FORT WORTH

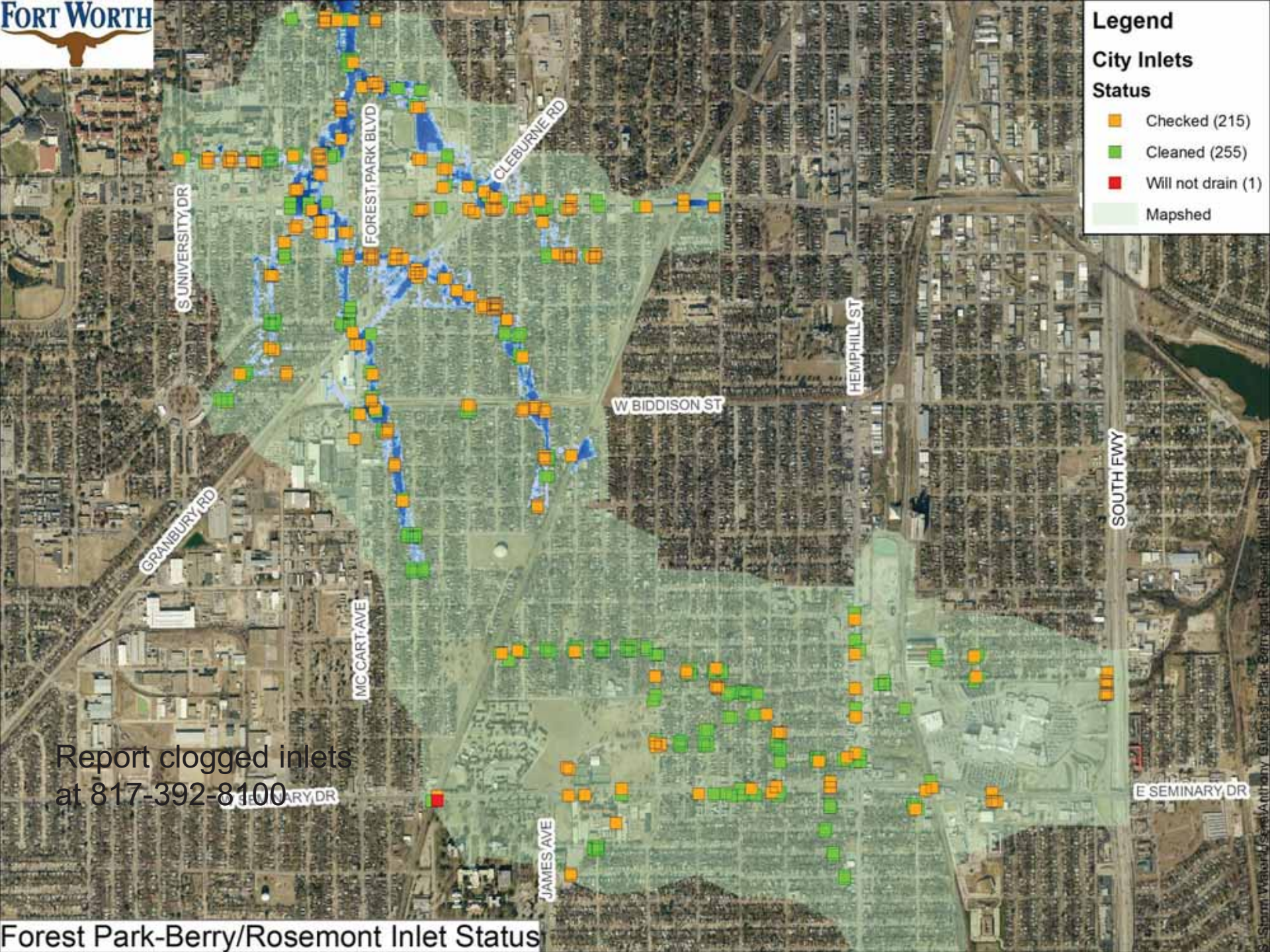
Forest Park/Berry
Flood Mitigation Initiative

Community Meeting

June 28, 2011

Meeting Agenda

- Welcome and Introductions
- System maintenance brief
- Recap of how we got here
- Review alternatives
- Questions and discussion



Forest Park-Berry/Rosemont Inlet Status

3500 Gordon Ave

3500 Gordon Ave

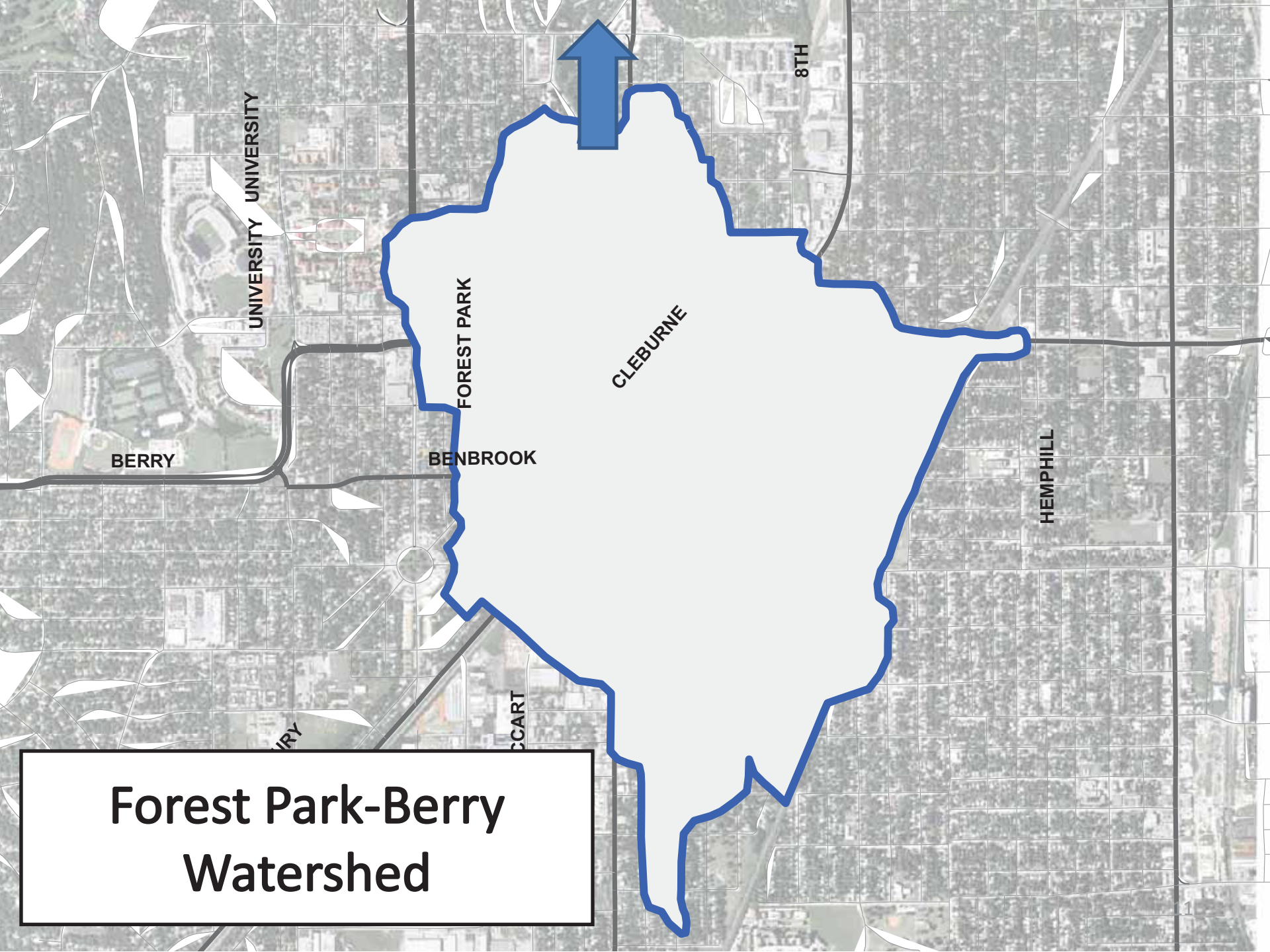
3500 Gordon Ave

3500 Gordon Ave

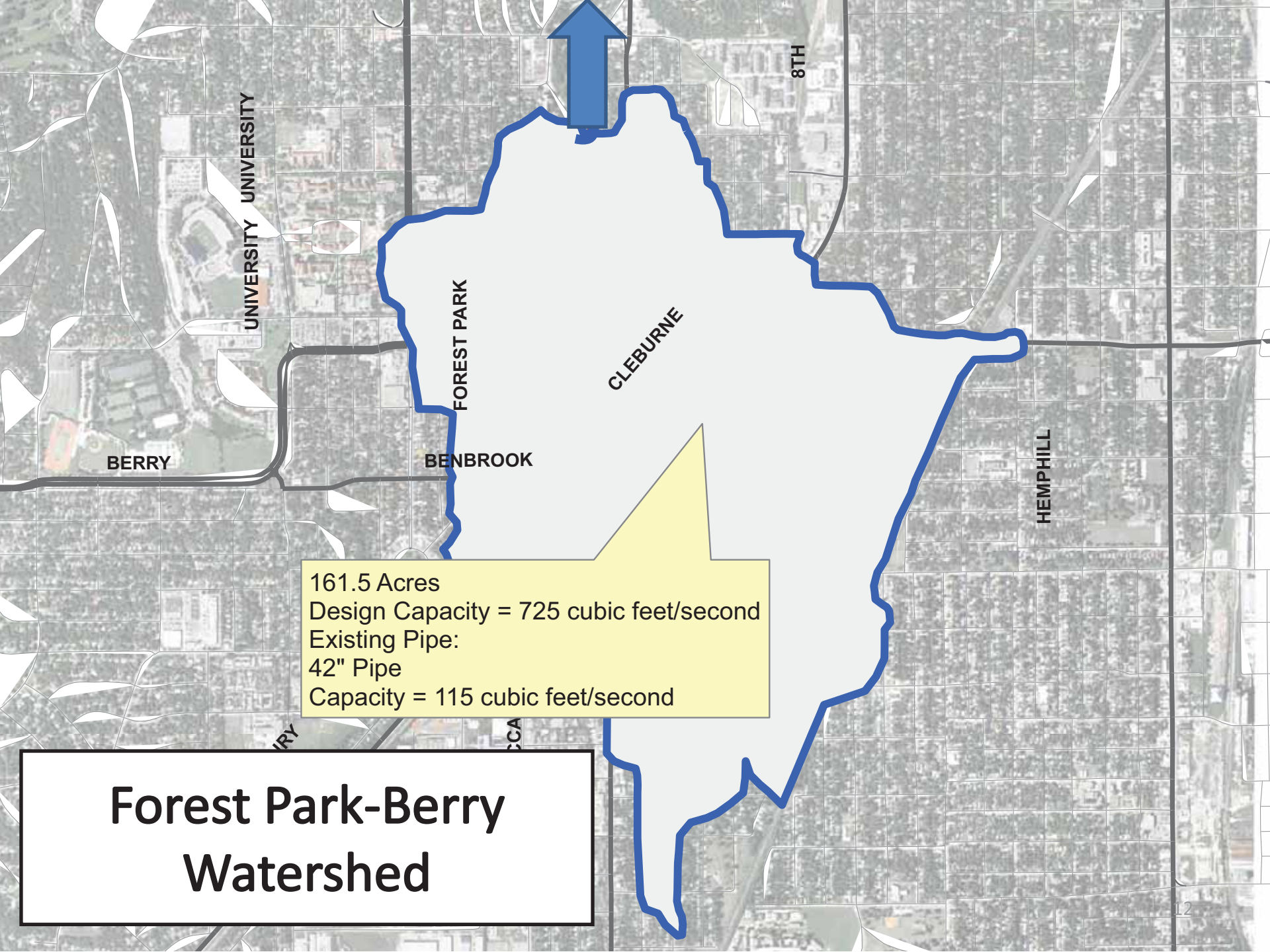
3500 Wayside Ave

3500 Wayside Ave

3500 Wayside Ave



Forest Park-Berry Watershed


UNIVERSITY
UNIVERSITY
8TH
FOREST PARK
CLEBURNE
BERRY
BENBROOK
HEMPHILL
161.5 Acres
Design Capacity = 725 cubic feet/second
Existing Pipe:
42" Pipe
Capacity = 115 cubic feet/second
Forest Park-Berry Watershed

FORT WORTH

Forest Park/Berry
Flood Mitigation Initiative

Community Meeting

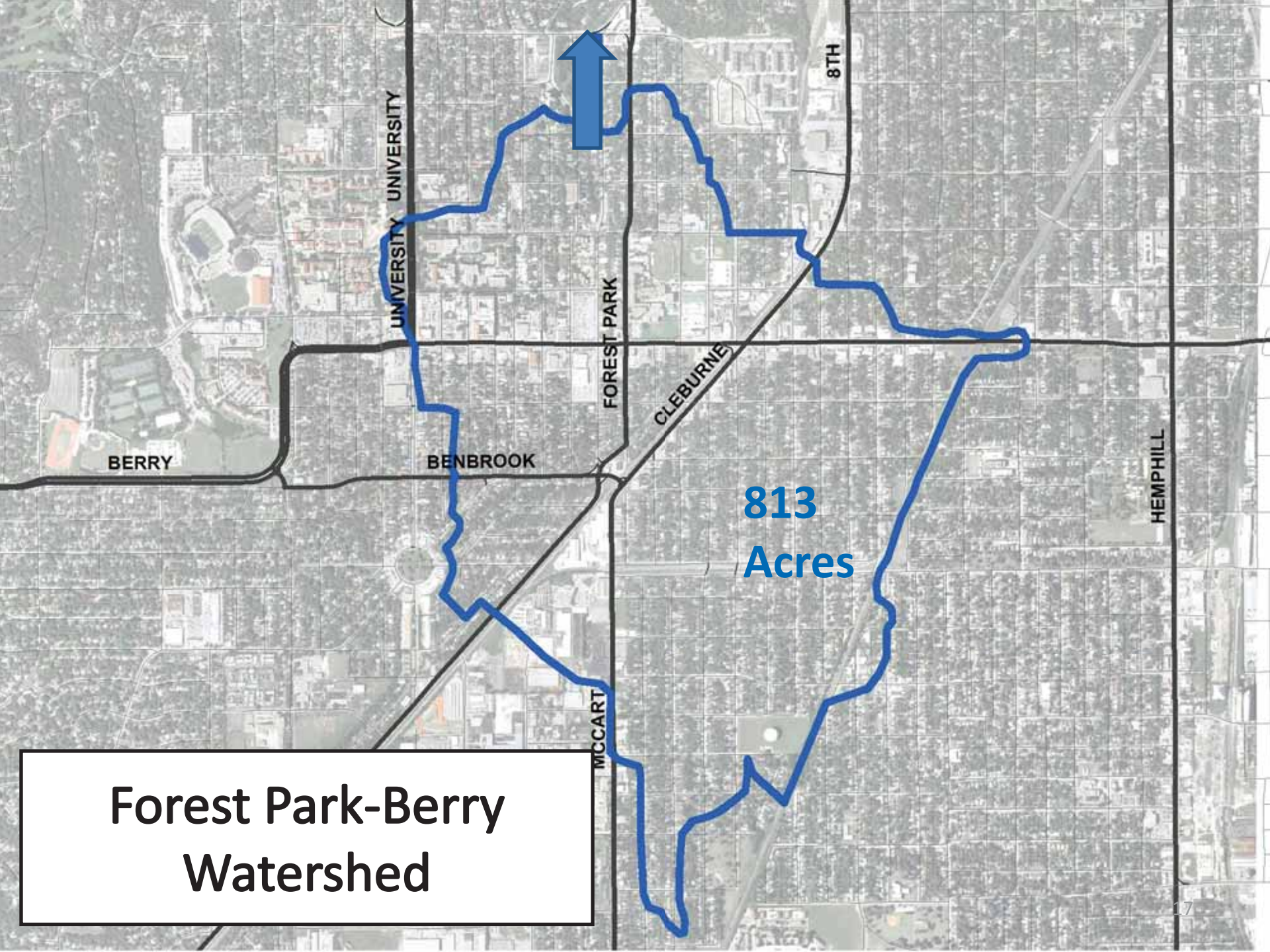
June 28, 2011

Timeline – Before Tonight

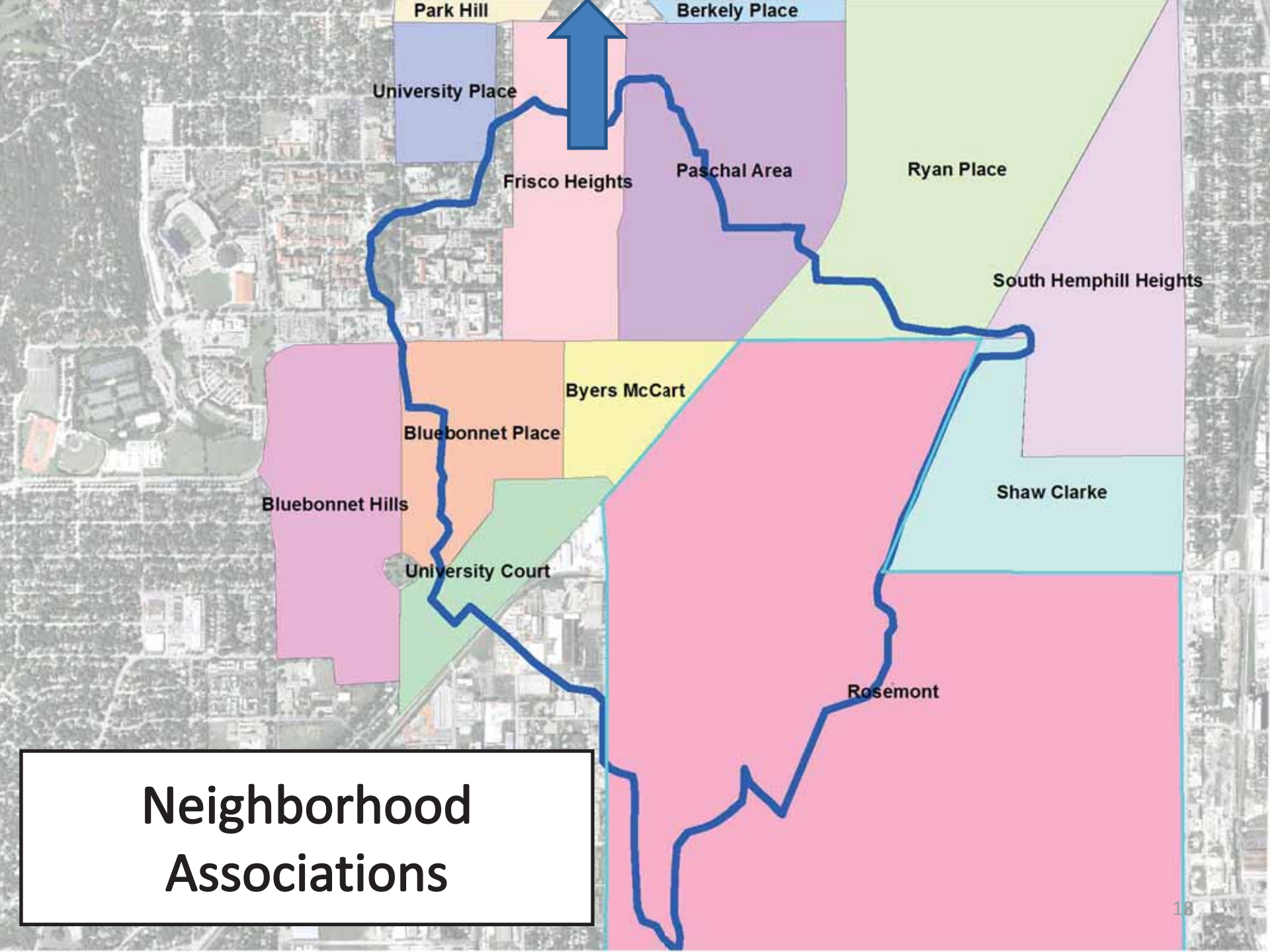
- September 22, 2010 – Initial Public Meeting
  - Introduced study, answered questions
- March 24, 2011 – Public Meeting
  - Discussed problem in detail, requested information from public, provide first pass of potential measures
- April 28, 2011 – Stakeholder Meeting
  - Discussed key measures under consideration
  - Concern about message getting to public

Timeline – After Tonight

- Public feedback will be obtained and evaluated
- Additional study of measures based upon public feedback
- Online survey (thru July 15) and outreach activities
- Additional meetings will be held, if necessary
- August 2011 – Public Meeting to report findings
- August 2011 – Recommendation of measures to carry forward for more detailed study and potential implementation

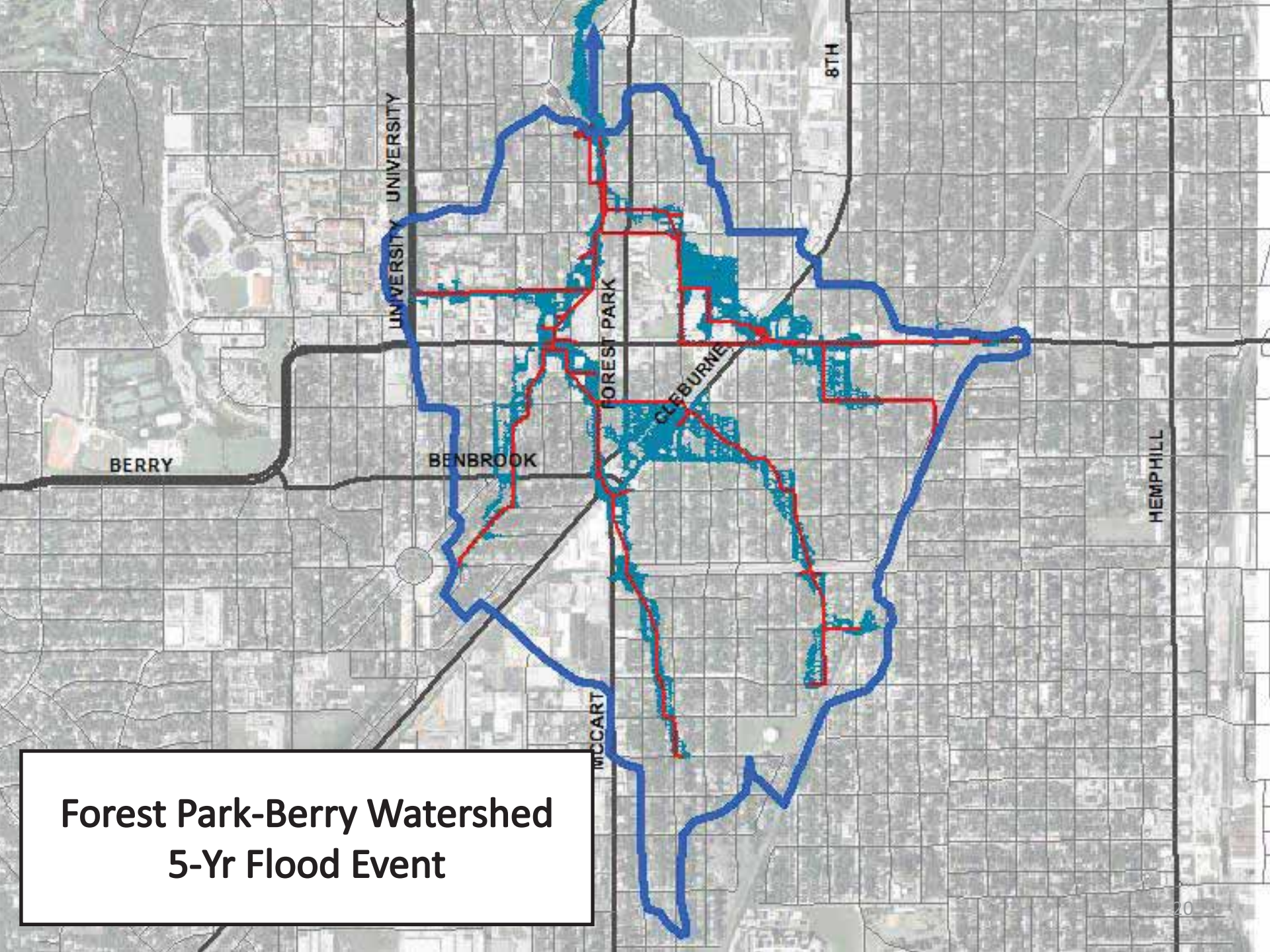


Forest Park-Berry Watershed



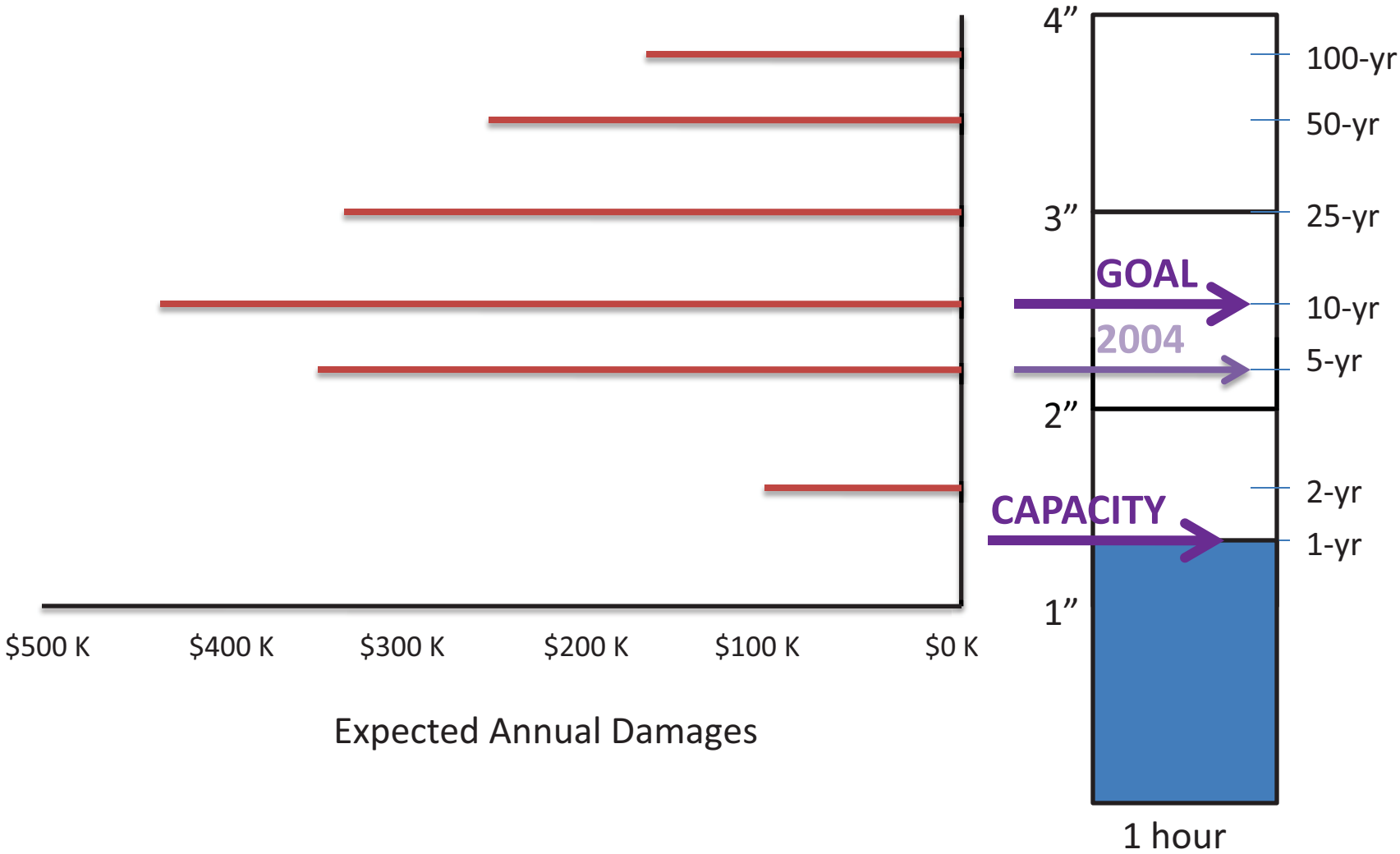
Neighborhood Associations

Forest Park-Berry Watershed 100-Yr Flood Event



Forest Park-Berry Watershed 5-Yr Flood Event

Expected Annual Damage (considers likelihood of event)



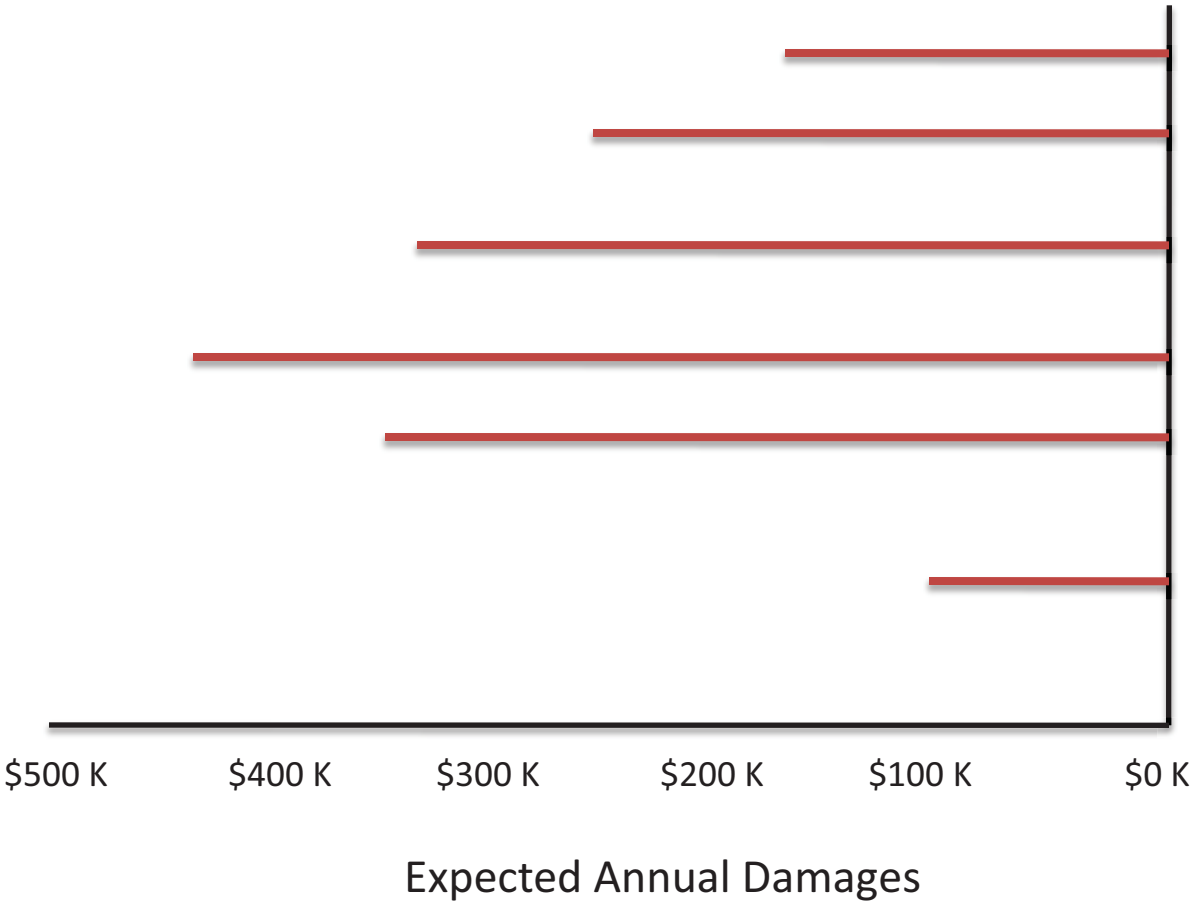
Possible Mitigation Measures

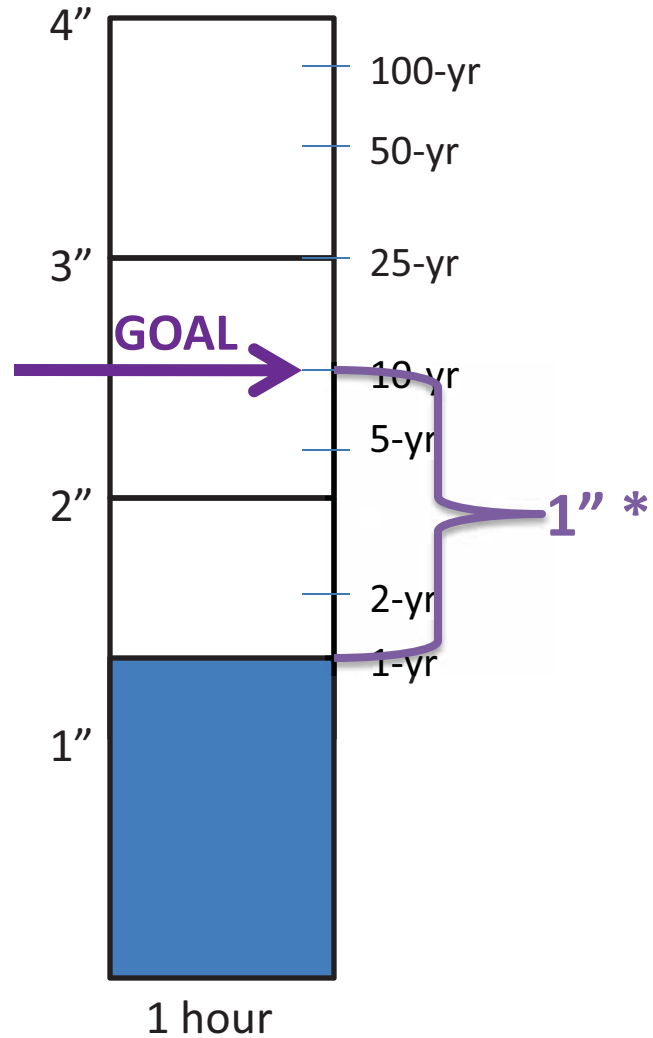
- Increase conveyance (pipes, channels)
- **Increase storage (detention)**
- Avoidance (floodproof, acquisition)
- Coping (flood insurance, flood warning)

Local Drainage Improvements

- Pipe improvements required in tandem with storage
- Need to carry water to designated storage areas
- Avoid “moving” flood from one locale to another

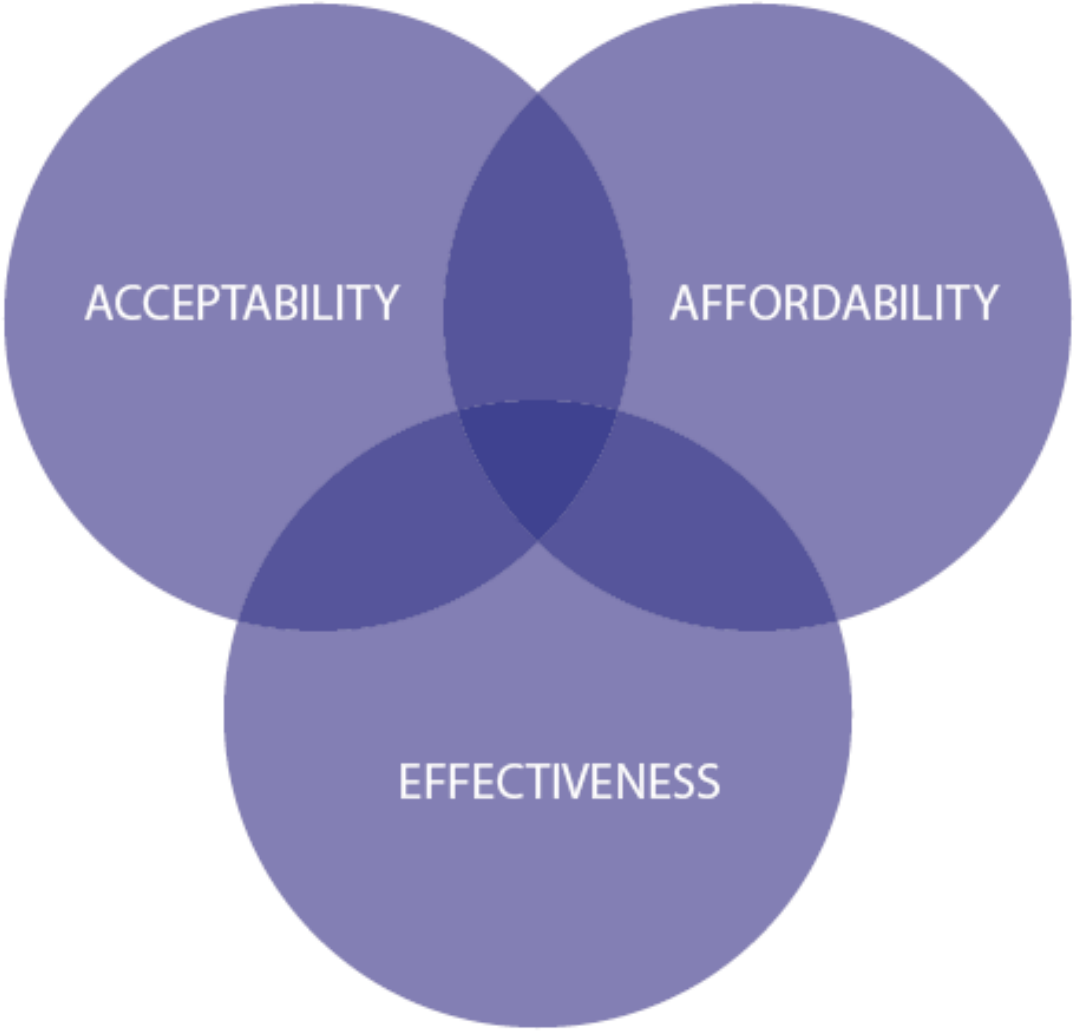
Expected Annual Damage (considers likelihood of event)





- **Volume desired is 68 acre-feet**
- **Equivalent to 11.3 acres of 6’ deep storage**

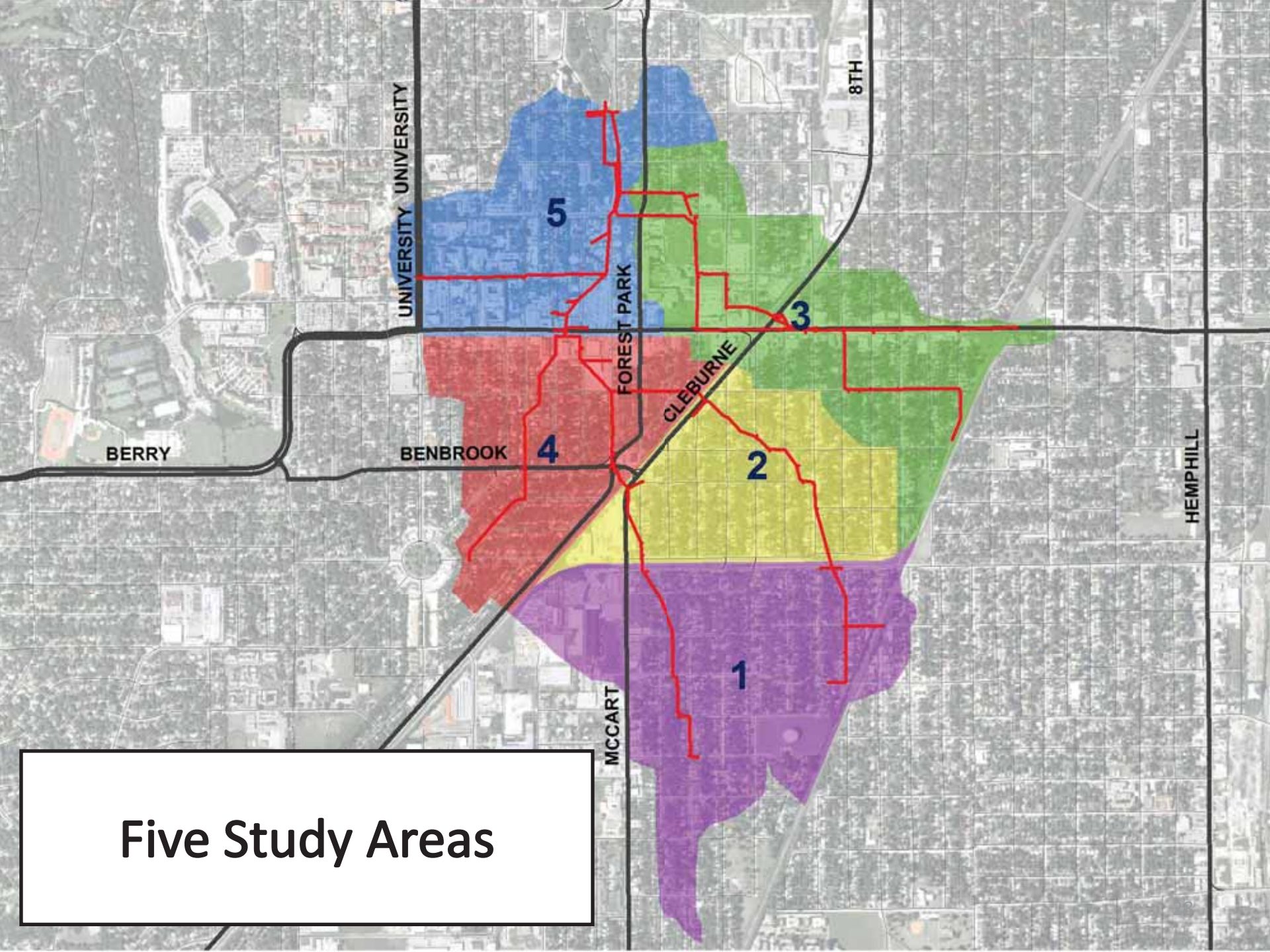
The Challenge



Forest Park-Berry
Watershed

The Challenge

- Integrate designated stormwater storage areas into the existing urban landscape
- Minimize disruption to the neighborhoods, homes, and businesses
- Add amenities, where possible
- Coordinate with other ongoing public and private initiatives
- Remain faithful stewards of rate payer's monies

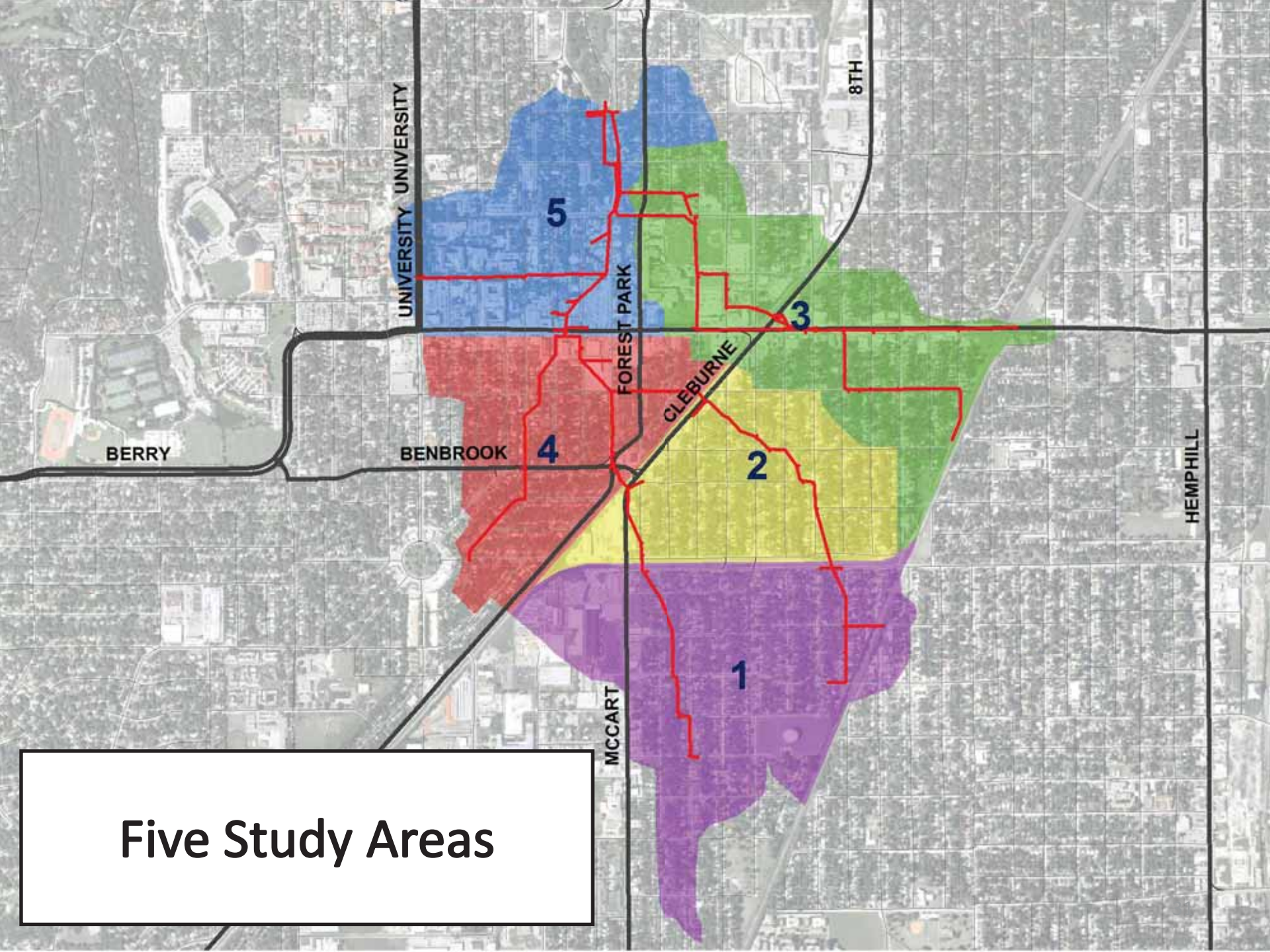


Five Study Areas

Watershed Wide Measures

- Enlarge Drainage Pipes
- Alleyway Detention
- Underground Storage Tied to Road Reconstruction
- Railroad Right-of-Way Detention
- Transit Oriented Development

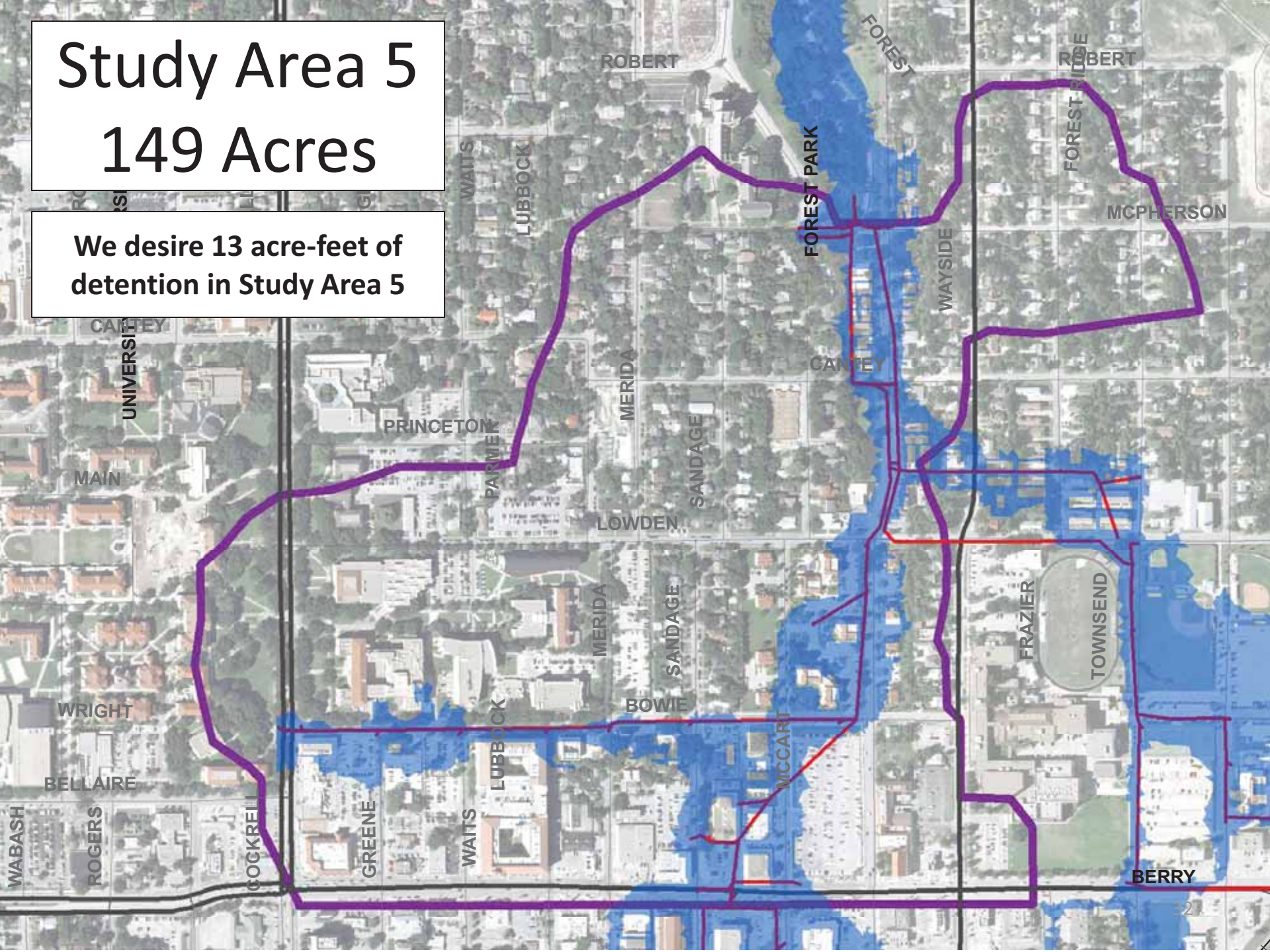
Transit Oriented Development Detention Concept
Long Term Concept (Rail Station - End of 2015)



Five Study Areas

Study Area 5
149 Acres

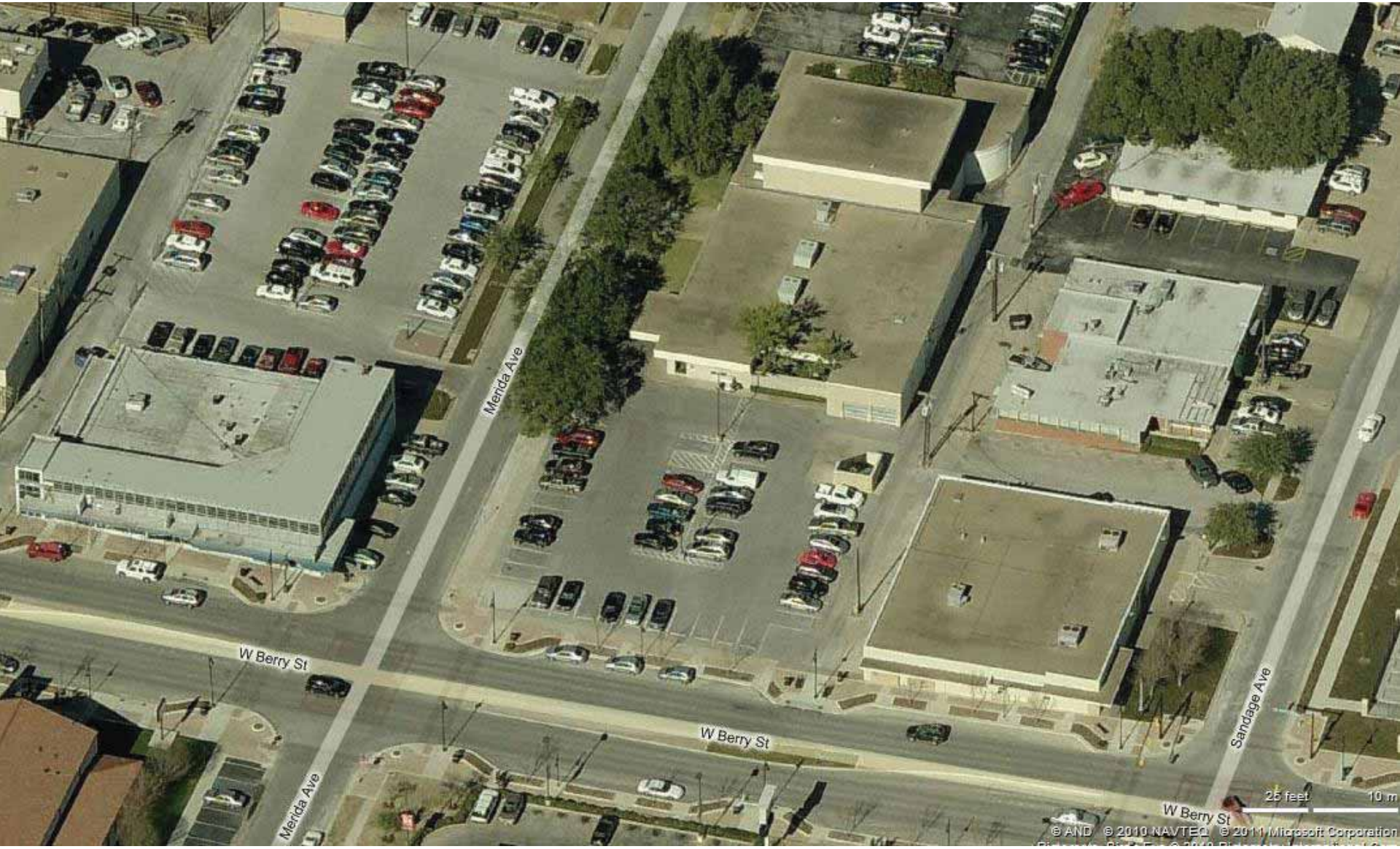
We desire 13 acre-feet of detention in Study Area 5



Outfall

McCart Ave
McPherson Ave
McPherson Ave
Sandage
S Forest Dr
Sandage Ave
McCart Ave

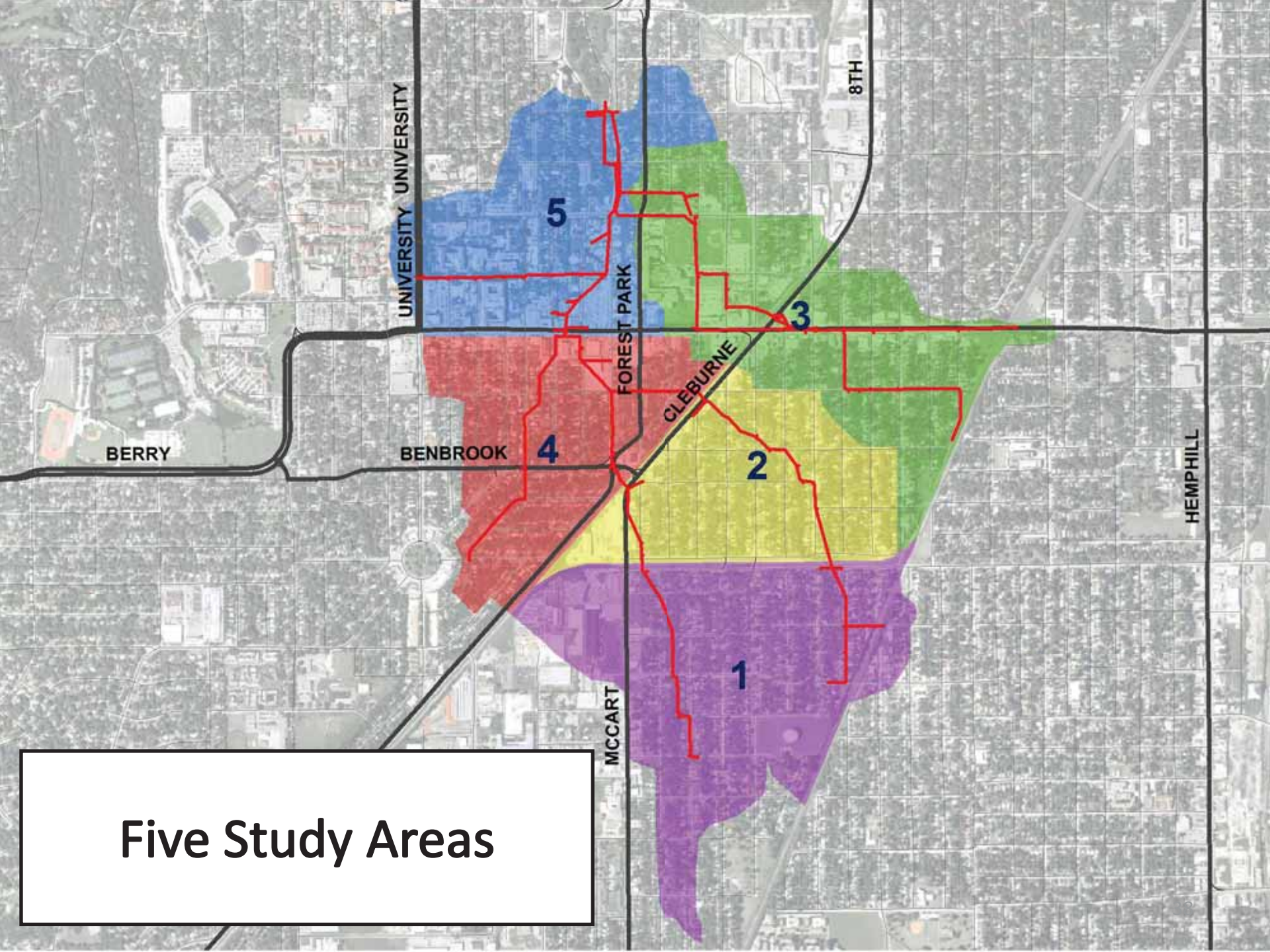
Berry Street Commercial



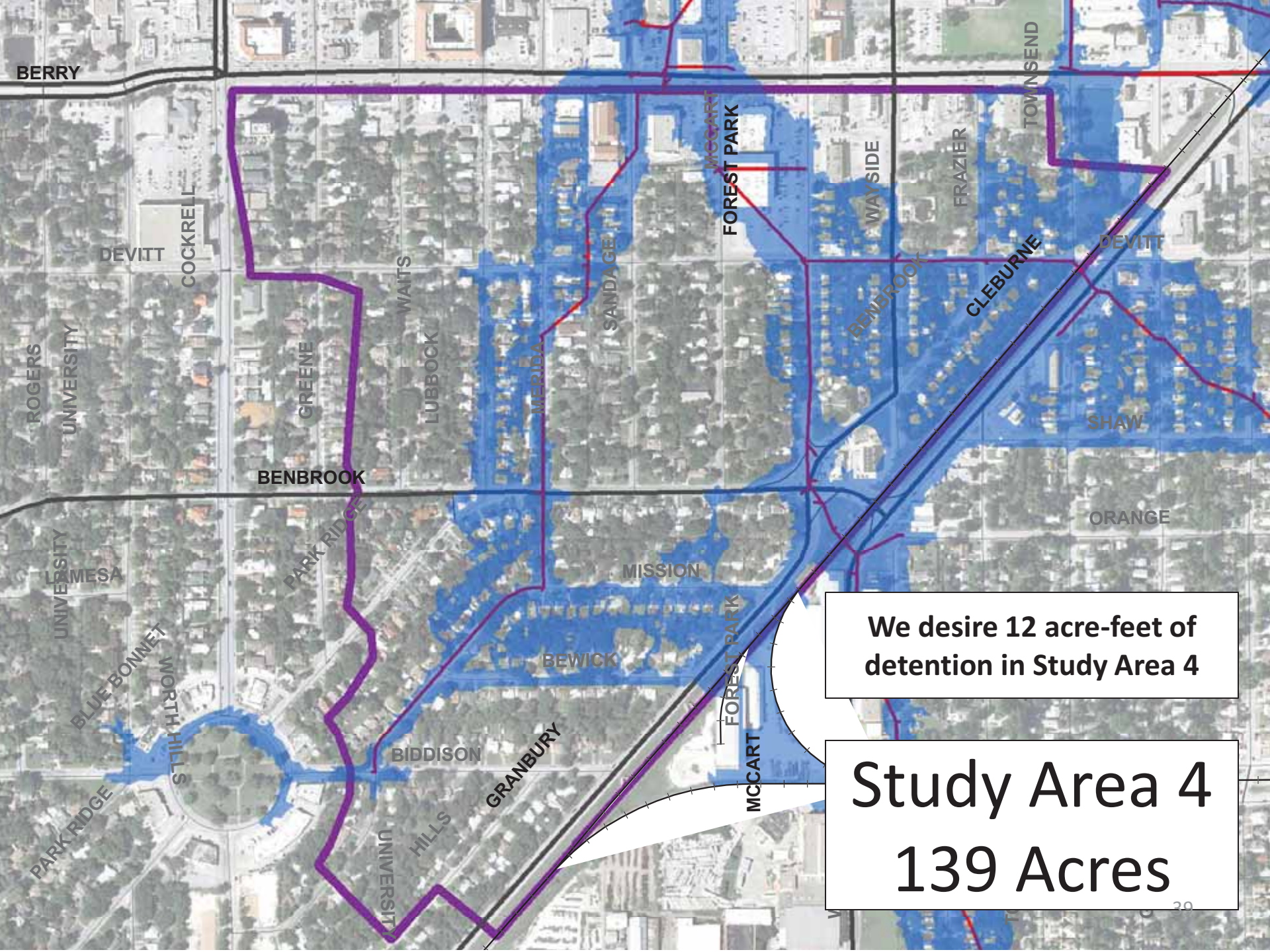
Study Area 5 Measures

(13 Acre-Feet Desired)

Measure	Cost	Volume	Properties	√/-
Urban Greenway Detention	$2,000,000 - $5,000,000	5 Ac-Ft	8	?
TCU Performing Arts	$5,000,000 - $8,000,000	8 Ac-Ft	0	–
TOD Detention	$400,000 - $600,000	3 Ac-Ft	others	√



Five Study Areas


BERRY
TOWNSEND
MCCART
FOREST PARK
WAYSIDE
FRAZIER
DEVITT
COCKRELL
WAITS
SANDAGE
BENBROOK
CLEBURNE
DEVITT
ROGERS
UNIVERSITY
GREENE
LUBBOCK
MERIDA
SHAW
BENBROOK
PARK RIDGE
ORANGE
UNIVERSITY
LAMESA
MISSION
BEWICK
FOREST PARK
BLUE BONNET
WORTH HILLS
BIDDISON
GRANBURY
MCCART
PARK RIDGE
UNIVERSITY
HILLS
We desire 12 acre-feet of detention in Study Area 4
Study Area 4
139 Acres

Lubbock/Devitt

Berry St – 2004

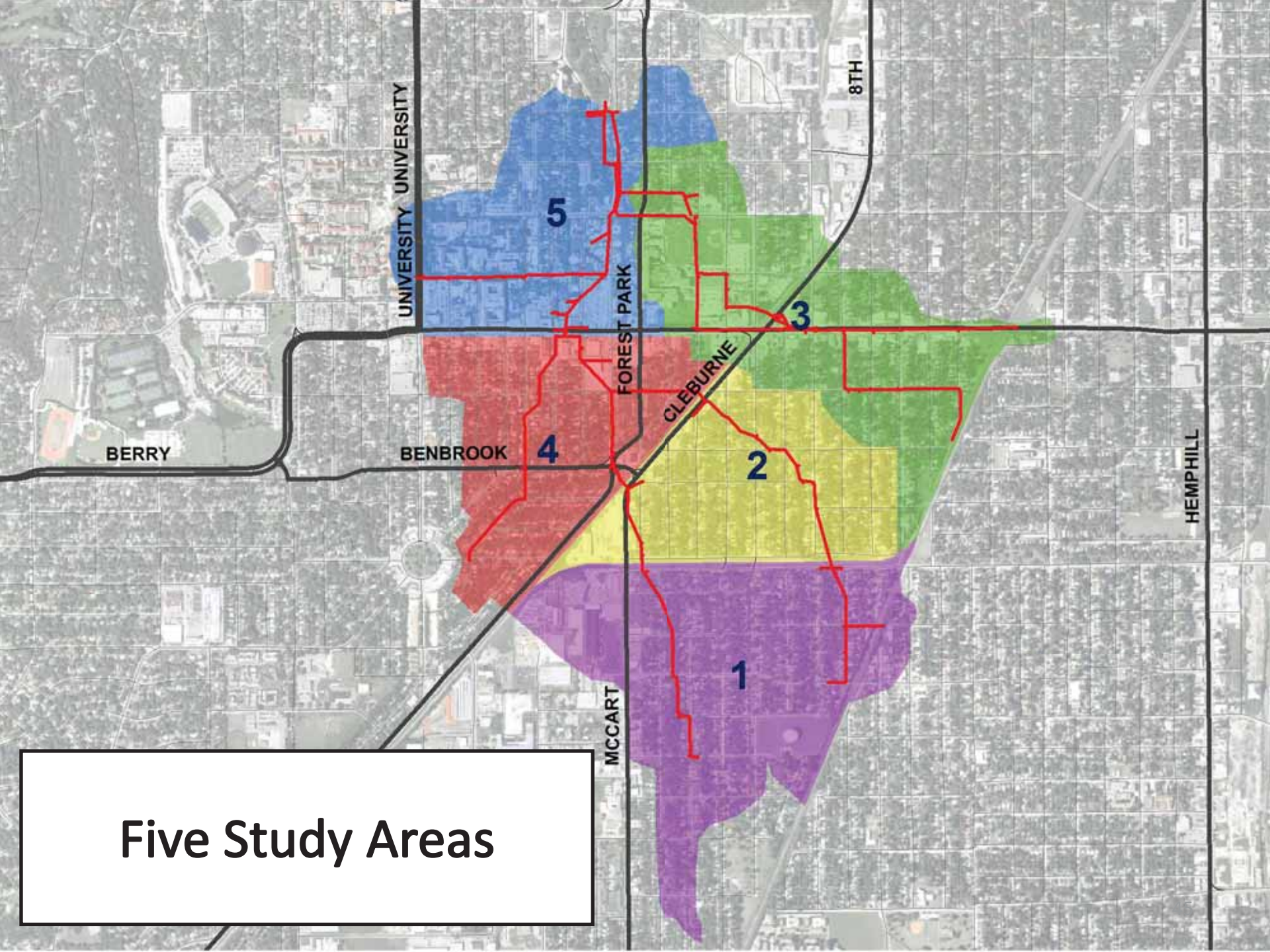
Berry St – 2007

Berry Street

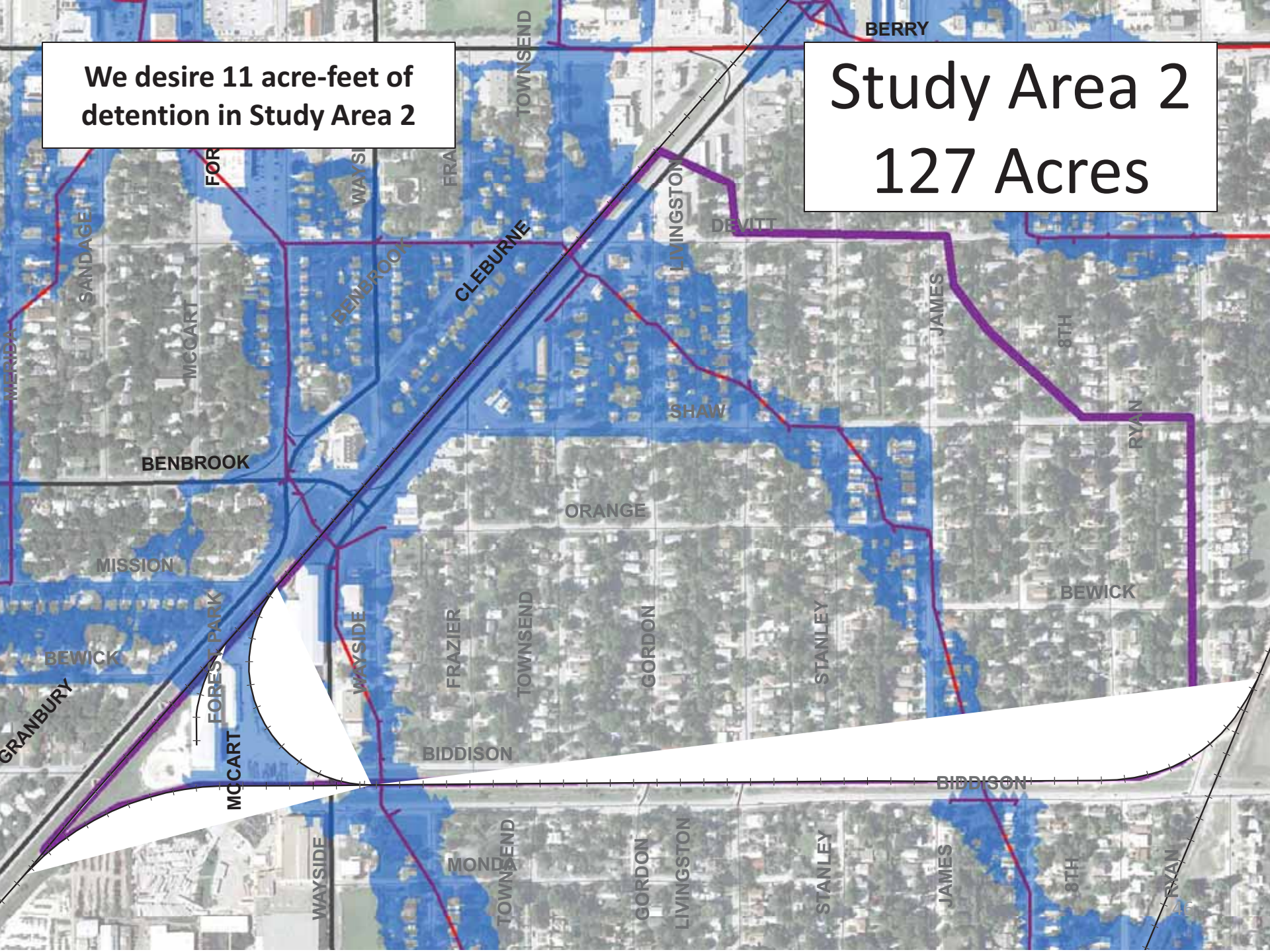
Study Area 4 Measures

12 Acre-Feet Desired

Measure	Cost	Volume	Properties	√/-
ISD/Drugstore Underground Detention	$2,000,000 - $3,000,000	5 Ac-Ft	0	√
Greenway Detention	$3,500,000 - $4,500,000	15 Ac-Ft	23	–
Detention under Transit Parking	$5,000,000 - $7,500,000	12 Ac-Ft	0	√
TOD Detention	$2,000,000 - $3,000,000	15 Ac-Ft	others	√



Five Study Areas


We desire 11 acre-feet of detention in Study Area 2
Study Area 2
127 Acres
BERRY
TOWNSEND
FOR
WAYS
FRA
LIVINGSTON
DEVITT
SANDAGE
MERIDA
McCART
BENBROOK
CLEBURNE
JAMES
8TH
SHAW
RYAN
BENBROOK
ORANGE
MISSION
BEWICK
FOREST PARK
WAYSIDE
FRAZIER
TOWNSEND
GORDON
STANLEY
BEWICK
GRANBURY
McCART
BIDDISON
BIDDISON
WAYSIDE
MONDA
TOWNSEND
GORDON
LIVINGSTON
STANLEY
JAMES
8TH
RYAN

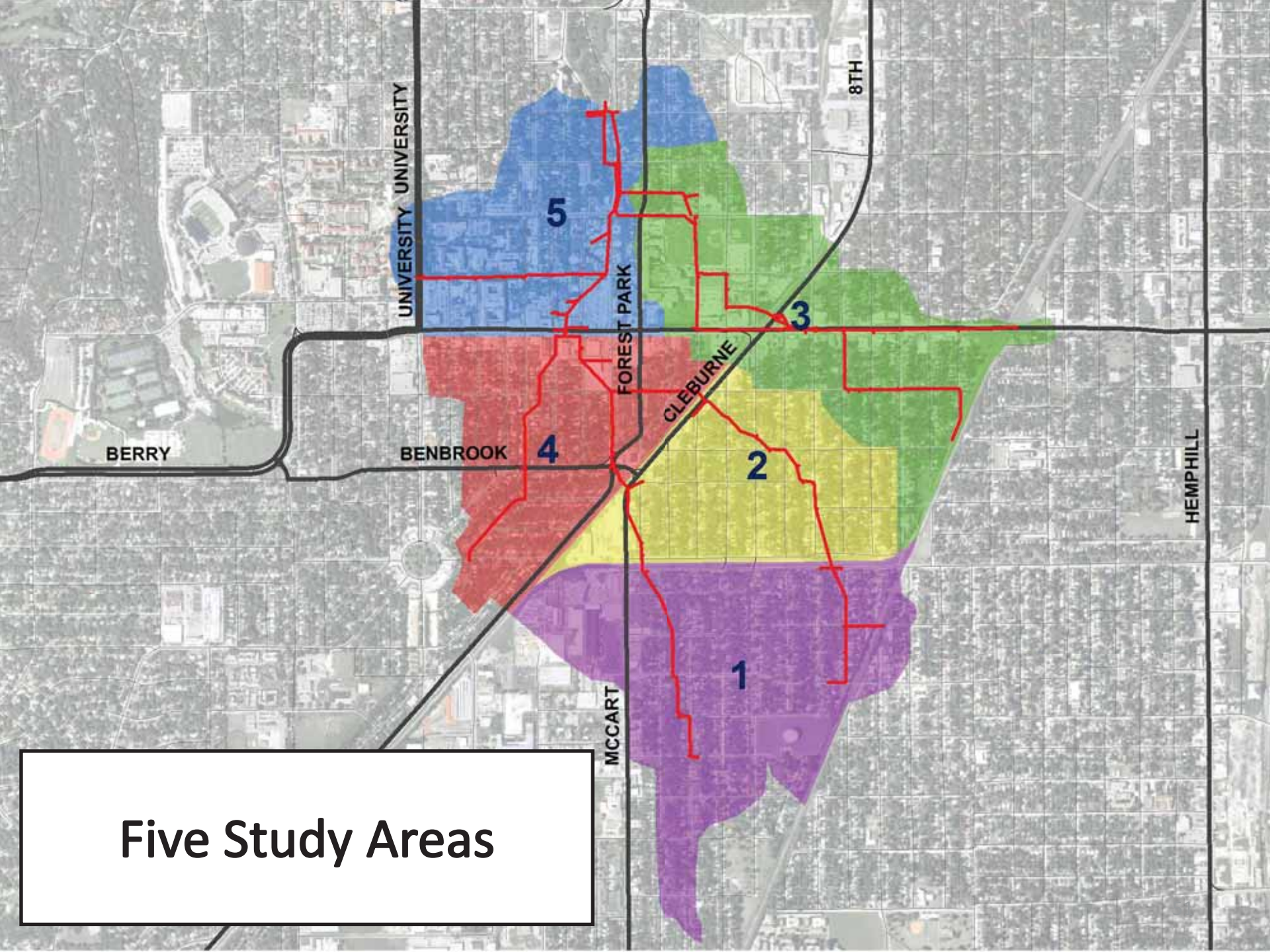
Railroad along Cleburne

Industrial Site

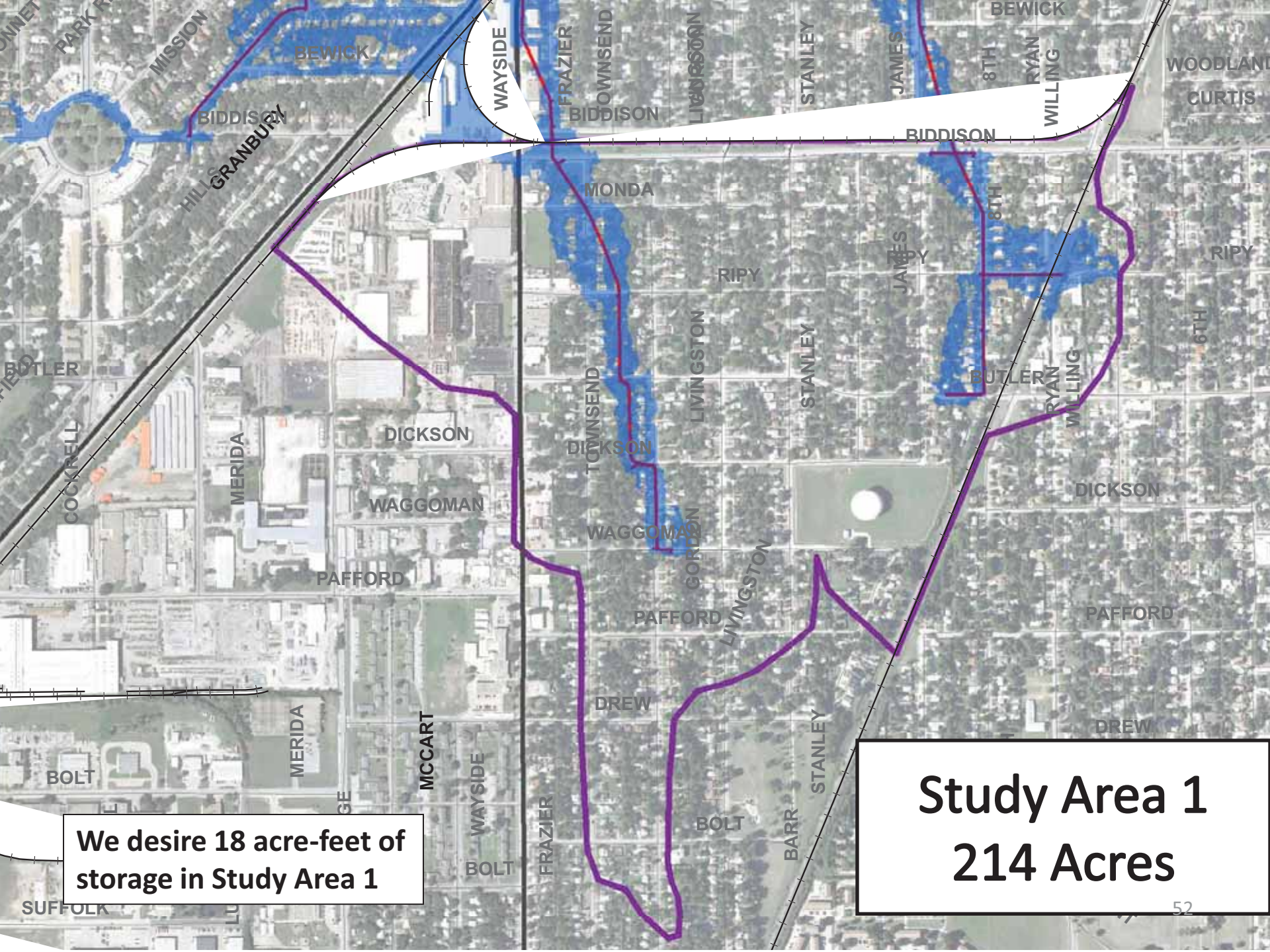
Study Area 2 Measures

(11 Acre-Feet Desired)

Measure	Cost	Volume	Properties	√/-
Industrial Site Detention	$6,000,000 - $10,000,000	25 Ac-Ft	3	–
Greenway Detention	$2,700,000 - $3,600,000	12 Ac-Ft	16	–
TOD Detention	$650,000 - $1,000,000	5 Ac-Ft	others	√



Five Study Areas

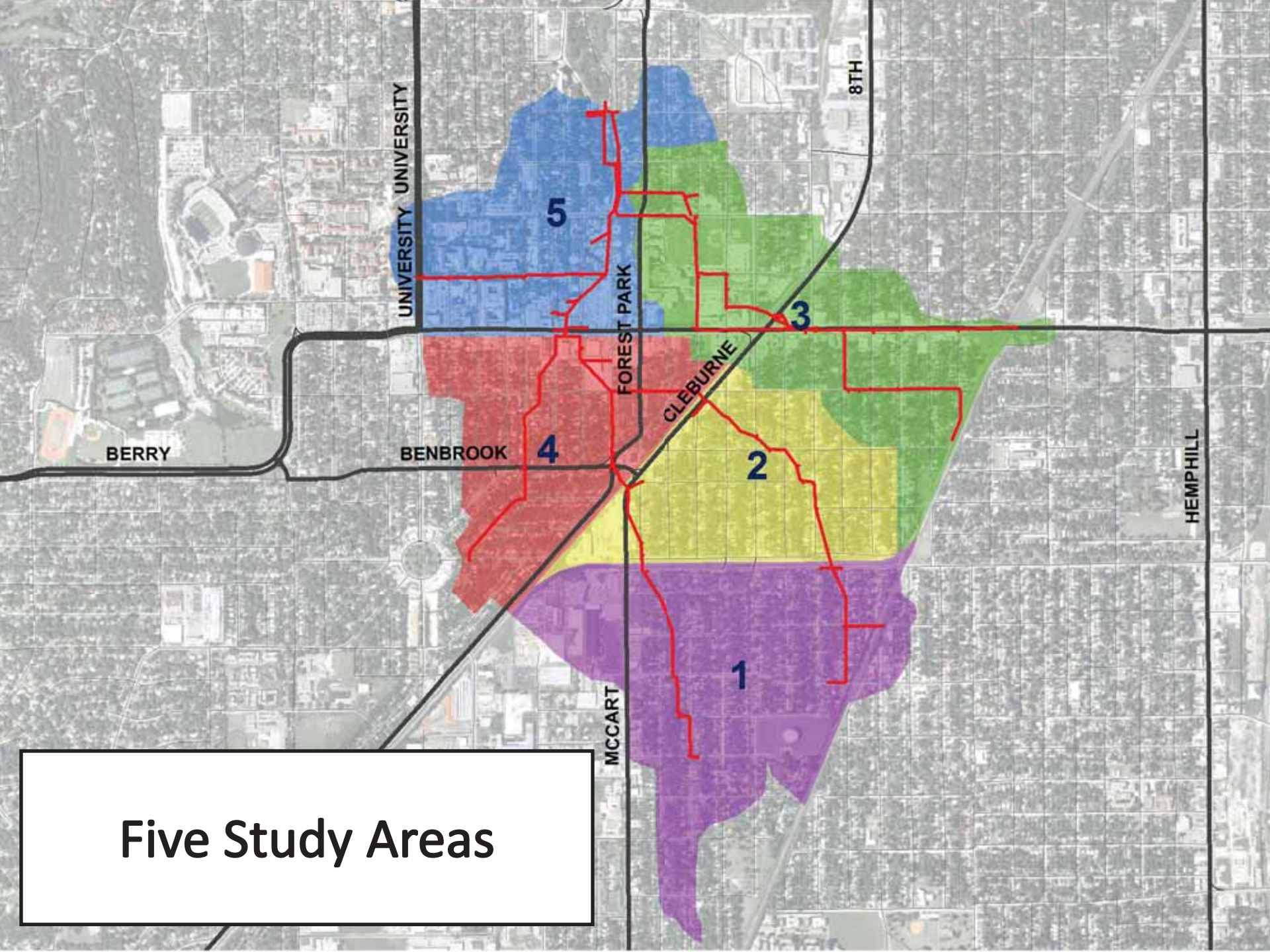

BEWICK
MISSION
BIDDISON
GRANBURY
WAYSIDE
FRAZIER
TOWNSEND
LIVINGSTON
STANLEY
JAMES
8TH
RYAN
WILLING
WOODLAND
CURTIS
MONDA
RIPY
BUTLER
DICKSON
WAGGOMAN
PAFFORD
DREW
BOLT
COCKRELL
MERIDA
MCCART
BARR
SUFFOLK
We desire 18 acre-feet of storage in Study Area 1
Study Area 1
214 Acres

BNSF Railroad Corridor along Biddison

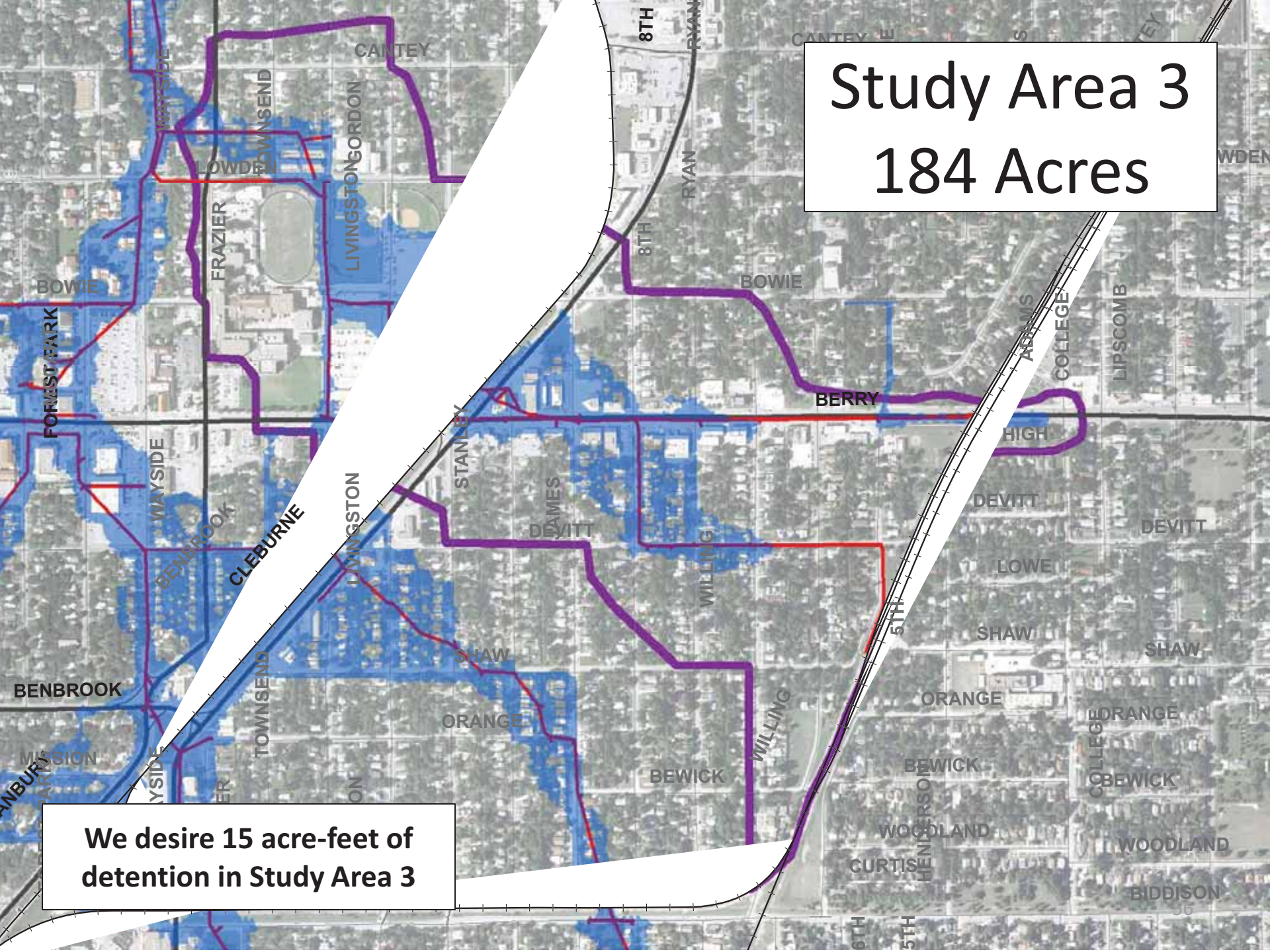
Study Area 1 Measures

(18 Acre-Feet Desired)

Measure	Cost	Volume	Properties	√/-
BNSF RR Corridor	$2,500,000 - $10,000,000	5 Ac-Ft	1	?
Water Plant Detention	$150,000 - $250,000	0 Ac-Ft	0	–
Industrial Site	$25,000,000-$35,000,000	30 Ac-Ft	3	–
Greenway Detention	$3,600,000 - $4,800,000	16 Ac-Ft	27	–



Five Study Areas


Study Area 3
184 Acres
We desire 15 acre-feet of detention in Study Area 3
CANTEY
WAYSIDE
TOWNSEND
GORDON
LOWDEN
FRAZIER
LIVINGSTON
8TH
RYAN
BOWIE
FOREST PARK
BERRY
HIGH
ADAMS
COLLEGE
LIPSCOMB
STANLEY
JAMES
DEVITT
WILLING
CLEBURNE
BENBROOK
LOWE
5TH
SHAW
ORANGE
BEWICK
WOODLAND
CURTISS
HENDERSON
BIDDISON
MISSION
6TH

Paschal High School

Study Area 3 Measures

(15 Acre-Feet Desired)

Measure	Cost	Volume	Properties	√/-
Paschal Detention	$6,000,000 - $10,000,000	15 Ac-Ft	0	√
Greenway Detention	$3,500,000 - $4,500,000	15 Ac-Ft	23	–

How Can We Get Desired Volume?

The Most Affordable Way

Measure	Cost	Volume (Goal=68 Ac-Ft)
TOD Detention	$3,000,000 - $4,600,000	23 Acre-Feet
Greenway Detention	$10,600,000 - $16,000,000	45 Acre-Feet
SUBTOTAL	**$13,600,000 - $20,600,000**	**68 Acre-Feet**
Local Drainage Improvements	$5,000,000 - $7,000,000	
TOTAL	**$18,600,000 - $27,600,000**	**68 Acre-Feet**

How Can We Get Desired Volume?

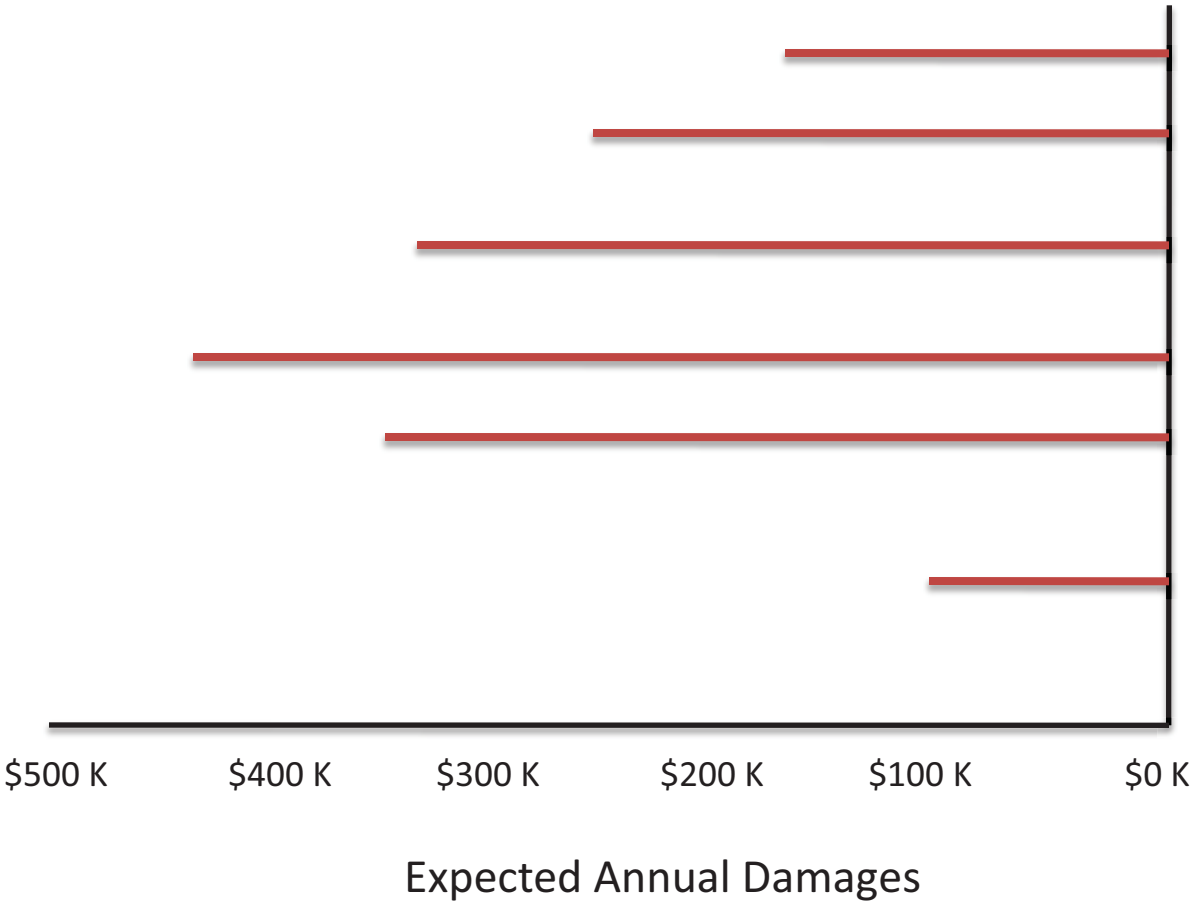
The Most Acceptable Way

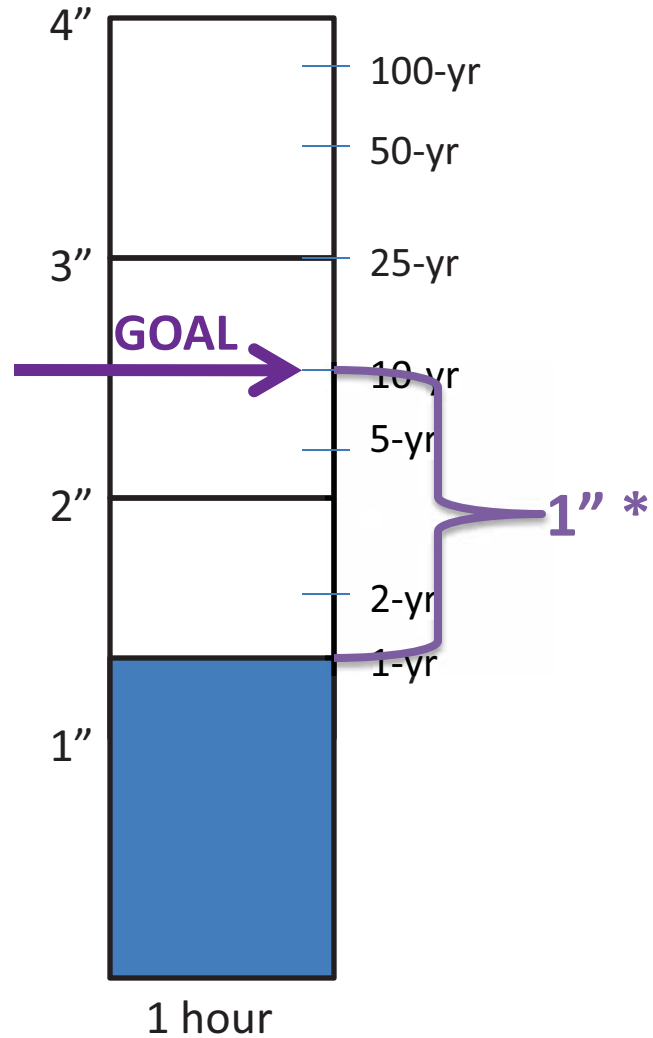
Measure	Cost	Volume (Goal=68 Ac-Ft)
TOD Detention	$3,000,000 - $4,600,000	23 Acre-Feet
Detention under Transit Parking	$5,000,000 - $7,500,000	12 Acre-Feet
Paschal Detention	$6,000,000 - $10,000,000	15 Acre-Feet
SUBTOTAL	**$14,000,000 - $22,100,000**	**50 Acre-Feet**
Local Drainage Improvements	$5,000,000 - $7,000,000	
Watershed Wide Measures	$2,000,000 - $3,900,000	5 Acre-Feet
TOTAL	**$21,000,000 - $33,000,000**	**55 Acre-Feet**

Plan Comparison

Measure	Cost	Level of Service
Tunnel Plan (Previous Study)	$50,000,000 -$75,000,000	3.8”
Most Affordable Plan	$18,600,000 - $26,100,000	2.6”
Most Acceptable	**$21,000,000 - $33,000,000**	**2.3”**
Existing System		1.3”

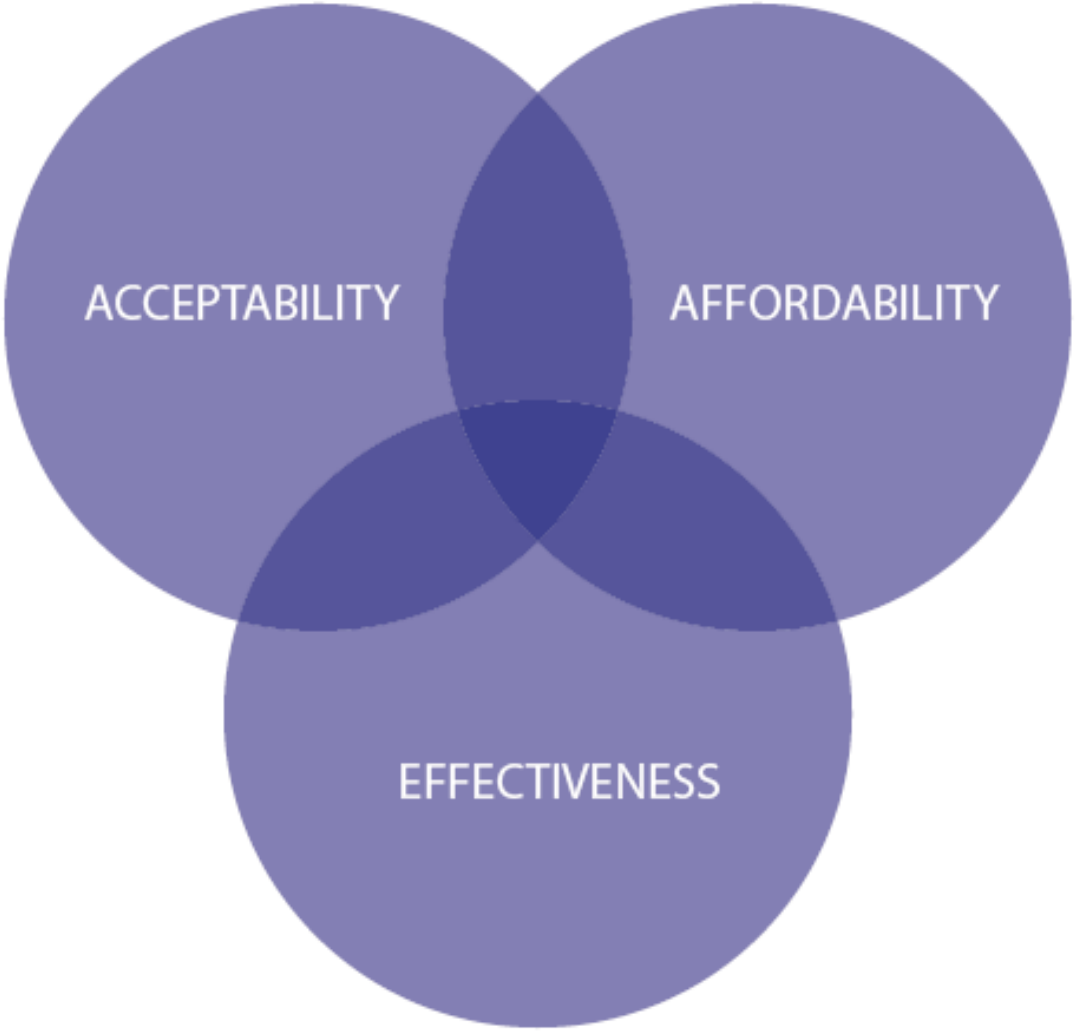
Expected Annual Damage (considers likelihood of event)





- **Volume desired is 68 acre-feet**
- **Equivalent to 11.3 acres of 6’ deep storage**

The Challenge



Summary

- We have identified a plan that includes:
  - Storage implemented via expected development activity
  - Storage under proposed transit parking facility
  - Storage under athletic fields as Paschal High School
  - Local improvements to drainage system
- The estimated cost is $21-33 million
- Almost double capacity of system
- Can be phased in over time
- Substantial underground detention
- Maintenance of existing and new drainage systems should remain a priority

Uncertainties

- Transit Oriented Development
- Major flood events
  - Availability of funds
  - Shift in public sentiment

Questions?