

INTEGRATING HAZARD MITIGATION WITH WATERSHED PLANNING AND NATURE-BASED APPROACHES

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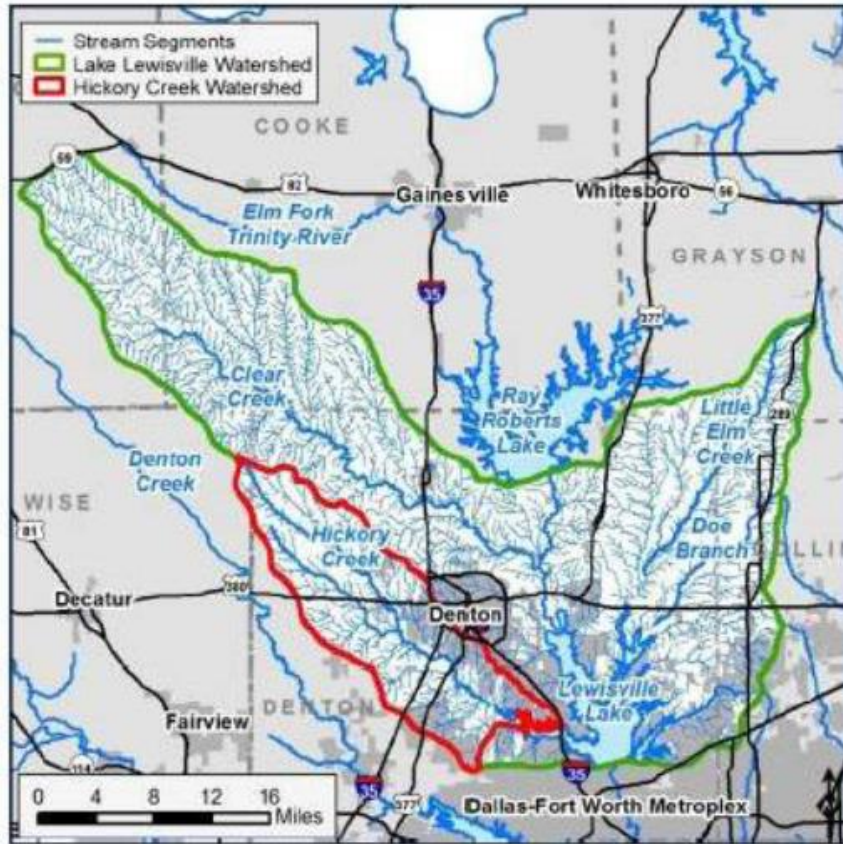
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Denton, Texas

- 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

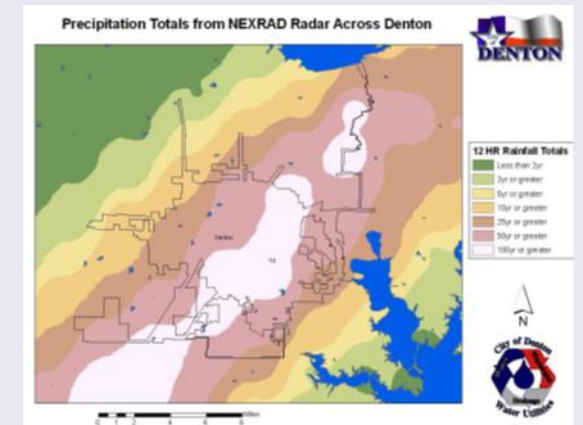
- Over 1 million expected in Denton County by 2030.
- Protection of natural assets for future economic growth and quality of life
- City of Denton expected to Double by 2040



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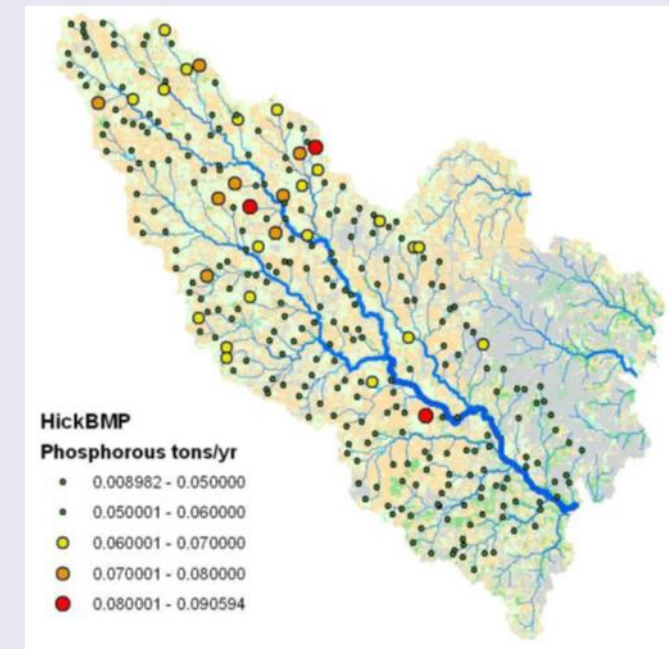
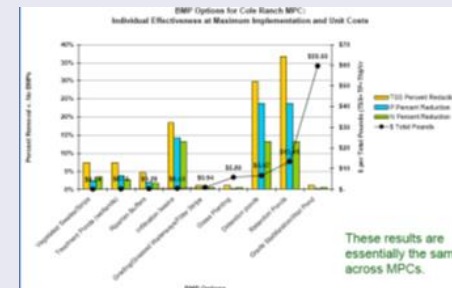
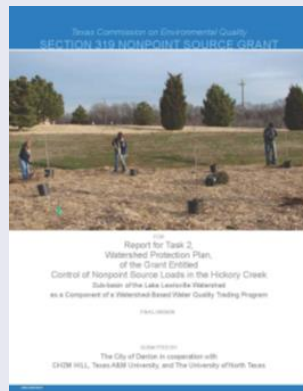
Challenges of flood events

- Increased impervious pavement
- Greater intensity and frequency of flood events
- Communication between City of Denton departments
 - Stormwater Management
 - Public Works
 - Parks Department
 - Emergency Management



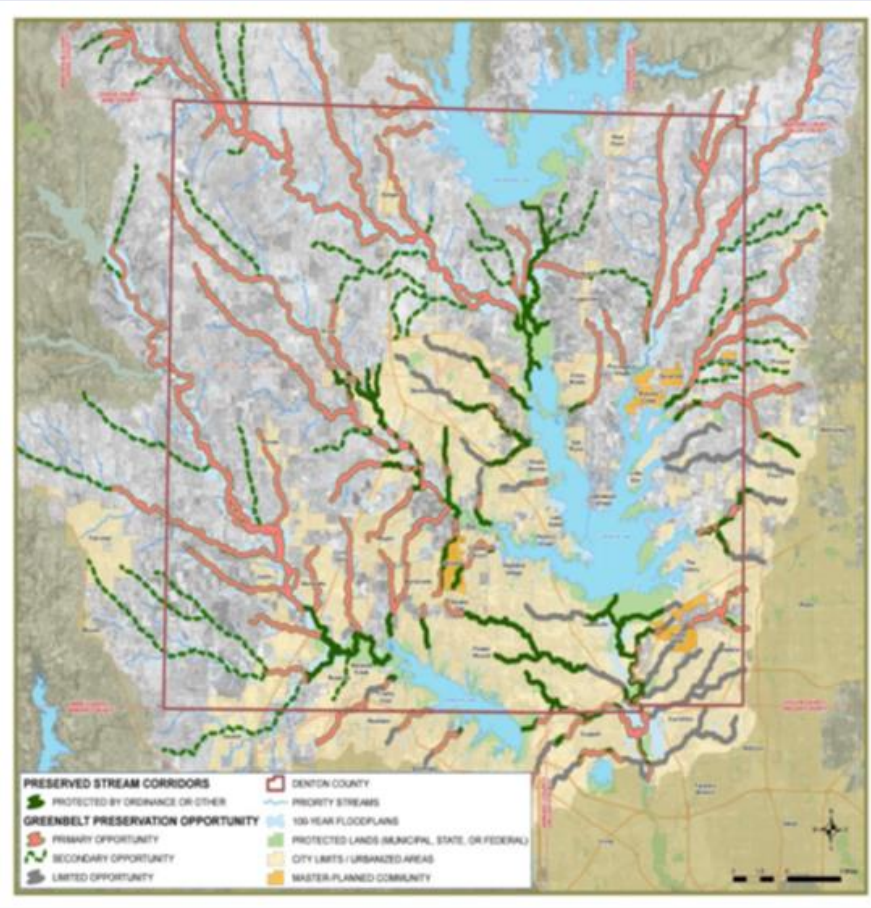
Hickory Creek Watershed Protection Plan (Project: 2005-2008)

- Modeled water quality impacts from development
- Constructed BMPs
- Incentivize BMP
- Established strong stakeholder relationships



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Denton County Greenbelt Plan (Adopted by Denton County 2017)



Preserve greenbelts and related natural areas

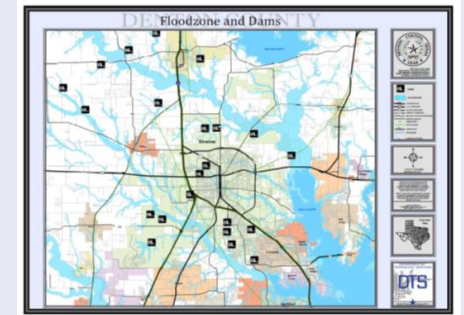
Identify strategic areas for greenbelt corridors

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

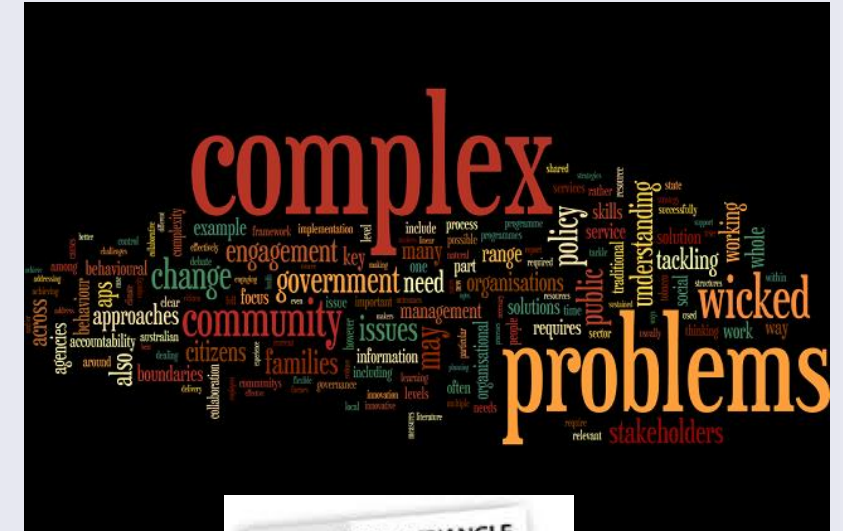
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Stakeholders (list not fully inclusive)

- 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

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- 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



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THANK YOU

Questions?

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