



## CITY OF MARSHALL

### COMMISSION AGENDA INFORMATION SHEET:

**MEETING DATE:** May 28, 2015

**PROJECT:** Consider, respond, and act on a report regarding a Storm Water Master Plan and Storm Water Detention Plan and possible funding methods. (Director of Public Services)

#### **DESCRIPTION:**

Drainage issues are becoming a higher and higher priority for the residents, the city commission, and our city staff, especially after recent floods during one of the wettest Spring periods on record. From a staff standpoint, drainage issues directly affects everyone and everything in Marshall and can become a major safety issue since it damages homes, businesses, streets, and other drainage structures during heavy rains.

We have over 193 miles of streets in Marshall, which means we have 386 miles of roadway drainage as well as hundreds of drainage structures to maintain. To put the 386 miles of drainage in perspective, the listing below shows how our drainage miles compare to the distance from Marshall to some regional cities:

306 miles	to Memphis, TN
308 miles	to New Orleans, LA
373 miles	to Corpus Christi, TX
<b>Marshall (drainage) 386 miles</b>	
392 miles	to Wichita, KS
396 miles	to Mobile, AL
438 miles	Lubbock, TX

\*The above noted Marshall drainage mileage does not include the over 60 miles of major drainage creeks in town.

Every portion of Marshall is affected by drainage issues from our major highways to neighborhoods, to individual homes. Our department receives up to one hundred calls a month regarding drainage needs; some minor, but some are more serious and require immediate attention.

I know each of you have received calls asking that ditches be cleaned on streets in your district; we receive the same calls. We are nearly 100% complaint call based, but we also immediately address calls that are the most pressing first.

We place drainage concerns/needs in three categories:

- **Priority One** – Potentially affects life and property.
- **Priority Two** – Slight potential for future flooding and minor flooding over roadway or yards.
- **Priority Three** – Lowest potential of affecting life or property.

Listed below are just a few of the “recent” drainage issues:

- Bell Cut-Off Railroad Underpass
- Carter Street and Youngsdale Street
- Davis and Price Streets
- FM-1997 (North Grove Street) at Railroad Underpass
- Franklin Street and Hawley Street - Railroad Underpass
- Grove Street and City Park
- Highway 59 and 80 Intersection and Railroad Underpass
- Highway 59 at East Houston
- Highway 59 at Happy Hollow Creek Crossing (KFC area)
- Highway 59 at Parker Creek Crossing (Kroger shopping center area)
- Highway 80 at Parker Creek Crossing
- Maverick Drive Culvert
- Pinewood – 400 block
- Rusk Street at Gehlan Street
- South Washington at Pope
- Turtle Creek Drainage area
- West Houston at Noland Street
- West Houston at Sanford Street
- Wingwood Terrace

Our drainage basins have been studied to death; beginning with a very comprehensive study dated December, 1971, and followed with isolated studies and reports. Over the years the city has taken a position that many localized drainage issues (where we do not have an expressed drainage easement) are private in nature. As with the condition of our streets, drainage is currently at a point of “needs immediate attention.”

Our many hills help create the drainage problems, but they also create an opportunity; creation of Storm Water Detention Ponds to slow the flow of water. A detention pond is a low lying area that is designed to temporarily hold a set volume of water while slowly draining downstream over an extended time. They are used for flood control when large amounts of rain could cause flash flooding. Normally they exist as an open grassy field with a couple of concrete culverts running towards a drainage pipe that slowly drains the water downstream - while flooding the detention area. During non-flooding periods, detention areas can be used for open park area, soccer fields, football fields and amenities such as open air amphitheaters – so they provide a multi-use purpose (flood control and recreation).

We have previously researched the possibilities of one major detention pond off 3<sup>rd</sup> Street by utilizing the Old T & P Ponds site, and several other smaller detention facilities on Happy Hollow, Parker, and Turtle Creeks including “running a series” of smaller detention ponds on Happy Hollow Creek. In addition to the detention ponds, another possible option in several of our drainage basins, would be to widen and add 5:1 slopes to allow for a higher degree of annual maintenance and increased flood control volume; this option is only viable in areas where we have abundant right-of-way availability in the basin. In many cases in town we are severely limited to increasing flow volume by adding width to the basin because commercial or residential development has already encroached right up to the creek line itself and so the use of a series of “smaller” detention ponds is probably the only real choice. Early preliminary “non-engineered” cost estimates for the areas currently under review include:

- Parker Creek – 3<sup>rd</sup> Street Detention (3<sup>rd</sup> Street – old T & P Ponds) – \$3,500,000
- Parker Creek – Detention or improvements above FM-1997 and Franklin – \$1,000,000
- Parker Creek South – East Rusk at Hood Street and Bella Wyatt Park - \$500,000
- Happy Hollow Creek – West Houston (series of detention above Sanford Street) – \$750,000
- Happy Hollow Creek – Smith Park (Series of detention upstream of Carter Street) – \$750,000
- East Parker Creek – Detention pond in nature park – \$350,000
- Happy Hollow Creek – add series of smaller detention ponds upstream – \$400,000
- Turtle Creek – Detention above South Washington – \$750,000

**\*Preliminary estimated costs: \$8,000,000**

The areas noted above are just a start on a series of detentions ponds or improvements designed to hold or handle rainwater through storm water storage to address 25 or 35 year flooding events; in a few cases we may be able to create enough storage capacity that some detention ponds or drainage improvements might be beneficial in a 50 year flooding event.

There may be some funding assistance in designated flood zones along Parker Creek that affect Highway 59, because it serves as a Hurricane Evacuation Route for the Gulf Coast. As far as the other drainage improvements and needs, Chapter 552 of the Local Government Code allows cities to create a Municipal Drainage Utility System and levy a monthly fee on each water bill to fund needed drainage improvements. In 2012, approximately 90 cities in Texas have a Drainage Utility; Tyler is the nearest to Marshall.

Our current 2015 budget allots \$15,000 for drainage improvements, and no funds allocated for bridges or culverts improvements.

### **MY RECOMMENDATIONS:**

- Investigate state and federal funding because of prior flooding during hurricane periods and because Highway 59 is a major exit route from the Gulf Coast and Houston;
- Continue investigation of possible storm water detention sites and drainage improvements and structures on and along Happy Hollow, Parker Creek, and Turtle Creek; and
- Research the possibility of creating a Municipal Drainage Utility System to fund needed drainage improvements and detention facilities.

**COST:**

To be determined

**FUNDING:**

To be determined

**Acct. Name & No**

N/A

**Original Budget**

N/A

**RECOMMENDED**

**ACTION:**

Consider, respond, and act on a report regarding a Storm Water Master Plan and Storm Water Detention Plan and possible funding methods. (Director of Public Services)

**CITY CONTACT:** J. C. Hughes, Director of Public Services 903-503-4503

**ATTACHMENTS:**

N/A

cc: File