

WATERSHED STUDIES COMPREHENSIVE PROGRAM

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and Mike Ways

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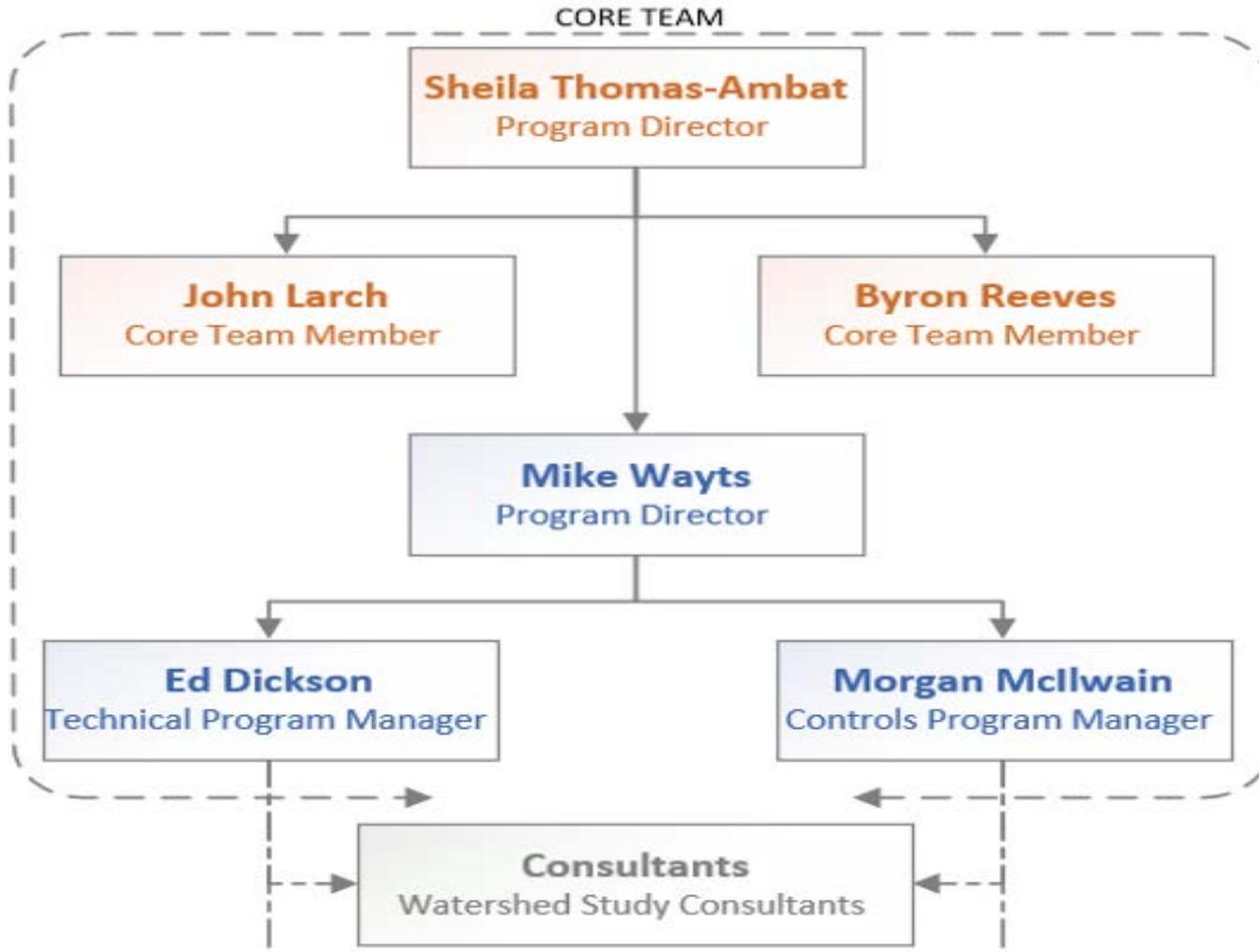


BACKGROUND

In FY 2019, City Council authorized a fee increase and directed staff to complete a stormwater masterplan for the entire City within five years.

- Stormwater Program and Utility Initiated in 1995 → Clean Water Act, Water Quality
- Stormwater Fee Increase in 2007 → Flooding and System Repairs, Water Quantity, Subsequent Fee Increases FY 16 and 18
 - Initially Citizen Complaints
 - Small Watershed Studies – CIP Projects
 - Lack of Comprehensive knowledge of City Wide Needs
- Stormwater Fee Increases in FY 19 – Freese and Nichols Program Manager

PROGRAM TEAM



AGENDA

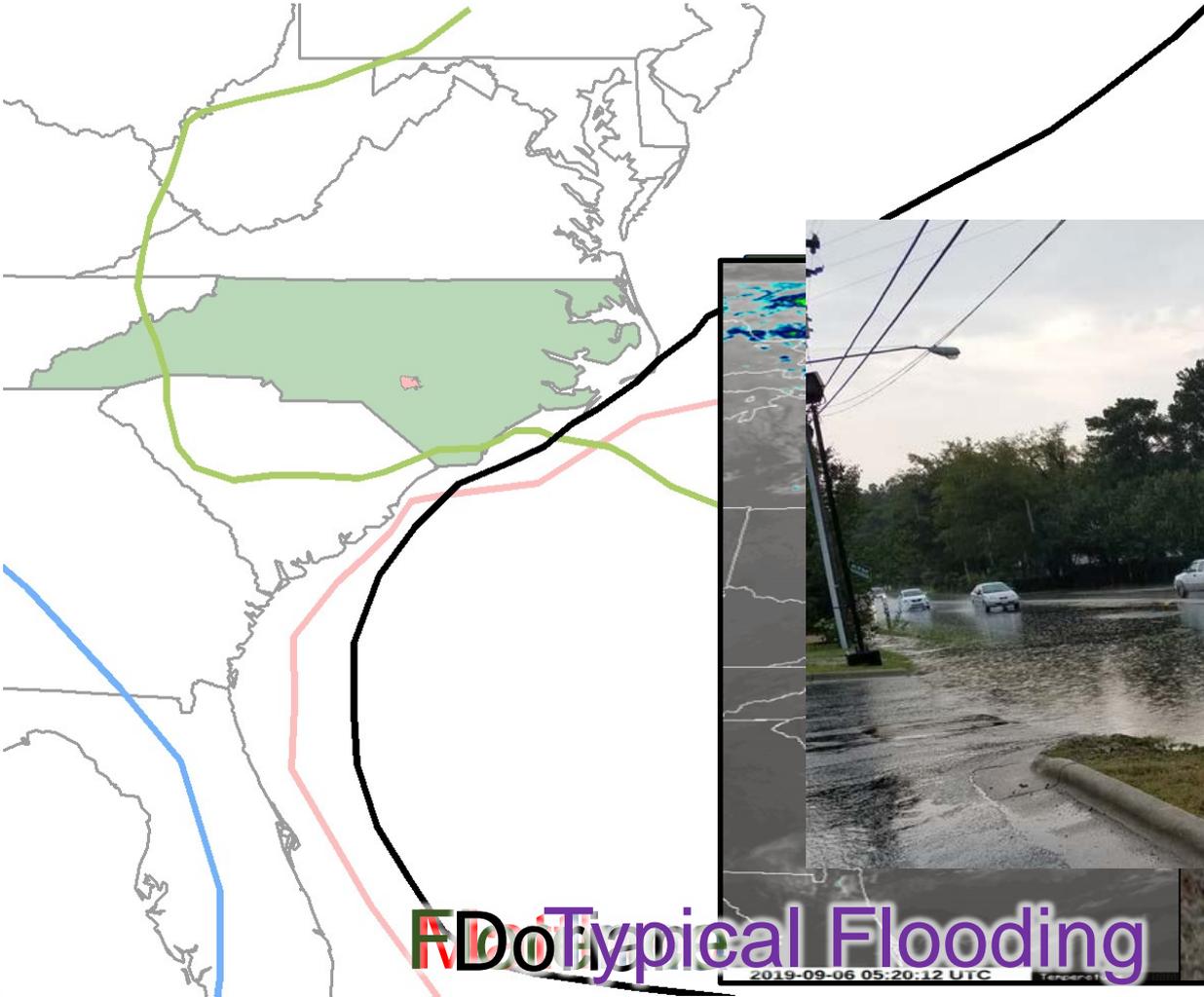
- Background
- Risk Assessment
- Prioritization
- Next Steps



BACKGROUND



PROJECT DRIVERS



FD Do Typical Flooding

2019-09-06 05:20:12 UTC Temperature

ORIGINAL PLAN

Stormwater utility fee increase

- Citywide Stormwater Master Plan
- Study all the Watersheds

Pros

- Comprehensive

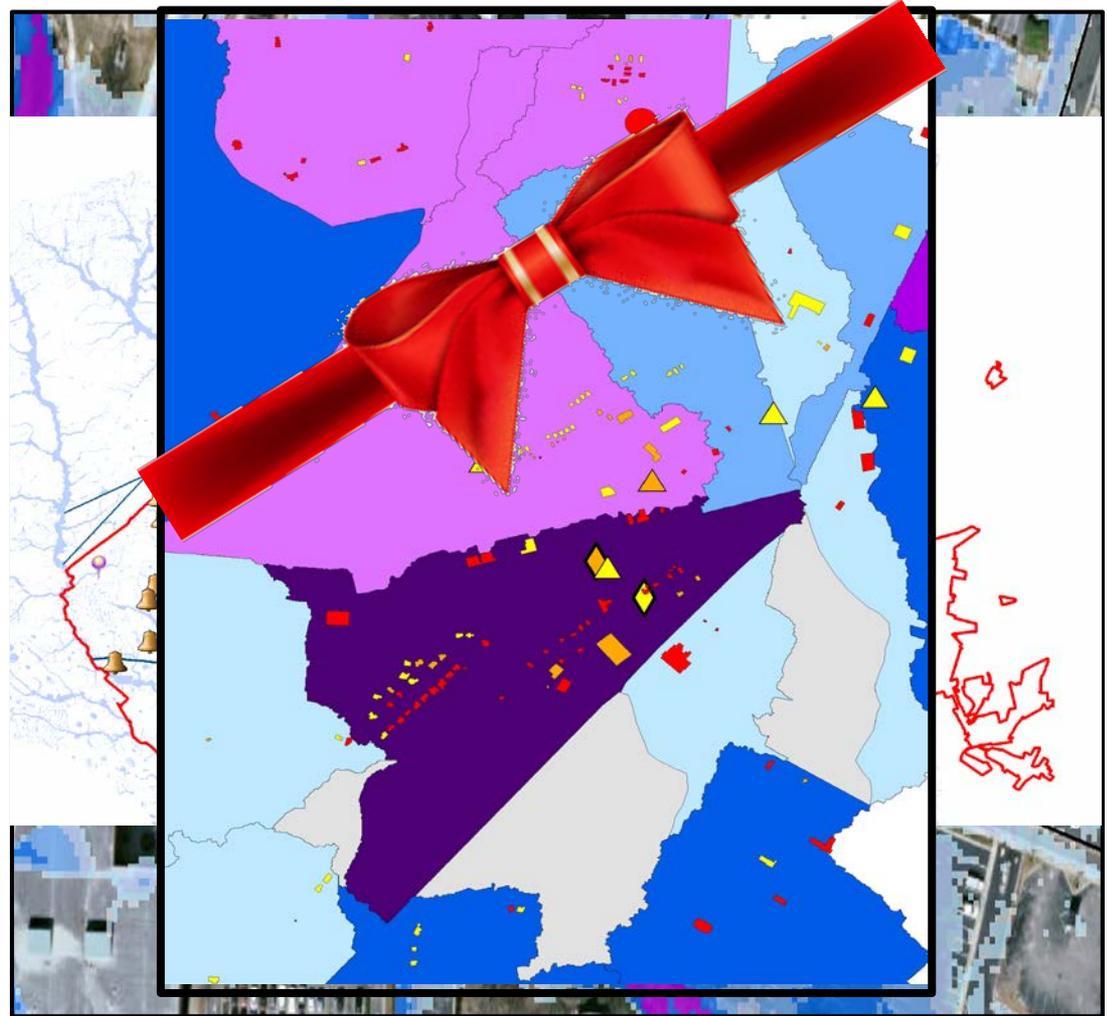
Cons

- Slow Process
- Expensive
- Some Things Don't Need to Be Studied

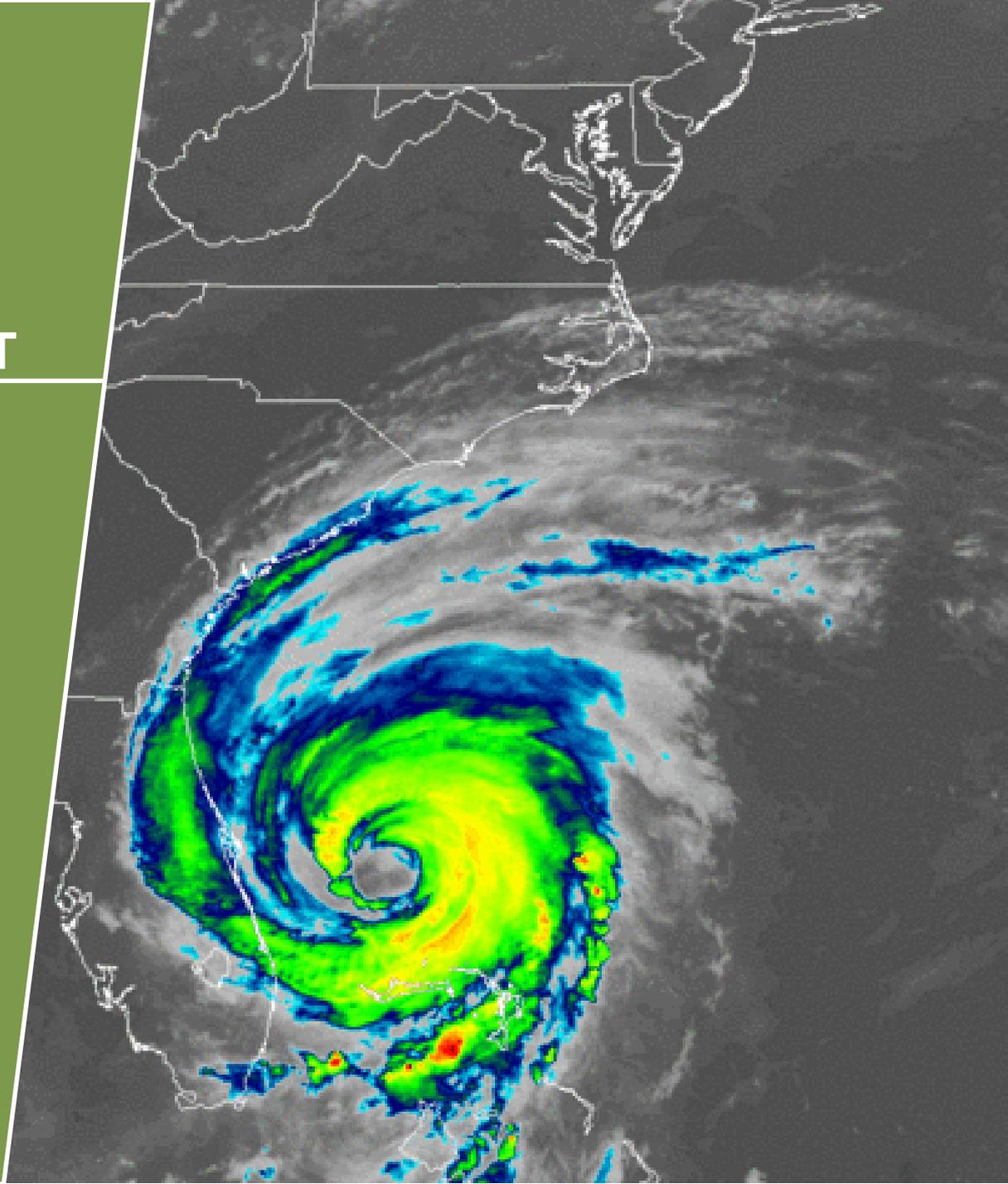


PLAN DRIVEN BY DATA

- Risk Assessment and Prioritization Process
- Overlay Historical Knowledge and Modeling Results
- Faster and More Efficient than Original Plan



RISK ASSESSMENT



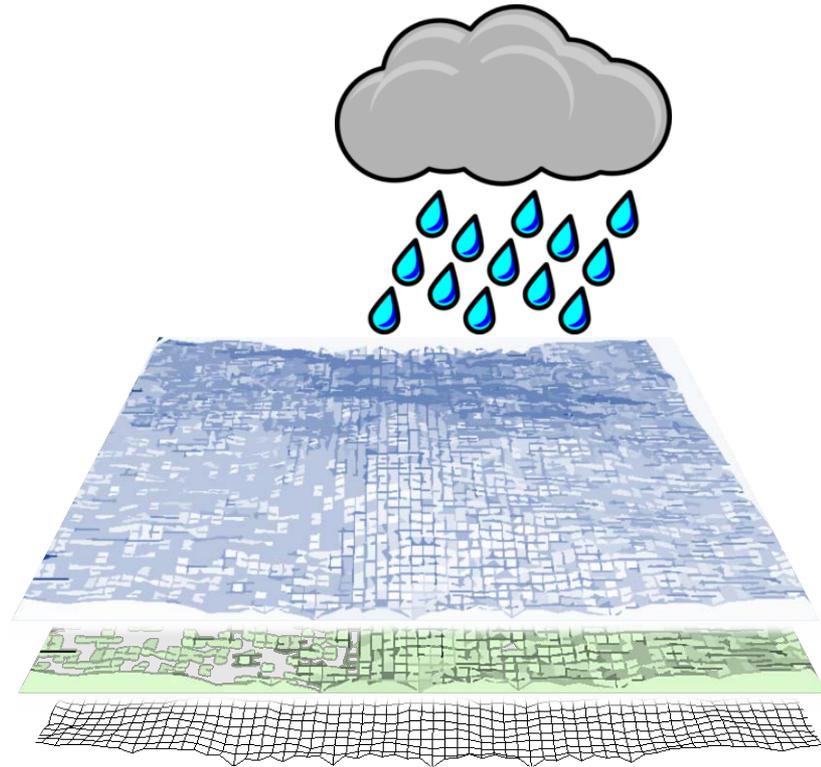
MODELING CONCEPT

Direct Benefits:

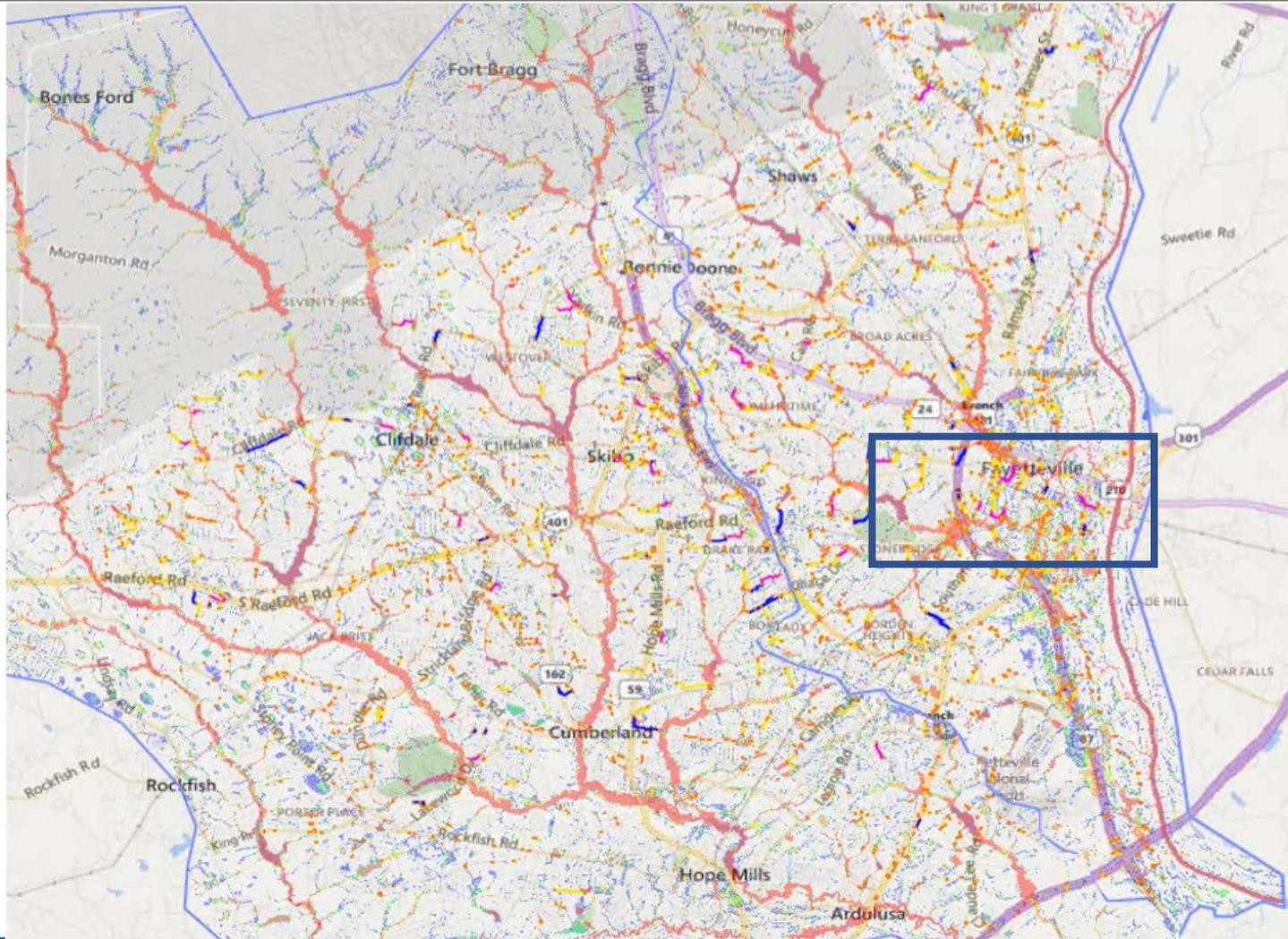
- High level planning
- Validation
- Identify problem locations

Additional Benefits:

- Emergency forecasting
- Development tool



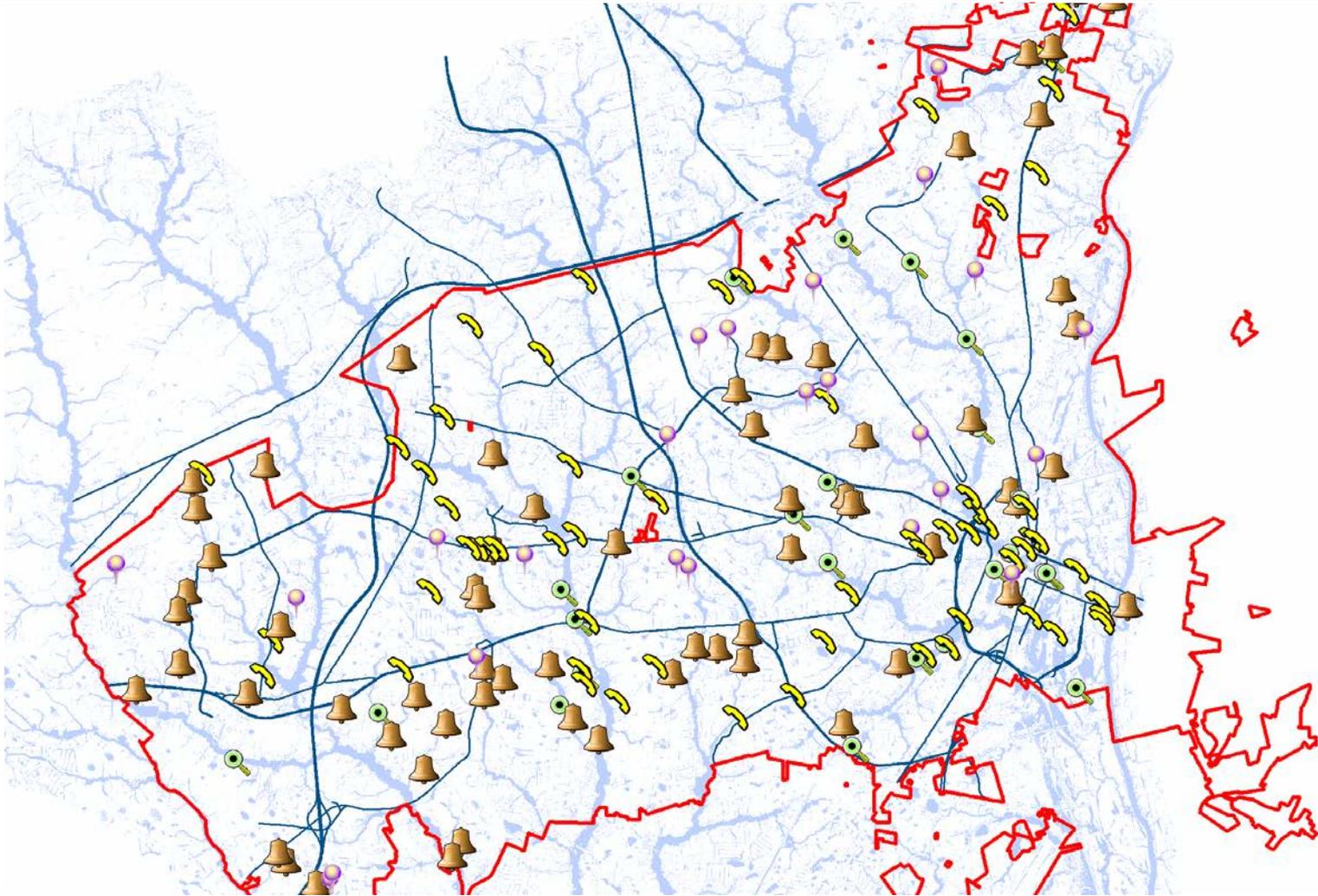
CITYWIDE RAIN ON MESH MODEL



CITYWIDE RAIN ON MESH MODEL



VALIDATION



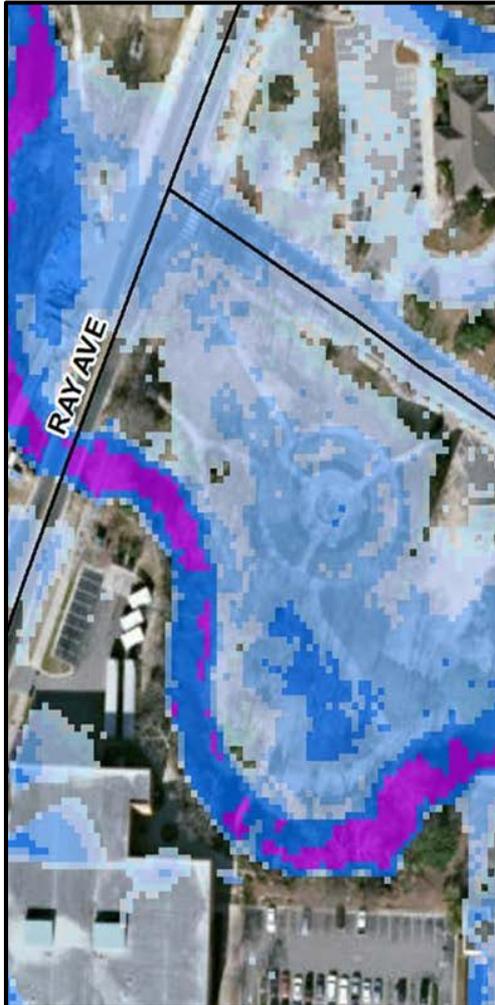
- ◆ HWMs
- 📞 911 Calls
- 🔔 CityWorks
- 📍 MainTrac
- 🔍 Interviews

VALIDATION – HURRICANE MATTHEW



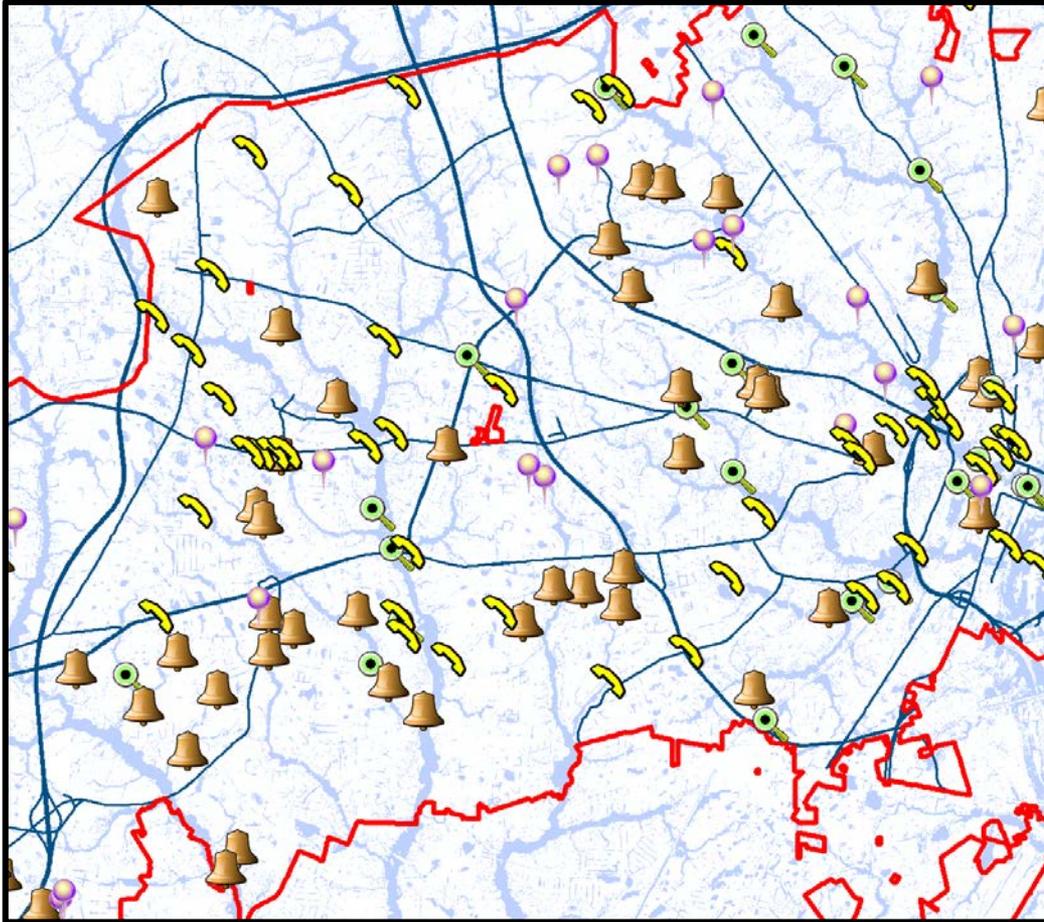
Blanton's Wash Center
(Max Model Depth = 0.7 ft)

VALIDATION – HURRICANE FLORENCE



Masonic Temple
(Max Model Depth = 2.7 ft)

MODEL LIMITATIONS



90% Accurate, Beyond Expectations!

However...

- Small-diameter stormwater infrastructure not in model
- No detailed survey or conditions assessment
- Flooding may exist that is not reflected in the model

PRIORITIZATION



OBJECTIVE



- Create analytical and defensible process
- Determine priorities for City's resources
- Address historical and persistent flooding issues
- Proactively plan for future

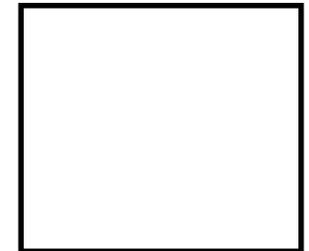
SCORING CRITERIA



Structures

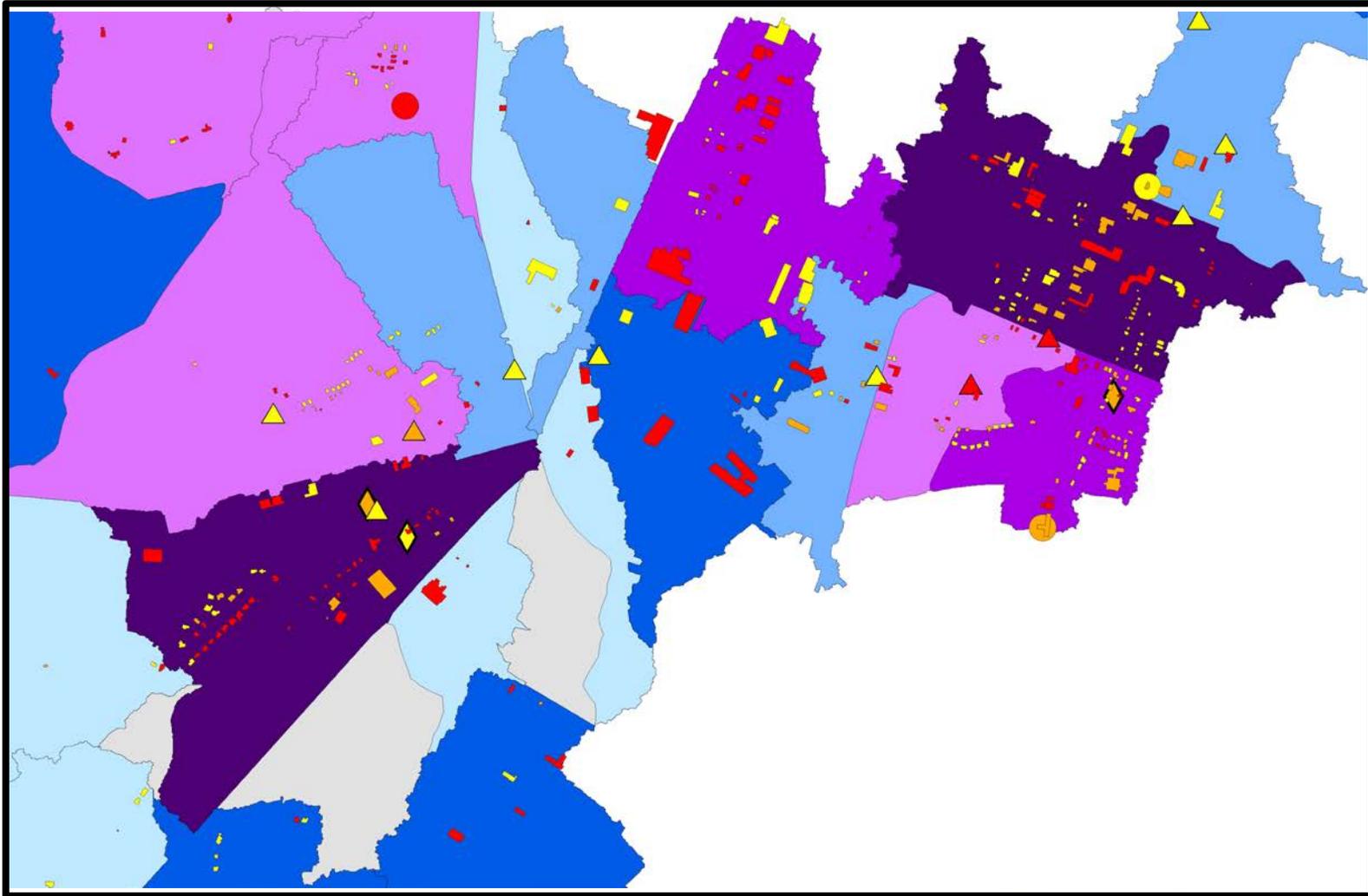


Crossings



Facilities

WATERSHED PRIORITIZATION



NEXT STEPS

(Parallel Paths)

1. Onboard Consultants
2. Asset Management
3. Economic Development
4. Quick Start Projects
5. Flood Warning System
6. Public Outreach



ONBOARD CONSULTANTS

- **Package study areas**
 - Prioritized
 - Non-study areas
- **Develop solutions**
 - Fix existing issues
 - Create development opportunities
- **Prioritize implementation**
 - Rank projects for implementation
 - Budget, schedules for efficient implementation



ASSET MANAGEMENT

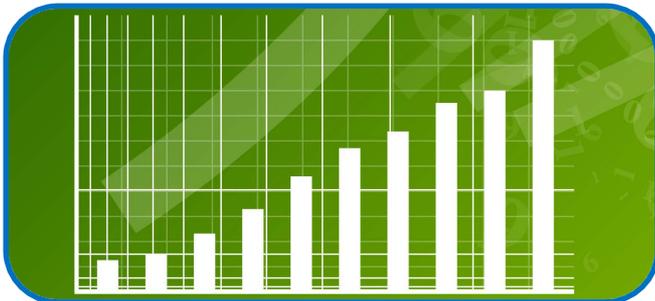


Get better data

- Maximize study efforts
- Enterprise Data Management System



Become proactive



Provide community access to data

- Development community
- Economic development

ECONOMIC DEVELOPMENT

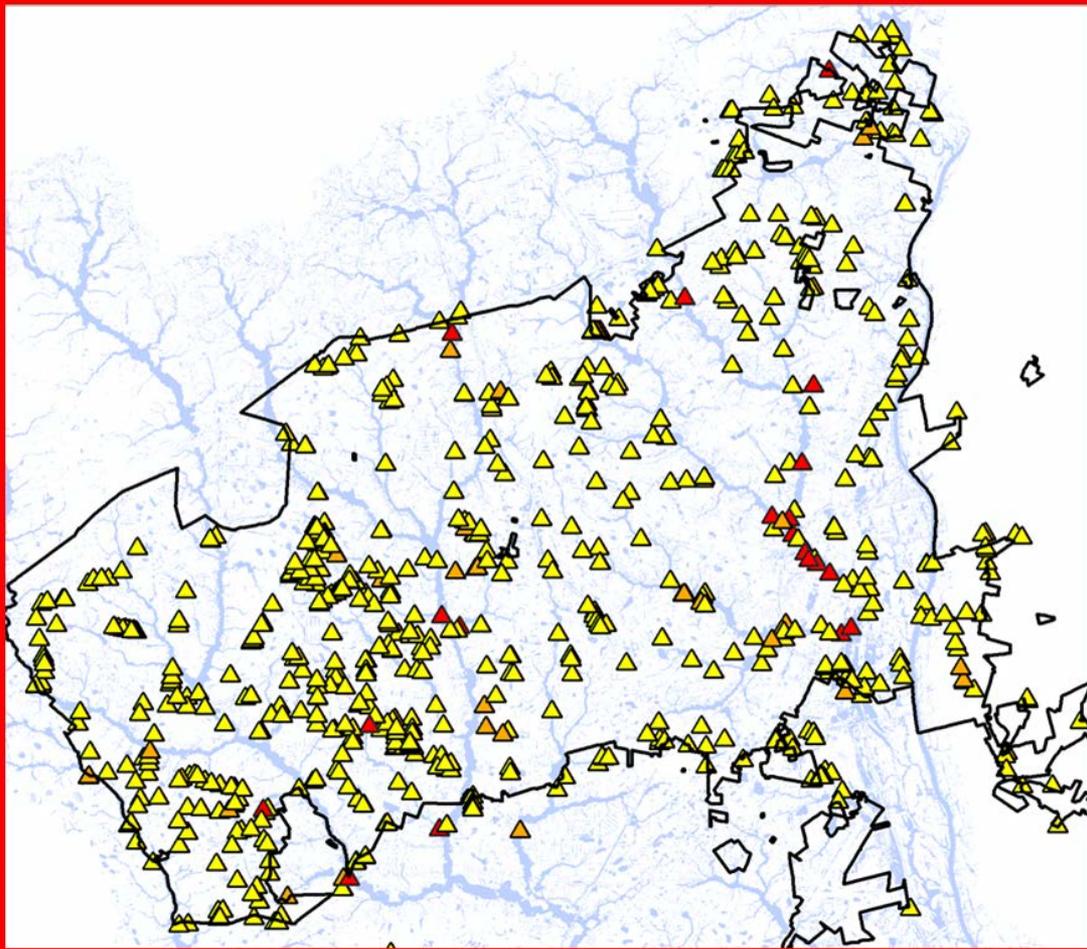
- Research National Approaches
- Solicit Input on Locations For Economic Development
- Two for One (Fix Existing Problems, Provide Capacity for New Development)



QUICK START PROJECTS

- Road C
- Exped
- backlo

Project Name
Sunbury Drive
Spruce Street Phase III
Louise Street
Raeford Rd Flood Plain Bench
Breezewood
Roxie Ave Phase I / Sandra Drive
North Street
Neville Street
Broyhill Drive
Bonnie Doone 5
Bonnie Doone 2
Yadkin
Godfrey Outfall Phase 1
Godfrey Outfall Phase 2
Buckhead: Kingsford Drainage Improvements
Buckhead: Coventry Rd Culvert & FPB / Glenwick, De
Bonnie Doone I: Area 1 (WEST Outfall 3)
Spruce Street - Acorn Street Phase 2
Bonnie Doone Area 12 (Kornbow Outfall 2)
Buckhead: Ferncreek Norwood





Turn
Around
Don't
Drown

Click Here

Project Name	Funded	ment
Sunbury Drive	No	
Spruce Street Phase III	Yes	
Louise Street	Yes	
Raeford Rd Flood Plain Bench	Yes	
Breezewood	Yes	
Roxie Ave Phase I / Sandra Drive	Yes	
North Street	Yes	
Neville Street	Yes	
Broyhill Drive	Yes	
Bonnie Doone 5	Yes	
Bonnie Doone 2	Yes	
Yadkin	Yes	
Godfrey Outfall Phase 1	Yes	
Godfrey Outfall Phase 2	Yes	
Buckhead: Kingsford Drainage Improvements	Yes	
Buckhead: Coventry Rd Culvert & FPB / Glenwick, De	Yes	
Bonnie Doone I: Area 1 (WEST Outfall 3)	Yes	
Spruce Street - Acorn Street Phase 2	Yes	
Bonnie Doone Area 12 (Kornbow Outfall 2)	Yes	
Buckhead: Ferncreek Norwood	Yes	
Case Fear 1 Watershed Study	No	
Case Fear 2 Watershed Study	No	
Blount Creek Watershed Study	No	
Beaver Creek 1 Watershed Study	No	

BC&HB Study Site 22 - Hybart's Branch and Morganton	No
BC&HB Study Site 17 - Morganton Road	No

FLOOD WARNING SYSTEM



SCHEDULE OVERVIEW

1. Onboard Consultants – Now through Spring
2. Asset Management – Framework this Month
3. Economic Development – Now through Summer
4. Quick Start Projects – Now through Summer
5. Flood Warning System – TBD (Pending Grant)
6. Public Outreach – Throughout Program (Studies Complete by 2023)

QUESTIONS?

