

For the last two years, we have been working to revise the City's Stormwater and Flood Protection Ordinance. The previous document had been approved by Council in December 2000. Over the 15 years since the approval of the current ordinance, there have been some changes in laws and policies that relate to drainage. These issues needed to be addressed as well as clarifications and improvements to the document that reflect our current policies and procedures.

Early in this project, we formed a committee of end users to provide feedback and guidance to the development of this ordinance. Members included –

Bill Walker – Billingsley Company – Development Community

Curtis Beitel, P.E. – HDR – Consultant Community

David Humphrey – Humphrey and Morton - Contractor

Brian O'Neill, P.E. – Pacheco Koch – Consultant – Private Land Development

Rob Guarnieri, P.E. – City Building Inspection

Krista Pender – Code Enforcement - Stormwater Quality

Regina Edwards – Assistant City Attorney

The project was led by William (Bill) Wallace, P.E. and Jenny LaFoy, P.E. with Nathan D. Maier Consulting Engineers. Bill has been involved with the City's drainage infrastructure for over 20 years and has authored many of the City's drainage related documents, including the previous Stormwater and Flood Protection Ordinance. He has also developed similar ordinances for other cities in the metroplex.

The final document has been reviewed and approved by both the City Attorney's office and the Texas Water Development Board (TWDB). The TWDB is the state coordinator for FEMA floodplain management.

## Summary of Changes

The December 2000 ordinance served as the starting point for the new ordinance. To simplify the evaluation of the new ordinance, the following lists the significant changes that are in the proposed new ordinance.

### Miscellaneous Items

- Clarified that the ordinance is enforced by the City Manager *or his authorized representative*.
- Clarified lowest finished floor in several areas to correspond to FEMA
- Establishes the Floodplain Administrator as the key enforcement / interpreter of the ordinance. The Floodplain Administrator is the de facto City Manager authorized representative.
- Article 9 – Special Provisions – removed several of the specific Corridor Development Certificate (CDC) requirements since they are addressed in the CDC Manual prepared by the North Central Texas Council of Governments.

- Specifically addressed the current FEMA floodplain maps (as opposed to the 'latest) per request from TWDB.
- Changed ordinance structure as requested by the City Attorney. This document will be an attachment to the ordinance, therefore some of the ordinance wording such as severability will be included in the ordinance and not in this technical document.

### **Article 1 – Title, Findings of Fact, Statement of Purpose, and Scope of Authority**

- This section includes references to protecting storm water quality which is added in Article 10

### **Article 2 – Definitions**

- Clarified the definition of Owners Association (Definition 55, page 9)
- Defined Transit Oriented Development Areas (Definition 75, page 12). This also notes that the TOD areas may have a Master Drainage Plan.
- Cleaned up several definitions to provide direct correspondence with FEMA definitions. These include 'Manufactured (Mobile) Home Park (Definitions 42, 43 and 44, page 8), Substantial Damage (Definition 72, page 11).

### **Article 3 – General Provisions**

- Section A removes exemptions from the city. This was a point that we tried to negotiate with TWDB since our channel improvements, by design, do not impact private property. This will require the City to prepare a LOMR for channel improvement projects even though it has little, if any, impact to real property. This will cause a small increase in cost for these projects.
- Section C was adjusted to reflect the fact that this is an attachment to the ordinance and the Penalty Clauses for violations is covered elsewhere.

### **Article 4 – Administration**

- The Floodplain Administrator is appointed to administer and implement the floodplain management portions of this ordinance and associated sections. This was the City Manager.
- **IMPORTANT** – Page 17, paragraphs 1 and 2 discuss proportionality. This is an issue that is based in recent State Law. Essentially a developer should not be responsible for infrastructure that is not required by his development. These paragraphs state the developer is required to bring this issue to the city and show that the required facilities are serving areas outside of his development. The City then has the right to participate or defer until funds are available. The methodology for determining the percentages between the City and the developer are presented in a guidance document that is not part of the ordinance. This document is attached.
- Typical Permit Process on page 20 details the general steps required to consider as part of a drainage design. Several items were added to address proportionality considerations. Item (m.) and (n.) address maintenance responsibilities, which are addressed later in the document.
- Section E, Item 2 adds a requirement for a maintenance bond of 150% of the contract price for a three year period to cover bioengineered improvement projects. These are usually difficult to establish and require extensive maintenance during the establishment period. This will aid in requiring the contractor to add additional vegetation as needed during the maintenance bond period.

- Section F, Item 2. Variances (page 26). The City Manager shall hear and decide variance requests (was the Planning and Zoning Commission).

#### Article 5 - Runoff Calculations

- **IMPORTANT** – The second paragraph on page 28 establishes a new detention / retention standard that will increase the area of ponds and the cost associated with them. Currently, detention is required to reduce flows leaving the site to the design flow from a typical residential development. This was an arbitrary standard. The new standard reduces flows to pre-development flows which is potentially a significant increase. This would mean that new residential subdivisions will be required to have detention. This is in conformance with Low Impact Development (LID) measures that are part of the Community Rating System (CRS) associated with flood insurance.
  - **Caveat 1** – Redevelopment of a tract will be required to detain to the existing flows from the site unless the downstream storm drain capacity is exceeded.
  - **Caveat 2** – There are very few significant residential tracts remaining in the city for development. This section should have minimal impact on a new development.
- Page 31 – Regional detention / retention is mentioned at the end of the second paragraph. While it is hoped that we can encourage regional facilities, the lack of available land may be a problem.

#### Article 6 - Design of Local Drainage Systems

- Page 32 - All design will be 100 year frequency storm event based designs. There was a provision for 10-year design on streets in the previous document, but it was rarely used.
- Section C, Item 3 (Page 33) – This is clarified to eliminate references to top of curb or alley elevation. Proper lot drainage can be provided for lots below the top of curb of the street without an alley at the back. The criteria provided address the basic design parameters.
- Pages 35 and 36 include tables that were moved from the Appendix for ease of reading.
- Page 37, Item 5 – This section addresses redevelopment concerns, especially in older parts of the City. Like proportionality, the City has a responsibility to improve the downstream system if the system is currently undersized but has the right to defer the construction until funds become available.
- Tables 6 and 7 (pages 39 and 41) were moved from the Appendix.
- Item 6, Page 55 – Simplified and clarified responsibilities for maintenance of drainage systems. Essentially everything within a dedicated easement or right of way that is accepted by the city shall be maintained by the city. For other drainage facilities, the city reserves the right to access the facility if it is not properly maintained by the appropriate party (HOA, owner, etc.). The previous ordinance had a number of requirements to address city maintained versus privately maintained drainage facilities. This was not practical for the major drainageways such as Dudley Branch, where poor maintenance could impact upstream homes.
- Section D, Item 9, page 60 – Adds a requirement for landscaping for detention pond areas.

- Section E, page 60 – New section that discusses Master Drainage Plans and notes that there may be additional requirements put forth in the Master Drainage Plans beyond the requirements in this ordinance.

#### **Article 8 – Floodplain Guidelines**

- Page 62, Item 2.c. and 3.b. – These two sections were revised to address FEMA requirements relating to lowest floor of buildings. Since basements are uncommon in the area, these are very minor changes.

#### **Article 9 – Special Provisions**

- Page 68 – minor adjustments to address CDC permitting noted above.

#### **Article 10 – Stormwater Quality**

- Page 71 through 75 – New section to address stormwater quality issues that are being promulgated by the EPA. In short, a number of Permanent Best Management Practices (PBMPs) are described and a point system is put forth to allow evaluation of the measures used for a site. The system is fairly simple and it is a first attempt at quantifying PBMP effectiveness at a specific site. There is flexibility in the last table item on page 24 providing for City approved methods beyond the items listed.

There is a section of exhibits at the back of the ordinance. These are pretty much the same as the previous document with the exception of correction of clerical issues on a couple of the exhibits.