



FORT WORTH[®]

Floodplain Management Plan

CITY OF FORT WORTH
Public Meeting #1

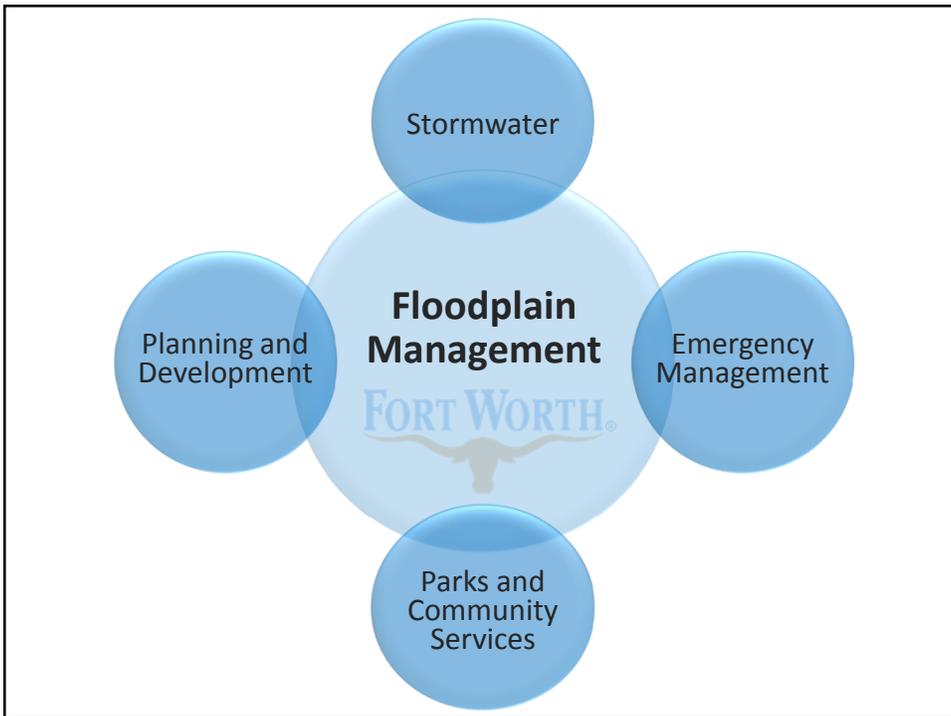
F FREESE NICHOLS

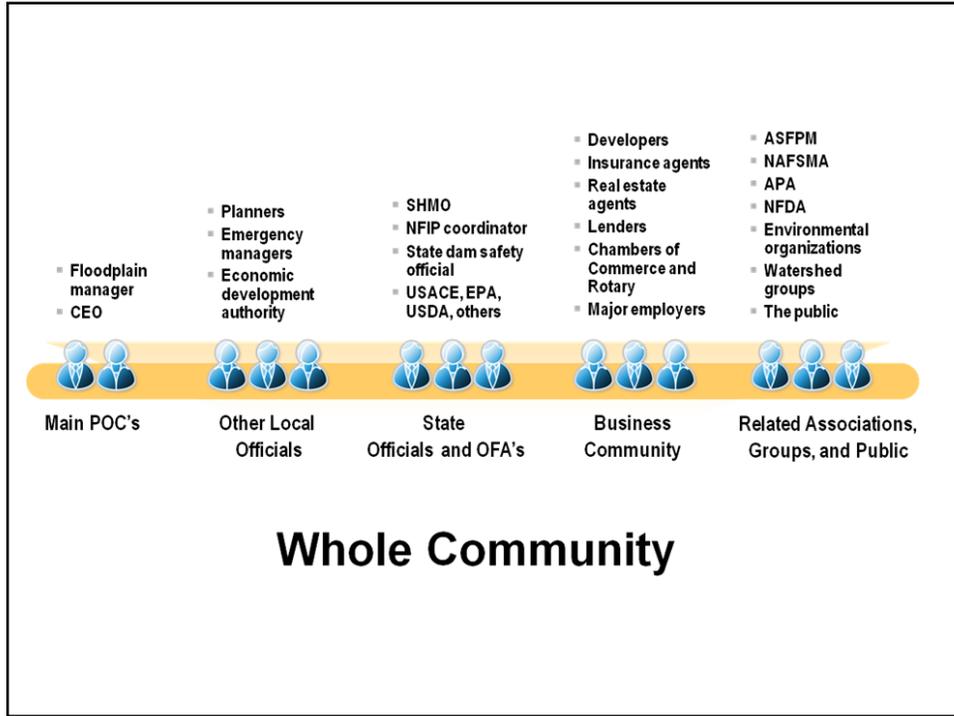
June 1, 2015

HELLO
MY NAME IS

Clair Davis
Floodplain Administrator

FORT WORTH[®]





Agenda

1. Flooding and Fort Worth: An Overview
2. Fort Worth Higher Standards (NFIP & CRS)
3. 510 FMP Steps & Goals
4. Project Timeline
5. Next Steps



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Flooding and Fort Worth: An Overview



Flood Facts and Risks



- Most common natural disaster in U.S.
- Common misconception that property is not in danger of flooding



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Recent Storms

- Rain in FW for ~21 days in May
- Avg. rainfall for May was ~12 inches
- Saturated ground = more runoff
- City is actively monitoring stormwater infrastructure
- Report flooding to the City at 817-392-8100

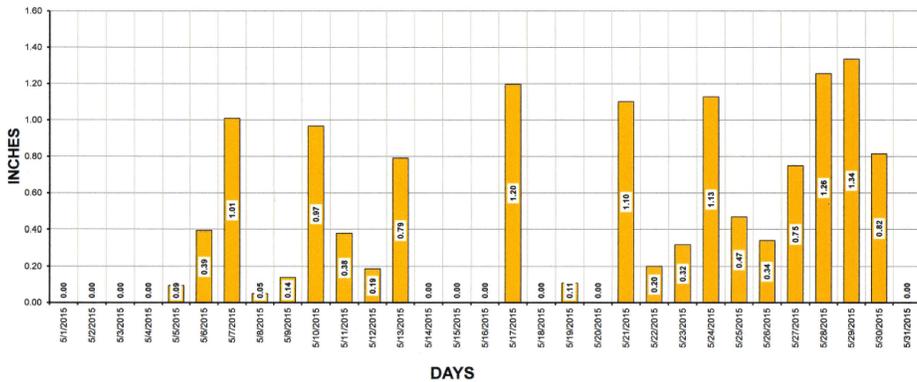


STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Recent Storms

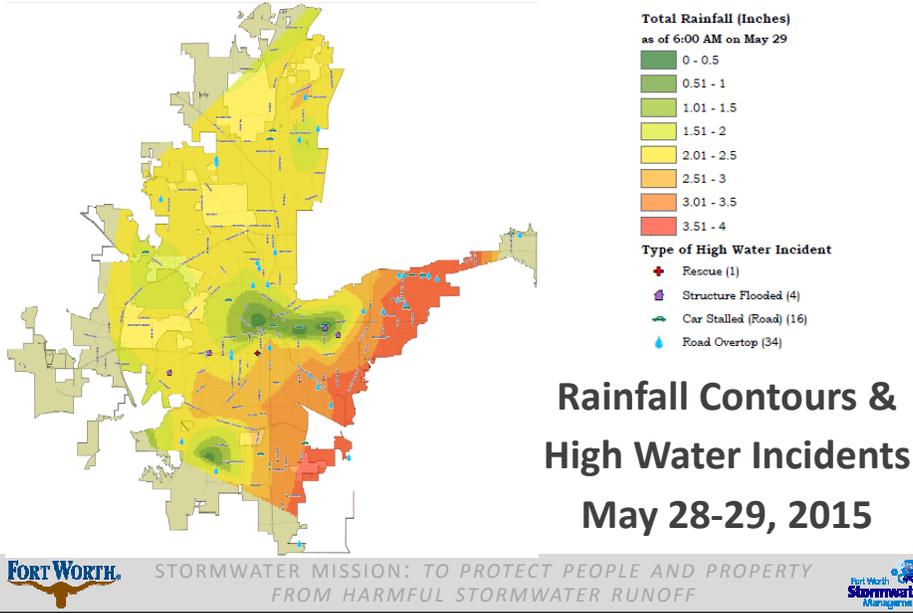
CFW ADVANCE WARNING & MONITORING SYSTEM
RAINFALL DATA FOR
MAY 2015



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF

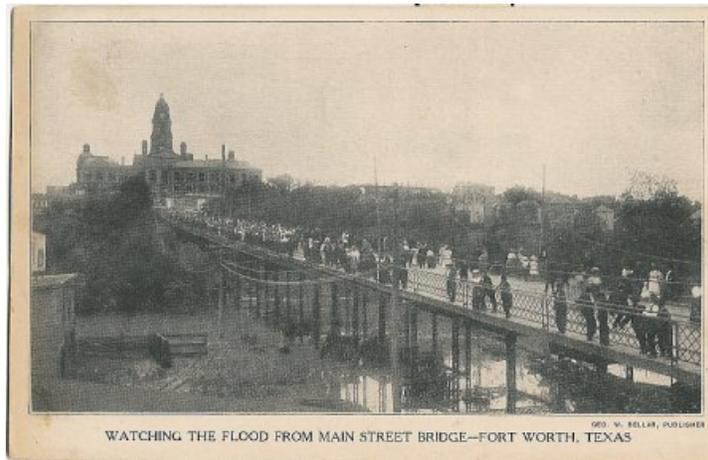


Fort Worth Recent Storms



Fort Worth Historic Flooding

May 25, 1908 Flood



FORT WORTH. STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF **Fort Worth Stormwater Management**

Fort Worth Historic Flooding

April 24-25, 1922 Flood



- “Flood Scene in Fort Worth, April 25, 1922, looking north on North Main Street”
- 8.81 inches of rain in 14 hours and 22 minutes
- Trinity River rose 39.1 feet



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Historic Flooding

May 17, 1949 Flood



- 11 inches of rain in nine hours
- Trinity River rose more than 40 feet
- Residential rooftops between 7th Street and Lancaster



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Floodplain vs. Stormwater



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Historic Flooding



Arlington Heights (2004)



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Historic Flooding



Bellaire at Stadium (TCU area) (2004)



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Historic Flooding



Berry Street (2004)



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Historic Flooding



Lubbock at Devitt (2004)

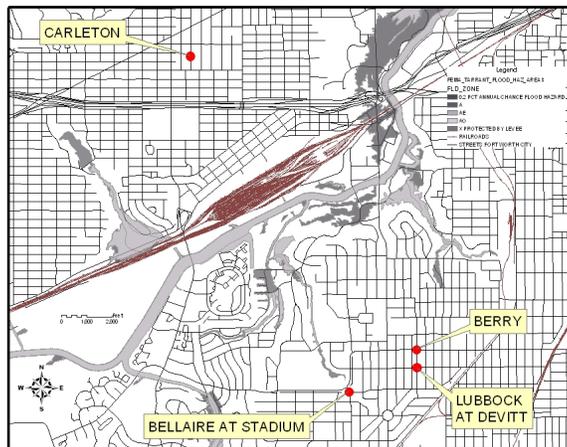


STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Historic Flooding

FLOOD PHOTO LOCATION MAP



Infrastructure Problems



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Video

“We just ran out of time”

https://www.floodsmart.gov/floodsmart/pages/videos/video_index.jsp



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY
FROM HARMFUL STORMWATER RUNOFF



Fort Worth
Higher Floodplain
Standards (NFIP & CRS)



National Flood Insurance Program

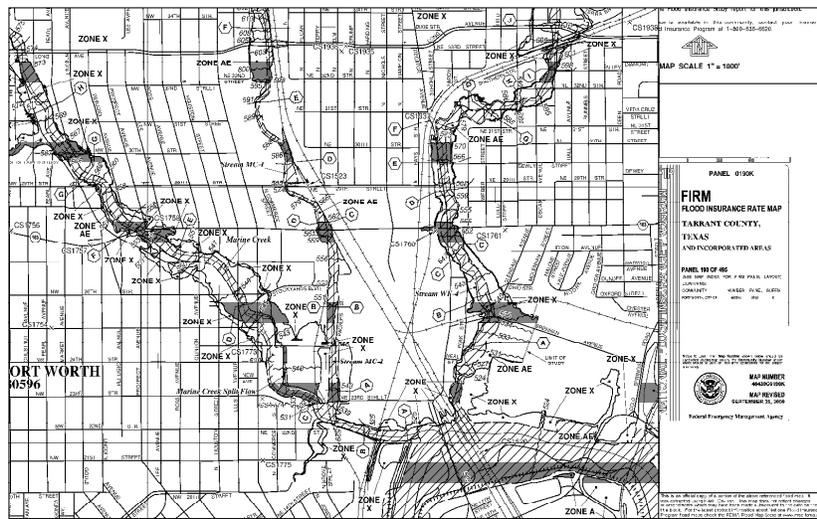
- Founded in 1968 to provide two main functions
 - Providing insurance for property owners
 - Guide communities in adopting and enforcing floodplain management regulations
- Average policy premium in 2012 was **\$650 per year**
- Paid out more than **\$7.7 billion** in 2012
- **Fort Worth joined NFIP in 1980**



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



National Flood Insurance Program



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Higher Standards Work

- Claim reduction since NFIP participation:
 - 321 pre-FIRM claims for \$3,365,846 in damages;
 - 38 post-FIRM claims for \$533,400 in damages;
 - 88% reduction in claims, 84% reduction in damages.
- Higher Standards throughout NFIP participation
 - 100-year (1.0% chance) design storm, fully-developed drainage basins, 2.0 feet of freeboard, Corridor Development Certificate.
- Community Rating System to reward higher standards with lower flood insurance premiums.

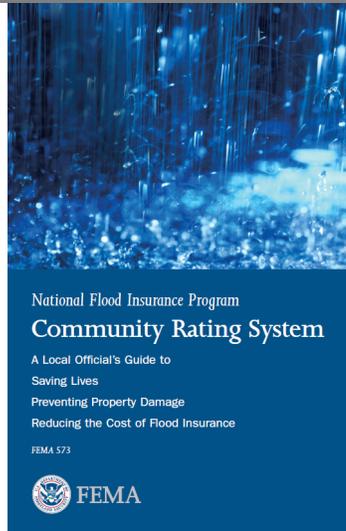


STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Community Rating System (CRS)

- Voluntary incentivized program that involved communities earning points toward higher CRS Classifications and, in turn, policy holders can receive reductions in their premiums
- **Fort Worth began participating in 2012**

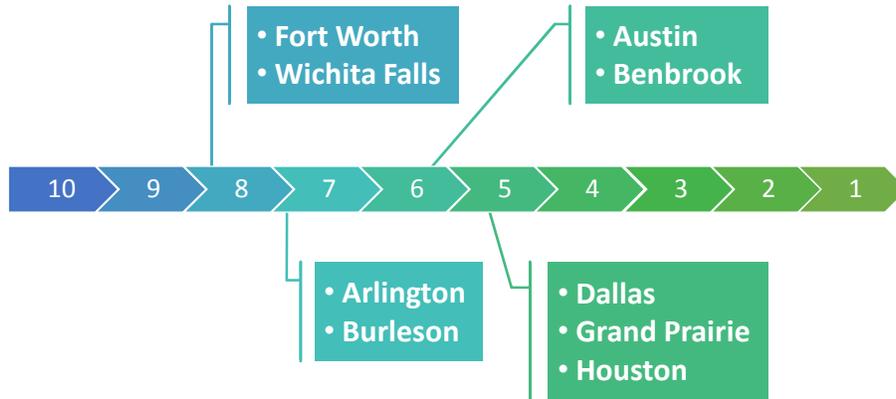


STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



NFIP Community Rating System

- Communities complete creditable activities to reach a higher classification



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Fort Worth Stormwater Utility

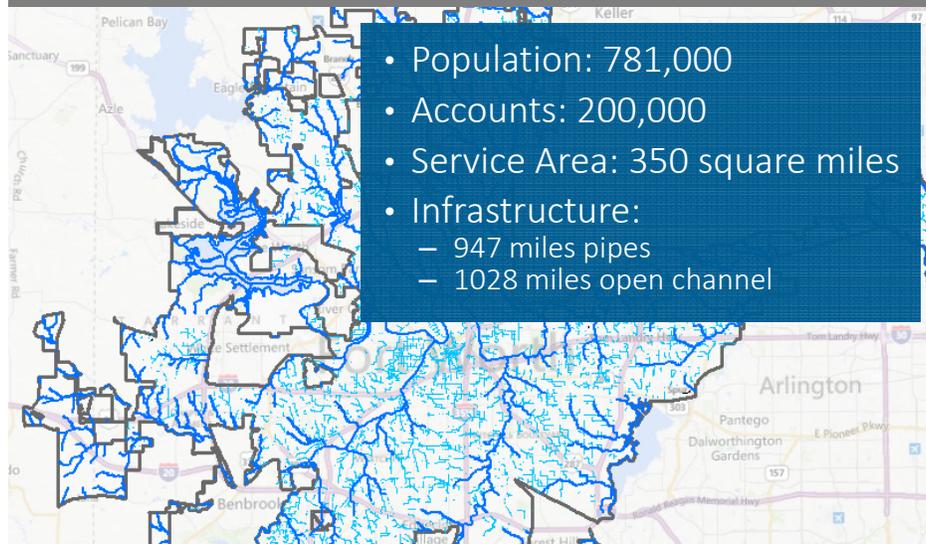
- 2006: Stormwater Utility created
- Monthly stormwater utility fee
- Annual Operating Budget: **\$15 million**
- Over **\$1 billion** in stormwater needs



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Stormwater Utility Facts



A map of Fort Worth, Texas, showing the city's stormwater infrastructure. The map highlights the city's boundaries and various waterways, including the Trinity River and several smaller creeks. A blue overlay box contains the following facts:

- Population: 781,000
- Accounts: 200,000
- Service Area: 350 square miles
- Infrastructure:
 - 947 miles pipes
 - 1028 miles open channel

FORT WORTH. STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



510 FMP Steps & Goals



510 Floodplain Management Plan



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Step 1: Organize

- Planning Committee to Guide Plan Development
 - Public & City Representatives
- **Planning Committee Meetings (3):**
 - Introduction to FMP
 - Hazard Assessment & Mitigation Activities
 - Draft Plan



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Step 2: Public Involvement

OBJECTIVES:

- To **engage and educate the community** on floodplain management and the current planning process
- To **gather input** that will inform the development of the Floodplain Management Plan



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Public Communication

- 2 Public Meetings
- “Runoff Rundown”
- Social Media  
- MySidewalk – Survey Tool

<http://www.yourfortworth.org/>

inside:

- Flood Insurance
- Property Protection
- Improvement Requirements

runoff Rundown

FORT WORTH STORM WATER MANAGEMENT DIVISION

The mission of the City of Fort Worth's Storm Water Management Division is to protect people and property from harmful storm water runoff. Education and prevention are valuable and proven ways that help our city communities become resistant to these natural disasters.

The City of Fort Worth recognizes that its entire community can be susceptible to flooding, not just those structures located within Special Flood Hazard Areas (SFHAs). The following information is being provided to help inform property owners located within the SFHA, flood prone areas, and also all property owners within the City of Fort Worth.

Flood Information

Residents of Fort Worth can obtain flood information concerning flooding, flood risks, mandatory flood insurance purchase requirements, and flood zone determinations from the City of Fort Worth's Transportation and Public Works Department Storm Water Management District located at City Hall or by calling 817-388-4637.

Obtain the Special Flood Hazard Area (SFHA) map on file in the Engineering Dept. of the Transportation and Public Works Department located at City Hall. Copies of the available elevation and datum information upon request.

Real time river gauge information can be obtained through the following website: www.txdot.gov

A publication of the City of Fort Worth Transportation and Public Works Department Storm Water Management District

<http://fortworthtexas.gov/stormwater/floodplain>



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Step 4: Assess the Hazard



- Where is the flooding?
- Assessment of flood hazards
 - Map of known flood hazards
 - Description of known flood hazard
 - Discussion of past floods
- Assessment of less frequent floods
 - Inventory of levees and dams that would result in flooding
 - Map of affected areas and lay term summary
- Assessment of areas likely to flood (floodplain & outside floodplain)



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Step 5: Assess the Problem

- We know where the hazard is, but what is the impact?
- Description of the impact of the hazards on:
 - Life, safety, health, procedures for warning and evacuation
 - Public health including health hazards to floodwaters and mold
 - Critical facilities and infrastructure
 - The community's economy and tax base
 - Number and type of affected buildings
- Review of all damaged buildings/flood insurance claims
 - All addresses of properties that have received flood insurance claims, even single occurrences



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



The Insurance & Risk Gap

- Not every structure in the FEMA floodplain, and not every structure at risk has flood insurance
- Estimate of 6,000 structures in the FEMA floodplain:
 - 5,310 residential, 690 commercial
 - Approximately 14,800 residents at risk
- \$1.026B in uninsured residential risk
- \$180M in uninsured non-residential risk
- No estimate of risk outside the FEMA floodplain



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY
FROM HARMFUL STORMWATER RUNOFF



Step 6: Goals

- Must pertain to all flood-related issues outlined in **Step 5**
- Should **provide future context** for review of all floodplain management activities, including the action plan
- Should **preserve consistency** with other non-flood related community goals in affected areas (CFW goals, HMAP Goals)



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY
FROM HARMFUL STORMWATER RUNOFF



City Goals



1. Make Fort Worth the nation's safest major city
2. Improve mobility and air quality
3. Create and maintain a clean, attractive city
4. Strengthen the economic base, develop the future workforce, and create quality job opportunities
5. Promote orderly and sustainable development



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Draft FMP Goals

1. Protect the health and safety of the public
(links to City goal 1, 5)
2. Facilitate sustainable growth
(links to City goals 4, 5)
3. Educate the public about flood risk mitigation and safety in Fort Worth *(links to City goal 1)*
4. Reduce the adverse effects of flood events
(links to City goal 1, 2, 3, 4, 5)
5. Develop mitigation actions to address potential regulatory issues *(links to City goal 5)*



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Step 7: Review Possible Activities

- Preventive activities (zoning, floodplain regulations, building codes, subdivision ordinances)
- Regulatory standard sufficient for current and future conditions
- Natural floodplain function protection activities
- Property protection and mitigation activities
- Emergency service activities
- Structural projects
- Public information activities



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Step 8: Draft Action Plan

- Actions must be prioritized
- Post-disaster mitigation policies and procedures established



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Step 9: Adopt the Plan

- Plan and amendments are adopted by Council
- Incorporated into existing planning mechanisms (HMAP)



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY
FROM HARMFUL STORMWATER RUNOFF



Step 10: Implement, Evaluate and Revise

- Procedures established for monitoring plan implementations, checking on progress, and recommending revisions



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY
FROM HARMFUL STORMWATER RUNOFF



Project Timeline





Schedule of FMP

Floodplain Management Plan Tasks	Month					
	May	Jun	Jul	Aug	Sep	Oct
Committee Organization and Data Collection	★ ●					
Hazard Assessment			★			
Mitigation Strategy and Action Plan						
Draft FMP					★ ●	
Submit to FEMA						

★ Committee Meeting
 ● Public Meeting



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Ongoing Stormwater Efforts



Purpose of Citywide Stormwater Master Plan

- Set City vision, strategies and policies for stormwater management
- Guides decisions regarding identification and prioritization of future stormwater studies and projects
- Enhances communication through public involvement and education
- Supports the need for a sustainable stormwater program



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Citywide Stormwater Master Plan Development

- Currently gathering existing information into a formal plan
 - 30 recent studies of FW creeks and channels to update floodplain and identify mitigation
 - Starting Near West Side study to look at Bailey Sump
- FMP will become 1 piece of the overall SWMP
- FMP public involvement will inform SWMP efforts
- Future SWMP specific public involvement opportunities



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY
FROM HARMFUL STORMWATER RUNOFF



Next Steps



Next Steps

- Hazard Assessment
- Future Meetings



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF



Comment Cards

- We would like your input
- Collecting information to help the community & develop a comprehensive plan
- Translation services available

FLOODPLAIN MANAGEMENT PLAN PUBLIC COMMENT CARD

Name: _____ Phone: _____

Physical address: _____

Email address: _____

1. Do you live in a floodplain? Y N UNSURE

2. Do you have flood insurance? Y N UNSURE

3. Has your property flooded before? Y N UNSURE

(If yes, please describe and provide address if different from above)

4. Do you know of any flood prone areas that you would like to make the city aware of? Y N UNSURE

(If yes, please describe)

5. Which type of flood risk mitigation activities would you support? (check all that apply)

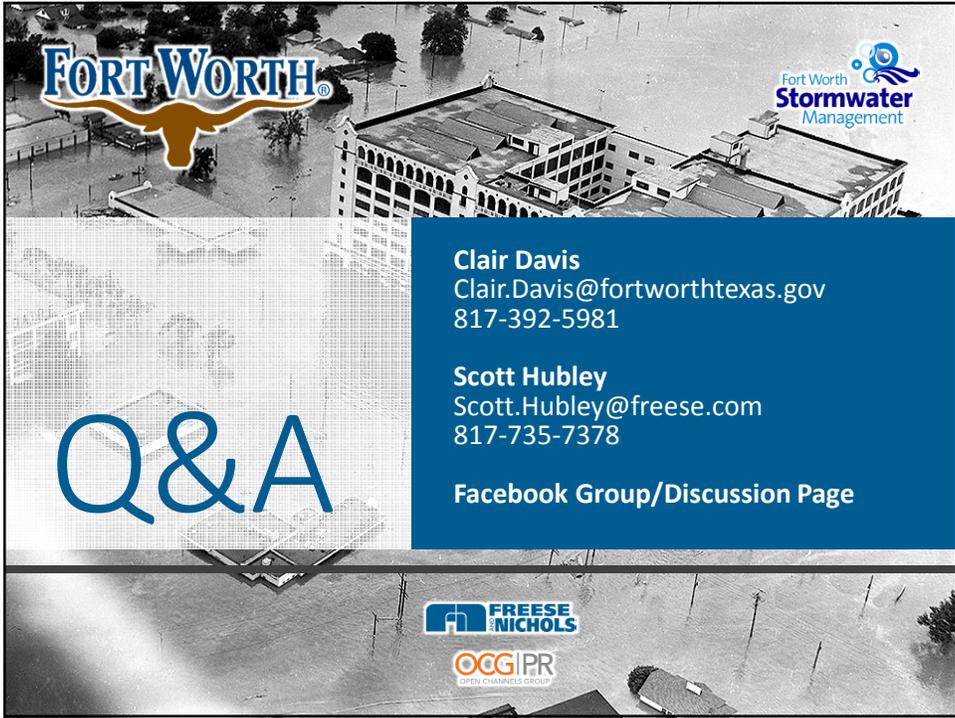
- Preventive activities (zoning, floodplain regulations, building codes, subdivision, ordinances)
- Natural floodplain function protection activities
- Property protection and mitigation activities
- Emergency service activities
- Public information activities

6. Any other comments you would like to share? _____



STORMWATER MISSION: TO PROTECT PEOPLE AND PROPERTY FROM HARMFUL STORMWATER RUNOFF





FORT WORTH
Logo featuring a longhorn silhouette.

Fort Worth
Stormwater
Management

Q&A

Clair Davis
Clair.Davis@fortworthtexas.gov
817-392-5981

Scott Hubley
Scott.Hubley@freese.com
817-735-7378

Facebook Group/Discussion Page

FRESE NICHOLS

OCCIPR
OPEN CHANNELS GROUP