



City of Fort Worth's Storm Water Management Feasible Options Study

**COMMUNITY MEETING
FOREST PARK/BERRY WATERSHED AREA
March 24, 2011, 6:30–8:30 p.m.**

Texas Christian University's Student Union Bldg, 3rd floor, Ballroom C

AGENDA

OPEN HOUSE

1. 6:30 – 6:50 - Visit flood-mitigation stations

(ASSEMBLE)

PRESENTATION 6:50 p.m. – 8:30 p.m.

2. Welcome, Background, Meeting Objectives (15 min)

Greg Simmons
*City of Fort Worth's Assistant Director of
Transportation & Public Works*

3. Project Overview – Discussion of Flood History (45 min)

Burton Johnson, P.E.
Project Manager, Michael Baker Jr. Corp.

4. What You Can Do to Help (10 min)

5. Project Timeline (10 min)

6. Discussion & Conclusion (20 min)

AD JOURN

COMPLETE THE FLOOD IMPACT COMMUNITY SURVEY ONLINE!
Log on to the City of Fort Worth's Storm Water Management project website for
Forest Park Berry/Central Arlington Heights
Go to: <http://www.fortworthgov.org/tpw/stormwater/forestpark/>

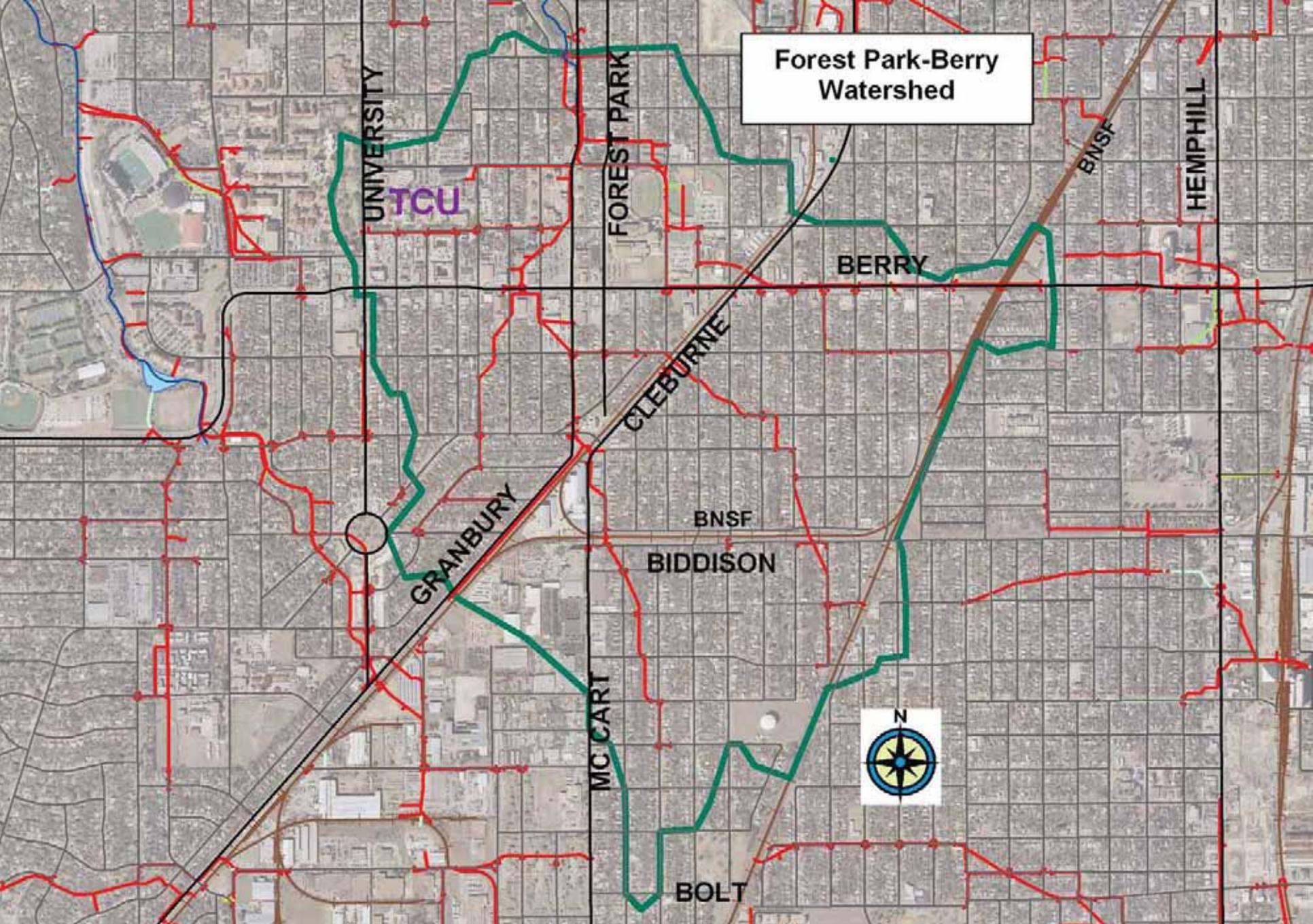
CITY OF FORT WORTH

Feasible Options Study Forest Park/Berry Watershed

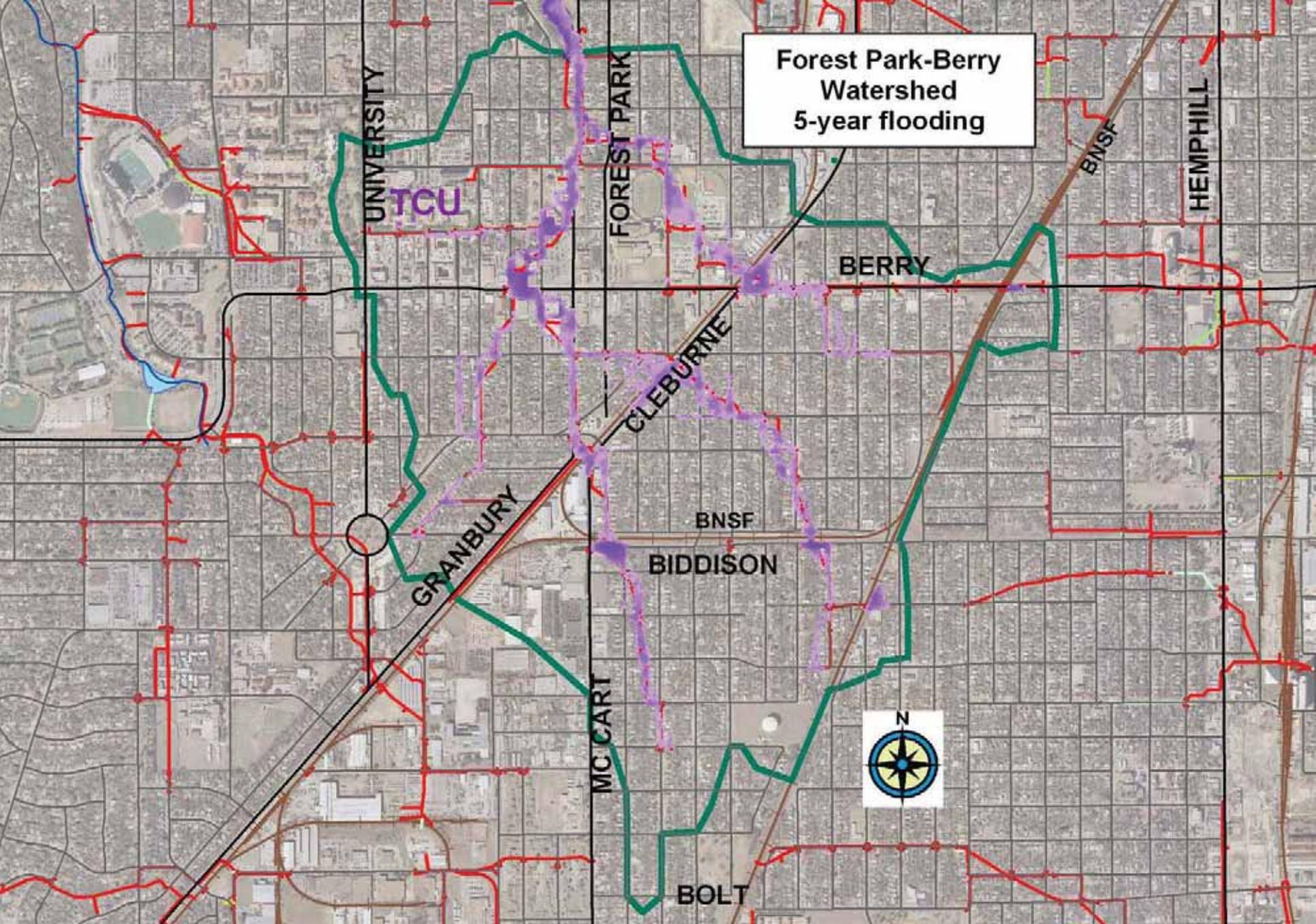
Public Meeting
March 24, 2011

What do WE want to get out of meeting?

- ▣ Inform stakeholders
- ▣ Obtain additional information about flooding in area
- ▣ Share initial thoughts and ideas



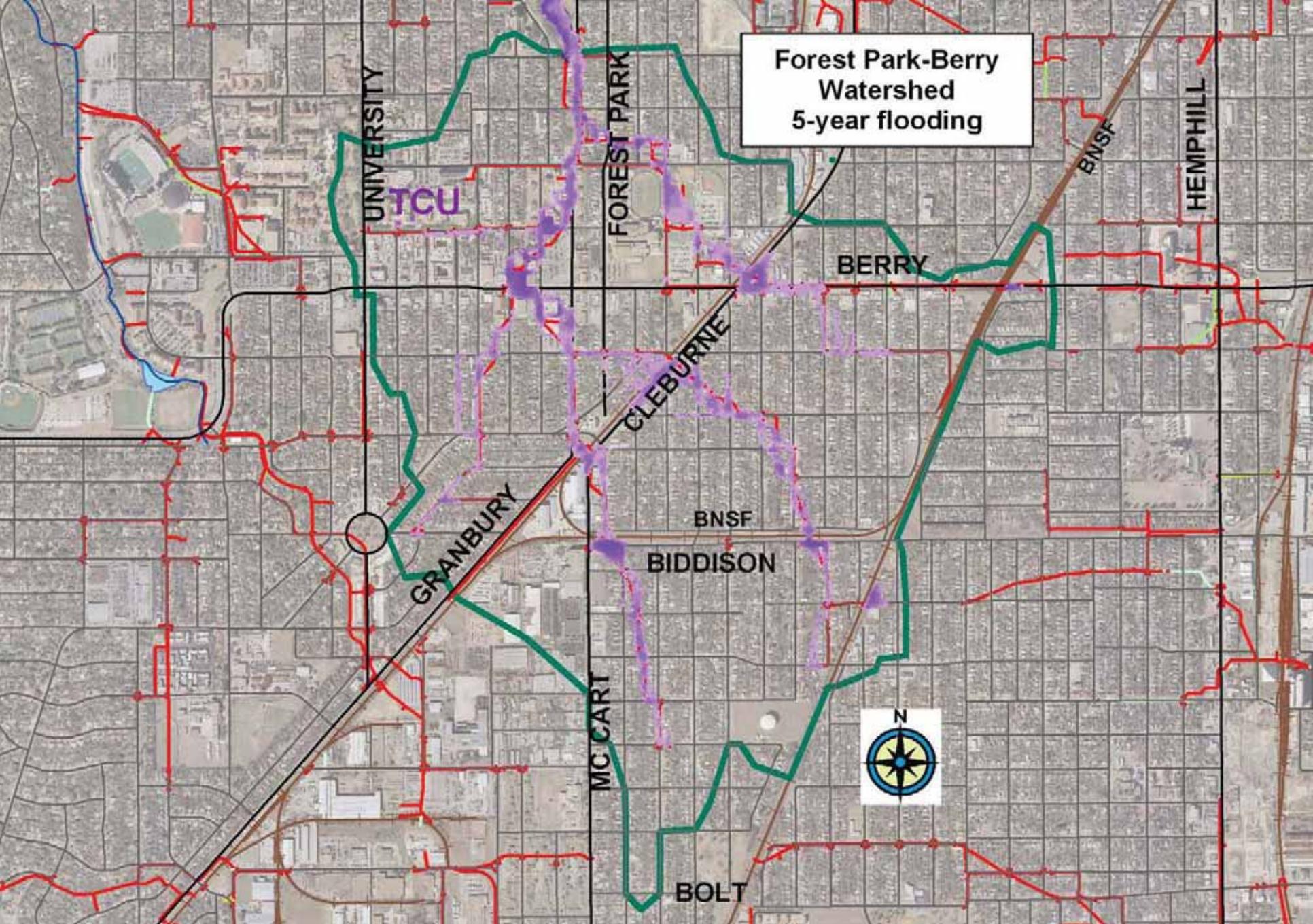
**Forest Park-Berry
Watershed
5-year flooding**



June 28, 2004



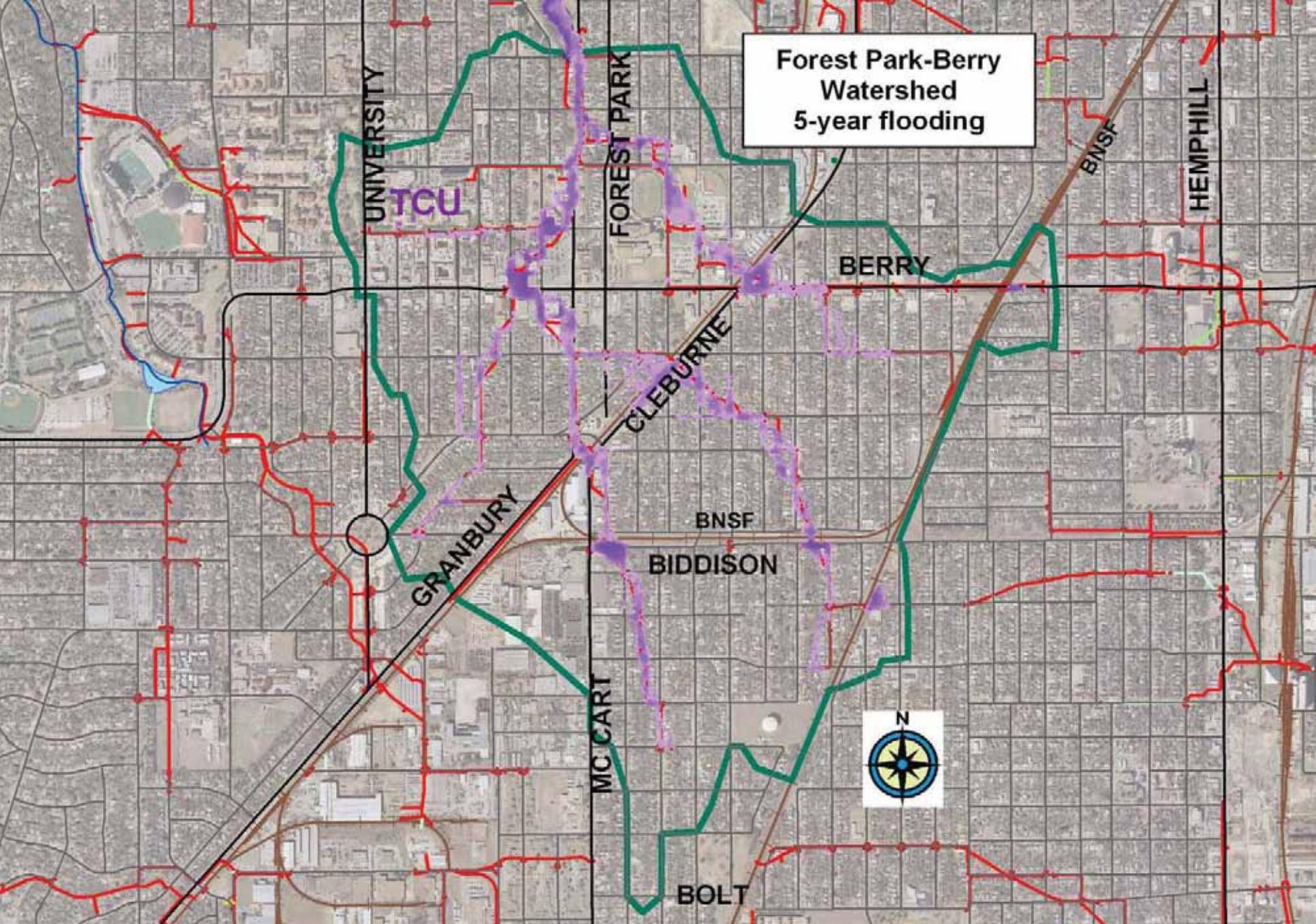
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June 28, 2004



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June 28, 2004



April 27, 2007



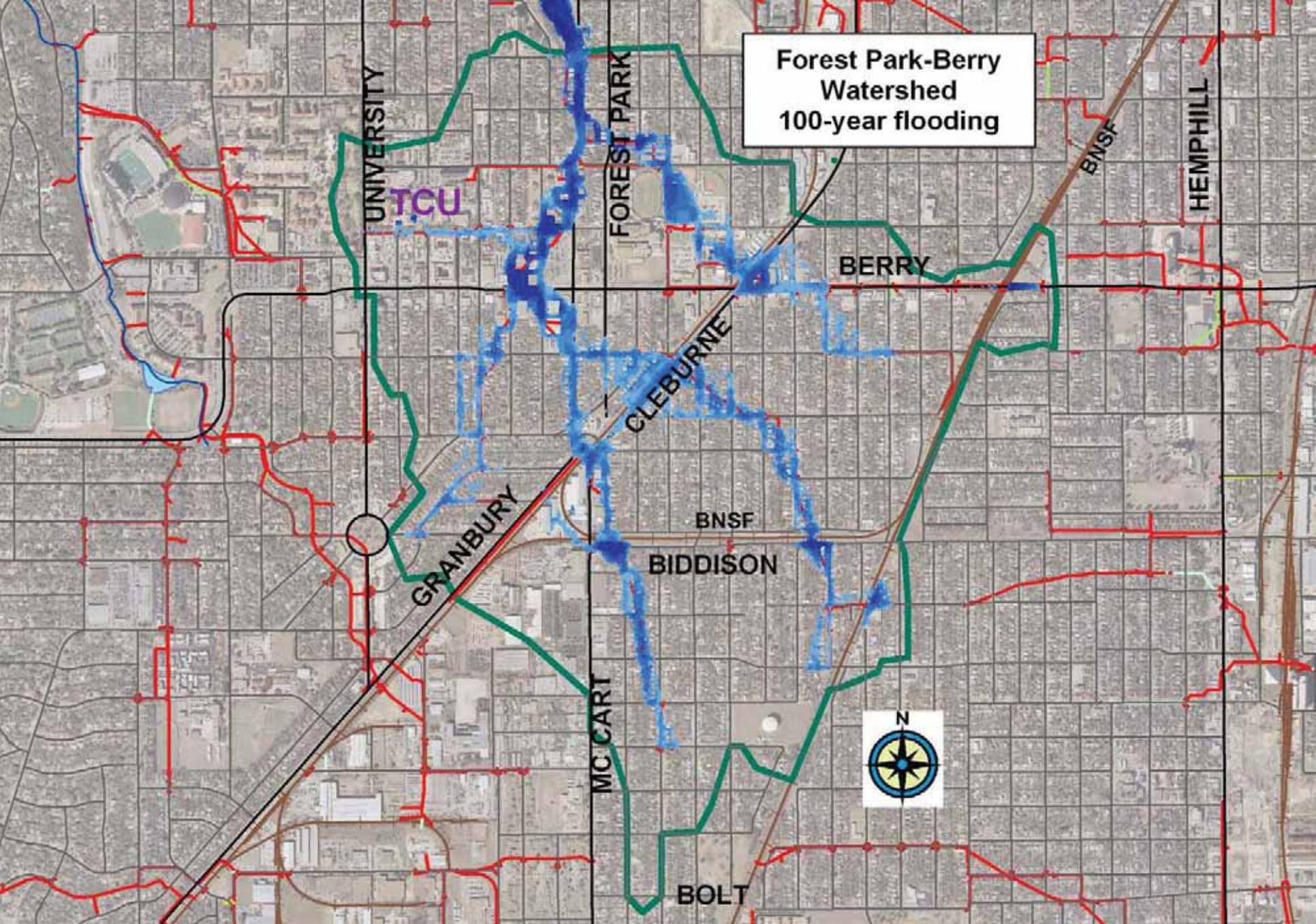
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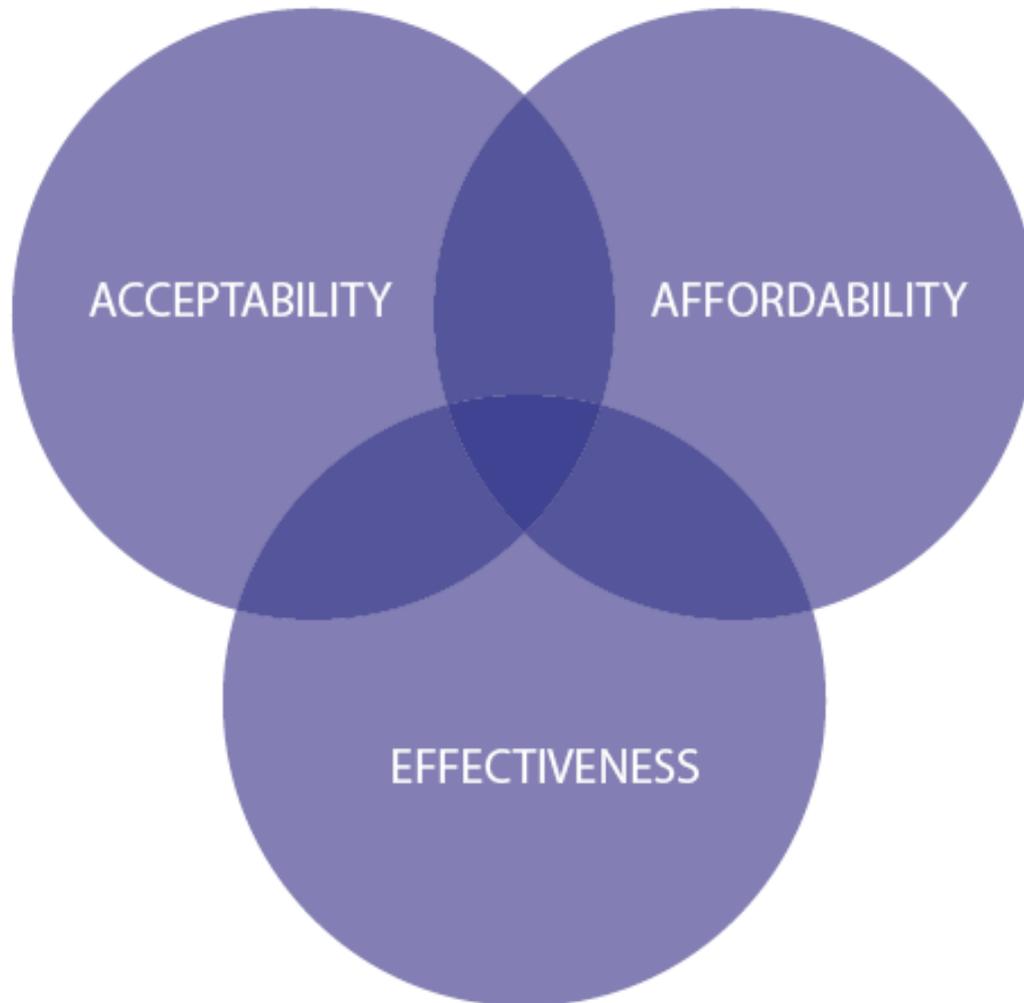
**Forest Park-Berry
Watershed
100-year flooding**



Flood History

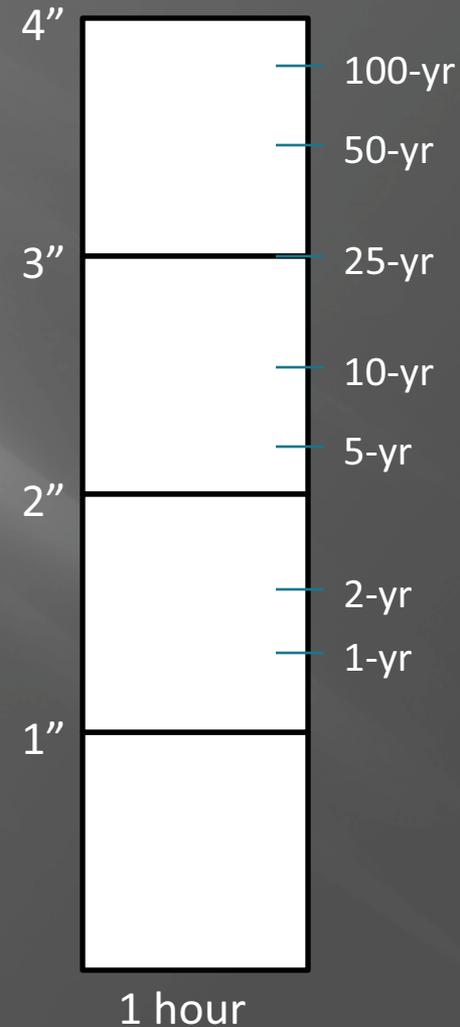
- ▣ Is information being shared consistent with observations?
- ▣ Have you been adversely impacted by flooding?
- ▣ If so, how often, how deep, etc...?
- ▣ How would you describe the flooding problem (severe, moderate, manageable, minor, non-existent)?
- ▣ You may provide information on handout

The Challenge



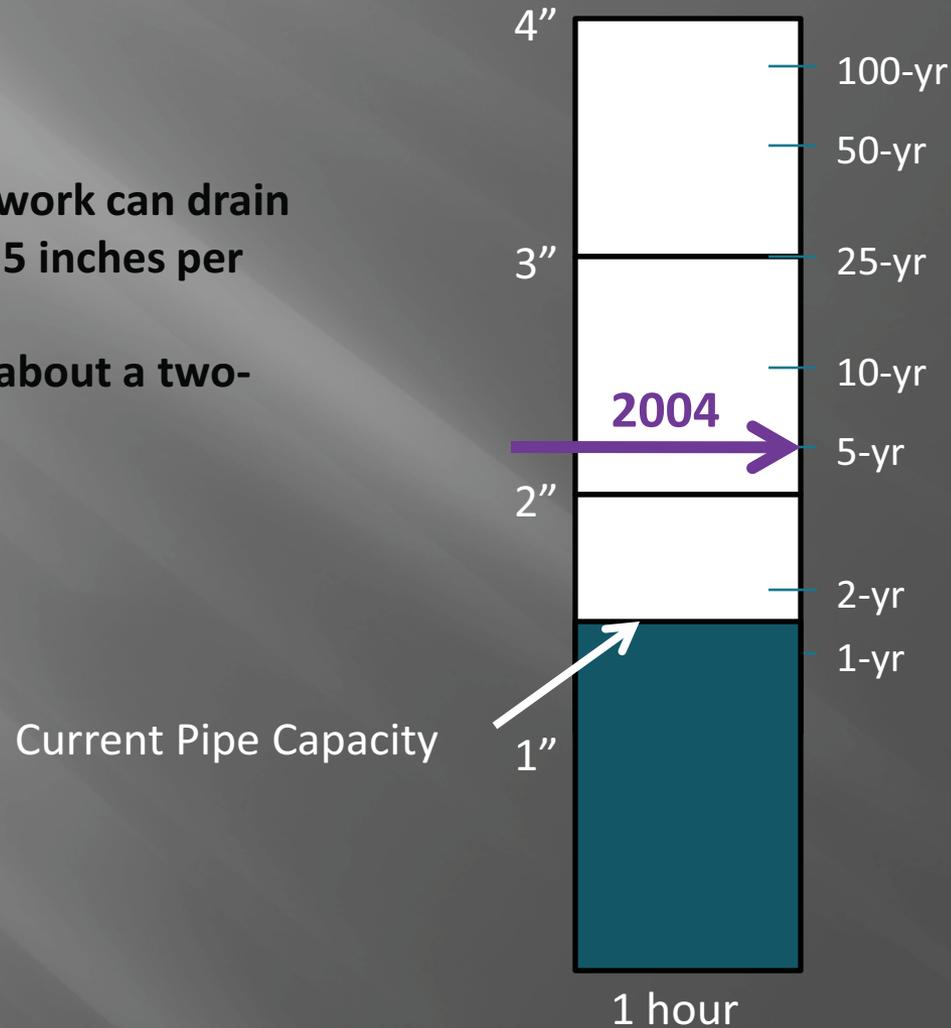
Level of Service: Let's Think in Terms of Inches of Rainfall...

- Not all rainfall becomes runoff, as some is lost to absorption, etc...
- The amount loss is smaller in urbanized areas
- And events are usually more than one hour long, and peak rainfalls typically occur after saturation



Current System Capacity

- The current drainage network can drain the equivalent of about 1.5 inches per hour
- The resultant capacity is about a two-year frequency event

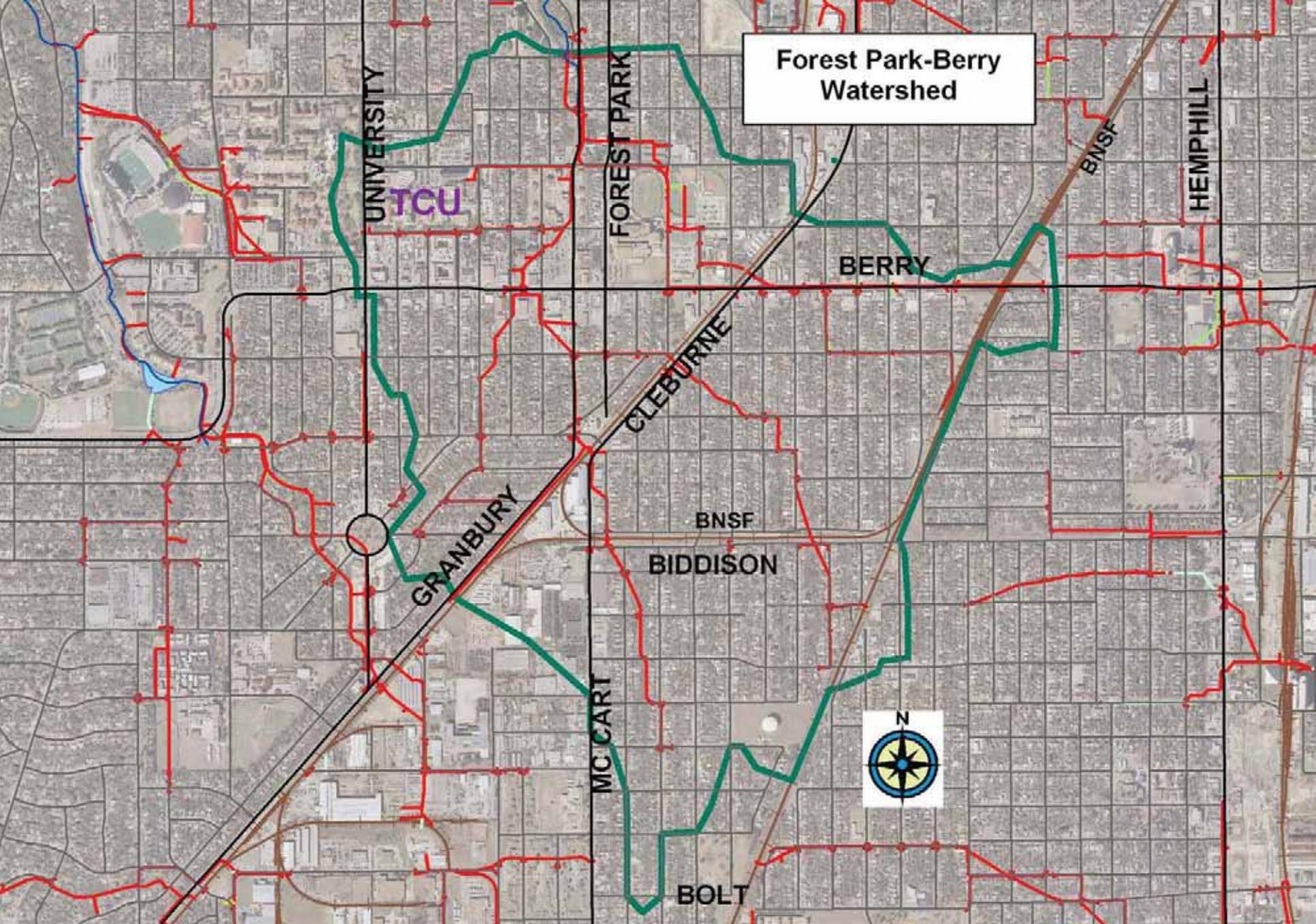


Mitigation Measures Involve One or More of...

- ▣ Increase conveyance (pipes, channels)
- ▣ Increase absorption (Low Impact Development)
- ▣ Increase storage (detention)
- ▣ Avoidance (floodproof, acquisition)
- ▣ Coping (flood insurance, flood warning)

Ideas/Alternatives from Previous Study

- ▣ Conveyance Enlargements (Increase Pipe Capacity)
 - Pipe Plans – High Cost and Impacts to Zoo Creek
 - Tunnel Plans – Even Higher Costs (\$43 million)
 - Implementation Time



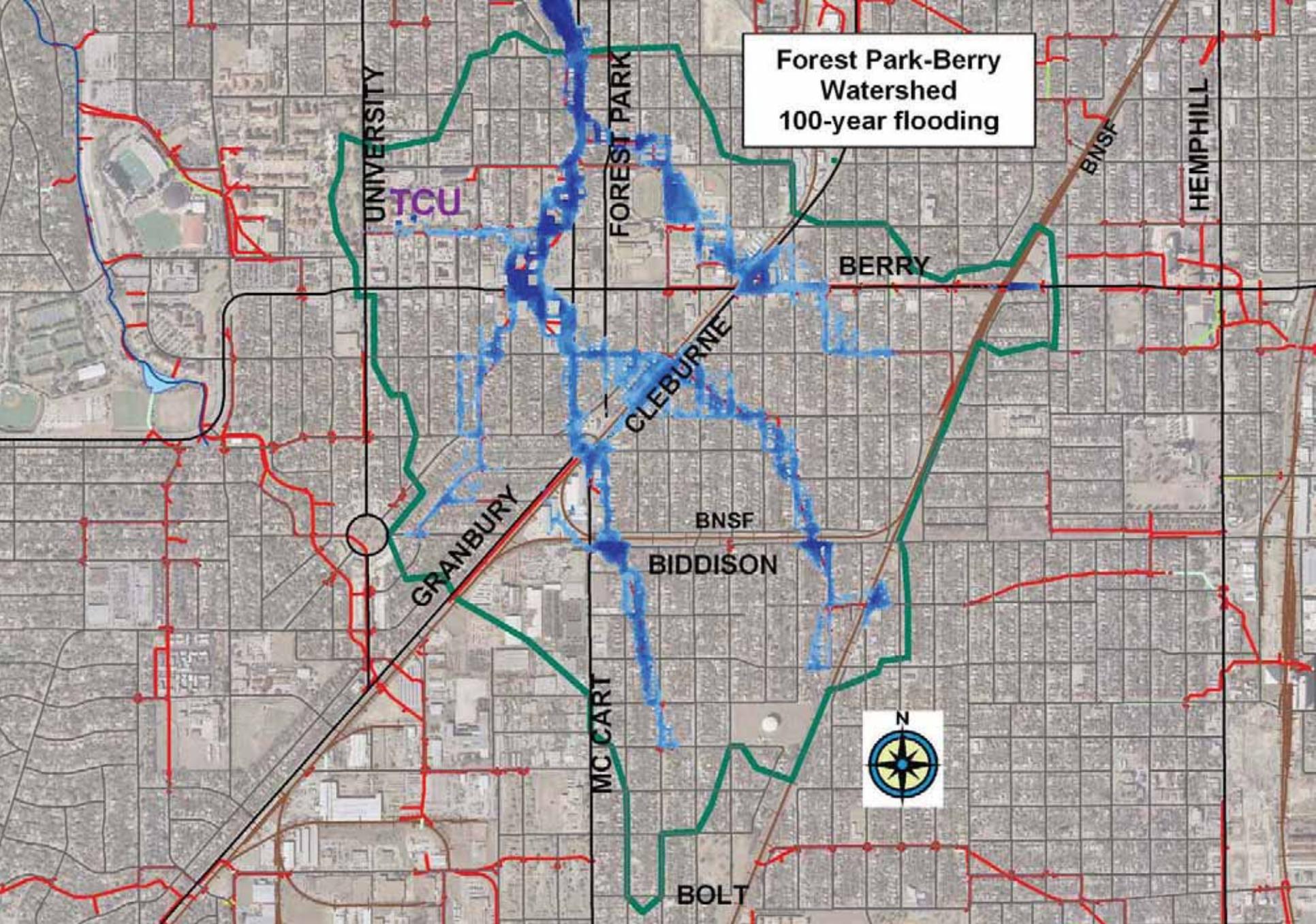
Forest Park-Berry Watershed



Ideas/Alternatives from Previous Study

- ▣ Conveyance Enlargements (Increase Pipe Capacity)
 - Pipe Plans – High Cost and Impacts to Zoo Creek
 - Tunnel Plans – Even Higher Costs (\$43 million)
- ▣ Detention
 - Surface Detention (3 acres, 147 homes, \$53 million)
 - Underground Detention (\$136 million)
 - How much detention? *Enough to fill Amon Carter stadium twice!*

Forest Park-Berry
Watershed
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Ideas/Alternatives from Previous Study

- ▣ Conveyance Enlargements (Increase Pipe Capacity)
 - Pipe Plans – High Cost and Impacts to Zoo Creek
 - Tunnel Plans – Even Higher Costs (\$43 million)
- ▣ Detention
 - Surface Detention (30 acres, 147 homes, \$53 million)
 - Underground Detention (\$136 million)
 - How much detention? *Enough to fill Amon Carter stadium twice!*
- ▣ All alternatives involved some degree of acquisition of property

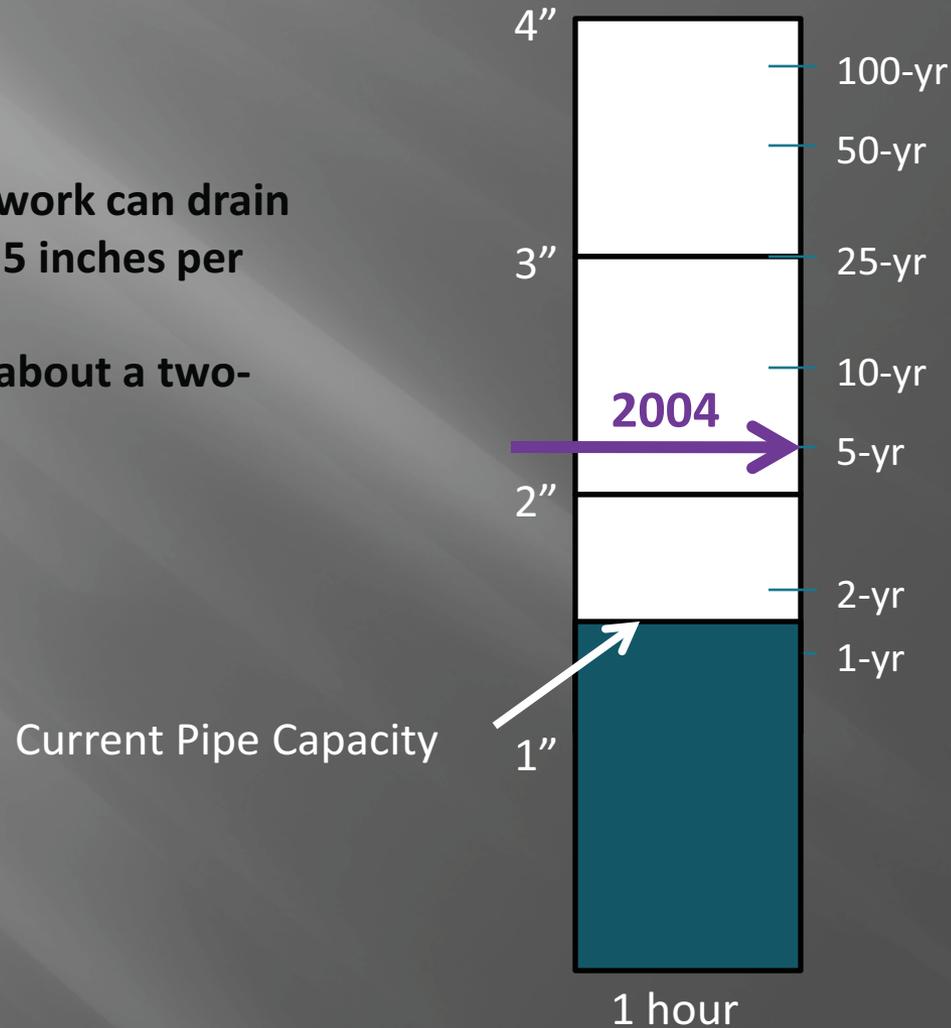
How Big is the Flooding Problem in the Forest Park/Berry Watershed?

Based on the engineering and economic analysis, flooding in the Forest Park Berry watershed is a

\$15-20 million problem

Current System Capacity

- The current drainage network can drain the equivalent of about 1.5 inches per hour
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Non-Traditional Solutions

- ▣ Rain Gardens (Biodetention)
- ▣ Rain Barrels
- ▣ Pervious pavement
- ▣ Underground storage modules
 - \$275-400/cubic yard

Previous study has indicated that these techniques are good things...but they do not substantially alter the overall flood risk

Other Options (Mitigation Measures)

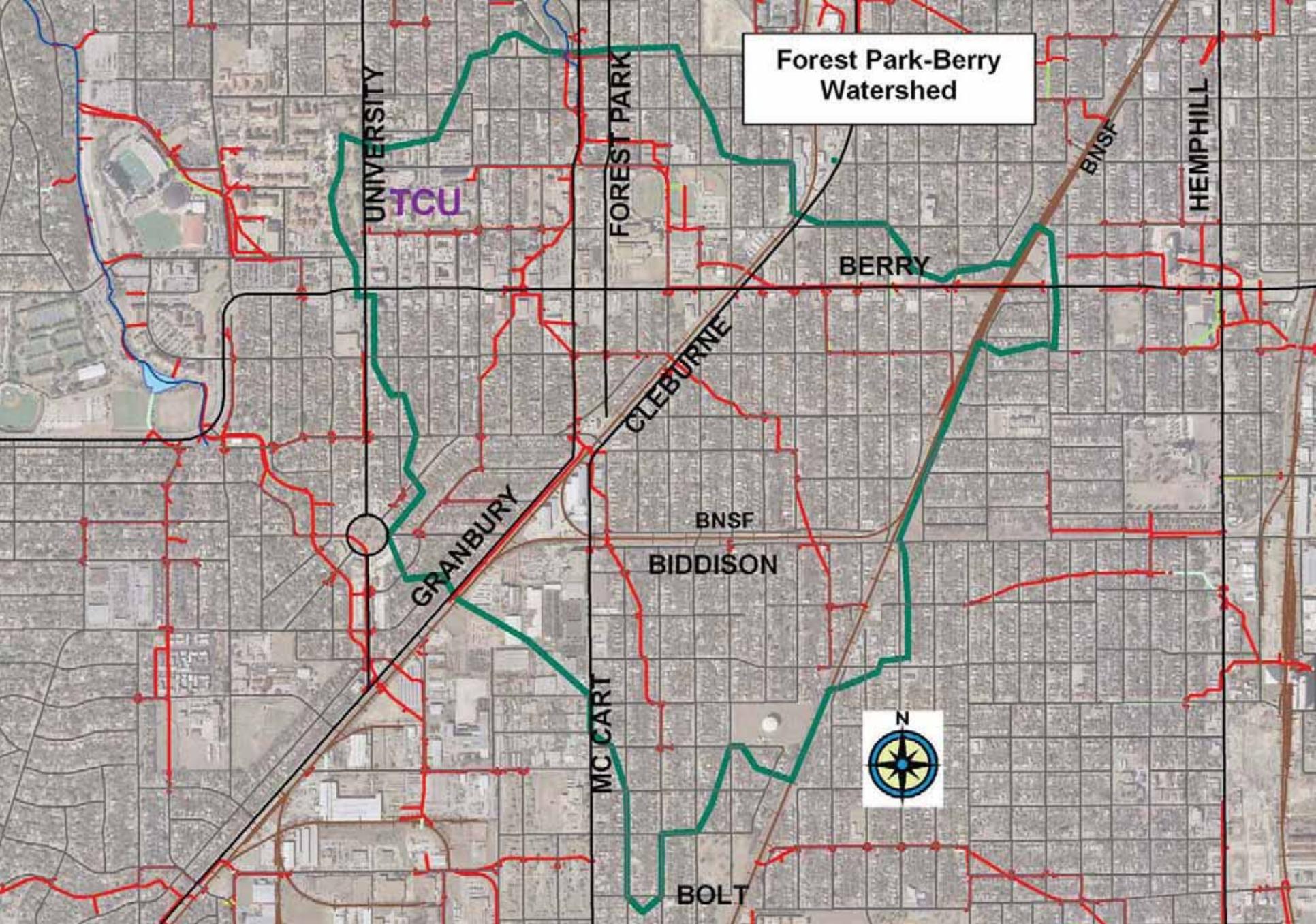
Conveyance Concepts

- ▣ Smaller Conveyance Improvements
 - Likely will incur costs almost as large as previous plans
 - Tunnel costs could be notably lower
 - Less impact to Zoo Creek

Other Options (Mitigation Measures)\

Conveyance Concepts

- ▣ Smaller Conveyance Improvements
 - Likely will incur costs almost as large as previous plans
 - Tunnel costs could be notably lower
 - Less impact to Zoo Creek
- ▣ Regionalization of Tunnel
 - Tunnel would provide primary drainage conduit for watersheds beyond the Forest Park/Berry Watershed
 - Allows for sharing of cost between projects



Forest Park-Berry
Watershed

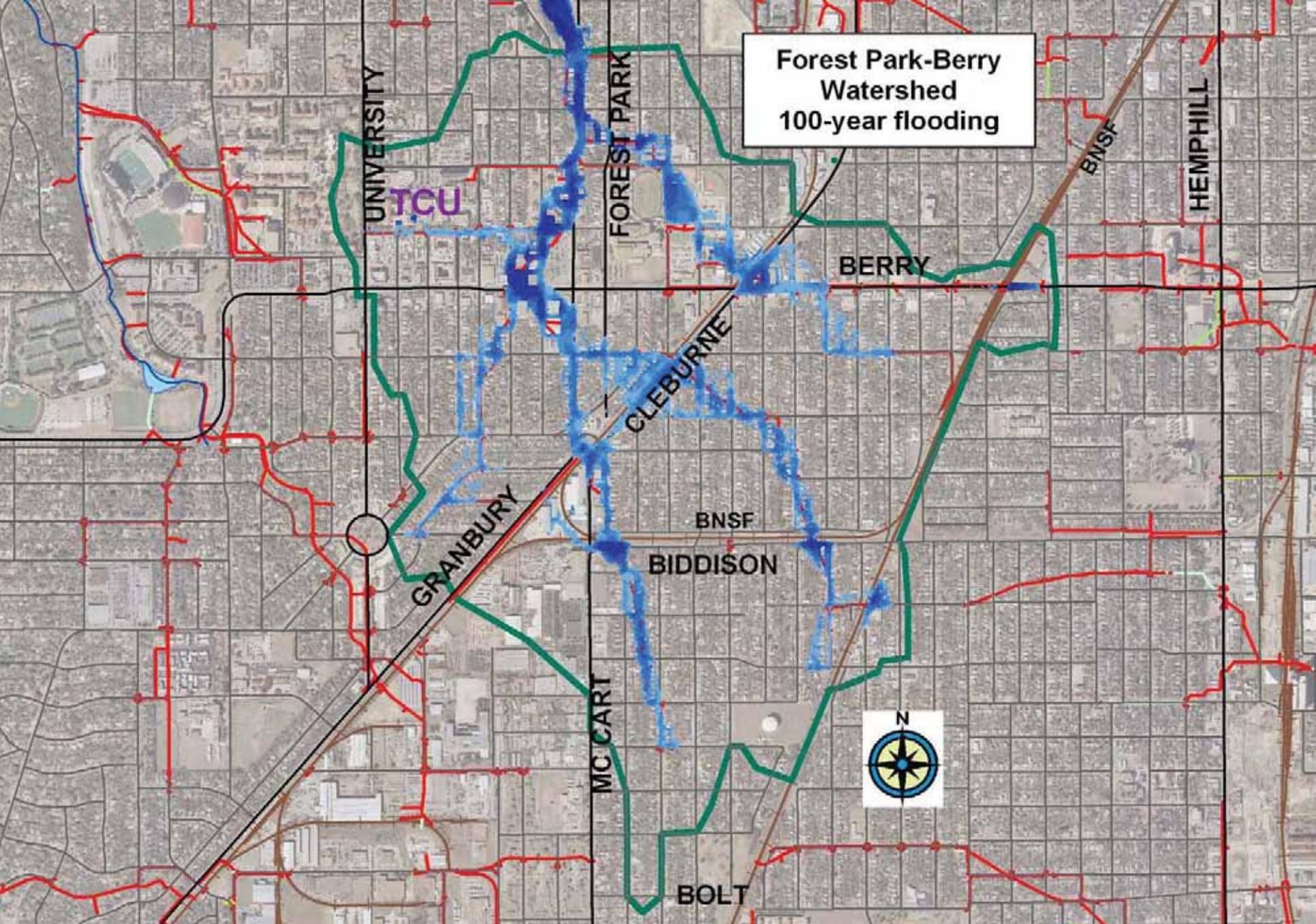


Other Options (Mitigation Measures)

Detention Concepts

- ▣ Detention Upstream of Cleburne Road
 - Would involve acquisition of homes
 - Would include multi-use functionality and aesthetic elements
 - Can be phased in

Forest Park-Berry
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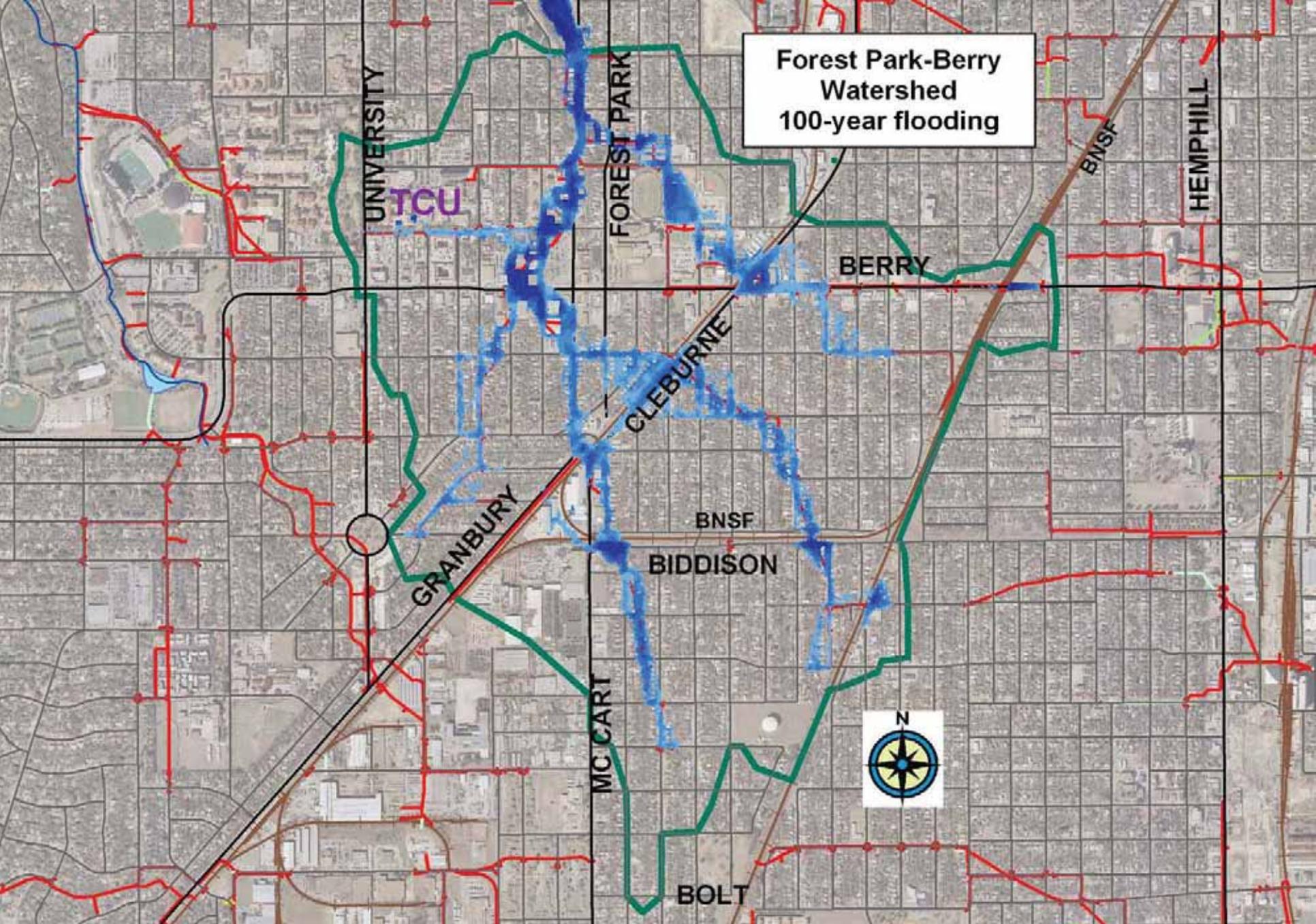


Other Options (Mitigation Measures)

Detention Concepts

- ▣ Detention Upstream of Cleburne Road
 - Would involve acquisition of homes
 - Would include multi-use functionality and aesthetic elements
- ▣ Greenway Detention Tied to T Station
 - Implement through zoning ordinances associated with Transit Oriented Development Project (Form Based Code)
 - Opportunities for mixed use corridors that provide stormwater storage along with other uses such as pedestrian trails, bike trails, etc...

Forest Park-Berry
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Other Options (Mitigation Measures)

Detention Concepts

- ▣ Detention in floodprone areas north of Berry
 - Urban detention concept
 - Might be best near term solution

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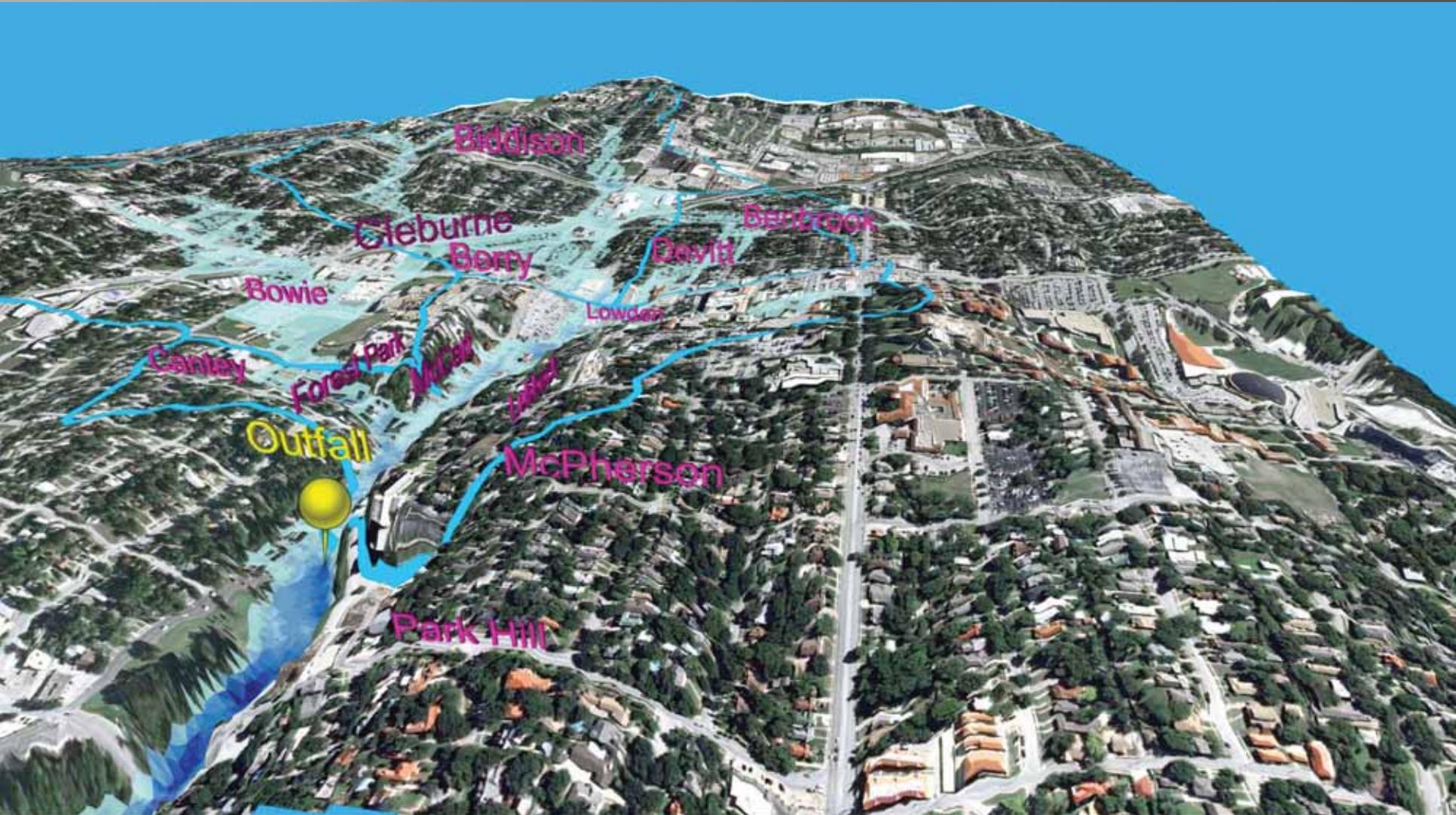


Other Options (Mitigation Measures)

Detention Concepts

- ▣ Detention in floodprone areas north of Berry
 - Urban detention concept
 - Might be best near term solution
- ▣ Detention at Paschal High School
 - Higher elevation limits opportunities
 - Downstream of worst problem areas
 - Would have to be underground

3-D View of Watershed



What Can You Do To Help?

- ▣ Ideas are welcome!
- ▣ Serve on stakeholder committee—monthly (about) meetings to dig into the details and make a recommendation to larger community.
- ▣ Complete the online survey & encourage neighbors to complete it
- ▣ Have conversations with neighbors to let them know what's happening

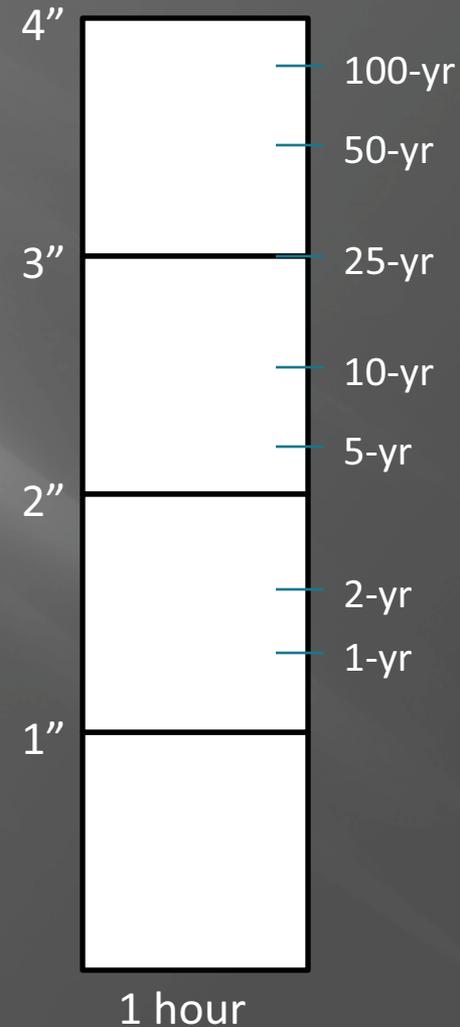
Timeline

- ▣ Public Meeting – March 24, 2011
- ▣ Stakeholder Committee Meetings
 - April 2011, others
- ▣ Transit Oriented Development Town Hall – May 17, 2011
 - More refined list of options
- ▣ End of June, 2011 – identification of short list of measures for additional study by city's contractor

DISCUSSION

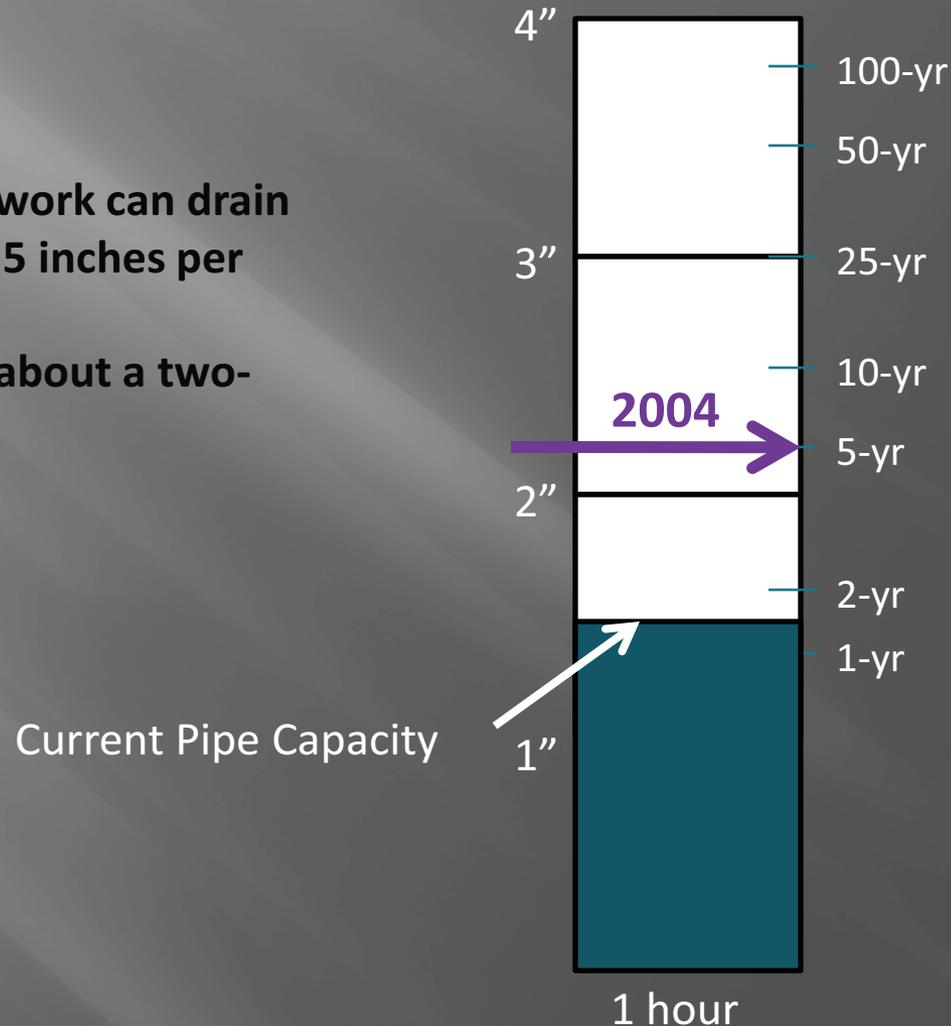
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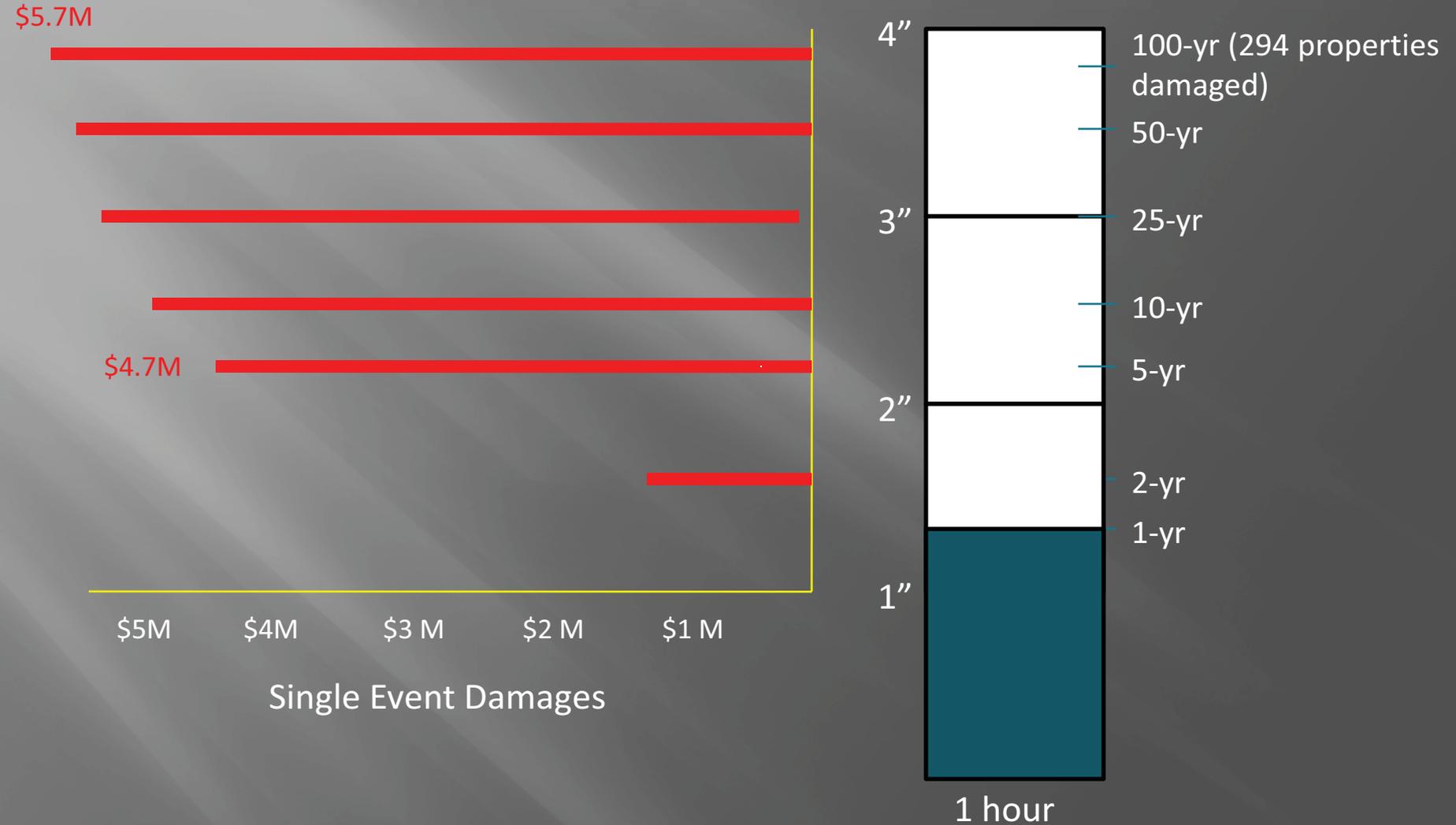


Current System Capacity

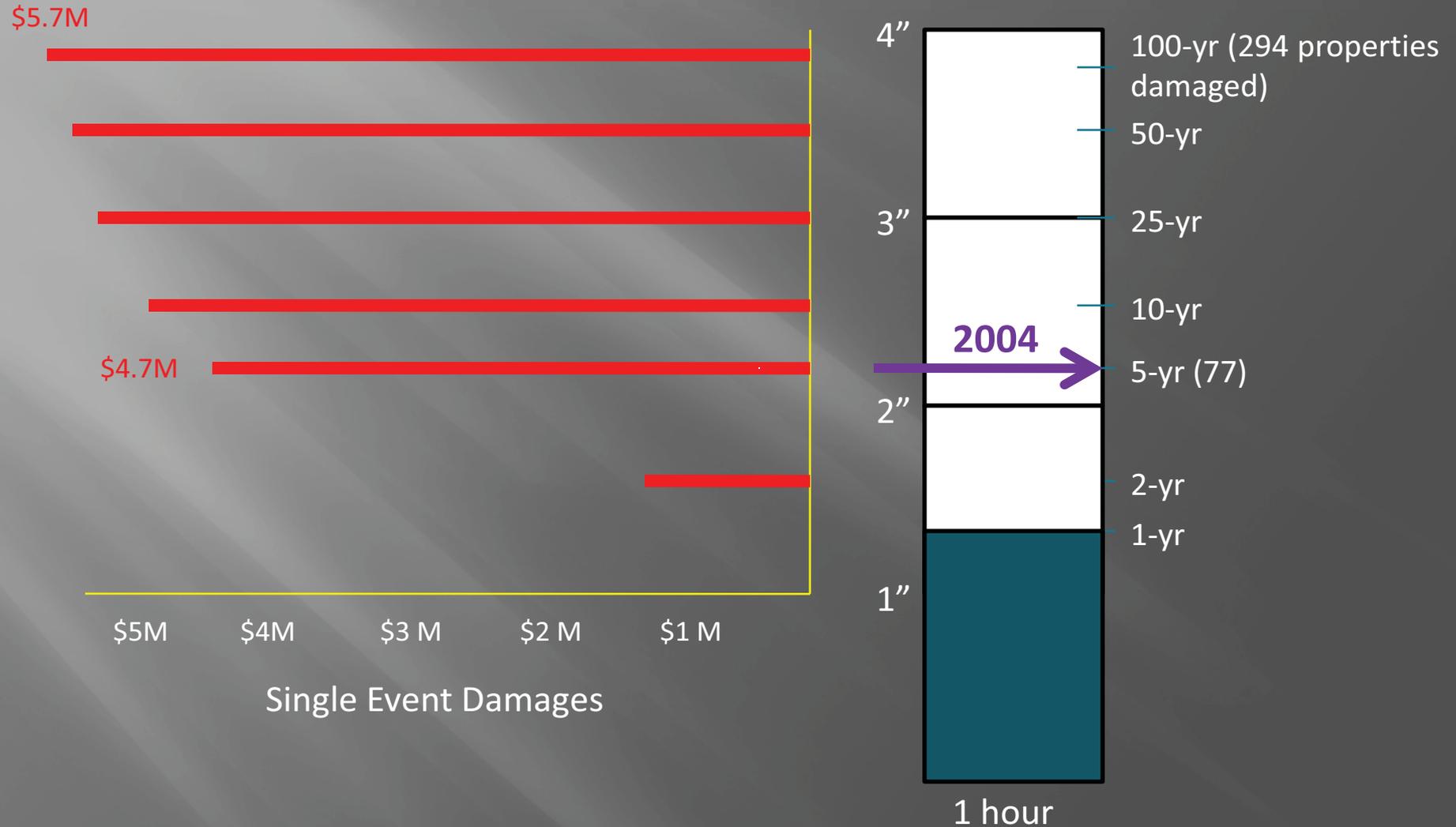
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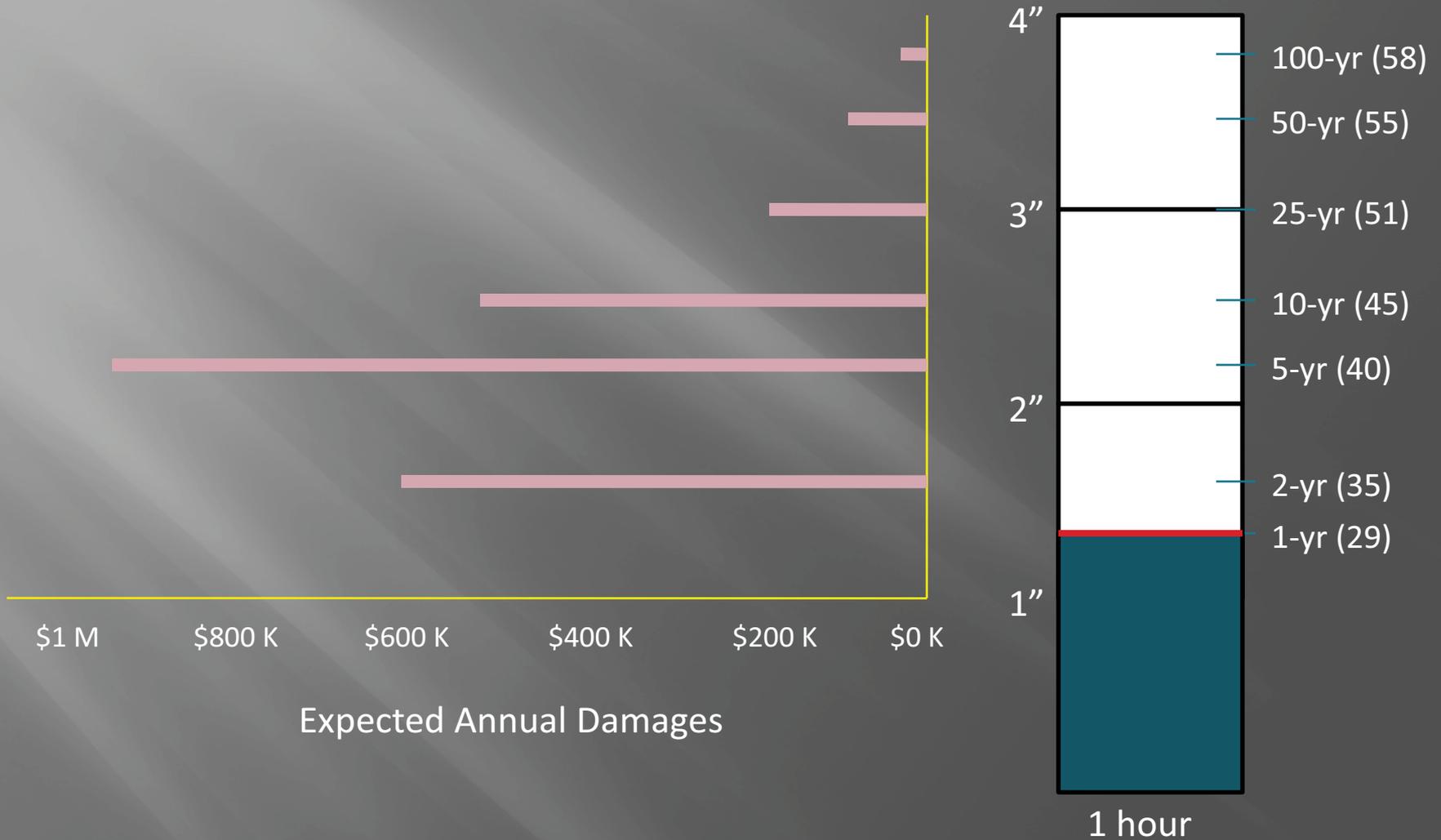
What if it rains more than 1”?



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Expected Annual Damage (considers likelihood of event)



Biodetention (Rain Gardens)



Rain Barrels



Underground Storage Units

