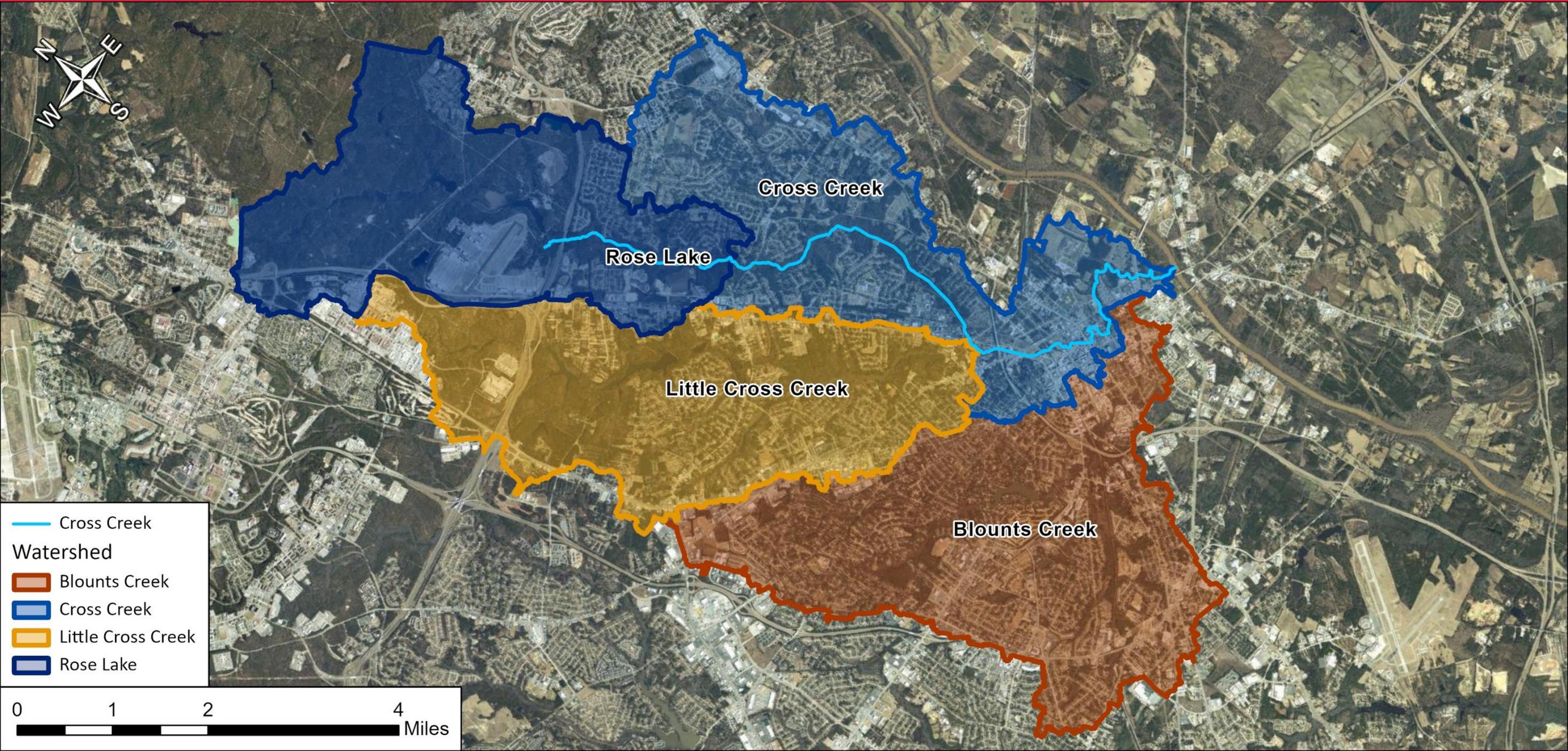




Watershed Master Plan Solutions for Cross Creek

City Council Work Session:
May 6, 2024

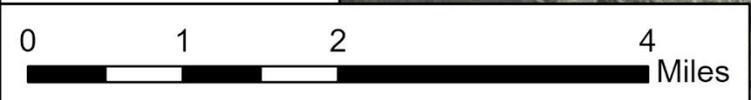


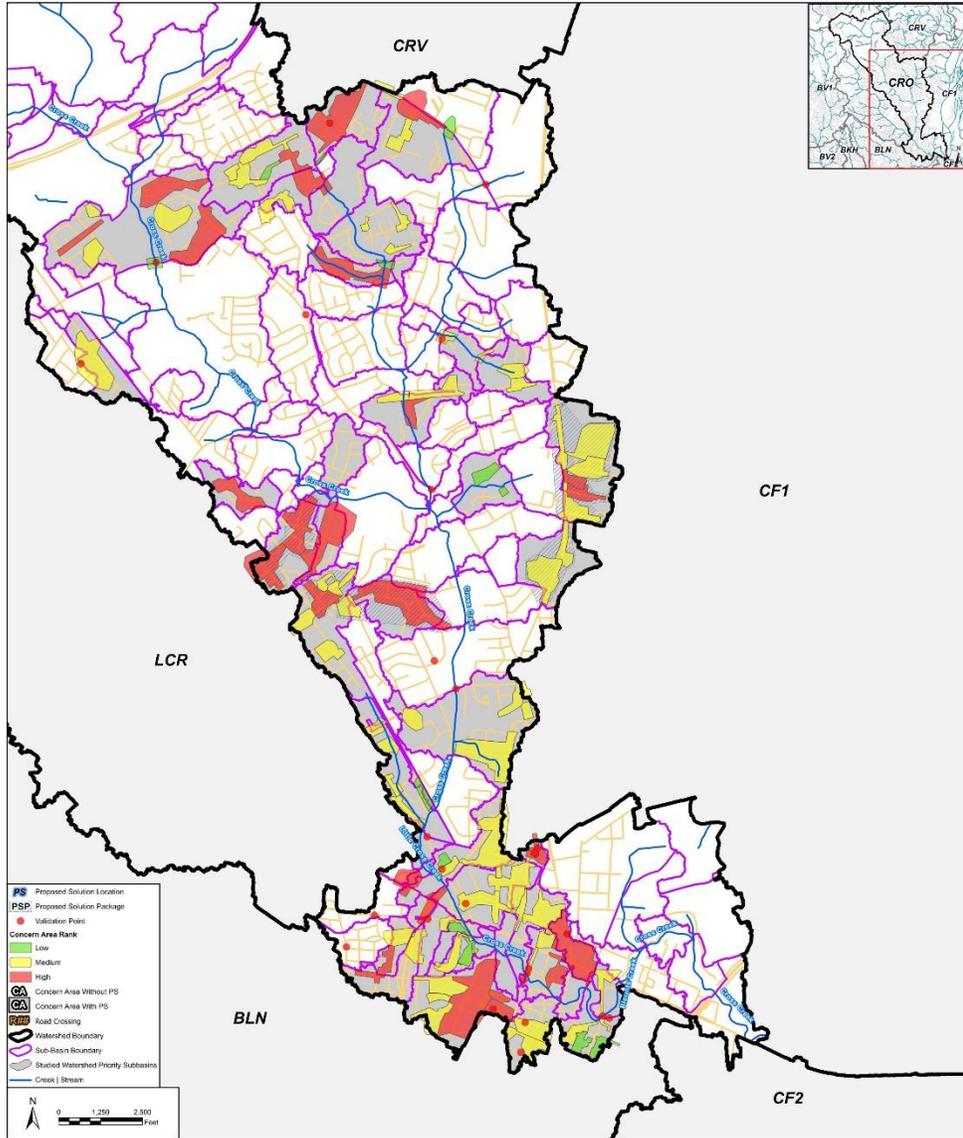


— Cross Creek

Watershed

- Blounts Creek
- Cross Creek
- Little Cross Creek
- Rose Lake





Study Area

93 – Total Sub-basins
 42 – Priority I Sub-basins
 4.34 – Sq. Miles

Study Identified

107 – Concern Areas (CAs)
 83 – CAs Selected
 83 - Proposed Solutions

Miles of Impacted Lane Length
 Identified – 61.3 | Resolved – 55.3

Number of Traverse Road Crossings
 Identified – 405 | Resolved – 342

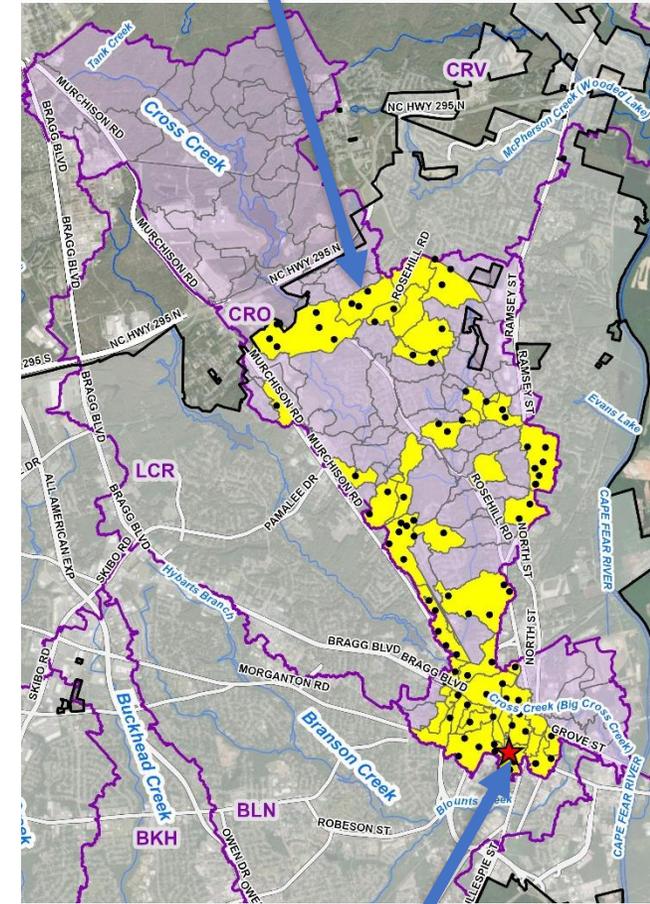
Number of Disconnected Structures
 Identified - 27 | Resolved – 27

Number of Impacted Structures

	10-yr	25-yr	50-yr
Identified	116	192	242
Resolved	85	149	191

Current Total Cost \$380M*
 * Downtown channel improvement project represents \$50M of total cost

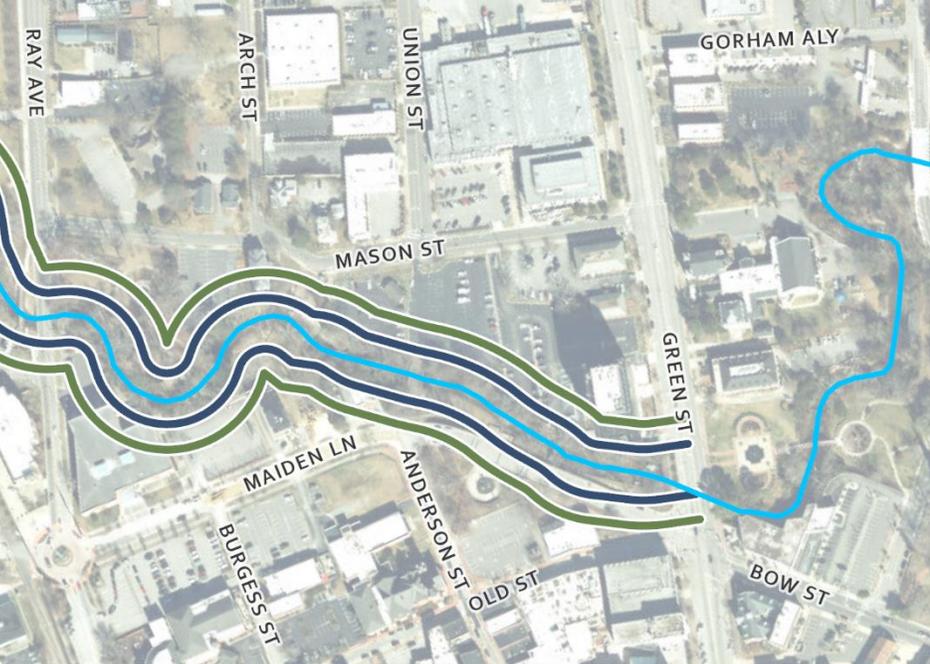
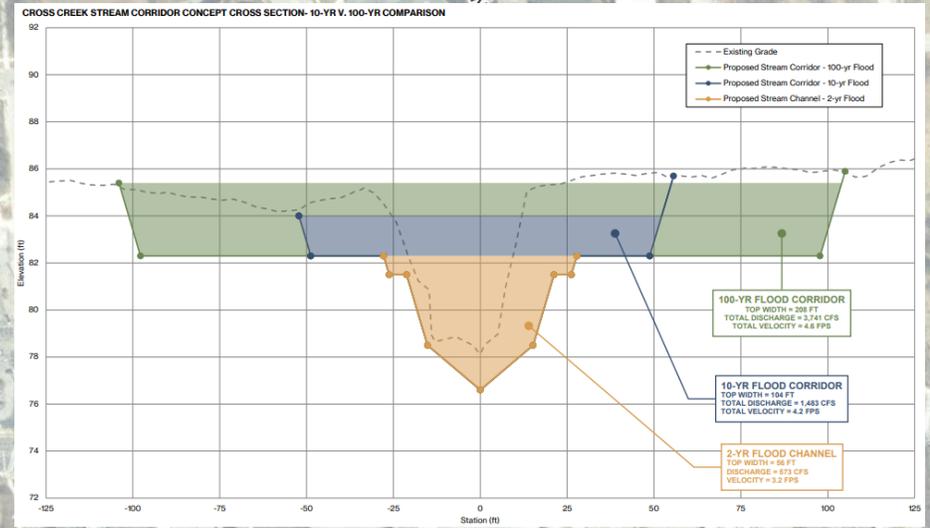
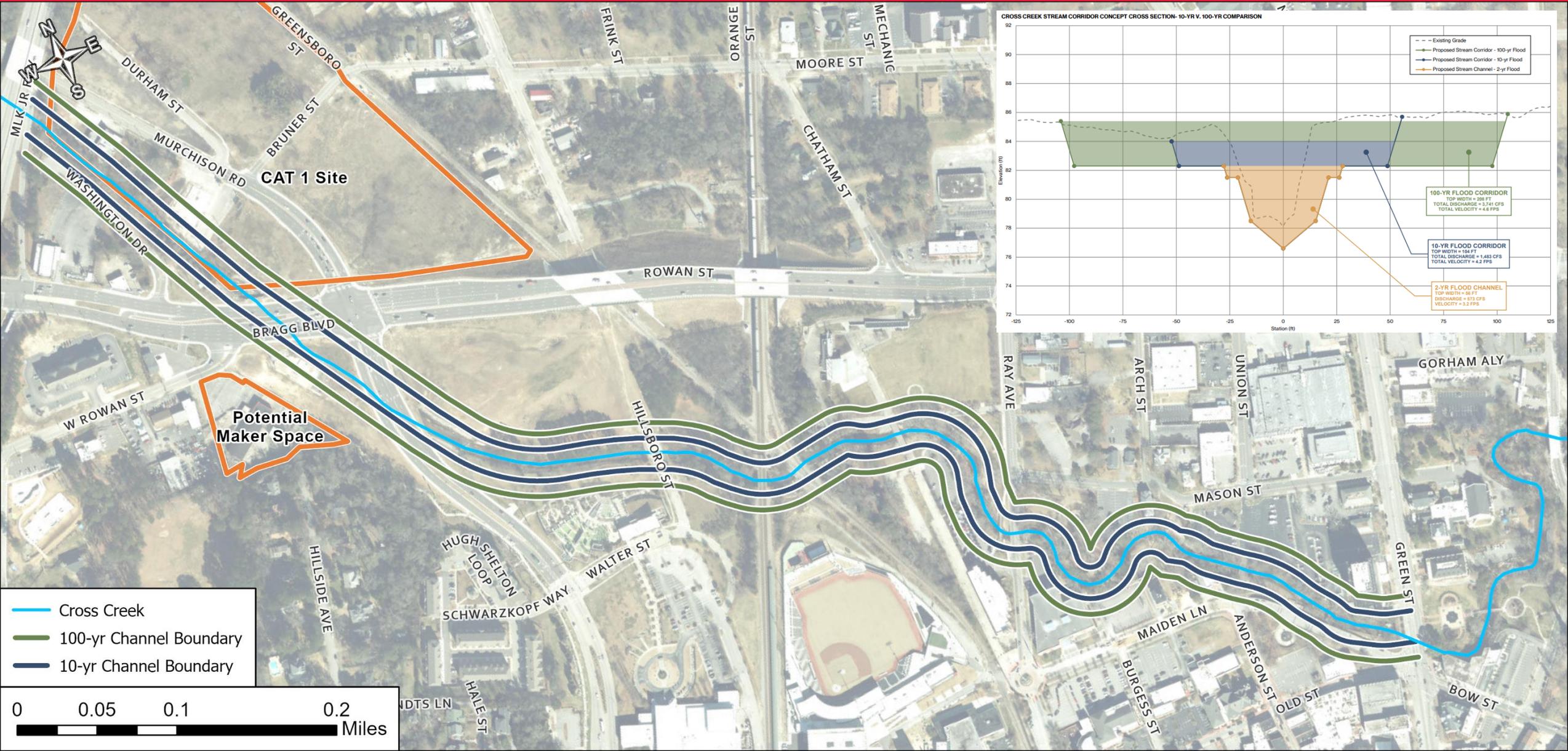
Cross Creek Watershed

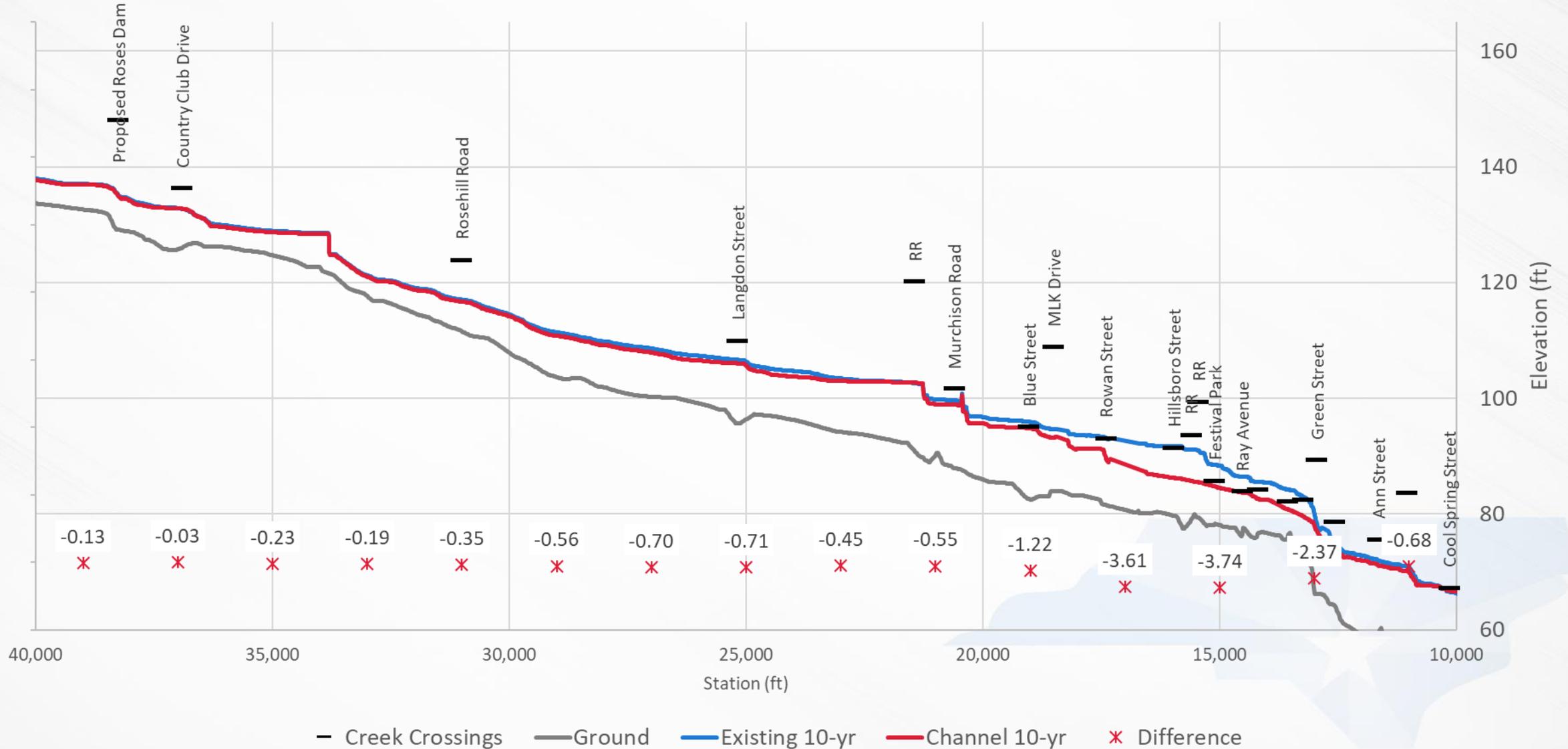


Downtown Fayetteville

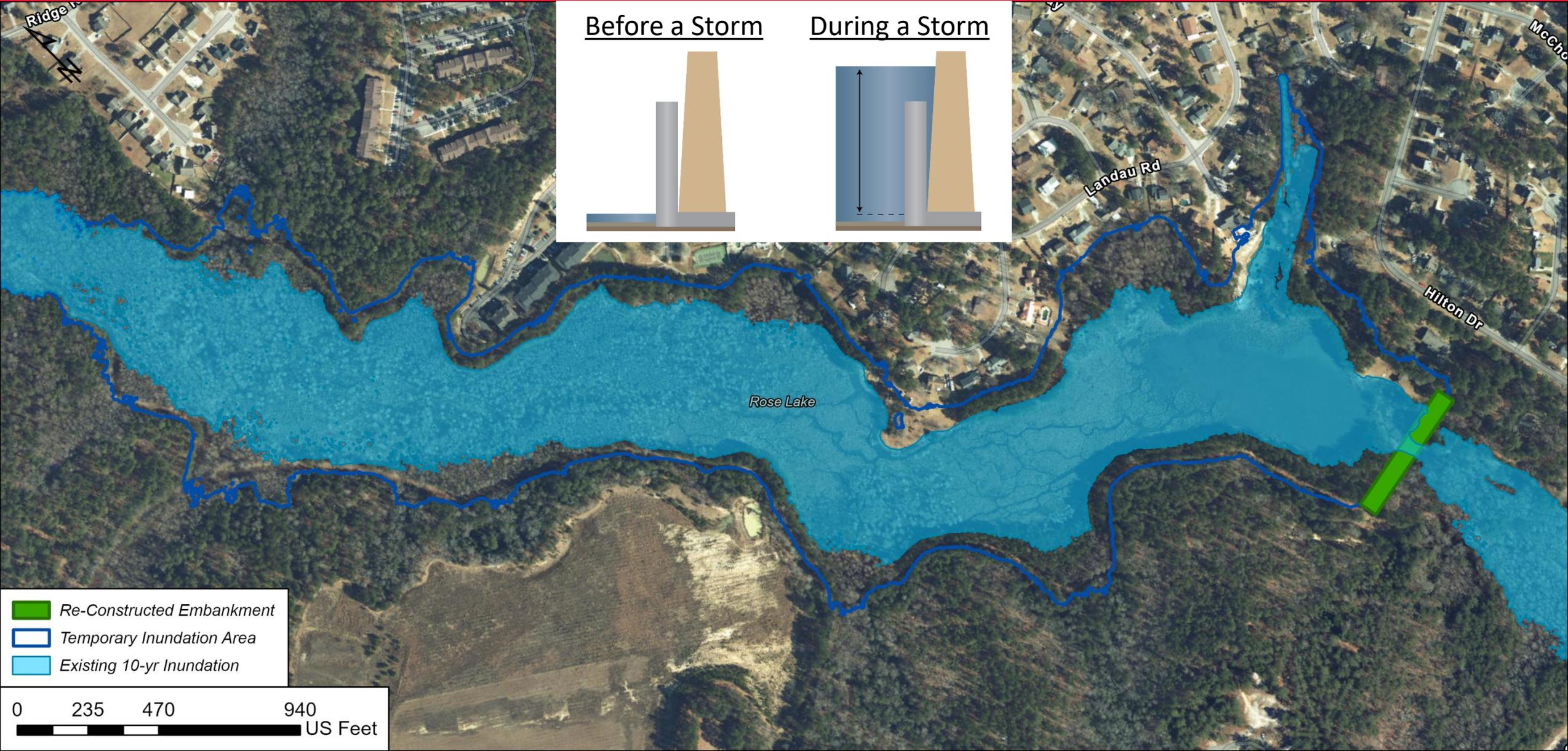


Primary System Proposed Solutions

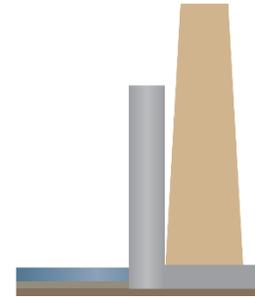




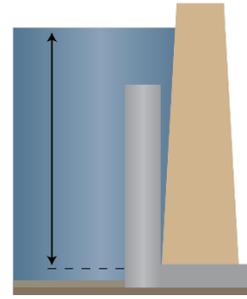
Rose Lake Temporary Detention



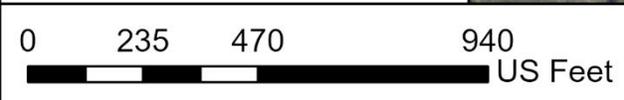
Before a Storm

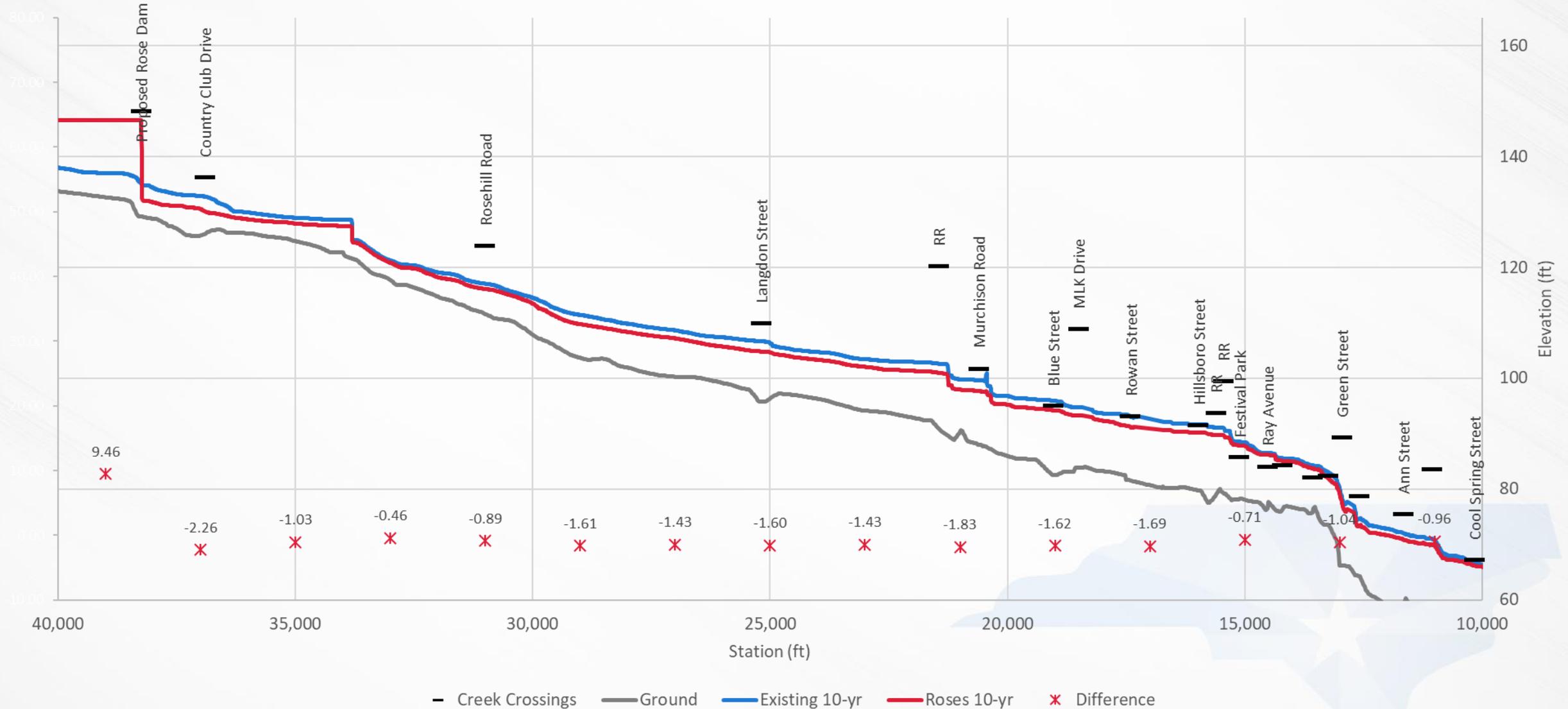


During a Storm

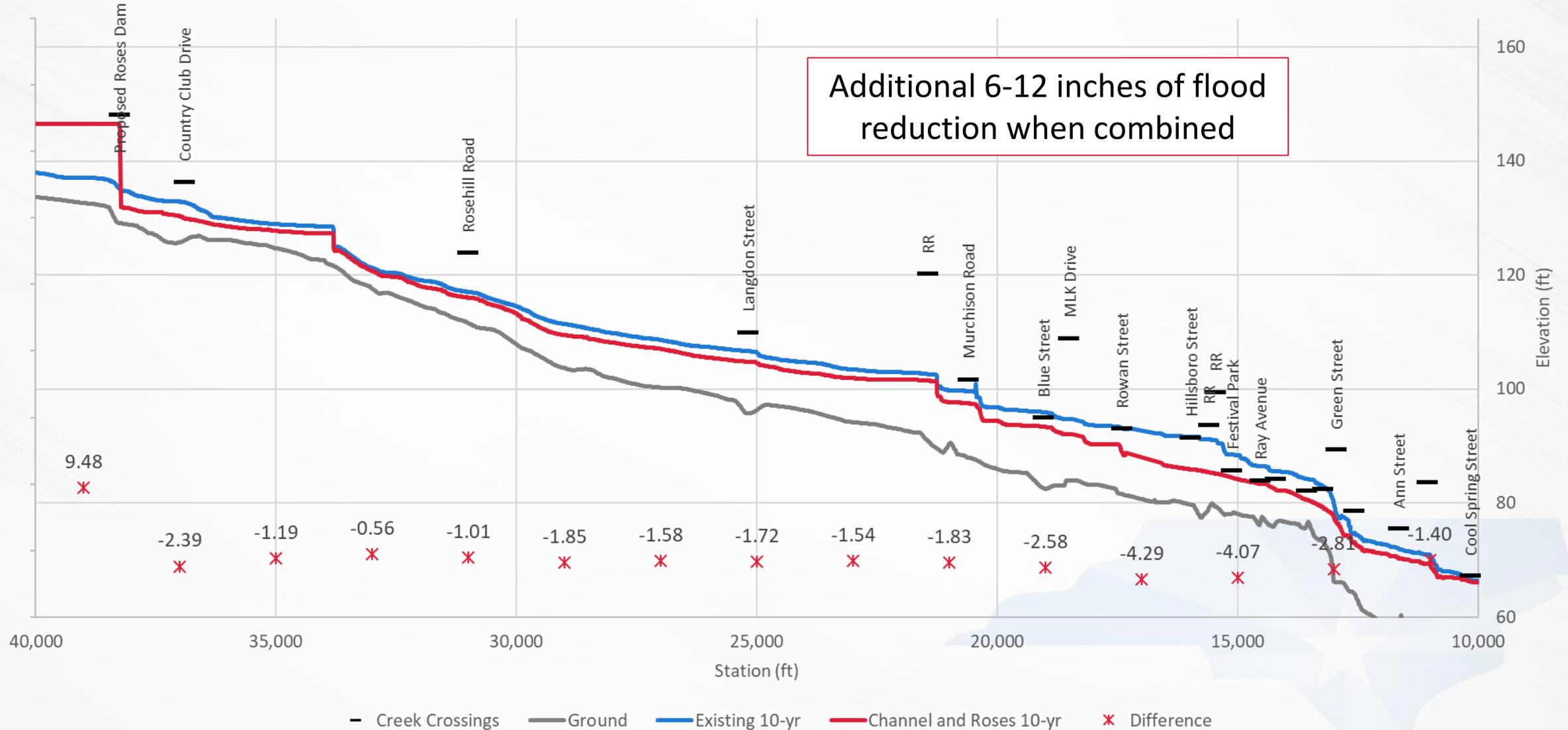


-  Re-Constructed Embankment
-  Temporary Inundation Area
-  Existing 10-yr Inundation





Combined Rose Lake and Channel Improvement Impact: 10-yr

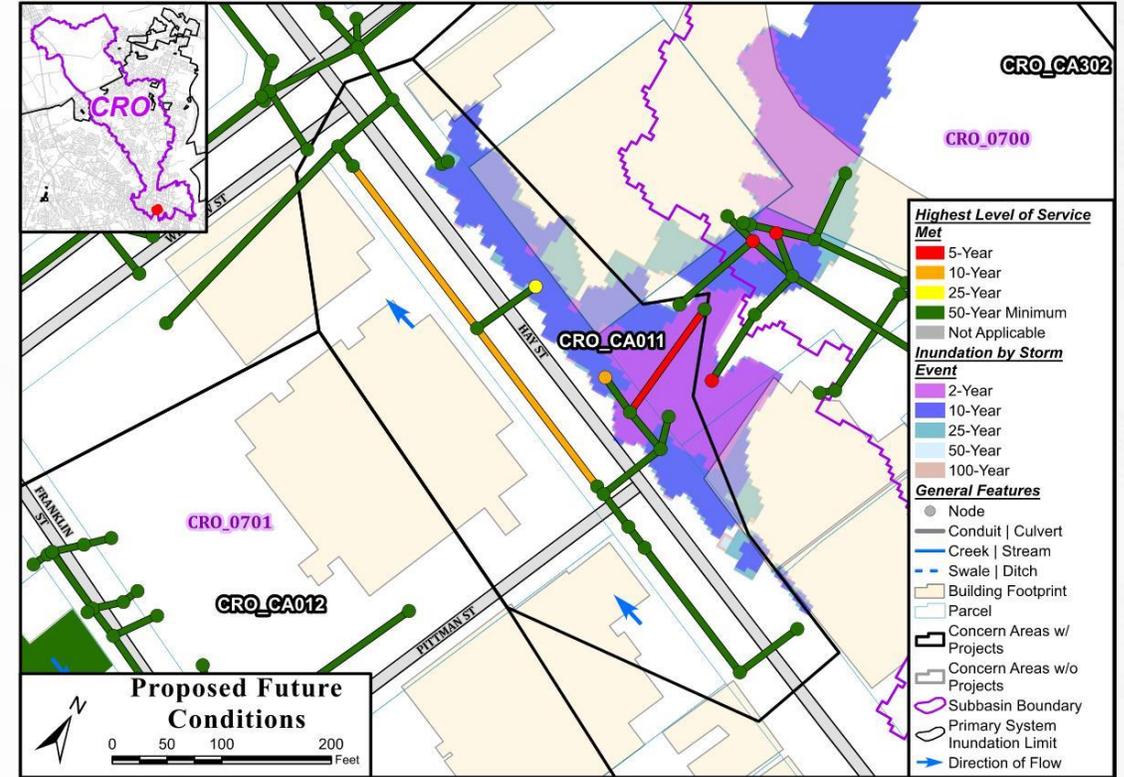
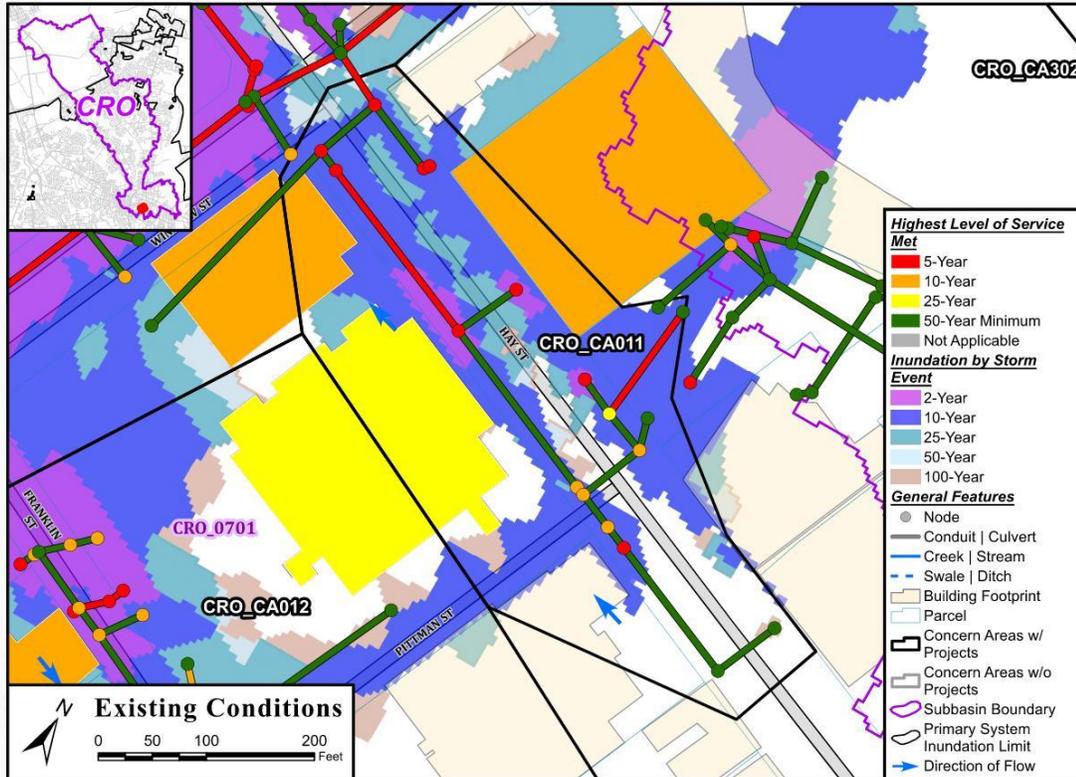




Secondary System
Proposed Solutions

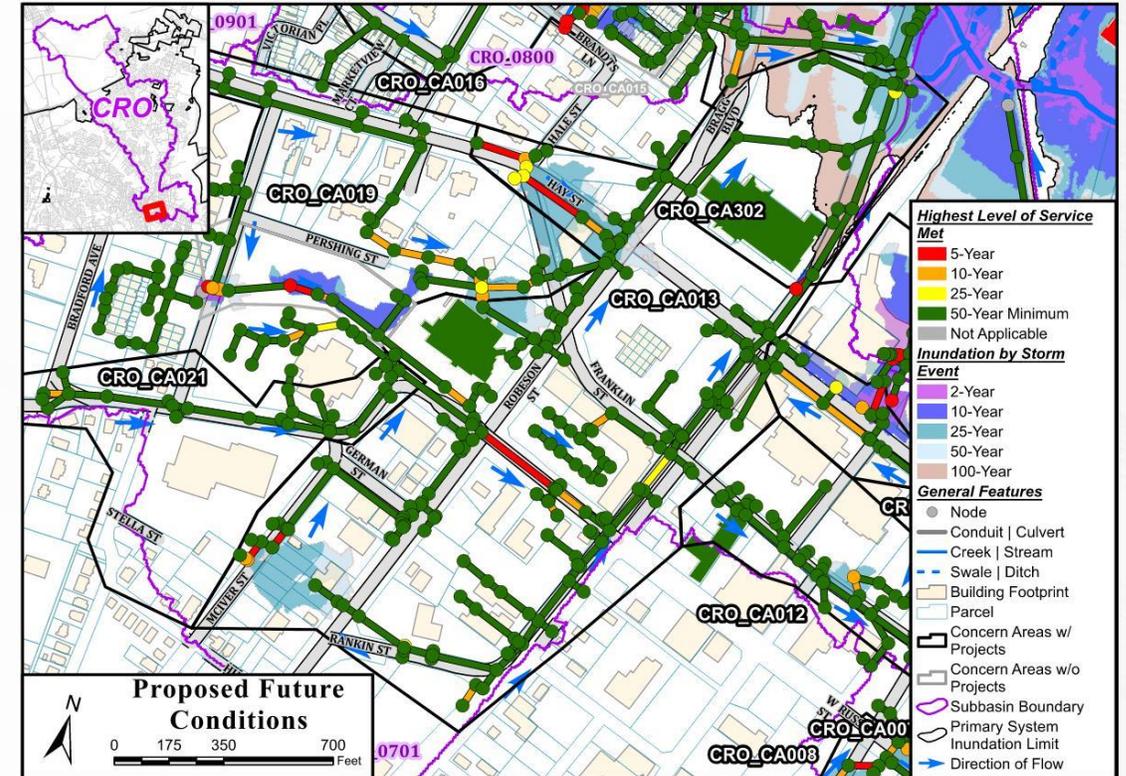
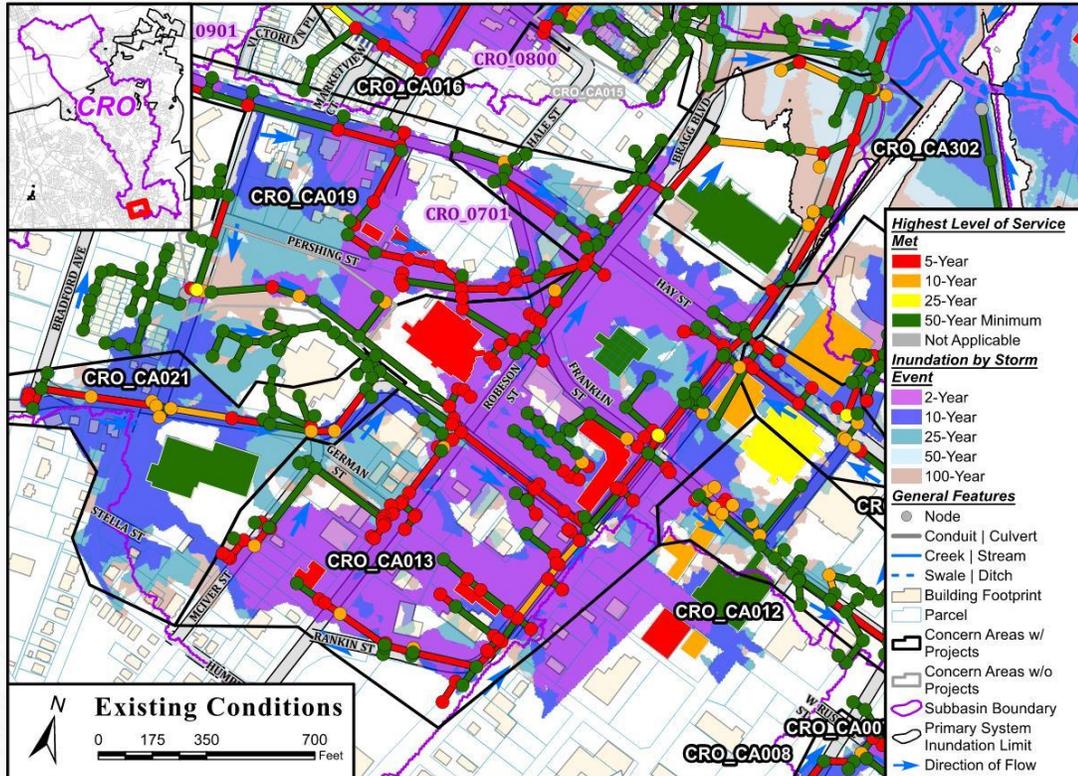
Top Proposed Solutions

Solution #	Proposed Solution Description	Score	Efficacy	Cost
PS011 (CA011)	Hay St. & Pittman St.	32	100%	\$0.5M
PS013 (CA013)	Robeson St.; Winslow St.	63	92%	\$23.6M
PS052 (CA052)	Gola Dr.; Broadell Dr.; Cascade St.	29	93%	\$13.1M
PS012 (CA012)	Franklin St. & Pittman St.	26	88%	\$5.4M
PS026 (CA026)	Rowan St. & Union St.	25	56%	\$4.4M
PS059 (CA059)	Ramsey St. & Post Ave.	23	100%	\$2.3M
PS090 (CA090)	McArthur Rd. & Deadwyler Dr.	21	100%	\$8.2M
PS066 (CA066)	Sourwood Dr.	20	100%	\$3.0M
PS064 (CA064)	McLamb Dr.	20	75%	\$6.7M
PS035 (CA035)	Bragg Blvd. & Blue St.	17	100%	\$1.7M
PS058 (CA058)	Eastwood Ave. & Ramsey St.	16	100%	\$8.2M



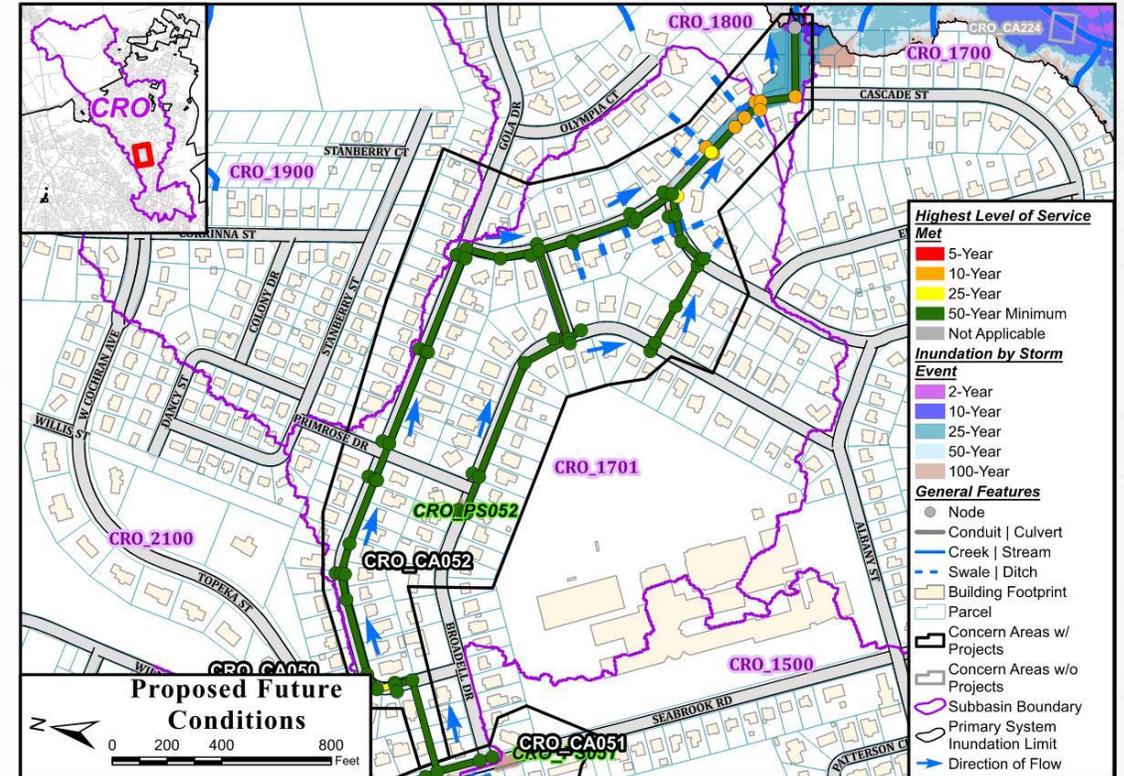
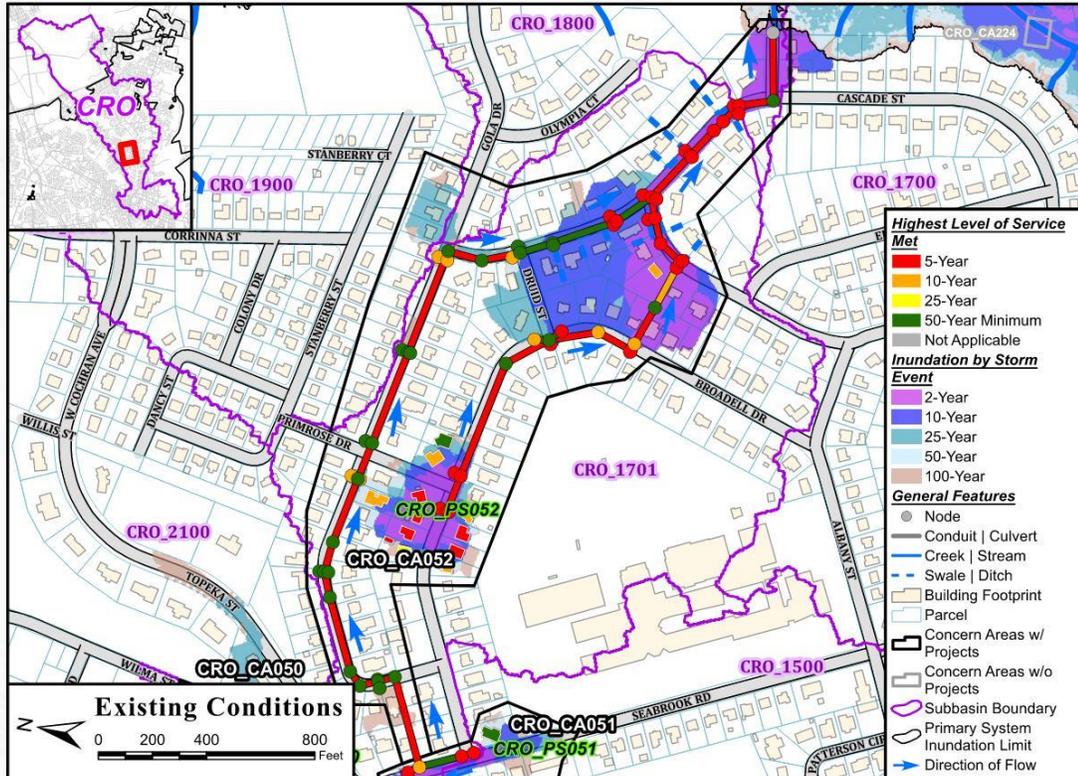
- Council District 2
- Proposed Solution = Pipe upsizing
- CA Score = 32
- Efficacy = 100%

- Estimated Cost = \$500k
- Reduces 1,543 LF of impacted lane length
- Eliminates impacts to 2 structures for 10-, 25-, & 50-yr events



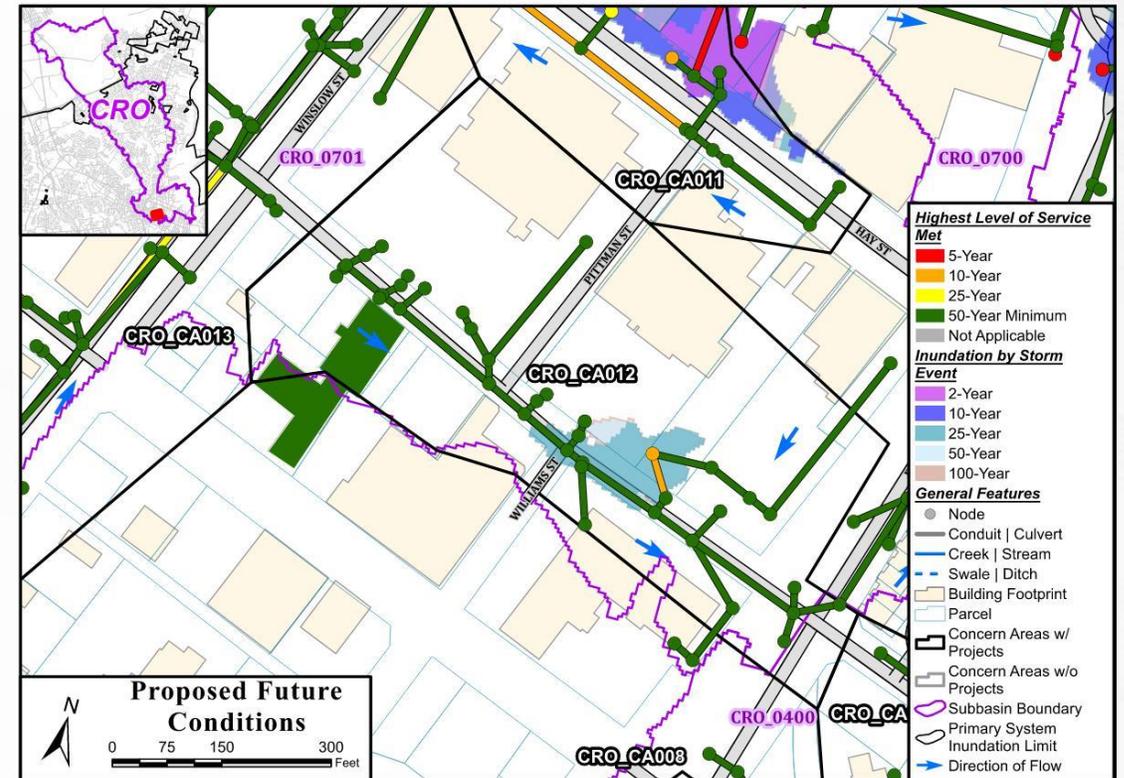
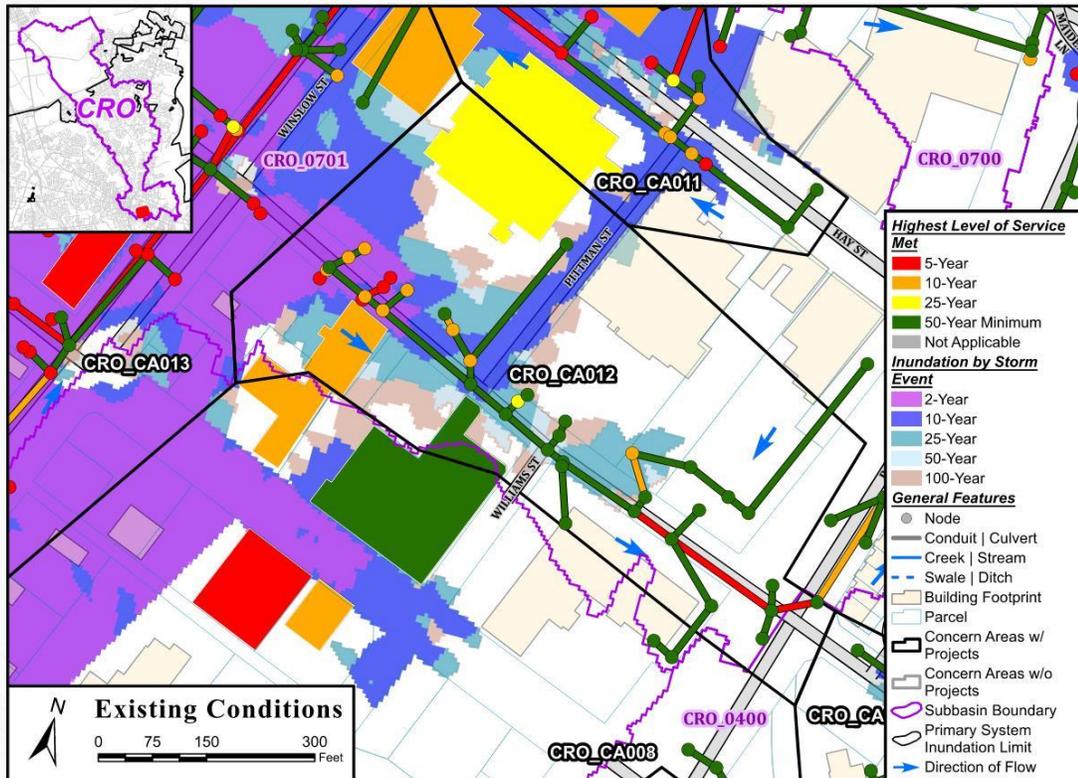
- Council District 2
- Proposed Solution = Pipe upsizing
- CA Score = 63
- Efficacy = 92%

- Estimated Cost = \$23.6M
- Reduces 25,132 LF of impacted lane length
- Eliminates impacts to 5 structures for 10-, 25-, & 50-yr events



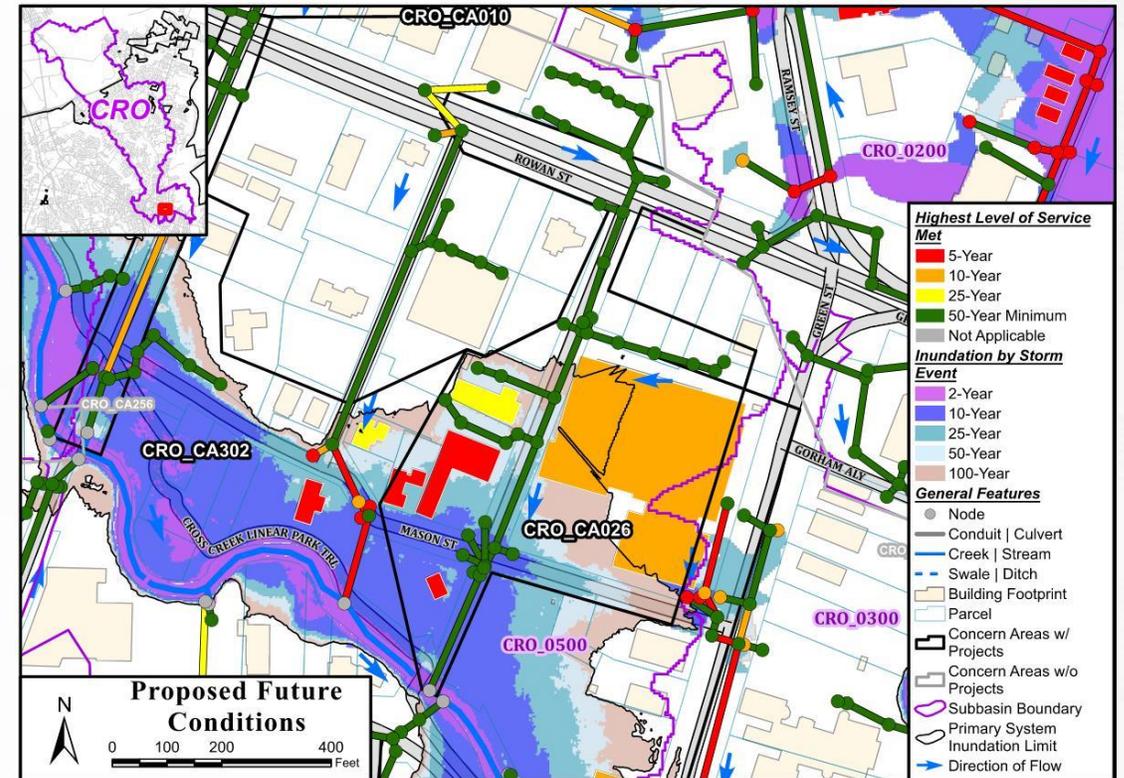
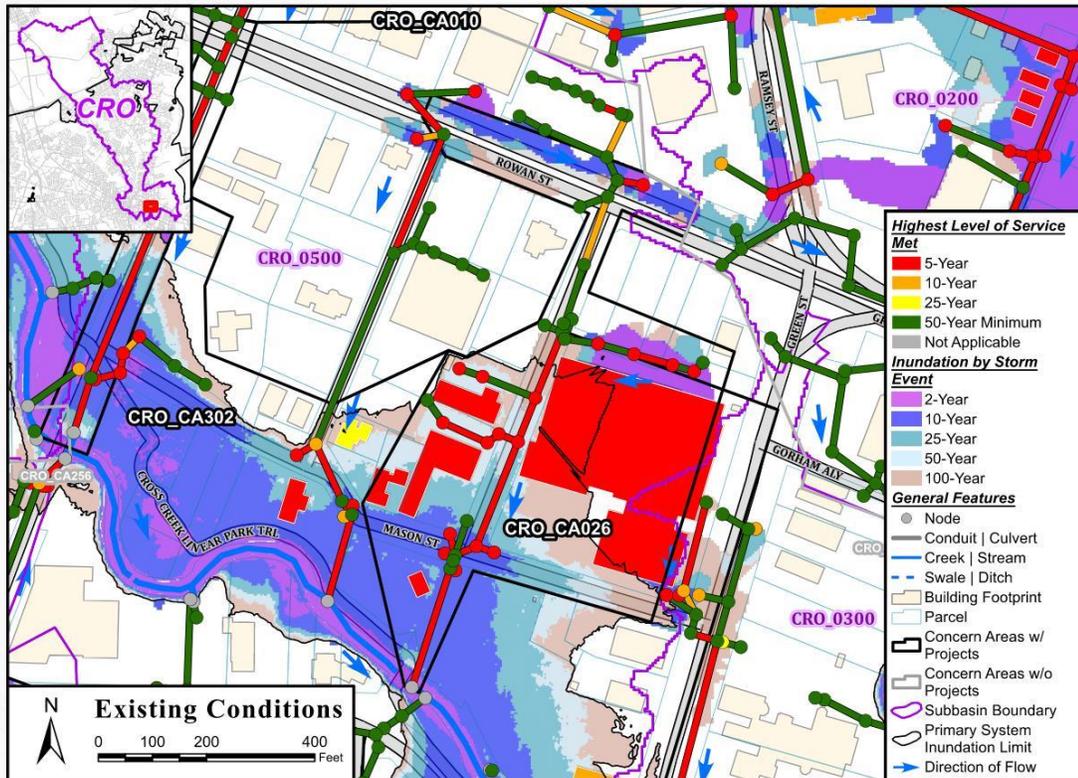
- Council District 3
- Proposed Solution = Pipe upsizing
- CA Score = 29
- Efficacy = 93%

- Estimated Cost = \$13.1M
- Reduces 5,976 LF of impacted lane length
- Eliminates impacts to 12 structures for 10-, 25-, & 50-yr events



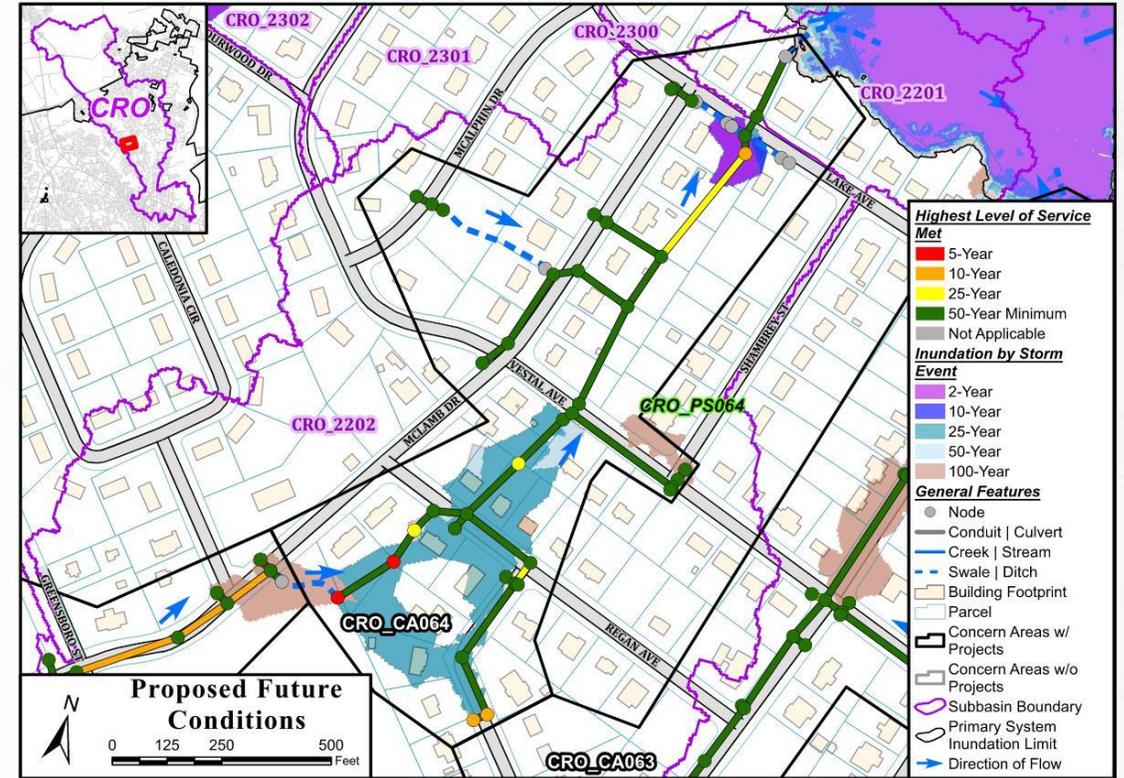
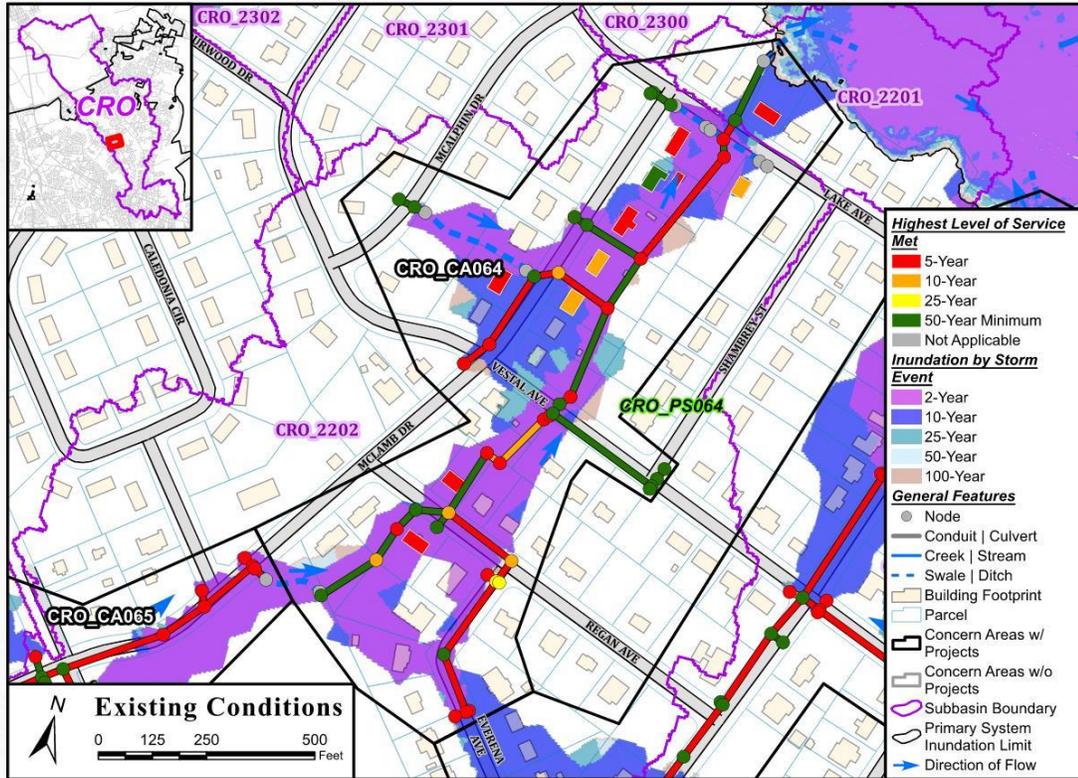
- Council District 2
- Proposed Solution = Pipe upsizing
- CA Score = 26
- Efficacy = 88%

- Estimated Cost = \$5.4M
- Reduces 575 LF of impacted lane length
- Eliminates impacts to 1 structure for 10-, 25-, & 50-yr events



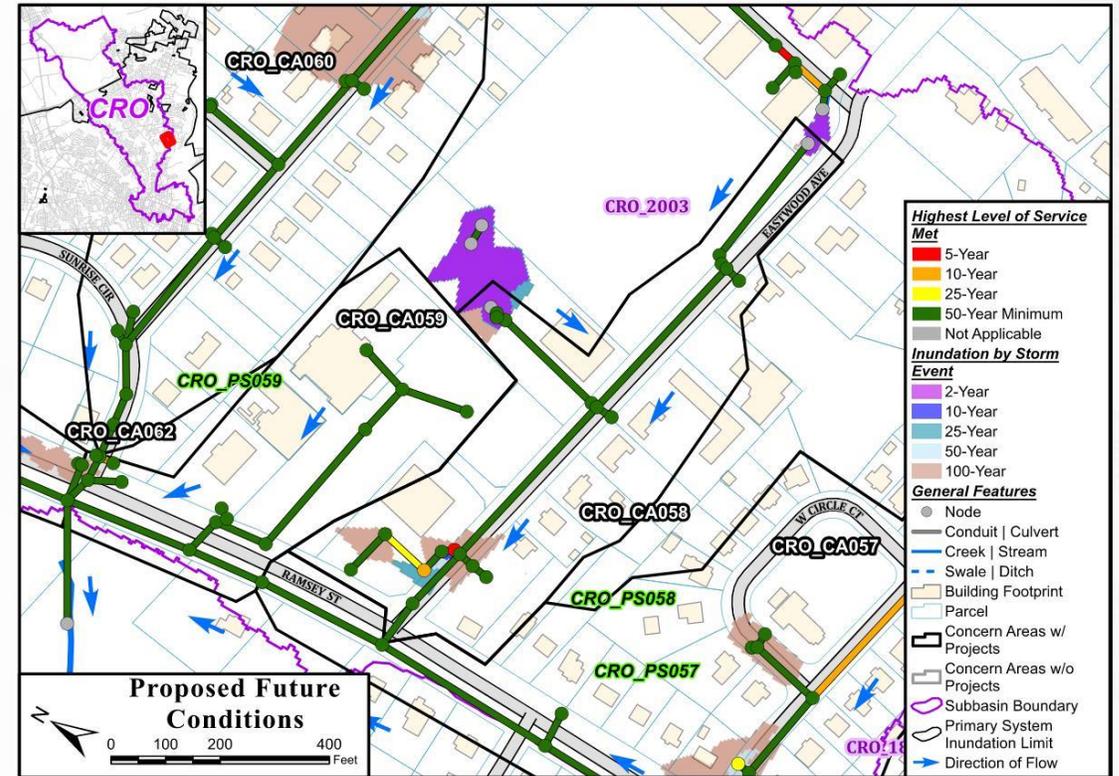
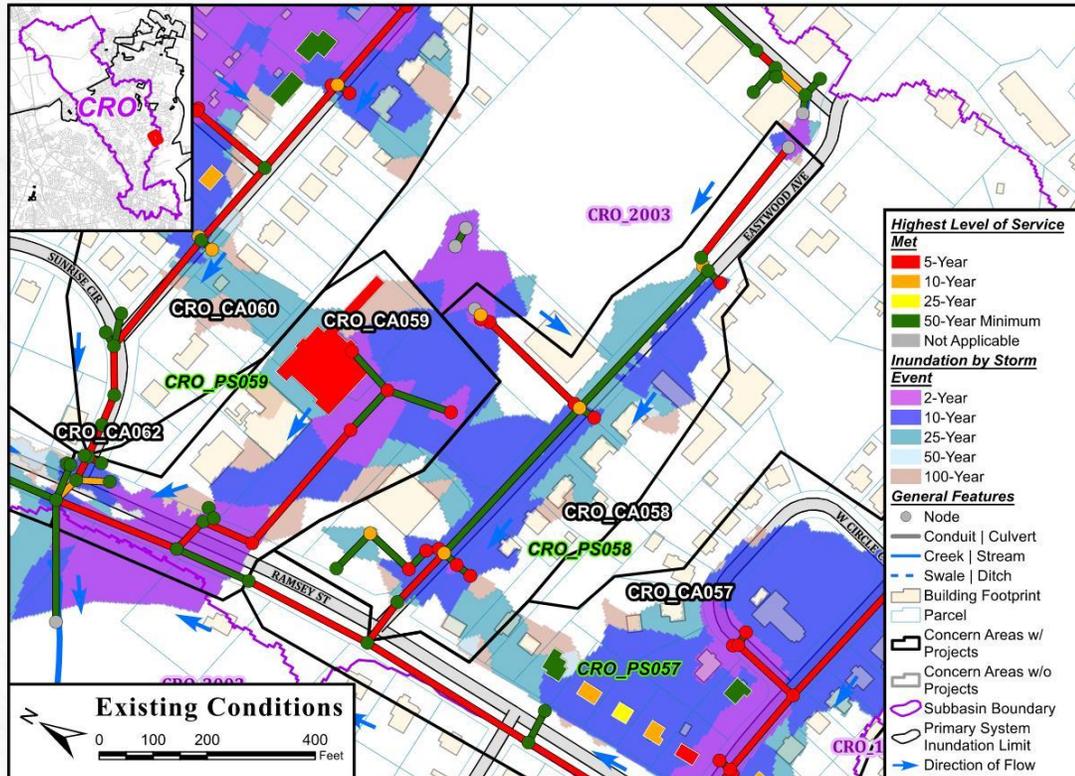
- Council District 2
- Proposed Solution = Pipe upsizing
- CA Score = 25
- Efficacy = 56%

- Estimated Cost = \$4.4M
- Reduces 1,590 LF of impacted lane length
- Eliminates impacts to 0 structures for 10-, 25-, & 50-yr events



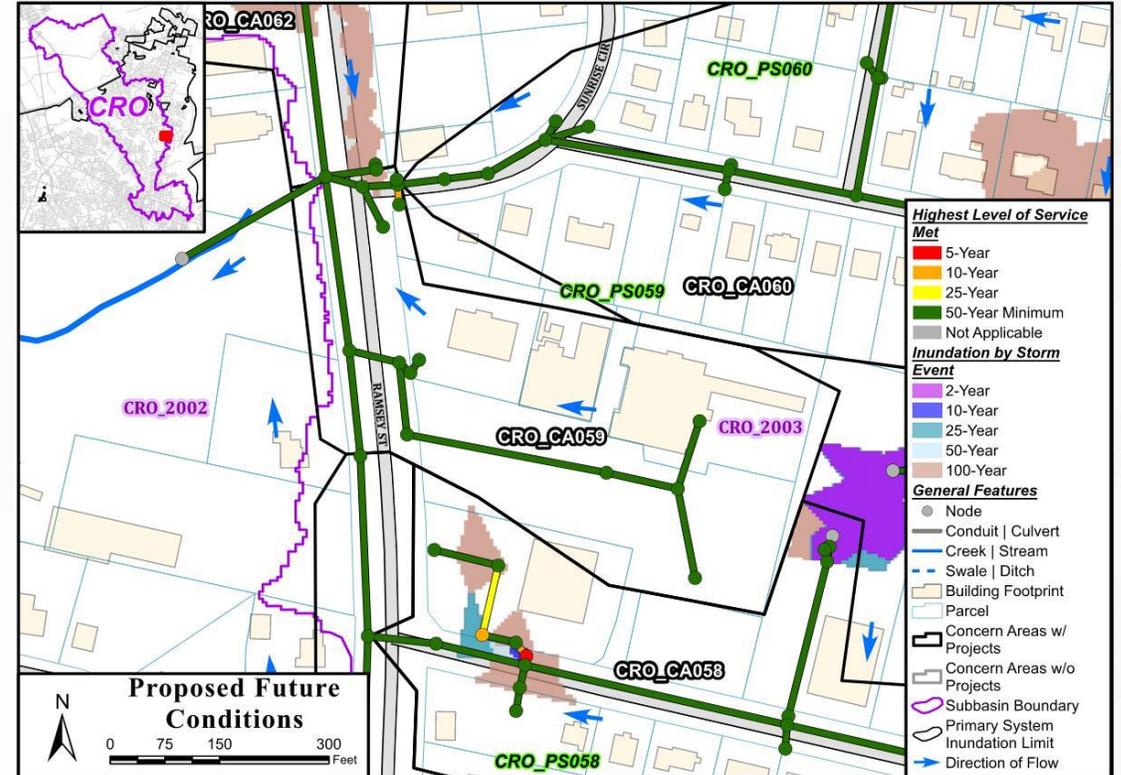
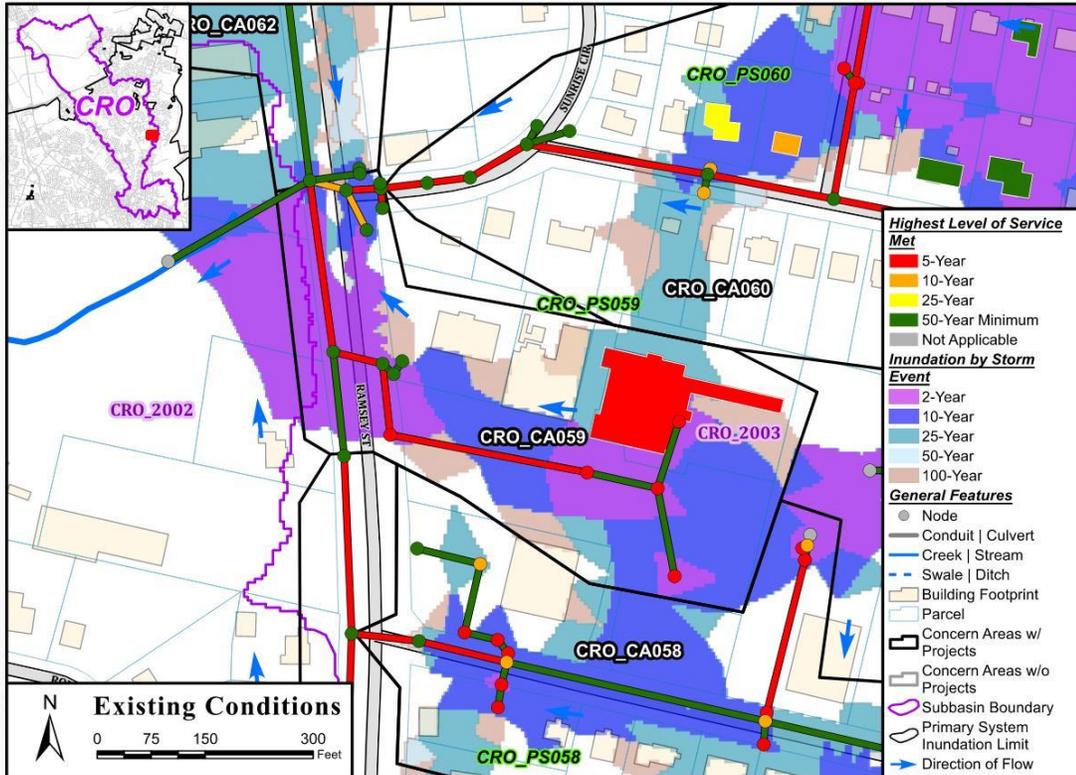
- Council District 3
- Proposed Solution = Pipe upsizing
- CA Score = 20
- Efficacy = 75%

- Estimated Cost = \$6.7M
- Reduces 2,043 LF of impacted lane length
- Eliminates impacts to 10 structures for 10-, 25-, & 50-yr events



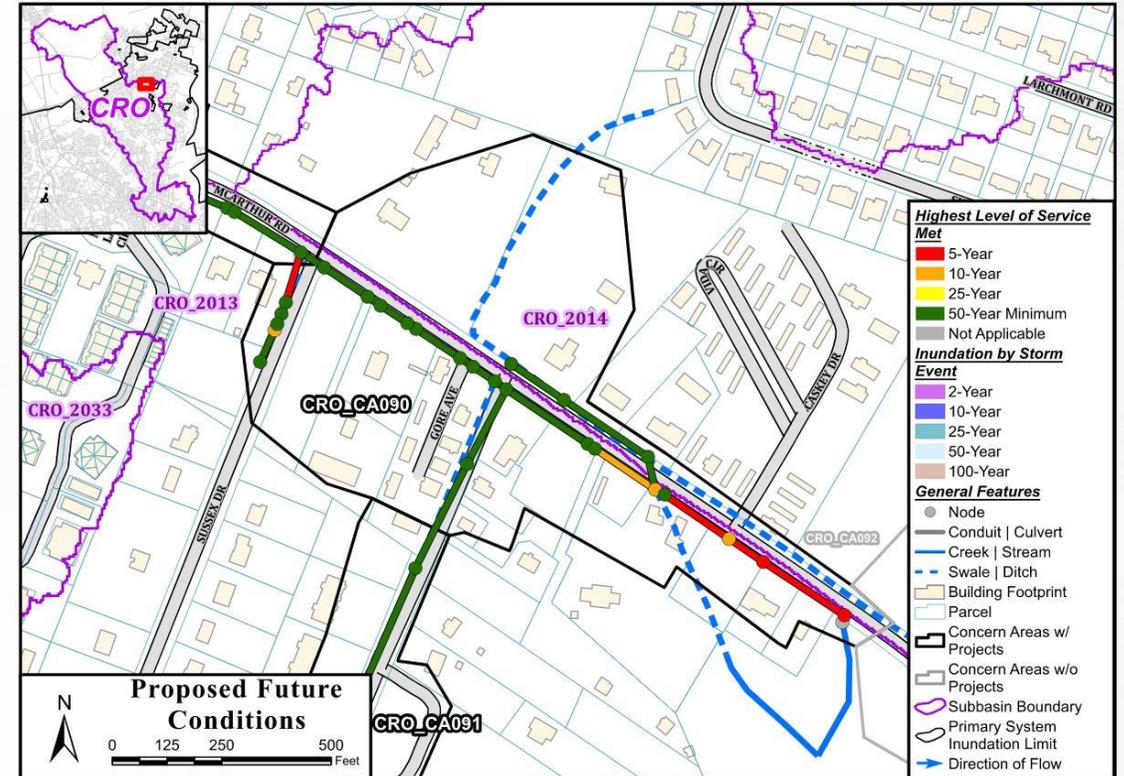
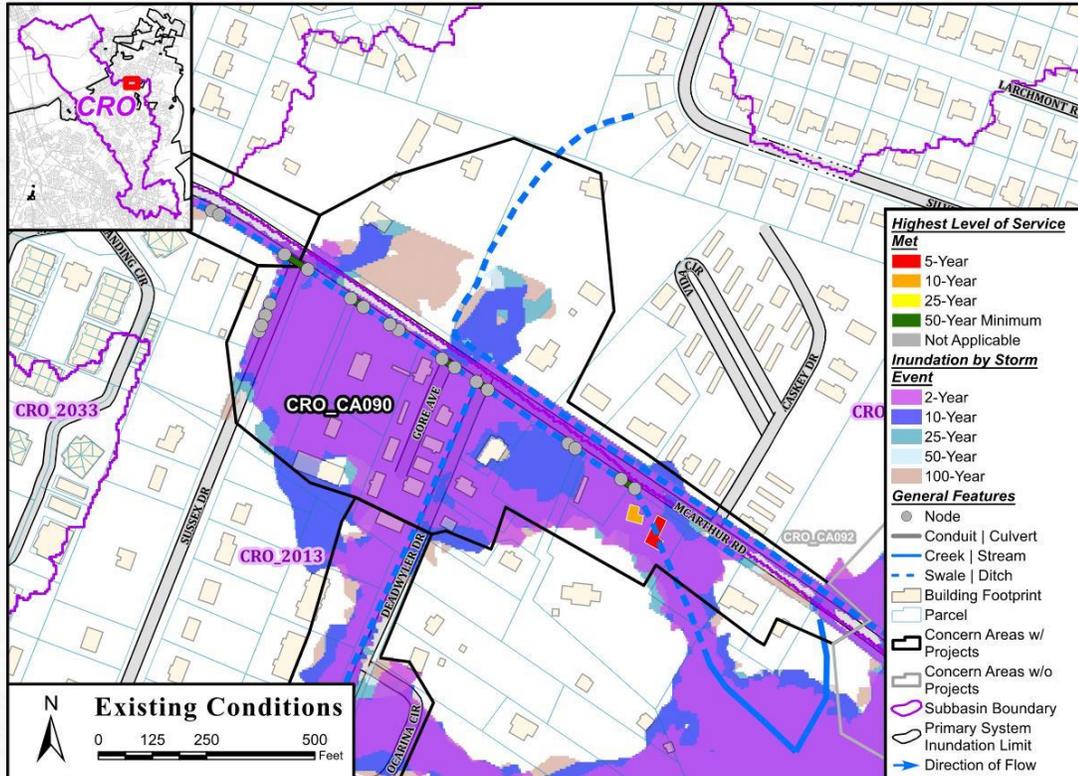
- Council District 2
- Proposed Solution = Pipe upsizing
- CA Score = 16
- Efficacy = 100%

- Estimated Cost = \$3.0M
- Reduces 3,310 LF of impacted lane length
- Eliminates impacts to 0 structures for 10-, 25-, & 50-yr events



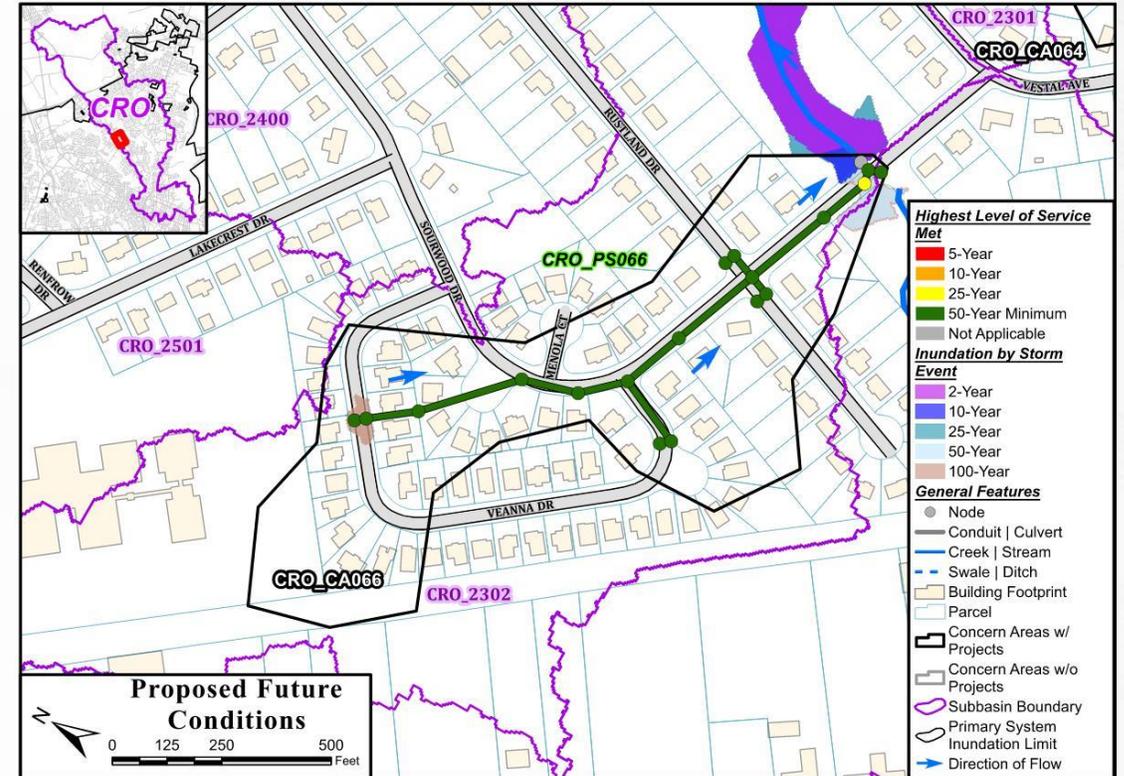
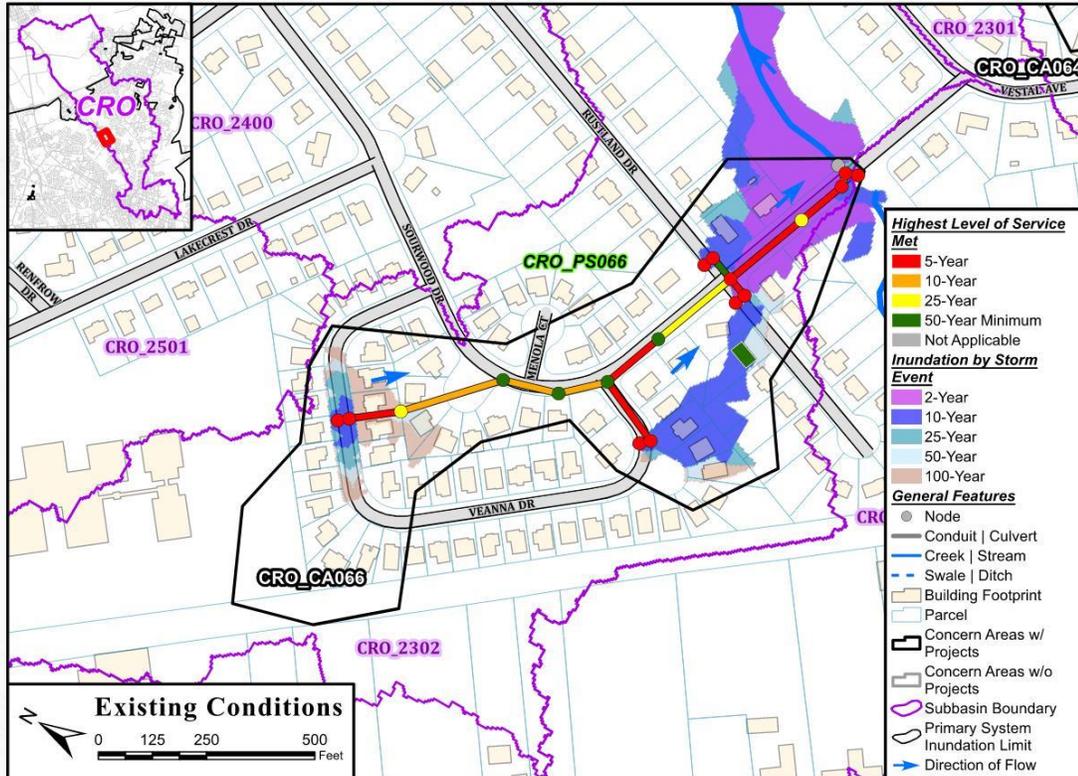
- Council District 2
- Proposed Solution = Pipe upsizing
- CA Score = 23
- Efficacy = 100%

- Estimated Cost = \$2.3M
- Reduces 1,941 LF of impacted lane length
- Eliminates impacts to 1 structure for 10-, 25-, & 50-yr events



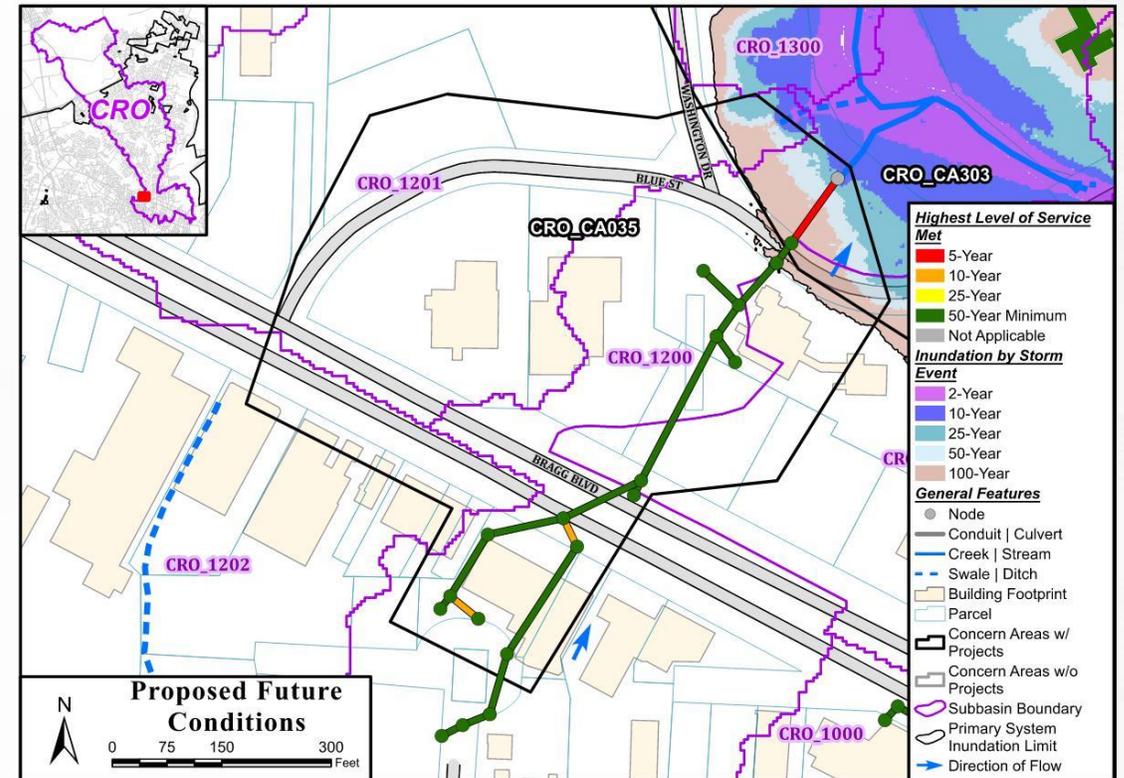
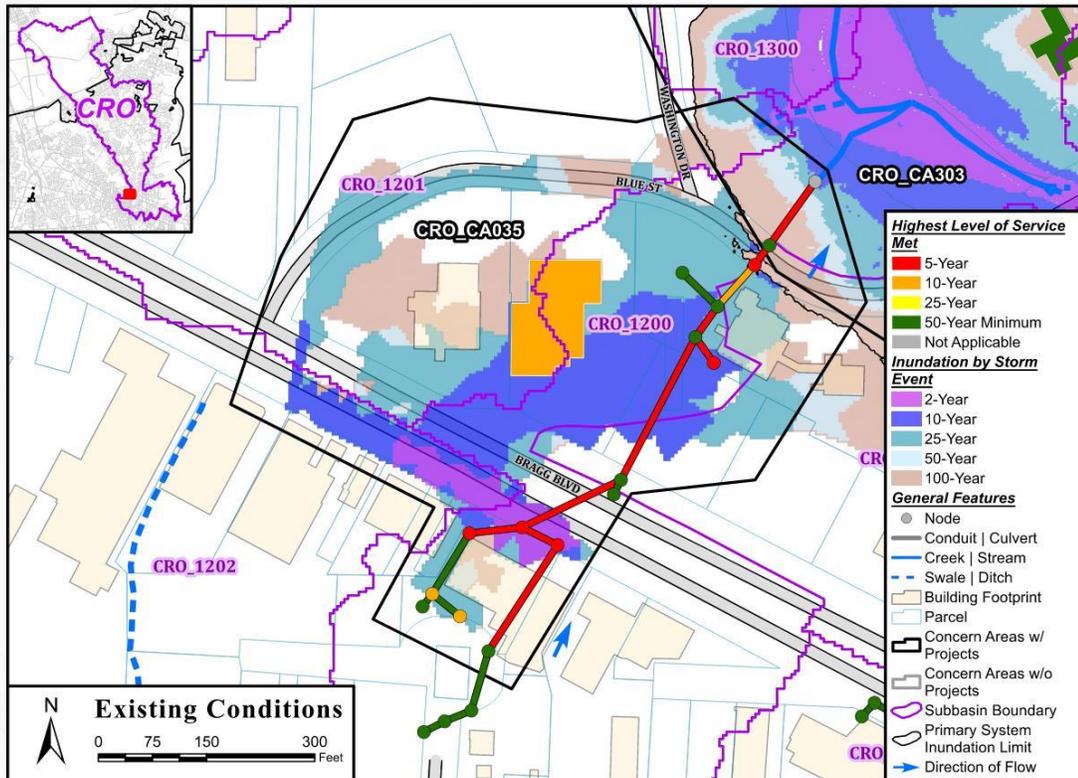
- Council Districts 1,3
- Proposed Solution = Pipe upsizing
- CA Score = 21
- Efficacy = 100%

- Estimated Cost = \$8.2M
- Reduces 3,008 LF of impacted lane length
- Eliminates impacts to 2 structures for 10-, 25-, & 50-yr events



- Council District 3
- Proposed Solution = Pipe upsizing
- CA Score = 20
- Efficacy = 100%

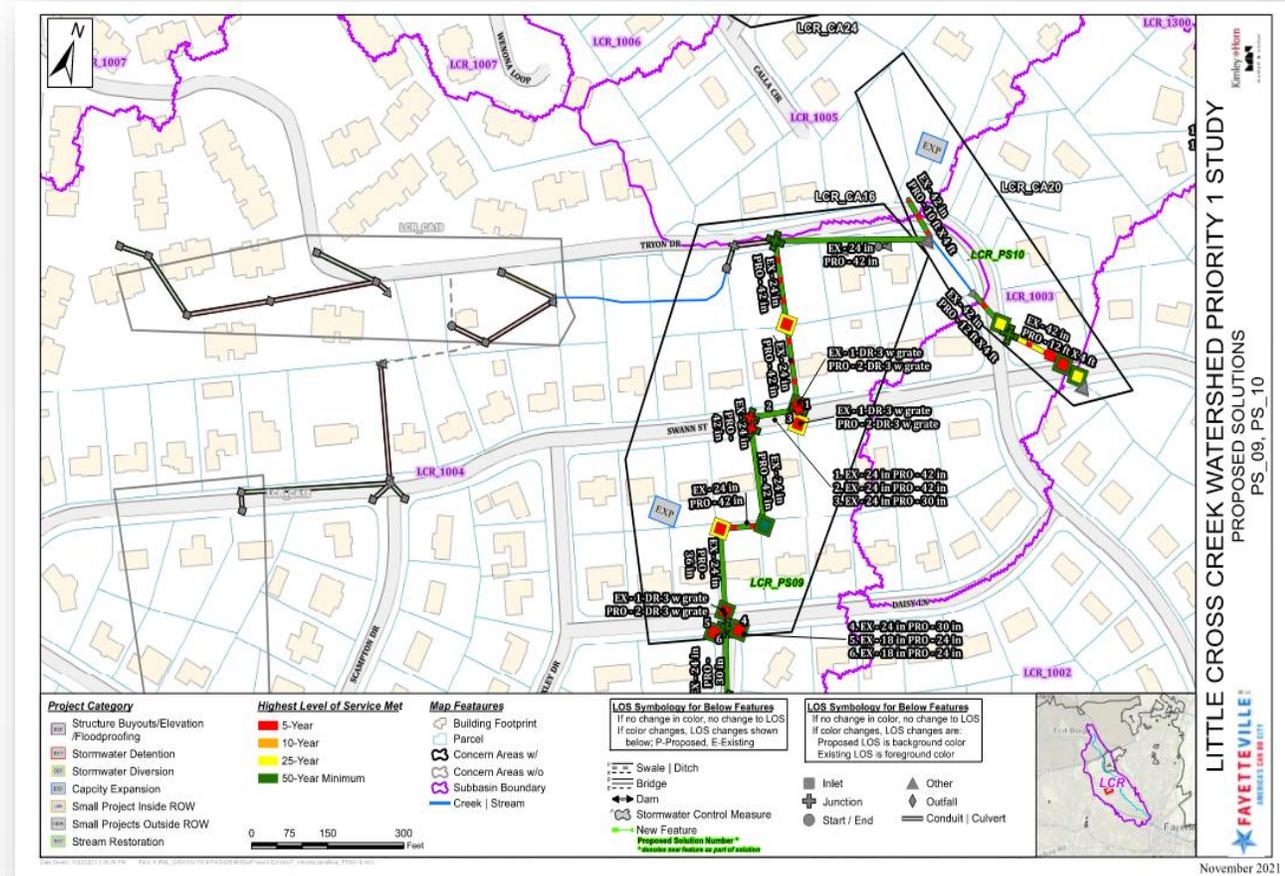
- Estimated Cost = \$3.0M
- Reduces 1,528 LF of impacted lane length
- Eliminates impacts to 0 structures for 10-, 25-, & 50-yr events



- Council District 2
- Proposed Solution = Pipe upsizing
- CA Score = 17
- Efficacy = 100%

- Estimated Cost = \$1.7M
- Reduces 2,548 LF of impacted lane length
- Eliminates impacts to 1 structure for 10-, 25-, & 50-yr events

- Rank based off of Concern Area Score (“Worst to First”).
- Rank based off the efficacy (Is there a practical solutions based off funding?).
- Target an equitable distribution between watersheds.
- Strategic Selections (i.e. DOT right of way, resurfacing, greater benefit to the community, grant potential, asset condition).
- Not a static list to be done in sequential order. As study areas are completed, new proposed solutions are developed that adjust priority ranking.
- A proposed solution recommended to move forward as a project is brought before Council for approval.



• Adam Street Drainage Improvements 12/2021

→ *ARPA Funded*

• Sessoms Street 12/2021

• Tryon Drive 12/2021

• Lyon & Ivy 12/2021

→ *Potential DRMF Recipient*

• Rosemary Drive 12/2021

• Rockford Drive 12/2021

• Rhemish Drive 12/2021

• Locks Creek 06/2022

• Person & Russell Street 06/2022

• Rose Lake Temporary Detention 09/2023

→ *Potential FEMA BRIC Recipient*

~\$60M in projects currently under design or construction

~\$28.5M pending State or Federal Funding

~48% of project cost leverage non-enterprise funding

Options:

1. Council provides consensus to approve the 83 proposed solutions to enable staff to program them into the annual CIP prioritization process and pursue grants as applicable.
2. Council does not provide consensus to approve the 83 proposed solutions and remands back to staff with additional guidance.

Recommended Action:

Council provides consensus to approve the 83 proposed solutions to enable staff to program them into the annual CIP prioritization process and pursue grants as applicable.



 **FAYETTEVILLE** ^{NC}
AMERICA'S CAN DO CITY

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