



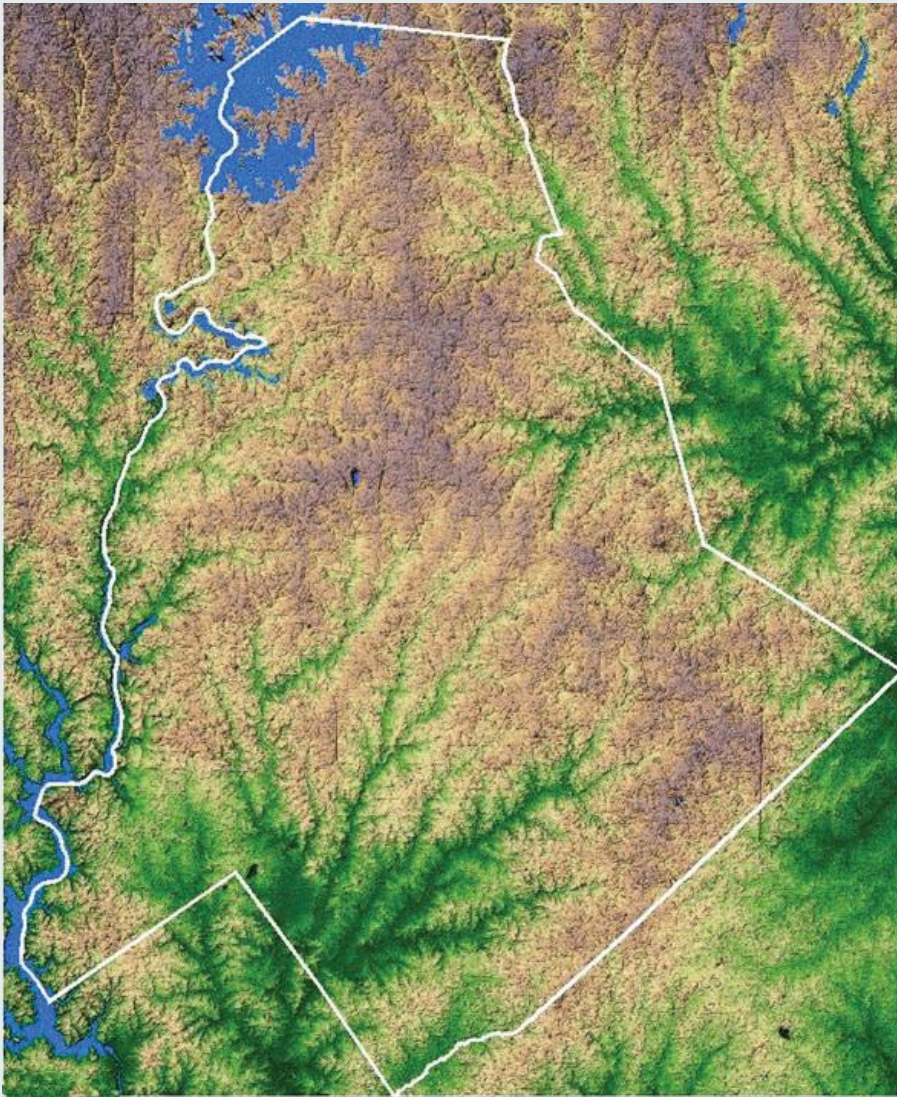
# **Integrating Smart Growth into Disaster Recovery**

*Local Implementation in  
Charlotte, NC*

# Overview

- **Five Key Principles to Consider**
  - Hazard Integration
  - Role of Local Government
  - Pre-disaster Recovery Plan
  - Locally Funded Opportunities
  - Building Greater Resilience
- **Implementation Examples**
  - Guidance Document
  - Strategic Acquisitions

# Floodplain Statistics:

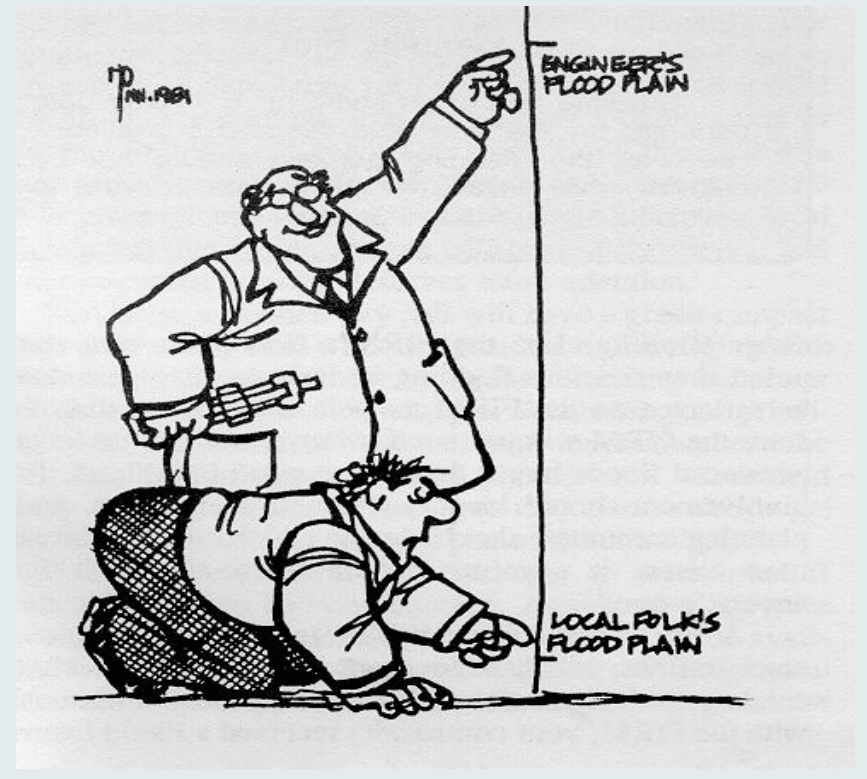


- 320 miles of streams
- 4000+ structures in the floodplain
- Average Precipitation: 40 inches per year
- Record Maximum Precipitation: 22 inches in 24 hours (1916 estimate)
- Probable Maximum Precipitation: About 33 inches

*Smart Growth, 2011*

# Hazard Integration

- Communities need to integrate natural hazards and mitigation into comprehensive land use planning
  - Floodplain maps
  - Other Hazards
  - Minimize adverse impacts from development



# Role of Local Government

- Local Governments are at the forefront of post-disaster smart growth opportunities
  - Land use decisions
  - Regulations
  - Capital Improvements



# Pre-disaster Recovery Plan



- Focus on **pre-disaster planning** for rebuilding **AND** mitigating future risk

- Greater Resources
- More political willpower
- Solid public policy
- Cost savings



# Locally Funded Opportunities

- Federal and state aid should not be the only opportunity for communities to implement smart growth into recovery
  - Timing of FEMA money
  - Non-disaster declarations
  - Develop a financial strategy to implement smart growth in events without assistance

# Building Greater Resilience

- Identify potential for building greater resilience to future flood events within the long-term recovery process
  - Evaluate existing flood hazard mitigation information,
  - Develop a hazard mitigation plan,
  - Identify projects and programs that incorporate mitigation principals.





# **Local Implementation**

## ***Floodplain Management Guidance Document***

***Charlotte, NC***

# Flood Guidance Document

- **Objectives:**

- Prevent or reduce loss of life and damage caused by floods
- Preserve the natural and beneficial functions of floodplains



- ✓ **Consider Smart Growth Strategies**
- ✓ **Use as a Business Plan**

# Community Vision for How to Become More Resilient



# How did we do it?

- Over two years and two floods
- Two symposiums and numerous workshops focused on problem statements and public engagement
- Incorporated sustainable multi-objective principles (water quality, greenways, open space, etc.)
- Timing (funding, flood mapping, etc.)

# Guidance Document Strategies

- **New Development**
- Flood Warning/Response
- Drainage System Maintenance
- Public Information
- **Interagency Coordination**
- **Hazard Mitigation Planning**



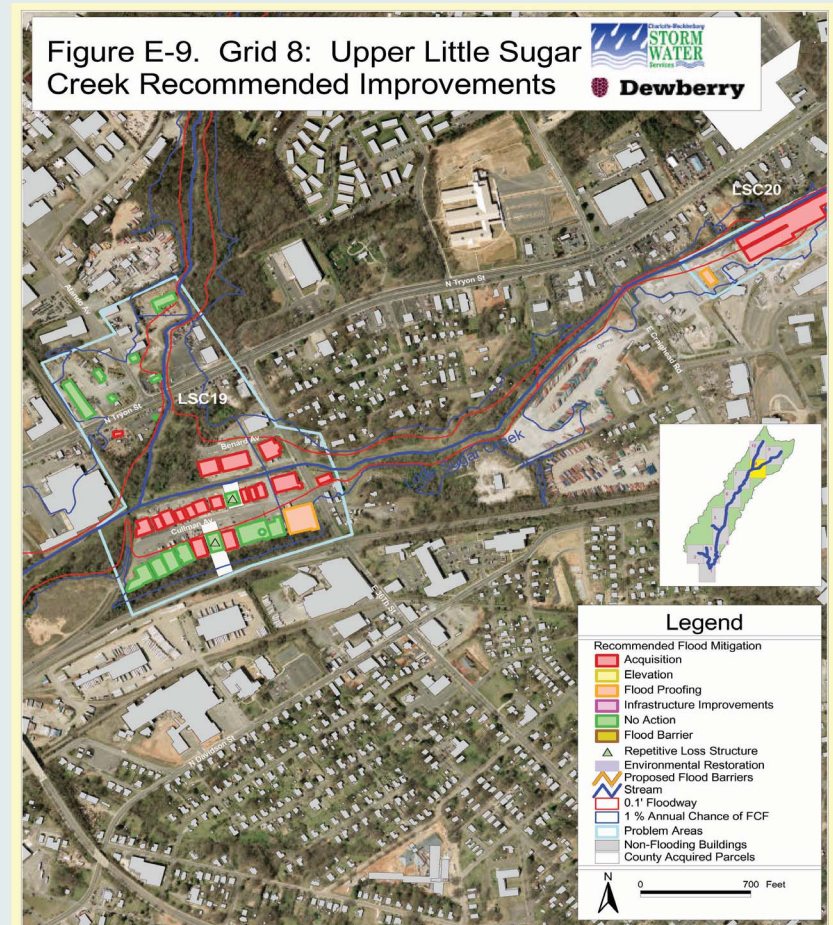
# **Local Implementation**

***Hazard Mitigation Grant Funds  
Strategic Acquisitions***

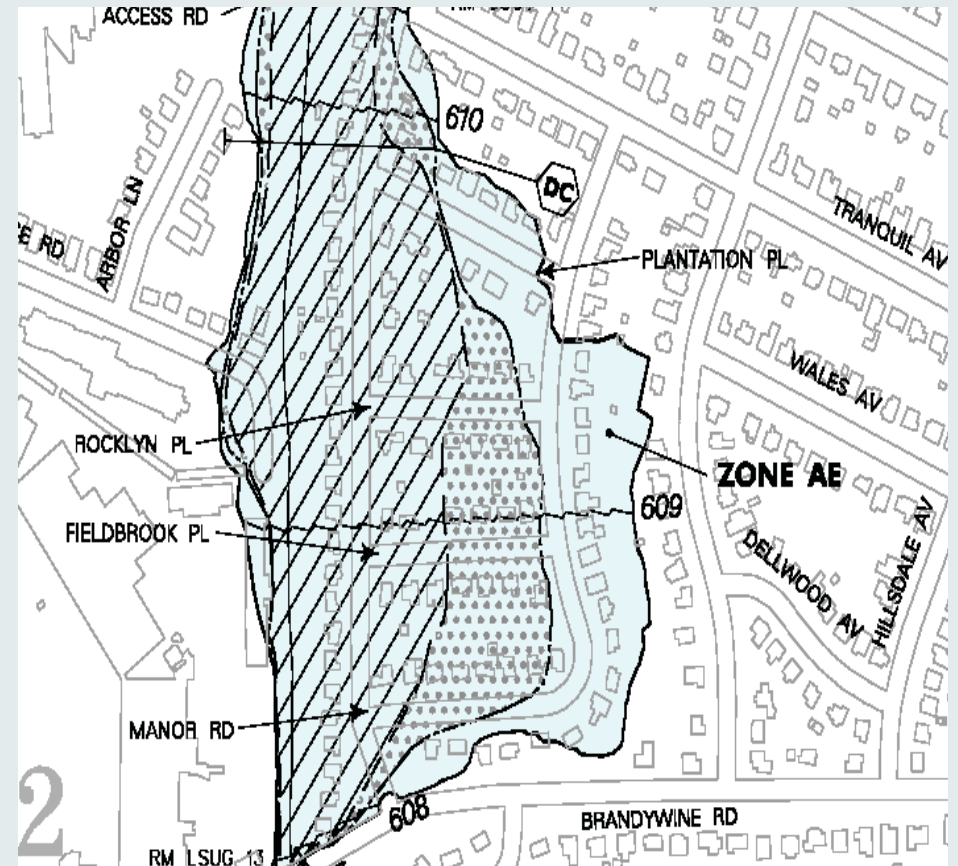
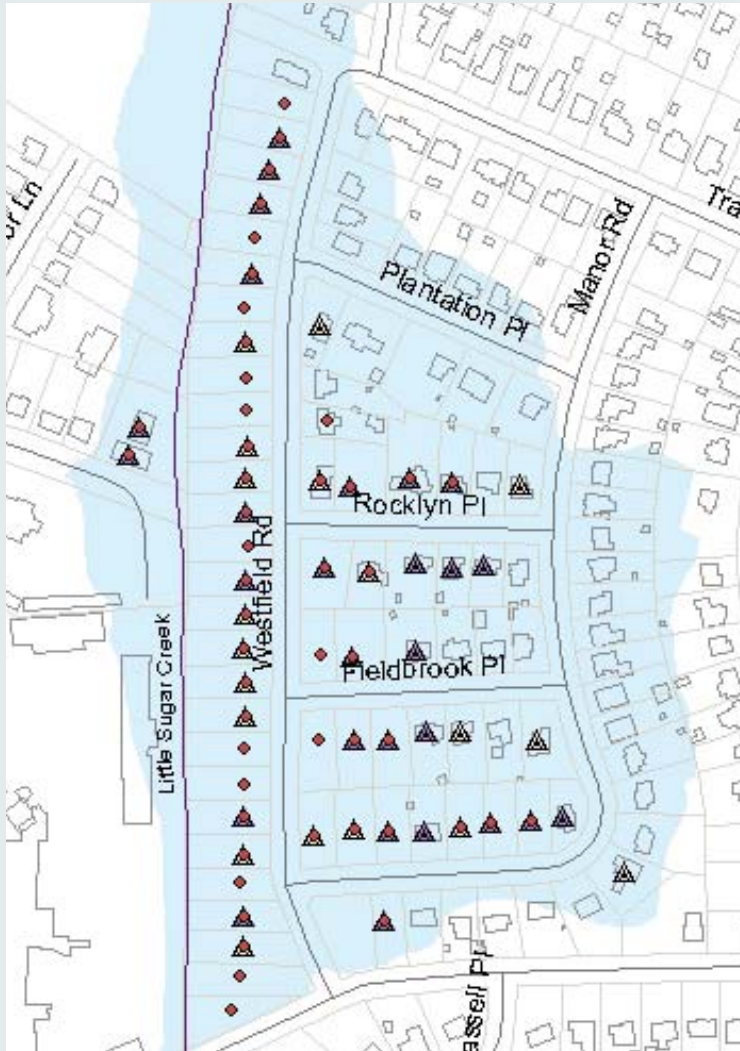
***Charlotte, NC***

# Planning for Future Disasters

- Identify High Risk Properties/Areas
  - Redevelopment
  - Open space
  - Connectivity
  - Recreation
  - STORAGE OF FLOODWATER



# Residential Area



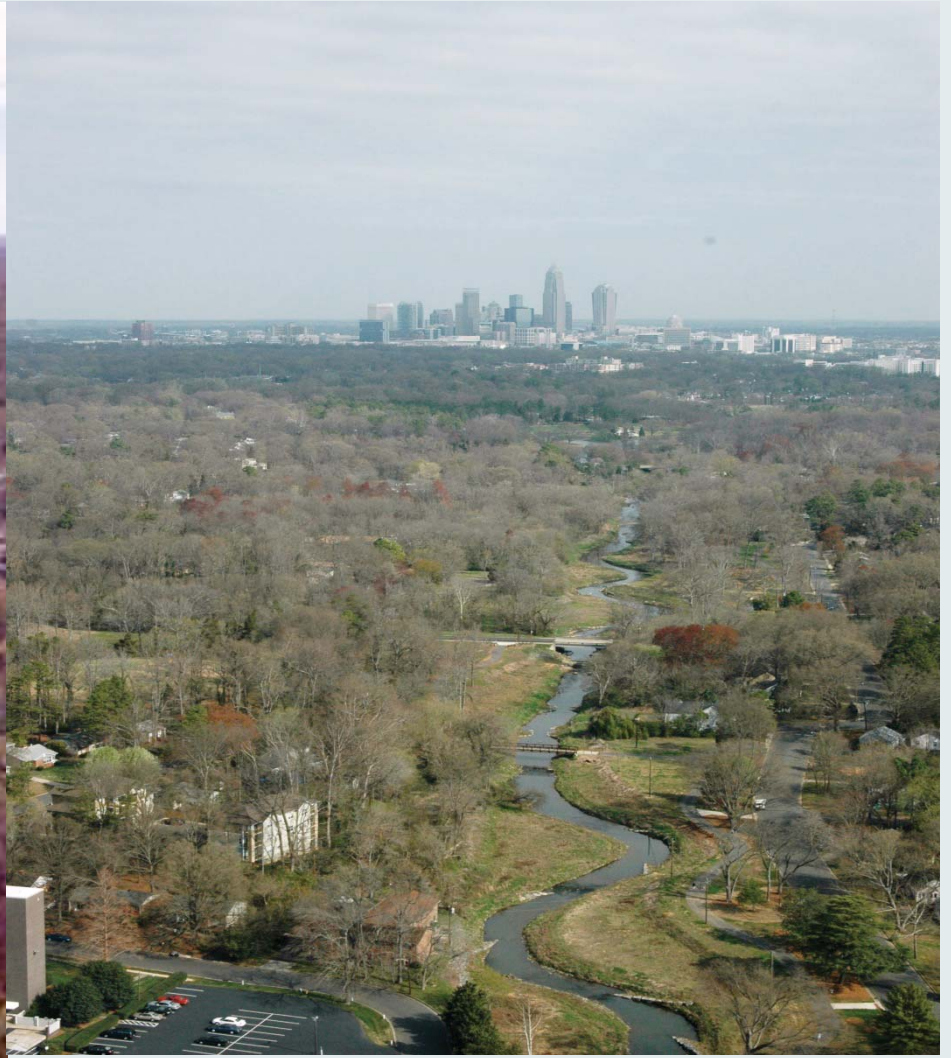


# Buyout Program

Westfield Road: Flooding – Demolition – Open Space – Environmental Restoration & Greenway Trail



# Residential Area



*Little Sugar Creek Floodplain  
Westfield Road*



**AFTER MITIGATION**

# Commercial/Industrial Area

- **Cullman Avenue Buyout**

- 12 Commercial Properties
- Federal Share: \$2,096,000
- Local Share: \$704,000
- Total Project Costs: \$2,800,000
- More Planned



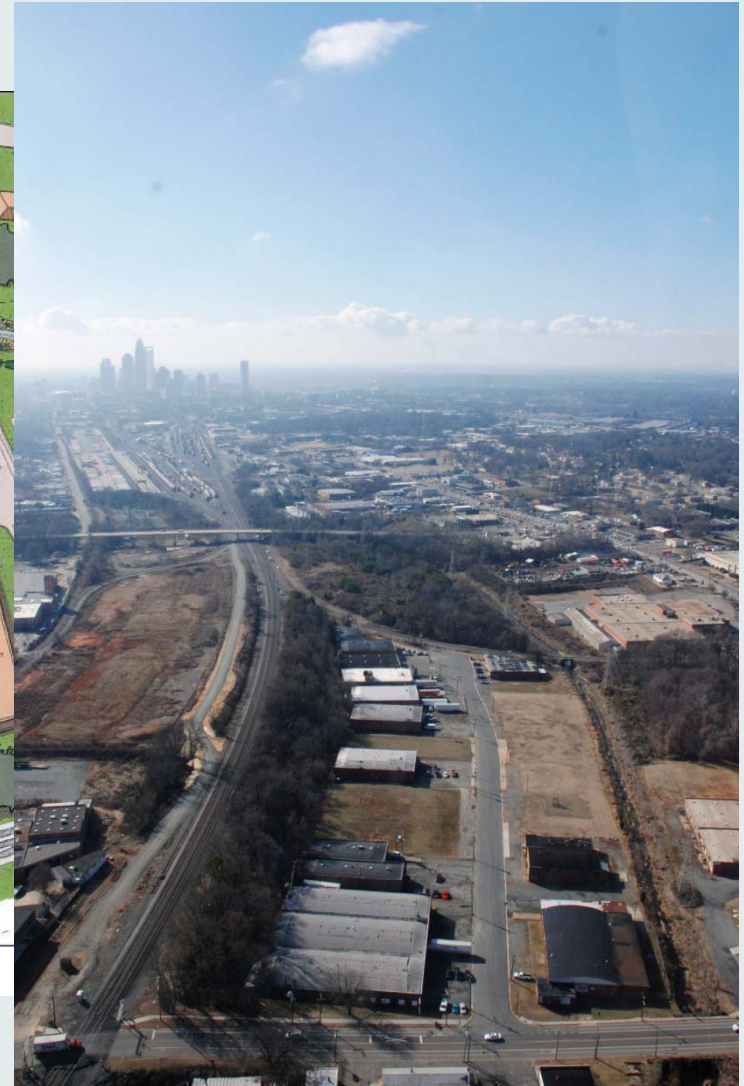
# Commercial/Industrial Area



# Commercial/Industrial Area



CULLMAN AVENUE WATER QUALITY PROJECT



# Apartments



# Apartments



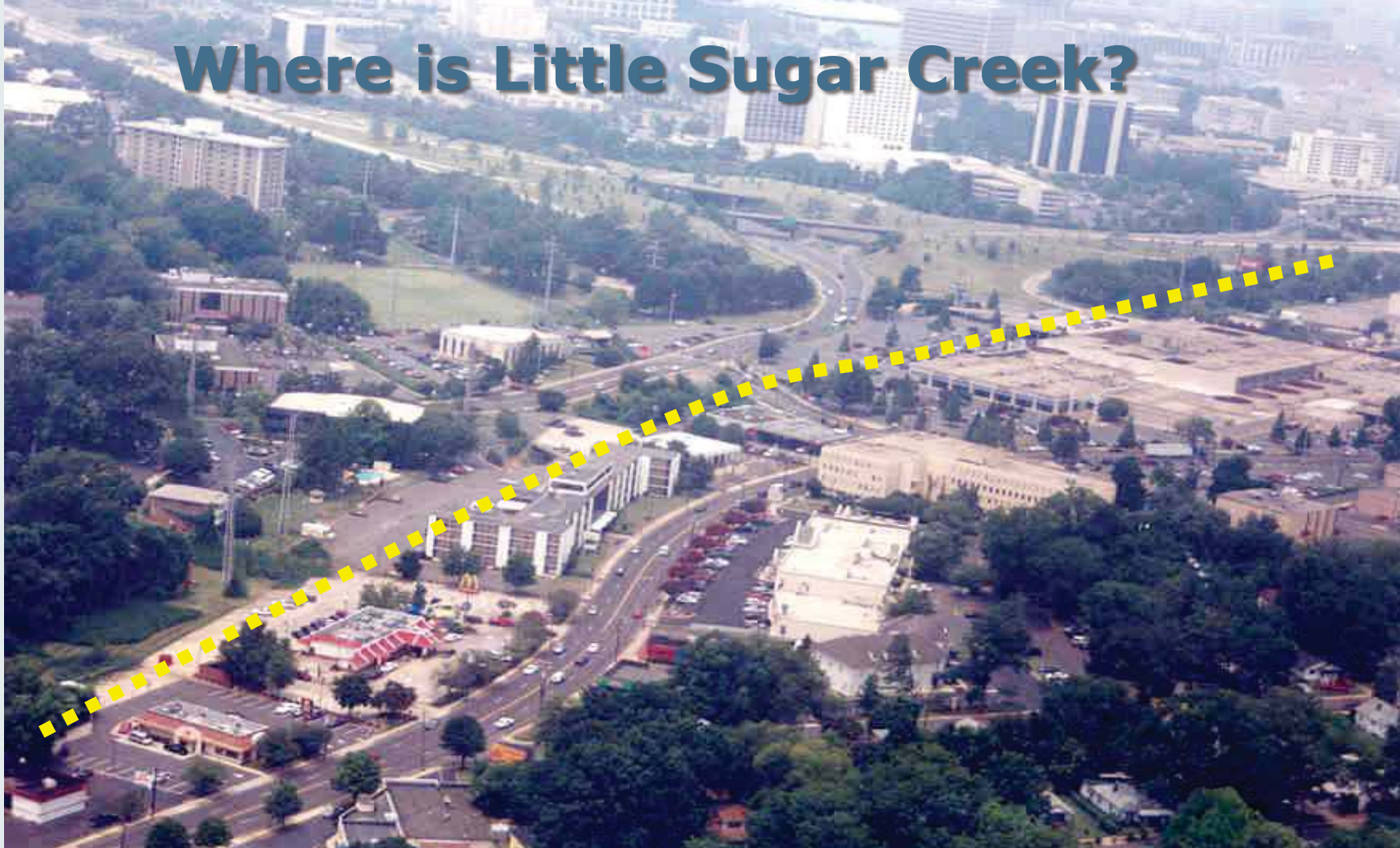


# Urban Redevelopment



# Urban Redevelopment

Where is Little Sugar Creek?



# Urban Redevelopment





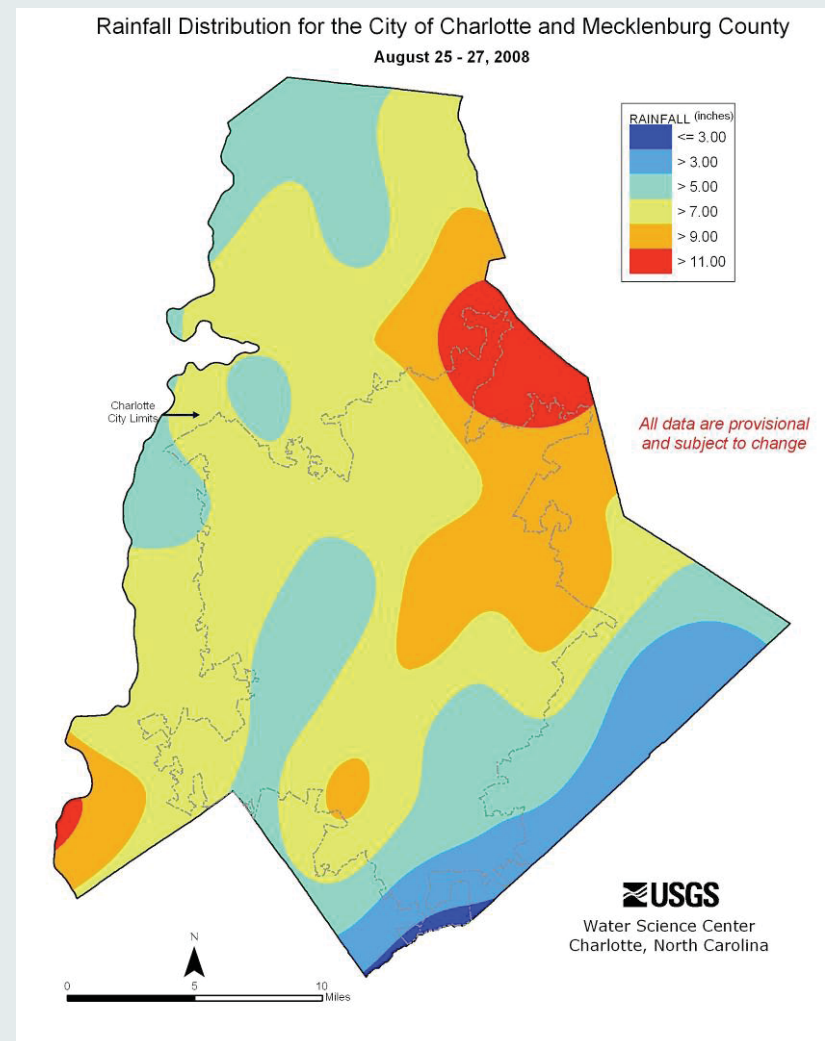
# **Local Implementation**

***Rainy Day Fund &  
Post-Flood Quick-Buy's***

***Charlotte, NC***

# Tropical Storm Fay

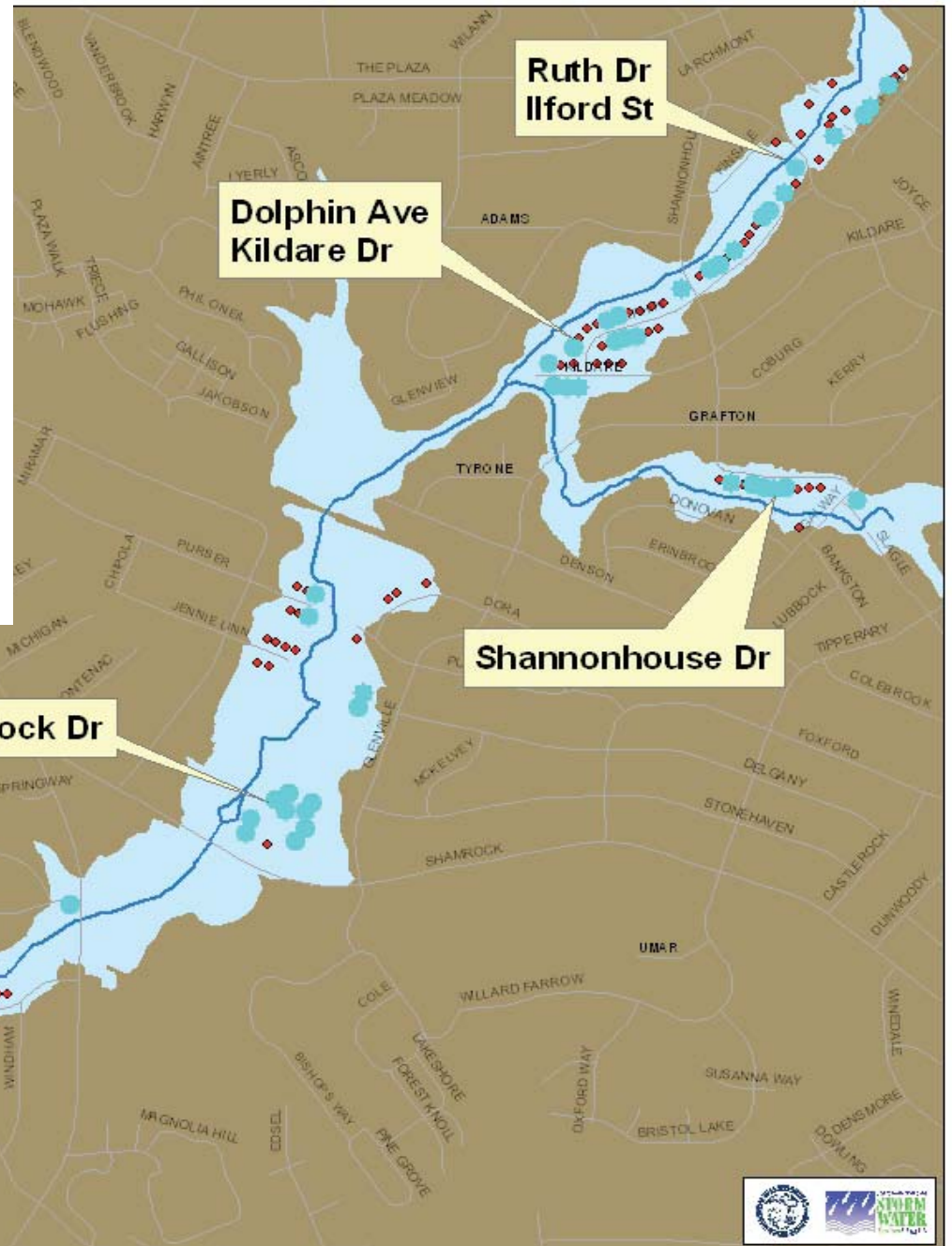
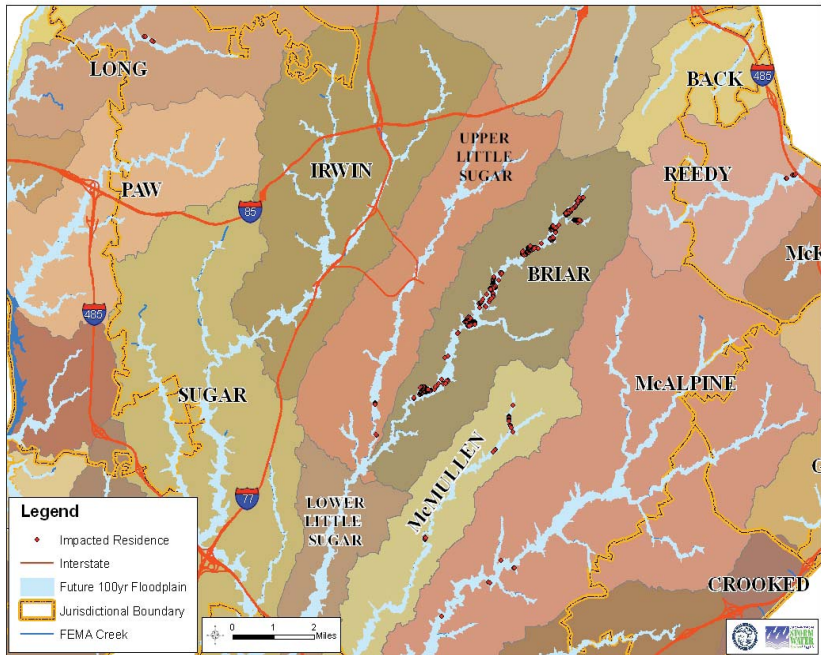
- Remnants of TS Fay
- Prolonged rainfall over 24 – 48 hours
- Intense rainfall in parts of County between 12:00 AM – 6:00 AM on August 27
- No Federal Disaster



# Damage Summary

- **SUMMARY of Impacted Floodplain Structures**
  - 600 - Total Residences flooded
  - 400 - Residences with flooding within living space
  - Flood depths from 1" – 58"
  - 100's of Vehicles severely flooded
- **Additional 125 structures would have flooded without prior mitigation**





# Proposed Quick Buy

- \$4M in “Rainy Day Funds”, \$2M in Park Funds, \$200k in Sewer Funds
- Opportunity:
  - Reduce future flood losses
  - Acquire for less than pre-flood market value
  - Provide flood victims an option
  - Provide the County with contiguous land





# Quick Buy Overview

- BOCC adopted Resolution October 2008
- Eligibility Criteria:
  - Flooding in living space and in Floodway or
  - Located along a Greenway priority area
- Priority to contiguous, public land
- County computes offers based on Fair Market value before the flood, minus damages



**Former KinderCare on Eastway @ Briar**

# Quick Buy Results

- **50 Properties Acquired**
  - Offers within 3-4 months after flood
  - 2 non-participants
  - Avoided about 15 Elevated homes in Floodway
  - 25 acres of additional greenway or Open Space



# Overall Accomplishments

## Years 2000 - 2010

- **Acquisition Results**

- **250+ buildings** removed from the floodplain (90% participate)
- **140 +/- acres** of deeded public open space
- Over **400 families/businesses** impacted
- No Federally Declared Flood Disasters



# Plan Ahead for Smart Growth Opportunities Before Disaster Strikes!



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