INTEGRATING HAZARD MITIGATION WITH WATERSHED PLANNING AND NATURE-BASED APPROACHES

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Denton, Texas

- DFW Metroplex
- Population 136,000
- Two Major Universities
- Known for Jazz Music Program
- Progressive community

- Located in the Trinity River Watershed
- • Elm Fork of the Trinity Sub-Basin
Watershed Management

- Rapid urbanization in western Denton County
- Growth in Lewisville Lake Watershed and Denton County
- Master Planned Communities (MPCs) in City of Denton
- Conditions in Lake Lewisville
Looking to the future

- Over 1 million expected in Denton County by 2030.
- Protection of natural assets for future economic growth and quality of life.
- City of Denton expected to Double by 2040.
Challenges of flood events

- Increased impervious pavement
- Greater intensity and frequency of flood events
- Communication between City of Denton departments
  - Stormwater Management
  - Public Works
  - Parks Department
  - Emergency Management
Hickory Creek Watershed Protection Plan (Project: 2005-2008)

• Modeled water quality impacts from development
• Constructed BMPs
• Incentivize BMP
• Established strong stakeholder relationships
Preserve greenbelts and related natural areas

Identify strategic areas for greenbelt corridors

Advocate for multi-use greenbelts

Provides a strategy “tool box”
Denton County Hazard Mitigation Plan (2016)

- Collaborative Regional Effort Coordinated by North Central Texas Council of Governments
- Identifies various Risk and Vulnerabilities
- Results of this effort to be incorporated into the City of Denton’s Hazard Mitigation Plan
- Reimbursable by FEMA funds
- Create opportunities to increase resilience
Environmental Quality / Emergency Management

- Water Quality – Water Quantity Concerns
- Not usually grouped together in organizational framework
- Not always funded or managed together
- Consider: Organizational / Financial / Regulatory
- Temporal and Spatial – Flooding events big and fast
- Water Quality - big or small and fast or slow
- Mitigation, Response, Recovery and Preparedness
EPA – City of Denton GI/LID Project

• Stakeholder Identification - leverage resources
• Analysis of Watershed protection literature and Hazard Mitigation Plan in Denton County
• Initial stakeholder meeting
• Use of GIS tool to identify critical areas for GI/LID, open space implementation in the Hickory Creek Watershed
• Second stakeholder meeting
• Final Report
• Outreach PowerPoint Presentation
Stakeholders (list not fully inclusive)

- City of Denton / Denton County Department of Public Works
- Upper Trinity Regional Water District
- State of Texas Department of Emergency Management: Denton County Emergency Service
- Trinity River Authority
- North Central Texas Council of Governments
- U.S. Corps of Engineers – Silver Jackets
- Federal Emergency Management Agency (FEMA)
- U.S. Environmental Protection Agency (EPA)
- Denton County Soil and Water Conservation District
- Natural Resources Conservation Service - USDA
Future Challenges and Opportunities

• Challenges:
  • Limited Funding
  • Regulatory challenges
  • Rapid Development is “Fast”

• Opportunities:
  • Denton has “low hanging fruit”
  • Completed and Approved Plans
  • Existing Stakeholder/Partner Network
  • Data sets / Literature
THANK YOU

Questions?

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