

Regulating Beyond the FEMA Floodplain: One City's Path

Presented to: TFMA 2025 Annual Meeting – Presentation J1

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Agenda

- Why we needed to regulate outside of the FEMA Floodplain
- Policy Development Process with Stakeholder Engagement
- CFRA Regulations
- What the future holds

Why did no one tell me it floods here?



Fort Worth Historic Flooding

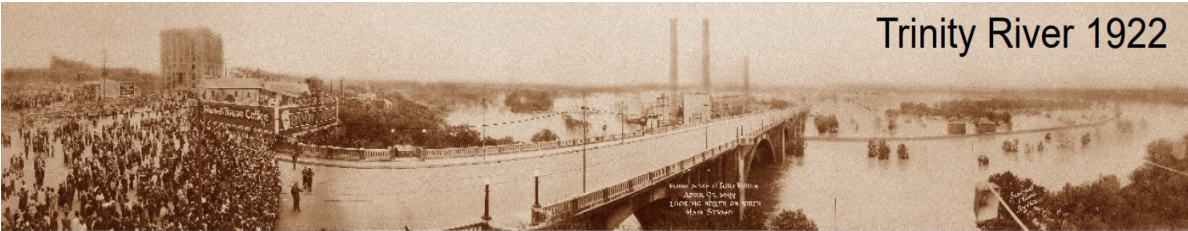


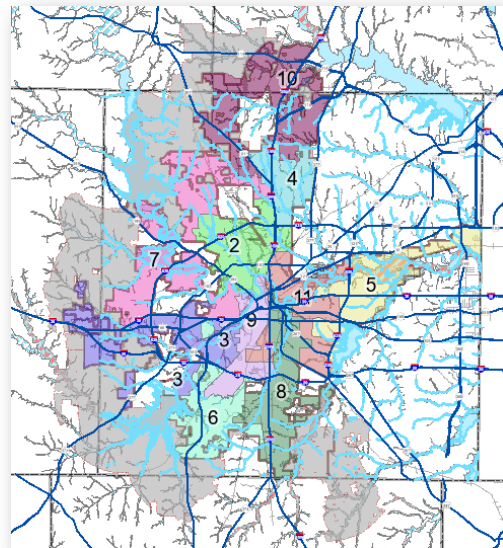
Figure 1.--FLOOD SCENES ON MARINE CREEK
Upper photograph shows damaging results of April 1942 flood in hardware store on North Main Street. Lower picture shows debris piled up near East Exchange Avenue and North Main Street after April 1942 flood. (Photos courtesy of Fort Worth Star-Telegram.)



Fort Worth by the Numbers

- 356 square miles in City Limits
- Additional 275 square miles in ETJ
- Located within 5 counties
- 42 square miles of FEMA Special Flood Hazard Area
- 700+ miles of natural streams
- 4 staff dedicated full-time to Floodplain Management

And Growing Fast!



Stormwater Program

Created in **2006** in response to devastating flooding

Mission: Protect people and property from harmful stormwater runoff

Dedicated funding from **Stormwater Utility Fee** paid by properties owners with impervious surface, with a few exceptions

- Fee- \$6.94/billing unit/month (as of Jan. 1, 2025)
- CFW top rate payer- \$1.26M/yr.
- Small commercial (1 acre impervious)- \$1,416/yr.
- Average single-family homeowner pays \$83.29/yr.



Repetitive Losses and Claims

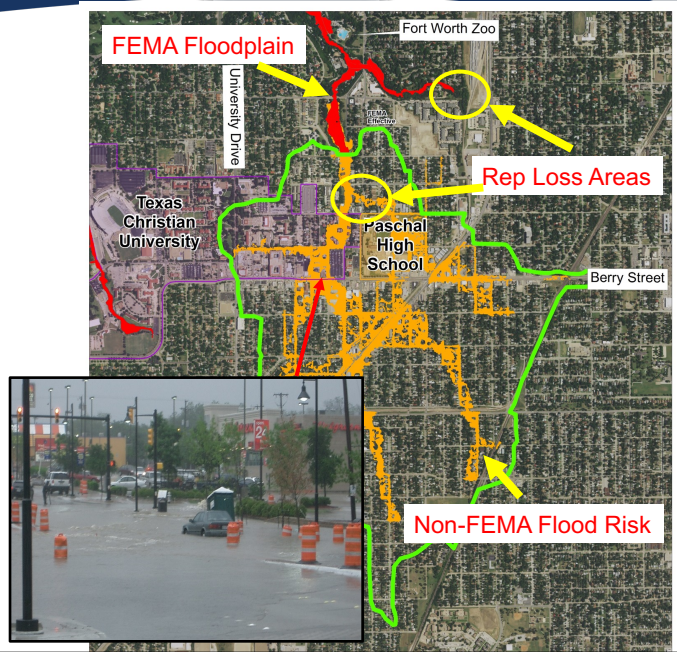
- More reports of flooding outside FEMA floodplains than inside them
- More flood insurance policies and claims are outside FEMA floodplains
- Flood risk too extensive to mitigate through capital projects

Flood Insurance	Total Policies & Claims	Policies & Claims In FEMA Floodplains	Policies & Claims Outside FEMA Floodplains
Policies	1346	657	689
1 Claim	250	95	155
2+ Claims	101	35	66

Citywide claim information as of Nov. 2023

What are Non-FEMA Flood Risk Areas?

- Areas of flood risk not shown on FEMA Maps
- Often called Local Floodplains, Urban Floodplains, or Residual Floodplains; we call our City Flood Risk Areas
- Often have drainage areas < 1.0 square mile



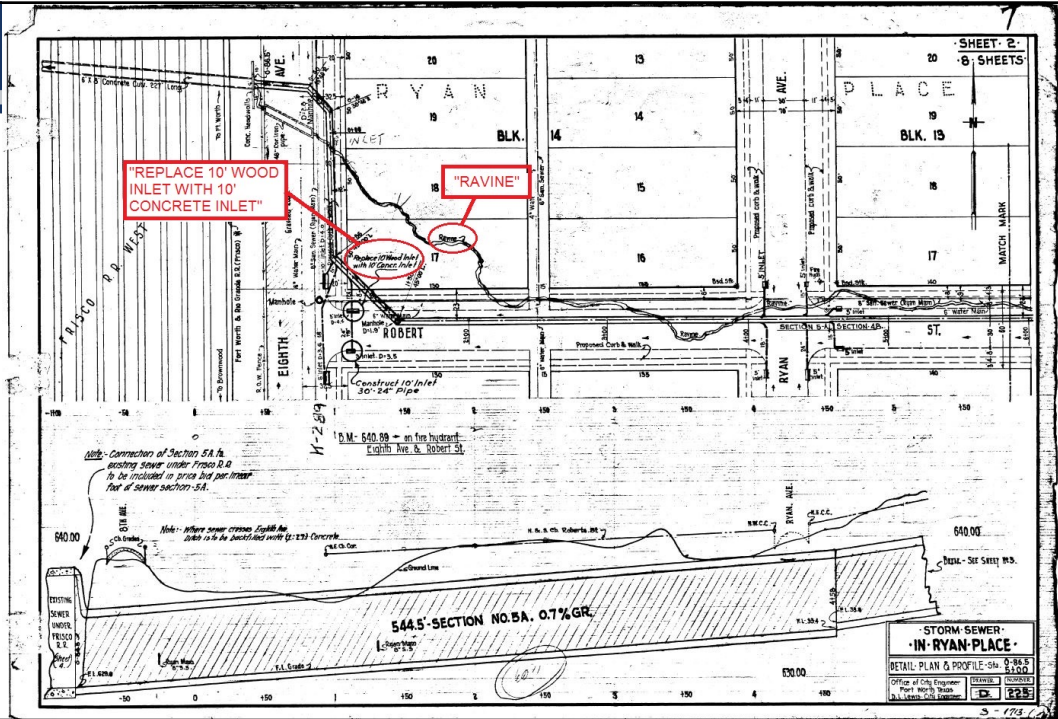
Flood Risks in Areas with No FEMA Floodplain

With no obvious risk of flooding Residents often think the stormwater infrastructure is in place to protect them



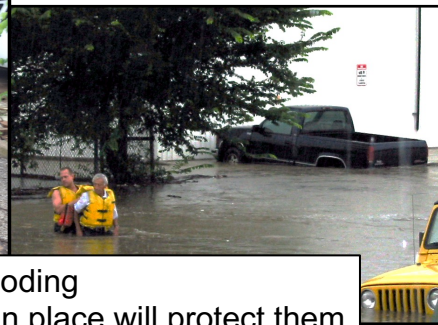
Primary Cause:
Undersized,
Obsolete
Storm Drain
Systems

Plans from 1921
Storm Drain
Improvement
Project



Risks

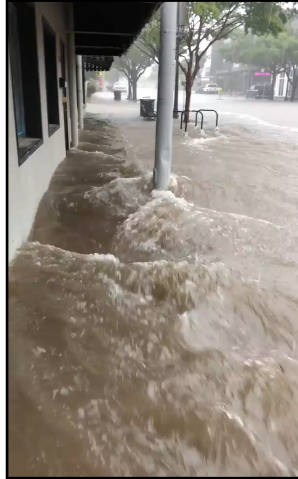
- Life safety
- Structure Damage
- Vehicle Damage
- Property Damage
- Emergency Response



Often times no obvious risk of flooding
Residents often think the stormwater infrastructure in place will protect them

What could we do?

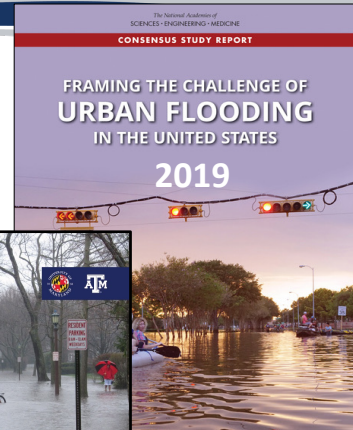
- Status Quo
 - Existing regulations did not address flood risks outside of FEMA floodplain
 - Consequences of status quo
- Capital Projects not an option
- Draft Recommendations
 - Mapping
 - Communication
 - Regulation



Policy Development Process & Stakeholder Engagement

Policy Development Process

- 2016 Floodplain Management Plan identified the issue
- 2018 Stormwater Master Plan identified this as a priority initiative
- Identified stakeholders
- Interviewed other cities
- Reviewed available research



Since 2018, we have been working with stakeholders representing:

- Residents
- Developers
- Property Owners
- Engineers
- Insurance Companies
- Title Insurance Lawyers
- Commercial & Residential Lenders
- Surveyors
- Tarrant County Appraisal District
- Association of Realtors
- Real Estate Council
- Builders Association
- Development Advisory Committee
- City Council
- Plan & Zoning Commissions
- City Departments

Public meetings held in Dec. 2018 & Nov. 2022 timeframe

Key Community Concerns

- “Please don’t call these areas Floodplains” – Insurance required?
- Mapping of local flood risk areas could increase the time and cost of real estate transactions – insurance and banking costs
- Communicating local flood risk maps could potentially impact property values – appraisal values and takings
- Applying existing flood protection standards & regulations in local floodplains could potentially impede development – more projects reviewed in greater detail
- Unintended consequences

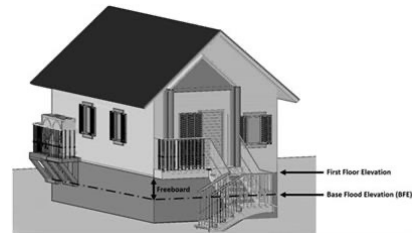
Benefits of Regulation

More informed decision making

- Less risk to life and emergency responders
- Property purchase & improvements
- Decision to purchase flood insurance
- Resiliency / Improved recovery from flooding
- Potential cost savings in development process if requirements are known upfront
- Safer, more sustainable development
- Improved quality of life



CFRA Regulations



Before Regulation Updates

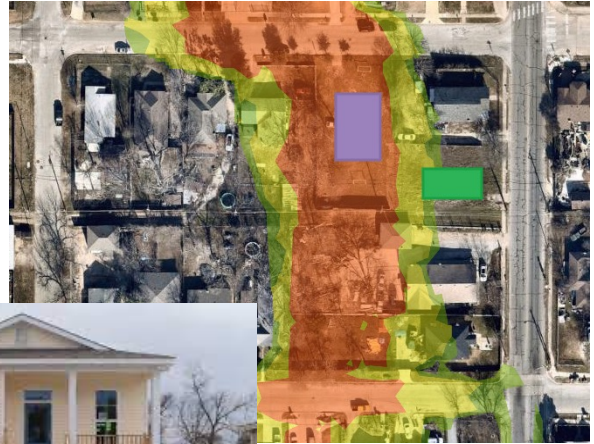
- Before July 15, 2024, development less than 1 acre was not reviewed for drainage impacts, except when:
 - Platting
 - FEMA Floodplain
 - Common Plan of Development
- Outcome: New buildings in CFRAs are potentially flood prone



Example: 2205 Western
-New build in 2012
-Could not require builder to build above flood risk
-Flooded multiple times

Floodplain Ordinance

- Non-FEMA City Flood Risk Area (CFRA) regulations:
 - 2 ft of freeboard above 100yr flood
 - Elevate or floodproof (or combination)
 - Certificate of Compliance
 - No significant impacts



Plan to evaluate and refine regulation over time as lessons are learned through implementation



Elevation

- Raising finished floor on pilings, piers, or slab above flood risk
- Elevating a 2,000 sq-ft home 2' above a 1' deep flood risk costs an est. \$28k-\$37k
- Repairing a home flooded from 1' of water can cost an est. \$57k (FEMA)



Flood Proofing

- Flood resistant materials are used around the structure to reduce risk of water penetration
- Special sealing around doors/windows to be watertight
- Allows for home to be built without need for stairs/ramps



When CFRA Certificate of Compliance Applies

Certificate of Compliance (COC) requirement is tied to existing permits

Permits that may trigger COC

- Adding a room to a house
- Adding a back garage
- Adding a fence over 7 feet
- Excavating a pool
- Adding a shed

Permits that do NOT trigger COC

- New roof, windows, doors
- Work internal to the structure
- Adding a back patio or parking slab
- Underground utilities

Note: Permits above are examples only; not all City permits are listed

Non-FEMA Flood Risk Areas

What does it mean for property owners?

- Property owners can make more informed decisions considering flood risk mapping
- Flood insurance is not required but is available to all property owners in the City
- Reduce emergency response need
- Development/redevelopment <1 acre in CFRAs would need to avoid impacting the flow of flood waters or submit a Certificate of Compliance



Between Oct. 2022 - Sept. 2023, 22 commercial & 28 residential building permits would have been affected by CFRA regulations (0.3% of ~16.5k permits)

Example Project: Near South Side Home Addition



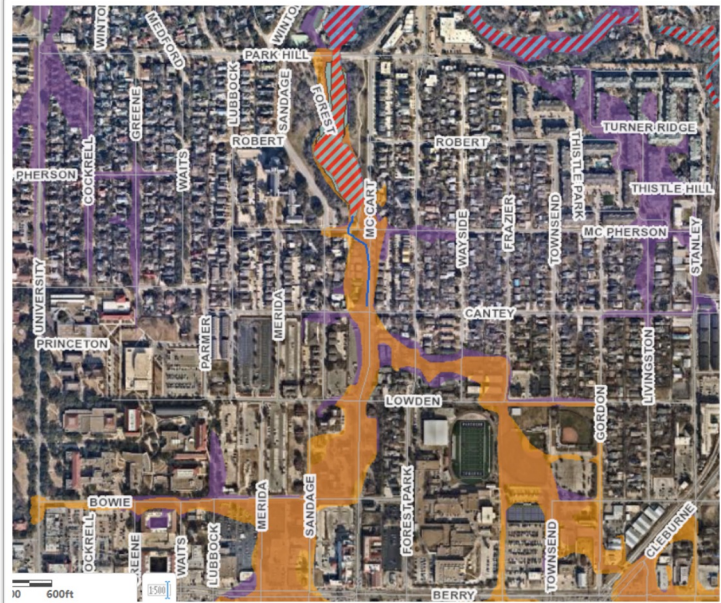
Certificate of Compliance:

Engineer certification that:

- Shows the new addition finished floor is elevated or floodproofed at least 2 feet above the 100 year flood elevation
- Explains how potential impacts were addressed – TX Water Code Chapter 11 prohibits development on a property from creating adverse drainage impacts on others
 - Development maintains the flow of stormwater

Types of Flood Risk Mapping

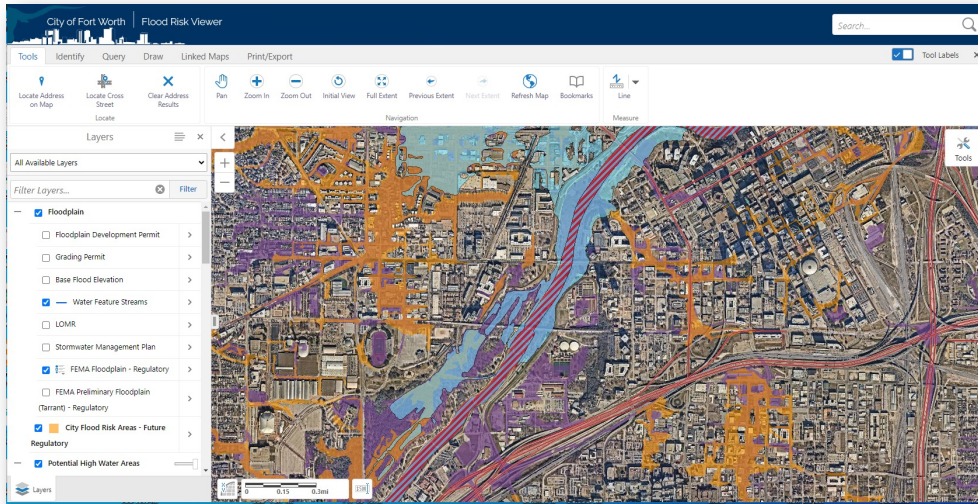
- ❖ **FEMA Floodplains**
 - Existing Regulatory
 - ~ 48.5 Square Miles
- ❖ **Non-FEMA City Flood Risk Areas (CFRAs)**
 - Basin Specific High Detail
 - Regulatory (as of 7/15/2024)
 - ~ 3.5 Square Miles
- ❖ **Non-FEMA Potential High Water Areas (PHWAs)**
 - Citywide Low Level of Detail
 - Advisory
 - ~ 29.5 Square Miles





Flood Risk Viewer

https://gisapps.fortworthtexas.gov/Html5Viewer/?viewer=CFW_Flood_Risk_Viewer



Future Updates to CFRA

- Prioritization study to determine future CFRA watersheds to add
- Review of initial regulations in first year as they are implemented to determine future revisions
- Continue outreach to public and development community
- Update form and guidance documents to clarify requirements and process

Contact Information

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Questions / Discussion

