City of Fort Worth
Stormwater Management Program

January 22, 2016
Briefing Points

• **Origins of Current Program**

• **Program Resources**

• **Vital Information**

• **Triage (i.e. prioritization)**

• **Partnerships**
Fort Worth Annual Rainfall
(116 years of data)

* Average annual = 33”/year

* Standard deviation in average rainfall = 9”
Fort Worth Annual Rainfall
(116 years of data)

* Average annual = 33”/year
* 2015 = 62.6”
Flash Flooding is the Issue

**MAXIMUM 15 Min. INT. RAINFALL DATA DURING 24 Hour Period**

From April 24, 2015 (7:00 a.m.) to April 25, 2015 (6:00 a.m.)

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**Max. rain in 15 min. for 24 hr.** 0.87 0.91 1.18 1.22 0.87 1.57 1.18 0.94 0.91

Flash Flooding
* Localized
* Sporadic

Historically drainage concerns have been low visibility/priority compared to crime, streets, traffic, etc....
Spring 2004

7th rainiest year on record

3rd rainiest June on record

* 47.6” in 2004
* 10.5” in June
Established 2006

• Result of a highly inclusive process

• Mission:

  “Protect people and property from harmful stormwater runoff”

• Make things better:

  ➢ Keep the drainage system performing as designed (Maintenance and Repair)
  ➢ Identify and correct deficiencies in the drainage system (Capital Improvement Program)

• Keep things from getting worse:

  ➢ Development review
  ➢ Floodplain Administration
Resources

Funding the Program: Stormwater Utility Fee

- Base rate in $$s/month/2600 sf of impervious surface

![Graph showing budget projections and actuals from FY 07 to FY 16.](chart.png)
### General Obligation Bond Debt

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<th>Year</th>
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<td>1978</td>
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<td>1986</td>
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<td>2004</td>
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<td>$47.45M</td>
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### Revenue Bond Debt

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<td>2007</td>
<td>$25 M</td>
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<td>2009</td>
<td>$45 M</td>
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<td>2011</td>
<td>$80 M</td>
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<td>Total</td>
<td>$150 M</td>
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- **$17 M** per year 9 years of delivery
- **$1.6 M** per year 30 years of delivery
- **$2.5 M** per year average ‘07-’14

Pay - Go
**Future steps to Asset Management:**

* Condition assessment
* Assess criticality
* Include channels and dams
* Include easements and maintenance agreements
Vital Information

Areas of Potential High Water
Vital Information

Grading Drainage Basins

Legend

Stormwater Mapsheds Metric1 Grading*

- A
- B
- C
- D
- E
- F
- Z (For Mapsheds Outside City Limits)

* This Mapsheds ranking were developed by B&G PMT in 2014.
Vital Information

Engineering Assessments

Legend:
- Green: Completed
- Orange: In Progress
Project Prioritization

Project Drivers
- Regulatory Risk
- Capacity
- Capital Replacement
- Efficiency/Sustainability

Tactical
- Citizen / Customer Satisfaction
- Prior CIP Approval
- Partnering Opportunity
- Healthy Environment

Strategic
- Safest City
- Improve Mobility
- Clean/Attractive City
- Strong Economy
- Development/Sustainability
- Improve Air Quality

Other Factors
- Inter-Organizational / Joint Infrastructure
- Leverage Funding
- Obligatory
- Time Sensitive
Prioritization

Stormwater Master Plan

Develop Policies
* Financing (Debt vs. Pay-go)  * Level of Service
  * Fee Increases  * Resource Allocation
    * Mitigation Strategies

Refine Prioritization Scheme
* Maintenance  * Capital Improvements
  * Drainage Basin Evaluations

Assess Asset Criticality
= Probability of Failure \times\text{ Consequence of Failure}

Continue accruing and assimilating System Data
* Channel Inventory  * Pipe Condition
  * Work Order System  * Drainage Basin Evaluations

Public Input
• Mitigate flooding
  – Regional solutions much more effective/efficient than multiple smaller scale improvements

• Revitalize Economic Base

• Enhance:
  – Aesthetics
  – Mobility
  – Functional use
Luella Merrett
Stormwater Solutions Magazine
Project of the Year
Summary

Keys to City of Fort Worth Stormwater Management Program

• **Reliable, substantive resources**

• **Vital Information**

• **Logical, intelligible prioritization scheme**

• **Creative partnerships**