

Public Meeting #1 September 29, 2016



Beechwood/Cypress Storm Drainage Improvements Project



Introduction of Team Members



City of Raleigh Staff

- David Kiker, PE, Engineering Services
- Veronica High, PE, Engineering Services
- Carmela Teichman, Public Outreach & Education

WSP | Parsons Brinckerhoff Staff

- Everett Gupton, PE
- Jon Becker, EI



Presentation Overview



- Introduce Team Members
- Summarize Project Goals
- Historical Flooding
- Present Existing Conditions Findings
- Present Recommended Drainage Improvements
- Drainage Easements
- Proposed Schedule
- Questions/Answers/Break-Out Sessions

Project Goals



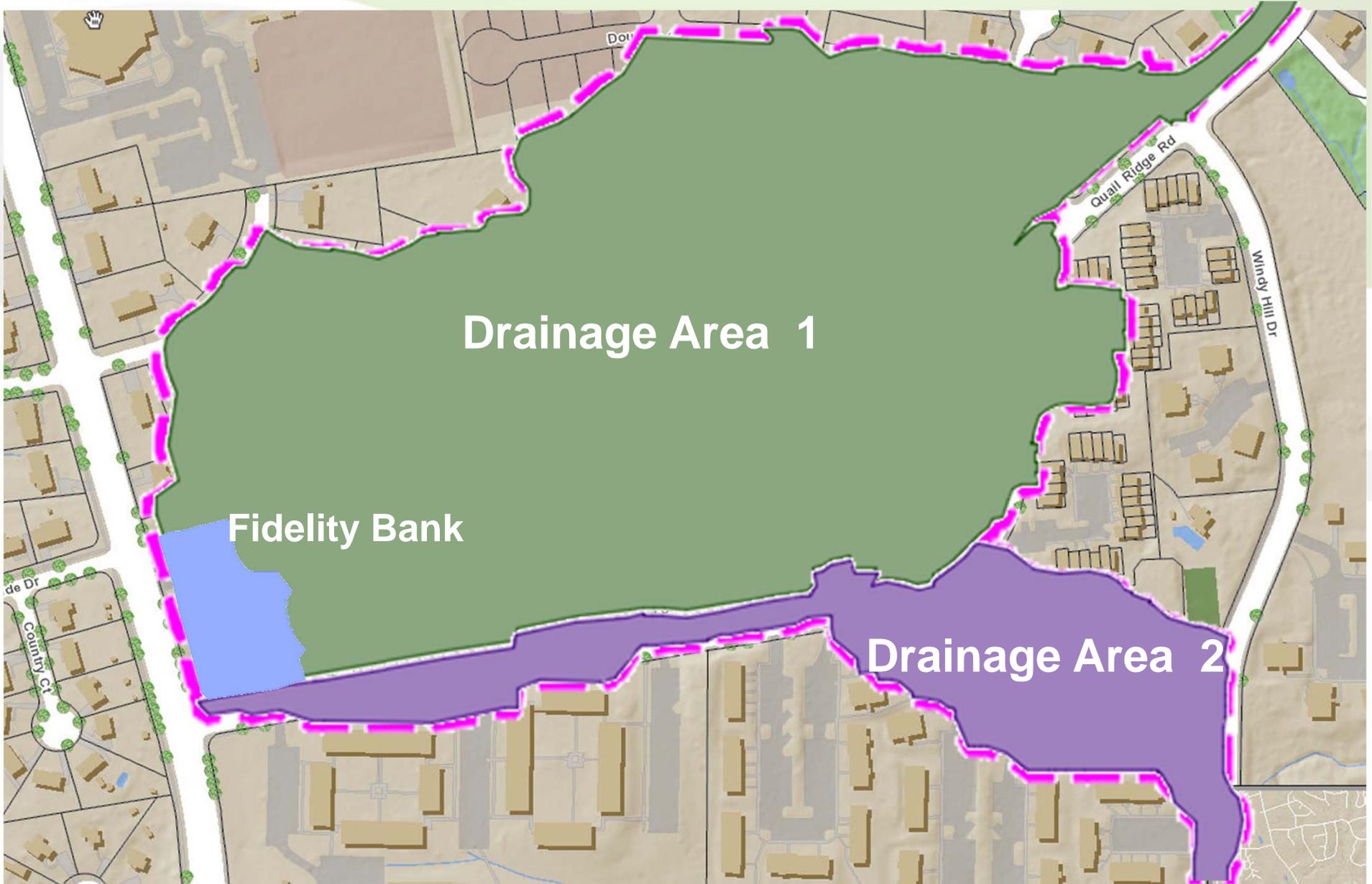
- Eliminate Roadway Flooding in 10-Year Flood
- Reduce Crawl Space, HVAC, Garage and Basement Flooding of Homes
- Reduce Yard Flooding
- Reduce Erosion



Study Area



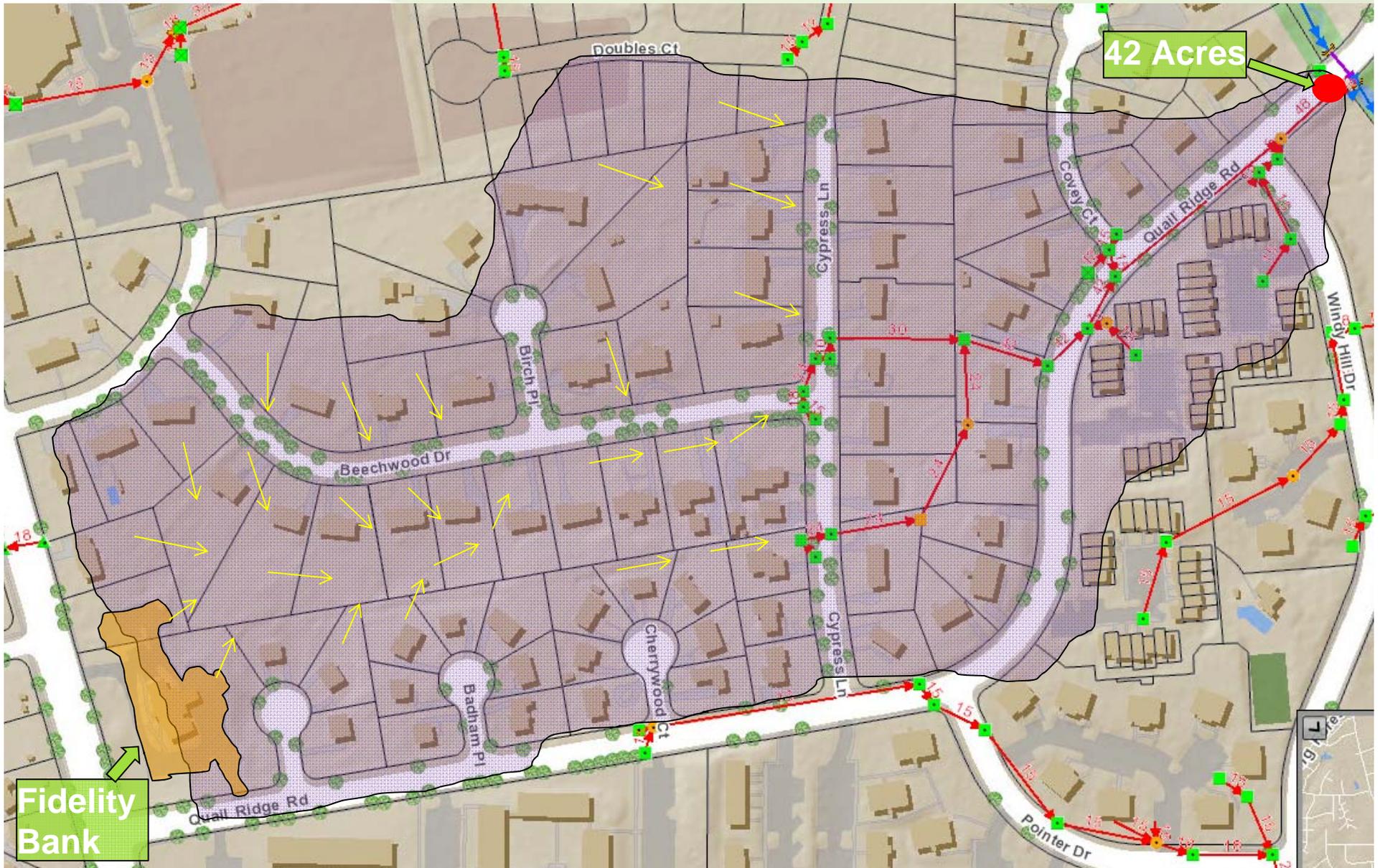
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Drainage Area 1



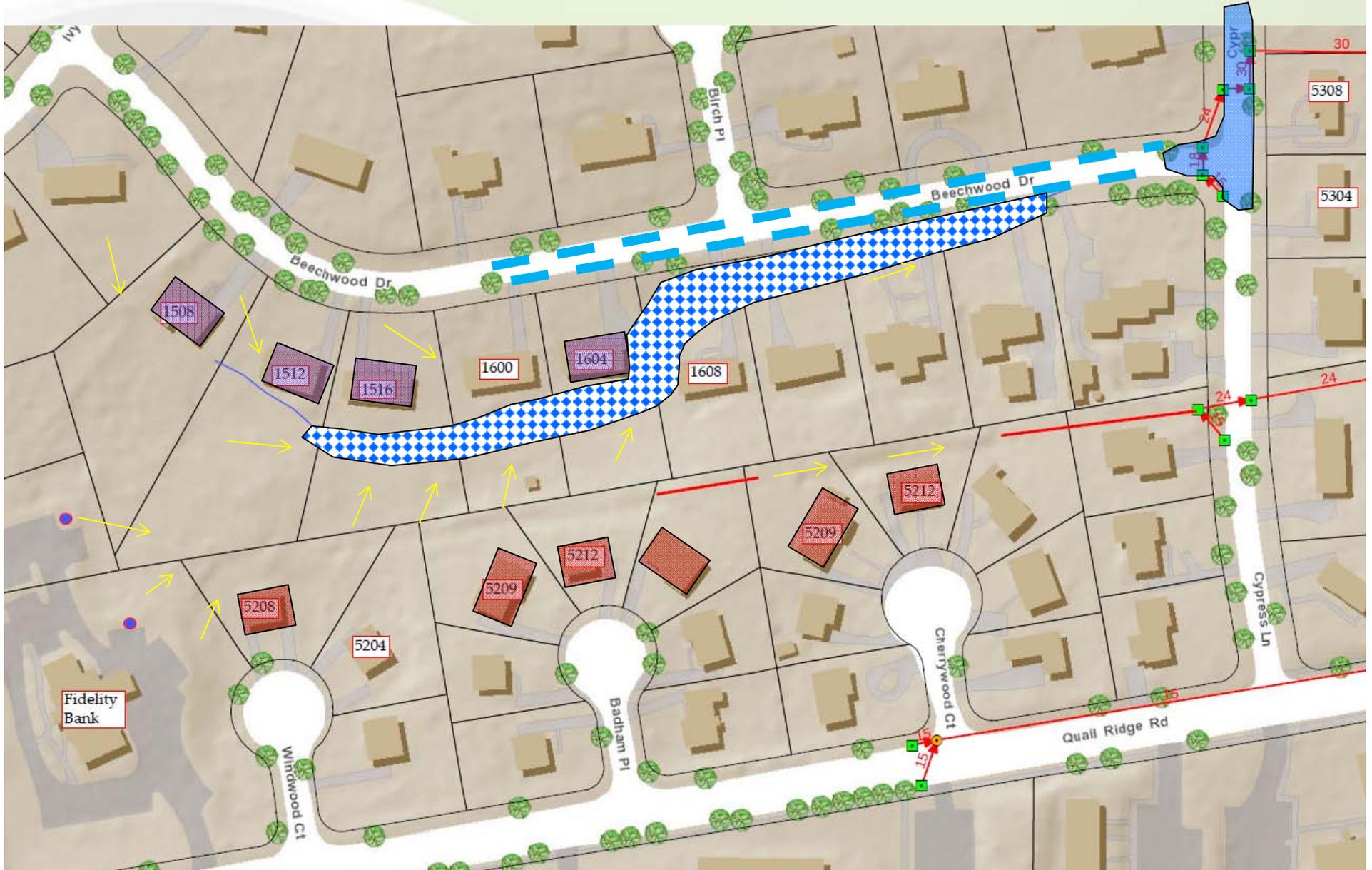
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Historical Flooding



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Historical Flooding



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1604 Beechwood Drive – July 2016

Historical Flooding



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1604 Beechwood Drive – July 2016

Historical Flooding



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1608 Beechwood Drive – July 2016

Existing Conditions Findings



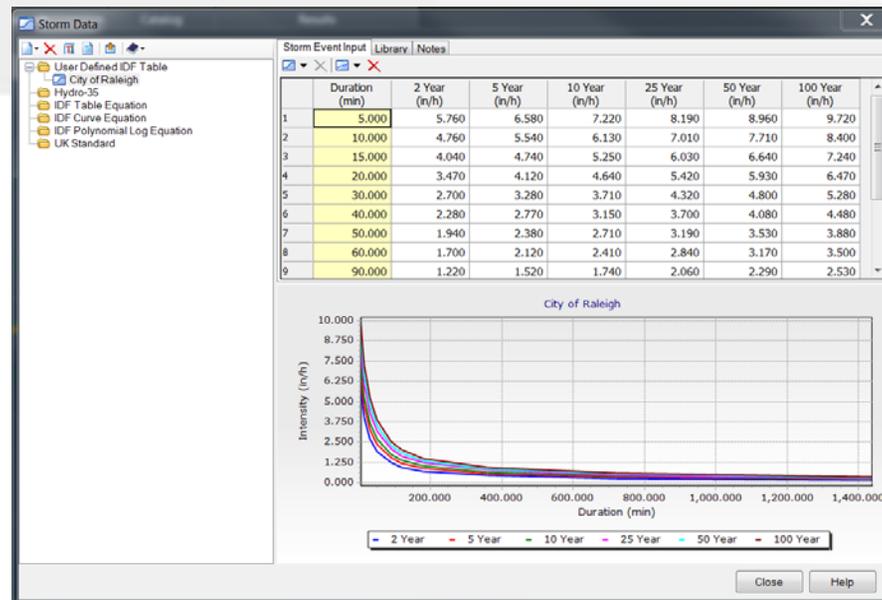
Hydrology

- Rational Method Hydrology
- Drainage Area
- Landuse
- Topographic Relief of Watershed
- Peak Flows

Hydraulics

- Field Surveyed Data
- Pipe Size, Length and Roughness
- Starting Conditions
- Street Spread <7.5 feet

Bentley
iamcivilengineer.com
www.bentley.com
Bentley WaterCAD V8i
SELECTseries 3



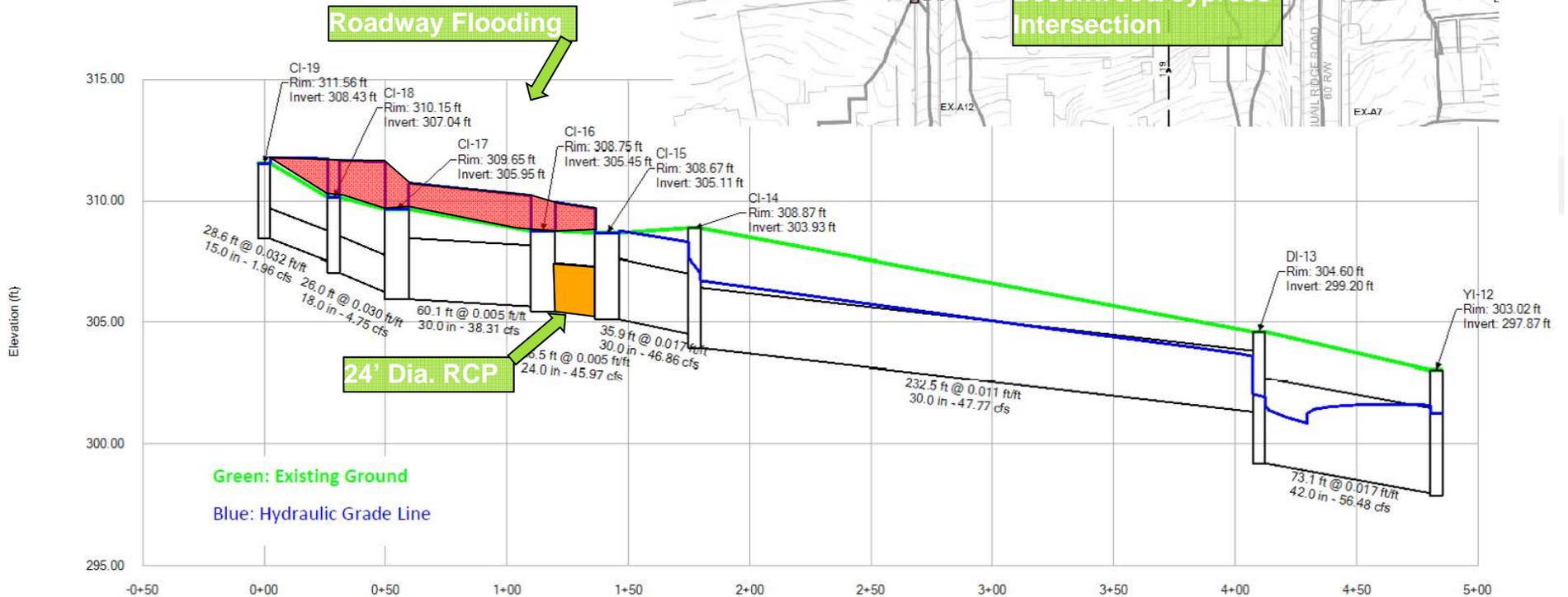
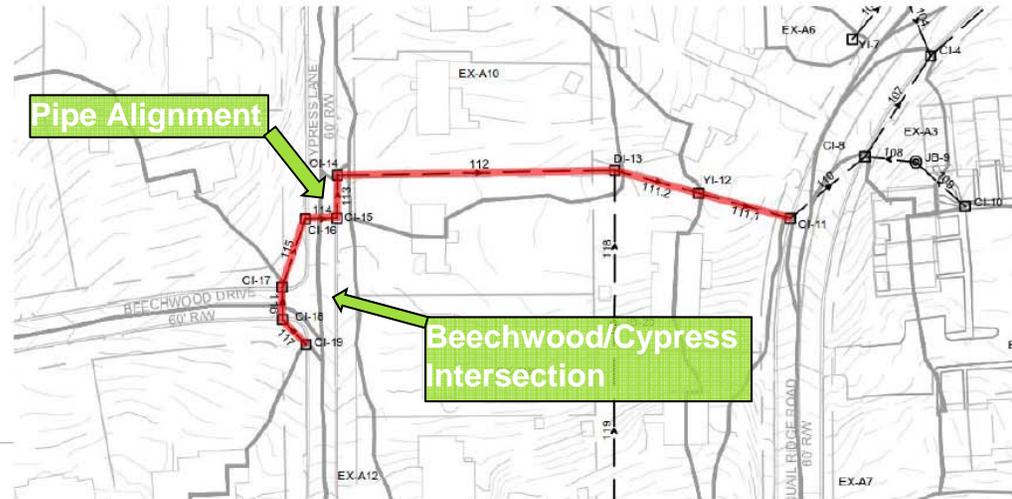
Existing Conditions Findings



Existing Drainage Profile

Intersection of Beechwood and Cypress to Quail Ridge Road

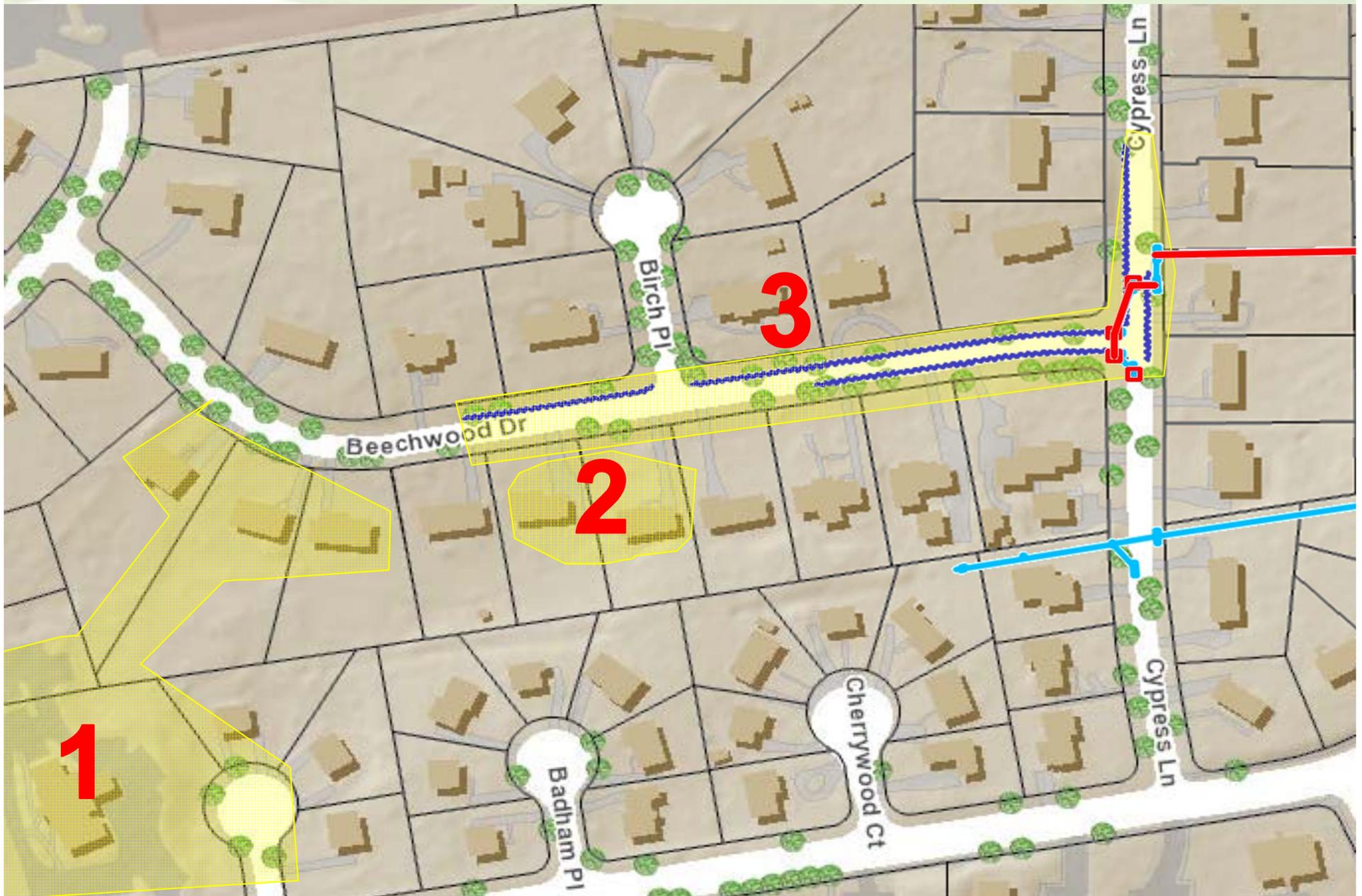
(10-Year Design Storm)



Existing Conditions Findings



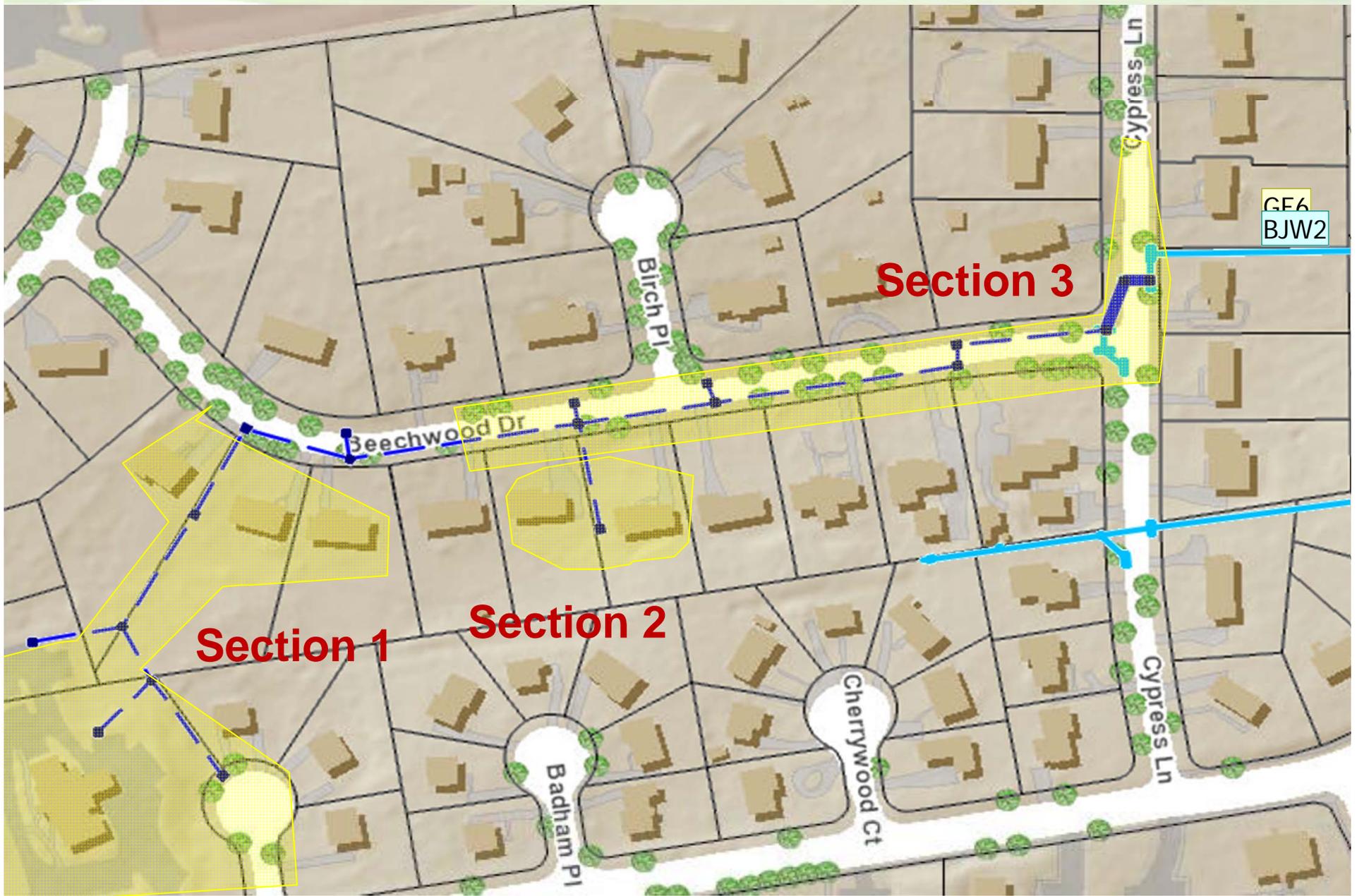
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Proposed Improvements



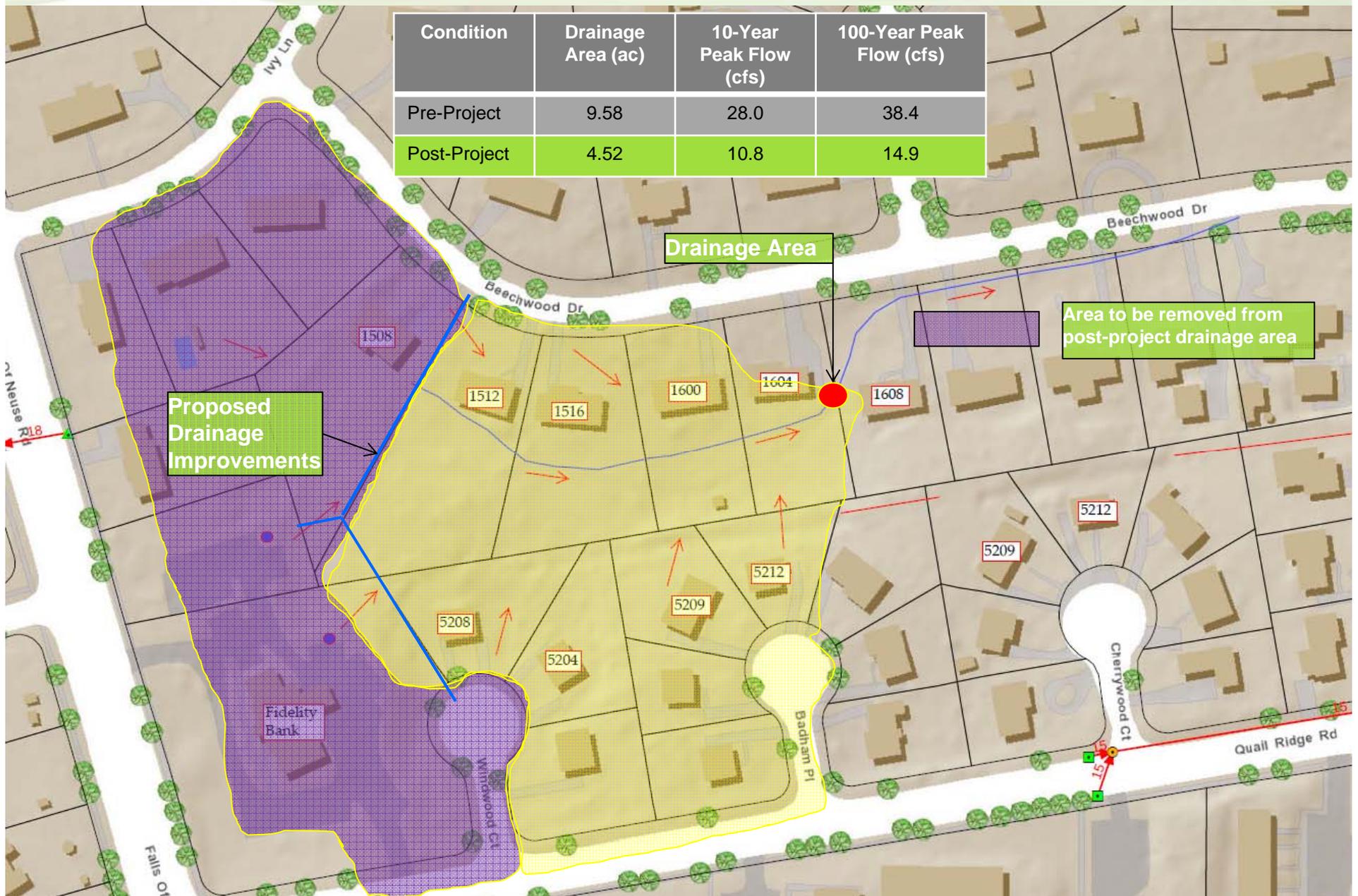
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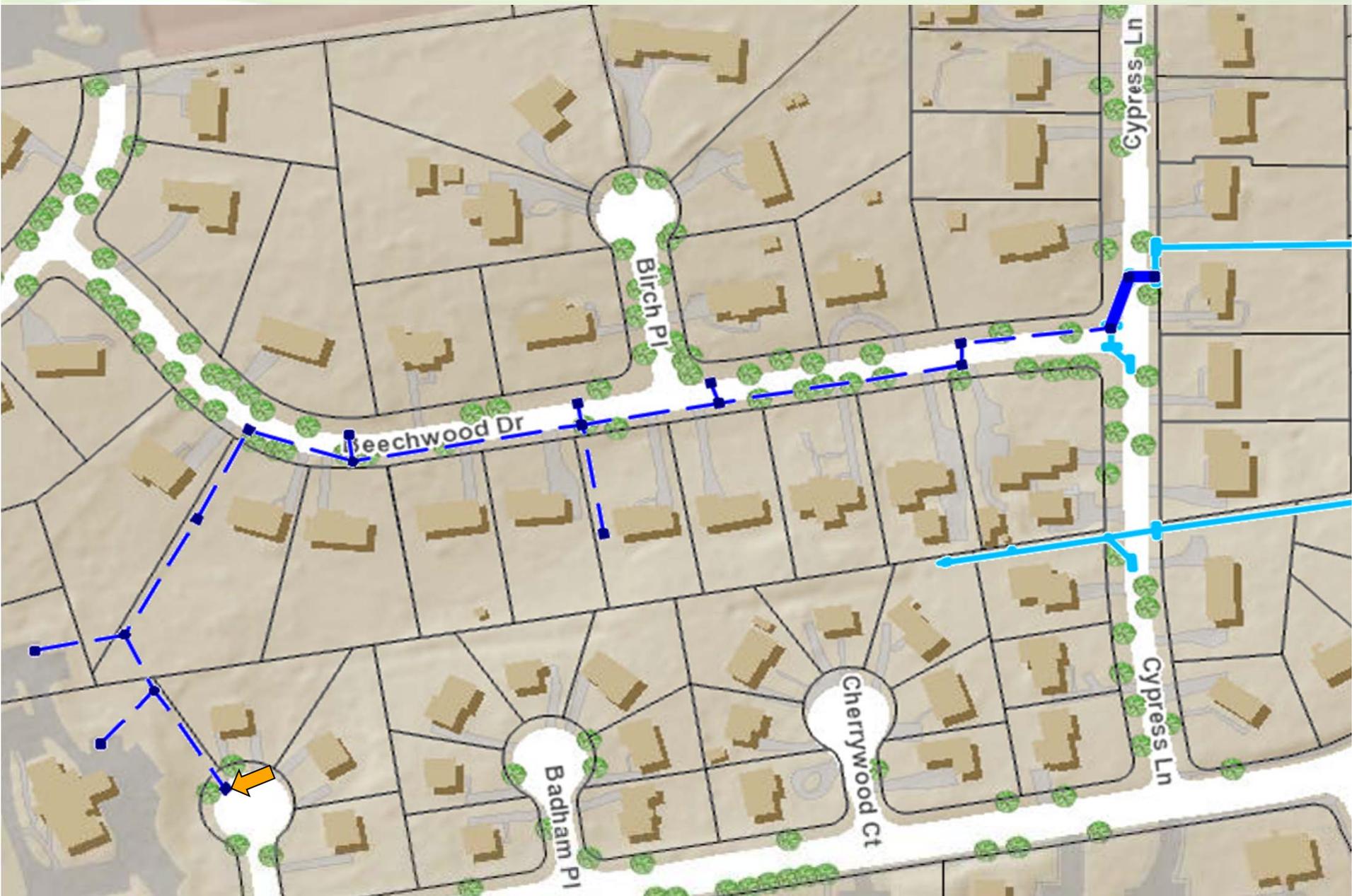
Peak Flow Reduction at 1608 Beechwood Drive



Condition	Drainage Area (ac)	10-Year Peak Flow (cfs)	100-Year Peak Flow (cfs)
Pre-Project	9.58	28.0	38.4
Post-Project	4.52	10.8	14.9



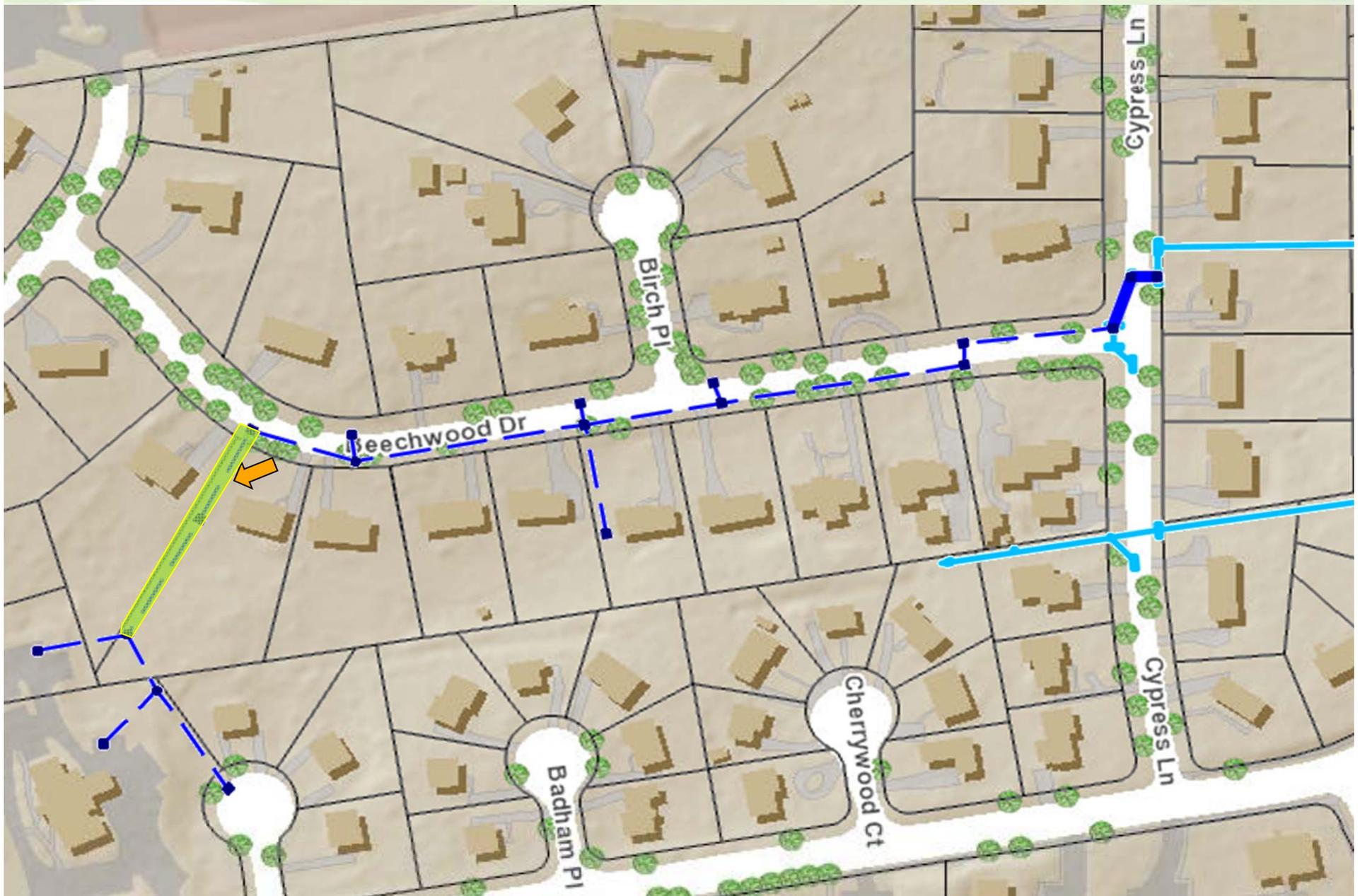
Section 1: Improvements



Section 1: Cont.



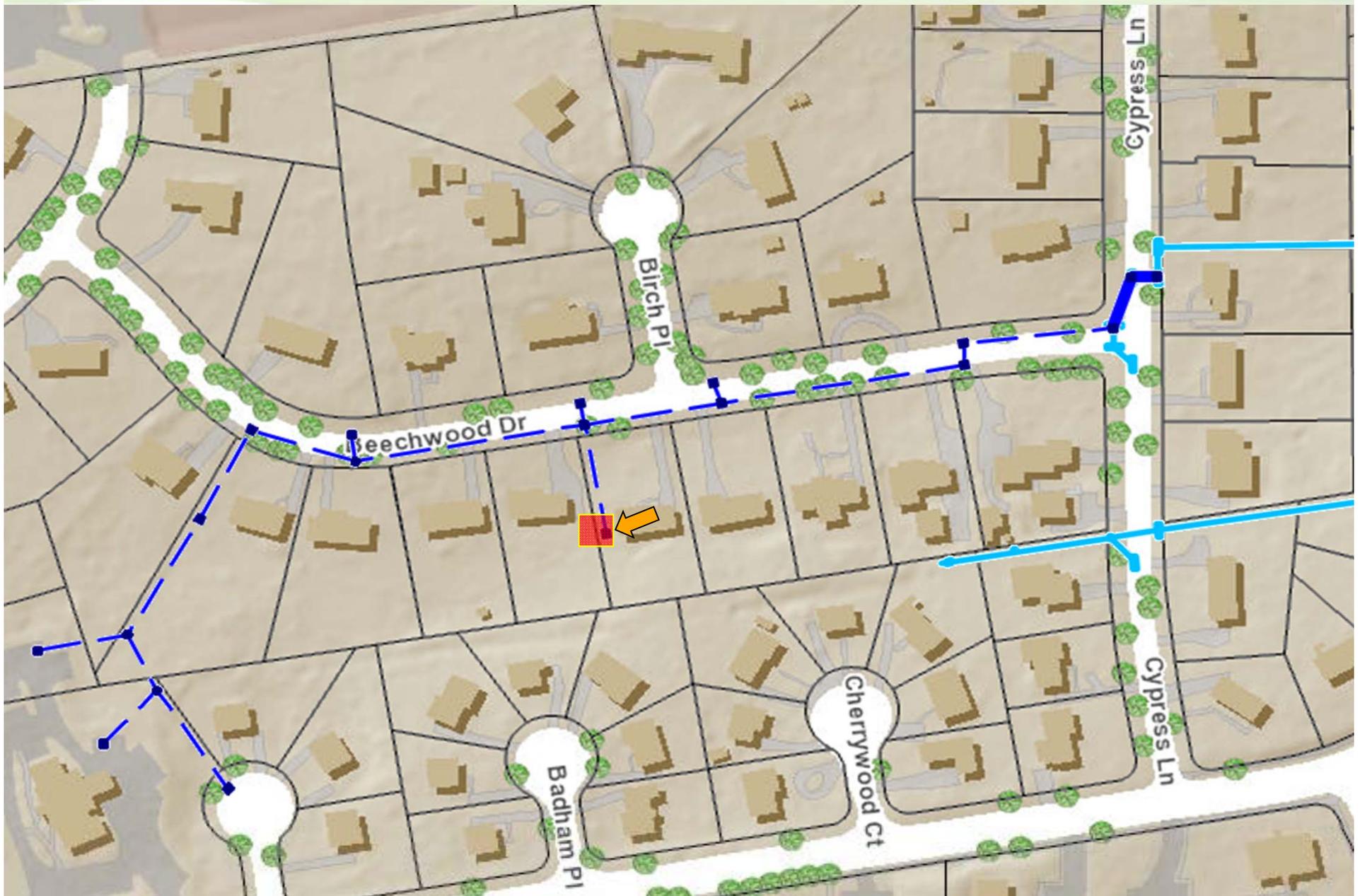
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Section 2: Improvements



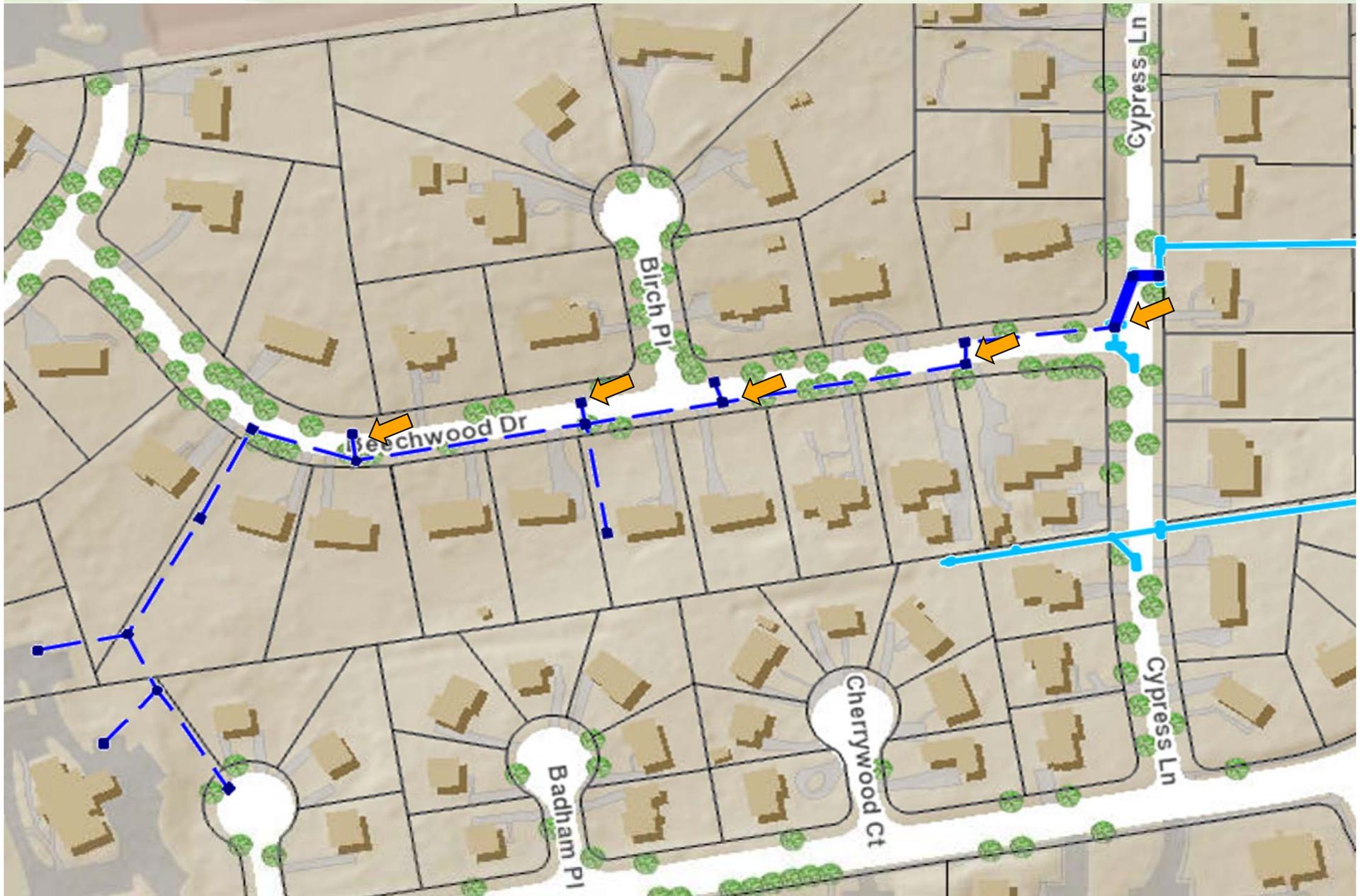
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Section 3: Improvements



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Easement Acquisition Process



Easement Definition:

Right granted from a property owner to another for a specific use of a portion of the owner's land. Utility operators (gas, electric, sewer, etc.) often have easements for the purpose of installing and maintaining their utility lines and structures. As with most utility easements, storm drainage easements are permanent and run with the land (i.e., survive any sale of the property). They generally require the property owner to give up certain rights, such as building permanent structures (additions, decks, certain types of fences, etc.) within the easement to allow for proper function of the system and unimpeded maintenance access.



- Grant Easements
- Fences
- Exemptions
- Stormwater to Facilitate

Potential Easement Acquisition



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**1604 Beechwood Drive
1608 Beechwood Drive**

**1508 Beechwood Drive
1512 Beechwood Drive
5210 Windwood Court
Fidelity Bank**

Schedule



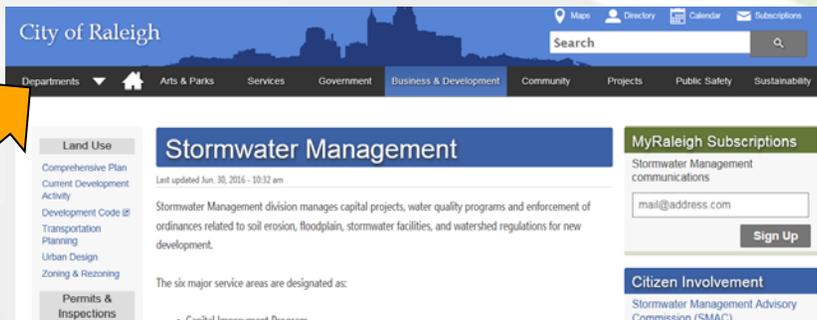
Task	Date
Field Survey Collected	April 2016 & October 2016
Draft Engineering Report Submitted to City	August 17, 2016
Conduct Public Meeting	September 29, 2016
Complete 30% Design Plans	January 2017
Complete 70% Design Plans	April 2017
Acquire Easements	April – October 2017
Finalize Design Plans	November 2017
Relocate Private Utilities (Construction)	January 2017 – March 2018
Prepare Project For Bid	December 2017
Award Contract	February 2018
Begin Construction	March 2018

Website



City's Website:

<http://www.raleighnc.gov/>



- Choose Departments
- Choose Engineering Services
- Choose Stormwater Management
- Select Projects

Bottom of Page Go to Projects:

- ▶ Citizen Assistance- We Are Here To Help
- ▶ Rates and Fees
- ▶ Development, Permits and Stormwater Inspections
- ▶ Projects ←
- ▶ Stormwater Quality



Inside Projects Go to Learn More About Projects:

▼ Projects

The Stormwater Infrastructure improvement program includes the design and construction of infrastructure projects including upgrading or replacing drainage systems, improvements to existing lakes, stream restoration and water quality improvements, and planning studies.

- Capital Improvement Projects
- Water Quality Cost Share
- Drainage Assistance
- Green Infrastructure (GI) and/or Low Impact Development (LID)
- Watershed Studies

Veronica High, PE: Stormwater Infrastructure Program Manager

[Learn more about Projects](#)



Bottom of Page Go to CIP Projects:

▼ CIP Projects

Project	Type
Alexander Rd/McCarthy	Storm Drainage System
Audubon Drive	Storm Drainage System
Beechwood-Cypress	Storm Drainage System
Brentwood Today	Stream Stabilization
Brockton Dam	Lake & Dam Preservation
Crabtree Blvd. Culvert	Storm Drainage System



Scroll Down Until You Get to Beechwood-Cypress



Beechwood Cypress Area

Last updated Jul. 25, 2016 - 9:21 am

Planning

Design

Construction

Completed

Type Storm Drainage System

Budget 1,100,000

Team

- Stormwater Management (Lead)
- Parsons Brinkerhoff, Inc.



Current Activity

Parsons Brinckerhoff, Inc. has completed the existing conditions hydrologic and hydraulic models for the project along with the engineering report that summarizes the findings. This report also includes the proposed conditions drainage system improvements needed to bring the entire drainage system up to the 10-year level of service. The City is currently reviewing this report and supporting modeling and providing direction on the recommended drainage improvements that most cost effectively achieve project goals.

Questions??

