

Honeycutt Creek Greenway



60% Design

**Parks Recreation and Greenway Advisory Board
Summerfield North Alternatives Analysis**

January 21, 2010



Project Team

January 21, 2010 – 60% PRGAB Meeting

City of Raleigh

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Project Manager
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Transportation Planning and Design



Introduction and Purpose

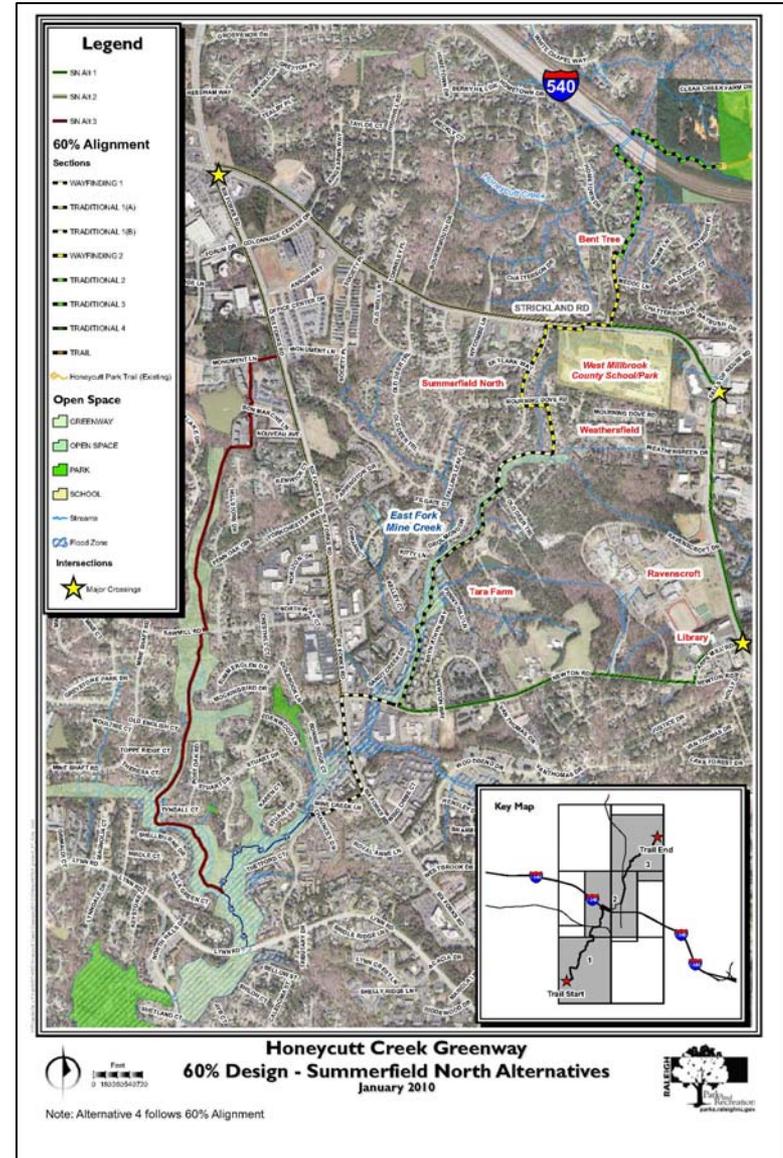
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Our request to the Board:

Recommend staff's proposed 60% design alignment to City Council for their consideration

November 19, 2009 Meeting:

- Presented 60% Design Alignment
- Received proposed alternatives from residents of Summerfield North
- Committed to provide an Alternatives Analysis consistent with criteria and methodology for review of previous alternatives





Introduction and Purpose

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Alternatives Analyses – Actions to Date:

August 18, 2009 Report

Included the analysis of all alternatives considered for multiple section of the proposed greenway

January 10, 2010 Supplement

In response to participation and interest of residents of Summerfield North

Review of alternatives providing connectivity between the south end of the proposed trail and the intersection of Strickland Road and Carriage Tour Lane as follows:

1. 60% Proposed Design Alignment
2. Summerfield North Alternative 1 (Newton to Falls of Neuse to Strickland)
3. Summerfield North Alternative 2 (Six Forks to Strickland)
4. Summerfield North Alternative 3 (Sawmill Trail to Monument to Six Forks to Strickland)
5. Alternative 4 (60% Proposed Design Alignment without enhanced sidewalks)



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Alternatives Analyses – Methodology and Criteria:

Methodology

1. Define the project goals (driven by Capital Area Greenway Master Plan)
2. Complete desktop analysis utilizing readily available data (GIS, aerial photography, etc.)
3. Identify and inventory opportunities and constraints
4. Conduct a site visit to acquire additional information to support the analysis
5. Prepare narrative, mapping, and Alternatives Analysis Matrix
6. Review results of analysis and determine the preferred alignment for design

Criteria

Alternatives are analyzed based on 31 unique criteria grouped as Social, Environmental, and Economic impacts. Specific items of interest related to the proposed Summerfield North Alternatives include:

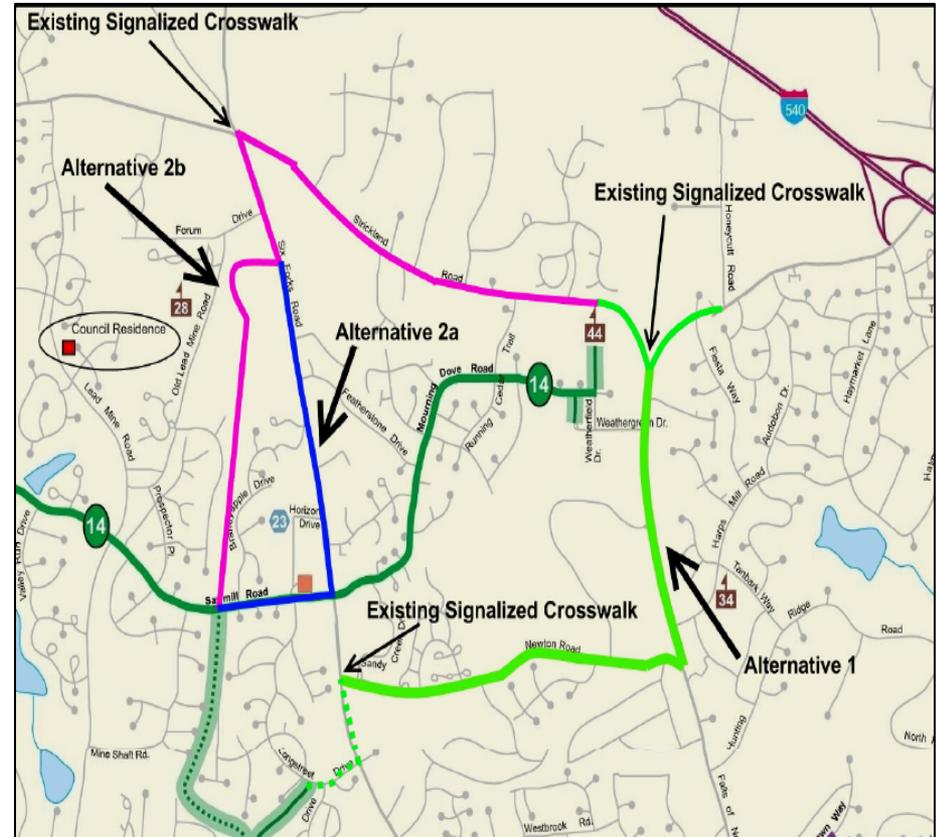
- Driveway crossings
- Roadway crossings
- Environmental constraints
- Existing infrastructure
- Proposed infrastructure
- Six benefits listed by the residents of Summerfield North supporting their alternatives

Introduction and Purpose

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Benefits to the Summerfield North Alternatives as presented during the November 19, 2009 PRGAB Meeting:

1. Superior Benefit/Cost Ratio
2. Superior Access and Connectivity
3. Minimal Traffic Congestion
4. Superior Safety Benefits with Signaled Crosswalks
5. Access to City Bus System
6. Summerfield North Prefers these 3 Alternatives



Map of Alternatives Provided by Residents of Summerfield North



60% Proposed Design – Preferred

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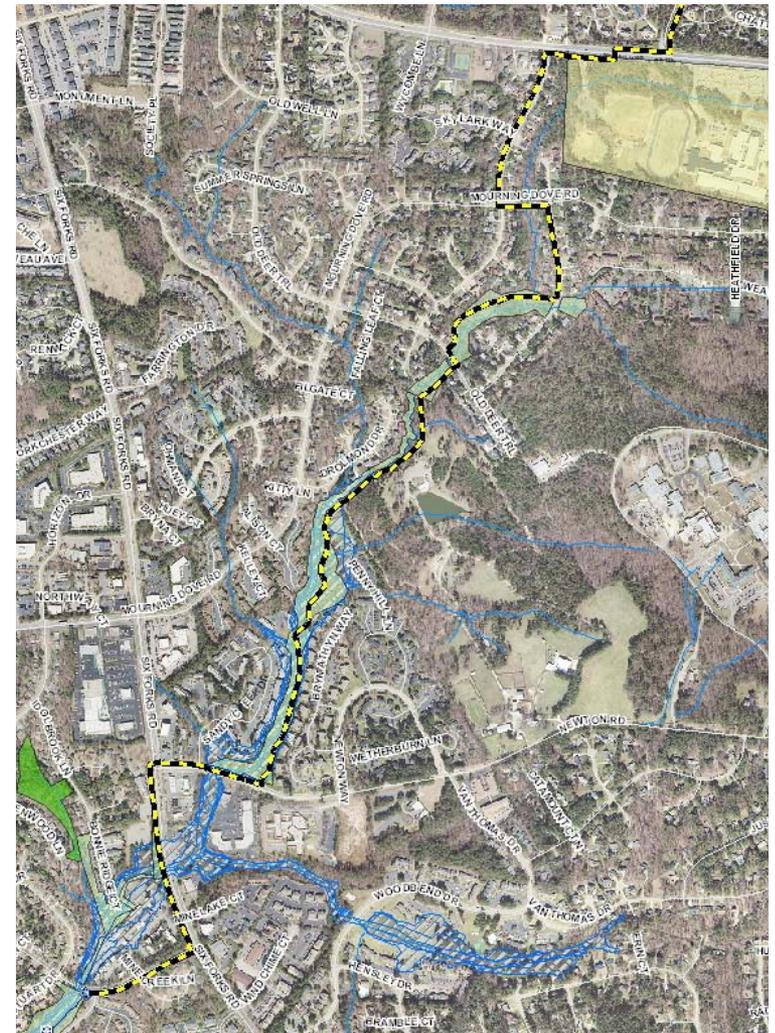
Following stream corridor along East Fork Mine Creek and providing connectivity to Strickland Road through Summerfield North using enhanced sidewalk typical section

Opportunities

- Consistent with goals of Capital Area Greenway Master Plan
- True greenway experience
- Trail to be located within City of Raleigh Greenway property and existing right-of-way
- Promotes protection of stream and open space
- Full connectivity utilizing 10' wide trail
- Enhanced sidewalk within right-of-way
- Overall neighborhood connectivity
- Shortest overall length (8,375 linear feet)

Constraints

- Requires environmental impacts (to be mitigated)
- Impacts to private property owners
- Structural elements required (bridges, boardwalks and retaining walls)
- Number of property owners impacted:
 - Between Old Deer Trail and Clear Brook Drive = 12
 - traditional greenway adjacent to stream
 - Between Clear Brook Drive and Strickland Road = 20
 - wayfinding along sidewalks within right-of-way
 - 2 property easements will be required



Alternative I: Newton to Falls of Neuse

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Newton Road East from current alignment to Harps Mill Road to Falls of Neuse Road to Strickland Road

Opportunities

- Use of existing right-of-way (dependent on right-of-way boundary relative to required widening)
- Little to no environmental impacts

Constraints

- Greater overall length (11,530 linear feet)
- Does not follow Capital Area Greenway Master Plan
- May have utility conflicts
- Improvement of sidewalk infrastructure, including widening of sections along Newton Road, Harps Mill Road, and Strickland Road, and repaving and widening of section along Falls of Neuse Road
- Would require additional easements for widening
- Crossing at Falls of Neuse Road/Strickland Road intersection – free flow southbound right-turn lane and additional crossing time will hinder operation
- Severs Summerfield North neighborhood from greenway (unless Strickland Road mid-block crossing is added)
- Driveway/roadway impacts
 - # of roadway/intersection crossings = 4
 - # of driveway crossings = 21



Alternative 2: Six Forks to Strickland

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Six Forks Road North from current alignment to Strickland Road

Opportunities

- Use of some existing right-of-way
- Little to no environmental constraints

Constraints

- Greater overall length (14,555 linear feet)
- Does not follow Capital Area Greenway Master Plan
- May have utility conflicts
- Widening of Six Forks Road and Strickland Road sidewalks
- Crossing at Six Forks Road/Strickland Road intersection – poor existing crossing patterns and additional crossing time will hinder operation
- Greenway users may use cut-through like Colonnade Center Drive and Anson Way – may encourage users to cross Strickland Road mid-block
- Severs Summerfield North neighborhood from greenway (unless Strickland Road mid-block crossing is added)
- Need for additional easements
- Driveway/roadway impacts
 - # of roadway/intersection crossings = 15
 - # of driveway crossings = 13



Alternative 3: Saw Mill Trail

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Existing Saw Mill Hiking Trail to Monument Drive to Six Forks Road to Strickland Road

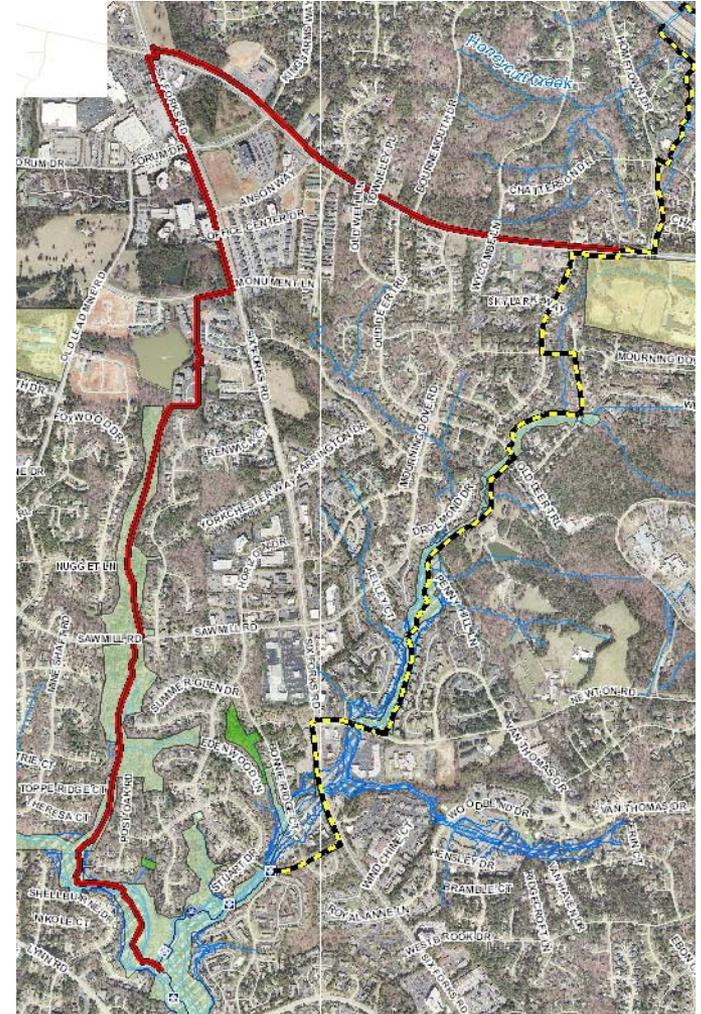
Opportunities

- Use of existing trail system
- Use of a portion of existing right-of-way

Constraints

- Greatest overall length (21,940 linear feet)
- Mid-block crossing of Sawmill Road
- Connection to Monument Drive from Trail (Lake Allyn and New Homes/Apartments constrain the alignment)
- Widening of Six Forks Road and Strickland Road sidewalks
- Crossing at Six Forks Road/Strickland Road intersection – poor existing crossing patterns and additional crossing time will hinder operation
- Severs Summerfield North neighborhood from greenway (unless Strickland Road mid-block crossing is added)
- Driveway/roadway impacts
 - # of roadway/intersection crossings = 9
 - # of driveway crossings = 7

Note: The Saw Mill trail corridor is part of the Master Plan and will become a traditional greenway in the future. Use of this trail for this project might require a revision to the Master Plan.





Alt 4: Modified 60% Proposed Design

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Following stream corridor along East Fork Mine Creek and providing connectivity to Strickland through Summerfield North using existing as-is sidewalk

Opportunities

- Consistent with goals of Capital Area Greenway Master Plan
- Promotes protection of stream and open space
- Sidewalk connector provides connectivity to greenway system
- Shortest overall length (8,375 linear feet)

Constraints

- Requires environmental impacts (to be mitigated)
- Impacts to private property owners
- Structural elements required (bridges, boardwalks and retaining walls)
- Number of property owners impacted:
 - Between Old Deer Trail and Clear Brook Drive = 12
 - traditional greenway adjacent to stream
 - Between Clear Brook Drive and Strickland Road = 20
 - wayfinding along sidewalks within right-of-way
 - 2 property easements will be required



Example of Wayfinding Signage – Greenway at Lassiter Mill



Comparative Analysis

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General Considerations

1. Alternatives utilizing extensive sections of sidewalk reduce greenway experience and represent a shift from project goals of developing greenway consistent with Capital Area Greenway Master Plan.
2. Any selected alternative will impact property owners. There is no solution in making this connection that eliminates the requirement to directly and/or indirectly impact private property.

Summary of Matrix

1. Provides consistent methodology for measuring impacts related to a series of variables
2. NOT intended to be used as a decision making tool
3. Provides another level of information critical to final alignment selection

	60% Proposed Design	Alternative 1	Alternative 2	Alternative 3	Alternative 4
RATING	46	48	52	87	46

Note: Rating taken from Page 26 of January 10, 2010 report
 Lower overall rating represents an expected greater overall value

Strickland Road Crossing

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Design Process

1. Identified numerous alternatives
2. Developed understanding of purpose and need
3. Met with Wake County Public Schools, City staff, NCDOT
4. Reported results of analysis of 2 final alternatives in August 18, 2009 report
5. Developed 60% Proposed Design

Purpose and Need

- Pedestrians are already crossing at this location now
- Connects greenway sections over natural ridge
- Connectivity to/between
 - Summerfield North
 - Bent Tree and Honeycutt Park
 - West Millbrook Middle School and Park

Would be constructed even if Alternatives 1-3 are chosen as preferred alignment

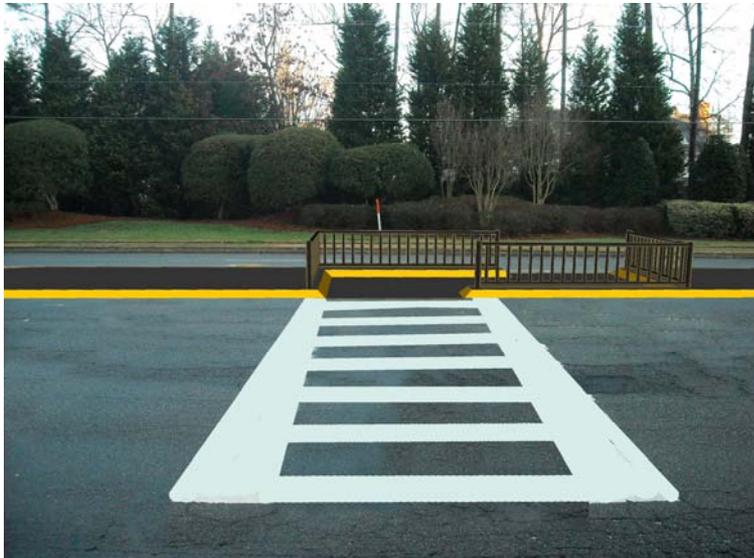


Strickland Road Crossing

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Design Elements

- Pedestrian refuge with protective fencing and signage
- Warning signs with flashers
- Pedestrian actuated pads
- High visibility crosswalk pavement markings
- Ongoing monitoring of traffic and performance
- Possible future signal





Alternatives Cost (Alternative Section Only)

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Cost comparison limited to section from south end of alignment to intersection of Strickland Road and Carriage Tour Lane.

Detailed cost comparison would require:

- Field survey and confirmation of right-of-way boundaries
- Subsurface utility exploration
- Vertical and horizontal design
- Evaluation of required easement acquisition
- Evaluation of required utility relocation

Relative to the baseline cost of the 60% Proposed Design, the following alternatives might provide a cost reduction:

Alternative 1 = 50% reduction

Alternative 2 = 25% reduction

Alternative 4 = 20% reduction

The following alternative might result in a cost increase:

Alternative 3 = 110% increase

Additional Design Issues of Interest

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How Many Other City Greenways utilize existing sidewalks/connect through Neighborhoods?

- Allegheny Trail at Lassiter Mill Rd
- Crabtree Creek Trail at Hertford Street – widened sidewalk
- Cooke Street – extending south from Glascock – widened sidewalk
- Gardner Street Trail
- Beaver Dam Trail at Dixie Trail



Allegheny Trail at Lassiter Mill Road



Crabtree Creek trail at Hertford Street



Additional Design Issues of Interest

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Has the City formed an opinion as to whether the alternatives presented by Summerfield North meet the core principles that were outlined by the consultant on connectivity?

The Alternative Analysis report of Summerfield North alternatives concludes that all three alternatives are rated a 2 for connectivity (Connectivity to other facilities) out of possible rating of 6. The proposed 60% Design Alignment and Alternative 4 received a rating of 1.

Within the Alternatives Analysis Matrices, a lower overall rating represents an expected greater overall value.



Additional Design Issues of Interest

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Bent Tree Impervious Surface

The Bent Tree neighborhood was incorporated into the City limits and the zoning was changed from Wake County to City Zoning; however, the area remains as a watershed. State law allows 24% impervious area on each individual lot. The greenway easement and proposed alignment is located on HOA property. We will not exceed the impervious surface restrictions.

In addition, a greenway is an allowable use within the Bent Tree Master Covenants Conditions and Restrictions

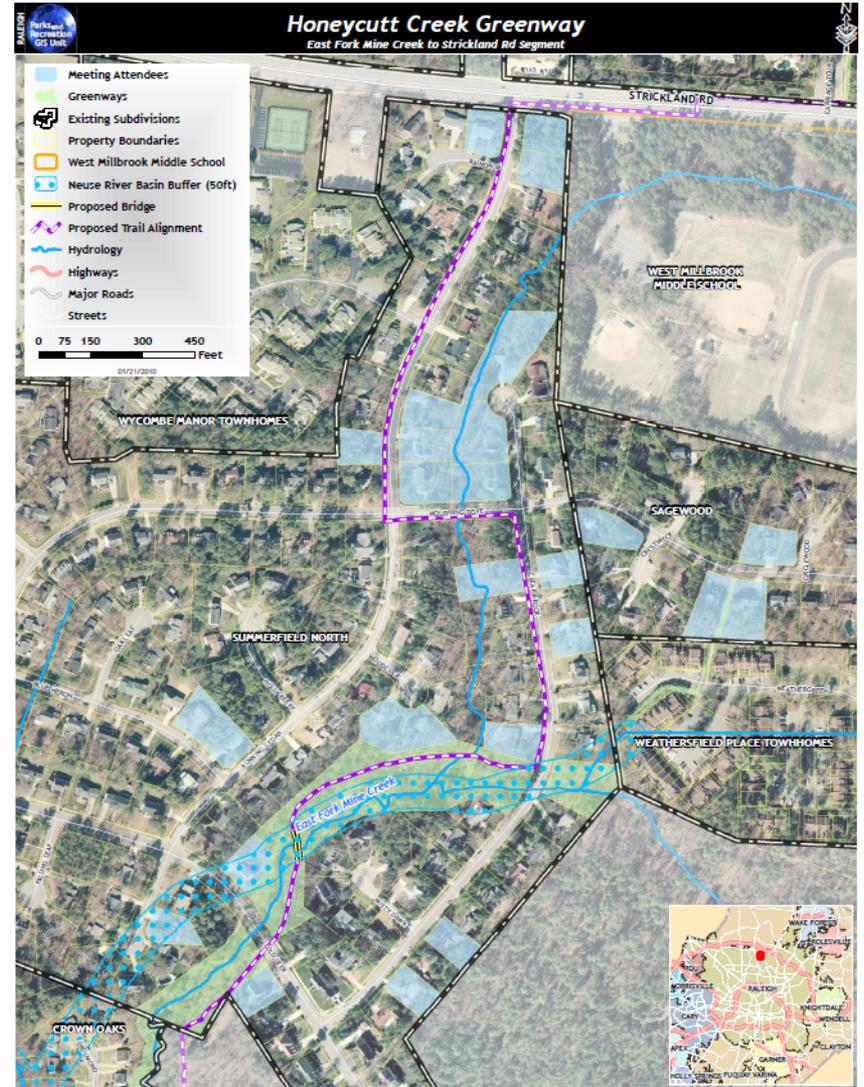
Additional Design Issues of Interest

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Alignment Shift in Summerfield North

A shift in alignment has been proposed in the area immediately east of Old Deer Trail.

The alignment is now shifted to the southeast side of the stream to avoid close proximity of trail to resident at 8012 Old Deer Trail. This shift also eliminates the need for an additional easement on this property.





Additional Design Issues of Interest

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Drainage Issues – Summerfield North

Our consultant has fully qualified registered engineers specializing in stormwater management design. All elements of the design

- will be reviewed to ensure there will be no negative impact (increased flood hazards) on private property.
- will include analysis of flood potentials and design of appropriate drainage features.

City is working with Public Works on stormwater project. Project and trail at same location.



West side of Old Deer Trail – Greenway trail and Stormwater Division stream restoration Project location



Conclusion

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Action Requested

Recommend staff's proposed 60% design alignment to City Council for their consideration



Conclusion

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Contact Information:

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Presentation and Project Information Available at:

<http://www.raleigh.nc.gov/parkplan>