

Public Meeting #1



Brookshire Lane/Beasley Road Stormwater Improvements

May 30, 2013



Purpose of Public Meeting #1

- Provide information on the Brookshire/Beasley Stormwater Improvements project
 - Existing conditions
 - Work completed
- Solicit comments and feedback on stormwater issues in the project area
- Get stakeholders involved in the process
- Provide contact information

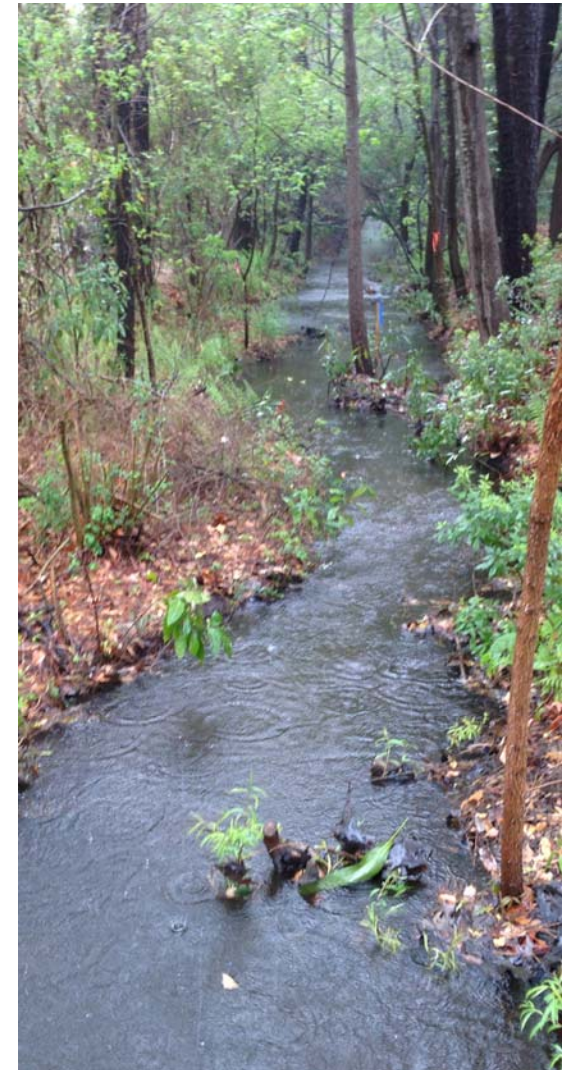


URS Corporation – North Carolina
201 N. Front Street, Suite 509
Wilmington, NC 28401
Nick Lauretta, PE
910-667-2392

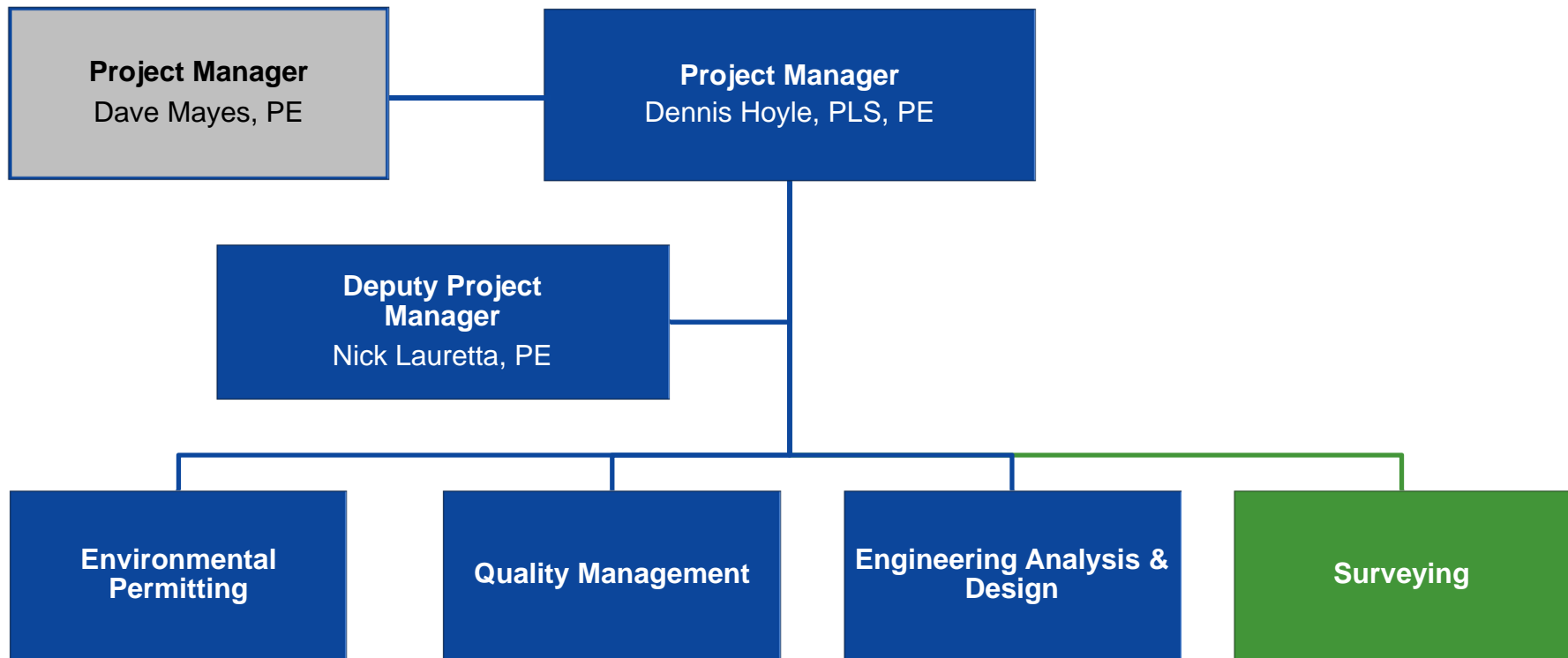


Overview

- Organizational Chart (Project Team)
- Project Goals and Scope
- Background Information
 - Hewletts Creek Watershed
 - Water Quality
- Existing Conditions
 - Survey Data
 - Environmental Conditions/Jurisdictional Features
 - Hydrologic and Hydraulic Modelling
 - Culverts/Channels/Bridge
- Project Timeline
- Historical Flooding



Organization Chart (Project Team)



Legend:

- Wilmington Stormwater Services
- URS Corporation – North Carolina
- Joyner Keeny, PLLC

Project Goals

Goals of the Brookshire Lane/Beasley Road Stormwater Improvement Project

1. Mitigate Flooding and Flood Related Problems (Protect Property)
 - Culvert replacement
 - Channel improvements
 - Bridge replacement
2. Provide for Long-Term Maintenance of Storm Drainage Structures and Channels
 - Improve access through existing drainage easements
 - Acquire new drainage easements
3. Improve Water Quality
 - Utilize JEL Wade Park constructed wetland
 - Reduce volume and sediment load through channel improvements



Project Scope

Replace Existing Culverts

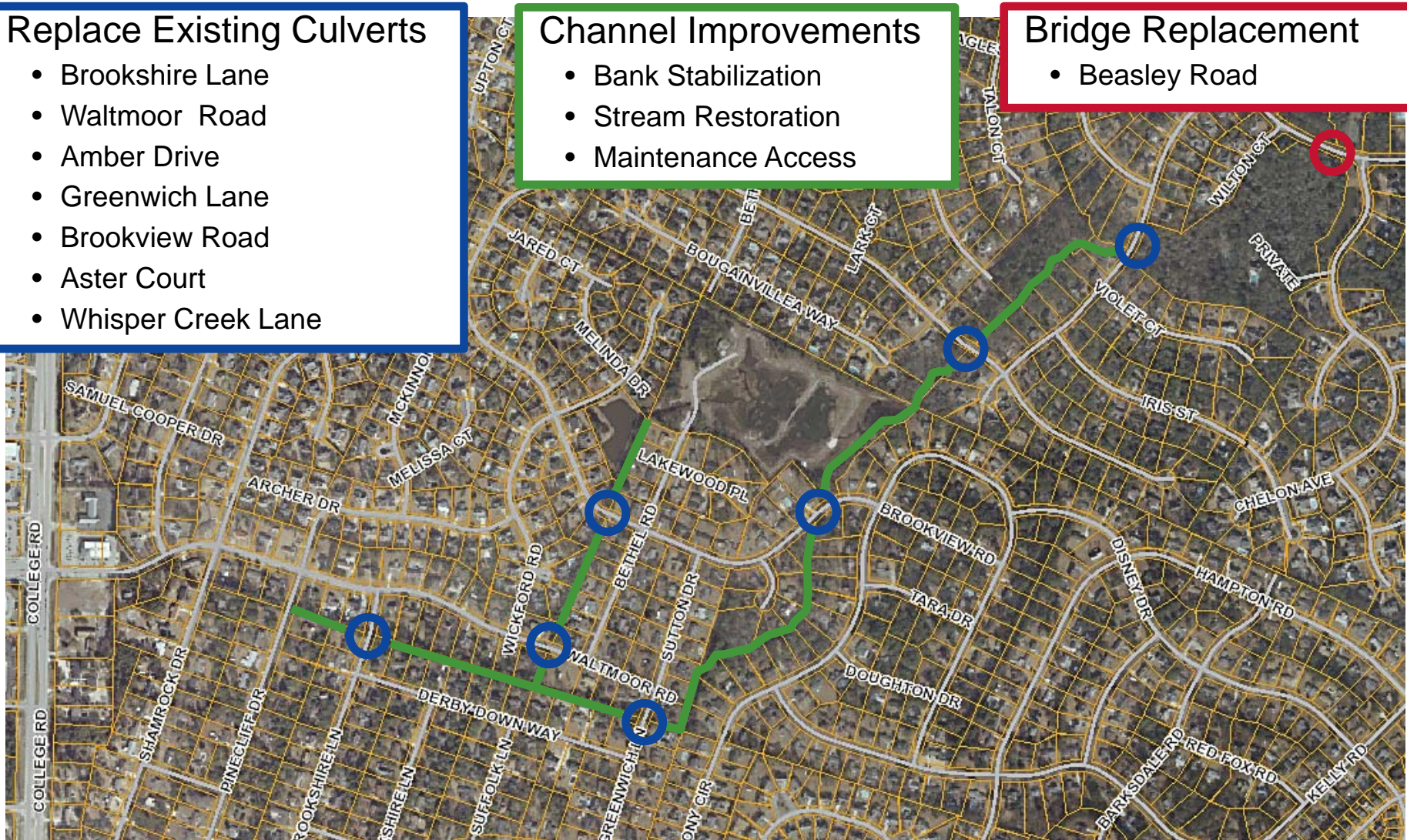
- Brookshire Lane
- Waltmoor Road
- Amber Drive
- Greenwich Lane
- Brookview Road
- Aster Court
- Whisper Creek Lane

Channel Improvements

- Bank Stabilization
- Stream Restoration
- Maintenance Access

Bridge Replacement

- Beasley Road





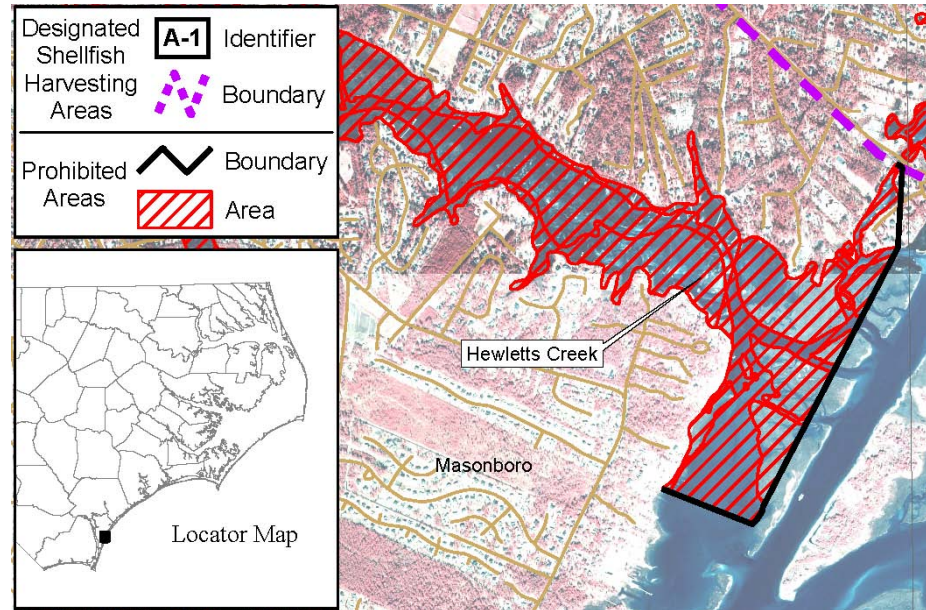
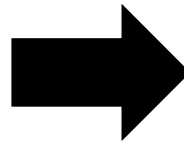
Background Information



Hewletts Creek Watershed



Or this map?

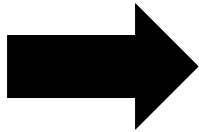


- Poor water quality in Hewletts Creek has led to closure of shellfish harvesting
- Stormwater runoff is the primary source of pollution
- The City has a restoration plan

What Improves Water Quality?

- **Best Management Practices** including stormwater wetlands, bioretention, stabilization of eroding stream banks, nutrient reduction and education to name a few...

This helps!



The J.E.L. Wade Wetland treats stormwater runoff from a 589 acre watershed

Reduces the volume of stormwater, fecal coliform, suspended solids and nutrients

- **And so will** City of Wilmington Stormwater Services' Capital Improvement Projects like the Brookshire/Beasley Stormwater project

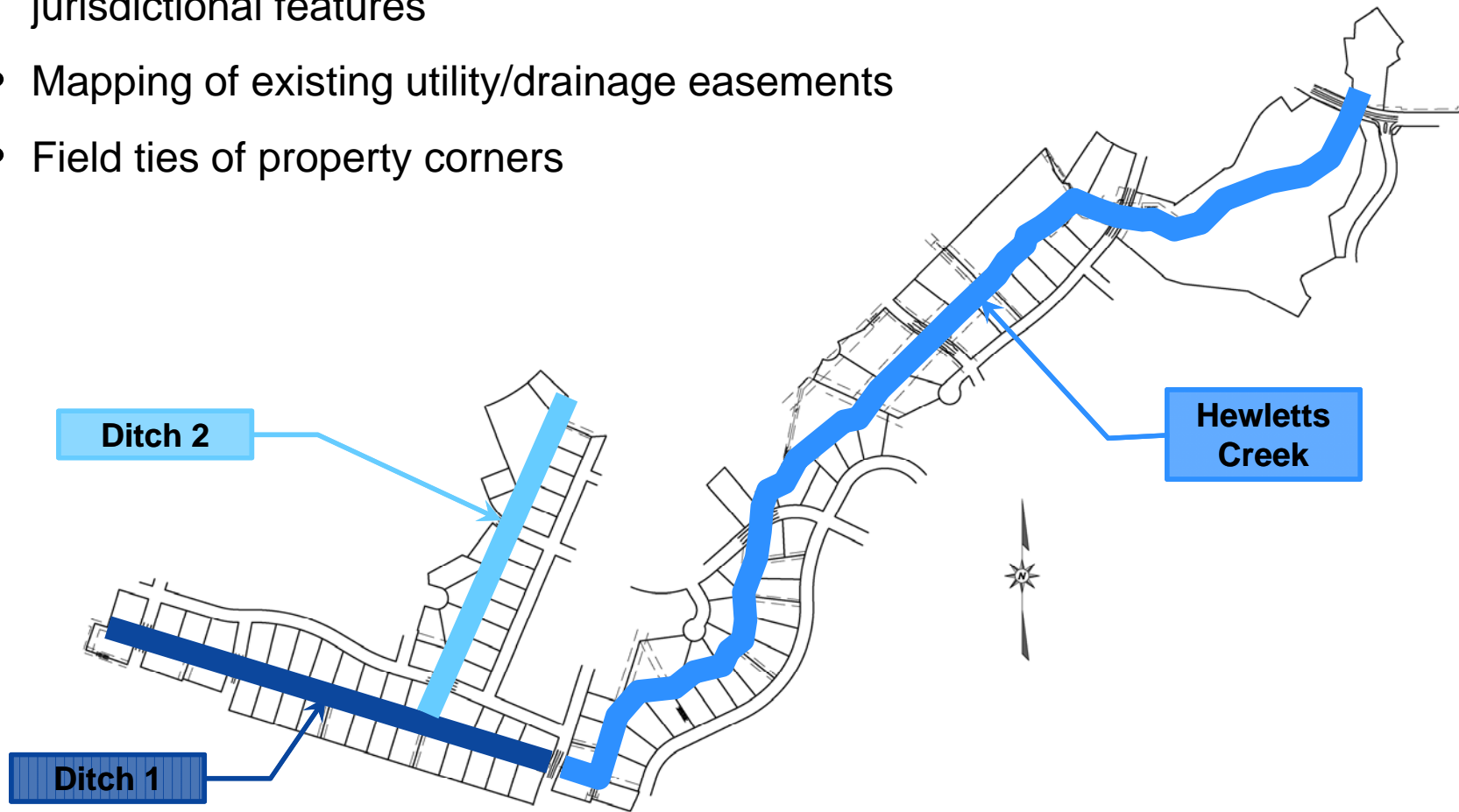


Existing Conditions



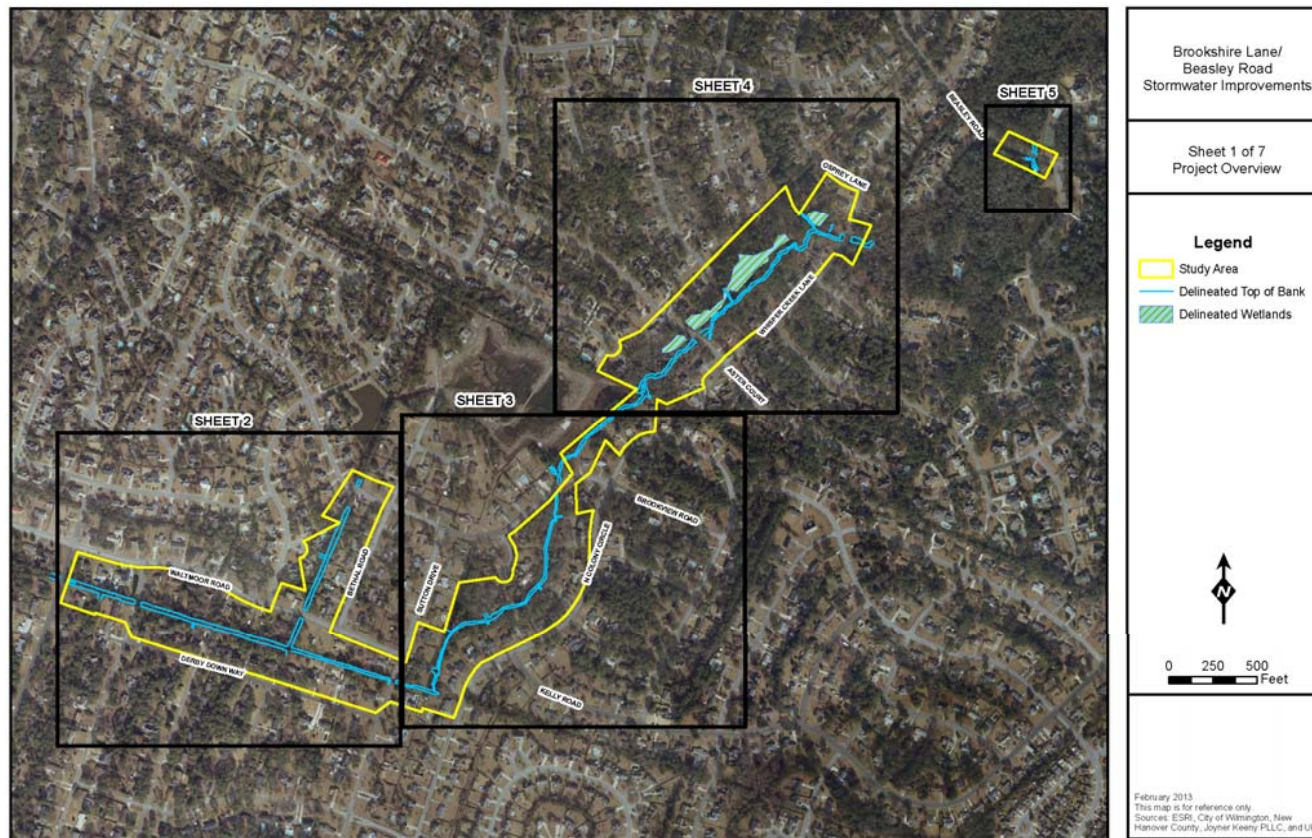
Survey Data

- Survey conducted Nov-Dec 2012 by Joyner Keeny, PLLC
- Detailed topographic mapping of culverts, bridges, drainage ditches and jurisdictional features
- Mapping of existing utility/drainage easements
- Field ties of property corners



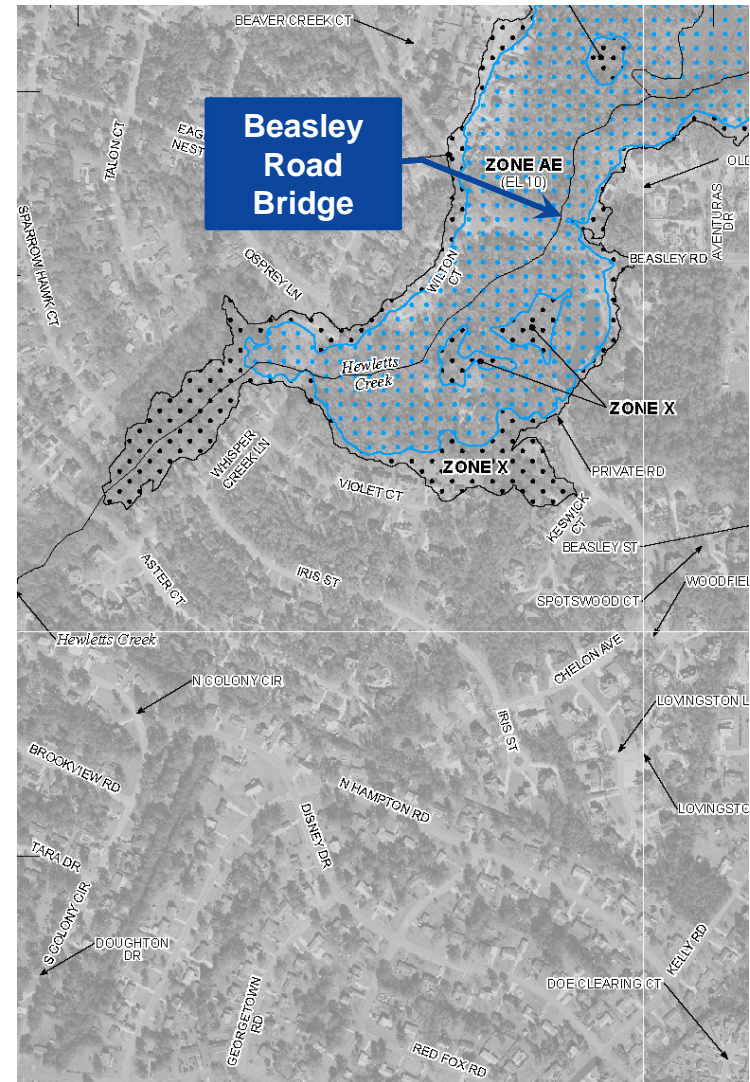
Environmental Conditions/Jurisdictional Features

- Site visits conducted on Nov 14, 2012 and Dec 4, 2012 by URS
- Met with Federal and State environmental regulators
- Regulations play a large role in design requirements for this project

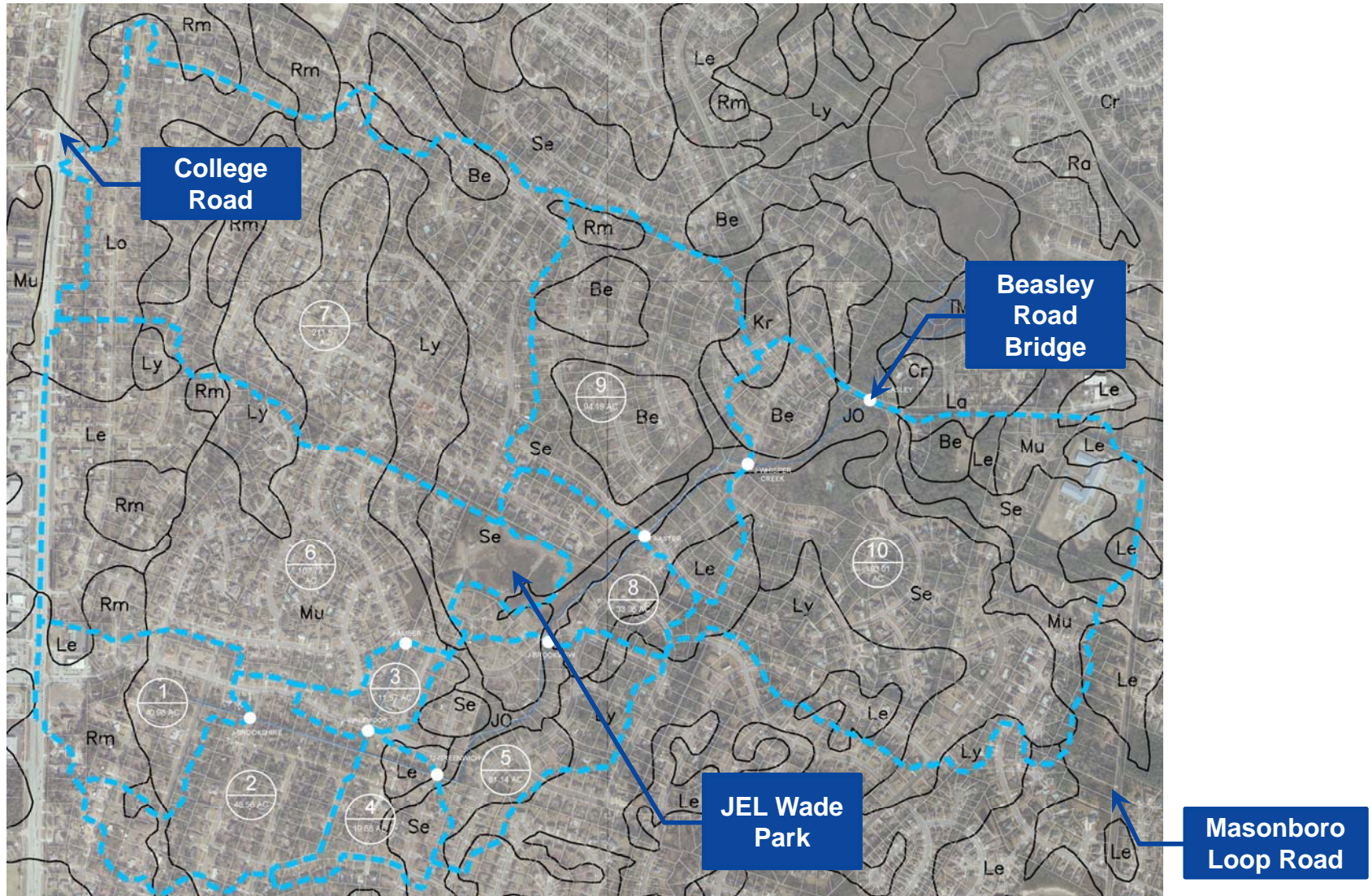


Environmental Conditions/FEMA Floodplains

- Beasley Road and Whisper Creek Lane located within the FEMA 100-year/500-year floodplains
- Result of coastal stillwater elevations from Atlantic Ocean
- Used to define downstream conditions of Hewletts Creek

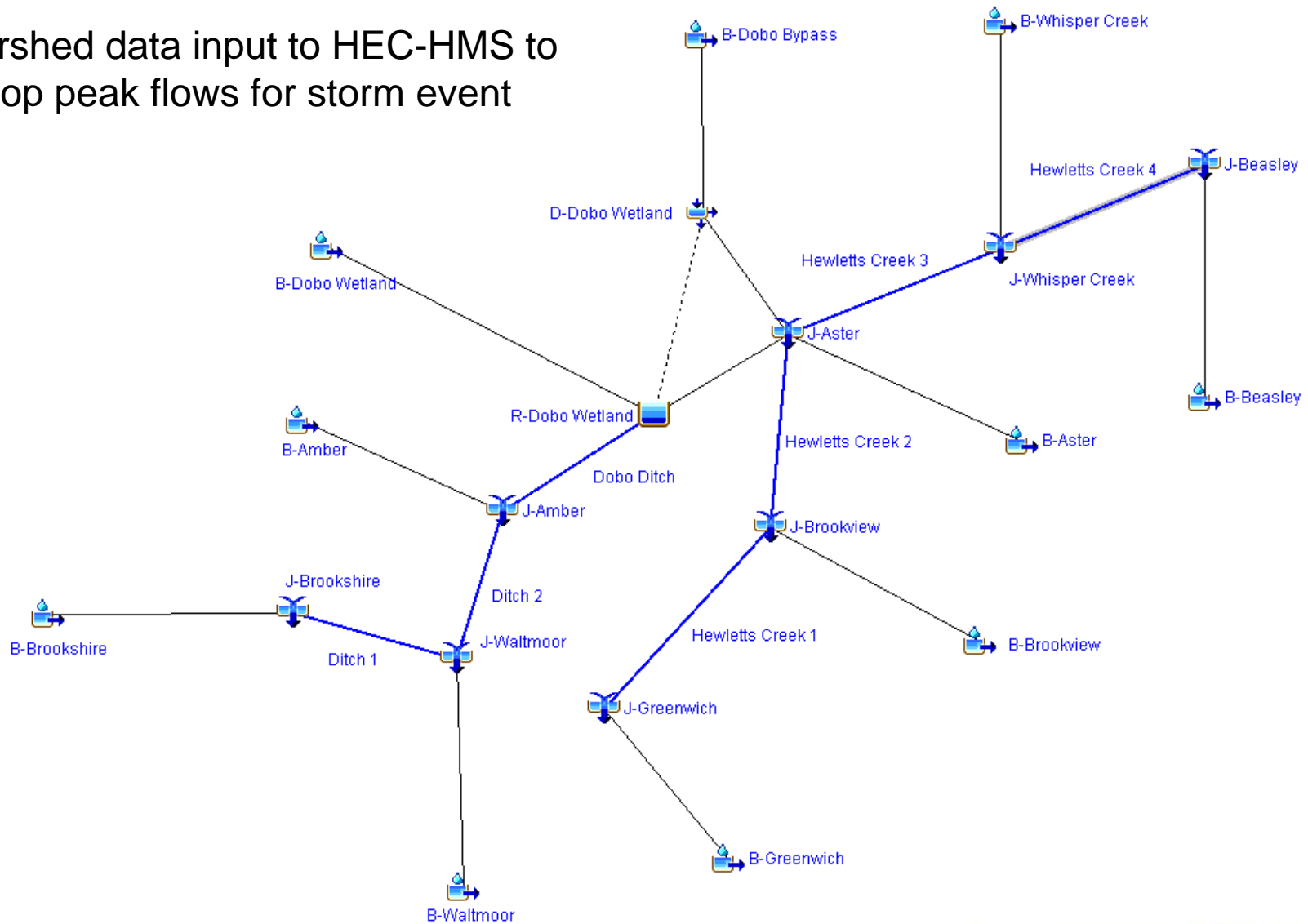


Watershed Delineation



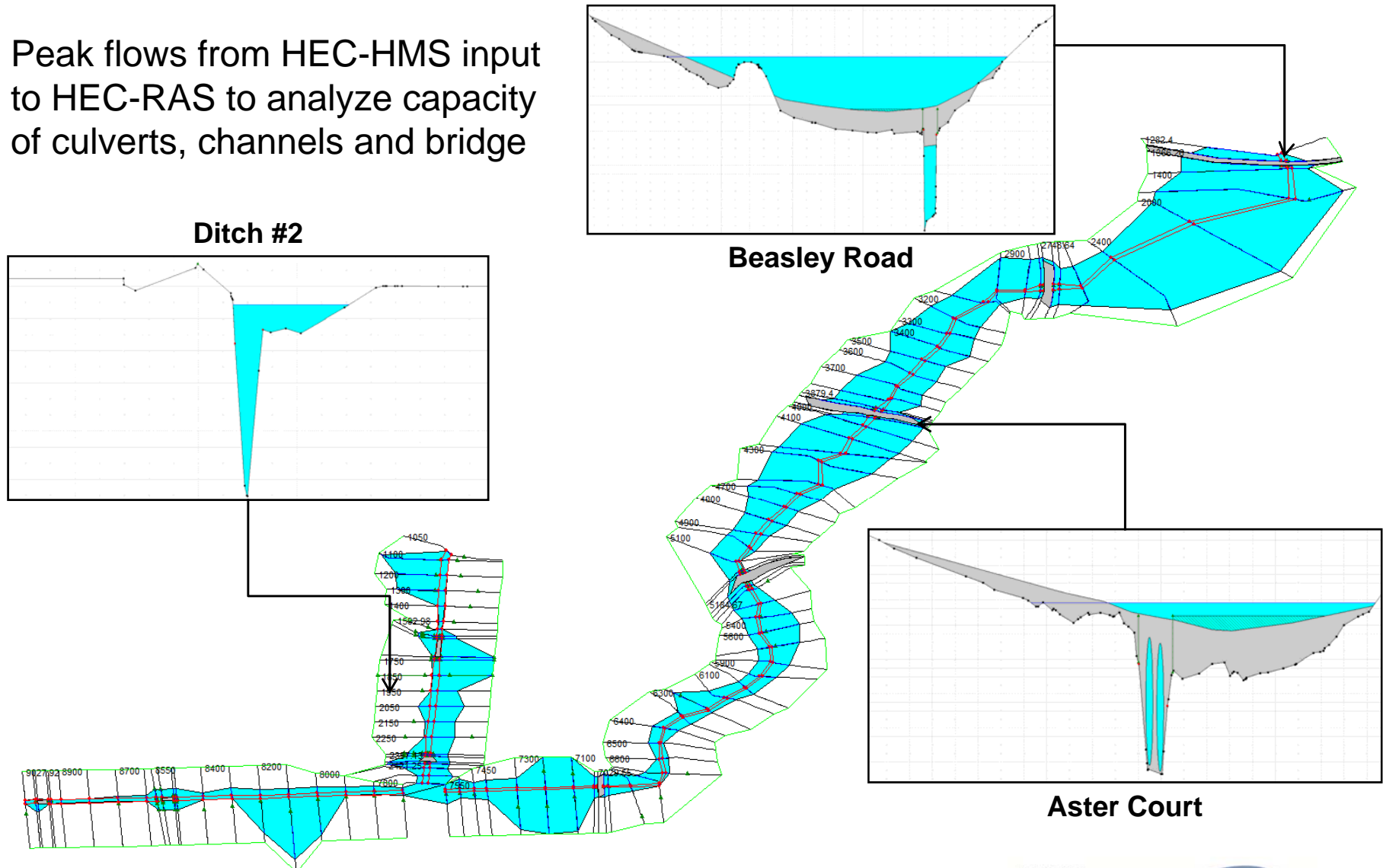
Hydrologic Modeling

Watershed data input to HEC-HMS to develop peak flows for storm event



Hydraulic Modeling

Peak flows from HEC-HMS input to HEC-RAS to analyze capacity of culverts, channels and bridge



Existing Culverts

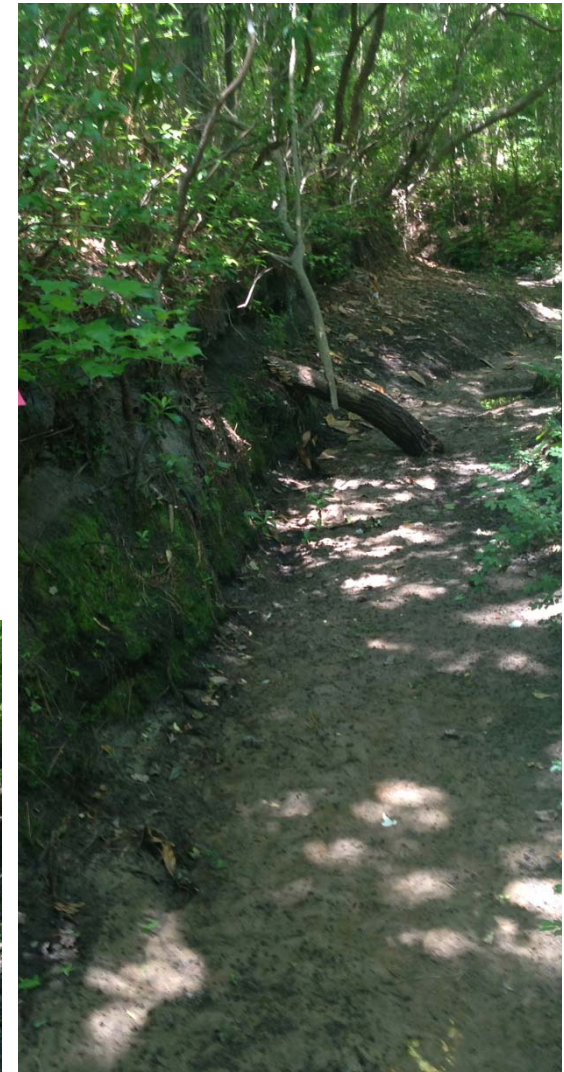
- Generally in poor condition
 - Near end of service life
 - **Undersized**
 - Standing water
 - Deteriorating pipes and headwalls
 - Full of sediment and debris
 - Poor choice of materials



Location	Road Elevation ft-MSL	Water Surface Elevation					
		2-Year		10-Year		100-Year	
	ft-MSL	ft-MSL	Flood Height (in)	ft-MSL	Flood Height (in)	ft-MSL	Flood Height (in)
Pinecliff Drive	26.26	26.67	4.9	26.95	8.3	27.47	14.5
Brookshire Lane	25.01	25.83	9.8	26.31	15.6	27.01	24.0
Waltmoor Road	24.69	25.36	8.0	25.79	13.2	26.38	20.3
Amber Drive	21.74	22.75	12.1	23.70	23.5	24.60	34.3
Greenwich Lane	22.73	22.97	2.9	23.14	4.9	23.32	7.1
Brookview Drive	19.07	19.41	4.1	19.60	6.4	20.37	15.6
Aster Court	16.23	16.67	5.3	17.02	9.5	17.56	16.0
Whisper Creek Lane	10.68	11.51	10.0	12.25	18.8	13.00	27.8

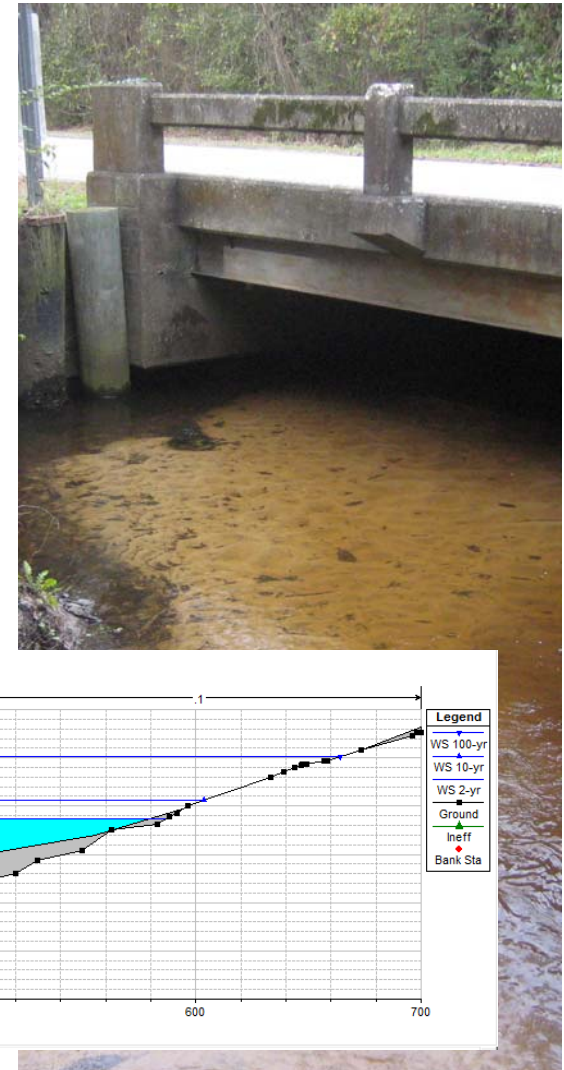
Existing Channels/Streams

- Most channels are stable and contained within a mature vegetative buffer
- Areas of bank erosion
- Channel is not contained within a drainage easement (restricted access)
- Overgrown
- Debris and trash restricting flow

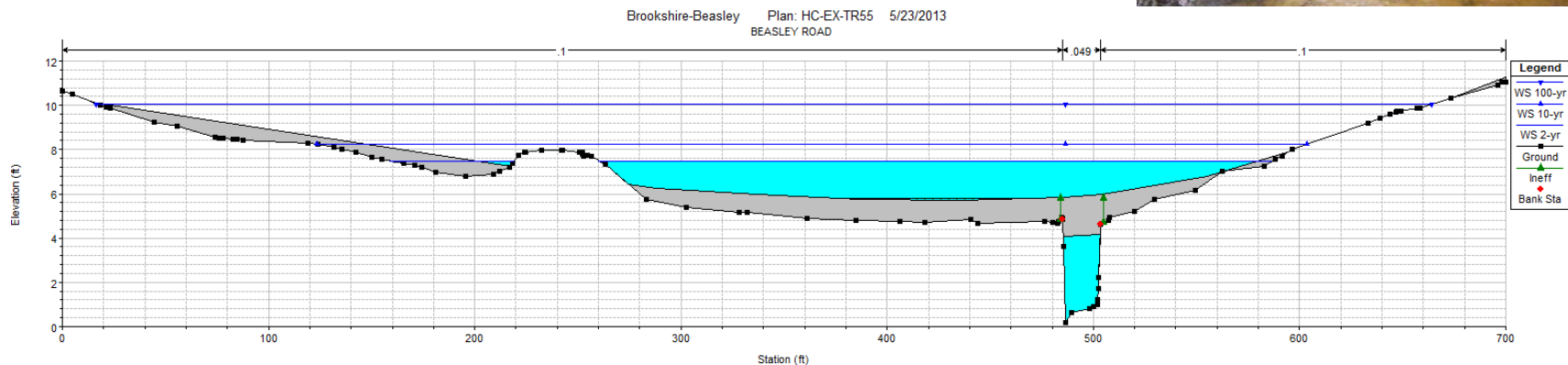


Existing Bridge at Beasley Road

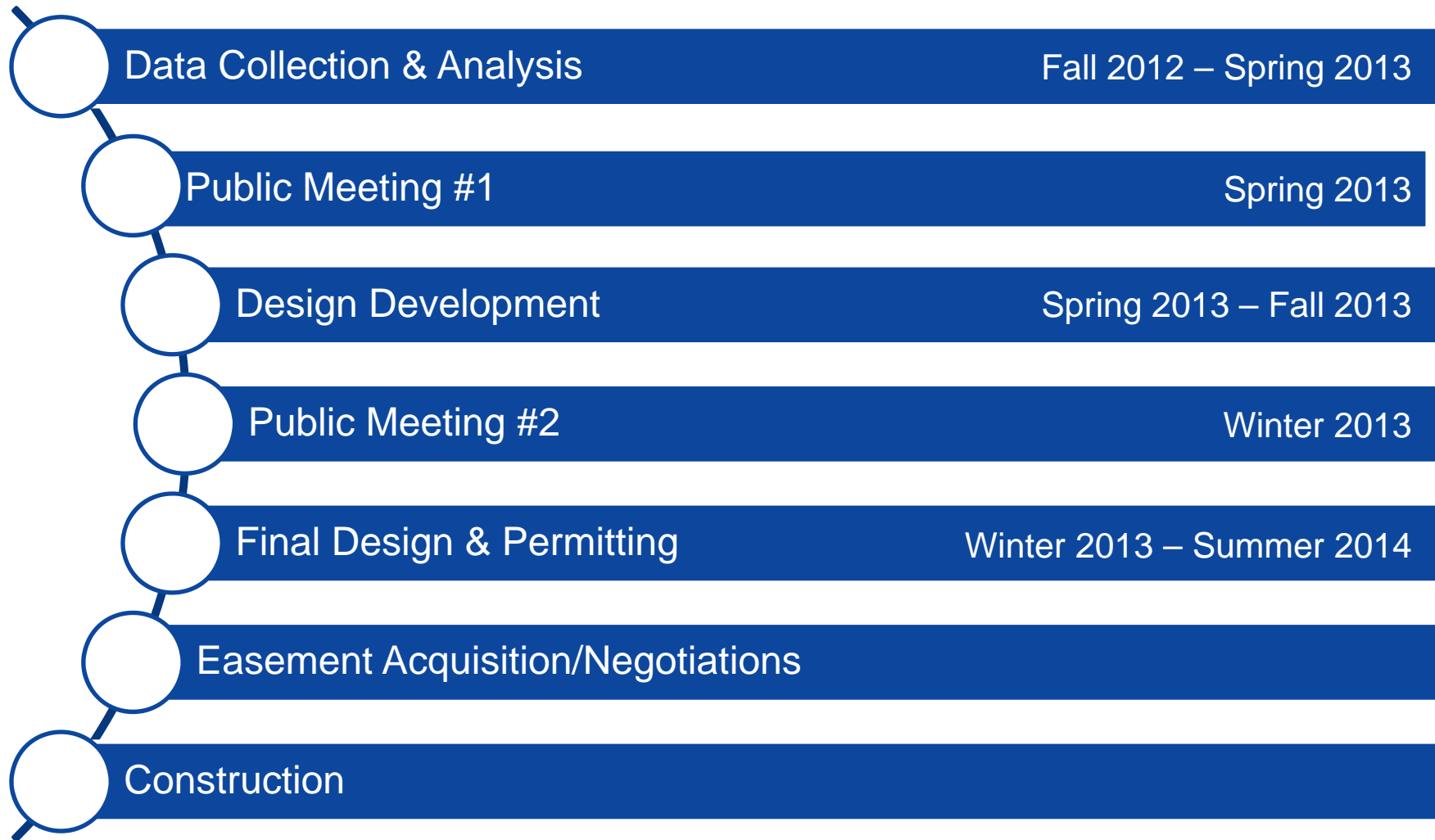
- Reinforced concrete floor on I-beams
 - Near end of service life
 - **Undersized**
 - Weight limit restrictions



Location	Road Elevation ft-MSL	Water Surface Elevation					
		2-Year		10-Year		100-Year	
	ft-MSL	ft-MSL	Flood Height (in)	ft-MSL	Flood Height (in)	ft-MSL	Flood Height (in)
Beasley Road	5.84	7.47	19.6	8.19	28.2	8.99	37.8

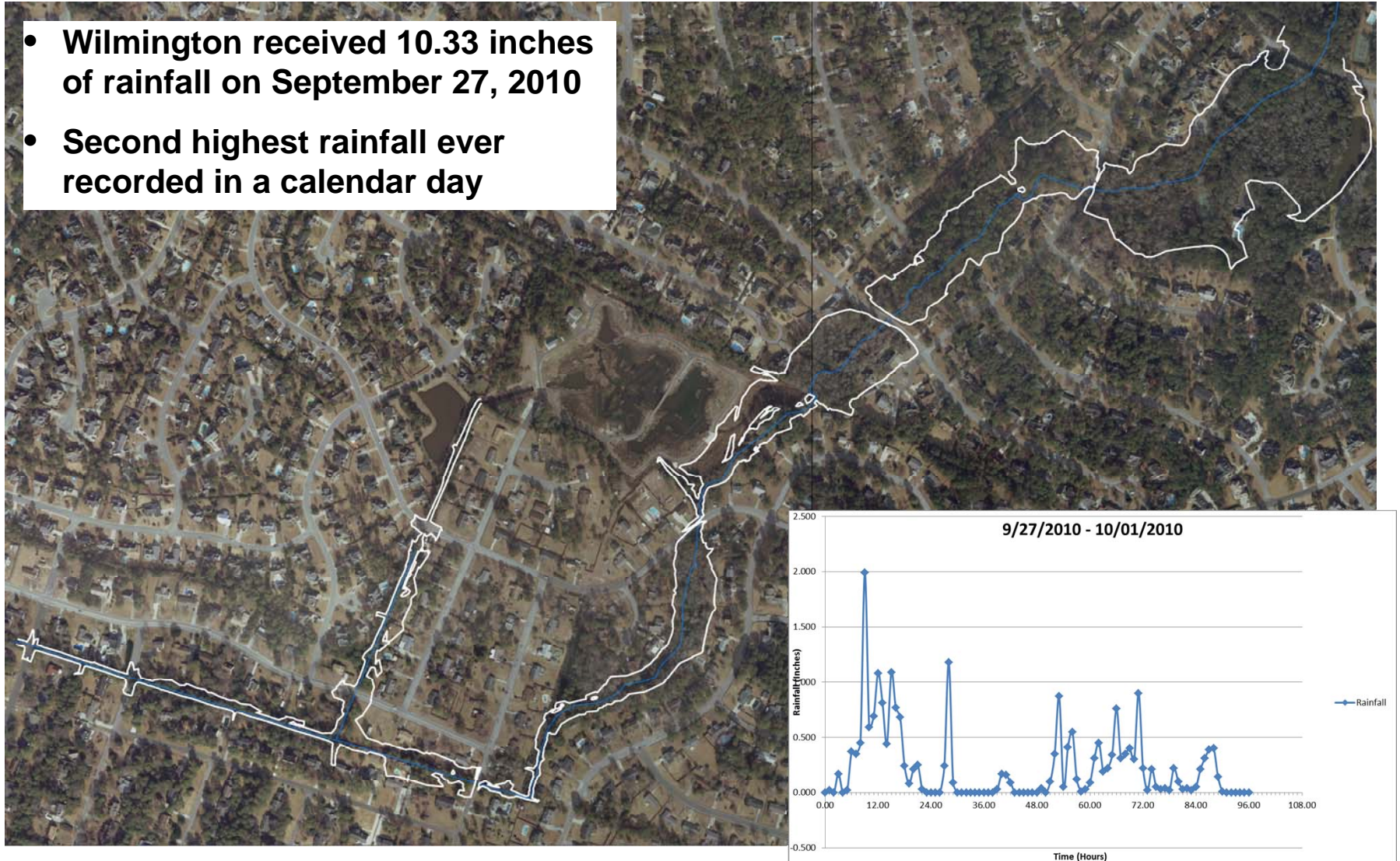


Project Timeline



Historical Flooding (something we can relate to)

- **Wilmington received 10.33 inches of rainfall on September 27, 2010**
- **Second highest rainfall ever recorded in a calendar day**



How you can help us...

- Have you seen flooding?
 - How much?
 - Where?
- What are your concerns regarding impacts to your property?
- What are your concerns regarding water quality?

Questions or Comments?