



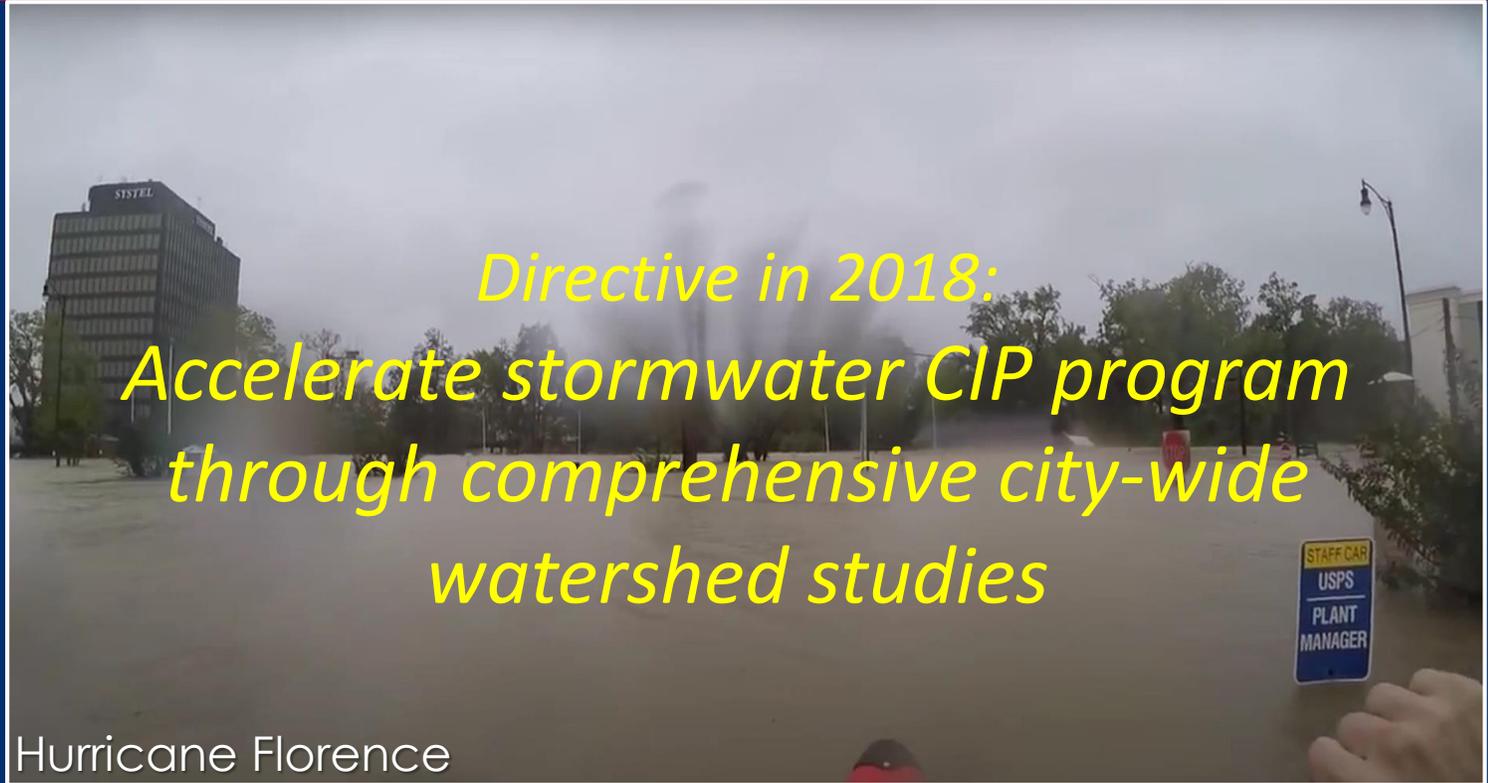
Watershed Master Plan Proposed Solutions - Beaver Creek 2

City Council Work Session:
February 3, 2025

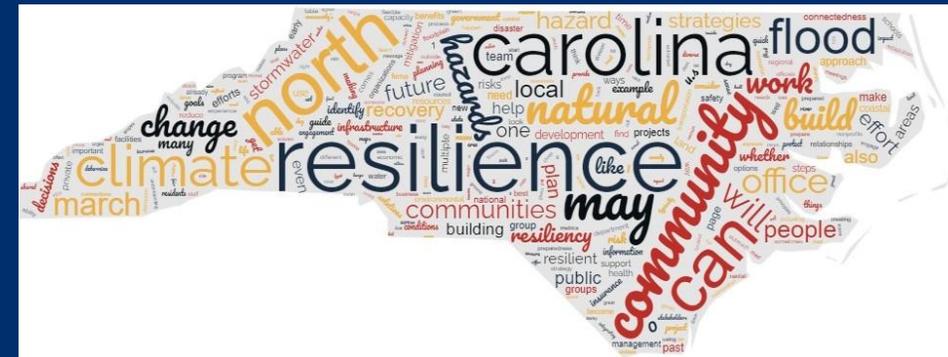


- Provide background and overview of Watershed Studies- City
- Provide a summary of the proposed solutions approved by the Council to date- City
- Present proposed solutions from the Beaver Creek 2 Watershed study-Arcadis
- Request consensus on accepting proposed solutions from the Beaver Creek 2 Watershed study-City





Visualize a Flood Resilient Fayetteville



Award Winning!

 **City of Fayetteville, NC** @CityOfFayNC · Jul 26

We are thrilled to announce that we were recently awarded the 2024 Association of State Floodplain Managers James Lee Witt Local Award for Excellence for our Watershed Master Planning Program! 🏆
Read more: bit.ly/3WE4oZb



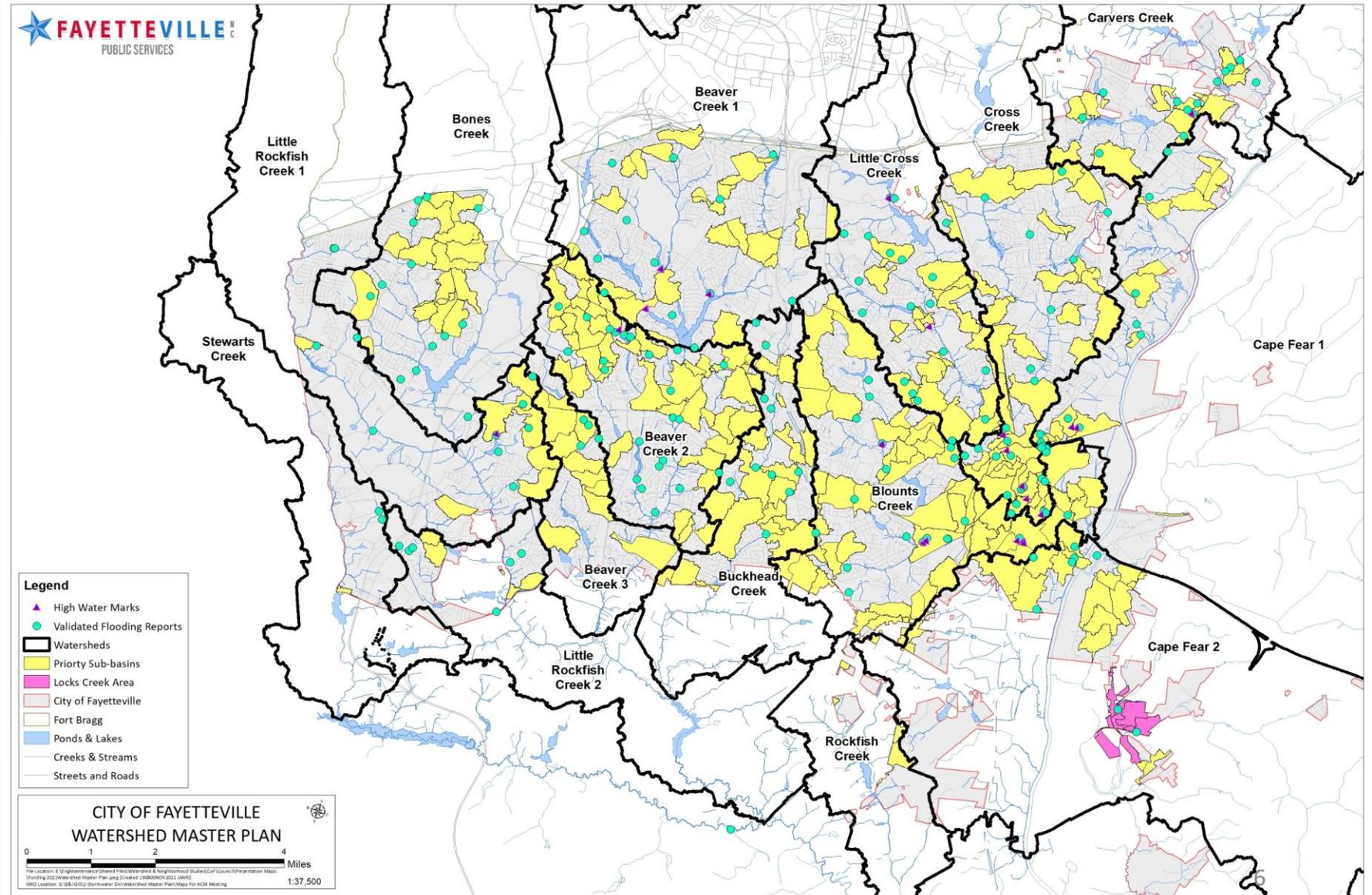
Where? High Priority Study Areas

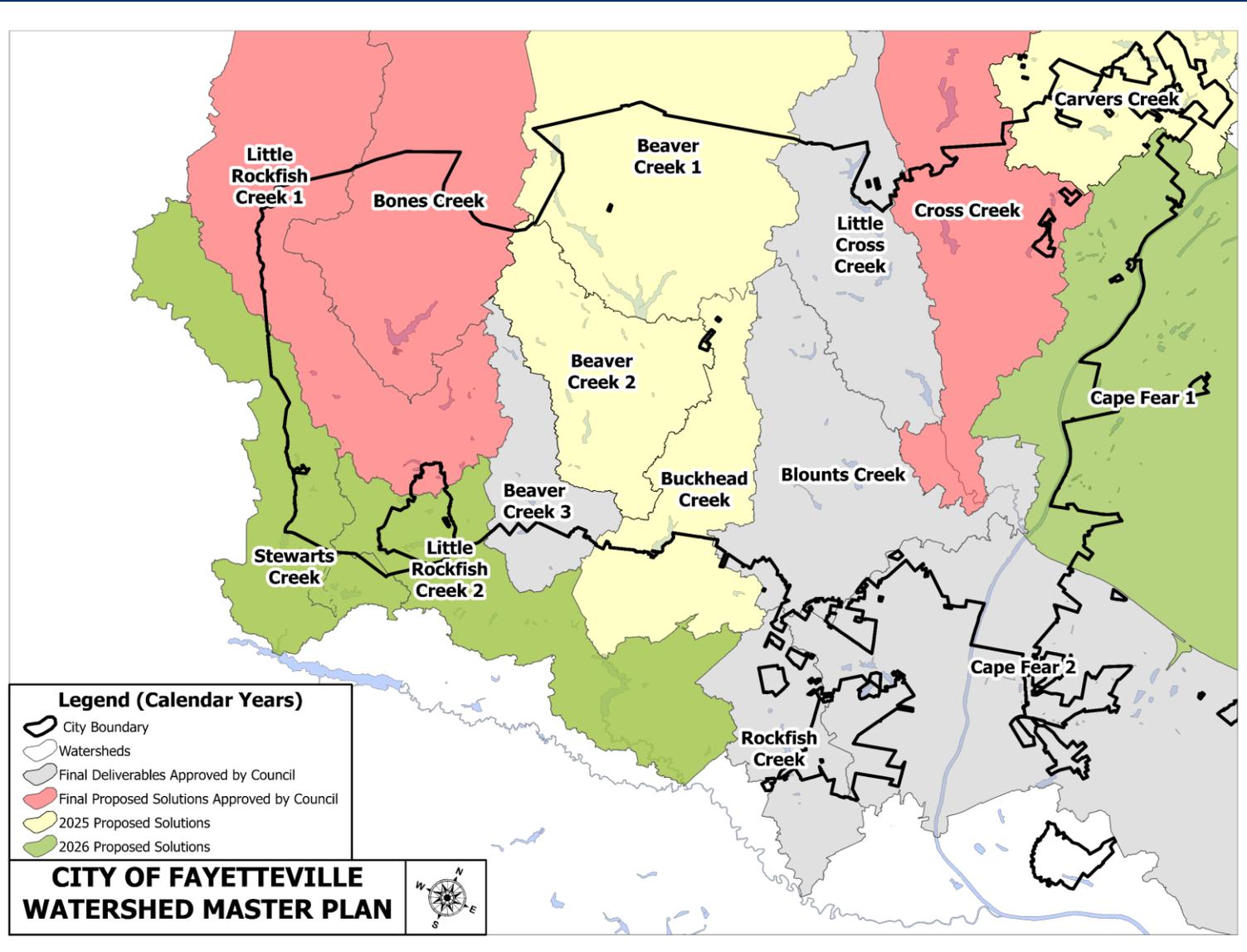
Flooded Roads

Emergency Facilities

Disconnected Structures (Single Access Neighborhoods)

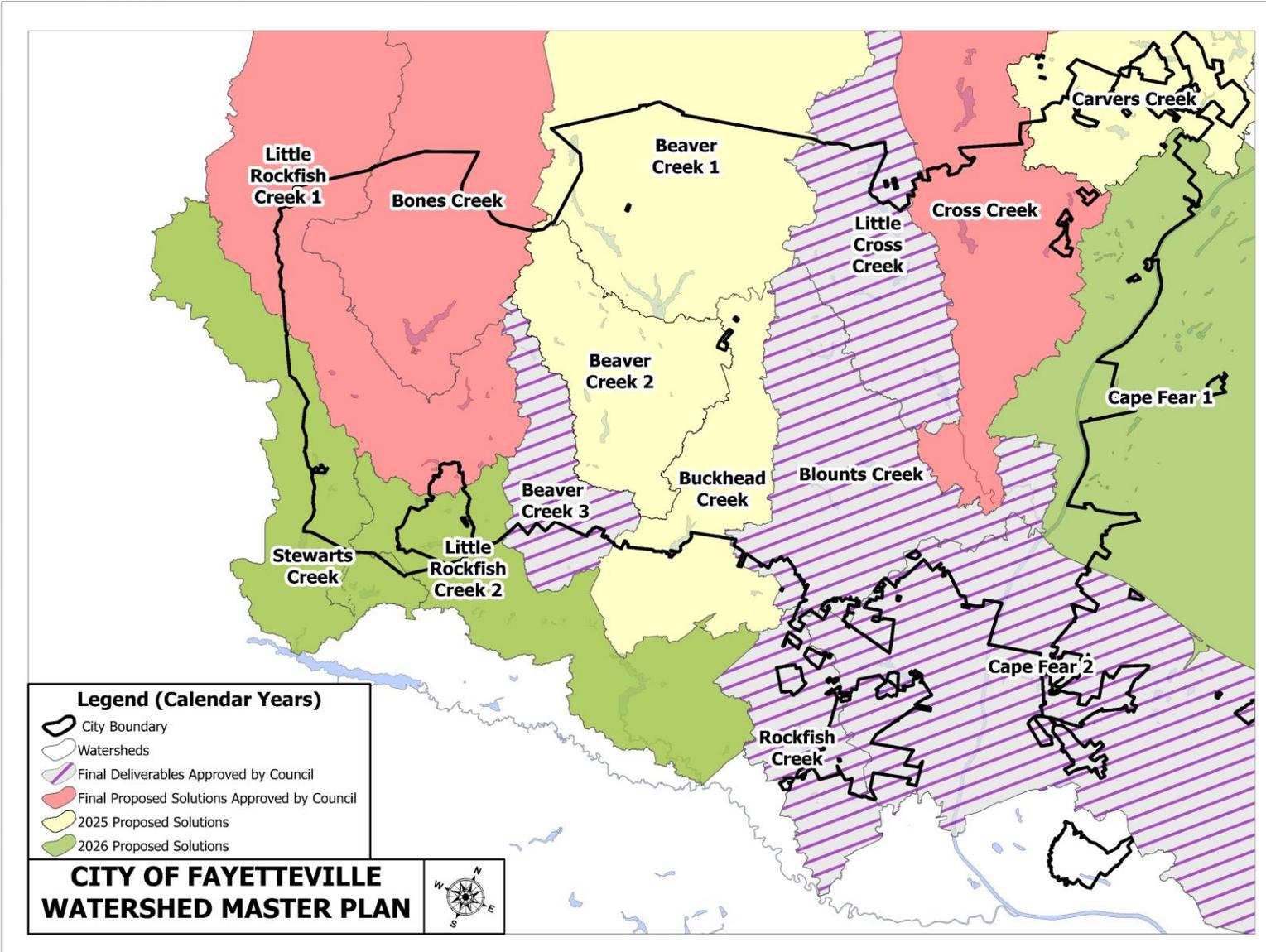
Structures (>400Ft2)





Final Deliverables Approved by Council

(1st Tranche)



Study Area

310 – Total Sub-basins
 109 – Priority I Sub-basins
 12.4 – Sq. Miles

Study Identified

313 – Concern Areas (CAs)
 193 – CAs Selected
 204 – Proposed Solutions

Miles of Impacted Lane Length
 Identified – 74 | Resolved – 49

Number of Traverse Road Crossings
 Identified – 135 | Resolved – 62

Number of Disconnected Structures
 Identified – 1,099 | Resolved – 867

Number of Impacted Structures

	10-yr	25-yr	50-yr
Identified	264	363	380
Resolved	159	183	220

Current Estimated Total Cost \$525M

STORMWATER MANAGEMENT

Fayetteville, North Carolina, awarded improvement

Fayetteville, North Carolina, was awarded with a \$3.5 million grant for June 4, 2024



Tony McEwen • 1st
Carolina's Director at American Flood Coalition
3mo •

Enjoyed a celebratory day in #FayettevilleNC with City officials doing amazing work to respond to #flooding challenges.

ACHIEVERS & ACCOLADES

Fayetteville's commitment to infrastructure \$15.4 million grant finalist

BY STAFF REPORT, POSTED 1 YEAR AGO

In 2023 the American Flood Coalition worked with our North Carolina members to successfully advocate for \$25m in Transportation Flood Resilience grants as part of the North Carolina state budget.

Like 1

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Search the blog



The City of Fayetteville's flood resiliency in the face of climate change: mapping 15 watersheds



Eric Suesz | DECEMBER 12, 2023

GOVERNMENT

Golden LEAF Foundation awards City of Fayetteville \$1M

BY STAFF REPORT, POSTED 2 MONTHS AGO



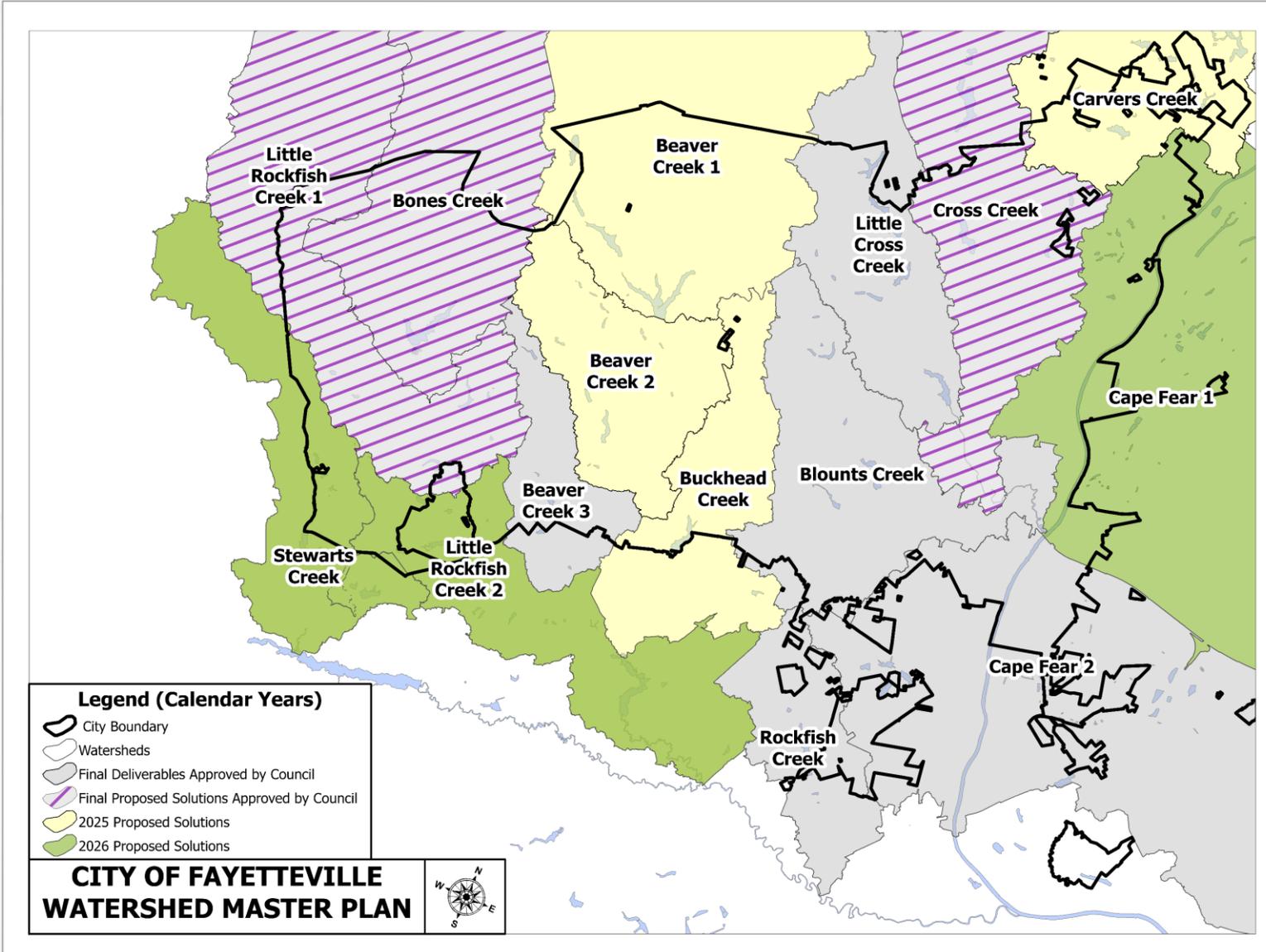
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Proposed Solutions Approved by Council

(2nd Tranche)



Study Area

266 – Total Sub-basins
 63 – Priority I Sub-basins
 14.1 – Sq. Miles

Study Identified

214 – Concern Areas (CAs)
 116 – CAs Selected
 111 – Proposed Solutions

Miles of Impacted Lane Length
 Identified – 76.3 | Resolved – 64.1

Number of Traverse Road Crossings
 Identified – 450 | Resolved – 353

Number of Disconnected Structures
 Identified – 61 | Resolved – 59

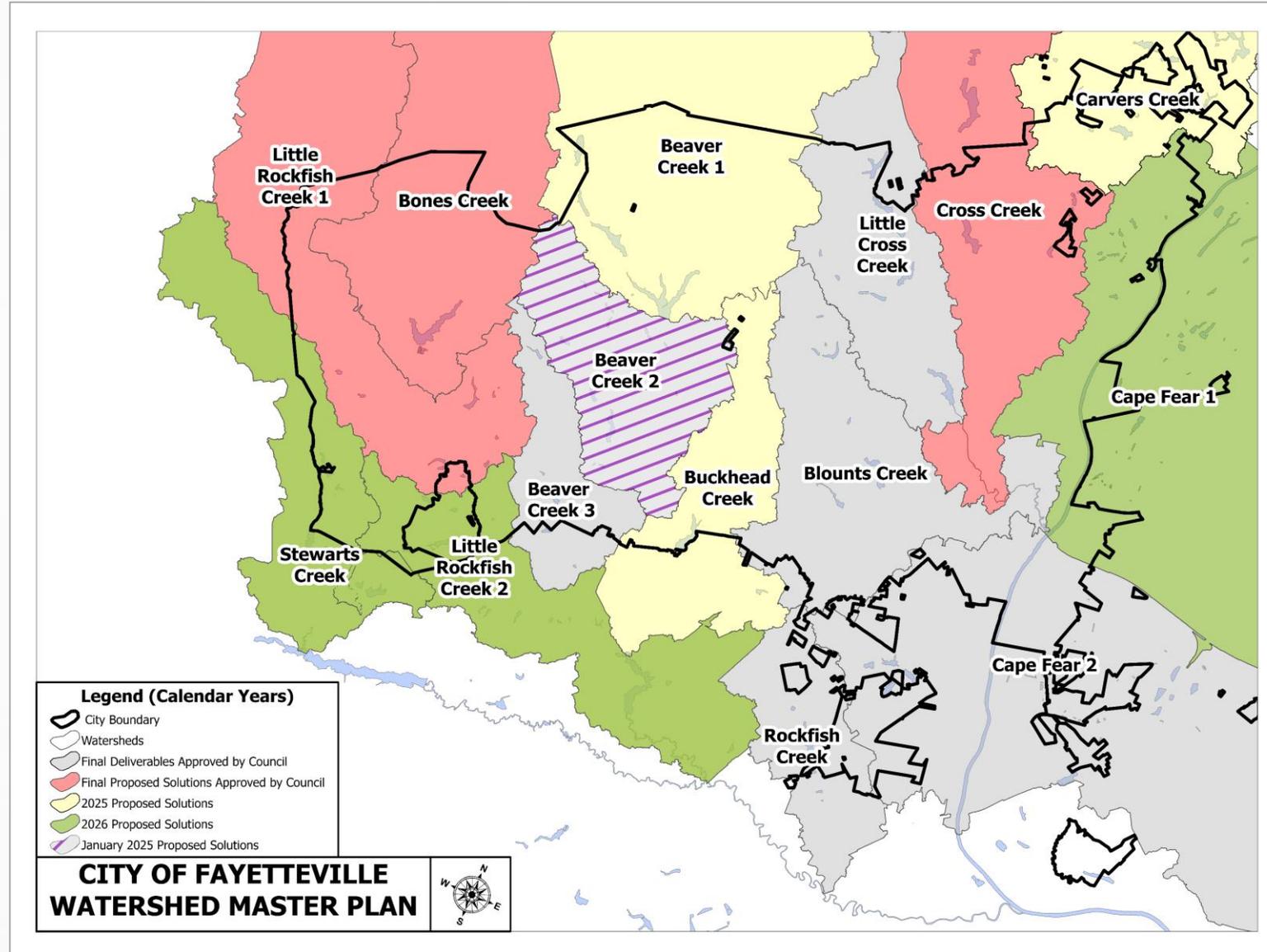
Number of Impacted Structures

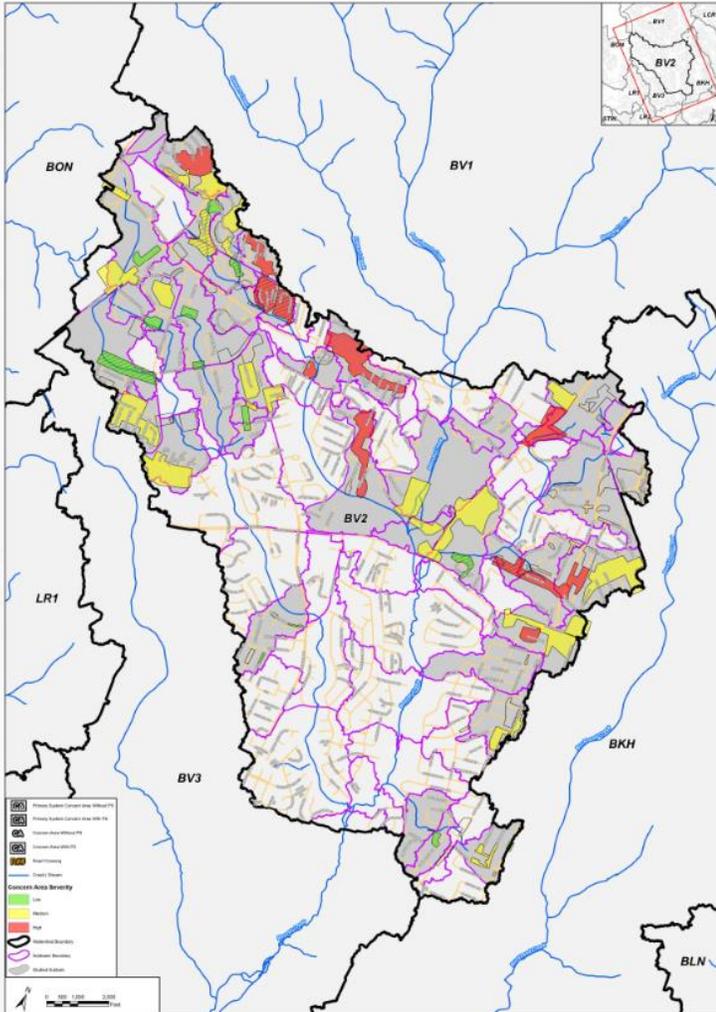
	10-yr	25-yr	50-yr
Identified	237	374	444
Resolved	170	278	332

Current Estimated Total Cost \$470.4M

Beaver Creek 2 Watershed

Proposed Solutions





Study Area

- 76 – Total Sub-basins
- 43 – Priority I Sub-basins
- 8.5 – Sq. Miles

Study Identified

- 95 – Concern Areas (CAs)
- 31 – CAs Selected
- 31 – Proposed Solutions

Miles of Impacted Lane Length
 Identified – 19.1 | Resolved – 16.8

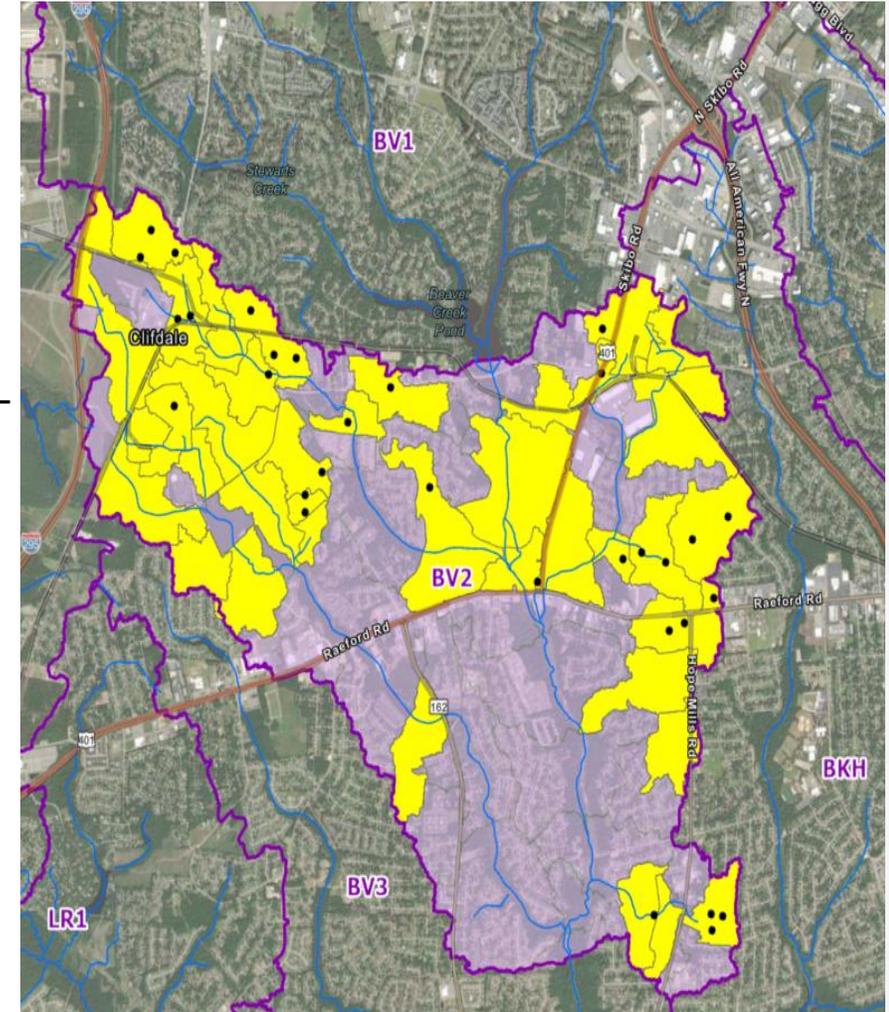
Number of Traverse Road Crossings
 Identified – 41 | Resolved – 16

Number of Disconnected Dwellings
 Identified – 101 | Resolved – 101

Number of Impacted Structures

	10-yr	25-yr	50-yr
Identified	95	165	194
Resolved	85	149	177

Current Total Cost \$85M

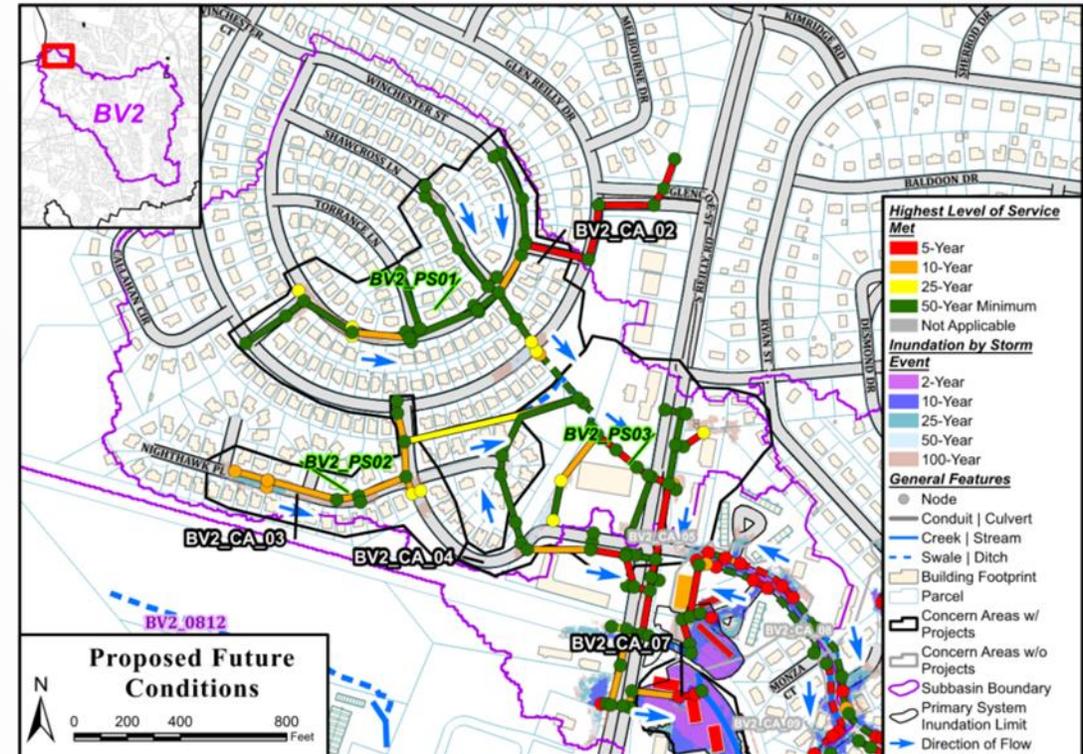
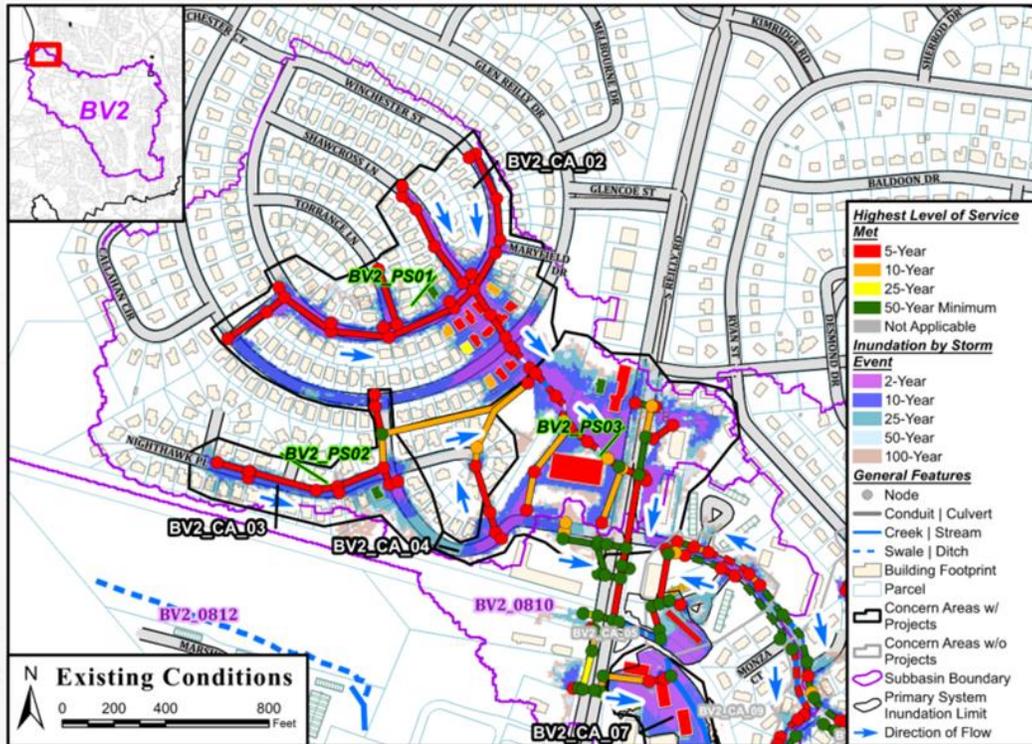


Solution #	Proposed Solution Description	Score	Efficacy	Cost
PS01 (BV2_CA02)	Winchester St. to S. Reilly Rd.	14	100%	\$3.4M
PS05 (BV2_CA14)	Timberwood Dr. to Wilder Dr.	12	97%	\$7.5M
PS07 (BV2_CA17) *	Bartons Landing Pl.	20	75%	\$590K
PS06 (BV2_CA15) *	Allonby Rd.	12	100%	\$697K
PS14 (BV2_CA45)	Glenlea Cir. To Kimbrook Dr.	12	79%	\$4.8M
PS24 (BV2_CA84)**	Ashbrook Rd.	29	79%	\$602K
PS23 (BV2_CA81)**	Belford Rd.	31	91%	\$8.6M
PS22 (BV2_CA77) **	Berwick Dr. and Glensford Dr.	23	91%	\$4.3M
PS21 (BV2_CA75) **	Moriston Rd. to Berwick Dr.	6	100%	\$9.7M

* PS06 and PS07 are part of a proposed solution package (PSP). PS07 can be completed as a stand-alone project but must be completed before PS06.

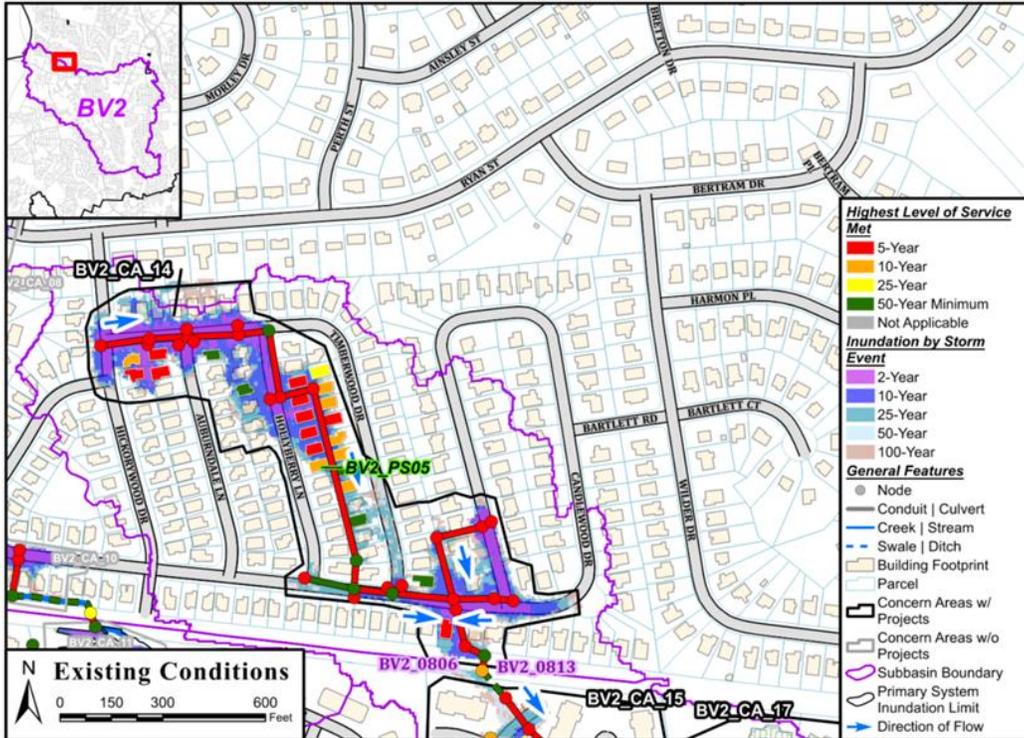
** PS21, PS22, PS23, and PS24 are part of a proposed solution package. PS24 can be completed as a stand-alone project. PS21, PS22, and PS23 are part of a phasing package with PS23 to be completed first.

PS01 (BV2_CA02) Winchester St. to S. Reilly Rd.

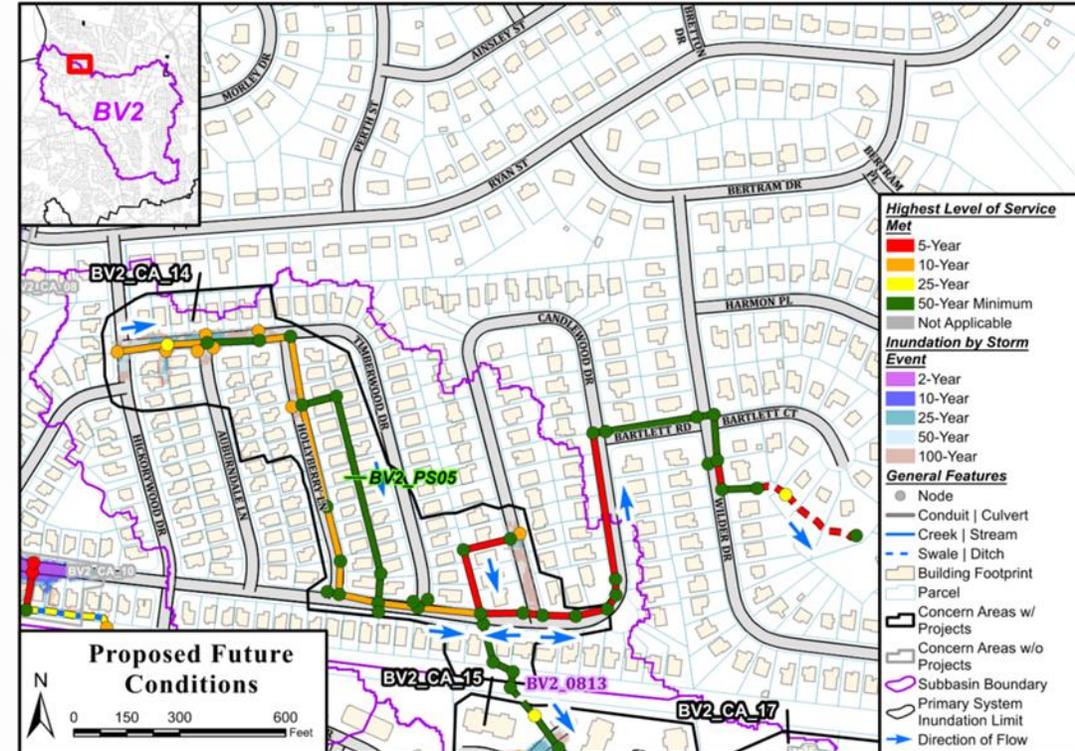


- Council District 4
- Beaver Creek 2
- Proposed Solution = Capacity Expansion
- CA Score = 14
- Efficacy = 100%
- Estimated Cost = \$3.4M

- Eliminates 7,533 LF of impacted lane length
- Eliminates Impacts to 14 Structures from 10-, 25-, & 50-yr events
- Eliminates traverse road crossings in 25- & 50-year events.

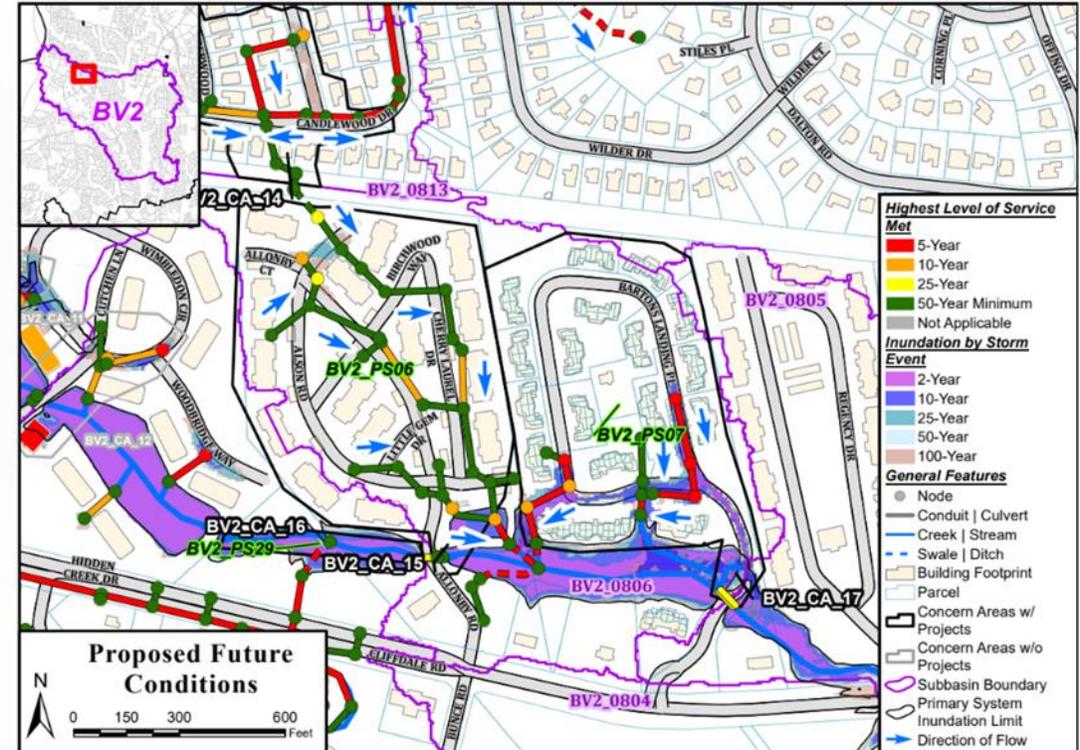
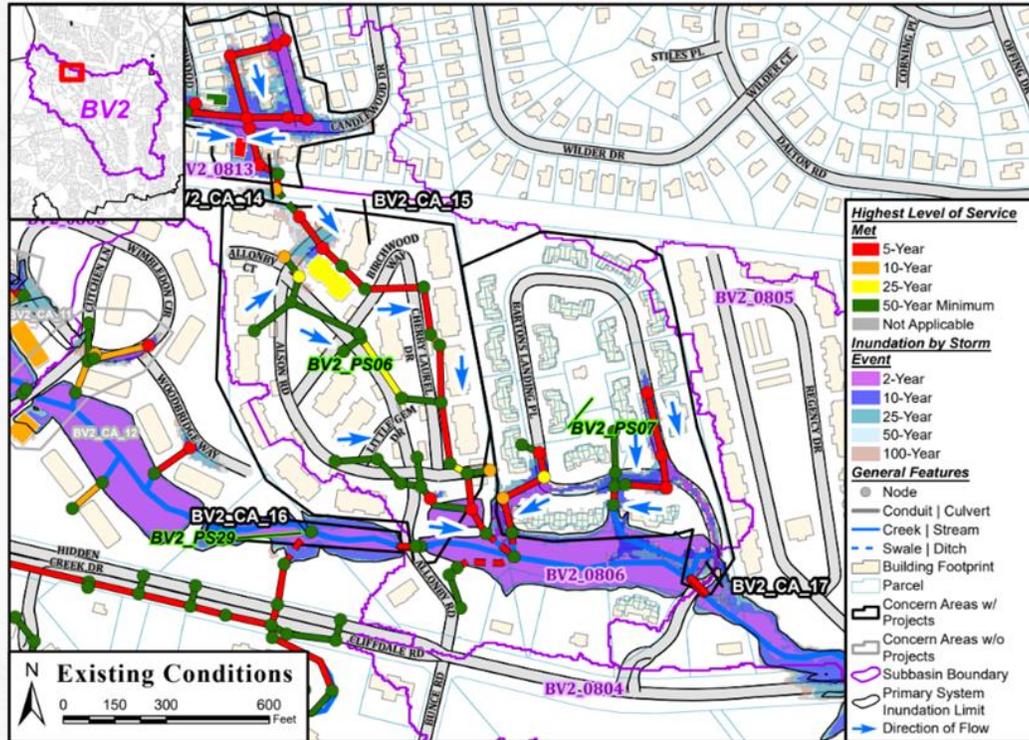


- Council District 9
- Beaver Creek 2
- Proposed Solution = Capacity Expansion
- CA Score = 12
- Efficacy = 97%
- Estimated Cost = \$7.5M



- Reduces 1,745 LF of impacted lane length
- Eliminates Impacts to 22 Structures from 10-, 25-, & 50-yr events
- Eliminates traverse road crossings in 25- & 50-year events.

PS07* (BV2_CA17) Bartons Landing Pl.

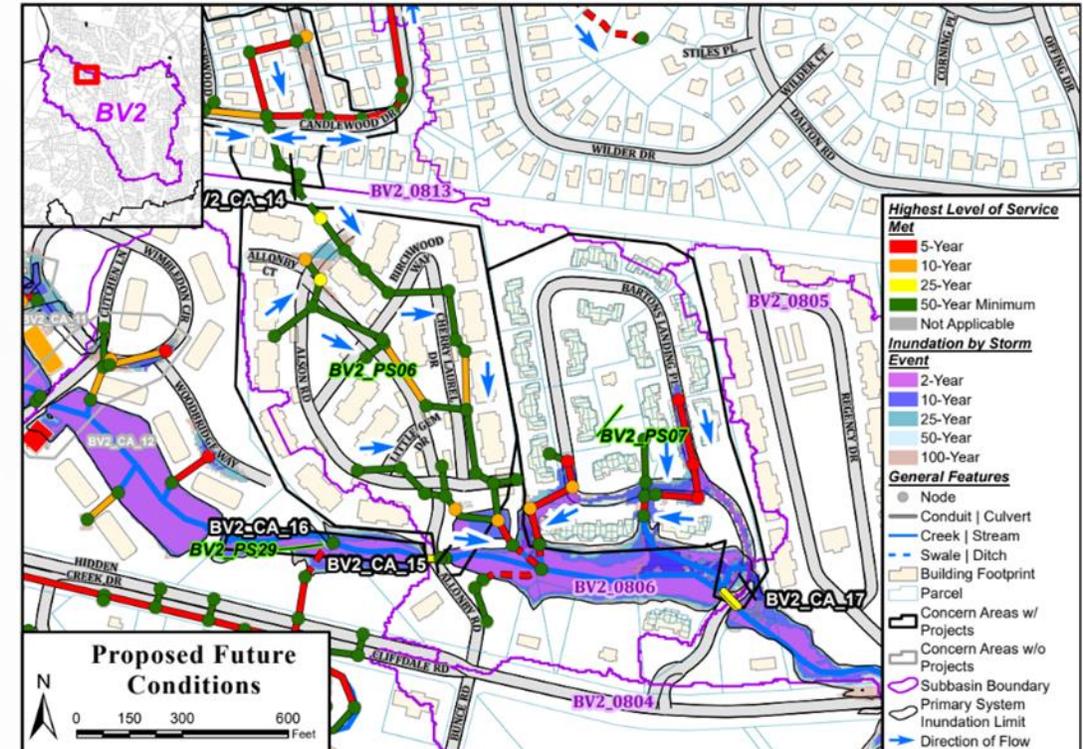
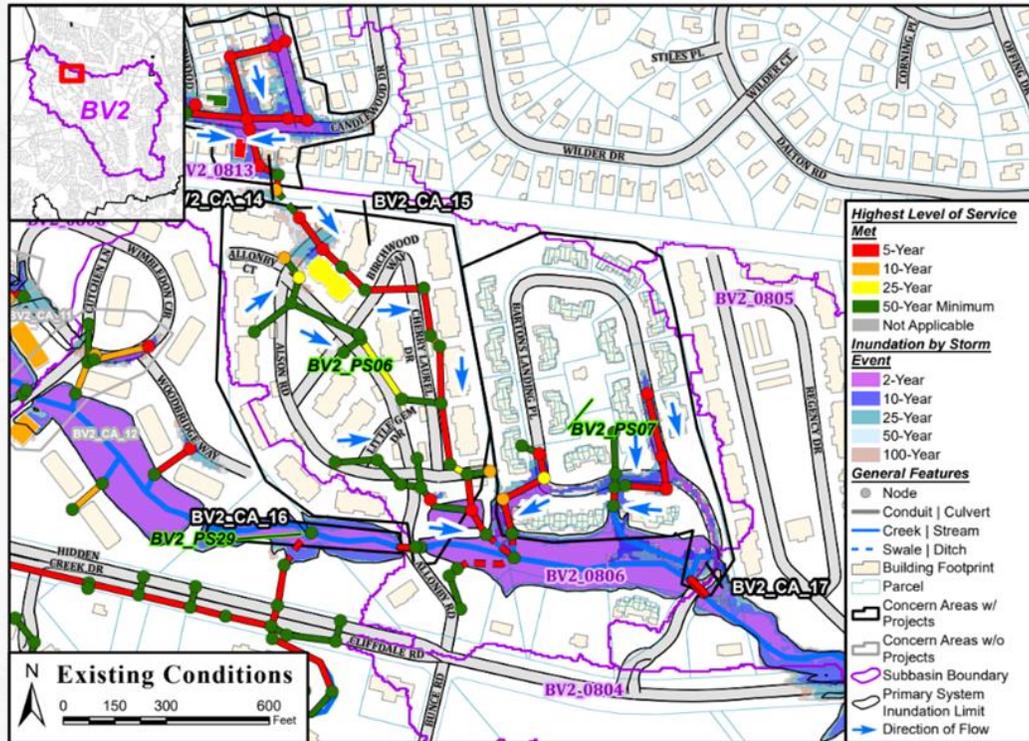


- Council District 9
- Beaver Creek 2
- Proposed Solution = Capacity Expansion
- CA Score = 20
- Efficacy = 75%
- Estimated Cost = \$590K

- Eliminates 2,166 LF of impacted lane length
- Eliminates traverse road crossings in 25- & 50-yr events.
- Provides access to 18 structures during 50-yr event

*Note: PS07 and PS06 are part of a proposed solution package. PS07 can be completed individually but must occur prior to PS06.

PS06* (BV2_CA15) Allonby Rd.

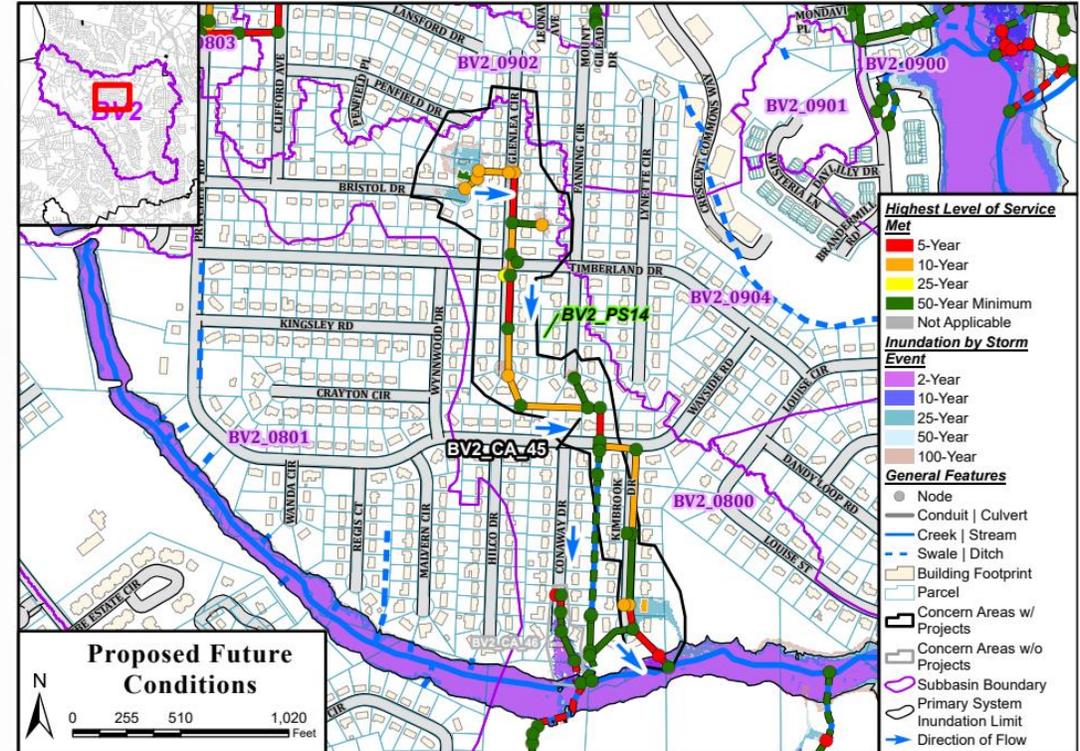
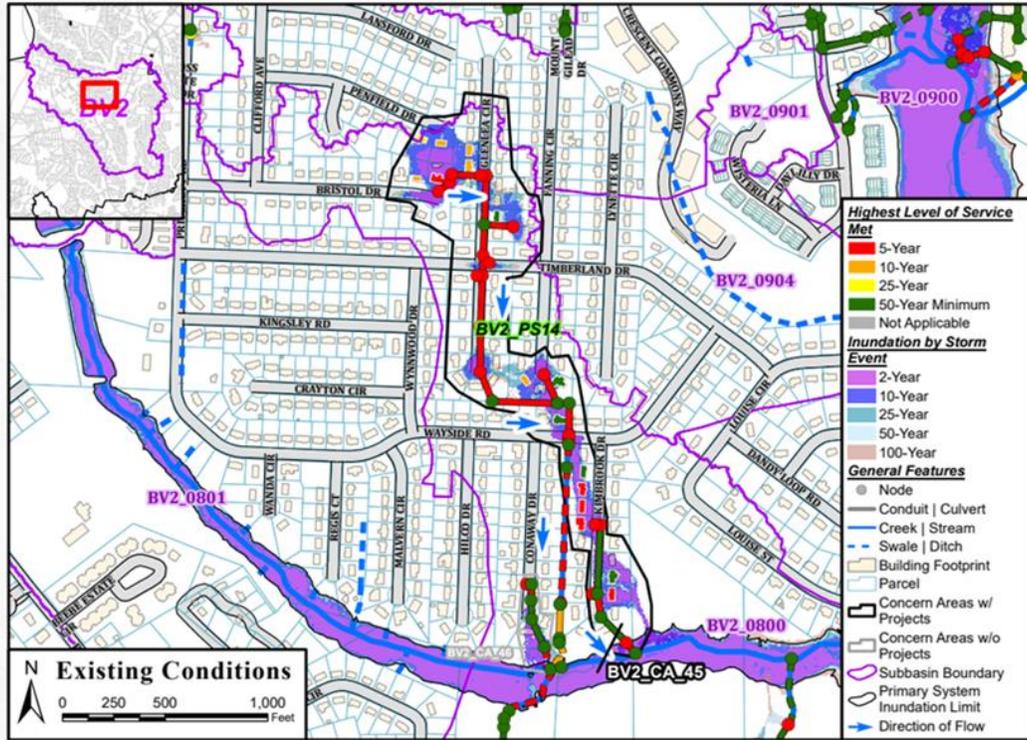


- Council District 9
- Beaver Creek 2
- Proposed Solution = Capacity Expansion
- CA Score = 12
- Efficacy = 100%
- Estimated Cost = \$697K

- Eliminates Impacts to 1 Structure from 10-, 25-, & 50-yr events
- Eliminates traverse road crossings in 25- & 50-yr events.
- Provides access to 15 structures during 50-yr event

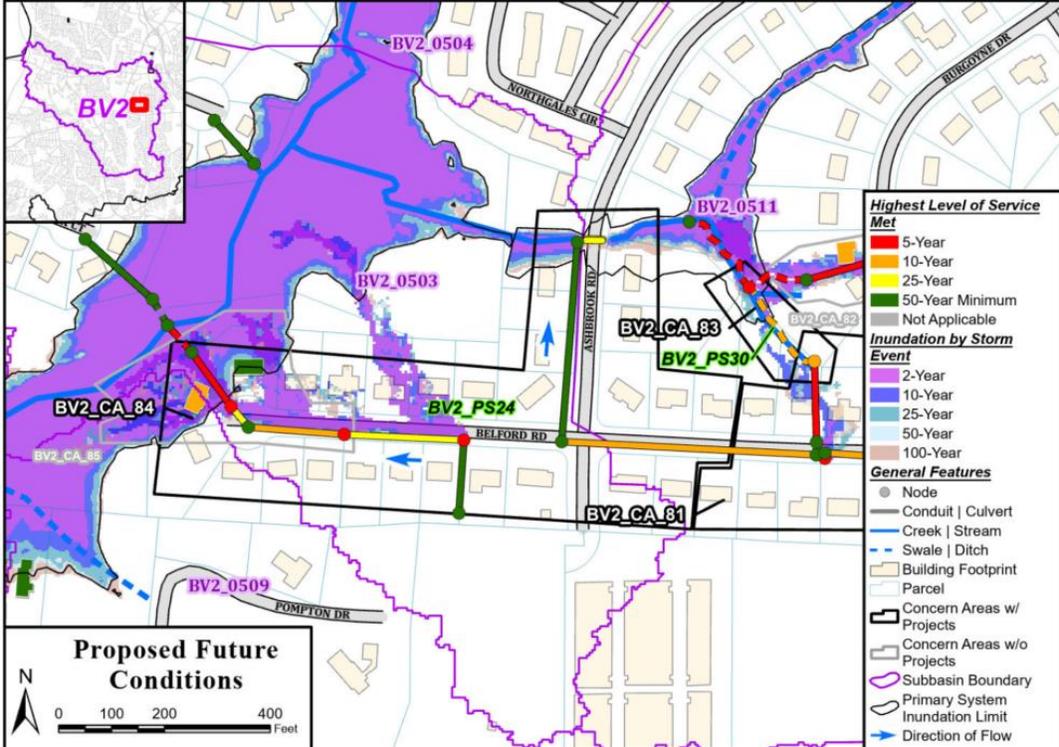
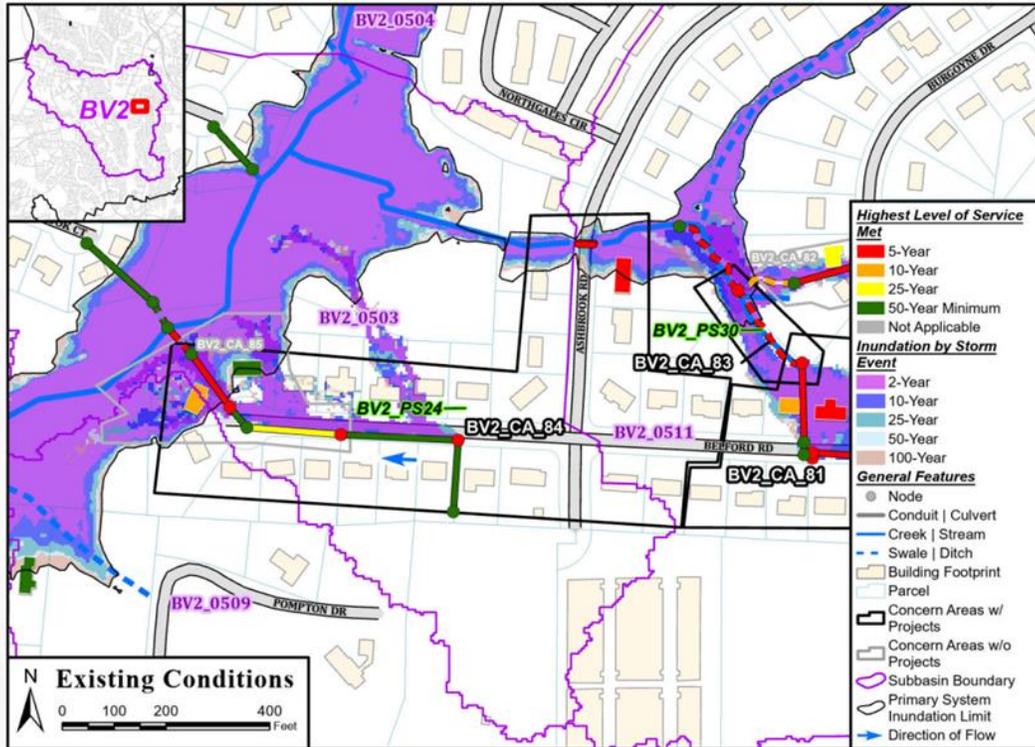
*Note: PS07 and PS06 are part of a proposed solution package. PS07 must be completed prior to PS06.

PS14 (BV2_CA45) Glenlea Cir. To Kimbrook Dr.



- Council District 7
- Beaver Creek 2
- Proposed Solution = Capacity Expansion
- CA Score = 12
- Efficacy = 79%
- Estimated Cost = \$4.8M

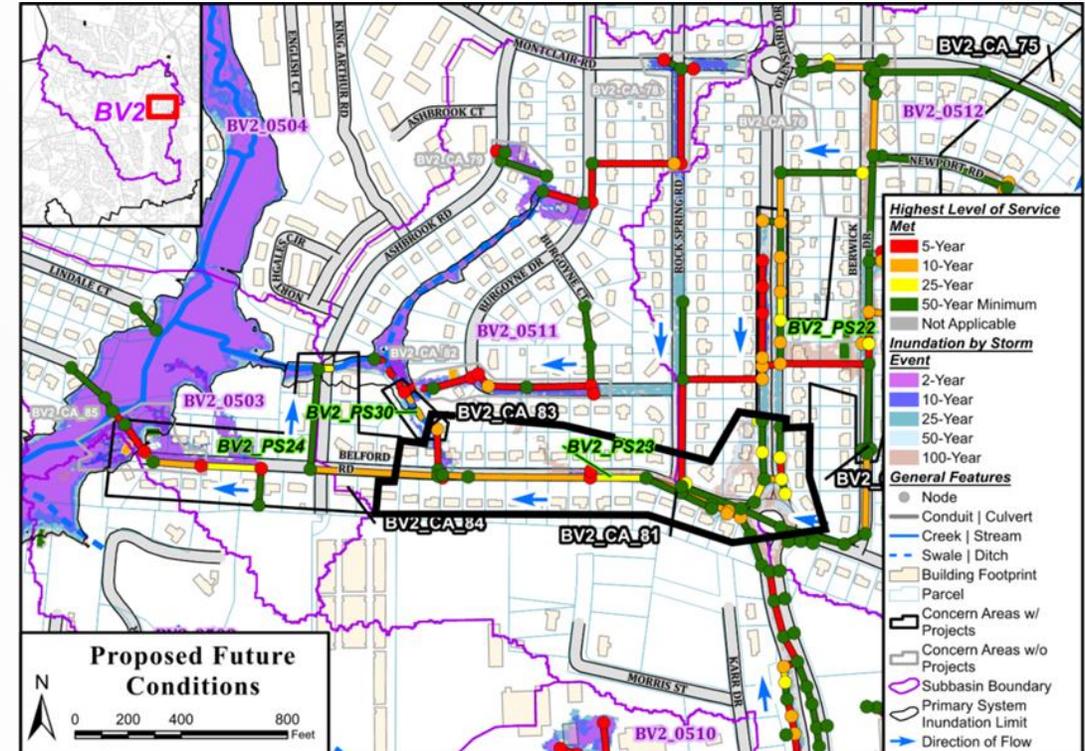
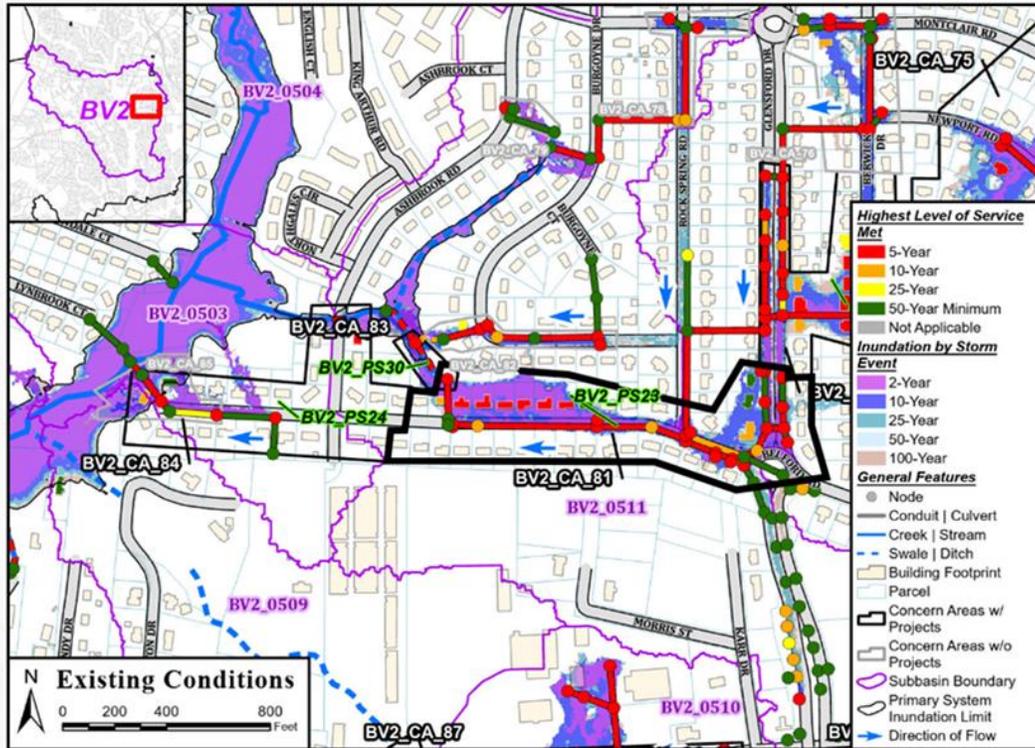
- Reduces 3,195 LF of Impacted Lane Length
- Eliminates Impacts to 13 Structures from 10-, 25-, & 50-yr events
- Reduces traverse road crossings in 25- & 50-yr events



- Council District 9
- Beaver Creek 2
- Proposed Solution = Culvert Upsizing
- CA Score = 29
- Efficacy = 79%
- Estimated Cost = \$602K

- Eliminates traverse road crossing on Ashbrook Rd in 25- & 50-yr events.
- Provides access to 26 structures during 50-yr event

**Note: PS24 is part of a proposed solution package with PS21, PS22, and PS23. PS24 can be completed as a standalone project.

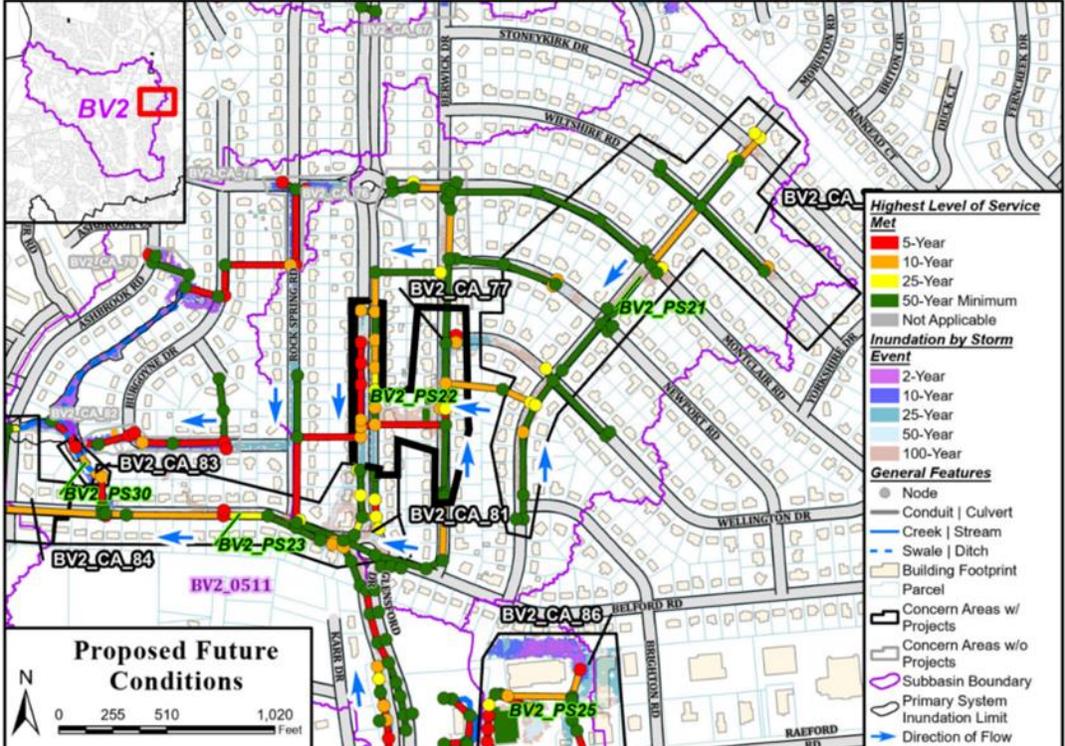
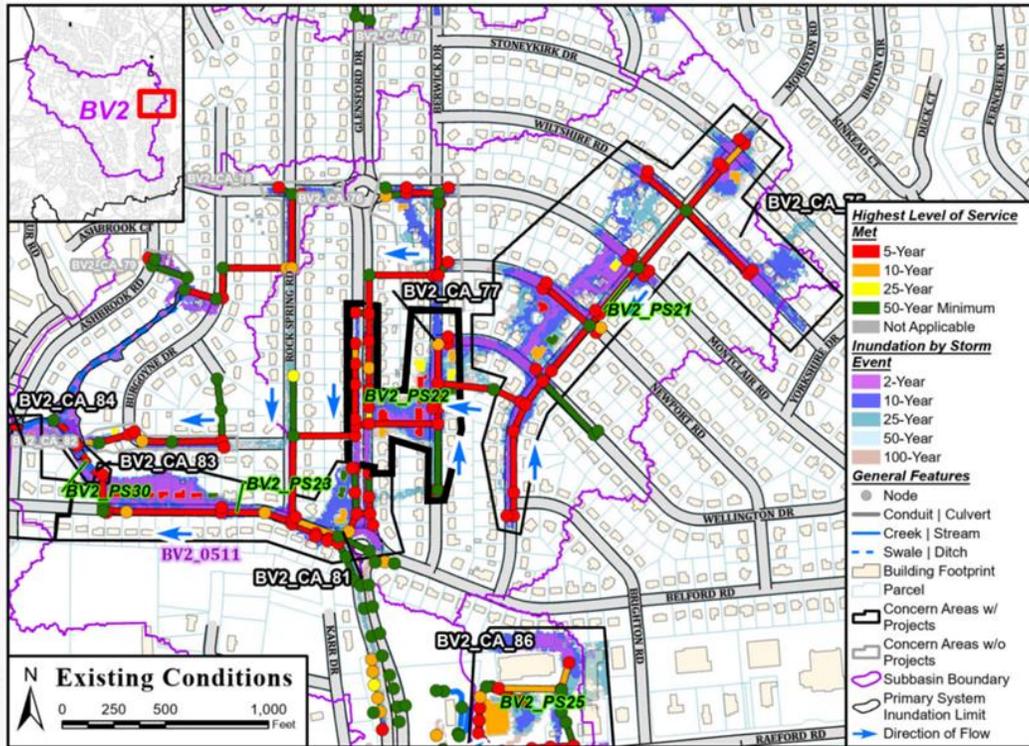


- Council District 9
- Beaver Creek 2
- Proposed Solution = Capacity Expansion
- CA Score = 31
- Efficacy = 91%
- Estimated Cost = \$8.6M

- Reduces 2,709 LF of Impacted Lane Length
- Eliminates Impacts to 9 Structures from 10-, 25-, & 50-yr events
- Provides access to 29 structures during 50-yr event
- Reduces traverse road crossings in 25- & 50-yr events

**Note: PS23 is part of a proposed solution package with PS21, PS22, and PS24. PS21, PS22, and PS23 are part of a phasing package with PS23 to be completed first.

PS22** (BV2_CA77) Berwick Dr. and Glensford Dr.

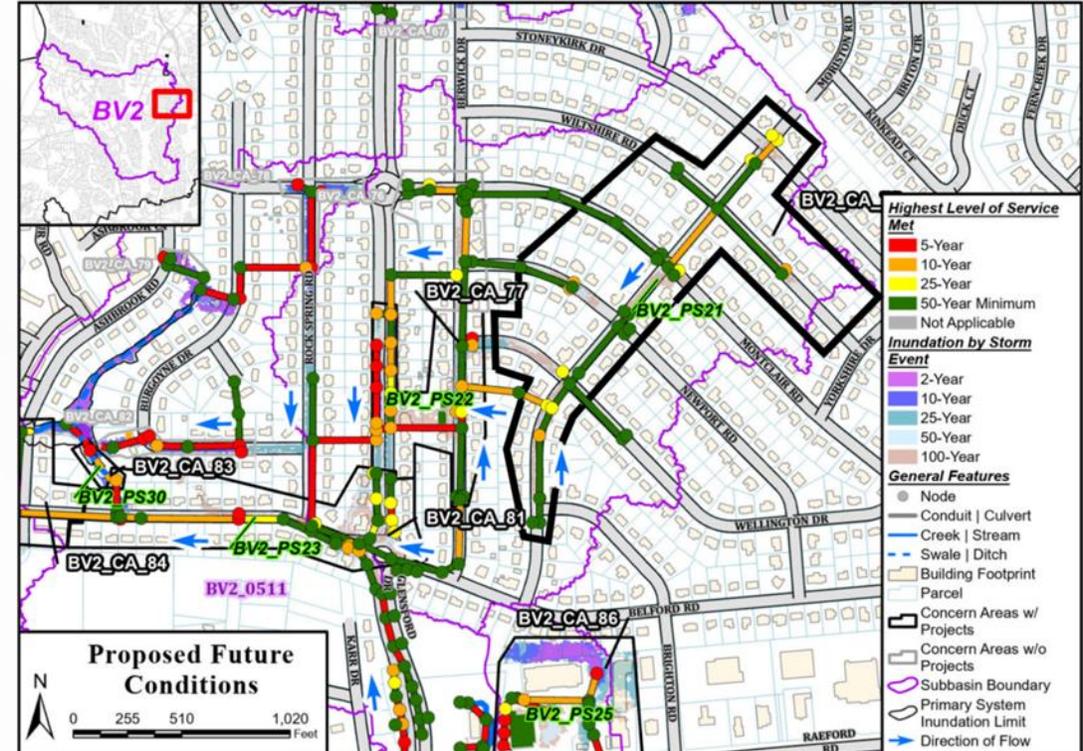
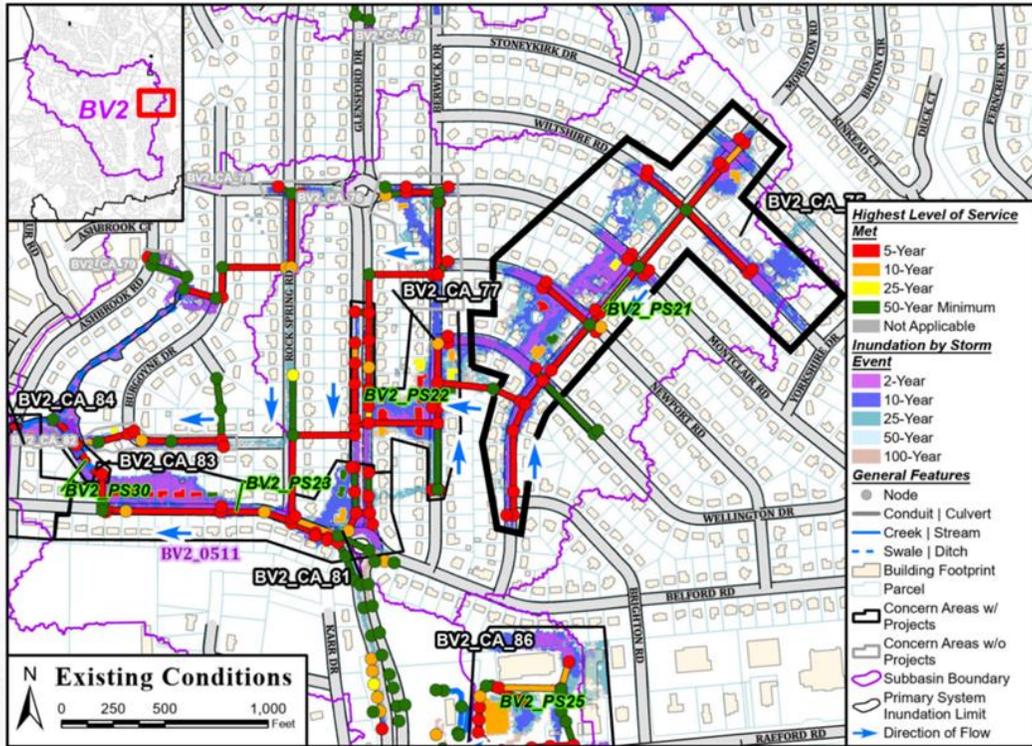


- Council District 9
- Beaver Creek 2
- Proposed Solution = Capacity Expansion
- CA Score = 23
- Efficacy = 91%
- Estimated Cost = \$4.3M

- Reduces 2,975 LF of Impacted Lane Length
- Eliminates Impacts to 11 Structures from 10-, 25-, & 50-yr events
- Provides access to 8 structures during 50-yr event
- Eliminates traverse road crossings in 25- & 50-yr events

**Note: PS22 is part of a proposed solution package with PS21, PS23, and PS24. PS21, PS22, and PS23 are part of a phasing package with PS23 to be completed first.

PS21** (BV2_CA75) Moriston Rd. to Berwick Dr.



- Council District 9
- Beaver Creek 2
- Proposed Solution = Capacity Expansion
- CA Score = 6
- Efficacy = 100%
- Estimated Cost = \$9.7M

- Reduces 8,601 LF of Impacted Lane Length
- Eliminates Impacts to 6 Structures from 10-, 25-, & 50-yr events

Options:

1. Council provides consensus to approve the 31 proposed solutions from the Beaver Creek 2 watershed study 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 31 proposed solutions from Beaver Creek 2 watershed study and remands back to staff with additional guidance.

Recommended Action:

Council provides consensus to approve the 31 proposed solutions from the Beaver Creek 2 watershed study to enable staff to program them into the annual CIP prioritization process and pursue grants as applicable.

Questions?



Thank You!



FayettevilleNC.gov