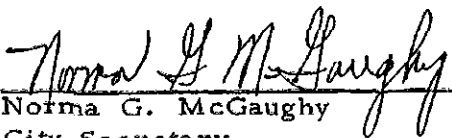
That the present ordinances of the City of Mesquite are inadequate to provide for adequate storm drainage facilities and flood control in the development of properties within such city, constitutes an urgency and emergency in the interest of the public health, safety and welfare, and necessitates that this Ordinance become effective immediately from and after its date of passage as the law in such cases permits.

PASSED AND APPROVED by the City Council of the City of Mesquite, Texas, on this the 4 day of May A.D., 1970.


George Boyce
Mayor

ATTEST:

APPROVED AS TO FORM:


Norma G. McGaughy
City Secretary

William R. Springfield
City Attorney