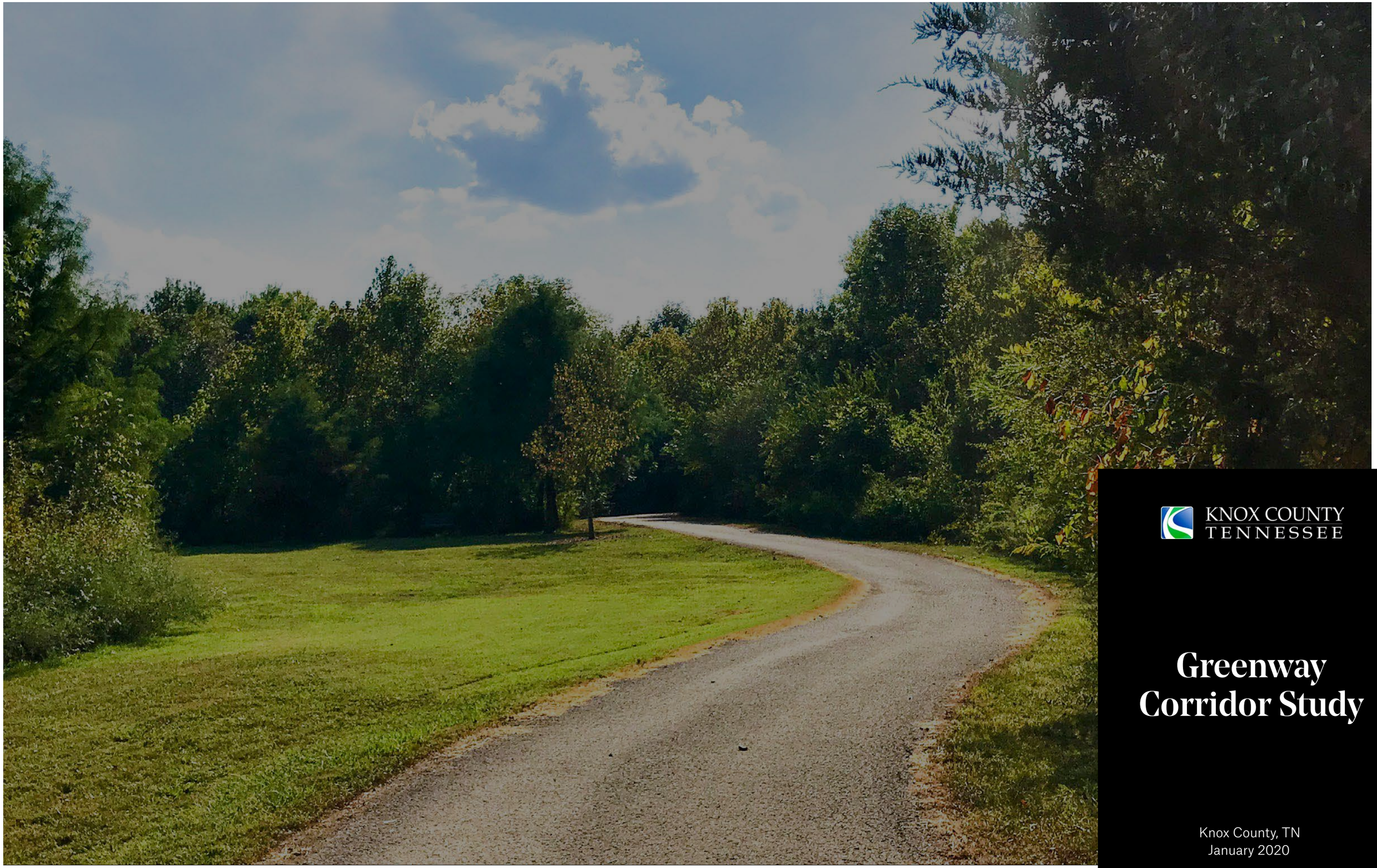

KNOX COUNTY
TENNESSEE

Greenway Corridor Study

Knox County, TN
January 2020

Prepared by

Gresham Smith

IBI PLACEMAKING

Contents

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Executive Summary

The following study develops five greenway corridors in Knox County. The recommendations from the study will be used by Knox County to help assist in funding and building greenways throughout the county. In addition, it will provide Knox County the documentation needed when applying for future grants.

The study connects existing and proposed greenways and sidewalks within the county and any that abut the county line from other jurisdictions. Totaling approximately 65 miles, the five greenway corridors are:

- Beaver Creek West – From Melton Hill Park in Hardin Valley to I-75 in Powell;
- Beaver Creek East – From I-75 in Powell to the Knox County/Union County line in Gibbs;
- Northshore Drive – From the Knox County/Loudon County line to Lakeshore Park;
- John Sevier Highway – From I.C. King Park to Chapman Highway; and
- Chapman Highway – From Gary Underwood Park to the Knox County/ Sevier County line.

Each greenway corridor includes a recommended preferred route, alternate route, and connector routes. The study's goals and objectives and recommended alignments are the product of technical analysis and public input, and link schools, parks, libraries, senior centers, and other popular destinations. Additionally the study provides cost estimates for each of the recommended improvements, as well as a health design assessment and economic impact assessment to help prioritize greenway segments.

Finally, the greenway corridor study will be utilized when asking for greenway easements from developers and property owners as their proposed construction projects go through Knoxville-Knox County Planning for approval. The County's policy is to acquire property or easements for greenways only through voluntary donation or sale.

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KNOX COUNTY
TENNESSEE

Greenway Corridor Study

Greenways are an important and dynamic investment for every community, delivering a wide range of economic, health, and environmental benefits. Indeed, communities throughout the United States are actively investing in greenways – and parks more generally – to attract and retain residents, visitors, and businesses, and improve their long-term economic competitiveness. The purpose of the Knox County Greenway Corridor Study is to establish a clear vision and plan for greenways in five key corridors in Knox County and set the stage for enhancing the overall park system as the county continues to grow and develop.

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Section 1.0
Introduction

1.1 Study Corridors

The Greenway Corridor Study evaluates potential alignments for approximately 65 miles of greenways throughout Knox County. The corridors (Figure 1-1) strategically connect communities in Knox County, linking people to the places where they live, work, learn, and play. The corridors include:

- **Beaver Creek West** – From Melton Hill Park in Hardin Valley to I-75 in Powell;
- **Beaver Creek East** – From I-75 in Powell to the Knox County/Union County line in Gibbs;
- **Northshore Drive** – From the Knox County/ Loudon County line to Lakeshore Park;
- **Gov. John Sevier Highway** – From I.C. King Park to Chapman Highway; and
- **Chapman Highway** – From Gary Underwood Park to the Knox County/Sevier County line.

1.2 Existing Plans and Studies

Knox County is not new to greenway planning. Over the past decade, the County and its municipalities have studied and planned new greenways, many of which have been or are in the process of being implemented. Importantly, the Knox County Greenway Corridor Study builds on the strong foundation established by the existing plans and studies, including:

- Knoxville-Knox County Park, Recreation and Greenways Plan (2009);
- Knox to Oak Ridge Greenway Master Plan (2015);
- Turkey Creek Greenway Feasibility Study (2016);
- City of Knoxville Greenway Corridor Feasibility and Assessment Study (2016); and
- Chapman Highway Implementation Plan (2019).

Ongoing coordination among the various planning efforts will be critical to the overall success of the greenway system in Knox County. As different agencies move forward with building new greenways, there will be any number of opportunities to link facilities and create a world class greenway system for the benefit of all stakeholders. Specific proposals from the existing plans and studies – notably, the Knox Blount Greenway, the Knox to Oak Ridge Greenway, and the Concord Park Greenways – have been integrated into several of this study's corridor recommendations.

1.3 Public and Stakeholder Involvement

The recommended greenway alignments in this study reflect the input and guidance from a diverse cross section of local officials, residents, and stakeholders in each of the corridors. Two rounds of public workshops were held during the study. Both rounds included four workshops in the following locations:

- Karns Elementary School (Beaver Creek West);
- Halls Elementary School (Beaver Creek East);
- Northshore Elementary School (Northshore Drive); and
- Bonny Kate Elementary School (Gov. John Sevier Highway and Chapman Highway).

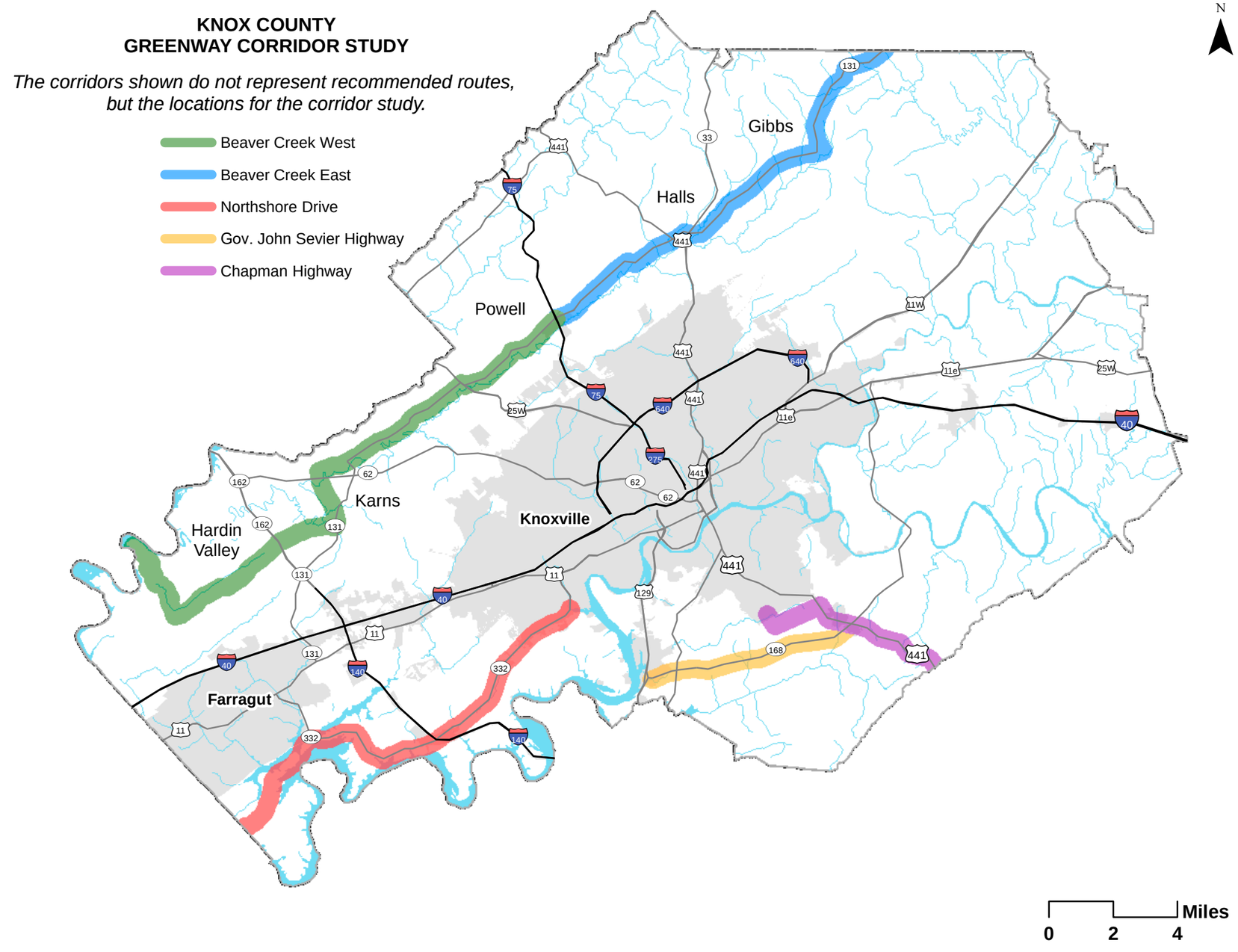
The first round of public workshops was held in June 2019 with more than 120 people attending the meetings. Participants were provided with background information on the corridors, including economic development and health data, and asked to comment on alternative greenway alignments. An online interactive map allowed people unable to attend a workshop to offer comments as well. Over 60 comments were captured through the online map.

Figure 1-2. Public Workshop at Northshore Elementary School

A second round of public workshops was held in September 2019, with more than 70 people attending. Results from the first round of workshops were provided along with draft greenway alignments. An online interactive map was made available again, where an additional 20 comments were received. Key findings from the public workshops are discussed in greater detail in Section 2.0.

In addition to the public workshops, a stakeholder committee met at three points in the study process to review and discuss project progress and draft recommendations. The committee included 30 people from across Knox County, representing public agencies, businesses, neighborhood associations, schools, and advocacy groups. The committee members provided valuable insights on specific issues and opportunities in each of the corridors.

Figure 1-1. Greenway Study Corridors



Section 2.0

Goals & Objectives

More than 200 people helped shape the goals and objectives for the study, providing valuable guidance on what they find most important about greenways in Knox County. Table 2-1 summarizes the results of how study participants ranked seven key objectives. Significantly, over 80 percent of participants ranked the following three objectives as more important or very important.

- Connect neighborhoods, parks, schools, and employment areas with greenways (90%);
- Ensure greenways provide access to parks, natural areas, and outdoor recreation (84%); and
- Link greenways to regional and city greenway systems (81%).

In addition to the overwhelming priority placed on the three objectives above, more than 60 percent of study participants expressed strong interest in two additional objectives:

- Make greenways accessible to all neighborhoods (69%); and
- Connect greenways to local business districts (61%).

Taken together, the highlighted objectives underscore the dynamic role that greenways play in every community and their potential for linking valued community assets in Knox County – whether a nearby park, local school, or neighborhood business. The priorities identified by study participants served as the overarching guideposts for the final recommendations found in Sections 3.0 through 7.0.

Understanding study goals, objectives, and priorities was further explored through a discussion on what types of greenways the community prefers. Figure 2-1 presents a series of options regarding potential greenway locations and features. Based on public input (Table 2-2), key takeaways included locating greenways in natural areas, incorporating trailheads throughout the greenway system, and providing safe greenway road crossings either with underpasses or overpasses or well-marked crosswalks. Sections 3.0 through 7.0 describe the recommended alignments and major features in each corridor.

Table 2-1. Study Goals and Objectives: Public Priorities

Goals	Objectives	1	2	3	4	5	Weighted Average
Improve Connectivity & Safety	Connect neighborhoods, parks, schools, and employment areas with greenways	1	7	14	45	157	**4.56**
	Link greenways to regional and city greenway systems	4	11	27	59	123	**4.28**
Enhance Quality of Life, Health & Equity	Ensure greenways provide access to parks, natural areas, and outdoor recreation	3	3	28	69	108	**4.31**
	Add greenways in areas with greater health needs	17	34	53	43	50	**3.38**
	Make greenways accessible to all neighborhoods	8	20	36	66	78	**3.89**
Support Local Economic Development & Tourism	Connect greenways to local business districts	10	24	47	65	60	**3.68**
	Promote tourism and development near greenways	39	33	51	35	51	**3.12**

1 = less important, 5 = very important

Table 2-2. Greenway Options: Public Priorities

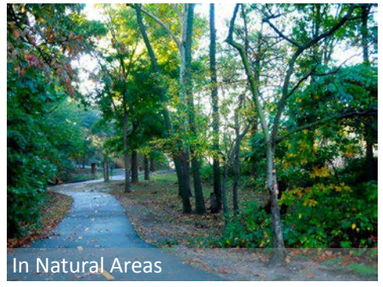
	Location/Feature	Total	%
Locations	In Natural Areas	196	26%
	Near Residential	145	19%
	Through Business Districts	117	15%
	In Parks	115	15%
	Through Neighborhoods	103	13%
	Near Streets	88	12%
Features	Trailheads	132	21%
	Underpasses/Overpasses	131	21%
	Crosswalks	110	18%
	Kayak/Canoe Put-Ins	97	16%
	Bike Parking	88	14%
	Bike Share	56	9%

Figure 2-1. Greenway Options

What kind of **greenways** would you like to see?

Choose any you like.

Locations


In Natural Areas


In Parks


Near Streets


Near Residential


Through Business Districts


Through Neighborhoods

Features


Trailheads


Kayak/Canoe Put-Ins


Underpasses/Overpasses


Crosswalks


Bike Share


Bike Parking

Section 3.0

Beaver Creek West

3.1 Recommended Alignments

With its distinctive communities and strong neighborhoods, the Beaver Creek West corridor offers tremendous opportunities to connect important local destinations, such as schools and parks, in concert with ongoing growth. Anchored by Melton Hill Park on the west and Interstate 75 to the east, the recommended alignments in the Beaver Creek West corridor, including the preferred, alternate, and connector routes, are organized around the area's major communities – Hardin Valley, Karns, and Powell – and effectively provide both local greenway networks as well as a corridor wide system. Figures 3-1 through 3-4 depict the recommended alignments in the Beaver Creek West corridor, and Appendix B includes the full set of typical greenway cross sections represented by the numbers (see red boxes) on the maps.

For each corridor, it is also important to note that the study recommends a preferred location for the proposed alignment (i.e., side of road or creek). To learn more about the recommended greenway alignments found in the following summary maps, please contact the Knox County Department of Parks and Recreation.

Figure 3-1. Beaver Creek West: Melton Hill Park to Brighton Farms Boulevard

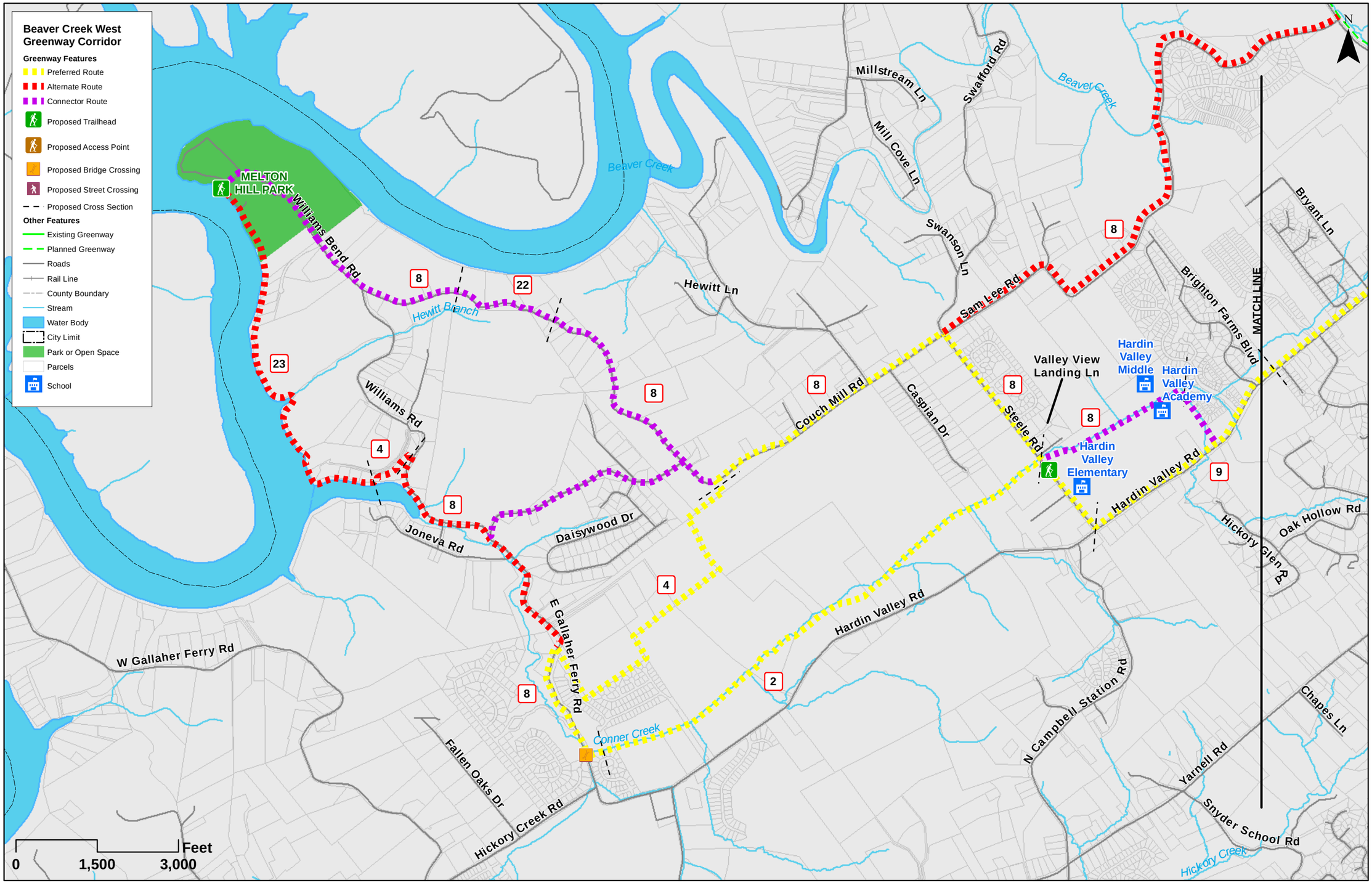


Figure 3-2. Beaver Creek West: Brighton Farms Boulevard to Garrison Drive

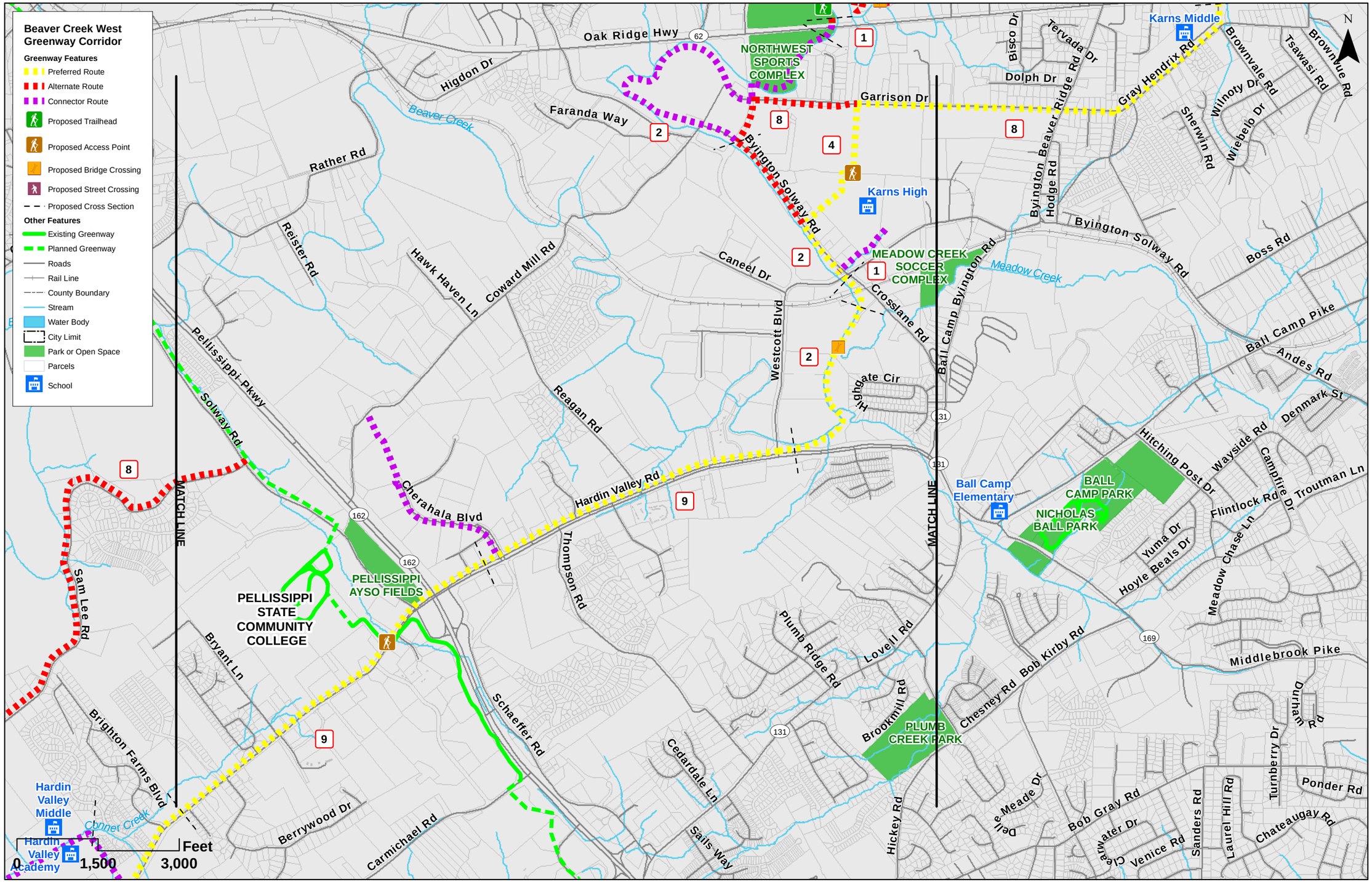


Figure 3-3. Beaver Creek West: Garrison Drive to Bridgefield Drive

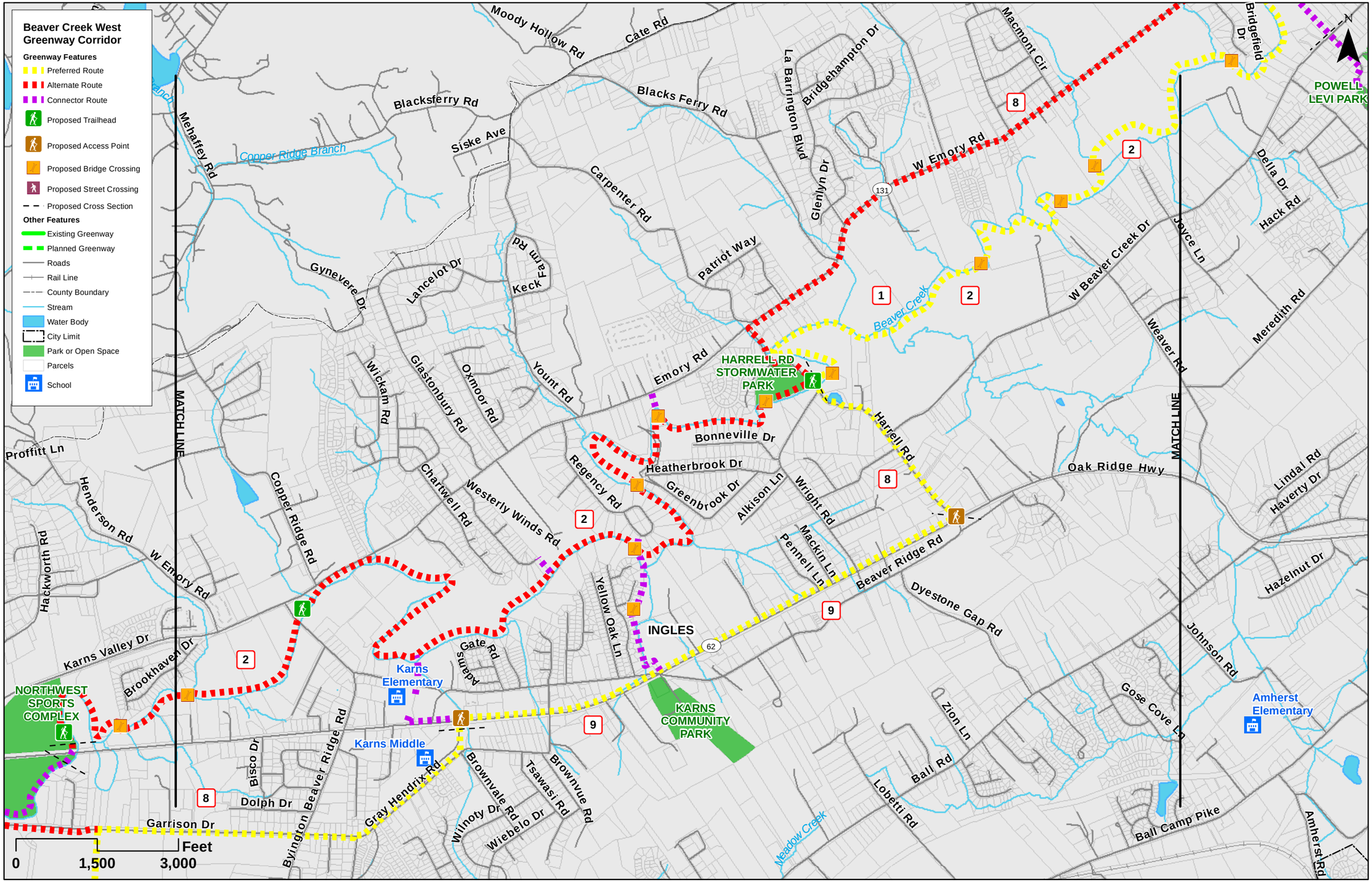
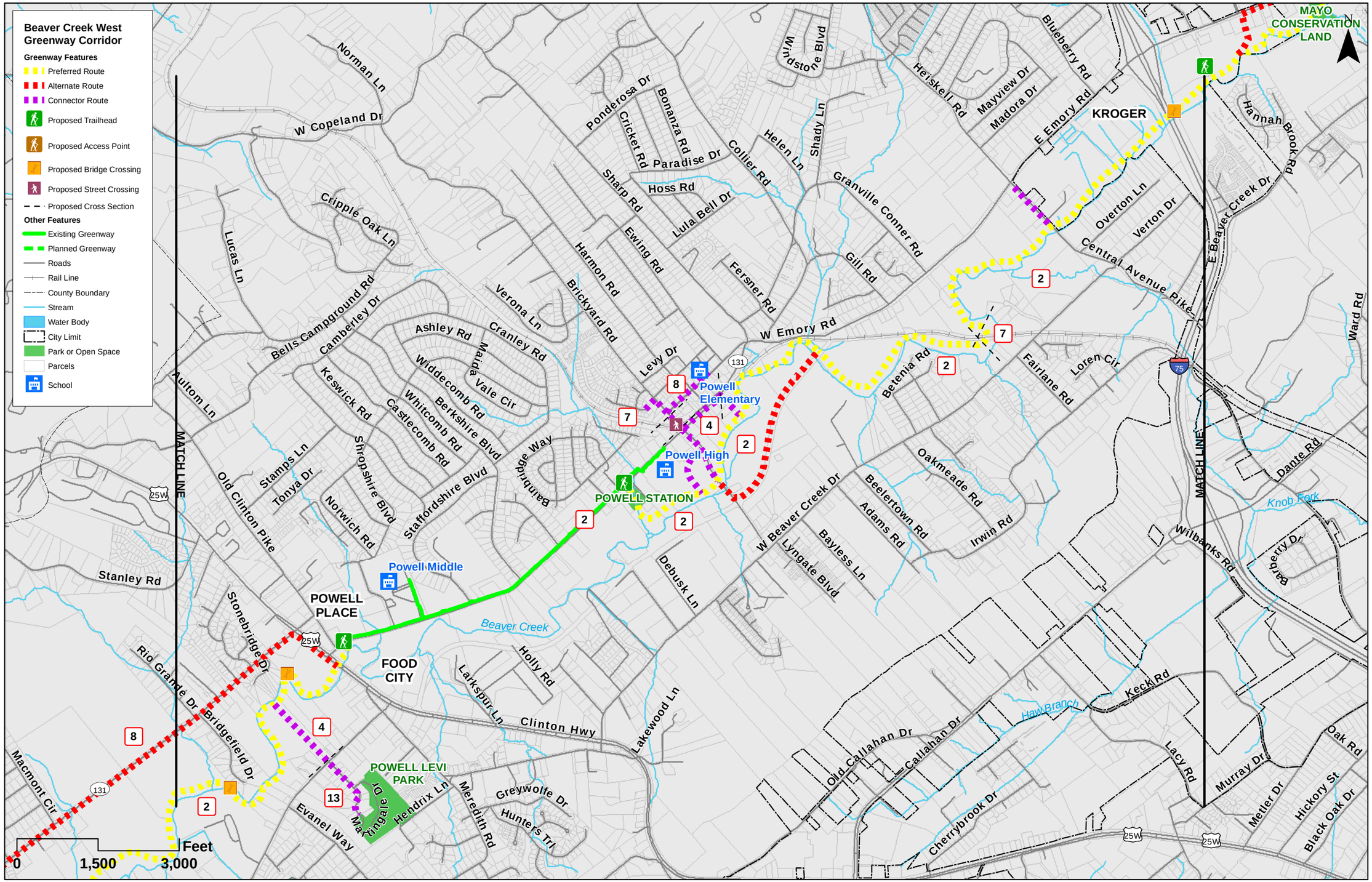


Figure 3-4. Beaver Creek West: Bridgefield Drive to Interstate 75



3.2 General Constraints

The recommended routes in the Beaver Creek West corridor follow roads or creeks at different points. Below are general constraints affecting the alignments in the Beaver Creek West corridor.

- Melton Hill Park to Brighton Farms Boulevard
  - Narrow existing road right-of-way and steep topography between Melton Hill Park and Couch Mill Road on both E. Gallaher Ferry Road and shoreline (alternate route) and Williams Bend Road (connector route)
  - Coordination with Hardin Valley Elementary, Hardin Valley Middle, and Hardin Valley Academy along Conner Creek (connector route)
- Brighton Farms Boulevard to Garrison Drive
  - Coordination with the Tennessee Department of Transportation (TDOT) at Pellissippi Parkway and Hardin Valley Road (preferred route)
  - Railroad crossing near Byington Solway Road (preferred route)
  - Coordination with Karns High School (preferred route)
- Garrison Drive to Bridgefield Drive
  - Coordination with TDOT on Oak Ridge Highway (preferred route)
- Bridgefield Drive to Interstate 75
  - Coordination with Powell High School (preferred and connector routes)
  - Potential property easement constraints along Beaver Creek (preferred route)
  - At grade railroad crossing on private property east of Powell Bypass (preferred route)
  - If use of utility easement under I-75 is not granted, the Emory Road/I-75 interchange could be a major constraint (alternate route)

Please see Appendix C for corridor constraint maps.

3.3 Design Character

Whether adjacent to Emory Road, Hardin Valley Road, or Oak Ridge Highway (Figure 3-5) or along Beaver Creek (Figure 3-6), the preferred greenway route in Beaver Creek West provides a way to access neighborhood schools, businesses, parks, and natural areas. Adjacent to roads, important design features include:

- Creating a sense of safety and comfort for greenway users from motor vehicle traffic through well designed, planted buffers;
- Providing an easily understood wayfinding system (Appendix A), including signage showing distances to trailheads and popular destinations such as commercial districts, parks, and schools; and
- Supporting safe access with pedestrian-oriented intersections, including high visibility crosswalks, pedestrian signal countdown heads, and nighttime lighting.

Similarly, ensuring a safe, convenient, and comfortable experience along Beaver Creek requires:

- Developing a planting plan that enhances both user experience and stream conservation;
- Lighting underpasses to improve personal safety;
- Providing an easily understood wayfinding system (Appendix A), including signage showing distances to trailheads and popular destinations such as kayak/canoe put-ins, neighborhoods, and commercial districts;
- Creating places to rest or gather; and
- Utilizing concrete for the trail surface in flood prone areas to minimize path damage.

Figure 3-5. Illustrative Concept: Oak Ridge Highway

Figure 3-6. Illustrative Concept: Beaver Creek

3.4 Cost Estimates

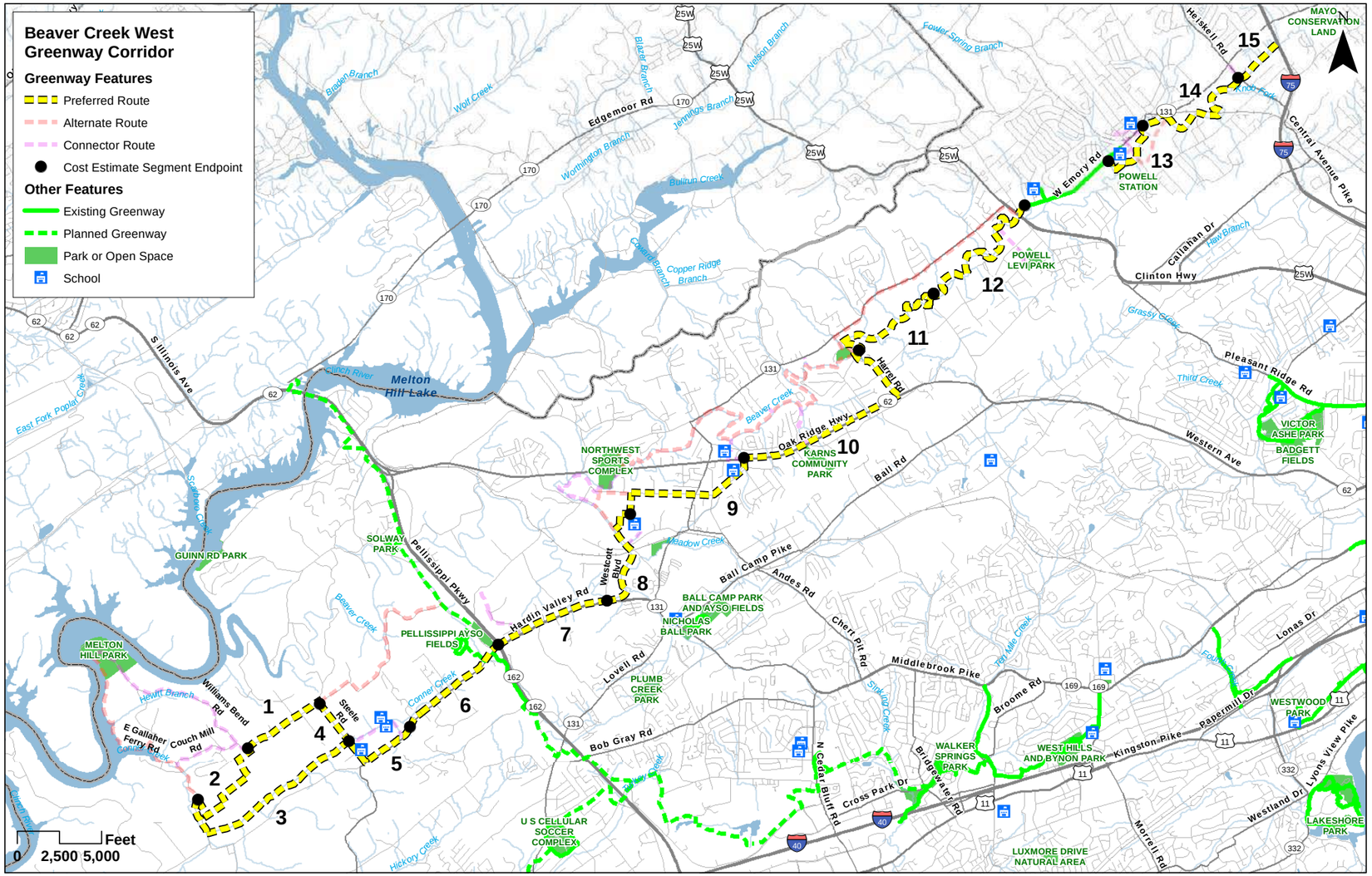
For cost estimating purposes, the preferred route in the Beaver Creek West corridor was divided into twelve segments, corresponding with logical termini and reasonable distances relative to funding design and construction (approximately 1-2 miles in length). Table 3-1 summarizes the estimated costs for each of the segments shown in Figure 3-7.

Estimated costs do not include utility coordination and relocation, property acquisition, permit fees, environmental impact costs, traffic control, signing, lighting, or erosion control.

Table 3-1. Cost Estimate by Segment: Beaver Creek West

Segment Name	Length (LF)	Estimated Cost
Segment 1 - Couch Mill Road from Williams Bend Road to Steele Road	5,151	$606,572
Segment 2 - East Gallaher Ferry Road to Williams Bend Road	7,105	$796,249
Segment 3 - Conner Creek from East Gallaher Ferry Road to Steele Road	10,245	$1,817,980
Segment 4 - Steele Road from Couch Mill Road to Hardin Valley Elementary Trailhead	3,112	$385,386
Segment 5 - Valley View Landing Lane to Conner Creek	4,067	$378,097
Segment 6 - Hardin Valley Road from Conner Creek to Pellissippi Parkway	7,797	$812,566
Segment 7 - Hardin Valley Road from Pellissippi Parkway to Beaver Creek	8,371	$1,078,990
Segment 8 - Beaver Creek from Hardin Valley Road to Westcott Boulevard	3,315	$768,632
Segment 9 - Westcott Boulevard to Oak Ridge Highway	13,622	$1,564,025
Segment 10 - Karns Middle to Harrell Road Stormwater Park	13,944	$1,734,209
Segment 11 - Harrell Road Stormwater Park to Beachmeadow Lane	10,168	$2,067,613
Segment 12 - Beachmeadow Lane to Emory Road	10,259	$2,004,292
Segment 13 - Powell Station Park to Powell Community Center	4,903	$2,035,302
Segment 14 - Powell Community Center to Heiskell Road Spur	9642	$2,671,938
Segment 15 - Heiskell Road Spur to I-75	3096	$599,943

Figure 3-7. Beaver Creek West Preferred Alignment Segments



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Section 4.0

Beaver Creek East

4.1 Recommended Alignments

The Beaver Creek East corridor extends from I-75 in Powell to the Knox County/ Union County line in Gibbs. As the preferred route moves east from Powell, it follows the creek and connects with the existing Halls greenway at Clayton Park and the Halls Community Park. While planned improvements on Emory Road between Maynardville Pike and Tazewell Pike include a shared use path, the recommended preferred route remains along Beaver Creek to the Gibbs Ruritan Park. From the park, the greenway would ultimately make its way to the county line. Figures 4-1 through 4-4 depict the recommended alignments in the Beaver Creek East corridor, and Appendix B includes the full set of typical greenway cross sections represented by the numbers (see red boxes) on the maps.

For each corridor, it is also important to note that the study recommends a preferred location for the proposed alignment (i.e., side of road or creek). To learn more about the recommended greenway alignments found in the following summary maps, please contact the Knox County Department of Parks and Recreation.

Figure 4-1. Beaver Creek East: Interstate 75 to Clayton Park

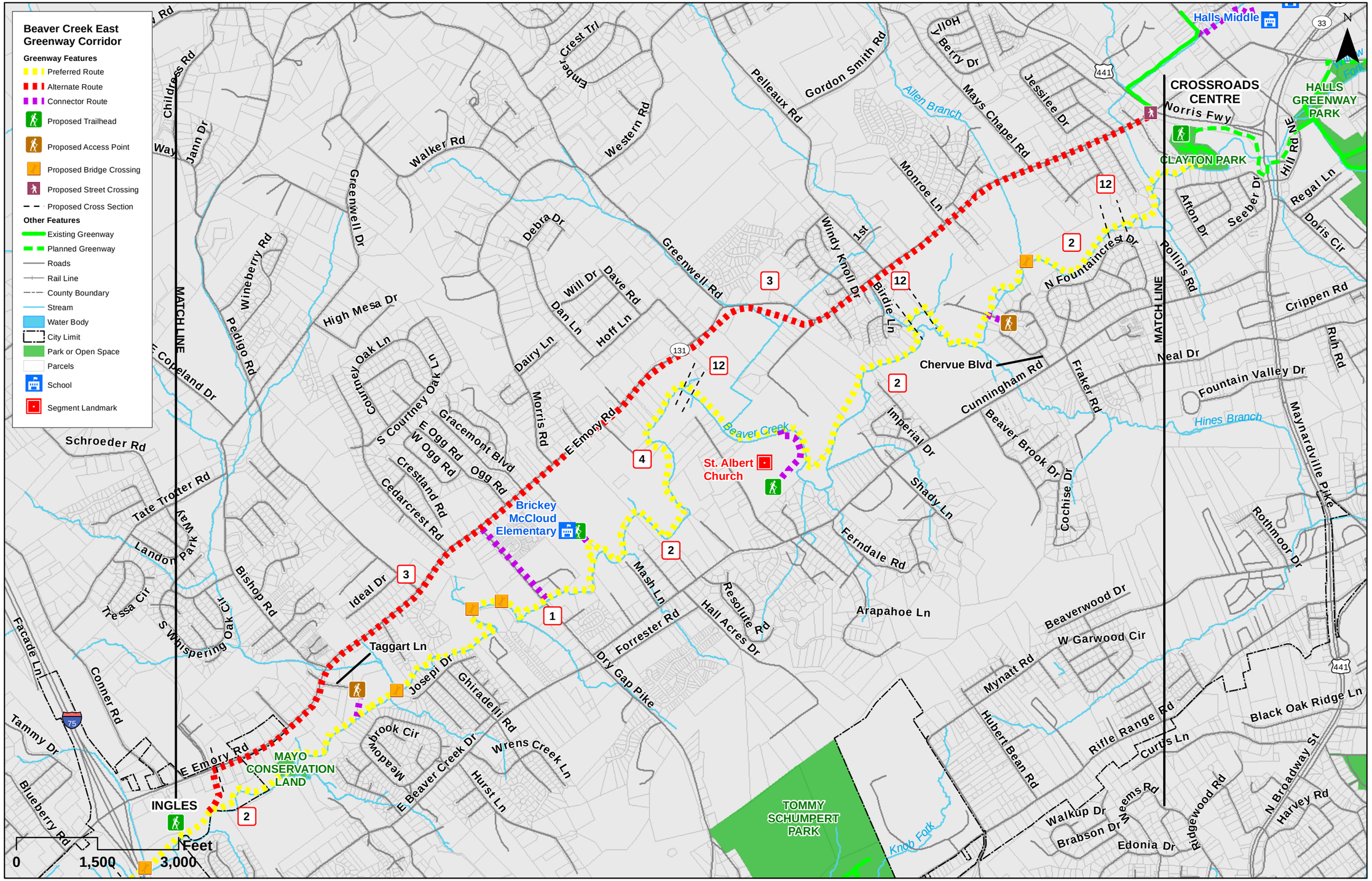


Figure 4-2. Beaver Creek East: Clayton Park to East of Beeler Road

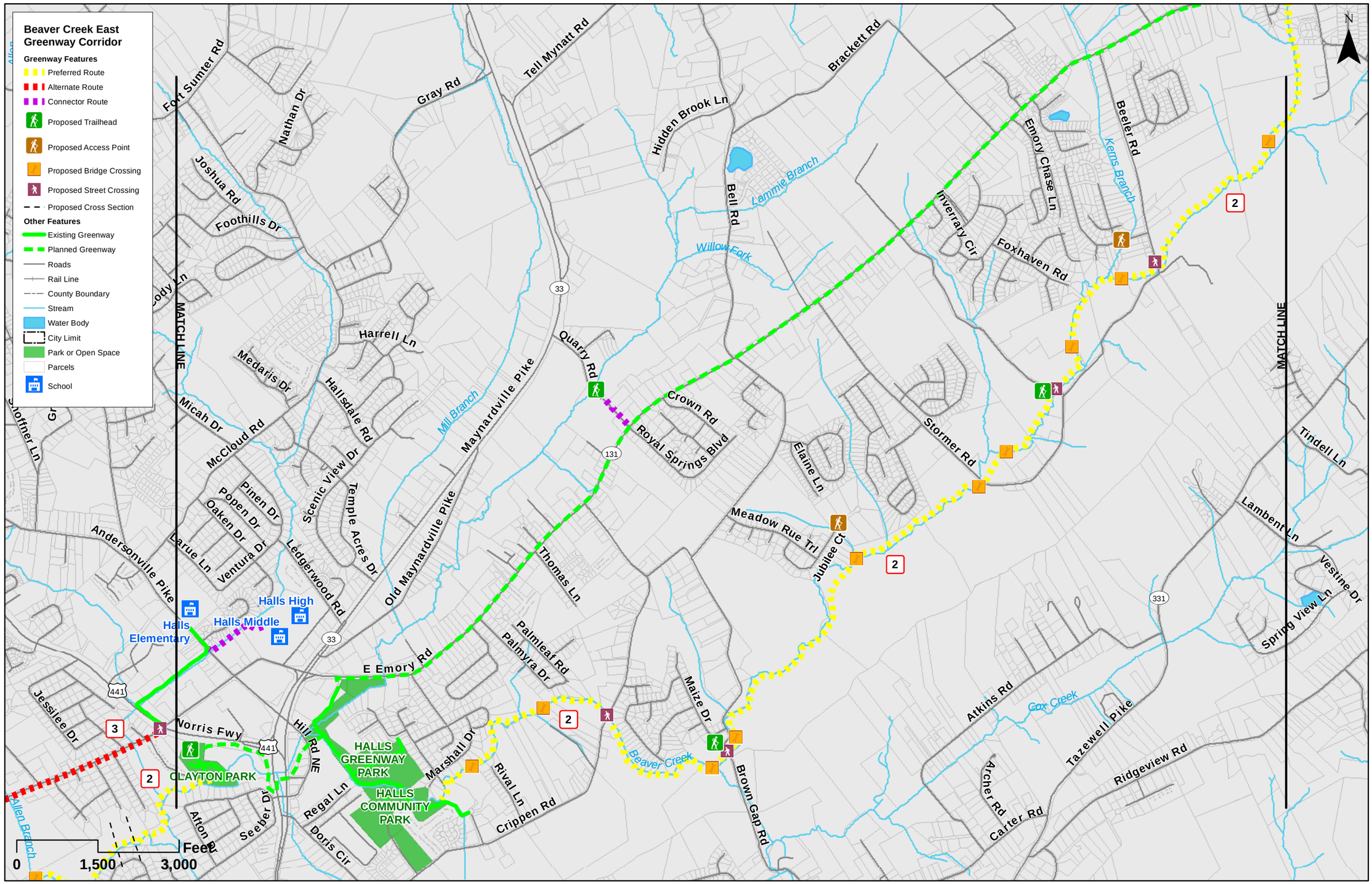


Figure 4-3. Beaver Creek East: East of Beeler Road to Campbells Point Road

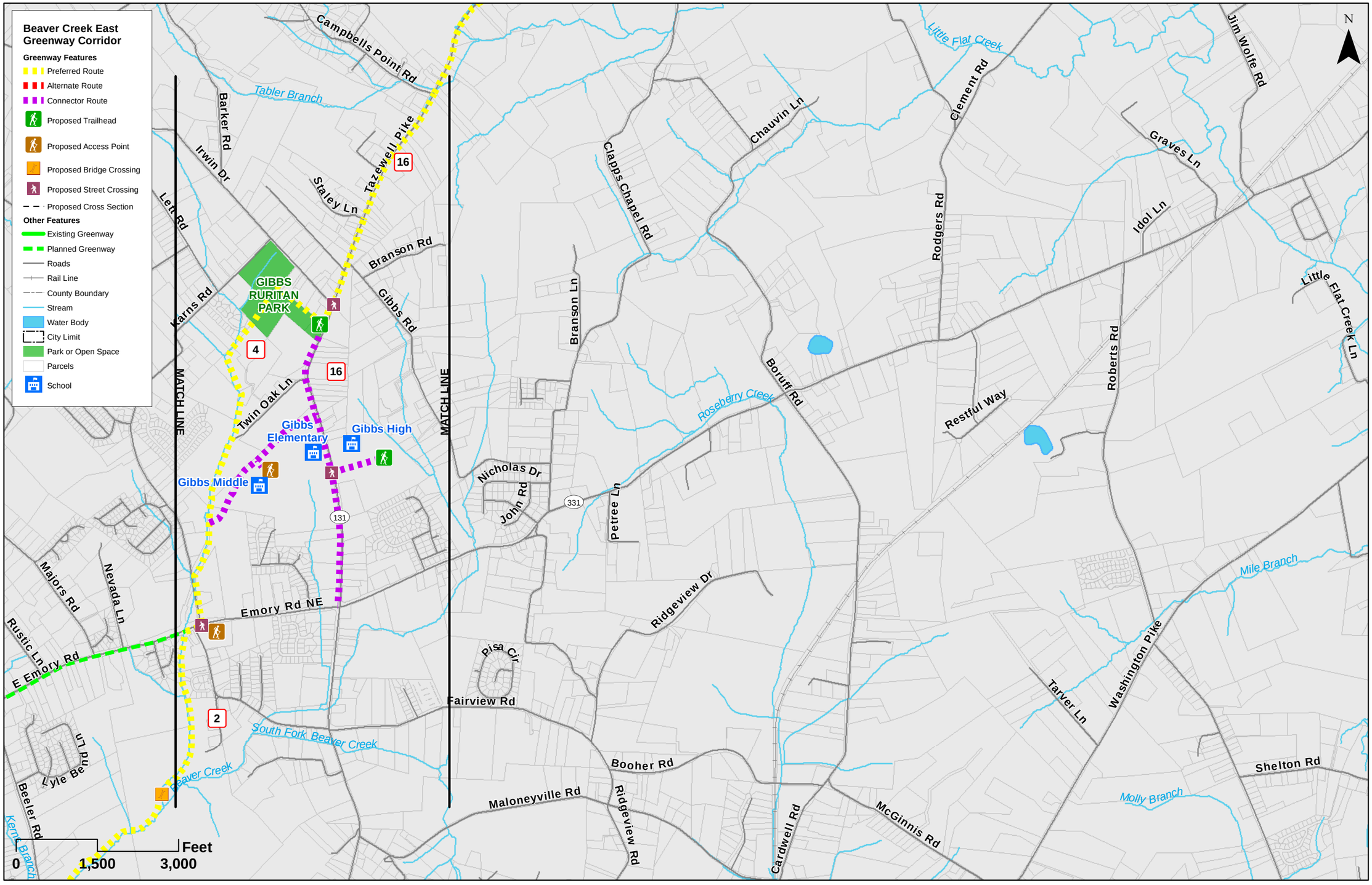


Figure 4-4. Beaver Creek East: Campbells Point Road to County Line

4.2 General Constraints

The recommended routes in the Beaver Creek East corridor predominately follow either Beaver Creek (preferred route), Emory Road (alternate route), or Tazewell Pike (preferred route). Below are general constraints affecting the alignments in the Beaver Creek East corridor.

- Interstate 75 to Clayton Park
  - Emory Road (alternate route) from I-75 to Dry Gap Road has a high traffic volume with multiple side roads and a large number of business entrances and narrow ROW
  - Emory Road (alternate route) from Dry Gap Road to Norris Freeway has a high traffic volume with multiple side roads and a large number of business entrances and narrow ROW
- Clayton Park to East of Beeler Road
  - Mid-block crossing at Beaver Creek (preferred route) and Crippen Road
- East of Beeler Road to Campbells Point Road
  - Steep topography may require retaining walls adjacent to Beaver Creek (preferred route)
- Campbells Point Road to County Line
  - Narrow right-of-way along county road

Please see Appendix C for corridor constraint maps.

4.3 Design Character

The preferred route in the Beaver Creek West corridor is located primarily adjacent to the creek and offers the chance to build on the existing greenway system in the Halls community. Trailheads, creek crossings, and places for active and passive recreation will figure prominently in the corridor. Figures 4-5 and 4-6 illustrate the proposed design character, including:

- Developing a planting plan that enhances both user experience and stream conservation;
- Lighting underpasses to improve personal safety;
- Providing an easily understood wayfinding system (Appendix A), including signage showing distances to trailheads and popular destinations such as kayak/canoe put-ins, neighborhoods, and commercial districts;
- Creating places to rest or gather; and
- Utilizing concrete for the trail surface in flood prone areas to minimize path damage.

Figure 4-5. Illustrative Concept: Beaver Creek

Figure 4-6. Illustrative Concept: Beaver Creek

4.4 Cost Estimates

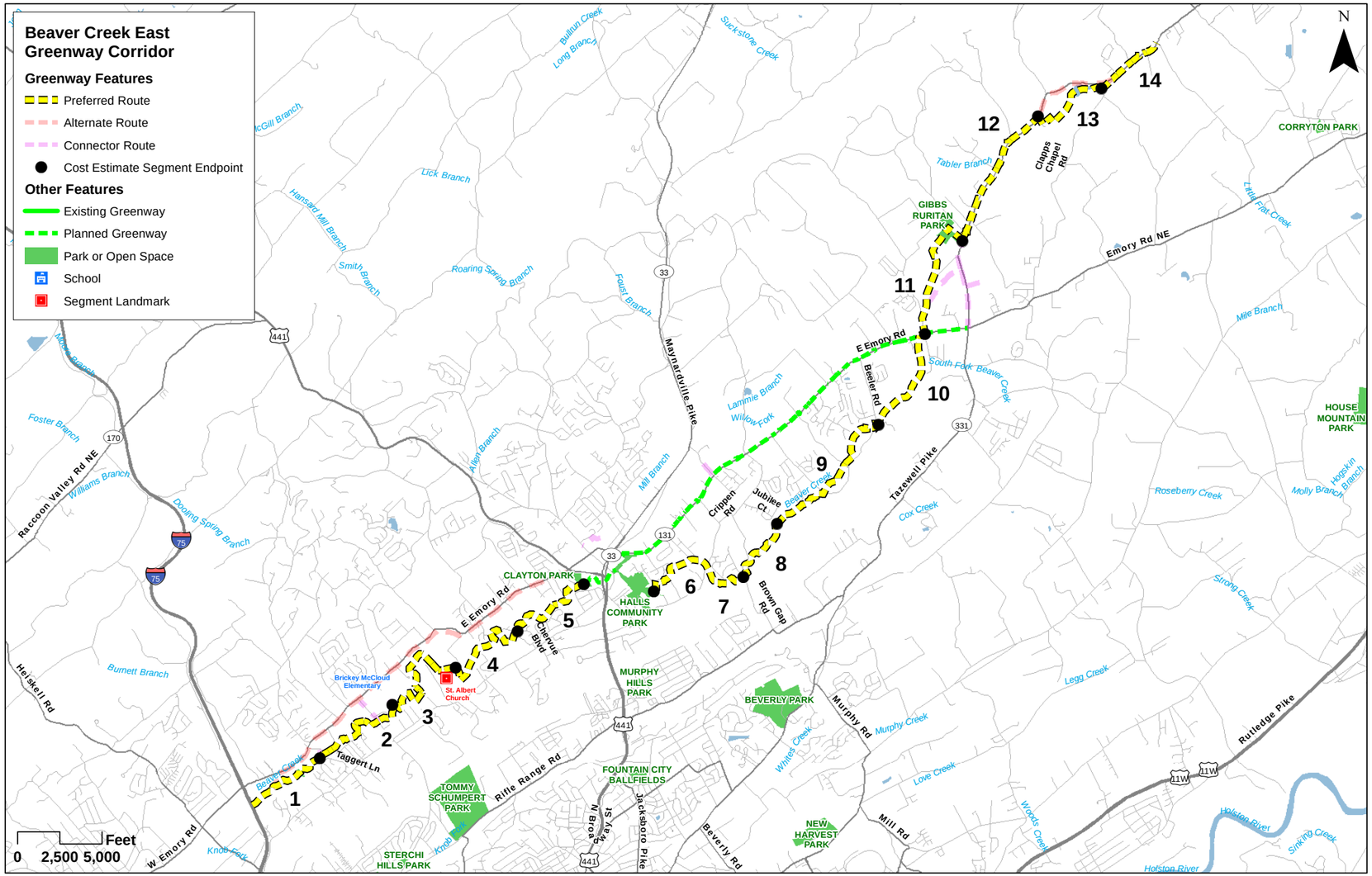
For cost estimating purposes, the preferred route in the Beaver Creek West was divided into thirteen segments, corresponding with logical termini and reasonable distances relative to funding design and construction (approximately 1-2 miles in length). Table 4-1 summarizes the estimated costs for each of the segments shown in Figure 4-7.

Estimated costs do not include utility coordination and relocation, property acquisition, permit fees, environmental impact costs, traffic control, signing, lighting, or erosion control.

Table 4-1. Cost Estimate by Segment: Beaver Creek East

Segment Name	Length (LF)	Estimated Cost
Segment 1 - I-75 to Taggart Lane (Industrial Park)	5,900	$1,247,991
Segment 2 - Taggart Lane (Industrial Park) to Brickey McCloud Elementary	7,293	$1,827,984
Segment 3 - Brickey McCloud Elementary to St. Albert Church	8,608	$2,194,179
Segment 4 - St. Albert Church to Chervue Boulevard	6,899	$2,086,943
Segment 5 - Chervue Boulevard to Clayton Park	6,091	$1,724,493
Segment 6 - Existing Halls Greenway to Crippen Road	4,172	$1,086,580
Segment 7 - Crippen Road to Brown Gap Road	3,082	$2,034,430
Segment 8 - Brown Gap Road to Jubilee Court	4,383	$1,289,160
Segment 9 - Jubilee Court to Beeler Road	9,595	$1,306,190
Segment 10 - Beeler Road to Emory Road/TDOT Greenway	6,685	$2,272,021
Segment 11 - Emory Road to Gibbs Ruritan Park	7,740	$1,394,842
Segment 12 - Gibbs Ruritan Park to Trailhead at Property	8,880	$1,986,025
Segment 13 - Trailhead at Property to Clapps Chapel Road	5,465	$490,994
Segment 14 - Clapps Chapel Road to County Line	4,280	$1,265,611

Figure 4-7. Beaver Creek East Preferred Alignment Segments



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Section 5.0

Northshore Drive

5.1 Recommended Alignments

The Northshore Drive corridor traverses the southwestern portion of Knox County, providing access to both well-established and new residential development. The corridor's namesake location, along the north shore of the Tennessee River/Fort Loudoun Lake, provides scenic views for travelers in addition to access to numerous recreational opportunities in one of the many parks that dot the lake shore. The corridor is served by neighborhood-scale retail centers, including the Rocky Hill Center and the new Northshore Town Center.

The recommended alignments, including the preferred, alternate, and connector routes, are organized around the key destinations – residential, commercial, and recreational – and take advantage of existing and planned greenways. Figures 5-1 through 5-4 depict the recommended alignments in the Northshore Drive corridor, and Appendix B includes the full set of typical greenway cross sections represented by the numbers (see red boxes) on the maps.

For each corridor, it is also important to note that the study recommends a preferred location for the proposed alignment (i.e., side of road or creek). To learn more about the recommended greenway alignments found in the following summary maps, please contact the Knox County Department of Parks and Recreation.

Figure 5-1. Northshore Drive: County Line to Concord Park

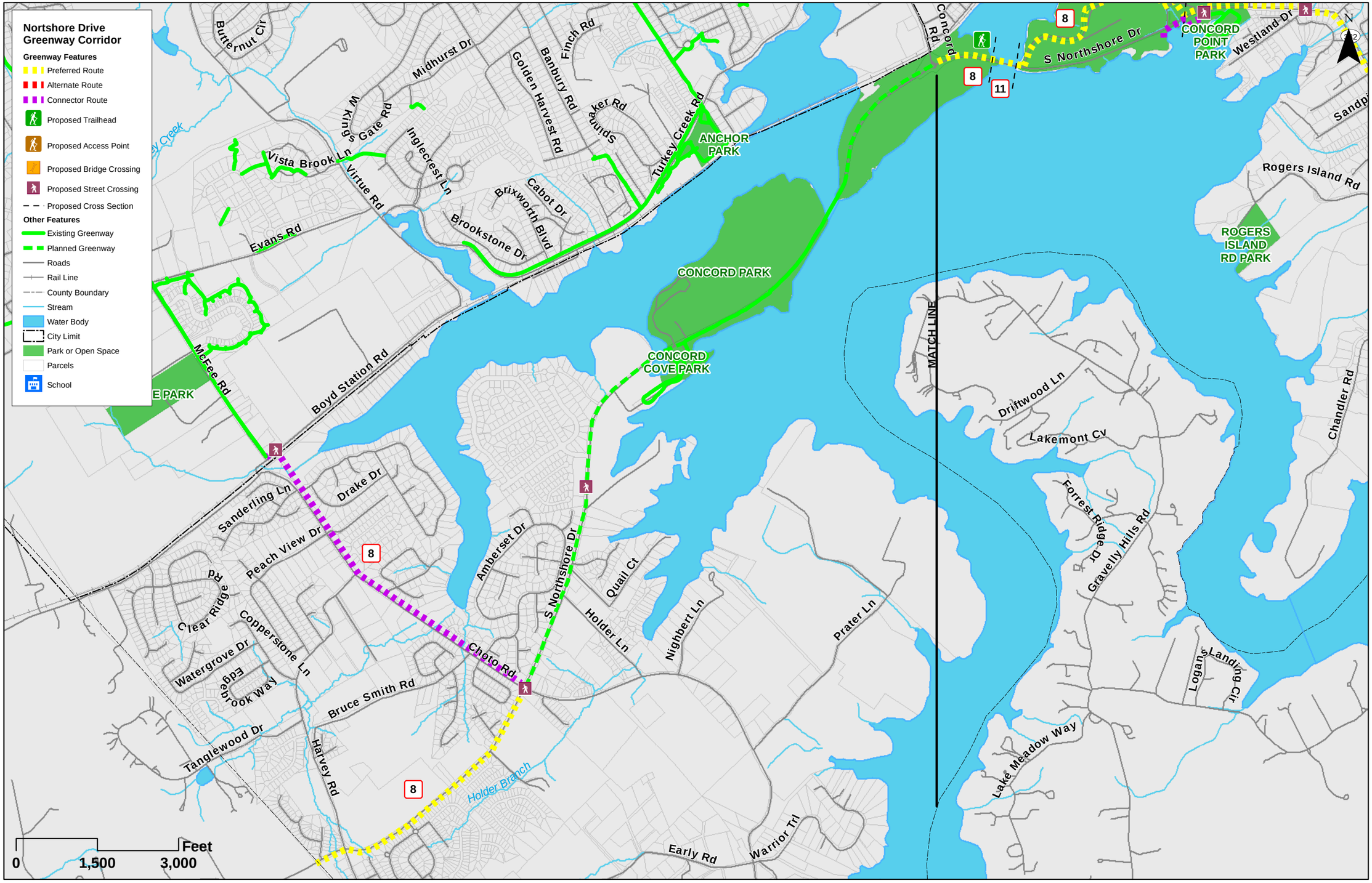


Figure 5-2. Northshore Drive: Concord Park to Pellissippi Parkway

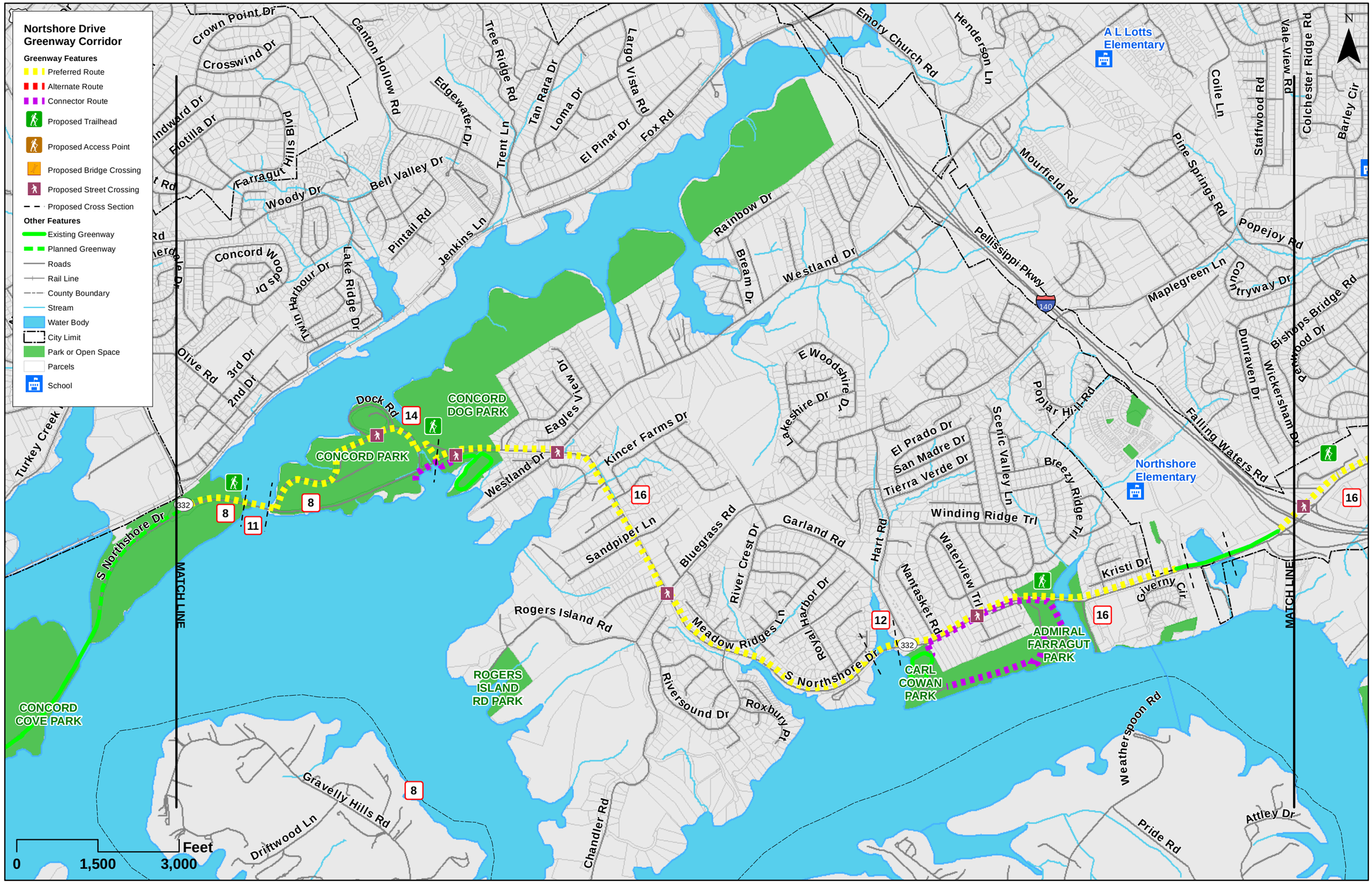


Figure 5-3. Northshore Drive: Pellissippi Parkway to Wallace Road

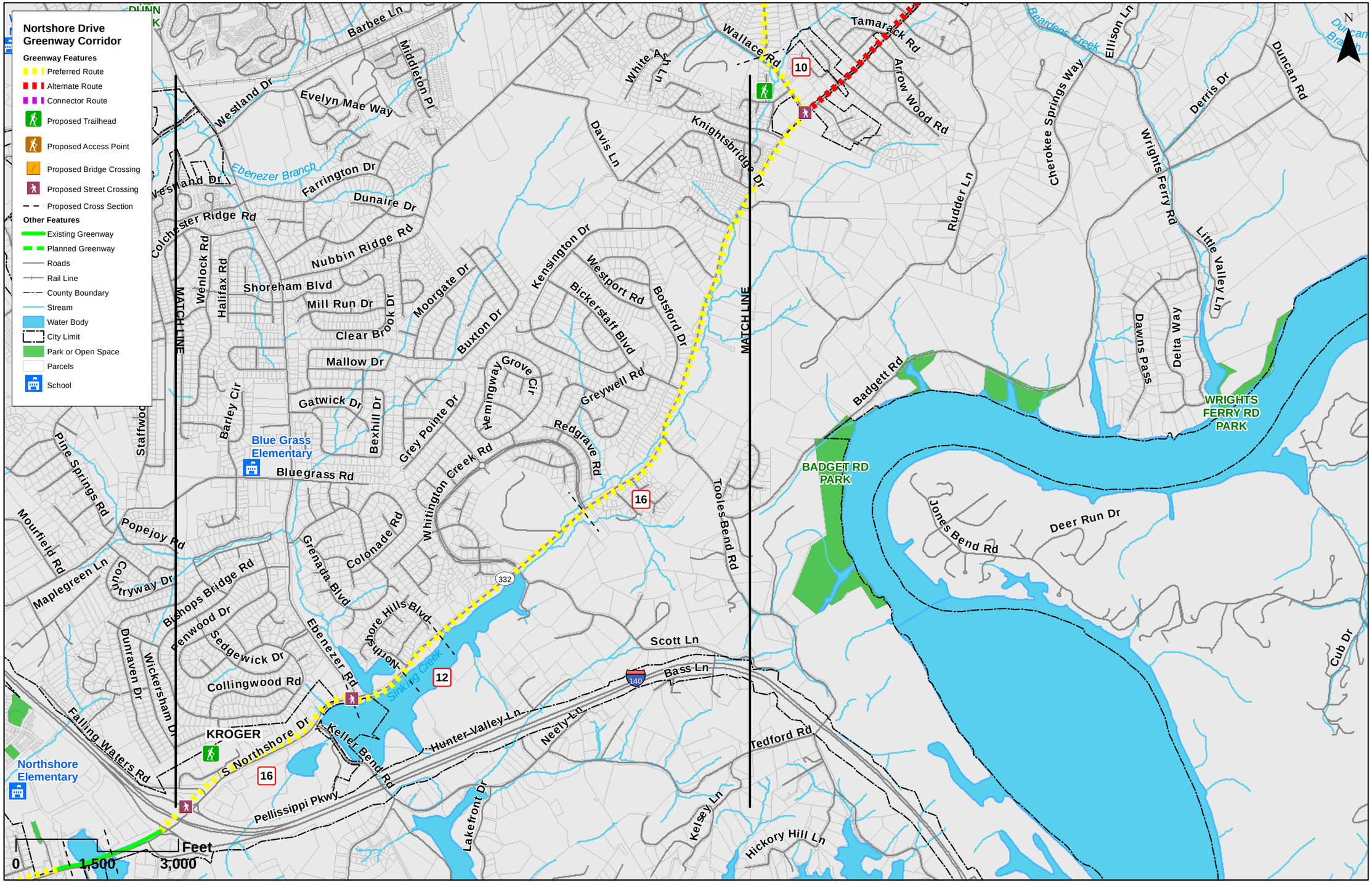
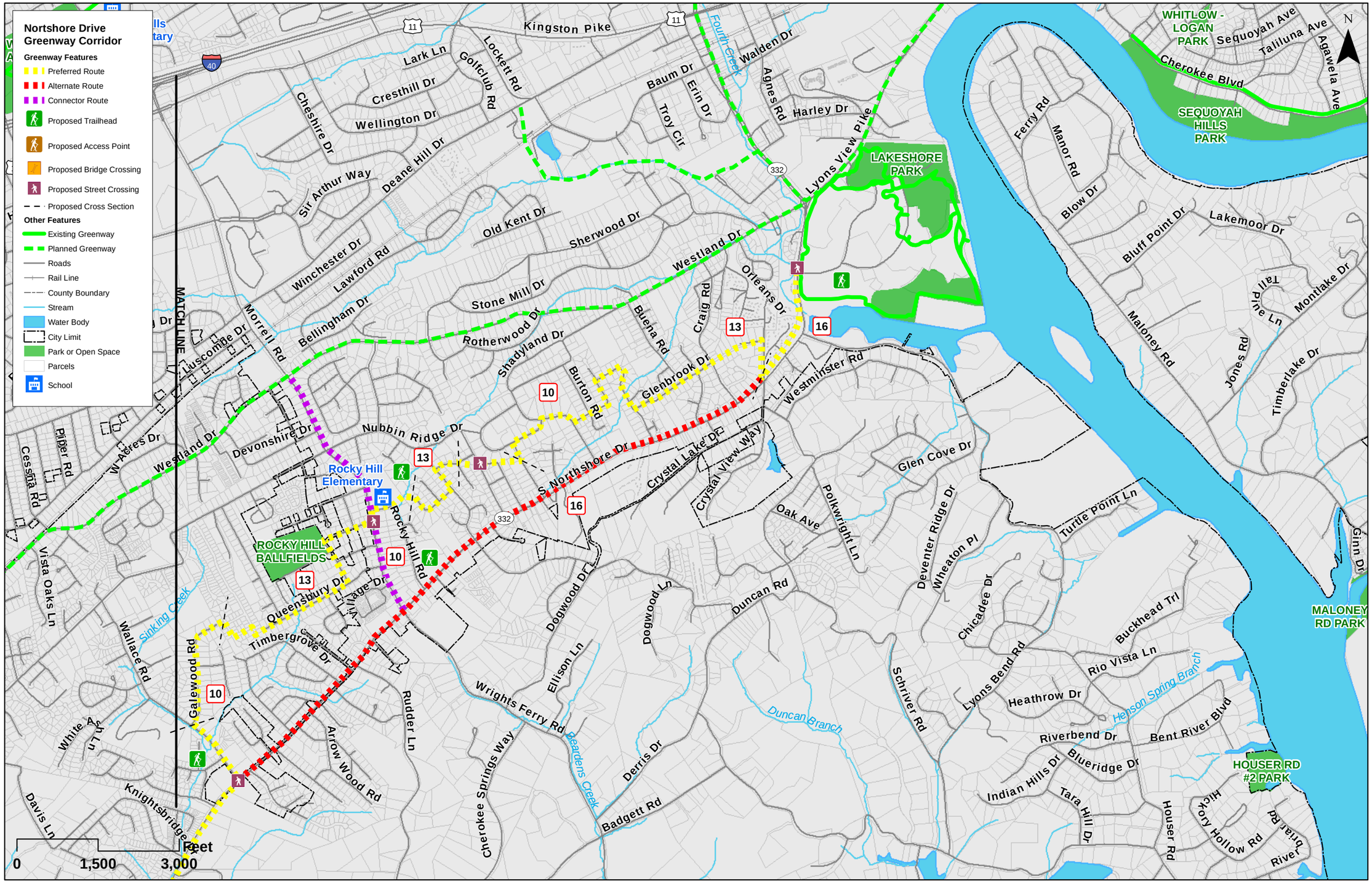


Figure 5-4. Northshore Drive: Wallace Road to Lakeshore Park



5.2 General Constraints

The recommended routes in the Northshore corridor are generally along roads or on streets in the corridor. Below are general constraints affecting the alignments in the Northshore Drive corridor.

- County Line to Concord Park
  - Existing development on both the north and south sides of Northshore Drive (preferred route)
  - Connection to the planned greenway along Northshore Drive between Choto Road and Concord Park and existing greenways in Concord Park (preferred route)
  - Connection to McFee Road greenway (connector route)
- Concord Park to Pellissippi Parkway
  - Existing development on both the north and south sides of Northshore Drive (preferred route)
- Pellissippi Parkway to Wallace Road
  - Topography and environmental features along north side of Northshore Drive (preferred route)
  - No suitable signalized or otherwise safe crossings of Northshore Drive (preferred route)
- Wallace Road to Lakeshore Park
  - Coordination with Rocky Hill Elementary (preferred route)
  - Connection between Westland Drive and Rocky Hill Center (connector route)
  - Topography, environmental features, and utilities along south side of Northshore Drive (alternate route)

Please see Appendix C for corridor constraint maps.

5.3 Design Character

Whether adjacent to Northshore Drive (Figure 5-5) or as an advisory lane along neighborhood streets (Figure 5-6), the preferred greenway route provides a way to access local schools, neighborhood retail, and recreational attractions. Adjacent to Northshore Drive, important design features include:

- Creating a sense of safety and comfort for greenway users from motor vehicle traffic through well designed, planted buffers;
- Providing an easily understood wayfinding system (Appendix A), including signage showing distances to trailheads and popular destinations such as commercial districts, parks, and schools;
- Constructing boardwalks to maintain adequate user separation from traffic in areas with hard constraints (i.e., water body) or narrow rights-of-way; and
- Supporting safe access with pedestrian-oriented intersections, including high visibility crosswalks, pedestrian signal countdown heads, and nighttime lighting.

Similarly, ensuring a safe and comfortable user experience on advisory bike lanes through neighborhoods requires:

- Designating a specific space within the roadway for greenway users; and
- Encouraging slower speeds and increased driver awareness with pavement markings and signage.

What is an **Advisory Bike Lane?**

An Advisory Bike Lane defines a preferred space for bicyclists and motorists to operate on narrow streets that would otherwise be a shared roadway environment. Roads with Advisory Bike Lanes accommodate low to moderate volumes of low-speed, two-way motor vehicle traffic and provide a prioritized space for bicyclists with little or no widening of the paved roadway surface.

Figure 5-5. Illustrative Concept: Northshore Drive

Figure 5-6. Illustrative Concept: Queensbury Drive

5.4 Cost Estimates

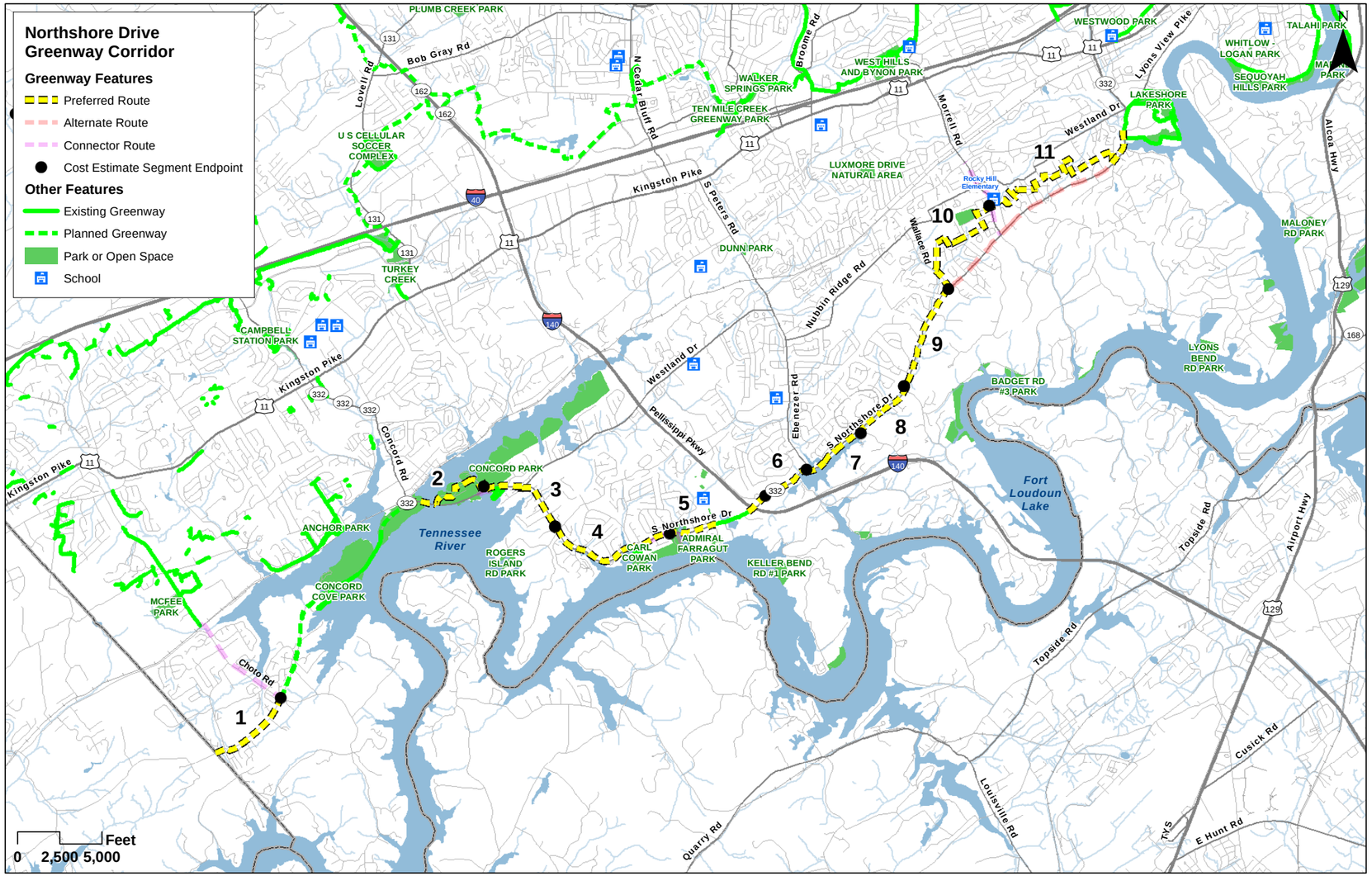
For cost estimating purposes, the preferred route for Northshore Drive was divided into seven segments, corresponding with logical termini and reasonable distances relative to funding design and construction (approximately 1-2 miles in length). Table 5-1 summarizes the estimated costs for each of the segments shown in Figure 5-7.

Estimated costs do not include utility coordination and relocation, property acquisition, permit fees, environmental impact costs, traffic control, signing, lighting, or erosion control.

Table 5-1. Cost Estimate by Segment: Northshore Drive

Segment Name	Length (LF)	Estimated Cost
Segment 1 - County Line to Choto Roundabout Trailhead	5,225	$676,582
Segment 2 - Concord Roundabout to Concord Dog Park Trailhead	5,881	$1,146,914
Segment 3 - Concord Dog Park Trailhead to Bluegrass Road	5,901	$1,529,718
Segment 4 - Bluegrass Road to Admiral Farragut Park Trailhead	8,271	$2,990,651
Segment 5- Admiral Farragut Park Trailhead to Kroger Trailhead	5,990	$2,076,755
Segment 6 - Kroger Trailhead to Ebenezer Road	2,799	$1,362,500
Segment 7 - Ebenezer Road to Scott Lane	3,936	$3,478,956
Segment 8 - Scott Lane to Tooles Bend Road	3,670	$1,841,306
Segment 9 - Tooles Bend Road to Wallace Road	6,680	$1,891,549
Segment 10 - Wallace Road to Rocky Hill Elementary Trailhead	9,103	$1,452,549
Segment 11 - Rocky Hill Elementary Trailhead to Lakeshore Park	13,402	$2,034,313

Figure 5-7. Northshore Drive Preferred Alignment Segments



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Section 6.0

South Knox – Gov. John Sevier Highway

6.1 Recommended Alignments

Located in south Knox County, the Gov. John Sevier Highway corridor serves as a transportation spine set in the natural beauty of the ridges and valleys that make up this portion of the county. Beginning at the newly expanded I.C. King Park to the west and ending at Chapman Highway, the recommended alignments, including the preferred, alternate, and connector routes, weave through the largely rural landscape – connecting neighborhoods, parks, and schools – while providing unmatched recreational opportunities. Figures 6-1 and 6-2 depict the recommended alignments in the Gov. John Sevier Highway corridor, and Appendix B includes the full set of typical greenway cross sections represented by the numbers (see red boxes) on the maps.

For each corridor, it is also important to note that the study recommends a preferred location for the proposed alignment (i.e., side of road or creek). To learn more about the recommended greenway alignments found in the following summary maps, please contact the Knox County Department of Parks and Recreation.

Figure 6-1. Gov. John Sevier Highway: I.C. King Park to Bonny Kate Elementary School

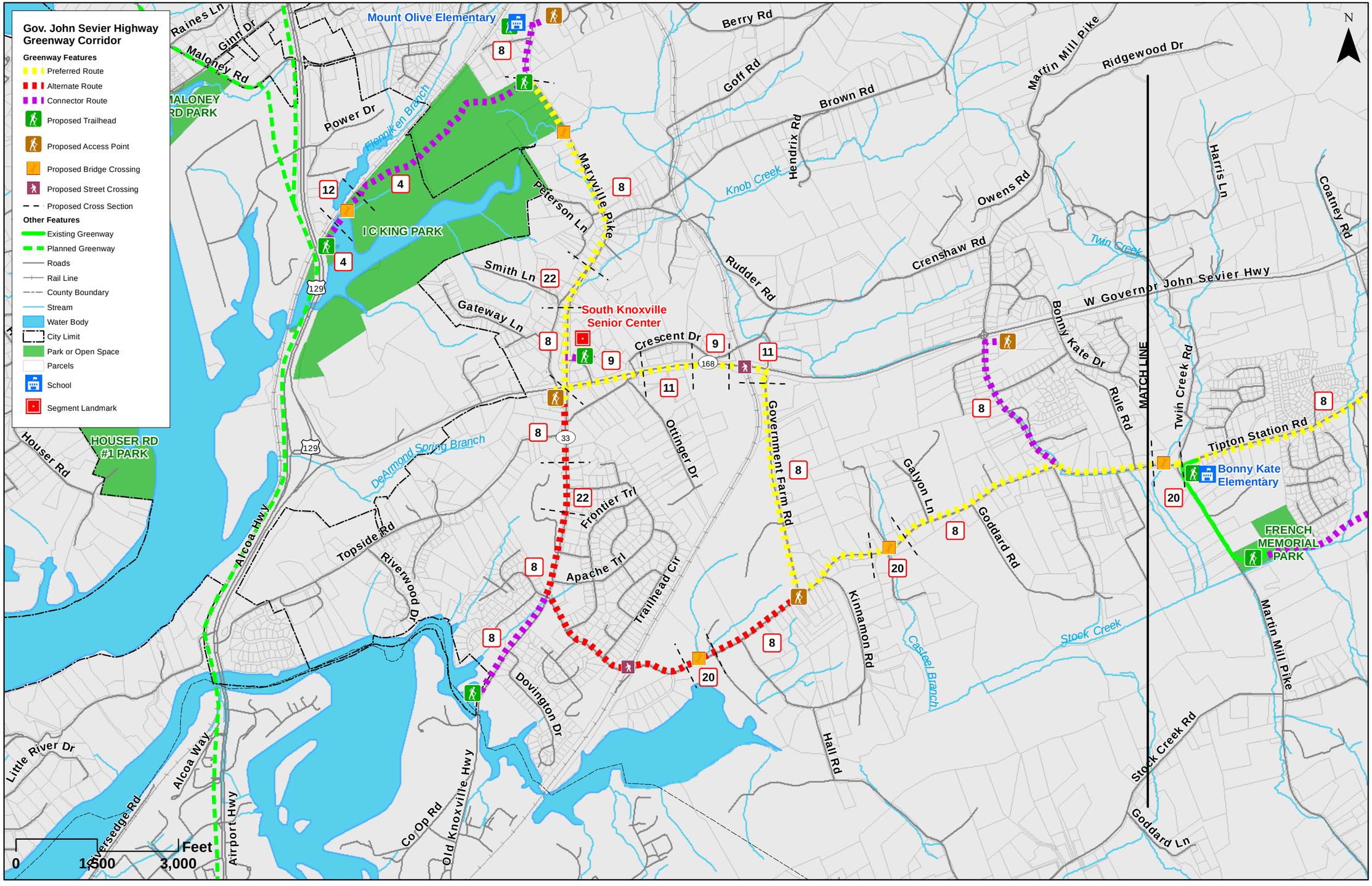
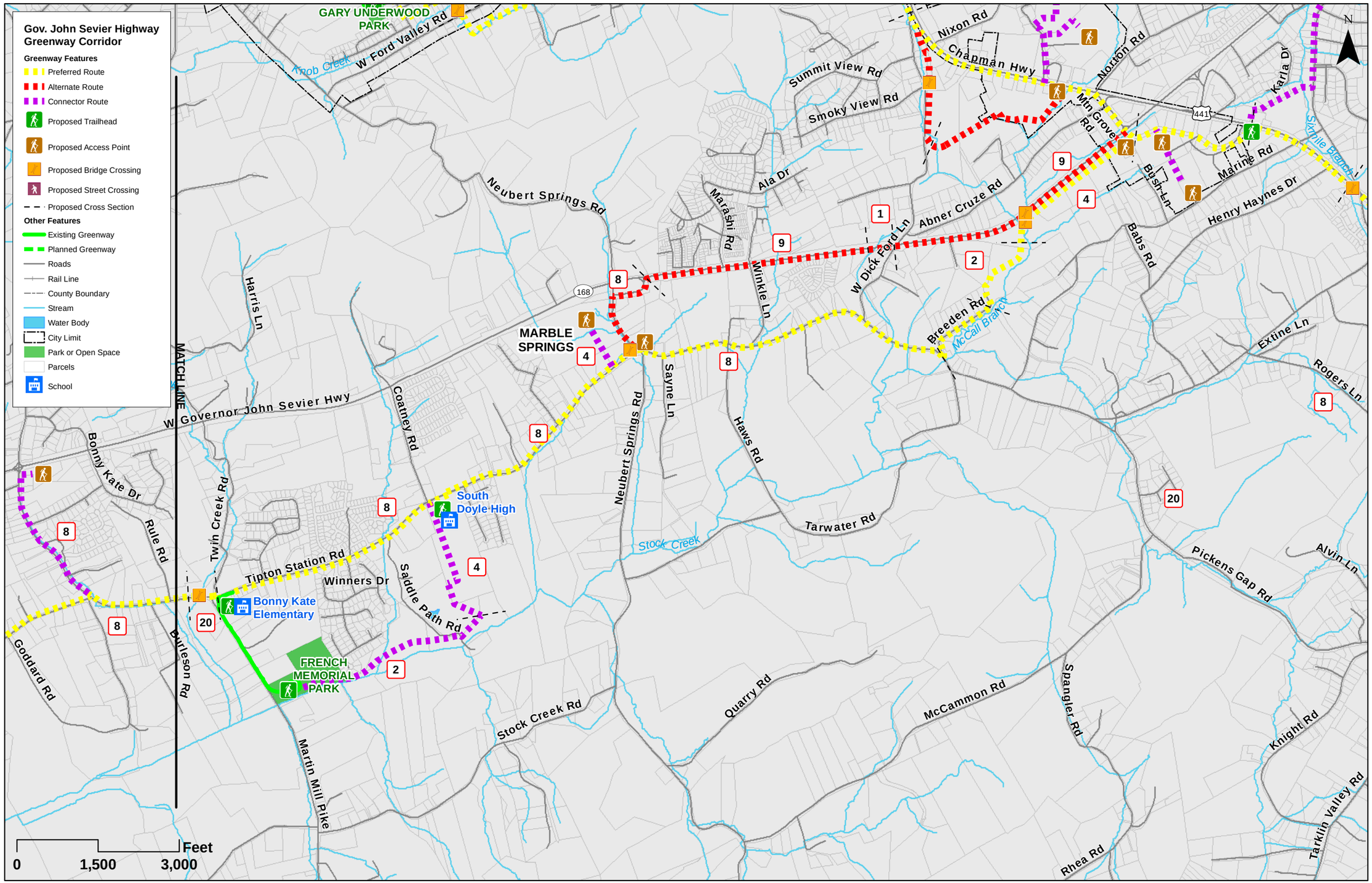


Figure 6-2. Gov. John Sevier Highway: Bonny Kate Elementary School to Chapman Highway



6.2 General Constraints

The recommended routes in the Gov. John Sevier Highway largely follow major roads and local streets along the corridor. Below are general constraints affecting the alignments in the Gov. John Sevier Highway corridor.

- I.C. King Park to Bonny Kate Elementary School
  - Steep topography in I.C. King Park between Alcoa Highway and Maryville Pike (alternate route)
  - Narrow existing road right-of-way along Government Farm Road (preferred route)
  - Coordination with the University of Tennessee – agricultural research station (preferred route)
- Bonny Kate Elementary School to Chapman Highway
  - None

Please see Appendix C for corridor constraint maps.

6.3 Design Character

The preferred greenway route for Gov. John Sevier Highway parallels major roads (Figure 6-3) and local streets as it connects neighborhoods, parks, and schools. Adjacent to major roads, important design features include:

- Creating a sense of safety and comfort for greenway users from motor vehicle traffic through well designed, planted buffers;
- Providing an easily understood wayfinding system (Appendix A), including signage showing distances to trailheads and popular destinations such as commercial districts, parks, and schools; and
- Supporting safe access with pedestrian-oriented intersections, including high visibility crosswalks, pedestrian signal countdown heads, and nighttime lighting.

Figure 6-3. Illustrative Concept: Tipton Station Road

6.4 Cost Estimates

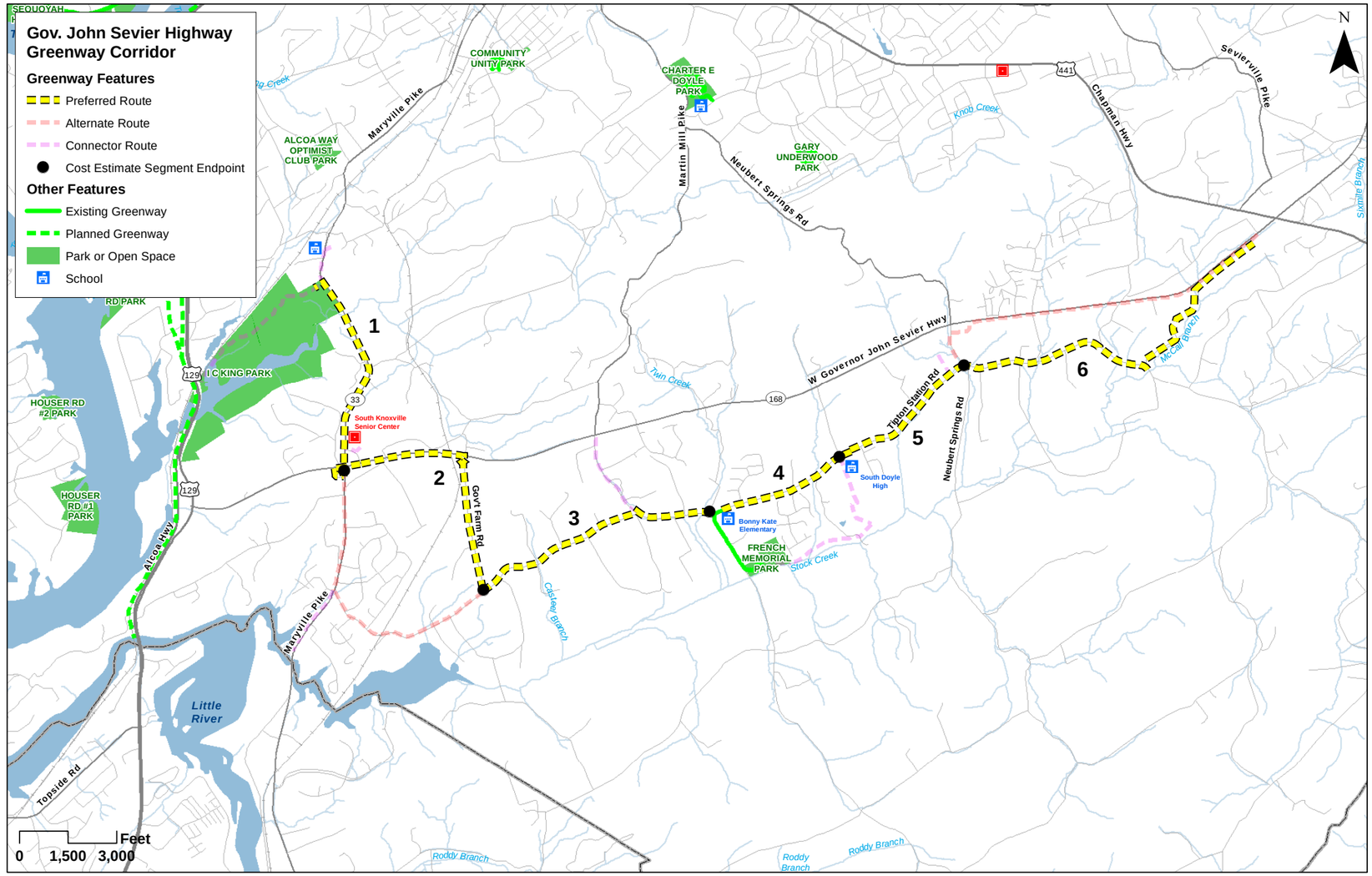
For cost estimating purposes, the preferred route along the Gov. John Sevier Highway corridor was divided into six segments, corresponding with logical termini and reasonable distances relative to funding design and construction (approximately 1-2 miles in length). Table 6-1 summarizes the estimated costs for each of the segments shown in Figure 6-4.

Estimated costs do not include utility coordination and relocation, property acquisition, permit fees, environmental impact costs, traffic control, signing, lighting, or erosion control.

Table 6-1. Cost Estimate by Segment: Gov. John Sevier Highway

Segment Name	Length (LF)	Estimated Cost
Segment 1 - I.C. King Park to South Knoxville Senior Center and Weigel's Parking Lot Trailheads	7,321	$1,635,928
Segment 2 - South Knoxville Senior Center and Weigel's Parking Lot Trailheads to Government Farm Road Access Point	9,285	$3,753,57
Segment 3 - Government Farm Road Access Point to Bonny Kate Elementary Trailhead	7,805	$846,002
Segment 4 - Bonny Kate Elementary Trailhead to South Doyle High School Trailhead	4,442	$349,082
Segment 5 - South Doyle High School Trailhead to Neubert Springs Access Point	4,626	$542,270
Segment 6 - Neubert Springs Access Point to Mountain Grove Weigel's Access Point	11,660	$1,171,074

Figure 6-4. Gov. John Sevier Highway Preferred Alignment Segments



Section 7.0

South Knox – Chapman Highway

7.1 Recommended Alignments

Complementing Gov. John Sevier Highway, Chapman Highway is the primary north-south transportation corridor for south Knox County. Anchored on the north by Gary Underwood Park and extending to the southern county line near the Seymour community, the Chapman Highway corridor serves as the commercial hub, offering shopping, professional services, and leisure opportunities along its entire length. In addition to recreation, the recommended alignments (Figures 7-1 and 7-2), including the preferred, alternate, and connector routes, will provide a continuous walking and bicycling facility in the corridor allowing residents of all ages and abilities to access destinations safely and conveniently. Strategically located connector routes identified during the study will also provide connectivity between the preferred route and the burgeoning Knoxville Urban Wilderness.

For each corridor, it is also important to note that the study recommends a preferred location for the proposed alignment (i.e., side of road or creek). To learn more about the recommended greenway alignments found in the following summary maps, please contact the Knox County Department of Parks and Recreation.

Figure 7-1. Chapman Highway: Gary Underwood Park to Norton Road

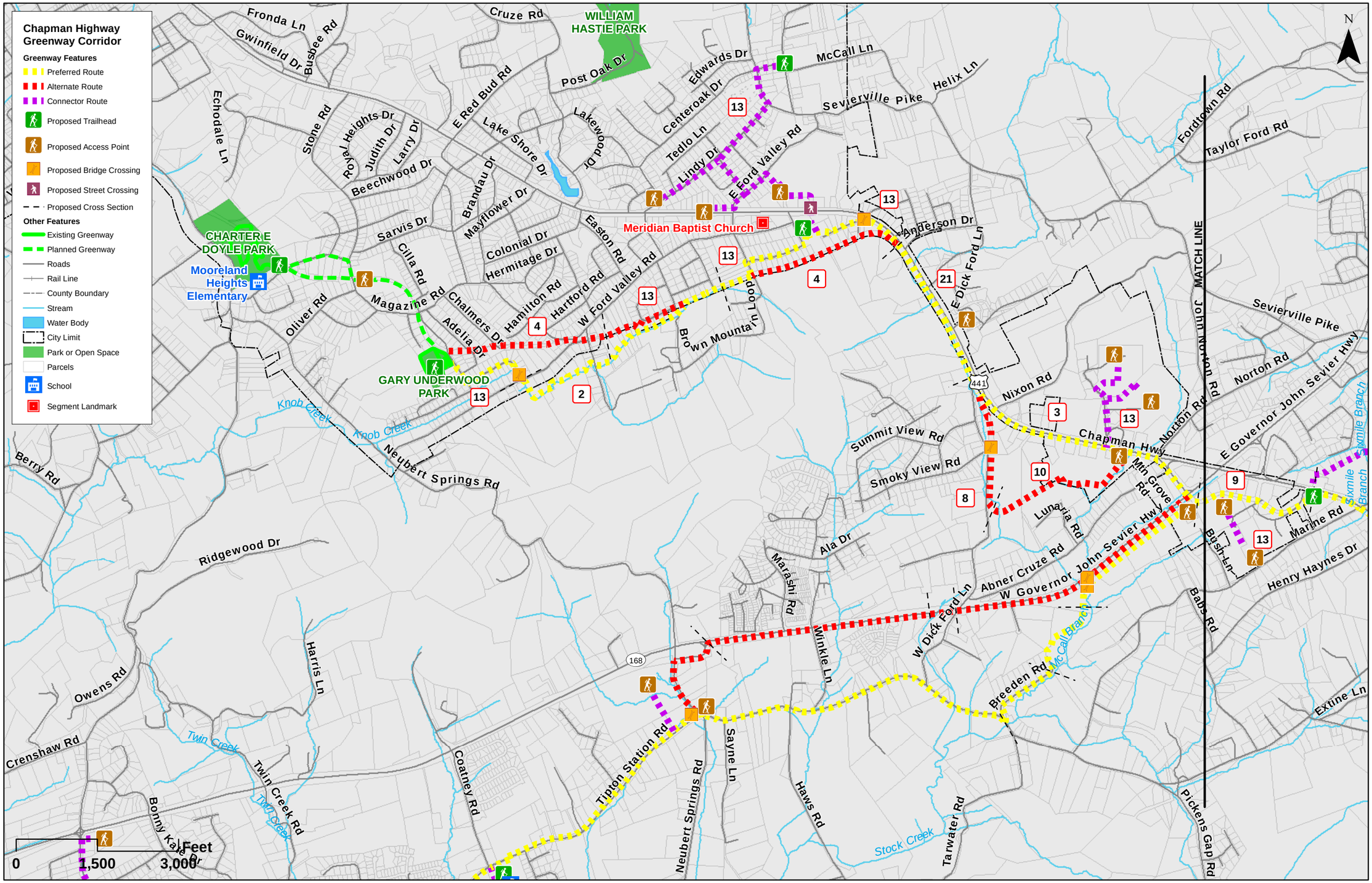
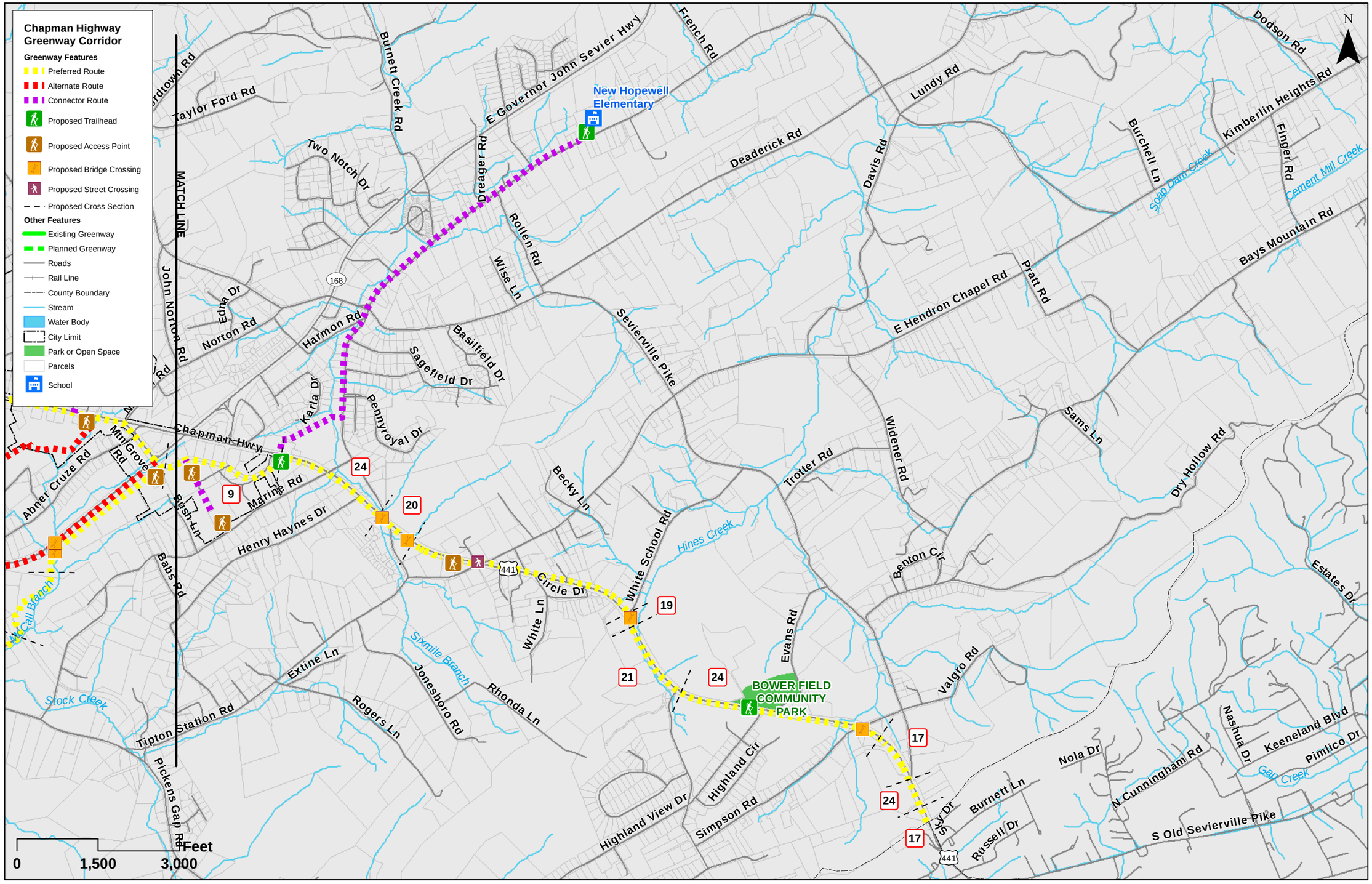


Figure 7-2. Chapman Highway: Norton Road to County Line



7.2 General Constraints

The recommended routes in the Chapman Highway corridor generally follow major roads, neighborhood streets, and creeks. Below are general constraints affecting the alignments in the Chapman Highway corridor.

- Gary Underwood Park to Norton Road
  - Topography, environmental features, utilities, and narrow rights-of-way along Chapman Highway between Anderson Drive and Nixon Road (preferred route)
- Norton Road to County Line
  - Topography, environmental features, utilities, and narrow rights-of-way along Chapman Highway south of Hendron Chapel Road (preferred route)
  - Narrow right-of-way along Kimberlin Heights Road (connector route)

Please see Appendix C for corridor constraint maps.

7.3 Design Character

Much of the preferred greenway route follows local roads and streets, including Chapman Highway (Figure 7-3), providing connectivity among neighborhoods, schools, parks, and the numerous commercial developments along the highway. Adjacent to roads, important design features include:

- Creating a sense of safety and comfort for greenway users from motor vehicle traffic through well designed, planted buffers;
- Providing an easily understood wayfinding system (Appendix A), including signage showing distances to trailheads and popular destinations such as commercial districts, parks, and schools; and
- Supporting safe access with pedestrian-oriented intersections, including high visibility crosswalks, pedestrian signal countdown heads, and nighttime lighting.

Figure 7-3. Illustrative Concept: Chapman Highway

7.4 Cost Estimates

For cost estimating purposes, the preferred route along the Chapman Highway corridor was divided into five segments, corresponding with logical termini and reasonable distances relative to funding design and construction (approximately 1-2 miles in length). Table 7-1 summarizes the estimated costs for each of the segments shown in Figure 7-4.

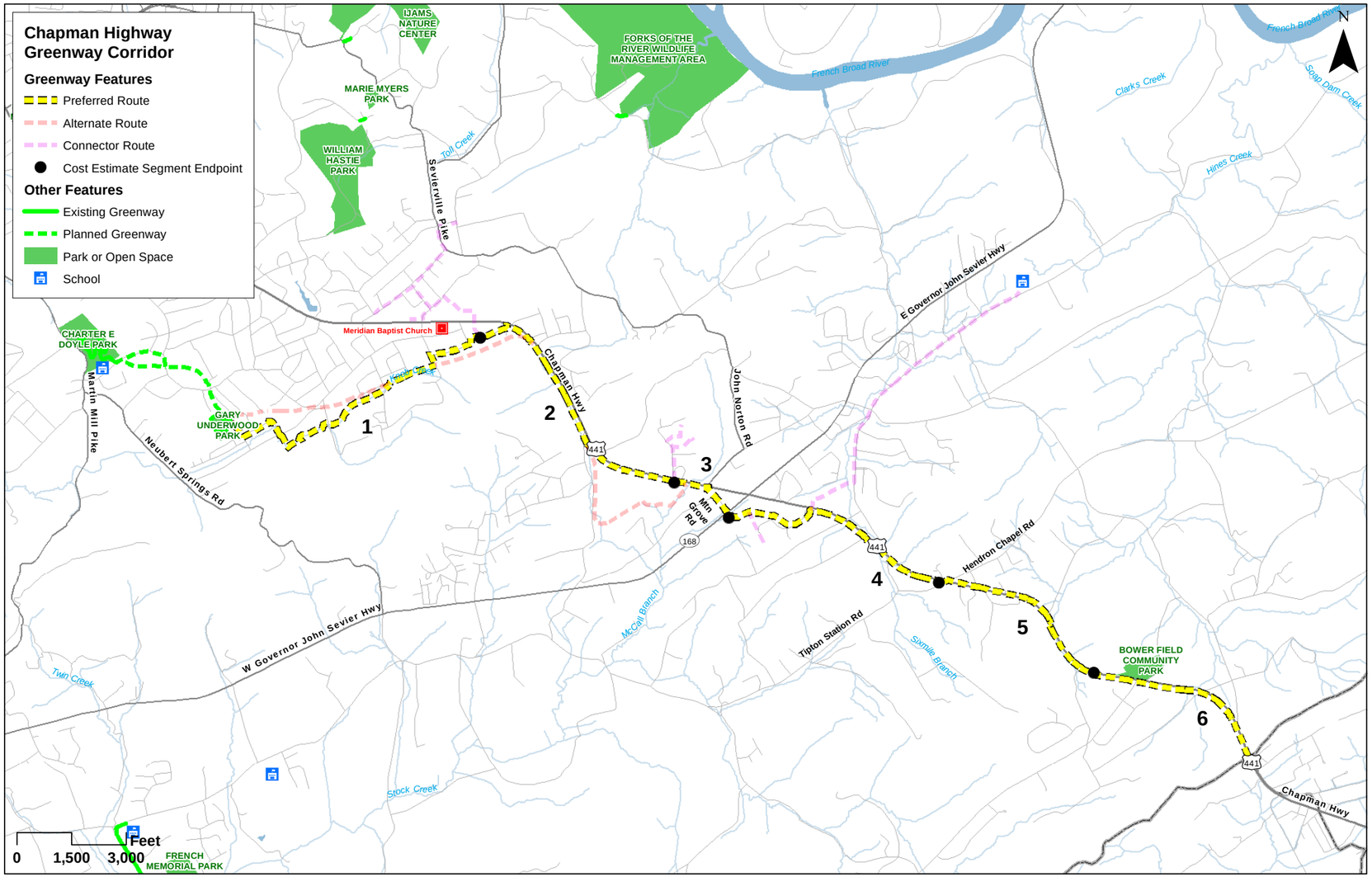
Estimated costs do not include utility coordination and relocation, property acquisition, permit fees, environmental impact costs, traffic control, signing, lighting, or erosion control.

Table 7-1. Cost Estimate by Segment: Chapman Highway

Segment Name	Length (LF)	Estimated Cost
Segment 1 - Gary Underwood Park Trailhead to Meridian Baptist Church Trailhead	9,649	$1,551,194
Segment 2 - Meridian Baptist Church Trailhead to Green Road	7,086	$2,001,321
Segment 3 - Green Road to Mountain Grove Weigel's Access Point	1,735	$567,182
Segment 4 - Mountain Grove Weigel's Access Point to Hendron Chapel CITGO Access Point	8,564	$1,672,321
Segment 5 - Hendron Chapel CITGO Access Point to Bower Field Community Park Trailhead	6,825	$5,481,819
Segment 6 - Bower Field Community Park Trailhead to County Line	4,214	$994,850

*Segment includes a pedestrian bridge.

Figure 7-4. Chapman Highway Preferred Alignment Segments



Section 8.0

Health Design Assessment

Greenways support communities through a host of health and wellness benefits. Among these benefits, greenways have been shown to increase rates of physical activity through both recreation and transportation, improve mental health outcomes, and reduce chronic disease in user populations. Greenways can also help reduce health disparities when specific communities that may benefit more than others from improved walking and bicycling facilities are identified and given explicit consideration during the planning process.

A Health Design Assessment (HDA) was conducted for this study to assist in identifying the communities that could benefit significantly from new greenways. The findings of the HDA will also assist county officials in identifying recommended segments that may be more competitive for key health-related grant opportunities (discussed in Section 10.0).

8.1 Health Benefits of Greenways

Greenways create healthy recreation and transportation opportunities by providing people of all ages and abilities with attractive, safe, and accessible places to walk or bike. In doing so, they make it easier for people to engage in physical activity. Physical activity is a primary influencing factor for health that can be affected by changes in the built environment, particularly for users with limited access to bicycle and pedestrian facilities. Currently, only 25 percent of adults nationally reach recommended physical activity levels. The health benefits of physical activity are both numerous and well-established - including the prevention of cardiovascular disease, arthritis, diabetes, and mental disorders like anxiety and depression.

8.2 Health Issues in Knox County

According to recent data from the Knox County Health Department, cancer and cardiovascular disease are the leading causes of death in the county. Similar to many communities around the country, obesity, physical inactivity, diabetes, and mental health are also identified as key community health issues. Consistent with national trends, community disparities exist with respect to these issues. A notable disparity is seen in data sourced from the U.S. Centers for Disease Control and Prevention (CDC) for the rate of death by cancer among Knox County African Americans as compared to the overall rate for Knox County. Diabetes, especially among African American populations, is also cited as a critical health issue. In one increasing trend, roughly 10 percent of Knox County residents report having been diagnosed with diabetes in their lifetime. Impoverished communities and communities with less than high school equivalency are disproportionately affected by diabetes in Knox County. Similarly, Knox County residents living with heart disease are also more likely to be African American, have a household income less than $15,000 and/or have not achieved a high school education.

8.3 Health Impact Opportunity Zones

To better understand health equity along each of the five greenway corridors, Health Impact Opportunity (HIO) zones were defined. These zones correspond to U.S. Census Bureau Block Group geographies. County-level health findings and demographic data from the U.S. Census Bureau were used to score each zone to determine the health impact opportunity that could be expected from an improved greenway system (Table 8-1).

Generally speaking, the zones are comprised of three levels of health impact opportunity:

- High Zones: block groups having the highest proportion of populations with sociodemographic metrics associated with poor health outcomes, health disparities, and traditionally-underserved populations;
- Medium Zones: block groups having a proportion of the population falling below and between county and national averages with potential to improve health outcomes through increased physical activity; and
- Common Zones: block groups with the opportunity to positively impact health (as all communities will experience health benefits) though not likely to improve countywide health equity indicators based on available data.
- As shown in Table 8-2, a number of preferred segments are located in high and medium HIO zones. These segments would likely yield greater health and equity benefits to the community, and importantly, be more competitive for health-focused grant funding opportunities.

Table 8-1. Health Impact Opportunity Criteria

Socio-Demographic Metric	Common (1)	Medium (3)	High (5)
Educational attainment (population 25 years + with less than a HS education)	<9.1% of pop.	9.1-12.6% of pop.	>12.6% of pop.
Population with a disability (armed services, civilian, and not in labor force)	<10.5% pop.	10.5-11.2% of pop.	>11.2% of pop.
Income (median annual household income)	>$57,652	$52,458-57,652	<$52,458
Poverty (income in past 12 months below poverty level)	<13.4% of pop.	13.4-15.7% of pop.	>15.7% of pop.
Unemployment Rate	<3.4%	3.4-4.4%	>4.4%
% Race/Ethnicity (historically-underserved pop)	<9% Non-white	>9% Non-white or	>9% Non-white and
		>4.3% Hispanic	>4.3% Hispanic

Table 8-2. Health Impact Opportunity Zones by Segment

Segment ID	Segment Name	HIO Zone
Beaver Creek West		
1	Couch Mill Road from Williams Bend Road to Steele Road	COMMON
2	East Gallaher Ferry Road to Williams Bend Road	COMMON
3	Conner Creek from East Gallaher Ferry Road to Steele Road	COMMON
4	Steele Road from Couch Mill Road to Hardin Valley Elementary Trailhead	COMMON
5	Valley View Landing to Connor Creek	COMMON
6	Hardin Valley Road from Conner Creek to Pellissippi Parkway	COMMON
7	Hardin Valley Road from Pellissippi Parkway to Beaver Creek	COMMON
8	Beaver Creek from Hardin Valley Road to Westcott Boulevard	COMMON
9	Westcott Boulevard to Oak Ridge Highway	MEDIUM
10	Karns Middle to Harrell Road Stormwater Park	MEDIUM
11	Harrell Road Stormwater Park to Beachmeadow Lane	COMMON
12	Beachmeadow Lane to Emory Road	COMMON
13	Powell Station Park to Powell Community Center	HIGH
14	Powell Community Center to Heiskell Road Spur	HIGH
15	Heiskell Road Spur to I-75	HIGH
Beaver Creek East		
1	I-75 to Taggart Lane (Industrial Park)	COMMON
2	Taggart Lane (Industrial Park) to Brickey McCloud Elementary	COMMON
3	Brickey McCloud Elementary to St. Albert Church	MEDIUM
4	St. Albert Church to Chervue Boulevard	MEDIUM
5	Chervue Boulevard to Clayton Park	MEDIUM
6	Existing Halls Greenway to Crippen Road	COMMON
7	Crippen Road to Brown Gap Road	COMMON
8	Brown Gap Road to Jubilee Court	MEDIUM
9	Jubilee Court to Beeler Road	MEDIUM
10	Beeler Road to Emory Road TDOT Greenway	MEDIUM
11	Emory Road to Gibbs Ruritan Park	COMMON
12	Gibbs Ruritan Park to Trailhead at Property	HIGH
13	Trailhead at Property to Clapps Chapel Road	HIGH
14	Clapps Chapel Road to County Line	HIGH

Segment ID	Segment Name	HIO Zone
Northshore		
1	Loudon County Line to Choto Roundabout Trailhead	COMMON
2	Concord Roundabout to Concord Dog Park Trailhead	COMMON
3	Concord Dog Park Trailhead to Bluegrass Road	COMMON
4	Bluegrass Road to Admiral Farragut Park Trailhead	COMMON
5	Admiral Farragut Park Trailhead to Kroger Trailhead	COMMON
6	Kroger Trailhead to Ebenezer Road	COMMON
7	Ebenezer Road to Scott Lane	COMMON
8	Scott Lane to Tooles Bend Road	COMMON
9	Tooles Bend Road to Wallace Road	COMMON
10	Wallace Road to Rocky Hill Elementary Trailhead	COMMON
11	Rocky Hill Elementary Trailhead to Lakeshore Park Trailhead	COMMON
South Knox - Gov. John Sevier		
1	I.C. King Park to South Knoxville Senior Center and Weigel's Parking Lot Trailheads	COMMON
2	South Knoxville Senior Center and Weigel's Parking Lot Trailheads to Government Farm Road Access Point	COMMON
3	Government Farm Road Access Point to Bonny Kate Elementary Trailhead	COMMON
4	Bonny Kate Elementary Trailhead to South Doyle High School Trailhead	COMMON
5	South Doyle High School Trailhead to Neubert Springs Access Point	COMMON
6	Neubert Springs Access Point to Mountain Grove Weigel's Acess Point	MEDIUM
South Knox - Chapman Highway		
1	Gary Underwood Park Trailhead to Meridian Baptist Church Trailhead	COMMON
2	Meridian Baptist Church Trailhead to Green Road	COMMON
3	Green Road to Mountain Grove Weigel's Access Point	COMMON
4	Mountain Grove Weigle's Access Point to Hendron Chapel CITGO Access Point	COMMON
5	Hendron Chapel CITGO Access Point to Bower Field Community Park Trailhead	MEDIUM
6	Bower Field Community Park Trailhead to Sevier County Line	MEDIUM

Section 9.0

Economic Impact Assessment

The economic benefits of greenways – and parks – continue to multiply as metropolitan regions throughout the United States become increasingly urban. Fueling new growth and development in many regions are industries falling under the larger umbrella of the services sector – including retail trade, professional and business services, health care, and leisure/hospitality – and these industries capitalize on parks and greenways by locating residential and commercial development nearby and highlighting the unique experiences they offer. Although the study's five corridors vary widely in land development patterns, each can realize economic benefits from the expansion of the county's greenway system.

9.1 Estimated Impacts on Property Values

In communities around the country, parks and greenways have a long history of anchoring residential development, and more recently, spurring the revitalization or development of commercial districts. From Birmingham/Jefferson County's Rotary Trail (Figure 9-1) to Charlotte/Mecklenburg County's Little Sugar Creek Greenway (Figure 9-2), community after community across the southeast United States is strategically investing in parks and greenways to improve the overall quality of life and attract residents and businesses. These investments are, in turn, generating increased property values and stronger local tax bases.

To evaluate the potential impacts on property values in the five greenway corridors, this study established a range of potential property value percentage increases based on case histories from comparable areas. Table 9-1 summarizes the case studies drawn from five metropolitan regions over a period of twenty years. Based on the case studies, the ranges of potential property value percentage increases were applied separately to residential and commercial properties within 1,000 feet of the greenways.

Table 9-2 reports the total estimated increase of assessed property value in each greenway corridor by route type. Even under the limited impact scenarios – a 5 percent increase for residential properties and a 1 percent increase for commercial properties – the total growth in assessed values ranges from approximately $19.9 million in the South Knox corridor to $39.9 million in the Northshore Drive corridor. Moreover, since the increases affect the underlying taxable value of the properties, they would create additional annual revenue for the county, ranging from approximately $423,000 in the South Knox corridor to $846,000 in the Northshore Drive corridor, or roughly $2.8 million in total annual property tax revenue growth.

Figure 9-1. Rotary Trail, Birmingham/ Jefferson County (AL)

Figure 9-2. Little Sugar Creek Greenway, Charlotte/ Mecklenburg County (NC)

Table 9-1. Property Value Impacts: Greenway Case Studies

City/County	TrailName	Trail Length (miles)	Land Use Context	Study Year	Area of Impact	Estimated Property Sales Price Premium
Austin/Travis County (TX)	Barton Creek Greenway (Barton)	7.5	Residential	2005	Adjacent	5.7%
Austin/Travis County (TX)	Barton Creek Greenway (Lost Creek)	7.5	Residential	2005	Adjacent	0.0%
Austin/Travis County (TX)	Barton Creek Greenway (Travis)	7.5	Residential	2005	Adjacent	12.2%
Charlotte/Mecklenburg County (NC)	Catawba Regional Trail	27.0	Commercial	2007	1000 feet	1.7%
Charlotte/Mecklenburg County (NC)	Catawba Regional Trail	27.0	Residential	2007	1000 feet	3.1%
Indianapolis/Marion County (IN)	Monon Trail	10.6	Residential	2004	2640 feet	14.0%
San Antonio/Bexar County (TX)	Countywide System	n/a	Residential	2009	Neighborhood	5.0%
Seattle/King County (WA)	Burke-Gilman Trail	12.1	Residential, Industrial, Educational	1986	600 feet/ 1 block	6.5%

Table 9-2. Estimated Assessed Property Value Increase: Greenway Corridors

		Assessed Property Value Increase					
		Residential			Commercial		
Corridor	Route Type	5%	10%	15%	1%	3%	5%
Beaver Creek West	Preferred	$15,227,058	$30,454,116	$45,681,174	$2,561,211	$7,683,633	$12,806,055
	Alternate	$9,726,223	$19,452,446	$29,178,669	$638,760	$1,916,280	$3,193,800
	Connector	$10,047,579	$20,095,158	$30,142,737	$1,071,298	$3,213,894	$5,356,490
	Total	$35,000,860	$70,001,720	$105,002,580	$4,271,269	$12,813,807	$21,356,345
Beaver Creek East	Preferred	$10,549,311	$21,098,622	$31,647,933	$1,318,607	$3,955,821	$6,593,035
	Alternate	$7,820,532	$15,641,064	$23,461,596	$841,966	$2,525,898	$4,209,830
	Connector	$10,543,670	$21,087,340	$31,631,010	$1,184,861	$3,554,583	$5,924,305
	Total	$28,913,513	$57,827,026	$86,740,539	$3,345,434	$10,036,302	$16,727,170
Northshore	Preferred	$19,536,626	$39,073,252	$58,609,878	$1,575,317	$4,725,951	$7,876,585
	Alternate	$7,820,532	$15,641,064	$23,461,596	$301,775	$905,325	$1,508,875
	Connector	$10,543,670	$21,087,340	$31,631,010	$147,060	$441,180	$735,300
	Total	$37,900,828	$75,801,656	$113,702,484	$2,024,152	$6,072,456	$10,120,760
South Knox	Preferred	$7,670,198	$15,340,396	$23,010,594	$1,353,589	$4,060,767	$6,767,945
	Alternate	$3,598,105	$7,196,210	$10,794,315	$850,868	$2,552,604	$4,254,340
	Connector	$5,410,813	$10,821,626	$16,232,439	$1,071,298	$3,213,894	$5,356,490
	Total	$16,679,116	$33,358,232	$50,037,348	$3,275,755	$9,827,265	$16,378,775

9.2 Greenways and Tourism Development Opportunities

The leisure and hospitality sector, or tourism, continues to be a major economic driver statewide and in Knox County. In 2018, according to the Tennessee Department of Tourism Development, travel and tourism represented the state's second largest industry by employment with Knox County capturing the fourth largest economic impact among counties in Tennessee. Tourism spending in Knox County totaled $1.2 billion in 2018 and created more than 10,500 jobs. Local tax receipts from tourism in Knox County added up to $27.6 million in 2018.

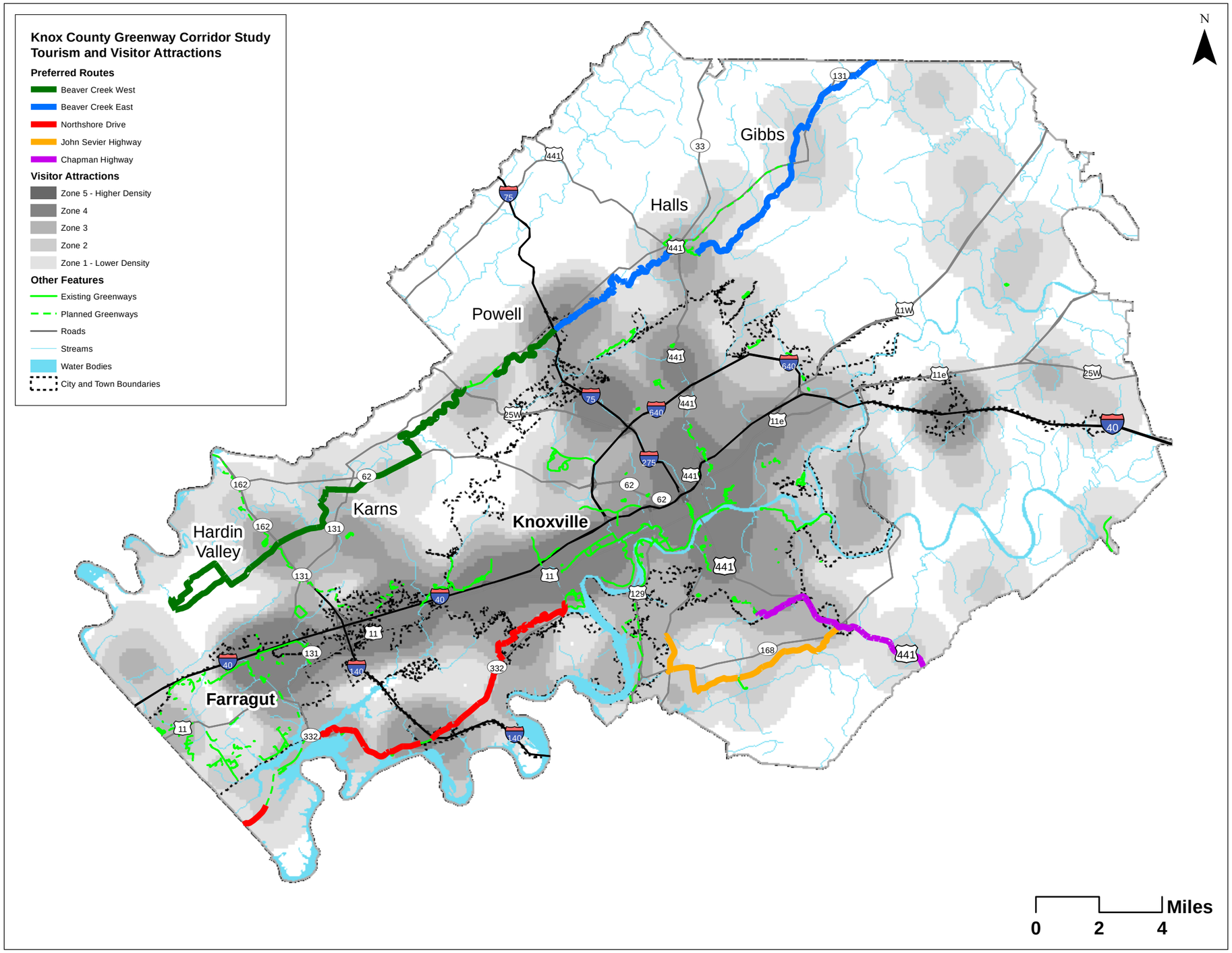
Tourism and trails go hand in hand. According to the Urban Land Institute, a leading real estate research and education organization, communities are finding that "bike trails and other active transportation infrastructure encourage visitors to stay longer, spend more, and come back more often." In the southeast United States alone, examples abound where greenway investments have supported and generated new visitor spending. Table 9-1 highlights several trails and the estimated annual spending by local and non-local visitors associated with the trails. In metropolitan areas, common features for greenways that attract visitors are trail length (minimum of three miles), access to destinations, and supporting businesses such as restaurants and hotels.

Based on data provided by the Knox County Convention and Visitors Bureau, all visitor destinations in the county were mapped against the recommended greenways. Of the 658 visitor attractions coded, approximately seven percent are located within ¼ mile (5 minute walk) of the preferred greenway routes (Figure 9-3). Notable concentrations of existing visitor destinations in the Knox County greenway corridors include the Pellissippi Parkway/Hardin Valley Road area (Beaver Creek West), I-75/Emory Road area (Beaver Creek East and West), and Pellissippi Parkway/Northshore Drive area (Northshore Drive) – especially when combined with water sports (e.g., kayaking and canoeing). Potential activity centers in south Knox County can be found near Alcoa Highway/Gov. John Sevier Highway and along Chapman Highway – especially with the continued development of the Urban Wilderness.

Table 9-1. Greenways and Tourism Opportunities: Case Studies

City/County	Trail Name	Trail Length (miles)	Estimated Annual Visitor Revenues (millions)
Damascus/Washington County (VA)	Virginia Creeper Trail	34	$2.5
Ft. Worth/Tarrant County (TX)	Lake Mineral Wells Trailway	20	$2.0
Tallahasee/Leon County (FL)	St. Marks Trail	16	$2.2

Figure 9-3. Knox County: Tourism and Visitor Attractions



Section 10.0

Project Prioritization & Phasing Plan

10.1 Prioritization Framework

The Knox County Greenway Corridor Study provides the overall framework for developing greenways within the five study corridors. While Sections 3.0 through 7.0 identify the recommended alignments, including the preferred, alternate, and connector routes, they do not necessarily represent specific projects. Although individual segments were defined with implementation in mind, the project development phase begins with project definition – typically describing the project's purpose and need, its logical termini, independent utility, and feasibility.

As part of the study process, however, criteria were identified, in coordination with the public, stakeholders, and local officials, to help prioritize the preferred routes from each of the five corridors. Figure 10-1 depicts the relationship among the study's recommendations, prioritization criteria, and project development.

The criteria are closely tied to the study's goals and objectives and can be used by the county to evaluate and weigh different needs and corresponding funding sources. The criteria include:

- Connectivity (population, employment, schools, and KAT bus stops);
- Safety (connections to existing or planned greenways);
- Quality of Life (existing parks and greenways);
- Health and Equity (low-income residents and residents lacking health insurance); and
- Economic Development (residential and commercial property value increases).

Figure 10-1. Project Development and Prioritization Process

10.2 Funding Opportunities

Ultimately, project development depends on the availability of funding. While some greenway segments, particularly those adjacent to major roads and highways, can be included as part of larger public infrastructure or development projects, others may be undertaken by the county directly. There are also several grant opportunities at the state and federal levels aimed at greenway infrastructure. Eligible project phases (e.g., design, right-of-way, construction) vary from program to program. Table 10-1 summarizes funding programs of note.

10.3 Phasing Plan

While project phasing will be a function of funding, evaluating public and stakeholder support, and ensuring geographic equity, the preliminary results of the prioritization framework suggest key preferred segments within each corridor that could be strategically considered early in the implementation process (Table 10-2). Not surprisingly, these segments tend to be located in developed areas closer to schools, parks, and employment centers. These segments would likely provide immediate benefits as stand-alone projects and establish a solid foundation around which the remainder of the greenway system can be built.

It is important to underscore that the study's recommendations include preferred routes, alternative routes, and connectors. Because many of the preferred routes rely on working with individual property owners to secure easements or donations, the alternative routes will be integral to the greenway system's future either as complements to the preferred routes (e.g., creating a loop) or substitutes when land cannot be secured for the preferred routes. Finally, connector routes represent significant, targeted opportunities to help ensure complete and connected networks.

Table 10-1. Federal and State Grant Programs

Program Name/ Administering Agency	Examples of Eligible Activities	Funding	How to Apply
Transportation Alternatives Program/Tennessee Department of Transportation*	On- and off-road pedestrian and bicycle facilities, and safe routes to school projects.	80 percent federal with a 20 percent non-federal construction share. Non-federal share must be provided as a hard cash match, and all preliminary engineering (PE), design and right-of-way expenditures are solely the responsibility of the local governmental agency.	Application cycle is open from July 1 to October 3 each year. Application materials can be accessed on the TDOT website.
Multimodal Access Grant/ Tennessee Department of Transportation	Pedestrian crossing improvements, sidewalks, paved shouders, bicycle lanes, ADA, multi-use paths, and pedestrian lighting.	95 percent state with a 5 percent local match. Total project costs must not exceed $1 million. Limited to facilities along state routes.	Application materials can be accessed on the TDOT website.
Spot Safety Improvement Program/Tennessee Department of Transportation	Signalization, school flashing signals, and flashing beacons on state routes or at intersections with state routes only.	Depending on the type of work, 80 percent to 100 percent federal with corresponding local match.	Application materials can be accessed on the TDOT website.
Recreational Trails Program/ Tennessee Department of Environment & Conservation	Land acquisition for trails, trail maintenance, trail construction, trail rehabilitation and trail head support facilities.	80 percent federal with a 20 percent non-federal match. Maximum award is $200,000.	Application materials can be accessed on the TDEC website.
Access to Health through Healthy Built Environments/Tennessee Department of Health	Greenways, trailhead signs, sidewalks, bikeways, crosswalks, and pedestrian/ bicycle traffic signs/signals.	100 percent state with a maximum award of $85,000, including a maximum of $80,000 for for design/construction. All applications must include an evaluation framework.	Application announcement is in the fall of each year. Materials from the prior year can be accessed on the TDH website.
Project Diabetes/Tennessee Department of Health	Greenways connecting schools and neighborhoods and park walking trails.	There are two levels of Project Diabetes funding. Category A grants are funded for up to 3 years for a maximum amount of $150,000 per year. Category B grants are funded for up to 2 years for a maximum amount of $15,000 per year	Additional information can be accessed on the TDH website.

*Please note that the Knoxville Regional Transportation Planning Organization also distributes Transportation Alternatives Program funds, and funds can be used for preliminary engineering, design, right-of-way, and construction.

Table 10-2. High-Priority Segments by Corridor

Corridor	Segment
Beaver Creek West	Hardin Valley Road from Conner Creek to Pellissippi Parkway
	Hardin Valley Road from Pellissippi Parkway to Beaver Creek
	Powell Station Park to Powell Community Center
	Powell Community Center to Heiskell Road Spur
	Heiskell Road Spur to I-75
Beaver Creek East	I-75 to Taggert Lane (Industrial Park)
	Chervue Boulevard to Clayton Park
	Existing Halls Greenway to Brown Gap Road
Northshore Drive	Kroger Trailhead to Ebenezer Road
	Ebenezer Road to Scott Lane
	Scott Lane to Tooles Bend Road
	Tooles Bend Road to Wallace Road
	Rocky Hill Elementary Trailhead to Lakeshore Park Trailhead
Gov. John Sevier Highway	Government Farm Road Access Point to Bonny Kate Elementary Trailhead
	Bonny Kate Elementary Trailhead to South Doyle High School Trailhead
Chapman Highway	Gary Underwood Park Trailhead to Meridian Baptist Church Trailhead
	Meridian Baptist Church Trailhead to Green Road
	Green Road to Mountain Grove Weigel's Access Point

Appendix A

Knoxville TPO Greenway
Signage Guidelines

Appendix A

Knoxville TPO Greenway Signage Guidelines

Guidelines for Signing and Marking Greenways

Overview:
Adequate signing and marking are essential on shared-use paths, especially to alert bicyclists to potential conflicts and to convey regulatory messages to bicyclists, pedestrian and motorists at roadway intersections. Both advanced crossing and crossing warning signs are needed on roadways to provide appropriate warning to the motorists of the upcoming path intersection. In addition, guide signing on a path, such as to indicate directions, destinations, distances and names of crossing streets, should be used in the same manner as they are used on roadways. Occasional signs with maps of the entire path route and indicating important destinations should be placed at major trailheads. The most recent Manual on Uniform Traffic Control Devices (MUTCD) provides minimum traffic control measures that should be applied. Warning signs, directional signs and other devices along the path should also meet the MUTCD guidelines.

Traffic control at path-roadway crossings should be treated so that the intersection looks and functions like a regular road intersection. Path crossings can occur as signalized or unsignalized intersections, depending on the particular attributes of the location. Warrants for signals and beacons are discussed in the MUTCD and could be used as guidance for path crossings as bicycles are considered vehicles. Motor vehicle speeds along the crossing corridor are also an important factor in this analysis.

At unsignalized locations, adequate sight distance should be provided along the roadway approaches to the path and the path approaches to the roadway. In most cases, advance warning signs should be provided on the road, indicating that a path is crossing the roadway. The path crossing of the street should be marked as a crosswalk since it carries a mix of non-motorized users. Due to the potential conflicts at these junctions, careful design is of paramount importance to the safety of path users and motorists. Each roadway/path intersection is unique and will require sound engineering judgment on the part of the designer as to the appropriate solution. The 1999 AASHTO *Guide for the Development of Bicycle Facilities* provides examples and guidelines for various intersection treatments.

Refer to MUTCD Figure and Table 9B-1 for size and sign placement recommendations for shared-use paths.

Sign location types:
The following describes the sign location types and the recommended signage and markings for each.

At major trailheads (these are greenway entrances with parking)
- Greenway symbol sign—the Big G (Figure 1)
- Greenway map (Figure 2)
- Connections map showing how this greenway connects to other greenways, if relevant (Figure 3)
- "No Motor Vehicles" sign (R5-3), if needed
- Courtesy/user behavior sign if desired
- Bollards (see "Bollards" on Page 78)

On roadway next to trailhead parking area (oriented for motorists)
- Greenway symbol sign—the Big G (Figure 1)
- Greenway identifier (e.g. "Third Creek Greenway") (Figure 4)
- Directional/destination signage with distance (e.g. "To Downtown, 2. 4 miles" or "To Sutherland, 1.8 miles") as needed (Figure 5)

At minor trailheads (walking and bicycling access only)
- Greenway symbol sign
- Greenway identifier (e.g. "Third Creek Greenway")

At junctions with other trails or splits in the trail
- Directional/destination signage with distance (e.g. "To Downtown, 2. 4 miles" or "To Sutherland, 1.8 miles")

At road crossings, on the greenway
- "No Motor Vehicles" sign (R5-3)
- Yield signs, if sight distance is adequate
- Stop signs, if sight distance is limited
- Directional/destination signage for nearby schools, libraries, shopping malls, KAT stops and parks.
- Street name sign for greenway users
- Bollards (see "Bollards" section)

At road crossings, on roadway
- Crossing warning signs W11-15 and W16-7P, with supplemental plaque W16-9P or W16-2aP for advanced warning
- Marked crosswalk
- Stop or yield line pavement marking, set back from crosswalk (see MUTCD for guidance on distance)

Depending on road type and level of greenway use:
- Consider raised crosswalk
- Consider center line striping on greenway on intersection approach
- On multi-lane roads, consider median refuge island, signals, beacons and other strategies – refer to the MUTCD.
- On roads with posted speed higher than 40 mph, or roads with 4 or more lanes and ADT over 12,000, a marked crosswalk alone in not sufficient. See MUTCD for additional treatments, or another resource. NCHRP report 562 is a good one.

At driveway crossings, especially on greenways parallel to roadways
- At high-volume/commercial driveways, yield signs for greenway traffic, warning sign for driveway traffic (W11-15, W16-7P), and a marked crosswalk.
- For lower-volume driveways, consider signage for greenway users if the driveway is near a curve or is otherwise not obvious, or to warn of a series of driveways.

At railroad crossings
- Railroad crossing sign (R15-1) and advance sign (W10-1 for RR crossings ahead, W10-2, W10-3, or W10-4 for RR crossings following a turn)

Greenway sign examples

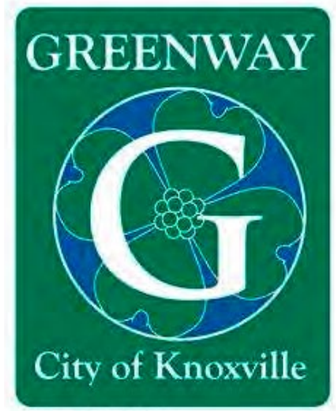


Figure 1: Big G sign

Figure 2: Greenway map

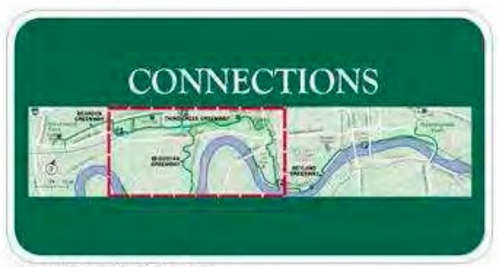


Figure 3: Connections map

Figure 4: Greenway identifier

Figure 5: Directional/destination sign

Other signs and markings may be used where needed for specific situations.

Warning users of potential hazards:
"Slippery when wet" (W8-10 and W8-10p)
"path narrows" (W5-4a)
"Bump" or "Dip" (W8-1,2)
and others as described in the MUTCD

The R9-6 ("Bicyclists yield to peds") or R9-7 ("Peds keep right, bikes keep left") signs could be used where user conflicts are occurring. Also consider centerline striping in those areas.

If a greenway must be closed for construction, signage should be used to show where the detour is. There should be an advance notice closure sign, a detour sign with an arrow, and a detour map sign.

Termini Signage

Path/greenway termini at roadways should be designed under the assumption that bicyclists and pedestrians may want to exit the greenway to the roadway and access the greenway from the roadway. Each terminus is different and should be analyzed to see what the appropriate treatment is for that intersection. The following are general guidelines to use:

- Analyze how greenways users (bicyclists, pedestrians, skaters) and motorists are behaving at the location. Is there a difference between desired and actual behavior?
- Provide sidewalks along the intersecting road, and design them knowing that some bicyclists will use them.
- Include positive guidance such as signs, pavement markings, and channelization to induce bicyclists to ride on the right side of the road once they have left the greenway.
- Provide educational materials for greenway users (such as courtesy signs listing proper behavior).

Bollards

Where needed, use bollards to keep unauthorized motor vehicles from entering a greenway. But recognize that bollards can be a hazard themselves, especially to bicyclists. In light of that potential hazard, consider these guidelines:

- Use bollards only where there is a demonstrated need: either a history of unauthorized drivers accessing the greenway, or a specific reason to believe that it will occur.
- Maximize the visibility of bollards by locating them properly and using reflective material on and around them.

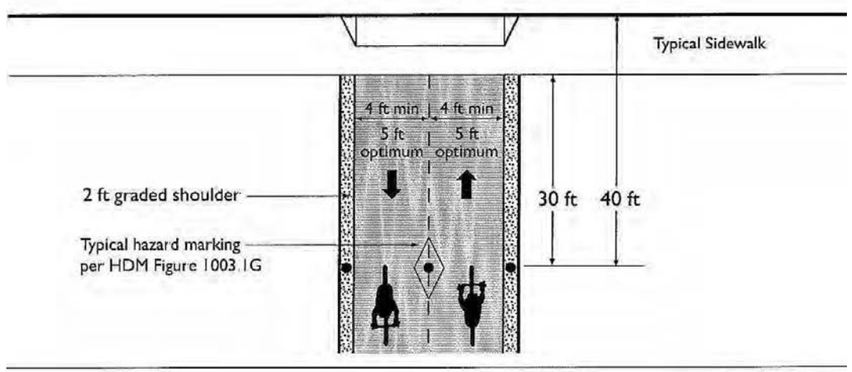


Figure 6: Typical bollard layout [Illustration source: Contra Costa County Trail Design Guidelines]

As Figure 6 illustrates, it's best to set bollards back from the trail entrance. This gives bicyclists more time to see the bollard after they enter the trail. Use reflective paint or tape on the bollard itself and in markings around the bollard to make it more visible in low-light conditions.

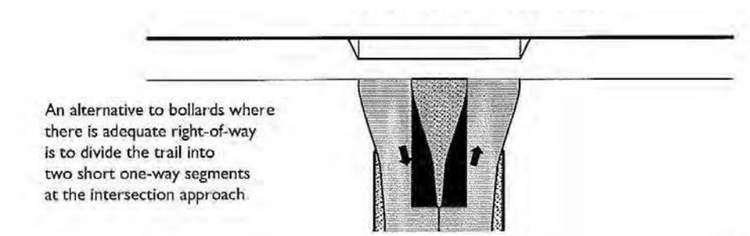


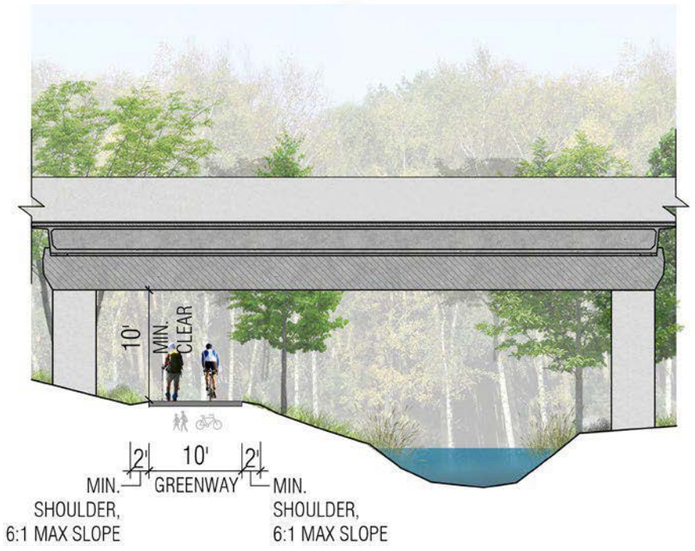
Figure 7: An alternative to bollards [Illustration source: Contra Costa County Trail Design Guidelines]

As an alternative to bollards, consider constructing or reconstructing trail entrances so that the path separates into two one-way paths, as in Figure 7. This design will help reduce conflicts between greenway users and keep unauthorized motor vehicles off the path.

Appendix B

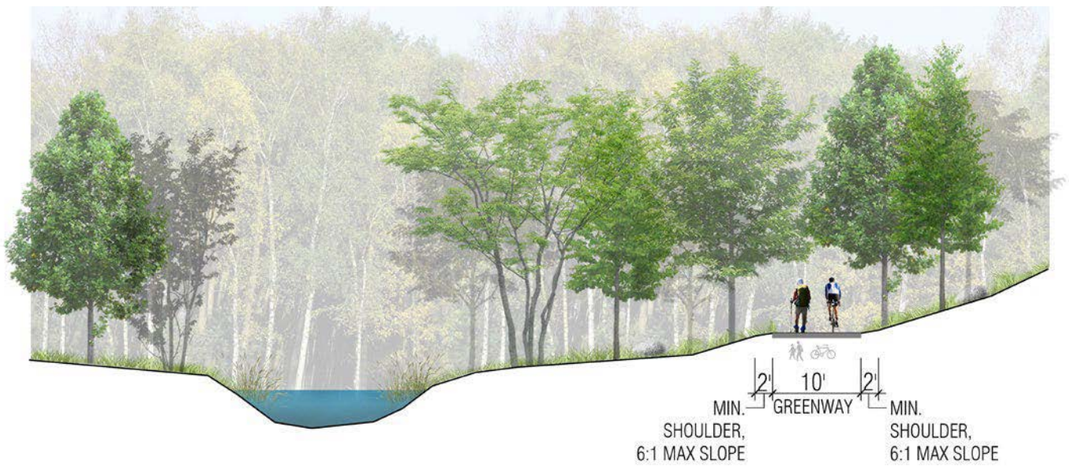
Typical Greenway Cross Sections

Figure 1. Bridge Underpass



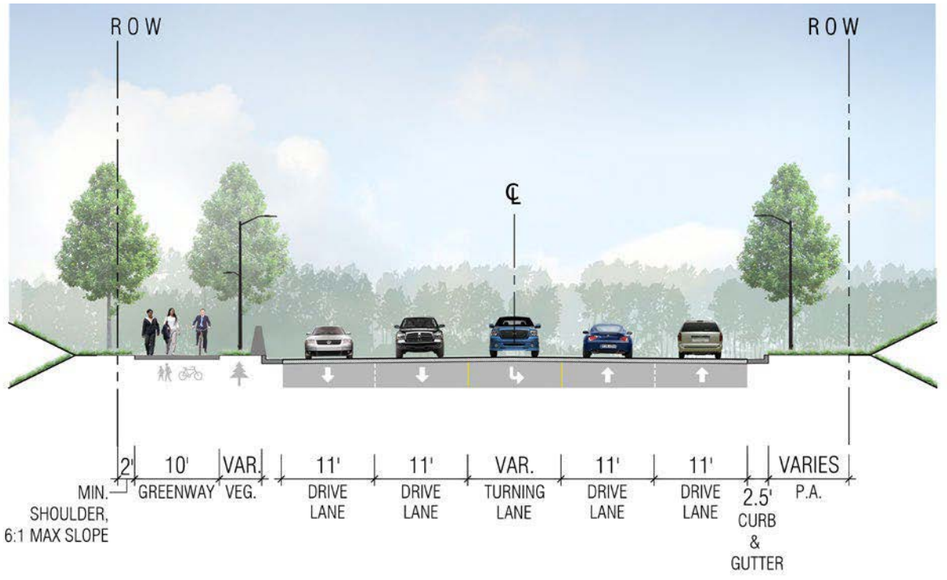
SCALE: 1/8" = 1'-0"

Figure 2. Creekside Trail



SCALE: 1/8" = 1'-0"

Figure 3. Highway Trail



SCALE: 1/8" = 1'-0"

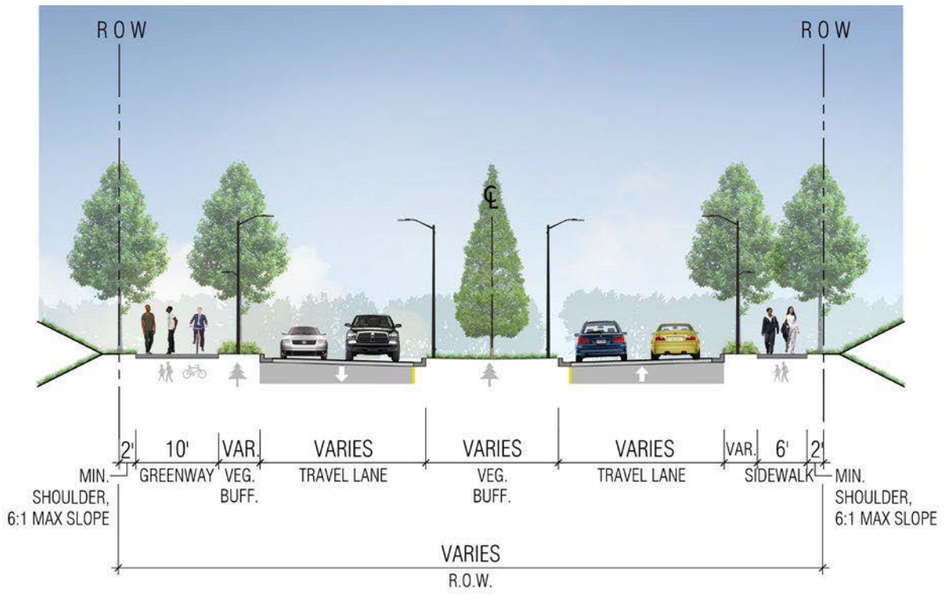
Figure 4. Paved Multi-Use Trail

SCALE: 1/8" = 1'-0"

Figure 5. Pedestrian Bridge Over Creek

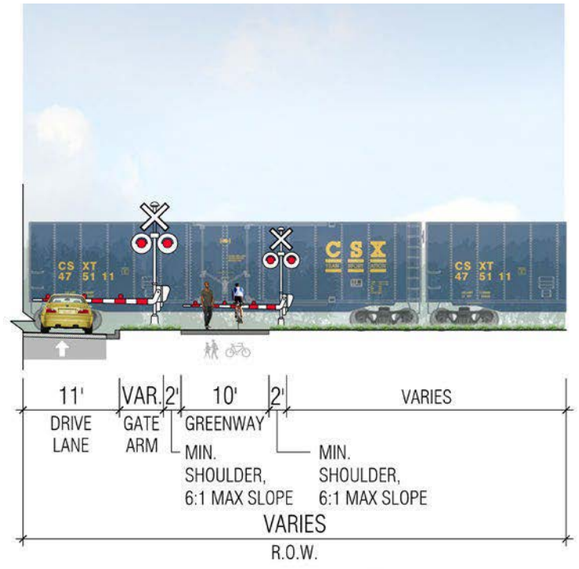
SCALE: 1/8" = 1'-0"

Figure 6. Boulevard



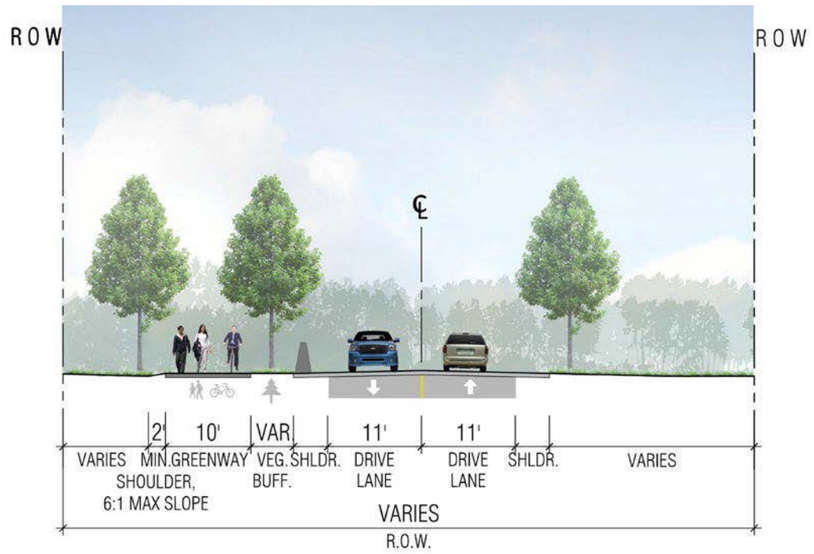
SCALE: 1/8" = 1'-0"

Figure 7. Railroad Crossing



SCALE: 1/8" = 1'-0"

Figure 8. Rural 2 Lane Road



SCALE: 1/8" = 1'-0"

Figure 9. Rural 3 Lane Road

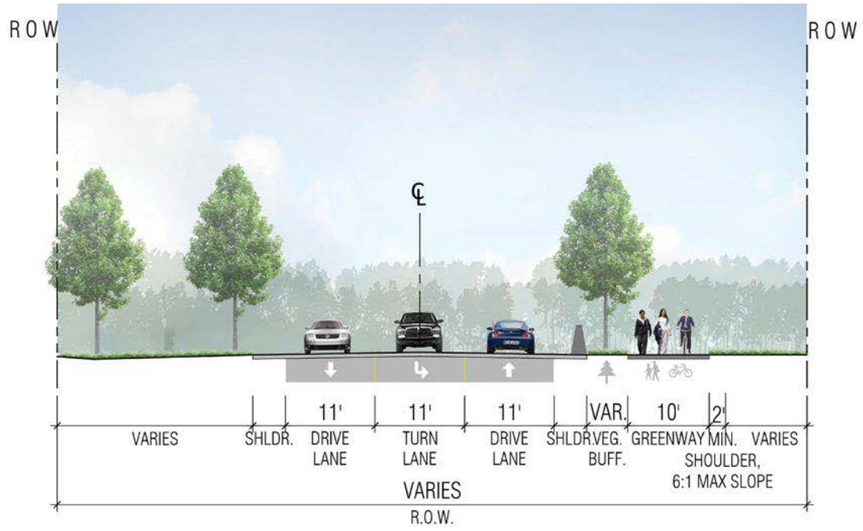


Figure 10. Utility Easement

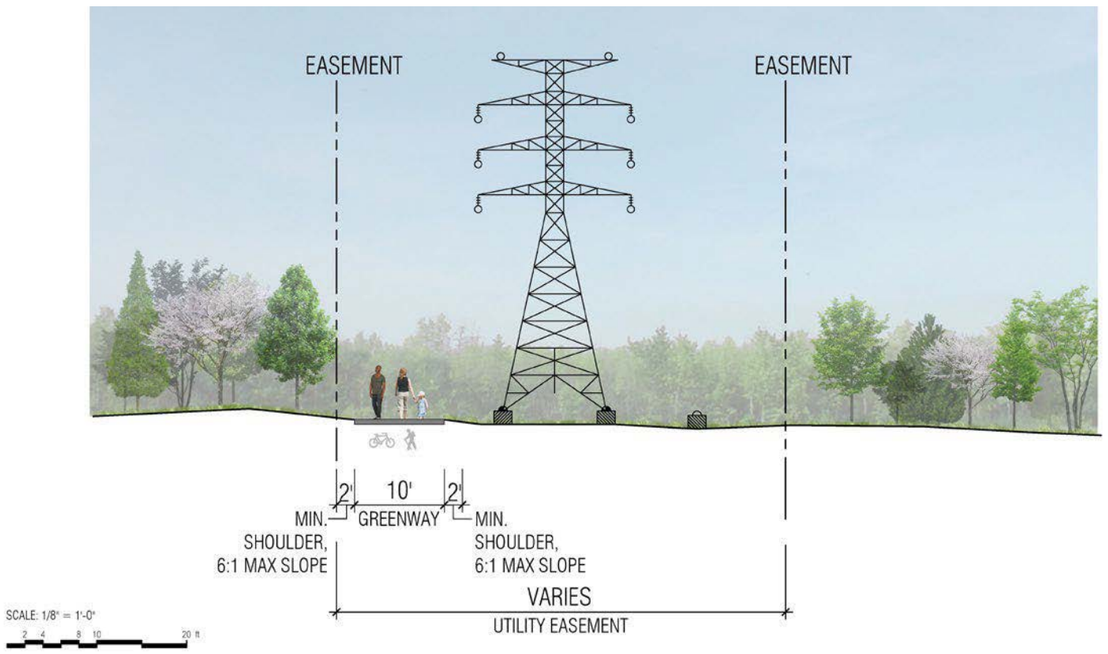


Figure 11. Cantilevered Bridge

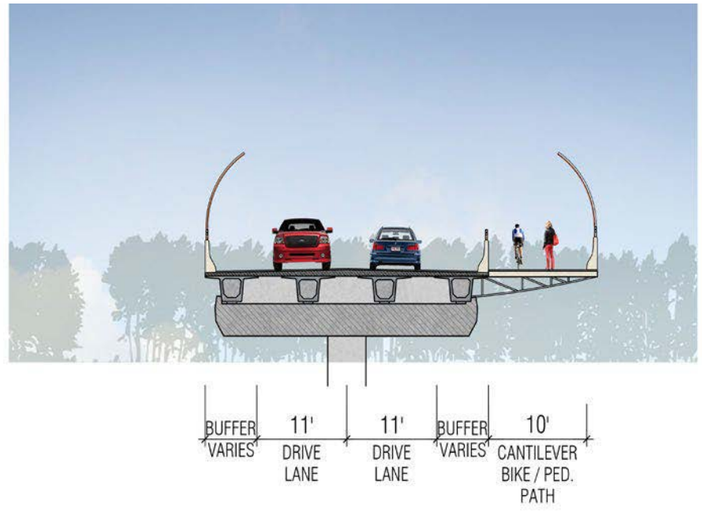


Figure 12. Boardwalk Trail

Figure 13. Advisory Lane

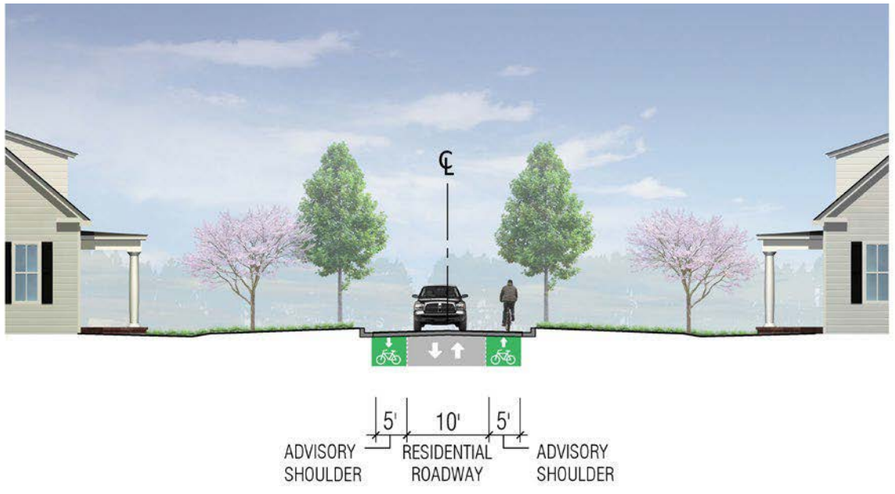


Figure 15. Rural 5 Lane Road

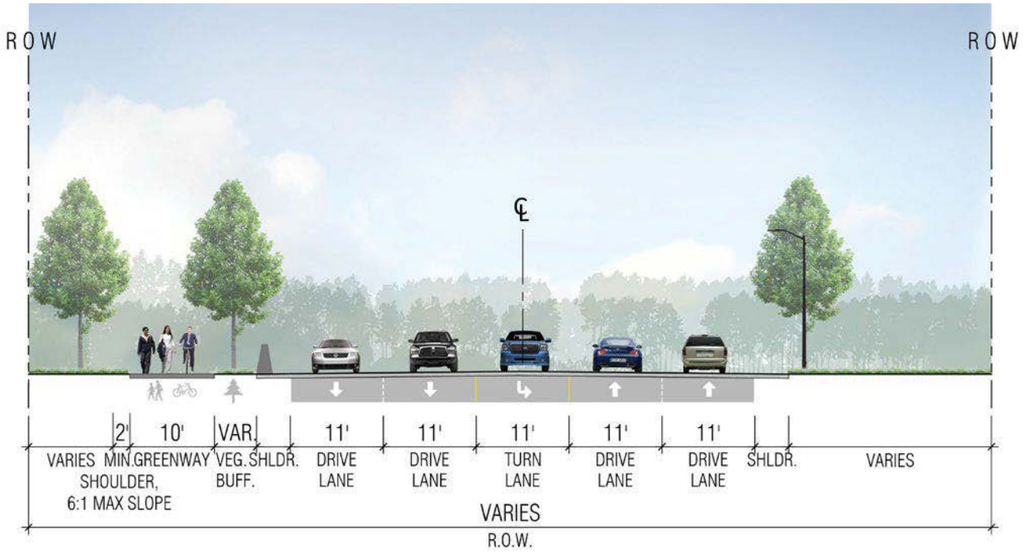


Figure 16. Urban 2 Lane Street

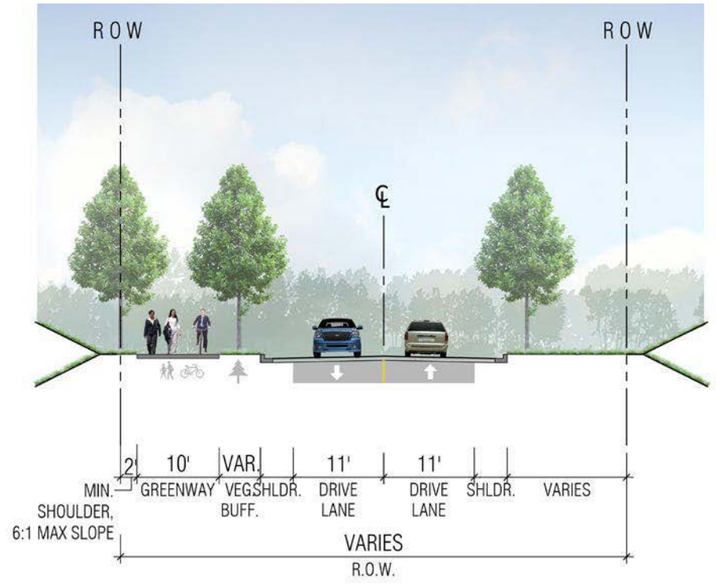


Figure 17. Greenway Above Road Elevation

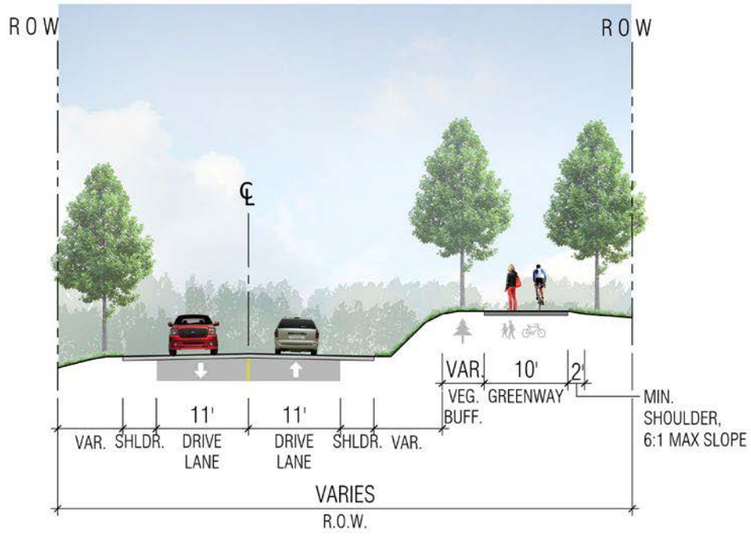


Figure 18. Greenway Below Road Elevation

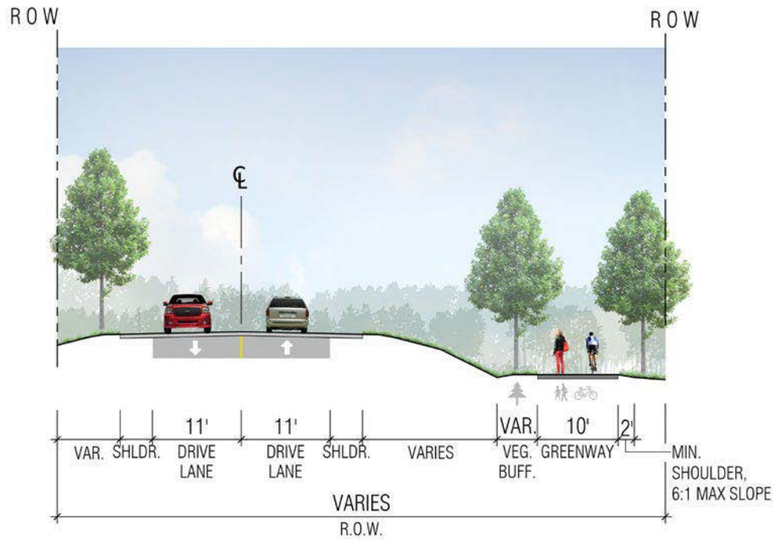


Figure 19. Pedestrian Bridge Over Road

Figure 20. Boardwalk at Highway

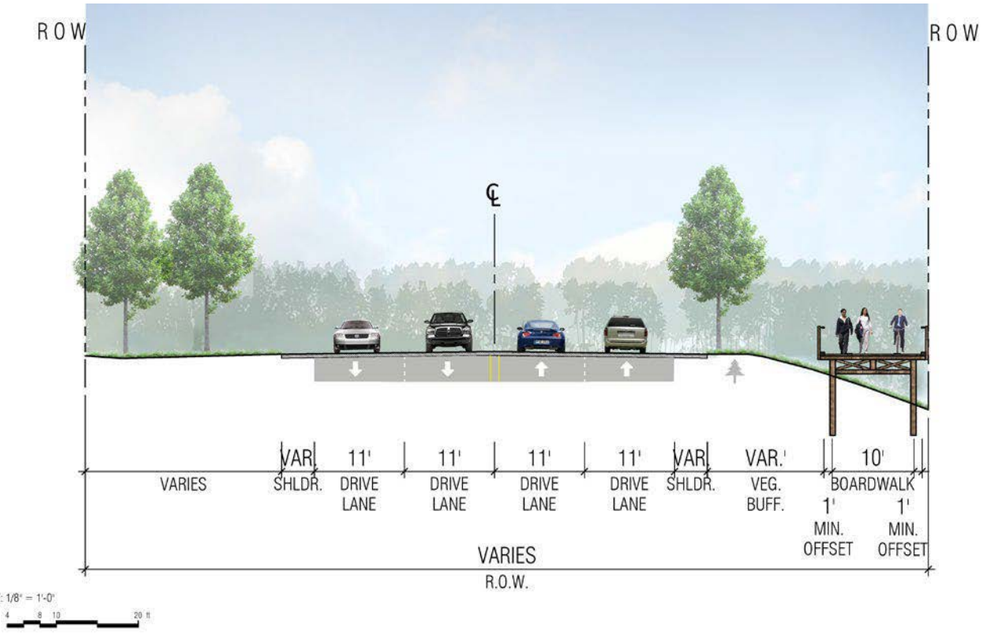


Figure 21. Floodplain

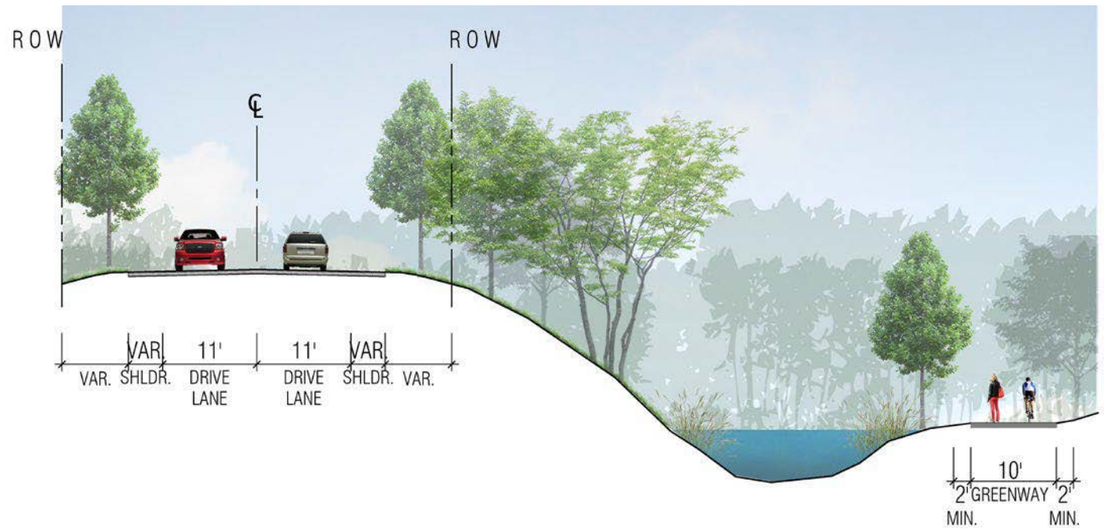


Figure 22. Retaining Wall

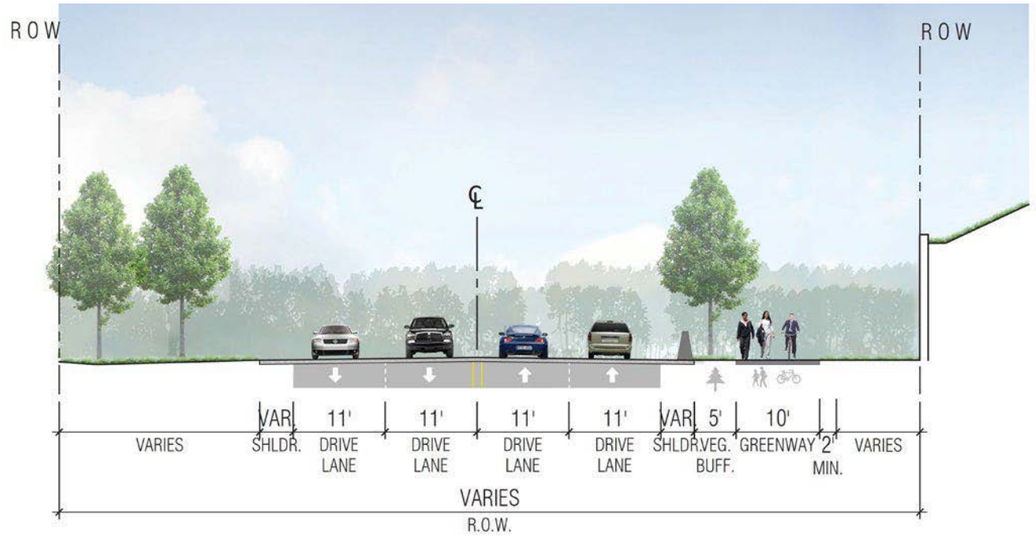


Figure 23. Riverside Trail

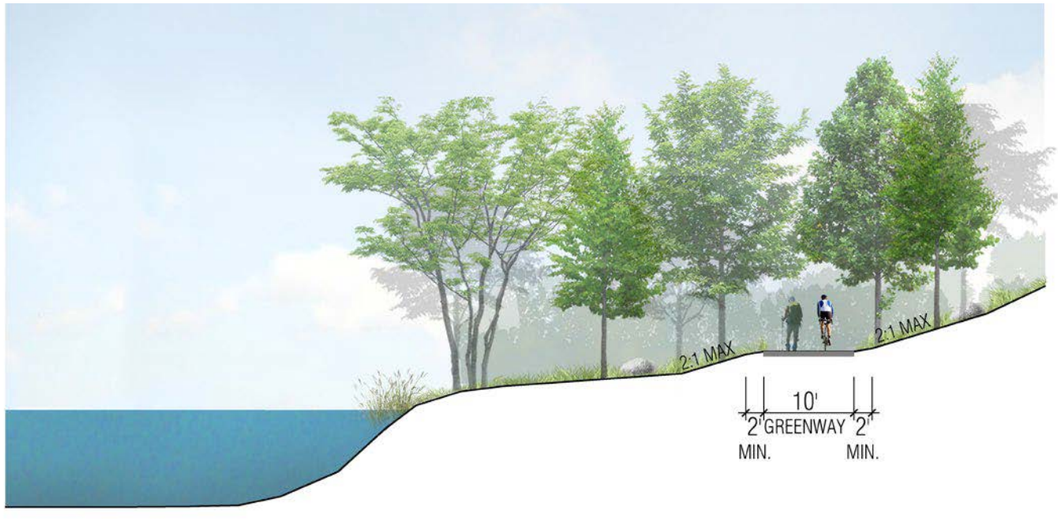
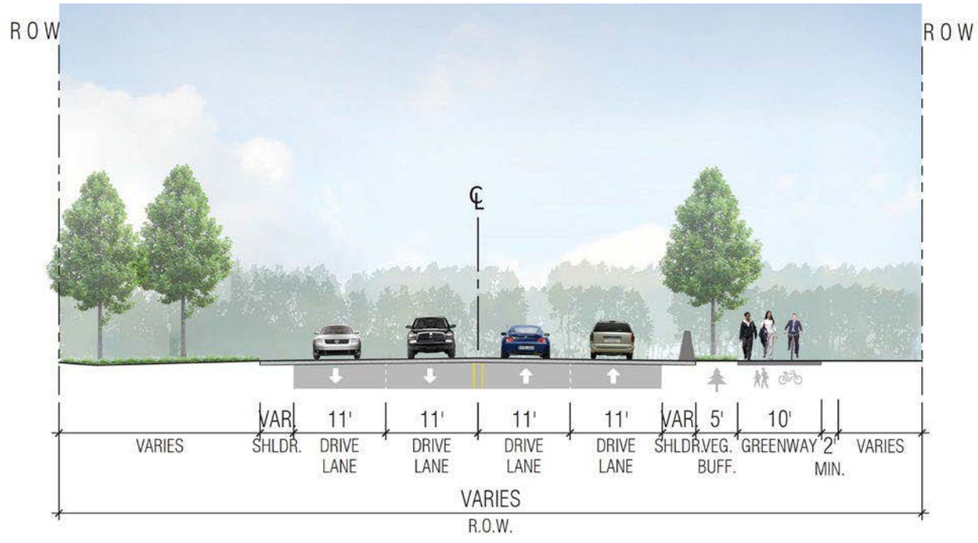


Figure 24. Rural 4 Lane Road



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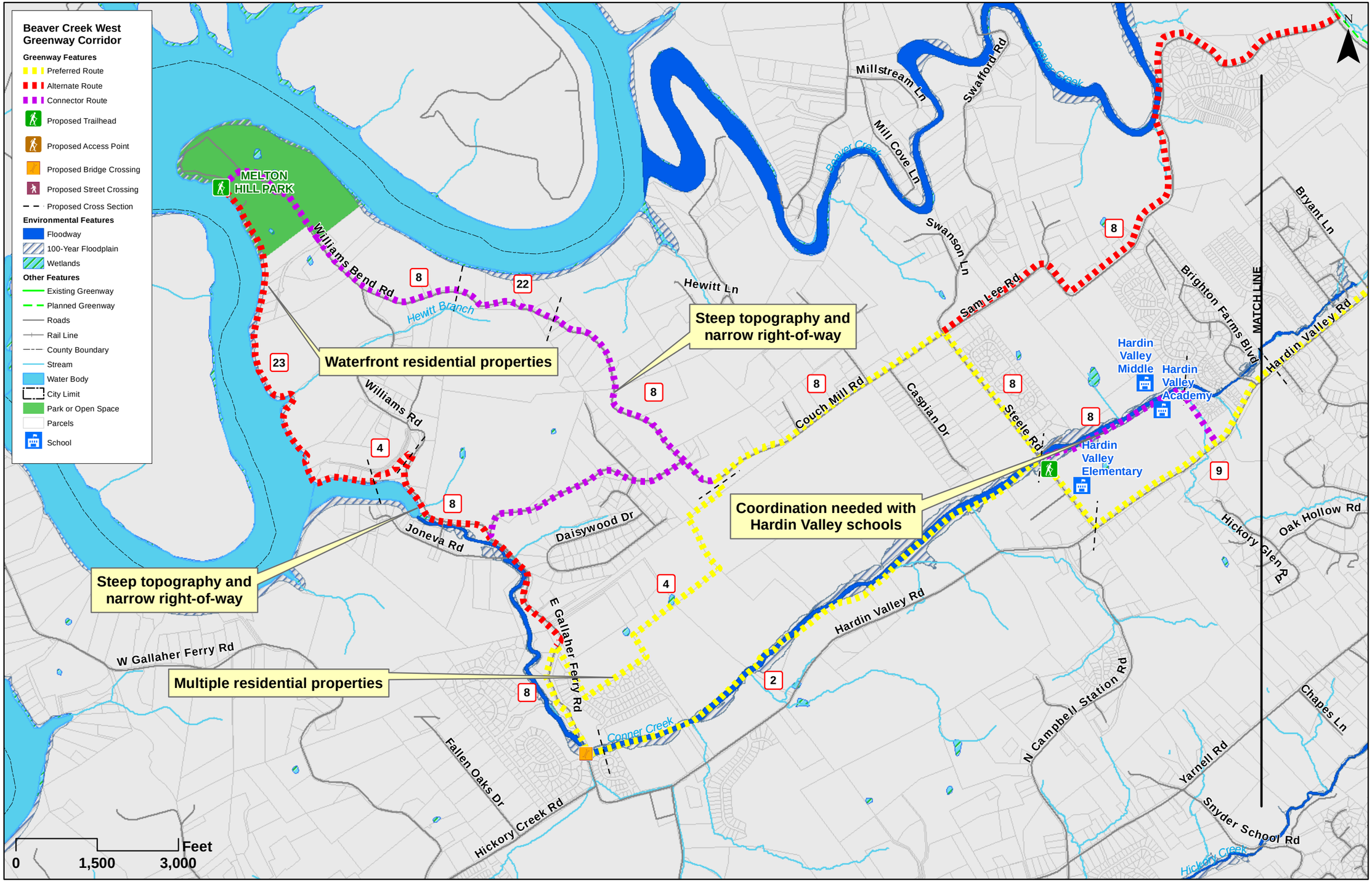
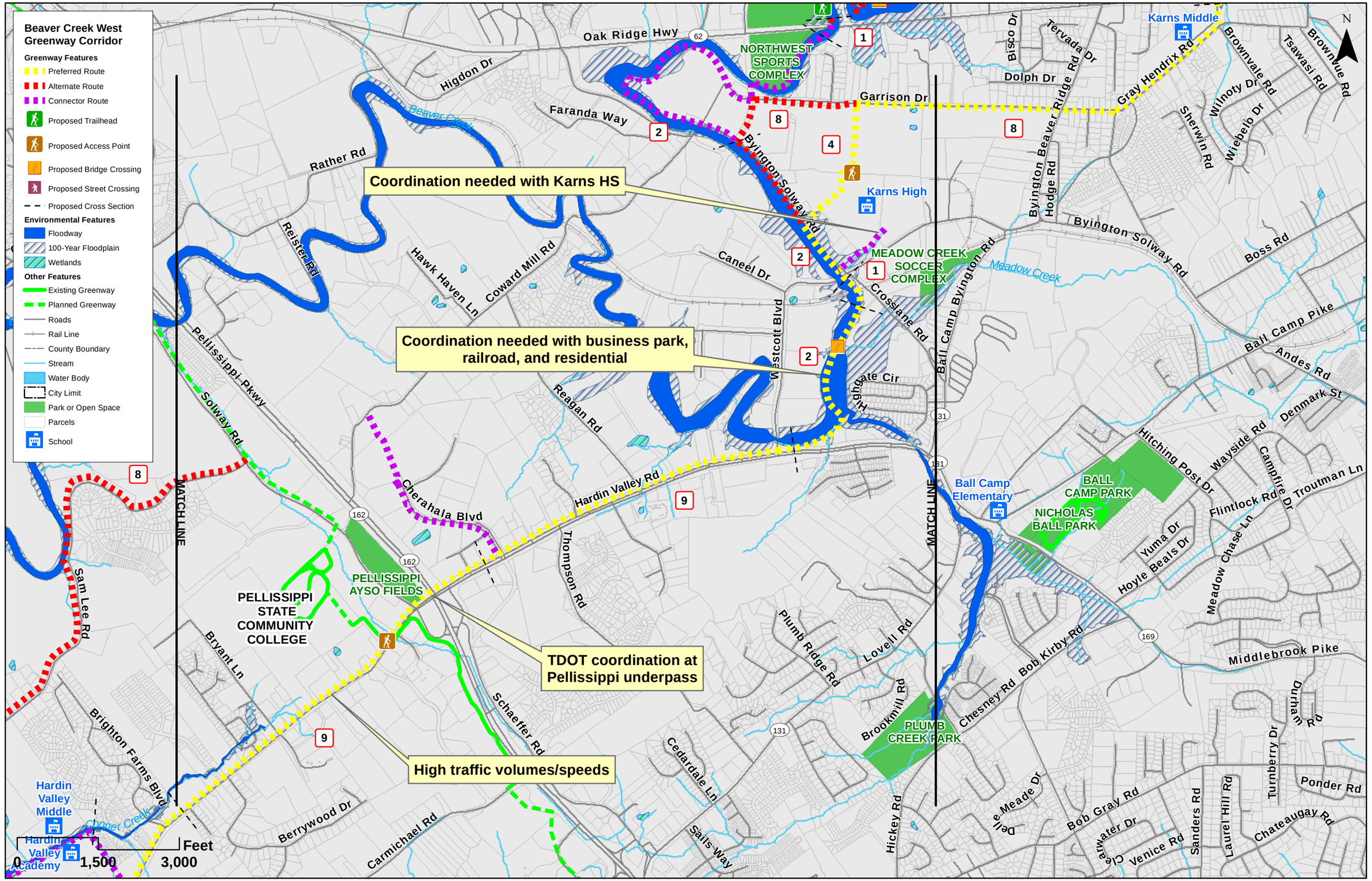
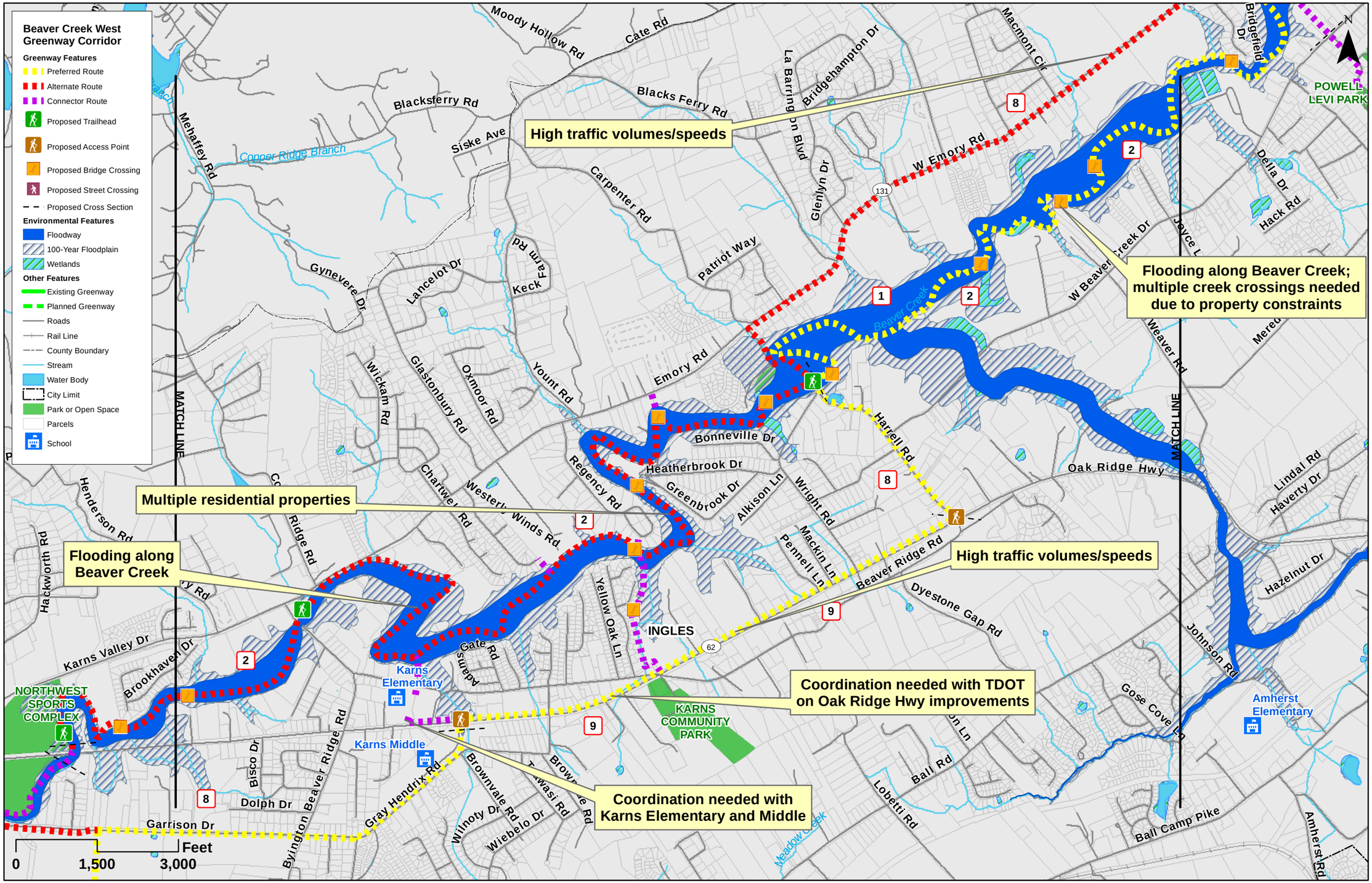
Appendix C

Corridor Constraint Maps

Beaver Creek West




Beaver Creek West Greenway Corridor
Greenway Features
Preferred Route
Alternate Route
Connector Route
Proposed Trailhead
Proposed Access Point
Proposed Bridge Crossing
Proposed Street Crossing
Proposed Cross Section
Environmental Features
Floodway
100-Year Floodplain
Wetlands
Other Features
Existing Greenway
Planned Greenway
Roads
Rail Line
County Boundary
Stream
Water Body
City Limit
Park or Open Space
Parcels
School
Coordination needed with Karns HS
Coordination needed with business park, railroad, and residential
TDOT coordination at Pellissippi underpass
High traffic volumes/speeds
MATCH LINE
MATCH LINE
Oak Ridge Hwy
Higdon Dr
Faranda Way
Rather Rd
Reister Rd
Hawk Haven Ln
Coward Mill Rd
Pellissippi Pkwy
Solway Rd
Sam Lee Rd
Bryant Ln
Brighton Farms Blvd
Berrywood Dr
Carmichael Rd
Reagan Rd
Cherahala Blvd
Hardin Valley Rd
Thompson Rd
Schaefer Rd
Cedardale Ln
Sails Way
Plumb Ridge Rd
Lovell Rd
Brookmill Rd
Hickey Rd
Garrison Dr
Caneel Dr
Westcott Blvd
Crosslane Rd
Byington Solway Rd
Byington Beaver Ridge Rd
Hodge Rd
Ball Camp Byington Rd
Bisco Dr
Tervada Dr
Dolph Dr
Gray Hendrix Rd
Sherwin Rd
Wilnoty Dr
Wiebelo Dr
Brownvale Rd
Tsawasi Rd
Brownlue Rd
Boss Rd
Ball Camp Pike
Andes Rd
Denmark St
Hitching Post Dr
Wayside Rd
Campfire Dr
Troutman Ln
Flintlock Rd
Meadow Chase Ln
Yuma Dr
Hoyle Beals Dr
Middlebrook Pike
Bob Kirby Rd
Chesney Rd
Durham Rd
Turnberry Dr
Ponder Rd
Chateaugay Rd
Laurel Hill Rd
Sanders Rd
Venice Rd
Bob Gray Rd
Clearwater Dr
Dell Meade Dr
NORTHWEST SPORTS COMPLEX
MEADOW CREEK SOCCER COMPLEX
PELLISSIPPI AYSO FIELDS
PELLISSIPPI STATE COMMUNITY COLLEGE
PLUMB CREEK PARK
BALL CAMP PARK
NICHOLAS BALL PARK
Karns High
Karns Middle
Ball Camp Elementary
Hardin Valley Middle
Hardin Valley Academy
Beaver Creek
Meadow Creek
Conner Creek
0
1,500
3,000
Feet
N


Beaver Creek West Greenway Corridor
Greenway Features
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Alternate Route
Connector Route
Proposed Trailhead
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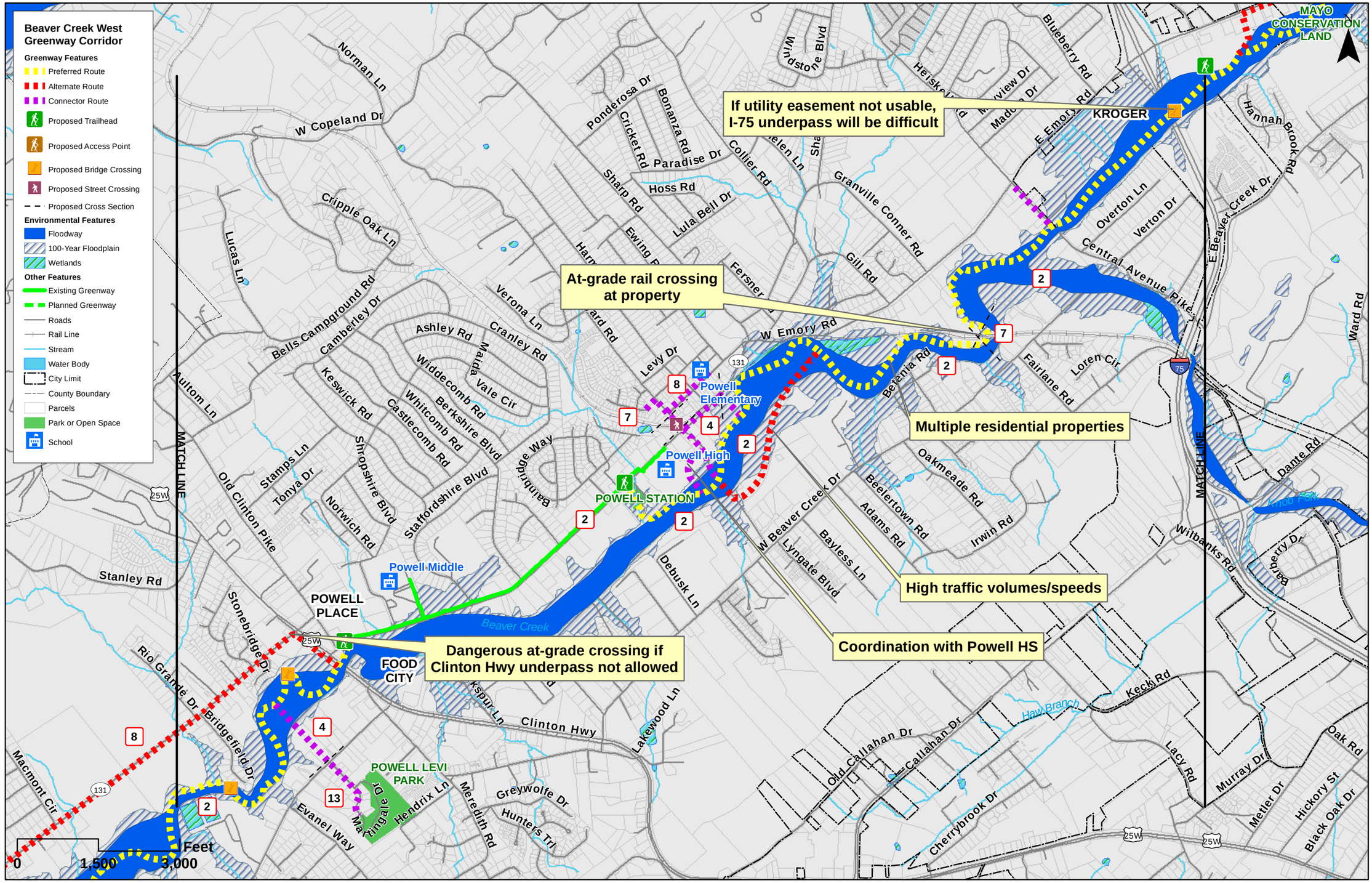
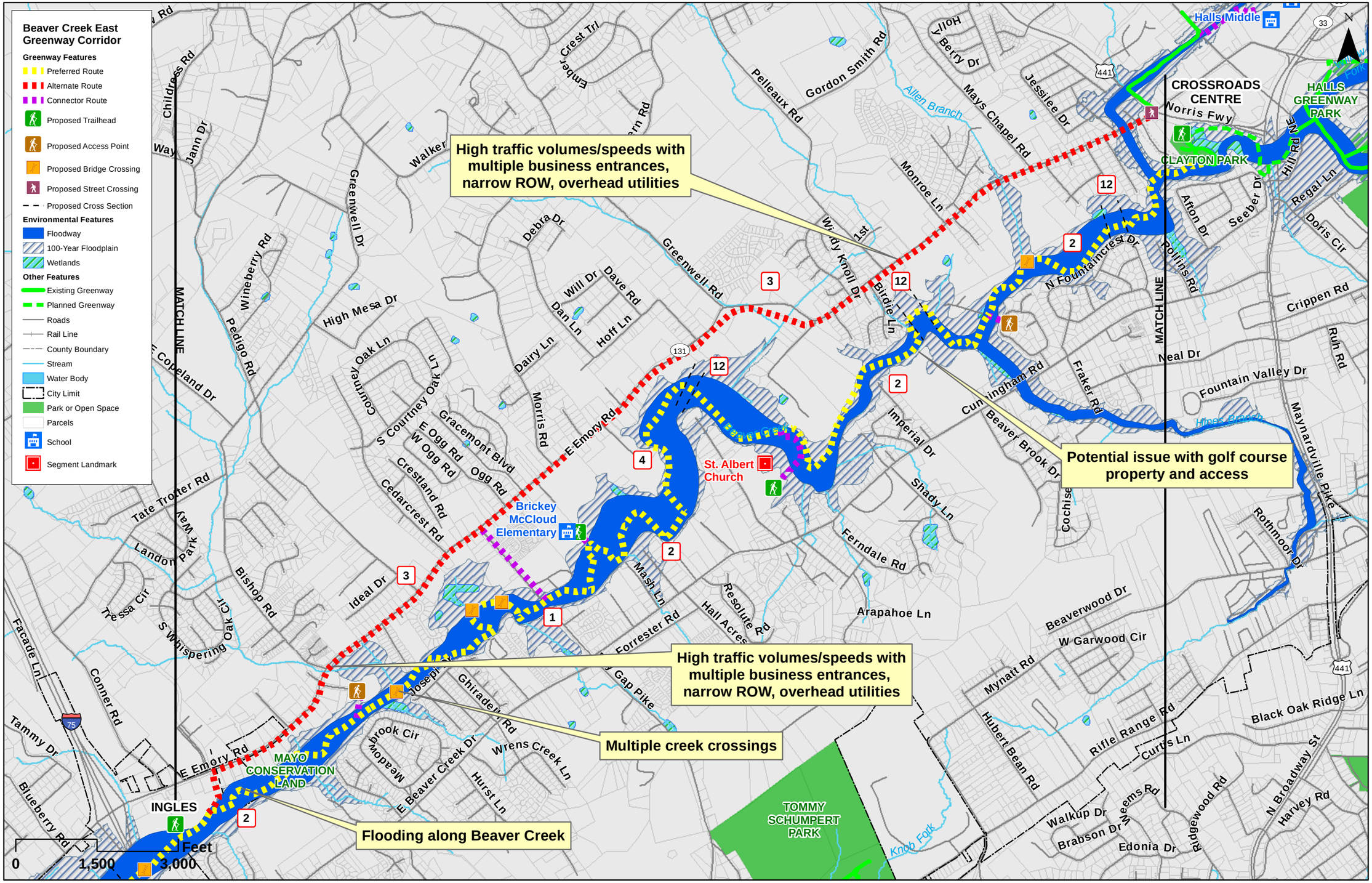
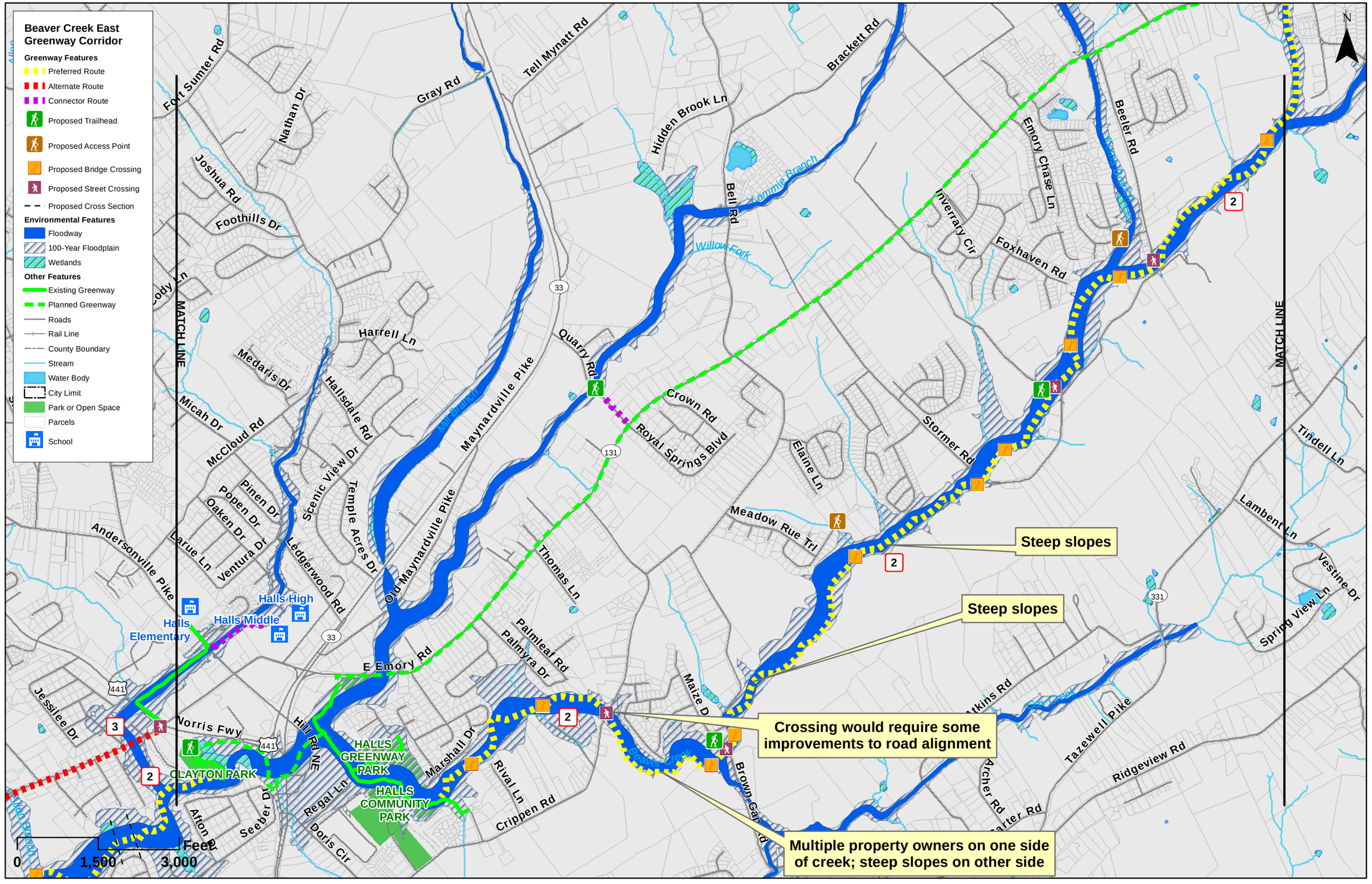
Floodway
100-Year Floodplain
Wetlands
Other Features
Existing Greenway
Planned Greenway
Roads
Rail Line
County Boundary
Stream
Water Body
City Limit
Park or Open Space
Parcels
School
High traffic volumes/speeds
Flooding along Beaver Creek; multiple creek crossings needed due to property constraints
Multiple residential properties
Flooding along Beaver Creek
High traffic volumes/speeds
Coordination needed with TDOT on Oak Ridge Hwy improvements
Coordination needed with Karns Elementary and Middle
MATCH LINE
MATCH LINE
Moody Hollow Rd
Cate Rd
Blacksferry Rd
Blacks Ferry Rd
Siske Ave
Mehaffey Rd
Copper Ridge Branch
Carpenter Rd
Patriot Way
Gynevere Dr
Lancelot Dr
Keck Farm Rd
Emory Rd
Yount Rd
Wickam Rd
Glastonbury Rd
Oxmoor Rd
Bonneville Dr
Heatherbrook Dr
Greenbrook Dr
Regency Rd
Harrell Rd
W Emory Rd
La Barrington Blvd
Bridgehampton Dr
Glenlyn Dr
Macmont Cir
Bridgefield Dr
POWELL
LEVI PARK
Della Dr
Hack Rd
Joyce L
W Beaver Creek Dr
Beaver Creek
Weaver Rd
Mereu
Oak Ridge Hwy
Lindal Rd
Haverty Dr
Hazelnut Dr
Johnson Rd
Amherst Elementary
Amherst Rd
Ball Camp Pike
Gose Cove Ln
Ball Rd
Lobetti Rd
Meadow Creek
Dyestone Gap Rd
Beaver Ridge Rd
Mackin Ln
Pennell Ln
Alkison Ln
Wright Rd
Western Winds Rd
Chartwell Rd
Ridge Rd
Henderson Rd
Hackworth Rd
Karns Valley Dr
Brookhaven Dr
Yellow Oak Ln
Gate Rd
Adams Rd
INGLES
Karns Elementary
Karns Middle
NORTHWEST SPORTS COMPLEX
KARNS COMMUNITY PARK
Bisco Dr
Dolph Dr
Garrison Dr
Gray Hendrix Rd
Byington Beaver Ridge Rd
Brownvale Rd
Wilnoty Dr
Wiebelo Dr
Brownwasi Rd
131
62
1
2
8
9
N
0
1,500
3,000
Feet


Beaver Creek West Greenway Corridor
Greenway Features
Preferred Route
Alternate Route
Connector Route
Proposed Trailhead
Proposed Access Point
Proposed Bridge Crossing
Proposed Street Crossing
Proposed Cross Section
Environmental Features
Floodway
100-Year Floodplain
Wetlands
Other Features
Existing Greenway
Planned Greenway
Roads
Rail Line
Stream
Water Body
City Limit
County Boundary
Parcels
Park or Open Space
School
If utility easement not usable, I-75 underpass will be difficult
At-grade rail crossing at property
Multiple residential properties
High traffic volumes/speeds
Coordination with Powell HS
Dangerous at-grade crossing if Clinton Hwy underpass not allowed
MAYO CONSERVATION LAND
KROGER
POWELL STATION
POWELL PLACE
FOOD CITY
POWELL LEVI PARK
Powell Elementary
Powell High
Powell Middle
MATCH LINE
Beaver Creek
Hood Fork
Hawk Branch
Feet
0
1,500
3,000

Beaver Creek East




Beaver Creek East Greenway Corridor
Greenway Features
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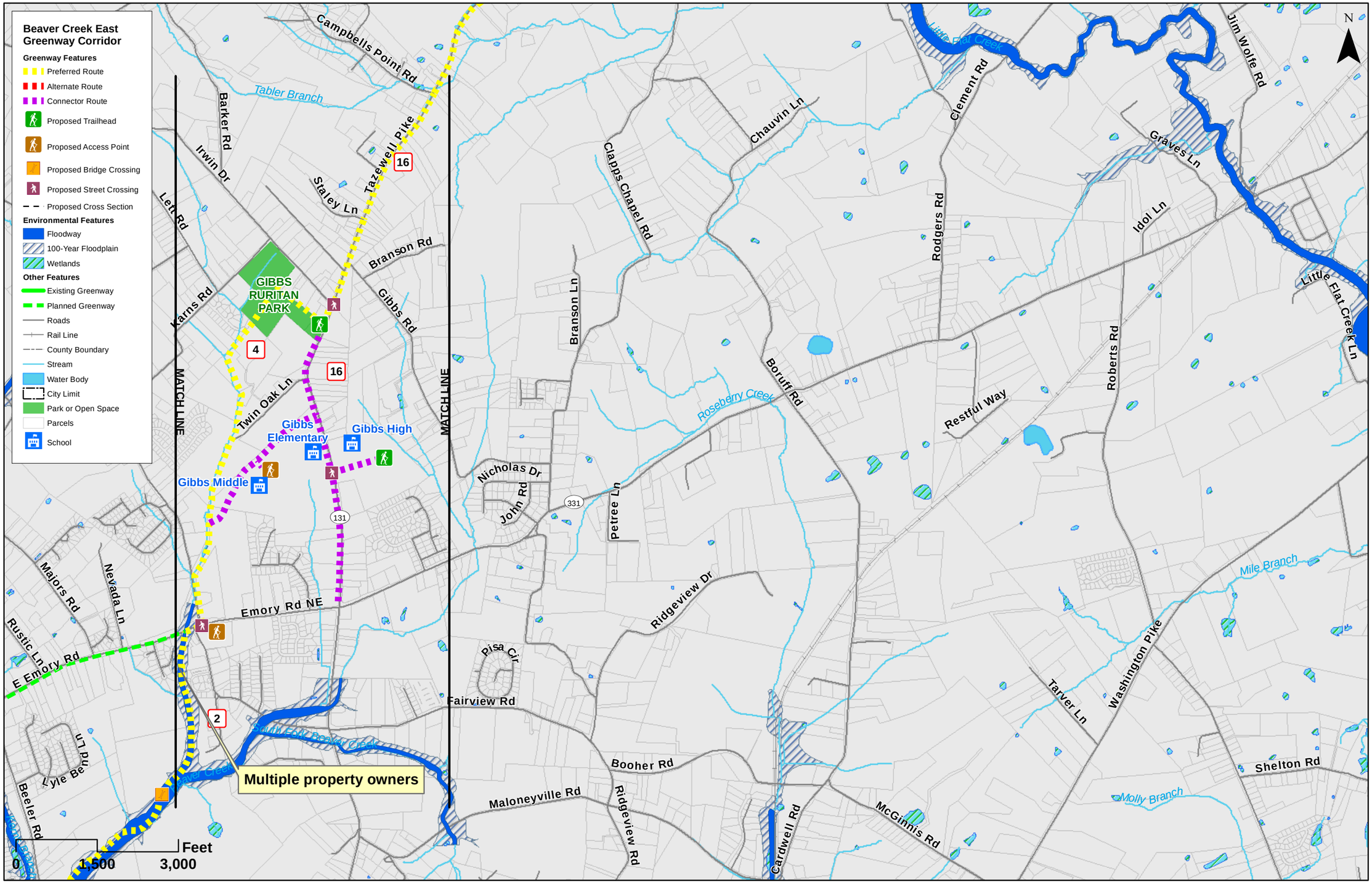
Rail Line
County Boundary
Stream
Water Body
City Limit
Park or Open Space
Parcels
School
N
MATCH LINE
MATCH LINE
Fort Sumter Rd
Nathan Dr
Joshua Rd
Foothills Dr
Gray Rd
Tell Mynatt Rd
Hidden Brook Ln
Brackett Rd
Bell Rd
Lammie Branch
Willow Fork
Inverrary Cir
Emory Chase Ln
Beeler Rd
Foxhaven Rd
Harrell Ln
Medaris Dr
Micah Dr
McCloud Rd
Hallsdale Rd
Quarry Rd
Maynardville Pike
Mill Branch
Crown Rd
Royal Springs Blvd
Elaine Ln
Stormer Rd
Tindell Ln
Lambert Ln
Vestine Dr
Spring View Ln
Meadow Rue Trl
Steep slopes
Steep slopes
Crossing would require some improvements to road alignment
Multiple property owners on one side of creek; steep slopes on other side
Andersonville Pike
Larue Ln
Pinen Dr
Popen Dr
Oaken Dr
Ventura Dr
Ledgerwood Rd
Scenic View Dr
Temple Acres Dr
Old Maynardville Pike
Thomas Ln
Halls High
Halls Middle
Halls Elementary
E Emory Rd
Palmleaf Rd
Palmyra Dr
Jessilee Dr
Norris Fwy
Hill Rd NE
HALLS GREENWAY PARK
CLAYTON PARK
HALLS COMMUNITY PARK
Marshall Dr
Rival Ln
Crippen Rd
Regal Ln
Seeber Dr
Afton Dr
Doris Cir
Maize Dr
Brown Gap Rd
Archer Rd
Carter Rd
Tazewell Pike
Ridgeview Rd
Atkins Rd
33
131
331
441
2
3
0
1,500
3,000
Feet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Stream
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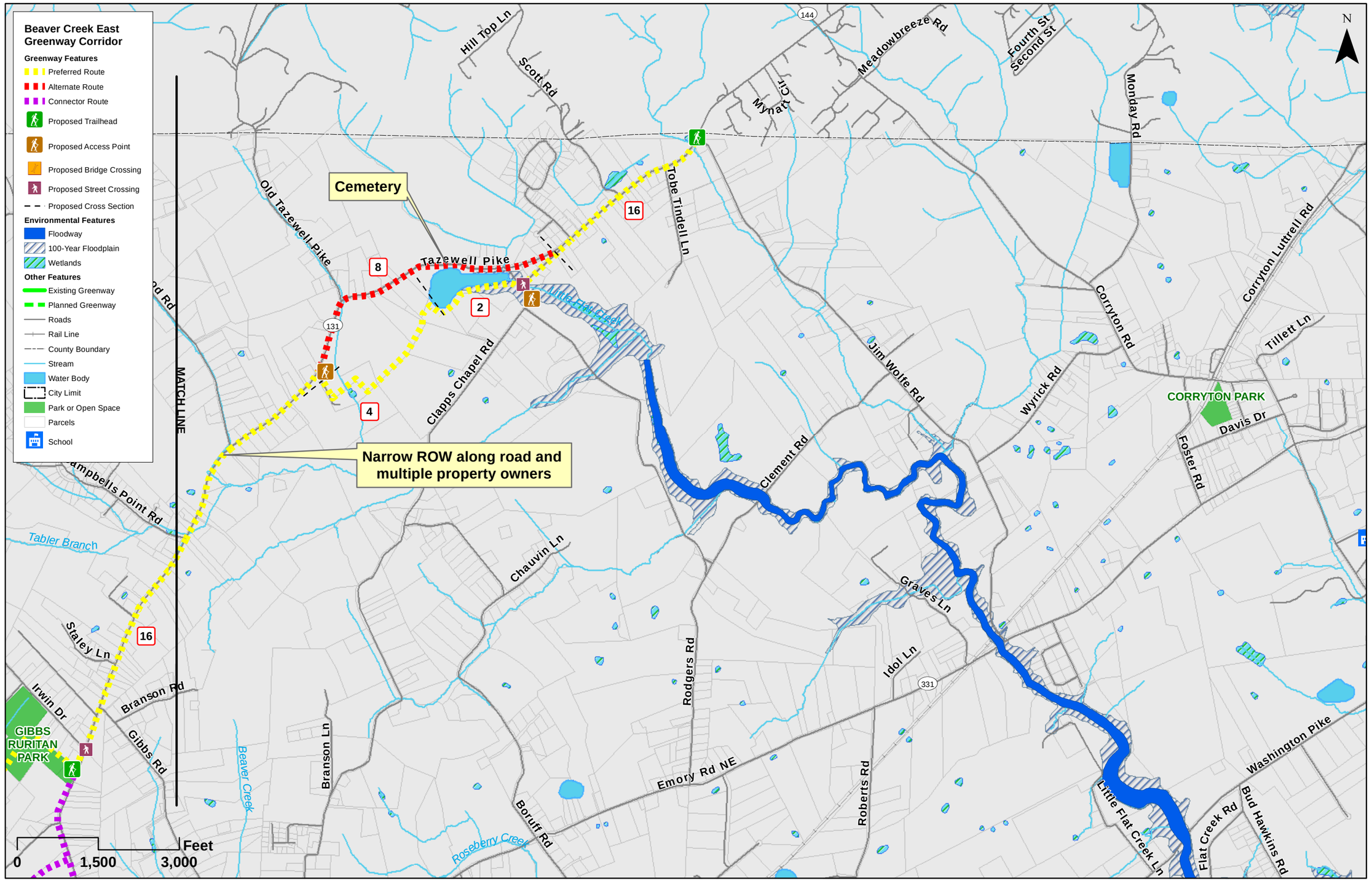
City Limit
Park or Open Space
Parcels
School
N
Campbells Point Rd
Tabler Branch
Barker Rd
Irwin Dr
Tazewell Pike
16
Staley Ln
Lett Rd
Karns Rd
Branson Rd
Gibbs Rd
GIBBS RURITAN PARK
4
16
Twin Oak Ln
Gibbs Elementary
Gibbs High
Gibbs Middle
131
MATCH LINE
MATCH LINE
Majors Rd
Nevada Ln
Rustic Ln
E Emory Rd
Emory Rd NE
2
Lyle Bend Ln
Beeler Rd
Beaver Creek
South Fork Beaver Creek
Multiple property owners
Chauvin Ln
Clapps Chapel Rd
Branson Ln
Clement Rd
Rodgers Rd
Little Flat Creek
Jim Wolfe Rd
Graves Ln
Idol Ln
Little Flat Creek Ln
Roberts Rd
Borouff Rd
Roseberry Creek
Restful Way
Nicholas Dr
John Rd
331
Petree Ln
Ridgeview Dr
Pisa Cir
Fairview Rd
Booher Rd
Maloneyville Rd
Ridgeview Rd
Cardwell Rd
McGinnis Rd
Tarver Ln
Washington Pike
Mile Branch
Molly Branch
Shelton Rd
0
1,500
3,000
Feet


Beaver Creek East Greenway Corridor
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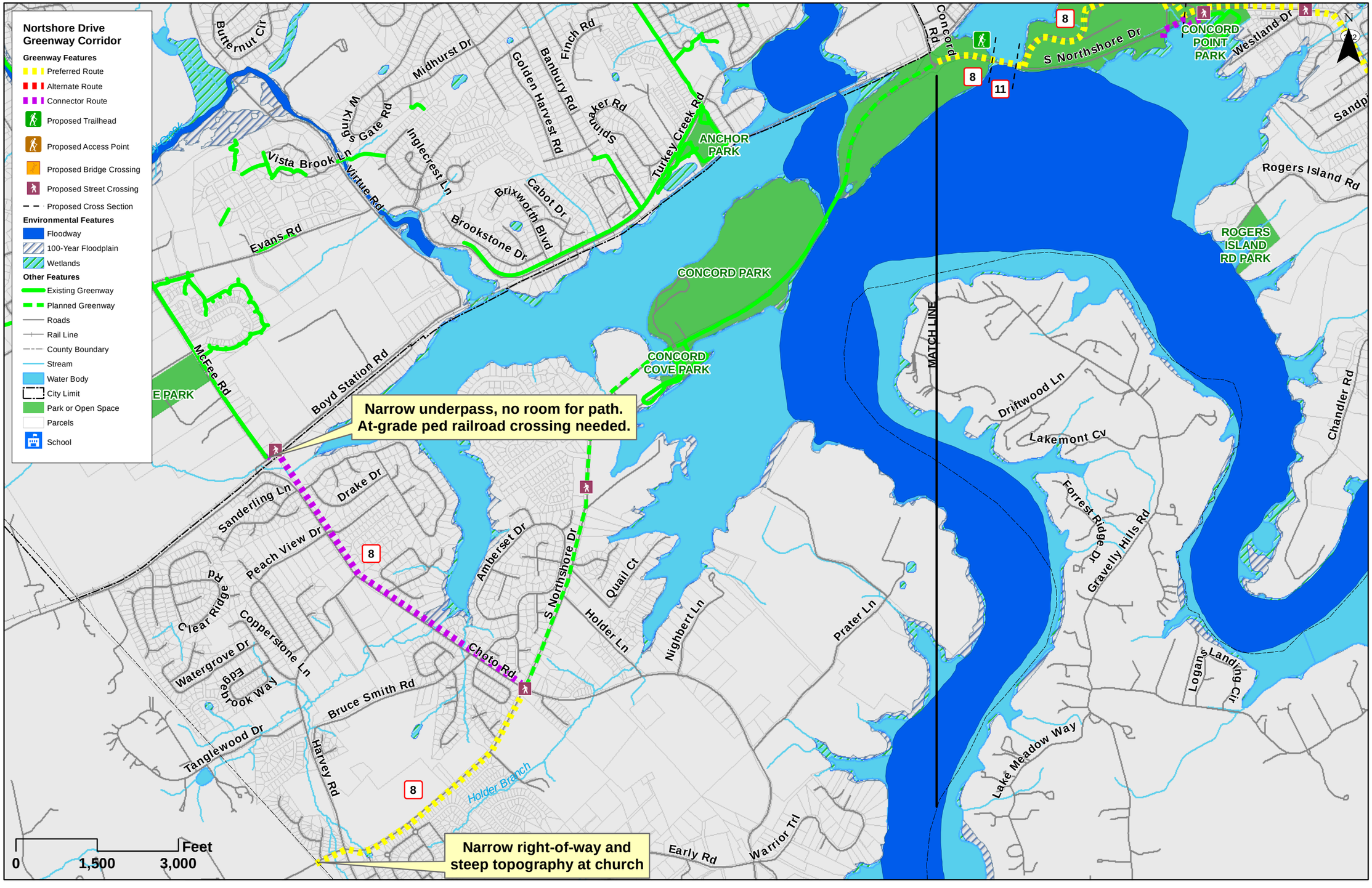
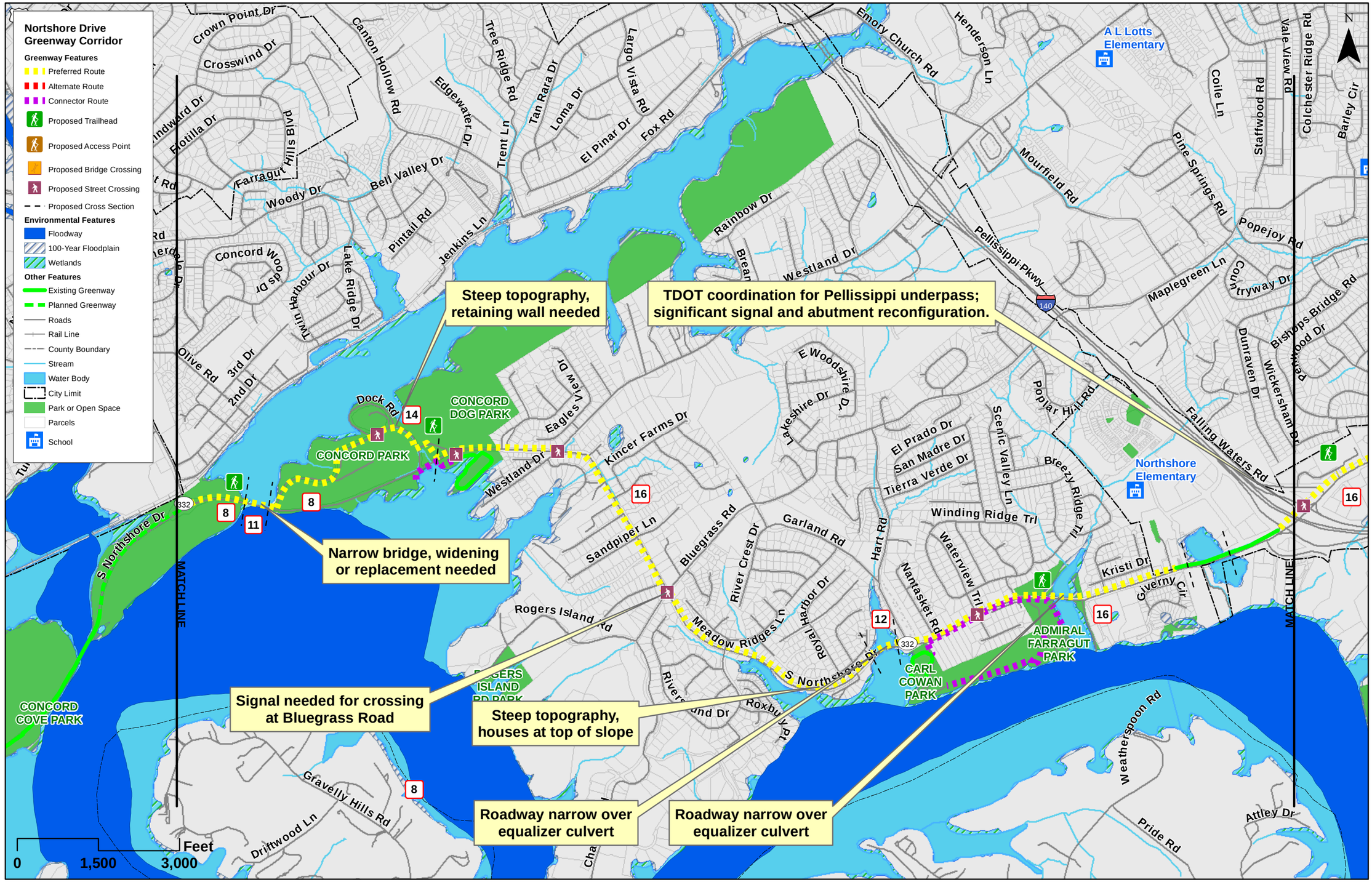
Rail Line
County Boundary
Stream
Water Body
City Limit
Park or Open Space
Parcels
School
N
Cemetery
Narrow ROW along road and multiple property owners
MATCH LINE
Hill Top Ln
Scott Rd
Old Tazewell Pike
Tazewell Pike
Tobe Tindell Ln
Meadowbreeze Rd
Mynatt Cir
Fourth St
Second St
Monday Rd
Corryton Luttrell Rd
Corryton Rd
Tillett Ln
CORRYTON PARK
Davis Dr
Foster Rd
Wyrick Rd
Jim Wolfe Rd
Clapps Chapel Rd
Little Flat Creek
Clement Rd
Chauvin Ln
Graves Ln
Idol Ln
Rodgers Rd
Roberts Rd
Emory Rd NE
Boruff Rd
Branson Ln
Beaver Creek
Roseberry Creek
Little Flat Creek Ln
Flat Creek Rd
Bud Hawkins Rd
Washington Pike
Campbells Point Rd
Tabler Branch
Staley Ln
Branson Rd
Irwin Dr
Gibbs Rd
GIBBS RURITAN PARK
144
131
331
16
8
4
2
0
1,500
3,000
Feet

Northshore Drive




Nortshore Drive
Greenway Corridor
Greenway Features
Preferred Route
Alternate Route
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Proposed Bridge Crossing
Proposed Street Crossing
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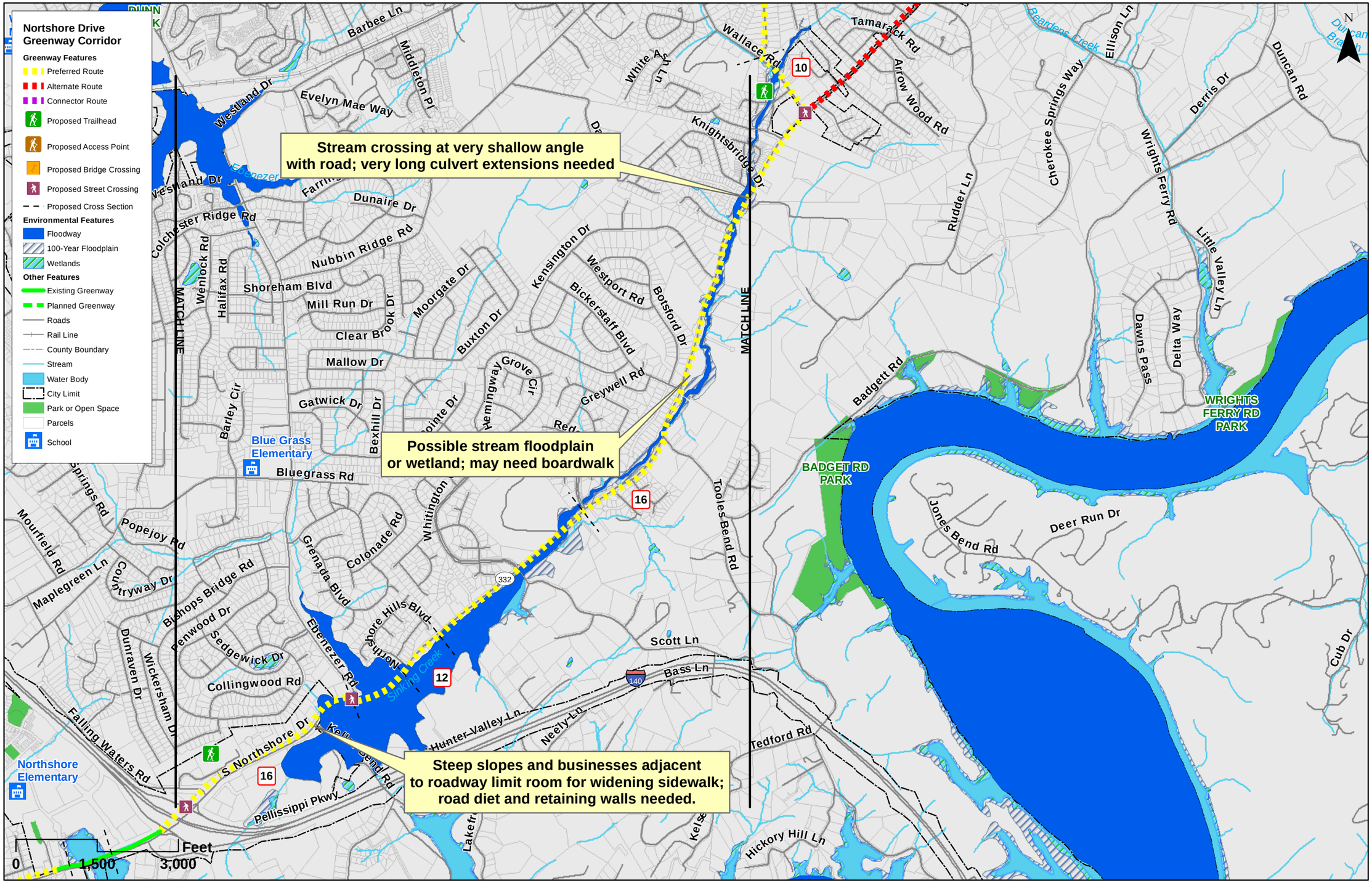
County Boundary
Stream
Water Body
City Limit
Park or Open Space
Parcels
School
N
Steep topography, retaining wall needed
TDOT coordination for Pellissippi underpass; significant signal and abutment reconfiguration.
Narrow bridge, widening or replacement needed
Signal needed for crossing at Bluegrass Road
Steep topography, houses at top of slope
Roadway narrow over equalizer culvert
Roadway narrow over equalizer culvert
CONCORD DOG PARK
CONCORD PARK
CONCORD COVE PARK
ROGERS ISLAND RD PARK
CARL COWAN PARK
ADMIRAL FARRAGUT PARK
A L Lotts Elementary
Northshore Elementary
MATCH LINE
MATCH LINE
Crown Point Dr
Crosswind Dr
Canton Hollow Rd
Tree Ridge Rd
Edgewater Dr
Trent Ln
Tan Rara Dr
Loma Dr
Largo Vista Rd
El Pinar Dr
Fox Rd
Emory Church Rd
Henderson Ln
Vale View Rd
Colchester Ridge Rd
Barley Cir
Coile Ln
Staffwood Rd
Pine Springs Rd
Mourfield Rd
Popejoy Rd
Maplegreen Ln
Country Hollow Dr
Bishops Bridge Rd
Dunraven Dr
Wickersham Dr
Falling Waters Rd
Pellissippi Pkwy
Westland Dr
Rainbow Dr
Bell Valley Dr
Woody Dr
Farragut Hills Blvd
Pintail Rd
Jenkins Ln
Lake Ridge Dr
Twin Harbour Dr
Concord Woods Dr
Olive Rd
3rd Dr
2nd Dr
Dock Rd
Eagles View Dr
Kincer Farms Dr
Lakeshire Dr
El Prado Dr
San Madre Dr
Tierra Verde Dr
Scenic Valley Ln
Poplar Hill Rd
Breezy Ridge Trl
Winding Ridge Trl
Waterview Trl
Hart Rd
Nantasket Rd
Garland Rd
Bluegrass Rd
River Crest Dr
Royal Harbor Dr
Sandpiper Ln
Meadow Ridges Ln
Rogers Island Rd
S Northshore Dr
Roxbury Rd
Kristi Dr
Giverny Cir
Weatherspoon Rd
Pride Rd
Attley Dr
Gravelly Hills Rd
Driftwood Ln
0
1,500
3,000
Feet


Nortshore Drive
Greenway Corridor
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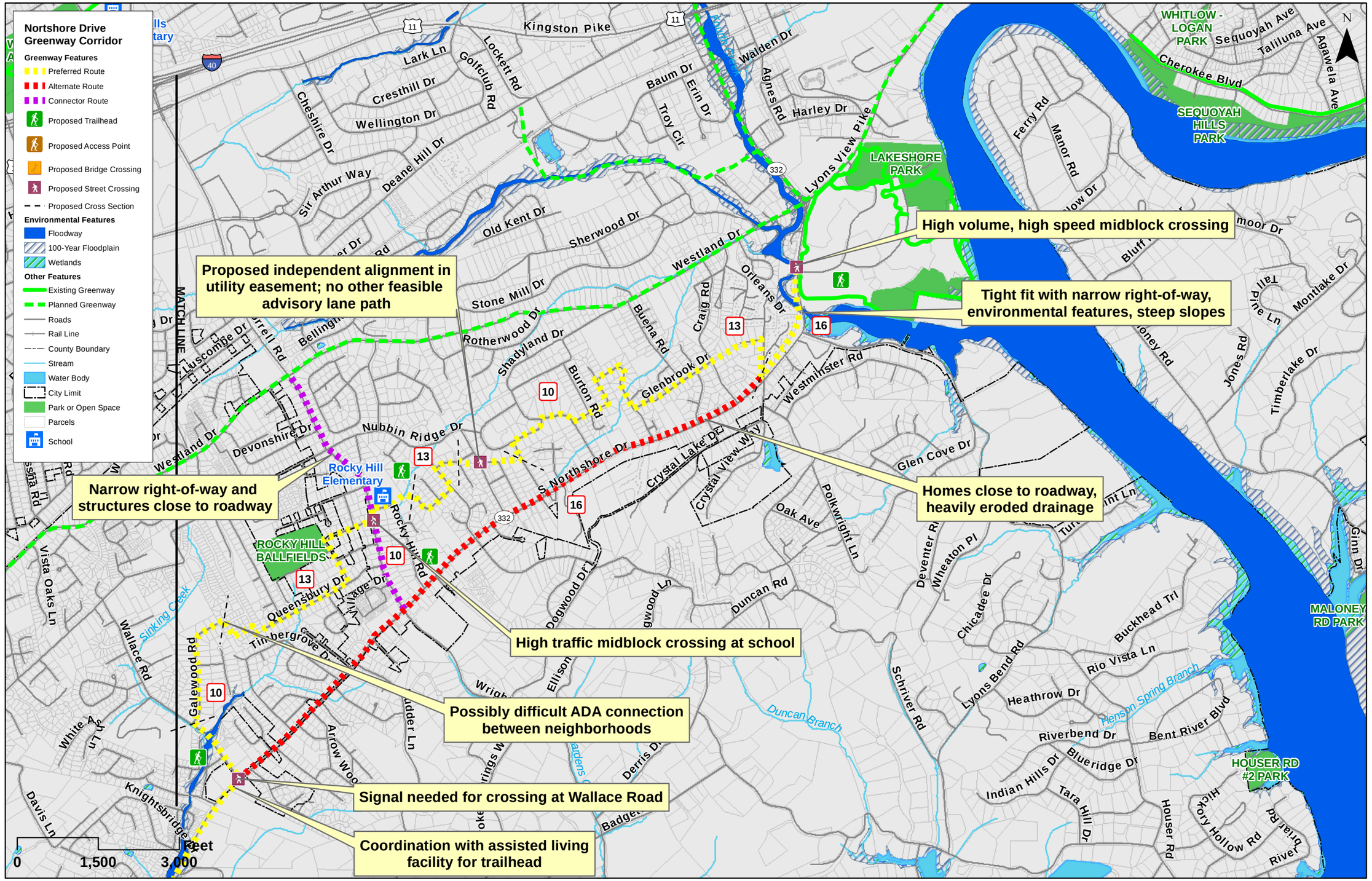
Park or Open Space
Parcels
School
Stream crossing at very shallow angle with road; very long culvert extensions needed
Possible stream floodplain or wetland; may need boardwalk
Steep slopes and businesses adjacent to roadway limit room for widening sidewalk; road diet and retaining walls needed.
MATCH LINE
MATCH LINE
Barbee Ln
Middleton Pl
Westland Dr
Evelyn Mae Way
Ebenezer
Farring
Dunaire Dr
Colchester Ridge Rd
Nubbin Ridge Rd
Wenlock Rd
Halifax Rd
Shoreham Blvd
Mill Run Dr
Clear Brook Dr
Moorgate Dr
Buxton Dr
Mallow Dr
Gatwick Dr
Barley Cir
Bexhill Dr
Blue Grass Elementary
Bluegrass Rd
Springs Rd
Mourfield Rd
Popejoy Rd
Maplegreen Ln
Countryway Dr
Bishops Bridge Rd
Penwood Dr
Sedgewick Dr
Dunraven Dr
Wickersham Dr
Collingwood Rd
Falling Waters Rd
Northshore Elementary
S Northshore Dr
Pellissippi Pkwy
Grenada Blvd
Colonade Rd
Whittington
Ebenezer Rd
Shore Hills Blvd
Northsh
Sinking Creek
Kensington Dr
Westport Rd
Bickerstaff Blvd
Botsford Dr
Greywell Rd
Hemingway Grove Cir
Pointe Dr
Red
Lakefr
Wallace Rd
White Ash Ln
Knightsbridge Dr
Tamarack Rd
Arrow Wood Rd
Rudder Ln
Tooles Bend Rd
Kelse
Hunter Valley Ln
Neely Ln
Scott Ln
Bass Ln
Tedford Rd
Hickory Hill Ln
Badgett Rd
BADGET RD PARK
Jones Bend Rd
Deer Run Dr
Cherokee Springs Way
Ellison Ln
Beardens Creek
Derris Dr
Duncan Rd
Wrights Ferry Rd
Little Valley Ln
Dawns Pass
Delta Way
WRIGHTS FERRY RD PARK
Cub Dr
10
16
12
16
332
140
N
0
1,500
3,000
Feet


Nortshore Drive Greenway Corridor
Greenway Features
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Connector Route
Proposed Trailhead
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Proposed Bridge Crossing
Proposed Street Crossing
Proposed Cross Section
Environmental Features
Floodway
100-Year Floodplain
Wetlands
Other Features
Existing Greenway
Planned Greenway
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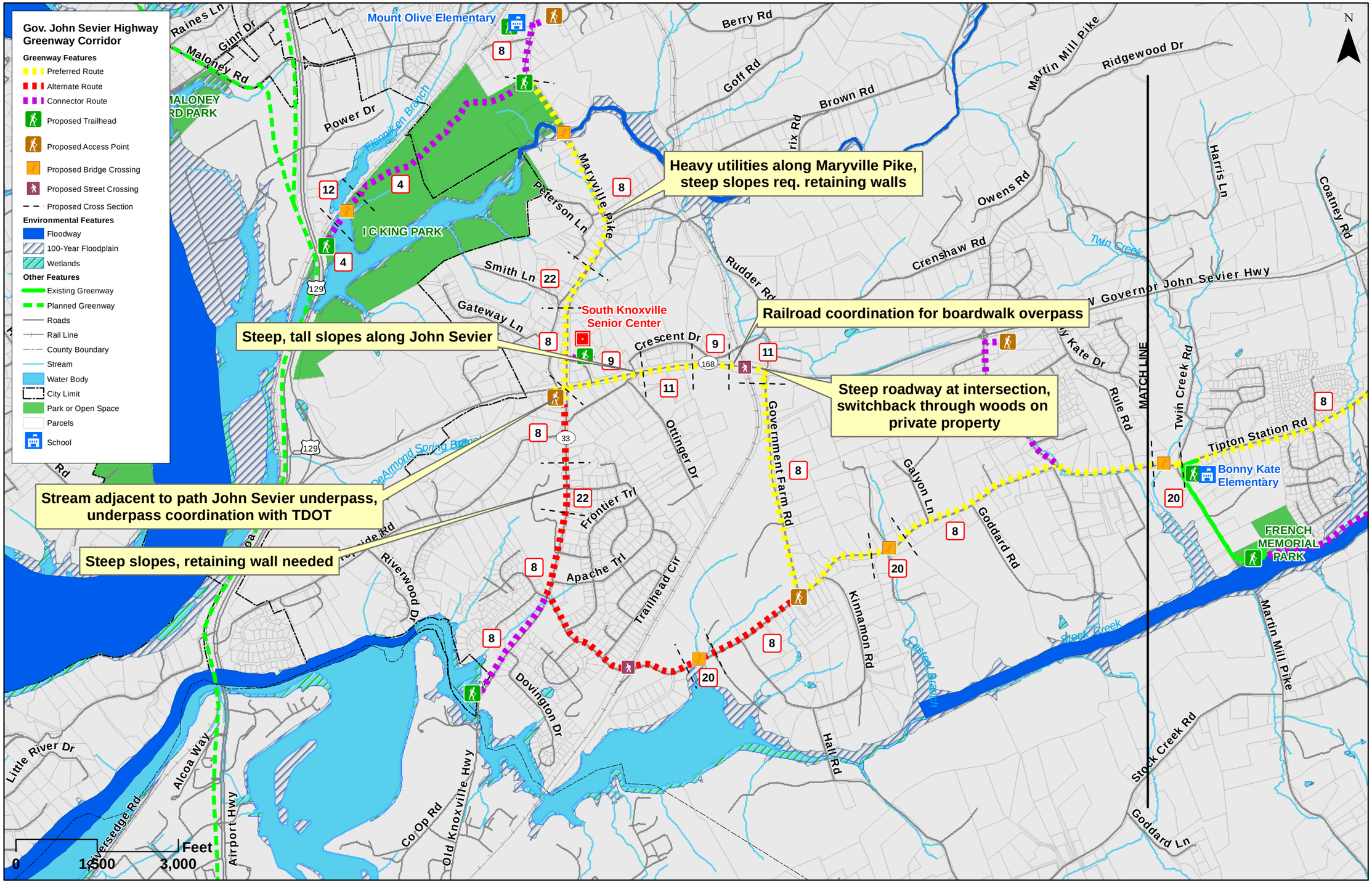
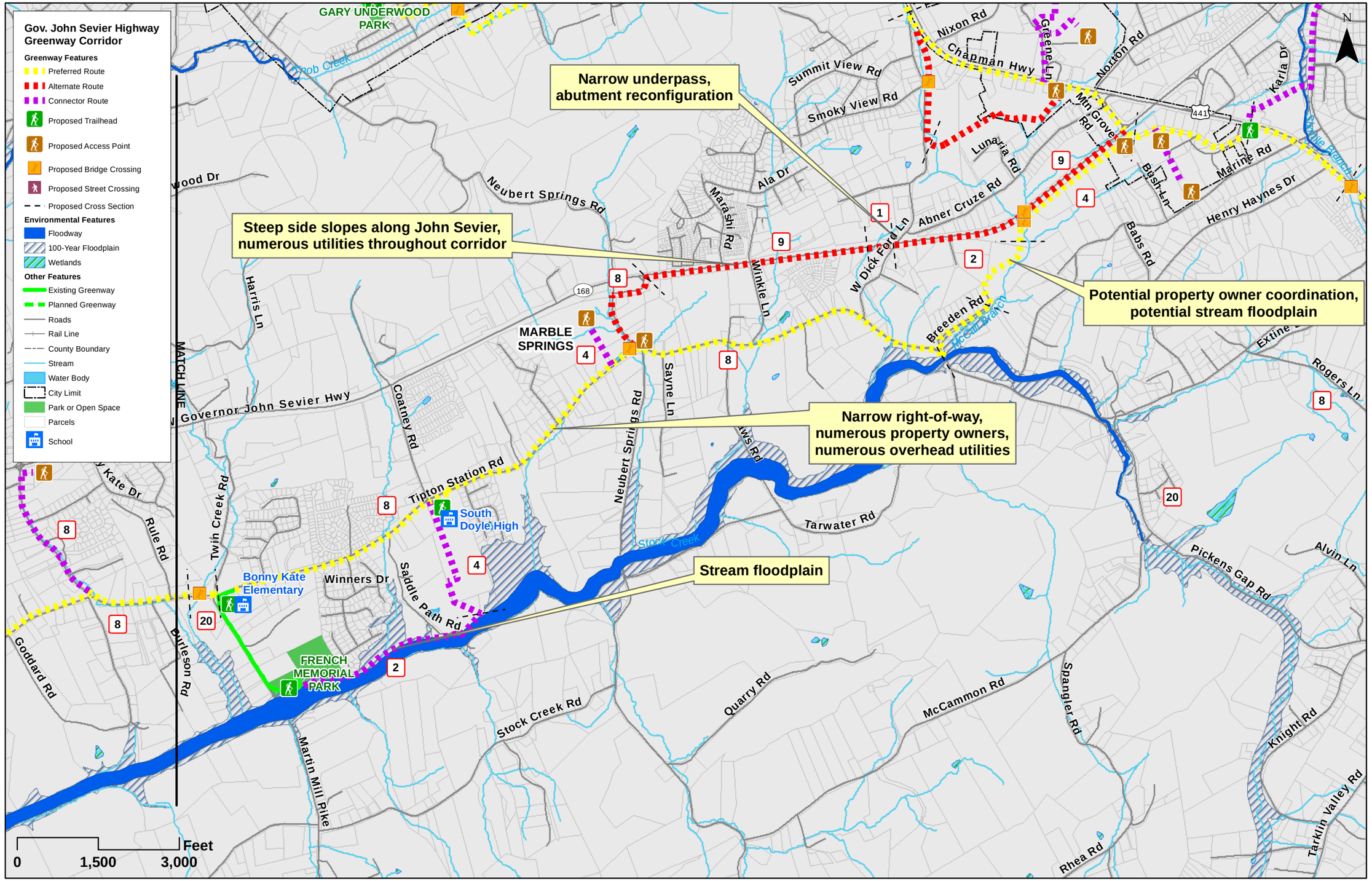
Rail Line
County Boundary
Stream
Water Body
City Limit
Park or Open Space
Parcels
School
Proposed independent alignment in utility easement; no other feasible advisory lane path
High volume, high speed midblock crossing
Tight fit with narrow right-of-way, environmental features, steep slopes
Narrow right-of-way and structures close to roadway
Homes close to roadway, heavily eroded drainage
High traffic midblock crossing at school
Possibly difficult ADA connection between neighborhoods
Signal needed for crossing at Wallace Road
Coordination with assisted living facility for trailhead
Kingston Pike
Lyons View Pike
Westland Dr
Sherwood Dr
Old Kent Dr
Stone Mill Dr
Rotherwood Dr
Shadyland Dr
Buena Rd
Craig Rd
Orleans Dr
Glenbrook Dr
Westminster Rd
Burton Rd
Nubbin Ridge Dr
Devonshire Dr
Rocky Hill Elementary
ROCKY HILL BALLFIELDS
Rocky Hill Rd
S Northshore Dr
Crystal Lake Dr
Crystal View Way
Oak Ave
Polkwright Ln
Dogwood Dr
Duncan Rd
Queensbury Dr
Timbergrove Dr
Galewood Rd
Wallace Rd
Sinking Creek
Vista Oaks Ln
Knightsbridge Dr
Davis Ln
Arrow Wood Dr
Badger Rd
Duncan Branch
Schriver Rd
Deventer Rd
Wheaton Pl
Chicadee Dr
Lyons Bend Rd
Heathrow Dr
Riverbend Dr
Indian Hills Dr
Blueridge Dr
Tara Hill Dr
Houser Rd
Hickory Hollow Rd
Briar Rd
Bent River Blvd
Henson Spring Branch
Rio Vista Ln
Buckhead Trl
Montlake Dr
Timberlake Dr
Jones Rd
Toney Rd
Glen Cove Dr
Ginn Dr
Lark Ln
Golfclub Rd
Lockett Rd
Cresthill Dr
Wellington Dr
Cheshire Dr
Deane Hill Dr
Sir Arthur Way
Baum Dr
Erin Dr
Troy Cir
Walden Dr
Agnes Rd
Harley Dr
Ferry Rd
Manor Rd
Bluff View Dr
Cherokee Blvd
Sequoyah Ave
Taliluna Ave
Agawela Ave
WHITLOW - LOGAN PARK
SEQUOYAH HILLS PARK
LAKESHORE PARK
MALONEY RD PARK
HOUSER RD #2 PARK
MATCHLINE
Luscombe Dr
Farrell Rd
Bellingham Dr
White Ave
Ln
Feet
0
1,500
3,000
N

Gov. John Sevier Highway




Gov. John Sevier Highway Greenway Corridor
Greenway Features
Preferred Route
Alternate Route
Connector Route
Proposed Trailhead
Proposed Access Point
Proposed Bridge Crossing
Proposed Street Crossing
Proposed Cross Section
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Floodway
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Wetlands
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Roads
Rail Line
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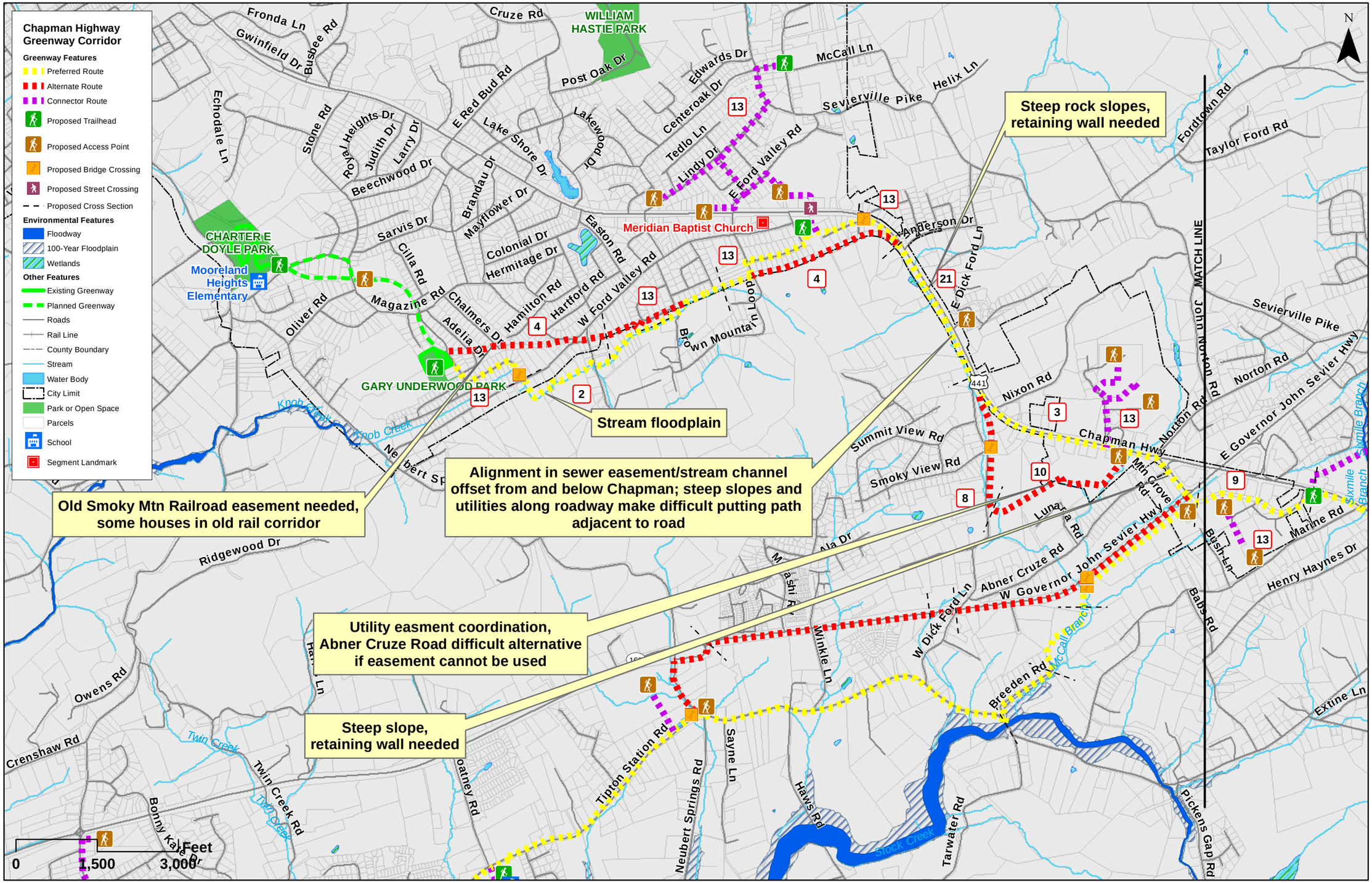
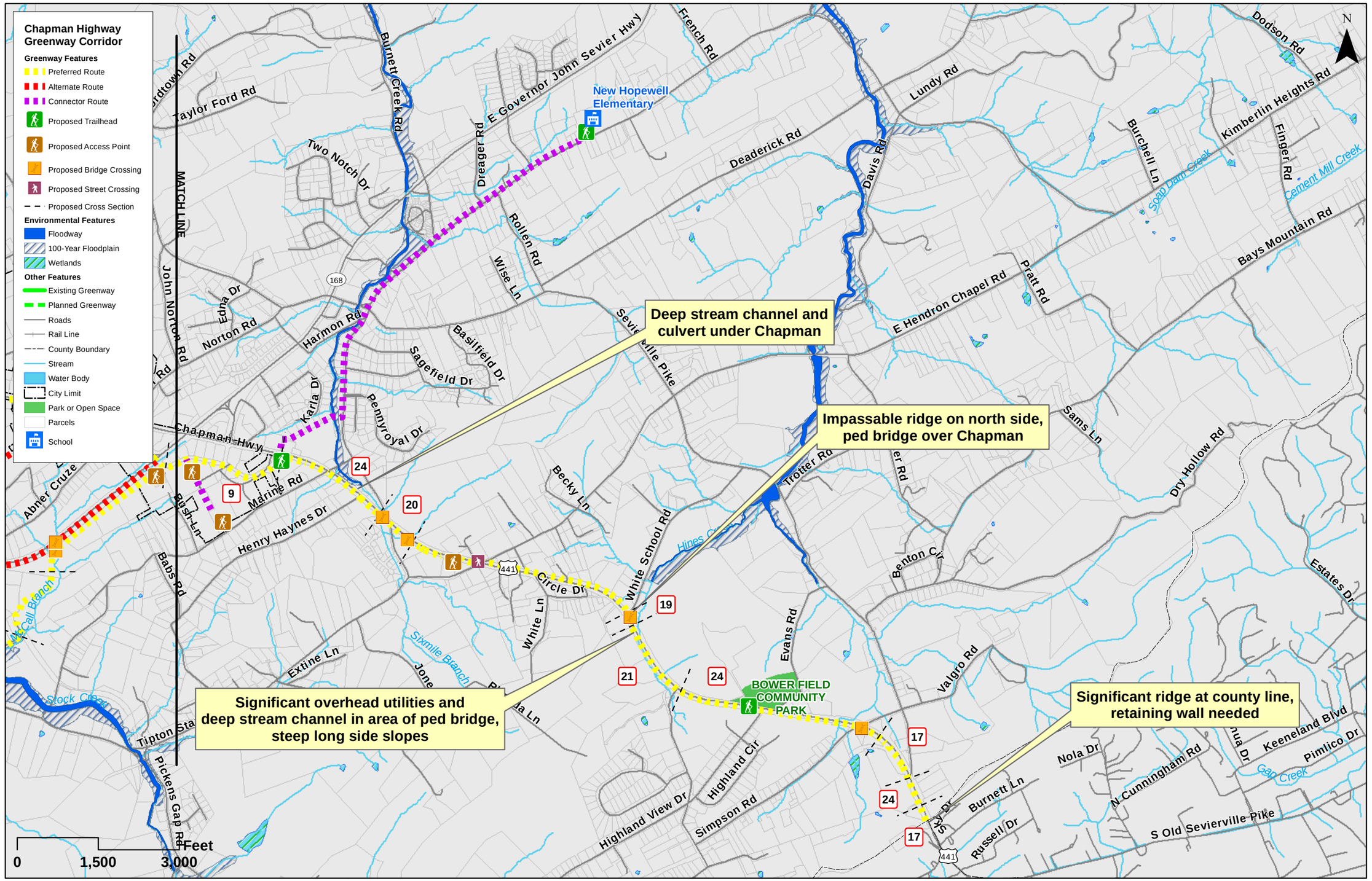
Stream
Water Body
City Limit
Park or Open Space
Parcels
School
Narrow underpass, abutment reconfiguration
Steep side slopes along John Sevier, numerous utilities throughout corridor
Potential property owner coordination, potential stream floodplain
Narrow right-of-way, numerous property owners, numerous overhead utilities
Stream floodplain
GARY UNDERWOOD PARK
MARBLE SPRINGS
FRENCH MEMORIAL PARK
South Doyle High
Bonny Kate Elementary
Knob Creek
Stock Creek
McCall Branch
Governor John Sevier Hwy
Chapman Hwy
Neubert Springs Rd
Summit View Rd
Smoky View Rd
Nixon Rd
Greene Ln
Norton Rd
Karla Dr
Lunaria Rd
Min Grove Rd
Marshi Rd
Ala Dr
Abner Cruze Rd
W Dick Ford Ln
Minkle Ln
Harris Ln
Babs Rd
Blush Ln
Marine Rd
Henry Haynes Dr
Breeden Rd
Extine
Rogers Ln
Sayne Ln
Coatney Rd
Neubert Springs Rd
Tipton Station Rd
Twin Creek Rd
Rule Rd
Kate Dr
Winners Dr
Saddle Path Rd
Tarwater Rd
Pickens Gap Rd
Alvin Ln
Goddard Rd
Burleson Rd
Martin Mill Pike
Stock Creek Rd
Quarry Rd
McCammon Rd
Spangler Rd
Knight Rd
Tarklin Valley Rd
Rhea Rd
MATCH LINE
168
441
N
0
1,500
3,000
Feet

Chapman Highway




Chapman Highway Greenway Corridor
Greenway Features
Preferred Route
Alternate Route
Connector Route
Proposed Trailhead
Proposed Access Point
Proposed Bridge Crossing
Proposed Street Crossing
Proposed Cross Section
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Wetlands
Other Features
Existing Greenway
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Roads
Rail Line
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Stream
Water Body
City Limit
Park or Open Space
Parcels
School
N
New Hopewell Elementary
Deep stream channel and culvert under Chapman
Impassable ridge on north side, ped bridge over Chapman
Significant overhead utilities and deep stream channel in area of ped bridge, steep long side slopes
Significant ridge at county line, retaining wall needed
BOWER FIELD COMMUNITY PARK
Burnett Creek Rd
Taylor Ford Rd
Two Notch Dr
Dreager Rd
E Governor John Sevier Hwy
French Rd
Deaderick Rd
Lundy Rd
Davis Rd
Dodson Rd
Kimberlin Heights Rd
Burchell Ln
Soap Dam Creek
Finger Rd
Cement Mill Creek
Bays Mountain Rd
E Hendron Chapel Rd
Pratt Rd
Rollen Rd
Wise Ln
Harmon Rd
Norton Rd
Edna Dr
John Norton Rd
MATCH LINE
Sevierville Pike
Basilfield Dr
Sagefield Dr
Karla Dr
Pennyroyal Dr
Chapman Hwy
Marine Rd
Henry Haynes Dr
Rush Ln
Abner Cruze
Babs Rd
Becky Ln
White School Rd
Hines Creek
Trotter Rd
Sams Ln
Dry Hollow Rd
Benton Cir
Estates Dr
Circle Dr
White Ln
Extine Ln
Jones
Sixmile Branch
Evans Rd
Valgro Rd
Highland Cir
Highland View Dr
Simpson Rd
Nola Dr
N Cunningham Rd
Keeneland Blvd
Pimlico Dr
Gap Creek
Burnett Ln
Russell Dr
S Old Sevierville Pike
Tipton Sta
Pickens Gap Rd
Stock Creek
McCall Branch
168
441
24
9
20
19
21
17
0
1,500
3,000
Feet

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Greenway Corridor Study

Gresham Smith

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Knoxville, TN 37922

865.521.6777
GreshamSmith.com