



Agenda

Parks and Recreation Board Regular Meeting

7:00 PM September 17, 2024

Board Meeting Room, Town Hall Annex, 105 E. Corbin St.

1. Call to order and confirmation of quorum

2. Agenda changes and approval

3. Minutes review and approval

A. Minutes from regular meetings on August 20, 2024

4. Discussion items

A. Review draft text amendment to increase the number of people allowed at parks for special events by school for up to 150 individuals, up to 4 times per year

B. Review draft of Ridgewalk Benefits Analysis

C. Review draft Ridgewalk Feasibility Study Phase 2

5. Parks and recreation-related reports

A. Board of Commissioners: Robb English

B. Planning Board: Hooper Schultz

C. Intergovernmental Parks Work Group: Staff

6. Park steward reports

A. Gold Park: Cole Kenworthy

B. Cates Creek Park: Richard von Furstenberg

C. Murray Street Park: Hooper Schultz

D. Kings Highway Park: Robb English

E. Hillsborough Heights Park: David Weinberg

F. Riverwalk: Staff

G. Turnip Patch Park: Wendy Kuhn

7. Staff updates

A. Updates on Skate Spot updates and grand opening, art park, park repairs

8. Adjournment

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Minutes

PARKS AND RECREATION BOARD

Regular meeting

7 p.m. Aug. 20, 2024

Board Meeting Room of Town Hall Annex, 105 E. Corbin St.



Present: Chair Cole Kenworthy, Vice Chair Richard von Furstenberg, Commissioner Robb English and Paul Weinberg

Absent: Wendy Kuhn, David Weinberg and Hooper Schultz

Staff: Public Space and Sustainability Manager Stephanie Trueblood and Public Works and Public Space Administrative Support Specialist Lindsay Rhew

1. Call to order and confirmation of quorum

Chair Cole Kenworthy called the meeting to order at 7 p.m. Public Space and Sustainability Manager Stephanie Trueblood called the roll and confirmed the presence of a quorum.

2. Agenda changes and approval

There were no changes to the agenda.

Motion: Vice Chair Richard von Furstenberg moved to approve the agenda with no changes. Commissioner Robb English seconded.

Vote: 4-0

3. Minutes review and approval

Minutes from regular meeting on May 21, 2024

Motion: Von Furstenberg moved approval of the May 21, 2024, minutes as submitted. Member Paul Weinberg seconded.

Vote: 4-0

4. Discussion items

- A. Review request from The Expedition School (TES) to increase the number of people allowed at parks for school events up to 150 individuals, up to four times per year.

First, Trueblood described the town's current ordinance for Gold Park. Next, Tammy Finch, the Director of Education and Curriculum at TES, addressed the board. Finch described the school's uses at the park such as exercising, civic engagement and events. Regarding the town's concerns for park's occupancy, Finch countered with the school's mitigation of bathrooms, parking, utilities and public interactions with the proposed increase in occupancy.

When von Furstenberg inquired about the relationship between the school and the park, Trueblood noted the school's involvement with the town and the positive relationship between them. The school pays fees for use of the fields and pavilion area. Then, Public Works and Public Space Administrative Support Specialist Lindsay Rhew contributed the reasoning behind the ordinance change in May, 2024. She suggested conditions on the

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proposal, such as, specifying the extra allowance during school hours and school days. Also, the town no longer has a planning department liaison.

Weinberg then asked, if limiting to school events will bring objections from other organizations. Trueblood summarized options, notably a Memorandum of Understanding (MOU) between the school and the town to address these concerns.

Regarding English’s inquiry about TES drop off and pick up protocol, Finch described the original traffic study which advised a walking school bus through Gold Park. Also, English acknowledged the positive relationship between the town and HES and favors an MOU.

Finally, the board directed staff to draft an MOU allowing The Expedition School to reserve Gold Park up to four times per school year for events up to 150 people with conditions.

B. Review draft of Cates Creek Park Master Plan

Trueblood described the updates and recommendations from the board. She then showed an example of an art park in Salisbury, NC. Next, the board discussed components of the master plan draft. English suggested revising the intended reach to community and regional draw. The board acknowledged the success of the Skate Spot. Also, the master plan’s map should note future connection to Ridgewalk. The board also considered the number of basketball courts, parking, trails and educational opportunities at Cates Creek Park. Also, the master plan should include sustainability language as in Gold Park’s Master Plan.

Motion: Von Furstenberg motioned to add the art park in the master plan. Kenworthy seconded.
 Vote: 4-0

Motion: English motioned to approve the Cates Creek Master Plan update with the discussed changes. Von Furstenberg seconded.
 Vote: 4-0

5. Parks and recreation-related reports

A. Board of Commissioners

English reported on the Joint Public Hearing in August, which discussed the proposed Waterstone South development and annexation. The town board also will the relevancy of the water/sewer advisory council at an upcoming joint meeting. English also noted the town’s lack of control over the fiber installation in town since the state supervises it. The town board will have a workshop

B. Planning Board

Since Member Hooper Schultz was absent, there was no report.

C. Intergovernmental Parks Work Group

Trueblood reported the group had not met.

6. Park steward reports

A. Gold Park: Kenworthy reported the park is in good condition.

B. Cates Creek Park: Von Furstenberg reported the park is in good condition.

C. Kings Highway Park: English applauded the new interpretive sign.

Since board members were absent, some parks were not had no report.

7. Staff updates

Trueblood stated:

- The Skate Spot's grand opening is Sept. 28, 2024, at 10:30 a.m.
- Rules for the skate park are posted, but not enforced by town staff.
- Tropical Storm Debby caused significant flooding along Riverwalk. Trueblood acknowledged the effort by the utilities department to clear the trail.
- Calvin Street Greenway boards were repaired.
- The September Parks and Recreation Board meeting will include a Ridgewalk Phase II presentation.
- The Parks and Recreation Board member applicant Nevin Daryani introduced himself and provided his background in public service.

8. Adjournment

Motion: Von Furstenberg moved to adjourn at 8:45 p.m. Weinberg seconded.

Vote: 4-0

Respectfully submitted,



Stephanie Trueblood
Public Space and Sustainability Manager
Staff support to the Parks and Recreation Board

Approved: September 17, 2024

Sec. 3-49. Rules and regulations for town parks and greenways.

The rules and regulations for town parks and greenways are as follows:

- (1) All persons in any park or greenway shall obey all posted regulations, signs and directions.
- (2) No person shall willfully mark, deface, disfigure, injure, tamper with, displace, dig, or remove any structure, equipment, facility, vegetation or any other real or personal property that is located within the park or greenway and belonging to the town unless authorized by the Town of Hillsborough. This includes but is not limited to the removal of any artifacts, plants, flowers, or foliage from town parks or greenways.
- (3) No person shall park, drive or ride motorized vehicles in town parks or greenways, except in designated roadways and parking areas unless authorized by the Town of Hillsborough. Parking areas at town parks are restricted to park users and patrons.
- (4) No person shall dump, deposit, leave or place trash, balloons, confetti, ashes, broken glass or other waste within any park or greenway except in designated waste or recycling receptacles provided for the purpose. No person shall dispose of household garbage or rubbish within any town park or greenway. All pet waste shall be picked up and disposed of in pet waste receptacles or removed from the site.
- (5) No person shall camp or stay overnight in any town park or greenway.
- (6) No person shall carry, possess or use any firearm or other dangerous weapon within any town park. This section shall not apply to law enforcement or other government personnel acting within the scope of their employment.
- (7) No person shall use, consume or possess any alcoholic beverages, beer or wine within any town park or greenway unless authorized by the Town of Hillsborough through a special event permit. No person shall use, consume or possess any narcotic drug or hallucinogen or any other controlled substance within any town park or greenway without a valid physician's prescription for the substance.
- (8) No person shall engage, either verbally or physically, in any loud, disruptive or offensive conduct, or engage in any activity or sport in a manner which threatens the safety or welfare of other patrons of the town park or greenway, or which unreasonably impairs the public's opportunity to use and enjoy the park.
- (9) No person shall ride or bring livestock or other animals, with the exception of leashed domesticated pets, to a town park or greenway. Unleashed dogs are prohibited outside of designated dog parks. Pets must be supervised at all times.
- (10) No person shall access or use any body of water in or adjacent to a town park or greenway where there is not properly permitted public access to the body of water.
- (11) Advertising, commercial or income generating activity is prohibited in town parks and greenways unless authorized by the Town of Hillsborough through a special event permit. This includes but is not limited to fitness classes, personal instruction, and selling of goods or services.
- (12) The following activities are prohibited in town parks and greenways:
 - a. Balloon releases.
 - b. Bounce house or inflatables.
 - c. Climbing walls.
 - d. Fire, fire pits, fireworks.

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- e. Game trailers.
 - f. Golf.
 - g. Petting zoos, circuses, carnivals.
 - h. Waterslides, water balloons, pools, and other water toys.
 - i. High voltage electrical items. Outlets in picnic shelters are limited to 200 amps or lower. Electricity is not provided in all shelters.
 - j. Paints, spray paints, and permanent markings on fields, buildings, equipment, walkways, and trails.
 - k. The use of cleated shoes on playing fields.

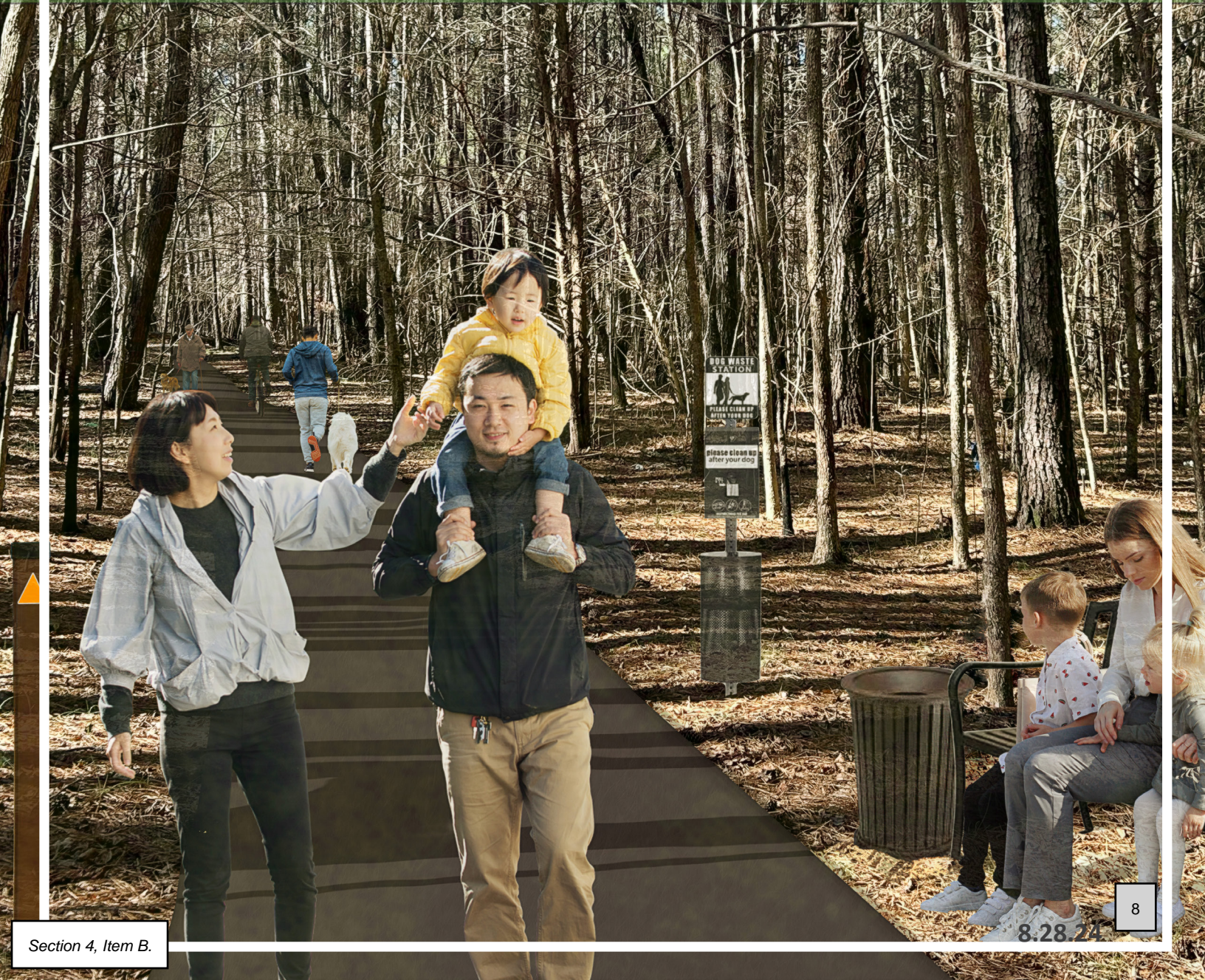
(Ord. No. 2006.006.12-11.E, § 2(3-49), 6-12-2006; Ord. No 20150727-8, § 1, 7-27-2015; Ord. No. 20170410-10.G, §§ 1, 2, 4-10-2017; Ord. No. 20240513-6.H, § 1, 5-13-2024)

Sec. 3-50. Reservation of facilities within town parks.

- (a) The town may allow the reservation of certain facilities within town parks for private use for limited periods when such use does not conflict with enjoyment of the park by the general public or other town policies.
- (b) A person seeking to reserve a town park facility must submit a reservation permit application a minimum of 14 days in advance of the reservation date. The reservation request must be approved by town staff in advance of the reservation date for the reservation to be effective. Fees associated with the reservation are non-refundable and are due on the date specified by town staff after the reservation request is reviewed. Cancellations made seven days prior to the reservation date may be issued a credit toward a future reservation of the facility, to be used within one calendar year. Reservation cancellations made within seven days of the reservation date are not eligible for credit.
- (c) The reservation shall be on a form provided by town staff and require sufficient information to identify the person requesting the permit, emergency contact information, the facility to be reserved, the proposed use and duration of use, and proof of liability insurance if deemed necessary by the town.
- (d) The public space manager or their designee is authorized to approve park facility reservation permits.
- (e) The reservation permit-issuing staff may issue a reservation permit when they find that the proposed activity or use of the park:
 - (1) Will not unreasonably interfere or detract from the general public enjoyment of the park;
 - (2) Will not unreasonably interfere with or detract from the promotion of public health, welfare, safety and recreation;
 - (3) Is not reasonably anticipated to incite violence, crime or disorderly conduct;
 - (4) Will not entail unusual, extraordinary or burdensome expense or police operation by the town;
 - (5) Has not been reserved for other use at the day and hour required in the application.
- (f) Not to limit the generality of paragraph (e), the following activities are prohibited and may not be permitted as part of a park reservation but can be considered and approved during the review of a special event permit:
 - (1) Archery;
 - (2) Sound amplifying equipment including but not limited to PA systems and stereos;

-
- (3) Temporary chalk markings associated with sports and games on playing fields.
- (g) Events that meet a threshold specified in section 7-18 shall seek a special event permit rather than a park reservation permit. ~~The standard reservation fees apply for special events, unless sponsored by the Town of Hillsborough. The~~ The following regulations apply to all ~~special~~ events in town parks excluding Town of Hillsborough hosted events:
- (1) Events at town parks are limited to a total number of 75 persons excluding ~~Town of Hillsborough hosted events~~ events conducted by schools and academic institutions held during school operating hours which may be permitted through a Special Event Permit for up to 150 persons up to 4 times per calendar year-
 - (2) Events at town parks must comply with chapter 5, article II of the Code of Ordinances: Noise.
 - (3) Event sponsors and hosts are responsible for the collection and disposal of all trash and waste that is not located within a provided trash bin or receptacle. No trash may be left on site or placed outside of the provided waste receptacles.
- (h) Town parks and greenways may not be reserved for exclusive, non-public use unless approved by the Hillsborough Board of Commissioners through a special event permit.
- (i) Town parks and greenways may not be reserved as the starting or ending point for walk, run or bicycle events but may be used as a portion of the route for permitted events.
- (Ord. No. 20090413-8.J, § 1, 4-13-2009; Ord. No. 20150713-10.H, §§ 1, 2, 7-13-2015; 20150511-10.D, § 1, 5-11-2015; Ord. No. 20170410-10.G, §§ 3, 4, 4-10-2017; Ord. No. 20240513-6.H, § 1, 5-13-2024)

RIDGEWALK BENEFITS ANALYSIS



THANK YOU!

This document is the result of a widespread community effort. A warm thank you to all the elected officials, Town of Hillsborough staff, business leaders, community members, partner agencies, and appointed board members who contributed to this document through their support, stories, survey responses, and enthusiasm for Hillsborough and its future.



TOWN OF
HILLSBOROUGH
NORTH CAROLINA



SUMMIT
DESIGN AND ENGINEERING SERVICES

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Summary

The Town of Hillsborough is exploring the possibility of expanding its existing greenway network with the development of “Ridgewalk,” a proposed greenway that will run from north to south, connecting the southern neighborhoods of Hillsborough to Riverwalk and downtown.

To demonstrate the potential benefits of an additional greenway, this analysis combines several types of source. First, it studies Riverwalk and how the greenway has benefited the community since its implementation. Next, a survey was created to assess Hillsborough residents’ experience of Riverwalk, and how a new greenway would be received. Interviews were then conducted with local business owners and community members to reveal their perception of the trail, how it has changed the town, and what their attitude was toward a new greenway.

It then analyzes a survey of national studies on the benefits of greenway infrastructure to communities by boosting the local economy, public health, environmental quality, transportation safety and efficiency, and social or cultural benefits.

Finally, the proposed Ridgewalk is assessed for its potential positive impacts on the community, its connection to Hillsborough’s existing plans, and mapping its potential ability to further connect the community to residential and commercial areas through non-automobile transportation modes.

By highlighting the successes of Riverwalk and other greenways, this document demonstrates the immense benefits that Ridgewalk will provide to Hillsborough and the wider community.

This Benefits Analysis includes:

A description and history of Riverwalk

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Input from Hillsborough stakeholders about the impacts of Riverwalk

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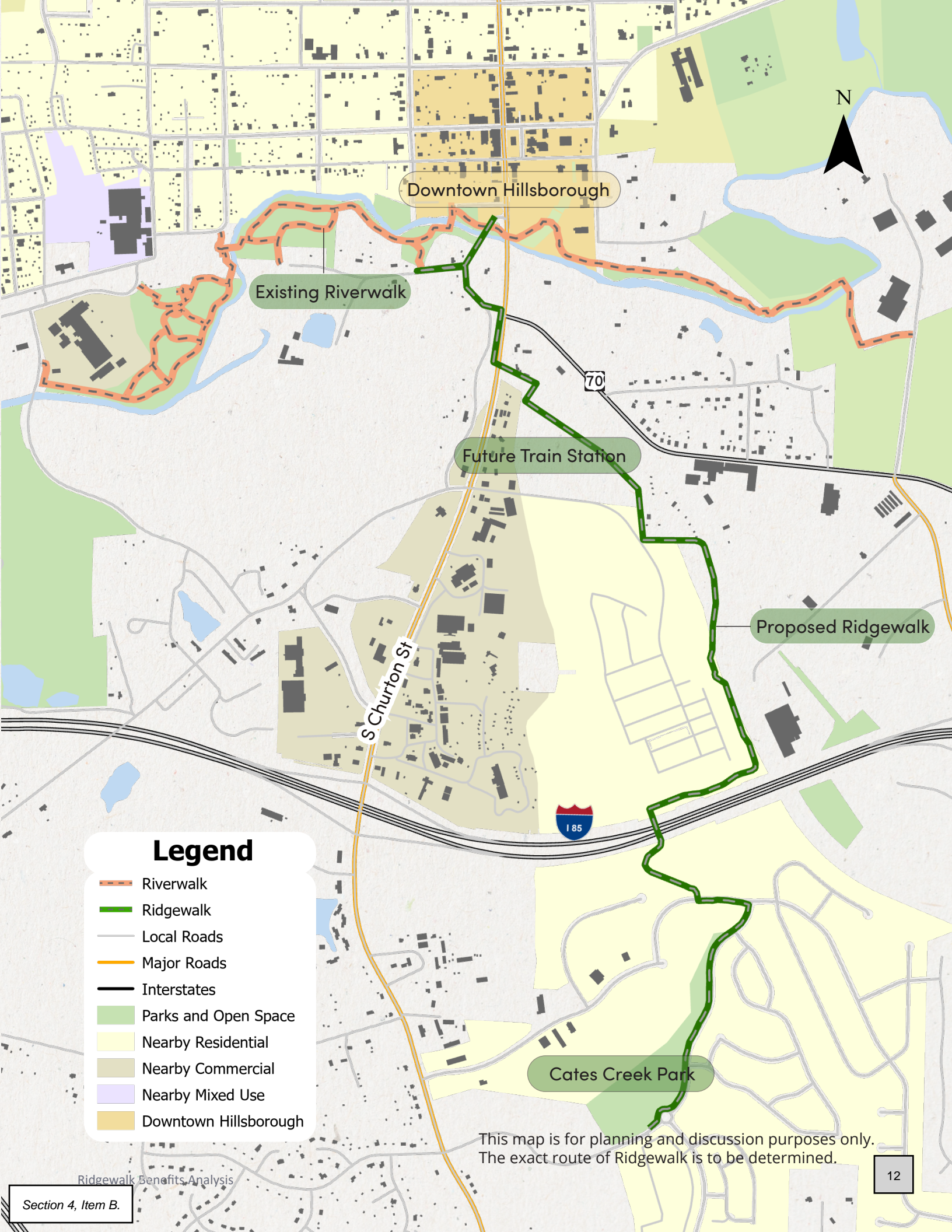
Research on greenways across North Carolina and the United States

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A summary of all plans and documents that support investment in Ridgewalk

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Description of the impacts Ridgewalk would have on Hillsborough.



Legend

-  Riverwalk
-  Ridgewalk
-  Local Roads
-  Major Roads
-  Interstates
-  Parks and Open Space
-  Nearby Residential
-  Nearby Commercial
-  Nearby Mixed Use
-  Downtown Hillsborough

This map is for planning and discussion purposes only.
The exact route of Ridgewalk is to be determined.

SECTION ONE:

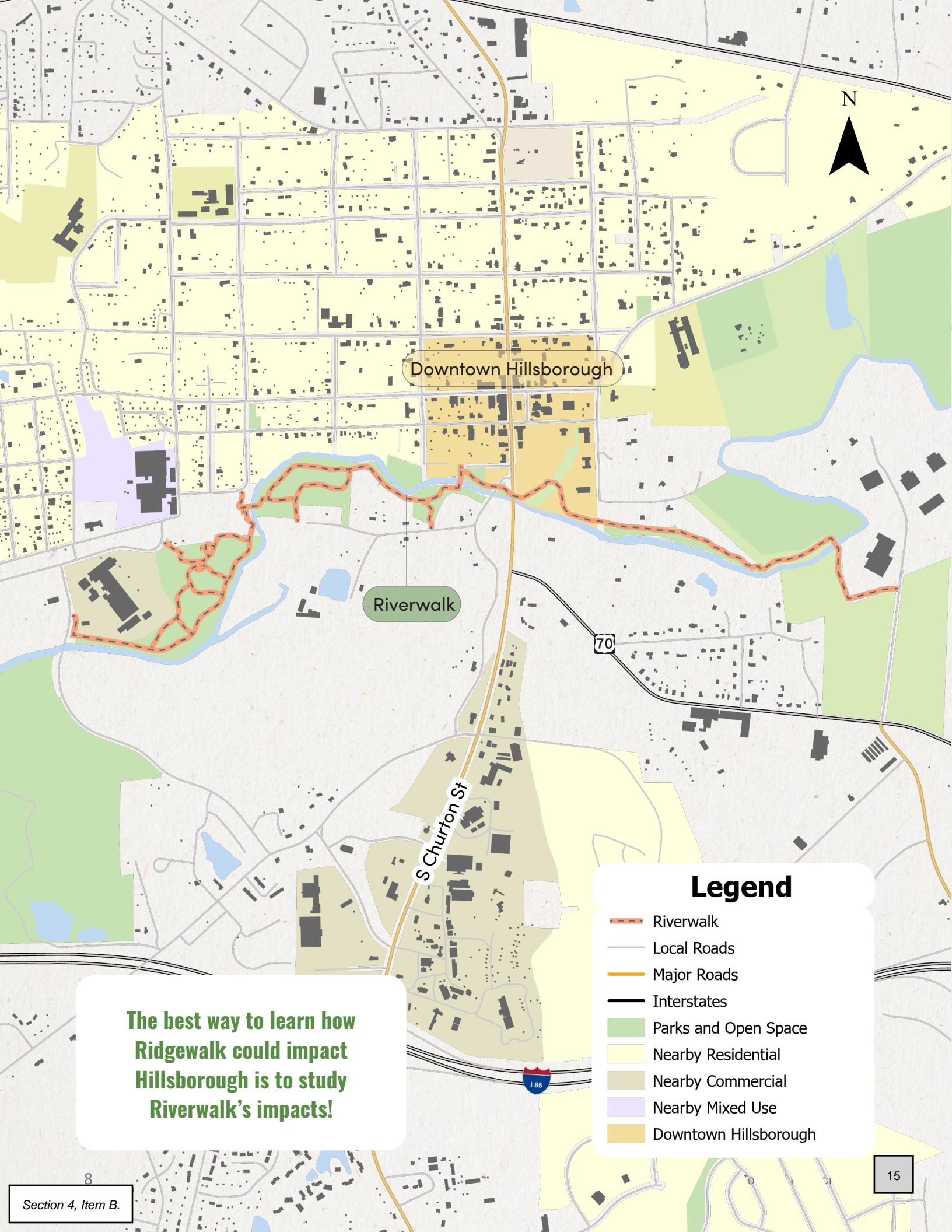
RIVERWALK

The best way to study the impacts a new greenway would have on Hillsborough is to study the impacts of the existing greenway.

The following pages describe Riverwalk and its impact on Hillsborough. To draft this study, the team used a combination of a stakeholder survey, interviews with business owners and town leaders, and demographic and observational data.












Benches along Riverwalk



The best way to learn how Ridgewalk could impact Hillsborough is to study Riverwalk's impacts!

Legend

-  Riverwalk
-  Local Roads
-  Major Roads
-  Interstates
-  Parks and Open Space
-  Nearby Residential
-  Nearby Commercial
-  Nearby Mixed Use
-  Downtown Hillsborough

Riverwalk

Hillsborough's Riverwalk is a paved, universally accessible trail that extends approximately three miles along the Eno River from east to west. Riverwalk is part of the Mountains-to-Sea trail, and Hillsborough is one of the only towns that the Mountains-to-Sea trail goes directly through, making it an important "trail town" along the way.

The western end of the greenway begins on the sidewalk adjacent to Eno River Brewing and the Eno River Mill, a historic mill from 1896, which has been converted into spaces for a gym, wedding venue, offices, small scale manufacturing, and a charter school. From there the path continues east and branches into additional paths such as "Gold Loop," which connects the trail to Gold Park. The trail then continues east and provides access to downtown Hillsborough, with a popular entrance adjacent to Weaver Street Market, then meanders past the Occaneechi Indian Village Replica Site, Hillsborough Community Gardens, and finally terminates at the eastern town boundary. After leaving the Town of Hillsborough, it becomes the Mountains-to-Sea trail and moves toward the Historic Occaneechee Speedway. The path is well-connected to public art, culture, and historic displays, areas of commerce and employment as well as residences and neighborhoods.

The greenway acts as a connector between destinations, a place for exercise and communing with nature, a cultivator for community events, and the green heart of Hillsborough. The bulk of the National Register Historic District lies in a grid pattern to the north of the greenway, with many historic homes and local businesses. South of the trail are neighborhoods that have been annexed over time and are more suburban in character. There are new subdivisions, restaurants, and commercial strips located along South Churton Street. Recent development in the southern portion of town is more dense than older neighborhoods. The proposed greenway would connect the existing trail by foot and bicycle to the future station and further connect the southern portions of the community with the downtown Hillsborough.

Riverwalk has taken on a life beyond a piece of connective infrastructure. As this study reveals, it is now tied to the identity of Hillsborough itself. Functioning in a similar way to a "public square," the greenway has become the springboard to many events, volunteer activities, education opportunities, spaces for public art, and more to make Hillsborough a highly attractive place to live and visit.



NATIA Riverwalk Group Tour
Section 4, Item B. of Hillsborough

Riverwalk's History

The concept of Riverwalk came from a desire to reconnect the public with the community's natural and cultural resources. Before its implementation, the railroad and highway systems, a lack of sidewalks, and congested streets made walking or bicycling through the community difficult. Hillsborough's neighborhoods, as a result, were isolated from one another. Historically, the Eno River was used for both travel and trade during colonial and pre-colonial times as part of the Great Indian Trading Paths. Hillsborough was a crossroads stop for major routes and crossings of the Eno River.

In the Victorian Era, there were riverside paths that the population used for recreational purposes while visiting Hillsborough. However, parcels of land along the river were eventually all subdivided and sold off to private landowners. This meant that the public could only access or even see the Eno River from a few points without trespassing.

Almost 30 years ago, a group of citizens approached the Town of Hillsborough with the idea of reopening public access to the Eno River.

Creating new park space connected by a linear greenway was an attractive but challenging proposal as the Town of Hillsborough had limited resources and staff available to facilitate the project. The Planning Department was tasked with studying the feasibility of implementing a greenway and was aided by citizen volunteers who provided surveying and landscape architecture expertise. The feasibility study and a conceptual layout was produced in 2001 that called for two new pedestrian bridges across the Eno River.

Phase I: In 1995, a landowner granted a large acreage of land along the river to the Town of Hillsborough. This provided the momentum for the first phase of the project, allowing for 1 mile of trails within a 22-acre community park. This allowed the Town of Hillsborough to apply for and receive a \$500,000 North Carolina Parks and Recreation Trust Fund grant from the State, which is the maximum amount allocated per year to a project. The park was named "Gold Park," and opened to the public in 2008. The quick success and popularity of the park helped build support and confidence that the Town of Hillsborough could oversee extending the trail to connect the park to the downtown area.



Phase II & III: The property needed to complete this phase of Riverwalk was challenging for the Town of Hillsborough to obtain. It had been inherited overtime by landowners who lived throughout the United States. Hillsborough acquired the necessary parcels over five years, utilizing a second Parks and Recreation Trust Fund grant of \$398,000 to assist in the purchases. The Town of Hillsborough was also drafting and adopting a comprehensive pedestrian and bicycle plan during this time. The Community Connectivity Plan incorporated completing Riverwalk and connecting neighborhoods to the trail system with safe and convenient paths and sidewalks. In 2009, the Town of Hillsborough focused its efforts on a \$1.7 million sidewalk project that connected isolated neighborhoods in North Hillsborough to Gold Park and the Historic District. Nash Street, for example, had 1.3 miles of sidewalk constructed connecting two elementary schools, low-to-moderate income neighborhoods, and hundreds of residents with safe access to the community park and trail system as well as the historic downtown area.

Once all properties were acquired, the Town of Hillsborough created a conceptual plan and strategy for construction, coordinating various stakeholders and advisory boards to give input into the process. Public meetings were held

to solicit community engagement for the final plans. Early engineering was conducted and provided cost estimates. The Town of Hillsborough was able to receive a third Parks and Recreation Trust Fund grant of \$425,000. Hillsborough also received additional funds from the Recreational Trails Program and SunTrust Foundation (now the Truist Foundation.) In 2013, the engineering and construction documents were finalized. The proposed trail had many site constraints including steep slopes, unsuitable soils, constrained property limits, existing utilities, and tree preservation areas that made engineering difficult. Permits were required from nearly every state regulatory agency in North Carolina as the Town of Hillsborough attempted to construct an urban greenway while maintaining the natural and cultural environment of the Eno River corridor.

Construction of Phase II and III lasted one year, with the grand celebration of opening day occurring on October 11, 2014. It was attended by hundreds of residents and visitors. The Town of Hillsborough utilized patience and persistence to keep the vision alive as it navigated each step of the process, slowly gaining public support that continued to grow momentum until Riverwalk's completion was accompanied with almost total encouragement and anticipation.



Culture and Community

Riverwalk has become an incubator of community and social events in the past decade. There are now so many reasons to visit Riverwalk in addition to transportation, exercise, and closeness to nature.

SOCIAL ACTIVITIES:

Riverwalk offers access to neighbors and friends. You're likely to pass someone you know while walking along the path, and say hello or stop to chat. Small, frequent social interactions increase a person's sense of well-being and build community, one greeting, one smile, and one wave at a time. In this sense, Riverwalk has had a large part in strengthening the sense of community in Hillsborough.

Riverwalk has played a large part in strengthening the sense of community in Hillsborough.

More formal groups and events have sprung up because of Riverwalk. The Hillsborough Tree Board and the volunteer Invasive Species Removal Team are responsible for removing unwanted or harmful non-natives and planting appropriate species. In the past year, volunteers planted over 1,000 native plants in 30 species, ranging from sycamore and oak to strawberry and elderberry.

Anyone can download a Riverwalk Scavenger Hunt form from the Town's website and spend a fun couple of hours learning from interpretive signs and observing nature. Just one more benefit of Riverwalk.

The Hillsborough Running Club organizes an annual 5K and half marathon, both of which use Riverwalk as part of their routes.

These events wouldn't be as much fun or be as safe if they were all on streets!



The Eno River farmers market would undoubtedly be popular in any case, but Riverwalk allows some customers to access it without getting in their car.

RIVERWALK-BASED EVENTS:

Many events take place on or around Riverwalk, including:

- The Solstice Celebration Lantern Walk
- Spiral of Light
- The River Park Concert Series
- The Hillsborough Running Club annual 5K and Half Marathon
- Arts Cycle
- Hand-made Parade
- First Fridays at Eno Arts Mill
- Uproar Public Art Festival
- And so much more!



Clockwise from top left: Bicyclists gather at Riverwalk, multiple modes of exercise on Riverwalk, Habitat Restoration sign, NATJA Riverwalk group tour, Occaneechi Village Replica Site, and musicians in Mayo Park. Source: Town of Hillsborough

Survey Takeaways

To gauge impressions of Riverwalk and the potential Ridgewalk, the Town released a public survey in February 2024, which was held open until April, 2024. The survey was available in English and Spanish, in digital and paper formats. Signs were placed along Riverwalk with a Quick Response (QR) code to the online survey. This page shows a summary of key takeaways from survey responses. *For detailed survey responses, please skip to the end of this document.*

WHAT DO THE SURVEY RESULTS TELL US?

The majority of the people who took the survey were from Hillsborough, with others responding from Orange County, Durham, and Chapel Hill.

In the three months the survey was open, 586 people responded (583 in English and 3 in Spanish). That alone indicates the high level of interest Hillsborough stakeholders have in Riverwalk and greenways!

The majority of survey respondents use Riverwalk often: between a two and five times a week and once or twice a month. Almost 12% of respondents said they use Riverwalk every day.

Respondents use Riverwalk mostly for physical exercise or “relaxation or leisure,” but “observing nature” and “socializing or chatting with friends” were also shown as reasons. Respondents also said they use Riverwalk for transportation.

Walking is the most popular form of exercise on Riverwalk, followed by running or jogging. The majority of respondents spend thirty minutes to an hour on the trail.

Of the respondents who answered from the trail, many were traveling to shopping, dining, or to meet a friend. Some, who gave specific answers, were also going to the library, Gold



A sign along Riverwalk asking for survey responses.

Park, Occoneechee Mountain State Natural Area overlook, Eno River Arts Mill, the dog park, Churton Street, Eno River Brewery, car repair, “to get from downtown to the sportsplex, Weaver Street Market, school, “running errands,” and the farmers market.

The majority (70%) of respondents indicated that they reach Riverwalk by car. This tells us two things: one, that Riverwalk is not equally accessible by foot to all Hillsborough residents who use it, and that Riverwalk draws users from the County and the region.

When asked to rate their experience of Riverwalk, the average respondent answered 4.6 out of 5!

Riverwalk users often stop to eat or shop when on the trail. Destinations include: The Eno River Brewery, Weaver Street Market, the library, The Wooden Nickel, Nash Street Tavern, Cup A Joe’s, Nomad, and more.

Question 13 asked “if you don’t live in Hillsborough, is Riverwalk the primary reason you come to Hillsborough? What else do you do while you’re here?”

Respondents mentioned a wide diversity of reasons they come to Hillsborough. Riverwalk was one of the main reasons, but respondents also mentioned riding bicycles, shopping in town, dining at restaurants, visiting breweries, shopping, the dog park, visiting friends, and more.

When asked to describe their experience using Riverwalk, “peaceful,” “relaxing,” and “nature” were some of the top responses.

Many respondents said that they have started exercising more because of Riverwalk, that it is an important part of life in Hillsborough, and they take visitors to Riverwalk.

When asked if they would use a north-south trail (Ridgewalk) connecting downtown Hillsborough to southern portions of the community, the majority of respondents answered in the affirmative, with the following words repeating the most often: Absolutely. Definitely. Yes.

The majority of respondents believe an additional greenway will enhance quality of life in Hillsborough. The average answer to this question is 9.4 out of 10.

When asked an open-ended question about how a second greenway would enhance quality of life in Hillsborough, respondents expressed a diversity of reasons that they believed Ridgewalk would enhance quality of life. Many respondents mentioned excitement about not needing to use a car as frequently and being able to bike into downtown. Some mentioned the potential for reduced traffic congestion if their neighborhood was accessible by bike trails. Other respondents mentioned access to green space for the residents and visitors of Hillsborough would greatly increase quality of life. Other respondents mentioned the health effects of having increased walkability and mobility options.

Overall respondents were very positive and believe Ridgewalk will improve quality of life.

Stakeholder Interviews

Thank you to our interview participants:

Chapel Hill/Orange County Visitors Bureau - Laurie Paolicelli, Hannah Hemphill

Anne & Arthur Fine Arts Supply - Erin Campbell

Collins Ridge Neighborhood - Sherra Lawrence

Colonial Inn - Elise Tyler

Cornwallis Hills Property Owners Association - Al Soulier

Eno River Association - Kim Livingston

Eno River Mill - Alex Gold

Hillsborough Visitors Center / Historic Hillsborough - Amanda Boyd

Former Hillsborough Mayor - Jenn Weaver

Summit Design & Engineering Services / Local Developer - Jim Parker

Becketts Ridge Neighborhood - Marty Ferris

Hillsborough Invasive Species Removal Volunteers - Tim Logue

Local Artist / Former Mayor - Tom Stevens

Weaver Street Market - Alice Lamson

Whit's Frozen Custard - Kathy and Barry Hupp

Hillsborough / Orange County Chamber of Commerce - Scott Czechlewski

Stakeholder Interviews were conducted virtually through February, March, and April 2024. These community members were identified as being part of a business, organization, or community group that may have experienced impacts as part of Riverwalk's opening. The planning team was curious to know if there were business decisions made in relation to Riverwalk's opening; if community members could recount the before and after effect of the greenway's opening on the Town; and if there were any anecdotes or stories that could help illuminate just how many businesses or community efforts Riverwalk has helped launch in its history. These types of questions were asked of each participant, with some variation in questions depending on whether the participant was part of a local business, related to arts and culture, tourism, an environmental group, or representing a residential community. Regardless of background or role in the community, the unanimous response was of resounding love and appreciation for Hillsborough's Riverwalk.



Riverwalk has expanded access to neighborhood commercial areas.

It was clear from interviews conducted that the trail has become integral to Hillsborough's identity and part of daily life for both long-time residents and newcomers. The trail began as an idea for a recreational amenity, winding through nature, but has emerged and continues to take on increasing importance as a platform for education on local history, increased tourism, social opportunities and events, environmental health, transportation connections across town, an accessible place for exercise and promoting public health, a venue for arts and culture, and so many other things that Hillsborough's residents and visitors are continuing to create together.

One of Hillsborough's biggest attractions is its history. Before Riverwalk, this was emphasized as one of the main reasons a tourist should visit the Town. While that is still true today, Riverwalk is used as a connecting platform between many different sites. Located near the Visitors Center, Riverwalk connects places like the Occaneechi Village Replica Site and the Historic Occaneechee Speedway. This has provided the community and visitors with more access and opportunity to learn its local history, and the trail has become ubiquitous in advertising materials and websites as a must-see place to understand Hillsborough. This has transformed Hillsborough's approach to tourism, as the Town now advertises itself even more dynamically while also increasing its access to interpretive sites to further emphasize the Town's historic character.

Interview participants noted that the Town has been rapidly growing over the past decade, so it is difficult to point directly to Riverwalk and say that it has been the only difference. However, there was consistent agreement that there has been a "night and day" change in the community. Before 2014, Hillsborough could be characterized as a "sleepy Town" with not a lot going on in terms of restaurants, retail, or events. However, since 2014, when Riverwalk was opened, the town has experienced an incredible influx of

growth and new activities. This can generally be attributed to the quality of life, which in turn can be attributed to amenities like Riverwalk.

There was consistent agreement that there was a "night and day" change in the community since 2014, and much of the change has been attributed to Riverwalk.

Those interviewed stated their complex and multifaceted relationships to the greenway, as a space for quiet reflection in nature; to care for and exercise with members of their family; the first place they take their visitors to see, a quick walking spot after lunch; or a place to greet and talk to neighbors. Seeing the community out and about was especially important during the COVID-19 pandemic; where the need to socially distance became necessary to protect one another, Riverwalk provided a venue through which the community could be socially resilient as a place to safely socialize while remaining outdoors. The path has also given new groups a platform, including running and hiking clubs, and even a team of "Invasive Species Removal Volunteers." When community members see the volunteers work, they often stop and engage to ask, "What are you doing?" sharing a moment of education and sometimes connection for further volunteers.

Before the "Invasive Species Removal Volunteers" had formed, invasive privet had grown around fifteen to twenty feet tall along the banks of the Eno River. This visually prevented the community from seeing its river and prevented the proliferation of native species from taking root. As the volunteers continued their work, native river oats grew supporting a food chain that improves the environment for pollinators and other insects, that in turn feed larger animals. The connections between native habitat made by removing invasive species further expand wildlife diversity and improve the health of the

environment. The team also plants native trees that absorb runoff, keep sediment out of the river, stabilize the banks from erosion, and cool the water temperature to improve conditions for aquatic life. All the aesthetic and environmental benefits from Riverwalk would not be possible today if the invasive species remained, which is almost certainly the case were all the properties along Riverwalk to remain in private hands. Riverwalk and greenways in general help conserve the environment and protect its quality into the future as well. By having acquired properties along the Eno River, development is prevented from encroaching too closely to sensitive environmental areas. Riverwalk is also noted to provide access to nature while preserving and enhancing it. The trail connects to the Occoneechee Mountain State Natural Area, Gold Park, and is designated as part of the North Carolina Mountain-to-Sea Trail. It features environmental interpretive signage to educate as well as opportunities to see birds and other wildlife, raising awareness and appreciation of environmental protection.

Riverwalk is an important transportation connection for both wildlife and human beings. Those interviewed stressed the importance of how West Hillsborough and Hillsborough now felt closer together than ever before. Two historically separated communities now share a safe and convenient pathway between commercial areas and neighborhoods. This has greatly expanded people's mental map of where it's possible to go in the Town. The connection has also improved business opportunities for the successful cluster of restaurants, a pet supply store along South Nash Street, and businesses at the Eno River Mill. Two businesses that benefit greatly from Riverwalk connection include a new brewery and a private school. Patrons of the brewery can safely reach their destination without using an automobile. Students can safely get to the school or go on walks during the school day with their classmates. These businesses enliven

West Hillsborough and further "triangulate" the activities a resident or visitor of Hillsborough can enjoy without driving between destinations. Activity begets activity, and the more people drawn to opportunities along Riverwalk, the more attractive a destination it becomes. This creates a highly social and economically productive environment. As people spend their time and money in the area, they can enjoy their community this way.

Weaver Street Market, with a prominent location at the "center point" of Riverwalk, and where the future Ridgewalk would connect, benefits greatly from foot traffic along Riverwalk. While sales have generally grown since the market's opening, the pandemic caused things to slow down. However, the prepared foods area, where lunch and breakfast are served has seen growth and there are near-daily returning customers. While there is no formal monitoring or tracking of patrons coming from or going to Riverwalk, through the interviews it was mentioned that trips of Weaver Street are often combined with a walk.

Riverwalk has connected East and West Hillsborough, two previously separated communities by providing a safe and social pathway through town.

The space to walk has had a noticeable impact on many of the interviewed participants' lives. Almost everyone discussed how their walking has increased because of Riverwalk's opening. Riverwalk is also a space for running or jogging, bicycling, or other exercise activities. One feature that sets Riverwalk apart from other greenways in the region is its accessibility. For the elderly, disabled, families, children, and everyone in the community, Riverwalk is wide, paved, or utilizes

boardwalks that allow for highly comfortable use of the trail. Ramps and bridges are easily navigated by mobility aids. Some participants noted that when they heard the trail would be paved, it was conflicting with their ideas of a natural trail down by the Eno River, however, since its completion it has become clear that the access has gone hand-in-hand with protecting and appreciating nature. Today, walking along the trail, one can see families with strollers, wheelchairs, children learning to ride bicycles, and more. Riverwalk is making the Town of Hillsborough a more active and healthier place to live by providing the space, infrastructure, and opportunity to recreate. As a larger audience grows through accessibility, areas along Riverwalk have been activated with programming and public art that have come to be greatly appreciated by the community.

Riverwalk is making the Town of Hillsborough a more active and healthier place to live by providing the space, infrastructure, and opportunity to recreate.

While not the venue for every event in Hillsborough, the connectivity provided by Riverwalk has had a reciprocal relationship with many events, such as Last Fridays and the Artwalk, allowing many members of the community an alternative way to get to the events without a car or a way to extend the evening's fun. Other events include the Arts Cycle and Handmade Parade, The River Concert with live music, the local Farmers' Market, and more. Riverwalk itself was, for three years, the site of a community-beloved work of art by the artist Patrick Dougherty. Shortly after Riverwalk's completion, the work titled "A Sight to Behold" was constructed from local brush and saplings, creating a whimsical castle-like structure that

captured the hearts and imaginations of many locals and visitors. The structure was so beloved that it became a venue for weddings and photoshoots. As a structure made from organic materials, its deconstruction was inevitable once it was damaged from snow. However, Riverwalk now is connected to the River Park Arch, by Jonathan Brilliant, a Raleigh-based artist that designed a steel frame with wood lattice work repurposed from one of Hillsborough's large beloved trees that fell over during a hurricane.

Perhaps the most well-attended event emblematic of Riverwalk's impact on local arts and culture in Hillsborough is the Solstice Celebration Lantern Walk, held annually in December. Participants walk the length of Riverwalk with creatively designed lanterns creating a beautiful atmosphere. Interview participants claimed that the initial idea was



"A Sight to Behold" by Patrick Dougherty
Source: Town of Hillsborough

“Riverwalk has been the most significant addition to the town in the 21st Century. It was a game changer. We had high expectations and our expectations were just blown out of the water.” – Tom Stevens, local artist and former Mayor of Hillsborough



Image: Orange County Arts Council

expected to bring in several hundred people, however, the event ended up drawing over two thousand locals and visitors. It has since become a beloved part of life in Hillsborough that continues to grow annually. Riverwalk is a vibrant and important public space to the Hillsborough community. Through the briefly conducted interviews numerous vignettes illuminated the various ways quality of life in Town is improved because of the greenway's existence. The community has been brought closer together and shares deeply in its many benefits across different points of study, yet literally connects them all. Since 2014, now a decade ago, Riverwalk has seen an increasing role in the community.

When asked about Ridgewalk, those interviewed noted that the greenway would be different than Riverwalk but held the same potential to create new value and positive change for Hillsborough's future. Participants imagined a future where visitors come in off the train and can walk or ride a bike into the Town, particularly for its events. Parking lots that sit mostly vacant south of the Downtown could also be utilized with a new safe connection to walk into the area. Neighborhoods that are isolated without sidewalks would suddenly have a safe way that connects them to the rest of their community.

When asked about a new greenway, those interviewed noted that Ridgewalk would be different than Riverwalk but held the potential to create new value and positive change for Hillsborough.

Cates Creek and other areas were identified as places that could be better protected with Ridgewalk, and Invasive Species Removal Volunteers could assist the Town in removing more non-native vegetation to help the environment thrive. There was generally unanimous love for the idea of expanding the network. Will Ridgewalk be fully implemented and benefit the Town in the ways Riverwalk has? Only time will tell, but, it seems that Hillsborough's community members are more than on board.

SUMMARY

Hillsborough stakeholders undoubtedly value Riverwalk, and expressed excitement about the potential for the Ridgewalk expansion of the network. People use Riverwalk for recreation, exercise, quality time, access to nature, transportation to local businesses of varying kinds, and more. Survey respondents believe Riverwalk impacts their lives positively and use the trail regularly. They were excited about bicycle access to downtown, access to additional green spaces, and increased walkability. Riverwalk is be an essential part of Hillsborough's quality of life for locals and an important amenity for visitors to enjoy.

SECTION TWO: RESEARCH ON GREENWAYS

This section provides a review of academic studies that attempt to quantify the effects greenways have had in other communities across the country. These studies inform how Ridgewalk would benefit Hillsborough.



A greenway in Minneapolis.
Source: Adobe Stock

Benefits of Greenways

Numerous studies have documented the benefits that greenways bring to local businesses, property values, the local tax base, human health, the environment, and the social life of the community. Benefits have been documented for cities and towns of all sizes, and for rural regions.

The extent and magnitude of the impacts range considerably, depending primarily upon the nature of the greenway itself, as well as the surrounding environmental, economic and community context. Trails in suburbs, small towns (such as Hillsborough), and rural areas typically have modest, but positive, impacts on nearby residential property values and business activity. Trails near waterways or wetland areas absorb stormwater and reduce runoff, while forest trails provide benefits through carbon sequestration and carbon storage by preserving intact forested areas.

Greenways that draw cyclists may attract bicycle repair, equipment, and food and lodging providers. Trail usage improves human health and reduces pollution and congestion from automobile traffic.

Quantitative analysis of four greenways in North Carolina found that every \$1.00 invested in one-time trail construction generates a total of \$1.72 from local business tax revenue, sales tax revenue, and health and transportation benefits. This return can be expected for an investment in Ridgewalk. In addition to this multiplier, the investment will likely improve the business climate and draw other investment.

The information below details research of economic contributions of Direct Expenditures from Greenway Users in a report produced by the North Carolina Department of Transportation, Institute for Transportation Research and Education at North Carolina State University, and Alta Planning and Design that utilizes extensive data and statistical software to estimate the benefits from greenways across the state.

Shared Use Path	Year Calculated	Annual # of Trips	Business Benefit Type	Business Output	Employment	Labor Income
American Tobacco Trail	2015-2017 Avg.	480,800	Direct	\$3,000,000	59	\$1,370,000
			Indirect	\$1,202,000	8	\$375,000
			Induced	\$1,466,000	11	\$465,000
			Total	\$5,668,000	78	\$2,211,000
Brevard Greenway	2015-2017 Avg.	76,000	Direct	\$831,000	16	\$380,000
			Indirect	\$331,000	2	\$105,000
			Induced	\$404,000	3	\$129,000
			Total	\$1,566,000	21	\$614,000
Little Sugar Creek Greenway	2016	382,600	Direct	\$2,783,000	56	\$1,280,000
			Indirect	\$1,112,000	7	\$345,000
			Induced	\$1,366,000	10	\$433,000
			Total	\$5,261,000	73	\$2,059,000
Duck Trail	2016	145,700	Direct	\$3,643,000	66	\$1,614,000
			Indirect	\$1,518,000	10	\$492,000
			Induced	\$1,770,000	13	\$562,000
			Total	\$6,931,000	89	\$2,668,000

Source: Evaluating the Economic Impact of Shared Use Paths in North Carolina (2015-2017)

Town of Hillsborough

Economic Impact

Greenways have very positive effects on nearby business activity – they attract new businesses and increase the sales of existing businesses that meet the needs of trail users.

Businesses purchase supplies and materials and hire workers, so the economic impact of a strong business community ripples through the entire local and regional economy, increasing jobs and tax revenues. There are two main types of trails, tourism-based and local user-based, and they attract different types of users. As part of North Carolina’s Mountains-to-Sea trail system, Hillsborough’s Riverwalk and planned Ridgewalk may serve both tourists and locals.

Tourism-based trails and greenways draw people from outside the community. Because the greenway is a destination for cyclists or hikers, it may stimulate the development of businesses that serve these users. These can range from food and beverage businesses, to lodgings, to equipment suppliers (if the trail attracts cyclists or long-range hikers), to regional gift shops, to gas stations and other services. Local user-based greenways draw local area residents (possibly from outside the immediate political jurisdiction, but still from within the local economy) for recreation (walking, hiking, or cycling) or for task-oriented trips, such as commuting to work or school, completing errands, or to visit a destination near the trail or greenway, such as an eatery or farmers’ market.

The two main types of business activity studies of trails and greenways are direct analyses of business activity near the trails and quantitative community-wide economic impact studies.

Both types of studies have documented very positive economic impacts for greenways of all types. Direct analyses of business activity can include (i) documentation of the presence of specific businesses near the trail/greenway, (ii) surveys of business owners near the trail asking them to estimate the impacts of trail / greenway usership on their specific business; also interviews with knowledgeable observers, (iii) analyses of taxable sales trends over time for businesses near the trail versus the community overall. Quantitative economic impact studies document the total impacts on a local economy over time; specifically, over the time it takes for an increase in direct consumer purchases at a business facility to ripple through the local economy in secondary and tertiary effects. These effects are then expressed as total employment created, total output by industry, and total taxes collected.

KEY FINDINGS:

1. Quantitative analyses of the impacts of four trails in North Carolina found that every \$1.00 invested in one-time trail construction generates a total of \$1.72 annually from local business tax revenue, sales tax revenue, and health and transportation benefits.
2. The annual economic impact of bicycling on the Outer Banks is \$60 million, including 1,407 jobs supported by 40,800 visitors for whom bicycling was an important reason for choosing to vacation in the area. The annual return on bicycle facility investment was estimated to be nine times higher than the initial investment.
3. Analysis showed that both local residents and non-local users spent a total of \$2.5 million annually related to their recreation visits on or near the Virginia Creeper trail. Of this amount, non-local visitors spent about \$1.2 million directly in the Washington and Grayson County economies. (Note: This study is 20 years old, so the impacts are likely to be far greater today than they were in 2004.)

Property Values

Most people like living near greenways, so they are willing to pay more for homes located there. These property value impacts result in higher tax revenues, as well. Property value impacts and property owner perceptions vary by type of trail and context. Property value impacts are greatest in urban areas and for urban mega-trails (e.g., New York High Line), because these areas do not have much nearby green space. Hence the trail becomes an unusual amenity that attracts investment and residential gentrification. These dramatic effects are less likely the smaller the community and the closer green space access is for everyone. The real estate value/tax revenue premium is somewhat lower, but there are no negative effects, such as residential displacement experienced in large cities.

The major types of studies done to date are surveys of property owner perceptions, both before and after development of the trail, and quantitative analysis of changes in property values before and after trail development. Property owner perceptions through surveys are positive overall. Owners have been asked questions like whether the trail had a positive impact on the sale price of their property and whether it would help the property sell more quickly. In the few cases where property owners expressed negative perceptions prior to trail development, these perceptions all disappeared after the trail was constructed and owners saw that their fears were unfounded.

Quantitative studies include all the properties within a community, both before and after a trail is developed. They measure the effect of each of the factors that could influence the price of a home, including its distance from a trail. These studies show very positive effects on residential property values, usually within one-half mile of a greenway. Property value premiums range from

3% to 5% overall, but they can reach as high as 15% (excluding iconic, mega-urban trails such as the New York High Line, where the premiums may exceed 40%).

KEY FINDINGS:

4. A quantitative study of 376 residences sold between 2003 and 2005 found that each foot in distance away from the trail decreases the sale price of a home by \$7.00 (an amount comparable to that found in other studies at that time).
5. A national survey of 3,247 recent and prospective home buyers found being near walking & jogging trails ranks among the top five most desired features.
6. The authors reviewed 20 quantitative studies and found that overall, the home price premium for locating near a greenway is 3% - 5% above the average price in the community, although it can range as high as 15%.
7. Interviews with 26 residential and commercial landowners near a trail found convenience, access, and physical fitness to be the chief benefits of the trail, along with its ability to foster social interaction and an opportunity for children to play outdoors. Although the owners perceived the impact on property values to be unclear, they thought the trail would improve their property's salability.
8. Quantitative study of 48,657 properties found that homes within 50 meters of bike paths in New Castle County, DE sold, on average, for 4 percent more than similar homes without bike paths.

Environment

Greenways have very positive impacts on the natural environment. Studies of environmental impacts of greenways proceed in two steps. First, they show the damage to the environment that is avoided through the construction of a trail instead of building a road or other physical development. They also show the ways the trail and the area around it improve the natural environment, through replenishment of the water supply, water quality improvement, flood mitigation, wildlife habitat conservation, air pollution removal, and carbon sequestration (and carbon storage) in trees on protected open space. To do this, they use publicly available national land cover data, and then calculate the environmental services per acre of that land cover. They use models developed by the U.S. Forest Service to estimate the air pollution removal and carbon sequestration and storage benefits of preserved open space. Second, they monetize these benefits or absence of costs to derive an estimated environmental dollar value of the greenway.



A green infrastructure project.
Source: UNC School of Government.

KEY FINDINGS:

9. Montgomery County, PA estimated the following environmental services savings annually:

- \$31.6 million annually through replenishment of the water supply, water quality improvement, flood mitigation, wildlife habitat conservation, air pollution removal, and carbon sequestration in trees.
- \$97.4 million in lifetime cost savings of carbon storage in trees.
- \$10 million annually in avoided annual stormwater system maintenance.
- \$180 million in avoided annual stormwater pollutant removal costs.

10. The presence of trails and their surrounding open space have a positive impact on the environment. Within a quarter mile of the Greenway in the Delaware Watershed are 9,900 acres of open space, which includes 5,800 acres of tree canopy. The tree canopy supports natural habitats and ecosystems by removing air pollutants and improving air quality, replenishing the water supply, and mitigating floods. These ecosystem services are estimated to have the following benefits:

- Water Quality \$2,000,000
- Flood Mitigation \$8,218,000
- Wildlife Habitat Preservation \$125,000
- Air Pollution Removal \$1,658,000
- Carbon Sequestration / Storage \$15,304,000
- Total Value of Environmental Benefits: \$39,340,000

Greenway corridors are an opportunity to showcase and implement examples of innovative stormwater green infrastructure!

Health

Greenways have very positive impacts on human health, since they facilitate exercise through walking, hiking, and cycling. Studies of the impacts on human health of using greenways employ user counts (as they pass by an electronic counter on a trail), as well as surveys of users who report the frequency and duration of their use of the greenway, and their modal choice (walking, hiking, or cycling). Analysts translate these activities into health outcomes using statistical relationships established over many years by entities such as the U.S. Centers for Disease Control and Prevention, the World Health Organization’s Health Economic Assessment Tool, and other international agencies that study disease and mortality statistics to document statistical relationships between types of human activity and health outcomes.

These health benefits are then “monetized” (translated into dollar savings in medical treatment costs avoided) to estimate the economic impacts of improved health through exercise. Studies show these impacts are highly positive.

Communities across the United States are realizing the value in active lifestyles and investing in infrastructure to promote and support biking and walking for health, transportation, and fun.

KEY FINDINGS:

11. A study determined that [a] region’s investments in paved and unpaved trails had contributed substantially to improved health, employee retention, and visitor spending in the region. Methods included surveys of cyclists and non-cyclists, quantitative analyses of property values near the trails, and surveys of tourists visiting the region.

12. A study reported the following annual health benefits of protected open space (including trails) in a county of 860,578 persons:

- \$225 million in annual medical costs due to cardiovascular disease, diabetes, depression, cancer, and obesity avoided through moderate to strenuous exercise in protected open spaces.
- \$243 million in costs to businesses due to employee absenteeism and “presenteeism” (working while ill) avoided, because workers are healthier thanks to exercise in protected open spaces.
- \$219 million in recreational benefits, which represents the amount of money residents stated they would be willing to spend in the private market to participate in the activities they currently do for free in the county’s open spaces.

13. In its comprehensive study of the impacts of four trails in North Carolina, ITRE documented significant health benefits to cyclists and hikers on the trails, including cost savings due to lower rates of heart disease, diabetes, dementia, stroke, and other maladies.

14. A medical journal study found that walking trails provide significant health benefits to low-wealth persons. Trails are associated with the greatest increase in exercise for those most at risk of inactivity, particularly those who were not already regular walkers, have a high school education or less, or who earn less than \$15,000 per year. Trails that were at least one-half mile long, paved or located in the smallest towns were associated with the largest increases in exercise.

Transportation

In cities and towns such as Hillsborough, a greenway may also provide users with an alternative to the automobile for running errands or completing other tasks. This may reduce traffic and improve circulation in the town. Transportation cost-related studies use surveys to ask greenway users how often they use the greenway and whether their use of the trail substitutes for their use of the automobile. Analysts then use these survey results to estimate reduced traffic congestion and other reduced automobile-related costs.

KEY FINDINGS:

15. A study of trails in North Carolina documented significant transportation cost-related savings among all the trails due to traffic reduction, lower vehicle collision costs, lower roadway maintenance costs, and lower annual household vehicle maintenance costs because of walking, hiking, and cycling on the greenways.

16. A study of Chittenden County, VT reported success in reducing downtown automobile traffic congestion through a network of greenways. Results include:

- Increased residential use of the greenways for walking or cycling as of 2007. Almost all towns in Chittenden County had bike or walking trails as of 2007.
- South Burlington, as of 2007, had 16 miles of pathways. The documented impacts of these path and trail networks include health benefits from biking or walking, as well as reduced downtown traffic levels during the busy commuting hours.

17. Another academic study examined the preferences of commuters for different types of cycling paths and the impacts of cycling paths on property values. The study found that those commuting by bicycle were willing to go out of their way to use a safer route, with the largest detour for on-street, designated bicycle lanes, followed by routes without parking and routes with an off-road bicycle lane.



Source: Town of Hillsborough

SECTION THREE:

RIDGEWALK'S

POTENTIAL

What would a second greenway look like in Hillsborough? Who would it affect and how would it make life for town residents different? Would it affect wildlife? Safety? Traffic congestion? How would it relate to the future train station and support riders? How would the Town fund Ridgewalk?



Source: Adobe Stock

Section 4, Item B.

Ridgewalk

Ridgewalk is a proposed greenway reaching approximately 2.6 miles south from Downtown Hillsborough. The route will connect existing neighborhoods and new housing developments to the center of town, the future train station, and other amenities and businesses.

Several schools, including four elementary schools downtown and cross country runners from high schools would have access to the trail. It is reasonable to expect, given knowledge of precedents outlined in this document, that additional businesses will choose to locate near the new greenway.

The creation of Ridgewalk would mean that the majority of residents of Hillsborough have access to downtown, to Riverwalk, to culture, activities, and amenities, without having to access a car.

CONNECTIONS AND EQUITY

Now more than ever, communities are aware of the importance of equal access to amenities, green space, and safe transportation connections for all residents, regardless of income, age, race, or ability.

Today, Riverwalk offers a way to connect with nature and the Eno River, a place for children to learn about the environment and local ecology in a safe environment, a safe and tranquil way for people to exercise and travel between various areas of town.

However, Hillsborough residents who live south of Interstate 85 don't have a safe way to access these amenities without driving. This creates a dichotomy between the neighborhoods of Hillsborough that have access to green space and those that do not.





More than 1040 existing households would have direct access to the greenway, and thus be connected to many amenities throughout Hillsborough without using a car.

Legend

- Riverwalk
- Ridgewalk
- Local Roads
- Major Roads
- Interstates
- Parks and Open Space
- Nearby Residential
- Nearby Commercial
- Nearby Mixed Use
- Downtown Hillsborough



This map is for planning purposes only. The final route is to be determined. Location labels are approximate.

Connection to Existing Plans

Ridgewalk is supported by many existing plans created over years by the Town of Hillsborough, Orange County, State agencies, and other organizations, both as a specific project recommendation and in general alignment with broad recommendations, visioning, or values.

These pages list relevant area plans and the ways in which they support investment in Ridgewalk.

COMPREHENSIVE SUSTAINABILITY PLAN

Hillsborough developed a comprehensive plan in 2023 as a means to connect a variety of systems such as housing, economic, transportation, environmental, and social systems in the context of sustainability. Sustainability is a major factor in most systems, particularly for a Town of Hillsborough that values and actively supports sustainable development and design.

Ridgewalk is a priority recommendation in the Comprehensive Sustainability Plan, described on page 6-35 of the document, indicating that the greenway is being studied for feasibility. The greenway recommendations map (p. 39 of this document) shows the general route for Ridgewalk.

In more general terms, there are many ways that implementing Ridgewalk will help implement the vision of the Comprehensive Sustainability Plan.

In a survey conducted for this plan, over half of respondents claimed the natural and scenic areas are primarily what make Hillsborough a great place to live. Respondents also said that reducing traffic congestion and expanding sidewalks, greenways, and trail infrastructure were some of the town's most pressing needs. Tree and forest preservation and land conservation and

protection were other highly ranked needs.

Ridgewalk is a sustainable project that has the potential to address many goals and objectives identified within the Comprehensive Sustainability Plan, particularly related to Land Use, Environmental Systems, and Transportation Systems. At its core, Ridgewalk is a transportation and recreation feature, but it explicitly supports sustainability efforts as well as ecologically conscious land use decisions and positive social and economic impacts.

The Comprehensive Sustainability Plan calls for investing in infrastructure that supports preferred land use and growth patterns, such as Smart Growth. Smart Growth encourages more compact and walkable spaces with a mix of uses. These spaces allow residents to spend fewer resources and less time on travel, encouraging more active lifestyles and less reliance on cars for short trips, and reducing greenhouse gas emissions and air pollution at the community and regional level. The Future Land Use Map also supports the development of Ridgewalk. Several of the areas designated "Permanent Open Space," or areas intended for use as parks or natural areas, are located along the proposed route.

Ridgewalk is a priority project of the Comprehensive Sustainability Plan with the conceptual route shown on the greenway recommendations map. An similar greenway was identified in the previous Comprehensive Plan.

According to the Sustainability Plan, "Providing safe and accessible non-vehicular connectivity throughout the town is a critical foundation to

equitable and sustainable growth” (p. 6-12). In their survey, they found that “those making an annual income of \$49,000 or less were twice as likely to choose lack of public transportation options as a top concern.” While Ridgewalk does not address transit directly, the link to the train station will include transit and micromobility options.

Ridgewalk builds upon goals that prioritize projects that support preferred growth and development patterns while also supporting ecological, economic, and social well-being. The natural buffer created by Ridgewalk helps support natural systems by generating a wildlife corridor that helps connect wildlife to natural resources such as the Eno River.

PREVIOUS COMPREHENSIVE PLAN

Though the adoption of the Comprehensive Sustainability Plan in 2023 rendered the former Comprehensive Plan obsolete, it is important to note that the former plan recommended a greenway called “Cates Creek Greenway,” which is similar to Ridgewalk in everything but name. Inclusion in multiple comprehensive plans is an indication that the community’s interest in a project has remained consistent over many years.

TOWN OF HILLSBOROUGH STRATEGIC PLAN

A review of the Town of Hillsborough’s strategic plan will quickly lead one to realize that Ridgewalk would help the Town of Hillsborough achieve the vision, the values, steps toward each of the five focus areas (Sustainability, Connected

There may be no better project than Ridgewalk to help the Town meet objectives in each of the five focus areas of the Strategic Plan.

Community, Economic Vitality, Community Safety, and Service Excellence) areas, and many of the specific objectives and initiatives of the Plan. Objective 1, Initiative 3 under Connected Community specifically mentions Ridgewalk.

ORANGE COUNTY STRATEGIC PLAN

In 2023, Orange County worked with a consultant to develop a Countywide strategic plan that prioritizes and aligns County programs and services. This Strategic Plan is composed of several strategic goals, including Environmental Protection & Climate Action, Healthy Community, Housing for All, Multi-modal Transportation, Public Education/Learning Community, and Diverse and Vibrant Economy. Each of these strategic goals has a goal statement that outlines Orange County’s vision for improving upon each strategic goal. The goal statement is supported by objectives that offer some directional clarity on how the County can achieve this vision, followed by a set of performance measures that set specific, tangible outcomes for the County to achieve within set time frames.

Ridgewalk supports several of these strategic goals, including Environmental Protection & Climate Action, Healthy Community, and Multi-Modal Transportation. As a multi-use path, Ridgewalk is an inherent benefit to developing better multi-modal transportation options for Hillsborough and Orange County residents alike and will contribute to the performance target of 3-5% annual increases in satisfaction of residents towards walking or biking in the County. Additionally, Ridgewalk supports the objectives of providing more multi-modal options for the County, reducing congestion, and supporting the Safe Routes to School Plan. Ridgewalk also supports environmental protection and conservation by connecting open spaces and promoting environmental stewardship by connecting residents with natural resources. Another unique way Ridgewalk supports the strategic goals for Orange County is through the Healthy Community goal, as the County has

identified the need to promote physical well-being. One objective of this goal is “Invest in services and programs that improve the health and quality of life of the community (e.g., recreation and public open spaces, arts, etc.).” Ridgewalk’s status as a recreational outdoor open space supports the strategic plan as it is a unique opportunity for residents to increase their physical well-being through exercise on the shared-use path.

ORANGE COUNTY MASTER AGING PLAN

The Master Aging Plan (2022-2027) is the fifth cycle of strategic planning for the Orange County Department of Aging, using a framework developed by the American Association of Retired Persons (AARP) framework for an Age-Friendly Community (AFC).¹ The AFC framework focuses on eight domains of livability that influence the quality of life for older adults, including: outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, and community and health services.

Ridgewalk aligns with the Master Aging Plan by enhancing livability by providing a quality outdoor space that enhances transportation, sense of community, and health. Further, Ridgewalk directly supports two goals of the plan, namely Goal 1 - Outdoor Spaces & Buildings: Optimize usability of outdoor spaces and buildings for older adults, and Goal 2 – Transportation: Increase access to and awareness of affordable, safe, and equitable mobility options for older adults in all parts of Orange County. Both goals have objectives that specifically call for the need to increase access to equitable spaces and transportation options. Goal 2, Objective 2.2 states, “Expand availability and improve transportation options for older adults.” Because Ridgewalk will be a paved, accessible greenway, it will permit users of all ages and abilities to use the path for

recreation or for transportation to their preferred destination.

ORANGE COUNTY PARKS & RECREATION MASTER PLAN 2030

The Orange County Parks & Recreation Master Plan was developed in 2014 as an update to the County’s first Parks & Recreation Master Plan released in 1988. Parks & Recreation Master Plans assist localities such as Orange County in making informed decisions regarding the need for public open space in the form of active parks that have sport or other recreational amenities, and passive parks that provide connections to nature. The Parks & Recreation Master Plan found that there was strong interest in “expanding both active recreation and low-impact recreation activities – especially for hiking, biking, and swimming.” (Pg. 1-9) The most desired park facilities were trails and the most desired program areas were for walking, hiking, biking, swimming, summer camps, and yoga. To address these desires, The Plan specifically offers a recommendation, “Build More Trails and Connect Open Spaces.” (Pg. 1-11) This recommendation calls for connecting open spaces and integrating trail systems throughout the County, permitting residents to walk or ride bikes seamlessly between natural destinations.

Ridgewalk will unequivocally support many of the goals and recommendations that are part of the Parks & Recreation Master Plan as it directly addresses the findings of the plan regarding the public desire to be more connected to nature via hiking and biking trails. Additionally, Ridgewalk promotes healthy lifestyles and enhances quality of life for much of Hillsborough by connecting neighborhoods directly to natural resources such as rivers and parks. It also serves as a useful amenity to a diverse range of age groups, as it can function as a transportation and recreational amenity that supports users with limited mobility

THE ORANGE COUNTY COMPREHENSIVE PLAN

The Orange County Comprehensive Plan is a guiding document developed by the County to inform future policy and land use decisions through the year 2030. The plan was officially adopted in 2008 and has had subsequent amendments in the following years. While the plan is 16 years old, there are many recommendations that still ring true. For example, the Transportation Needs section outlines the County's need to keep pace with increasing development by offering more alternative transportation options while also reducing greenhouse gas emissions and improving air quality.

The Orange County Comprehensive Plan directly called for "An efficient and integrated multi-modal transportation system that protects the natural environment and community character." The Plan also states that countywide transportation systems serve the needs of the senior population, youth, as well as the economically disadvantaged and the disabled.²

The incorporation of Ridgewalk into Hillsborough and Orange County's transportation network explicitly supports the goals and objectives of the County's comprehensive plan by providing an accessible transportation option connecting residents of different ages and abilities to key points throughout Hillsborough. One important aspect of Ridgewalk that cannot be downplayed is the ability to connect youth to schools and recreation amenities such as skate parks or pools. Ridgewalk can also play a greater role in the transit options of Orange County by providing another greenway that can be extended in the future. Ridgewalk also supports The Comprehensive Plan's recommendations for expanding parks and trails by providing an additional greenway, generating greater access to natural beauty and ecosystems for residents of Hillsborough, Orange County, and visitors or tourists.

DURHAM-CHAPEL HILL-CARRBORO METROPOLITAN PLANNING ORGANIZATION COMPREHENSIVE TRANSPORTATION PLAN

The Comprehensive Transportation Plan released by the Metropolitan Planning Organization has consistently found that there is a strong desire to provide more multi-modal opportunities for commuting and traveling to key points of interest in the County. The plan has also found that many bicycle routes throughout the County are deemed dangerous due to lack of adequate road shoulders, poor visibility, and other issues. The Plan specifically recommends additional bike routes through Hillsborough.

Ridgewalk meets specific and general goals in every adopted plan mentioned in these pages, ensuring that it is a necessary and timely project that will benefit the town and the region.

Ridgewalk strongly supports the general goals of the Comprehensive Transportation Plan by providing a permanent, protected multi-use path for the Town of Hillsborough, increasing the viability of bicycle transportation within the Town of Hillsborough. Ridgewalk's connection to other transit modes such as passenger rail will further allow residents to seamlessly travel to their destinations without the need for a personal vehicle.

SAFE ROUTES TO SCHOOL STRATEGIC ACTION PLAN

The Safe Routes to School Strategic Action Plan is a plan that outlines existing conditions for students and families that are walking or biking to school. The Plan offers explicit design recommendations for Hillsborough schools and the Town of Hillsborough itself to implement to increase the ability of students to reach their schools in a safe and efficient manner.

Ridgewalk would directly serve the action plan, as it will provide direct connections to dense neighborhoods filled with families and schools, allowing students to safely reach their school without having to walk alongside fast-moving traffic. The greenway would permit students to ride bikes or walk, allowing them to build relationships with the other students who use the path and strengthen social and communal bonds while providing a unique exercise and recreational experience for them. The greenway would also provide opportunities for cross-country events, field trips, and educational opportunities.

NC MOVES 2050

The importance of transportation connectivity that could be addressed through greenways continues to be evident through these plans. The statewide transportation plan, NC Moves 2050, has several transportation goals that directly support Ridgewalk. These goals include providing transportation access for all by improving multi-modal access and ensuring safety and security by promoting multi-modal safety.

Ridgewalk would meet the NC Moves Tier 1 Action which calls for accelerated flexible multimodal strategies to meet the needs of an aging population and residents with disabilities. NC Moves specifically emphasizes the economic impacts of greenways and, when speaking of

tourism, states that “choices for travel (reliable public transit, convenient options and well-connected sidewalks and greenway paths) are important to both residents and visitors.”

In summary, the proposed Ridgewalk project is greatly supported by many different plans for the state, the region, and the Town of Hillsborough. Ridgewalk has the opportunity to reduce traffic congestion, support Hillsborough’s need for multi-modal access, support the local economy, preserve natural areas, support Smart Growth, and improve quality of life.

A LANDSCAPE PLAN FOR WILDLIFE HABITAT CONNECTIVITY

The Landscape Plan for Wildlife Habitat Connectivity is a plan developed as part of an informed public-private partnership to research and identify landscape habitats and how best to connect them. This plan also brought together a variety of entities to increase coordination on conservation goals regionally. This plan is important to the Hillsborough and Orange County region as it offers specific instructions for the region to conserve natural ecosystems allowing the diverse wildlife of the area to move seamlessly from ecosystem to ecosystem.

According to the Landscape Plan, in the US, over one million vertebrates are killed each day due to wildlife-vehicle collisions, which in turn creates massive safety issues for drivers. From 2011 to 2013, more than 61,000 wildlife-related vehicle crashes were recorded in the state of North Carolina alone, causing nearly 20 human fatalities, more than 3,400 injuries, and more than \$149 million in damages.

Ridgewalk presents the opportunity to build upon the conservation priorities of The Landscape Plan for Wildlife Habitat Connectivity by creating a path that can connect natural areas to reduce habitat fragmentation. Additionally, Ridgewalk supports the recommendations issued by the landscape plan in that Ridgewalk has the potential to create a natural corridor that is informed by wildlife conservation measures and can provide a buffered ecosystem for wildlife to safely reach the Eno River from disconnected landscapes.

For more on the subject of wildlife crossings, please see the pages 40-41.



Figure 6.16 of the Comprehensive Sustainability Plan shows Ridgewalk running south from downtown, past the future train station, Collins Ridge neighborhood, and south across I-85 to Cates Creek Park.

Wildlife Crossings and Safety

In addition to all the benefits for human mobility, Ridgewalk would be essential for wildlife mobility, wildlife safety. It would also reduce the number of animal-related accidents on Interstate 85 through Hillsborough.

All wildlife need to move from place to place in order to find food, water, and other necessities of life. When an interstate highway lies between one area and another, an animal will try to cross, ending up hit by cars and often causing accidents fatal to automobile passengers as well.


The North Carolina Department of Transportation published a report of animal-related crashes by county for 2020-2022. The report stated that there are hundreds of animal-related crashes in Orange County alone every year, and between 2015 and 2022 the County consistently ranked between 22 and 33 in a list of counties with the most crashes, out of the 100 counties in North Carolina.

In 2022 there were a total of 313 animal-related crashes in Orange County, and the County ranked 23 in the list of counties with the most crashes.

While there are currently ways, like underpasses, bridges and culverts, for wildlife to safely go under I-85, animals don't necessarily know where those safe passages are.

Between 2020 and 2022, there were a total of 801 animal-related crashes in Orange County, causing 48 total injuries and causing an estimated \$2,557,150 in property damage.

Ridgewalk, a greenway where habitat would be connected on either side, would guide animals safely toward the underpass and reduce danger to both animals and humans.



Ridgewalk can create a connection for animals as well as humans. Giving wildlife a safe passage under I-85 not only will reduce animal fatalities, but dangerous animal-related vehicle crashes.

Interstate 85 runs through Hillsborough.
Source: Google Streetview

Animals will find a path under the interstate more natural and less stressful than any potential pedestrian bridge over the interstate, making an passage under the interstate more effective and realistic.

The most common animals to cause accidents on interstates in North Carolina are deer, but other large species, such as coyotes and bear, are also at risk of causing accidents. Other animals are less likely to cause accidents but are still at risk of losing their lives, including turtles, racoons, skunks, snakes, and more.



Source: Adobe Stock



Future Train Station

The Town of Hillsborough is working with the state to reestablish passenger rail service and provide economic development in Hillsborough through the development of a new Amtrak passenger rail station. The new station is planned for a 20 acre site that is adjacent to the North Carolina Railroad corridor.

Two small area planning processes informed the funding request for a train station to the North Carolina Department of Transportation. The station was funded in the 2016-2025 State Transportation Improvement Program. In 2020, the Town of Hillsborough entered into a funding agreement with the North Carolina Department of Transportation and GoTriangle to begin the design and construction of the station building and site.

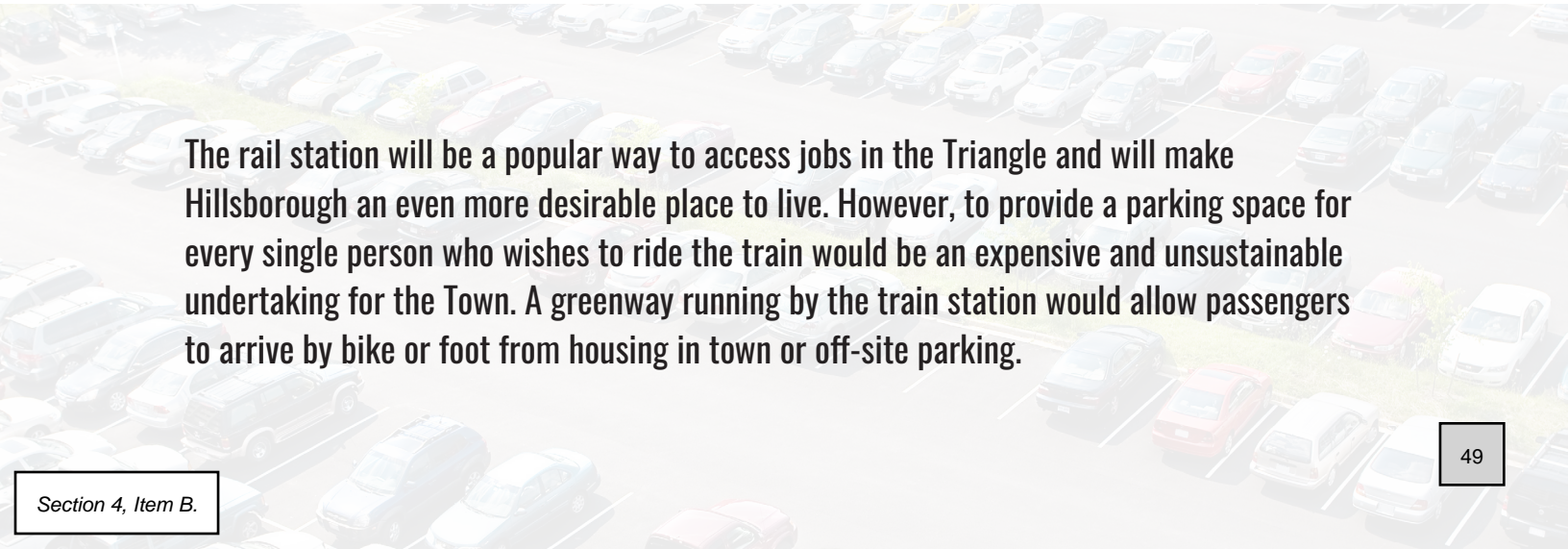
Planning, design, and construction document-level engineering of the train station building, covered platform, parking, site circulation, connectivity to the site, and other improvements are all currently underway. The design and engineering of the station and a greenway connection was awarded to the firm Clearscapes in December 2021 at a cost not to exceed \$800,000.

The train station will be approximately 7,000 square feet and provide space for Town of Hillsborough offices and passenger service areas. The new station will be primarily used as the Town of Hillsborough's new board room

and meeting space until future expansion and construction of the station's platform can proceed. The addition of a passenger rail station in Hillsborough will be an exceptionally impactful influence on the town and the region. The station will make it possible to live in Hillsborough and the surrounding community and work in the Triangle without commuting in a car, bringing both opportunities and challenges to town.

One of the largest or most disruptive impacts to Hillsborough will be the number of people who choose to board the train in Hillsborough; whether they live elsewhere in town, in Orange County, or further away, commuters may want to park at the train station.

To accommodate every car for every commuter is expensive. Acquiring and paving over land is an unnecessary expense for the Town of Hillsborough that will result in additional impervious surfaces, which has myriad negative impacts on the Town of Hillsborough. Impervious surfaces, especially black asphalt in the large amounts found in parking lots, increase stormwater runoff into nearby waterways, prevent water from seeping into the ground to replenish the aquifer, and contribute to rising ambient temperatures.



The rail station will be a popular way to access jobs in the Triangle and will make Hillsborough an even more desirable place to live. However, to provide a parking space for every single person who wishes to ride the train would be an expensive and unsustainable undertaking for the Town. A greenway running by the train station would allow passengers to arrive by bike or foot from housing in town or off-site parking.



Downtown Hillsborough

N

The proposed Greenway will connect to the future train station, providing greater transit mobility for Hillsborough residents and visitors alike.

Future Train Station

70

S Churton St

185

Legend

- Riverwalk
- Ridgeway
- Local Roads
- Major Roads
- Interstates
- Parks and Open Space
- Nearby Residential
- Nearby Commercial
- Nearby Mixed Use
- Downtown Hillsborough

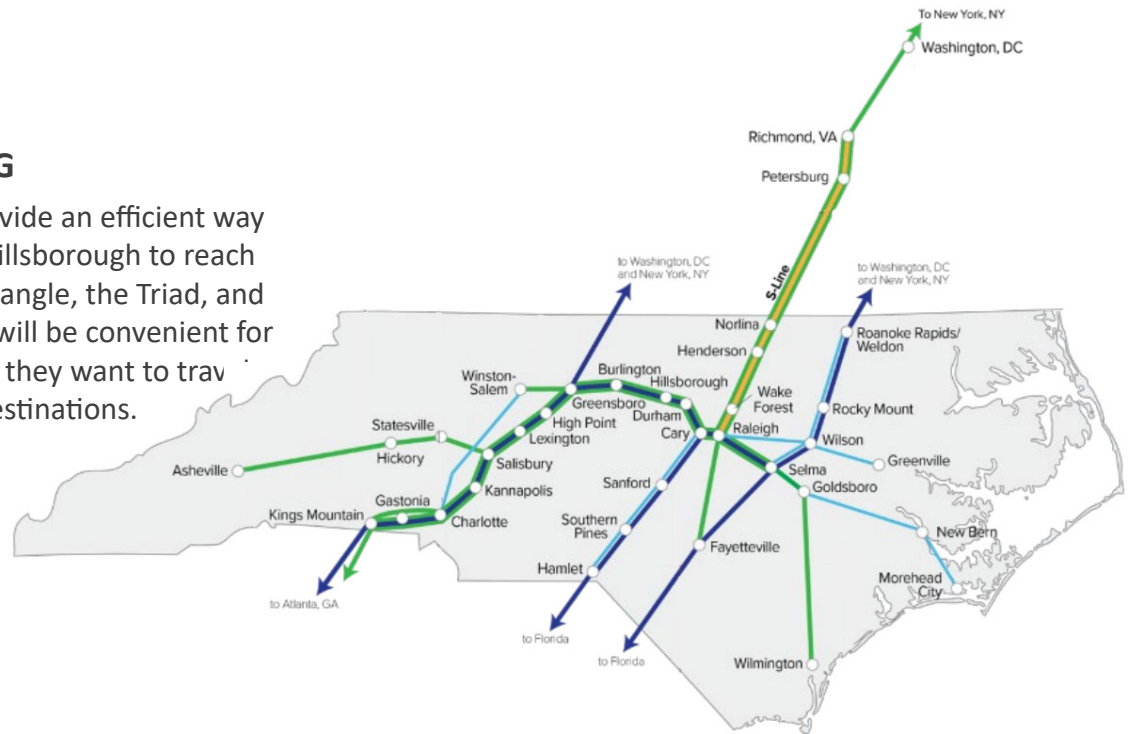
Cates Creek Park

OLD NC 89

This map is for planning purposes only. The final route is to be determined. Location labels are approximate.

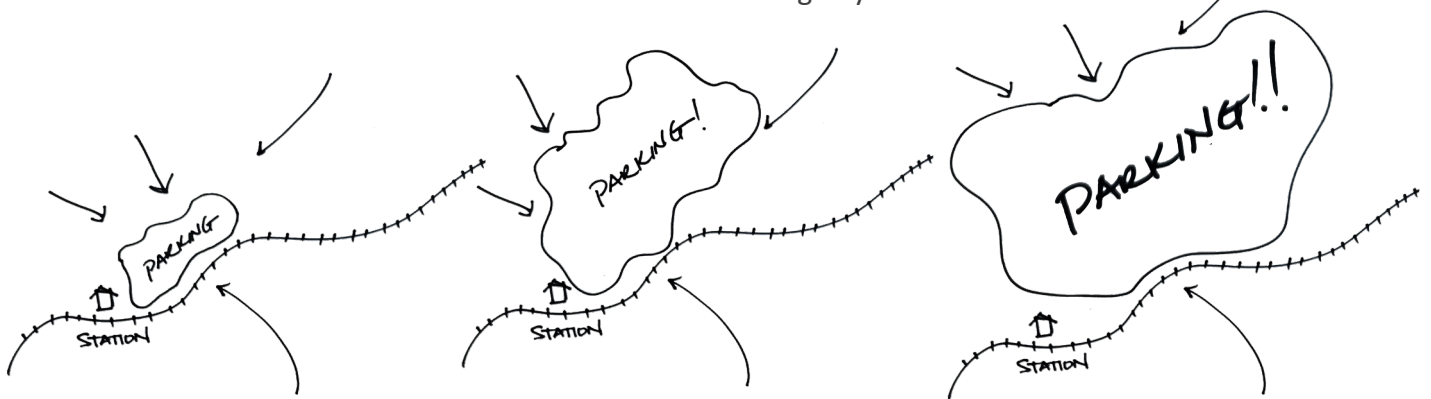
LIMITS ON PARKING

The train station will provide an efficient way for people to get from Hillsborough to reach multiple points in the Triangle, the Triad, and the Charlotte area. This will be convenient for Hillsborough residents if they want to travel by train to a choice of destinations.

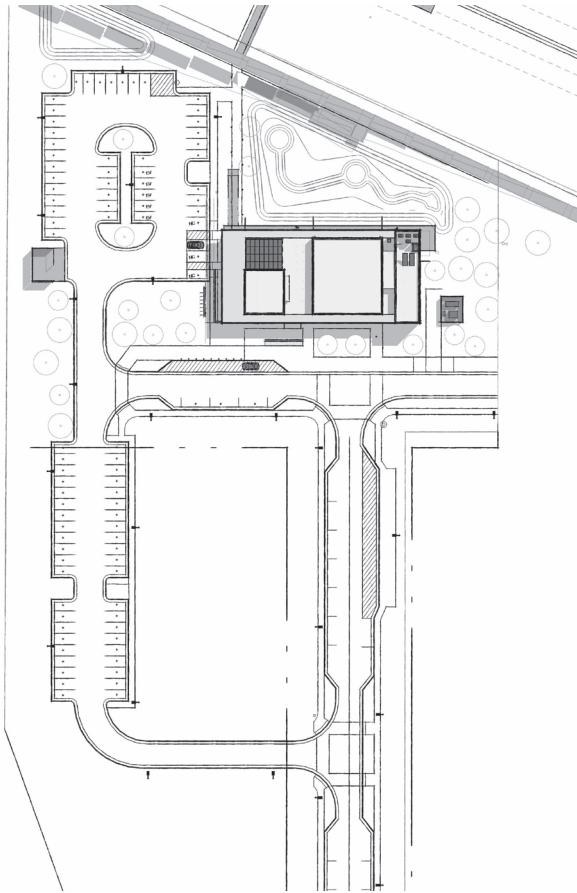


However, it will also be appealing for residents of anywhere within an hour's radius who work in other localities to board a train in Hillsborough if there is plentiful parking. This demand will only be increased as 85 is widened and area population increases. This will increase traffic in town and reduce available parking for Hillsborough residents. If there are multiple trains a day and most cars are parked more than 8 hours, this will almost immediately limit access to parking.

Building more parking will only help very temporarily. Parking will not be able to keep up with the demand. This concept is called "induced demand;" the very idea that a resource is available creates an increased demand for it. If you know there is parking available and there will be free-flowing traffic, you are more likely to drive alone in your car, and therefore more cars will be on the road and parking in a lot. If you know that parking is scarce, you will be more likely to share a ride or find alternative means of arriving at your destination.



Demand for parking at the train station will grow with parking's availability. Creating more parking will only create more demand. The Town's best option is to create safe alternatives for people to access the train.



Existing parking lot plans for the train station. Source: Town of Hillsborough

There are several ways that the Town of Hillsborough can work to mitigate impact from automobile demand to the station, including shuttles, cost of parking, and carpooling educational campaigns. However, for people who live in Hillsborough, Ridgewalk can provide an excellent, safe way for walkers and riders of all types to reach the station safely. Ridgewalk could also help reduce strain on parking by allowing access from commuter lots and along the greenway as well as transit routes.

PROVIDING SPACE FOR BIKES

The Town of Hillsborough’s initial plans for the station include parking lots with parking for cars and some racks for bike parking. On average, a single auto parking space, if replaced with bike racks, can accommodate 8 to 12 bicycle spaces.

If the Town of Hillsborough were to replace only 10% of the planned parking spaces with bike parking, the train station could accommodate 100 or more additional bikes, increasing the capacity of the rail station while using significantly less space. (The more bike spaces provided in lieu of car spaces, the greater the capacity.)

Accommodating more modes of transportation, such as scooters, motorbikes, and more can help even more people reach the train station without a car, further lessening the impacts of the station on Hillsborough.

Three takeaways:

- 1: It’s expensive to build enough parking for future demand at the station.**
- 2: Providing options for other ways to reach the train station, like biking or walking, would be most beneficial.**
- 3: Ridgewalk is the perfect way for Hillsborough residents to access the train station.**

Transportation & Housing Cost Burden

Housing costs in Hillsborough have been rising steeply in the past decade, as Hillsborough becomes a more sought-after place to live. This is compounded by all of the factors that have led to the national housing affordability crisis. Greenways have been shown to raise values for homes within a short distance, but is that always a good thing? Not necessarily. For households who are already cost-burdened (defined as spending more than 30% of their income on housing), rising costs are detrimental. Additionally, most households (78%) in North Carolina own two or more vehicles.*

*ACS 5-year Estimates 2022, Table B08141, "Means of Transportation to Work by Vehicles Available."

** Estimate created using [NerdWallet's Monthly Car Cost Calculator](#)

A household that relies upon two vehicles is under a significant financial burden. Even the most efficient and economical vehicles can generate an excess cost of over \$1,000 a month from fuel costs, maintenance, taxes, insurance, and car payments.

Conservative estimates place the total annual cost for owning two vehicles from anywhere between \$12,120 and \$25,114.**

If households in the town of Hillsborough were to replace one vehicle in their household with a bicycle or e-bicycle, not only would they be saving thousands of dollars each year, they would also be contributing to a reduction in traffic congestion, carbon emissions, and improved mental wellbeing.

One way for a household to offset high housing prices is to have the option of owning and maintaining only one vehicle. Accessing town and the train station (and the Triangle) via Ridgewalk would give some households that option.



Reducing Congestion

There are many reasons for people to visit Hillsborough. Festivals, concerts, history, the farmers market, and charming local businesses are just a few of the draws. However when all these visitors arrive in cars, it can create significant traffic congestion.

Ridgewalk would provide a venue by which residents living south of I-85 would be able to access downtown, removing some of the cars arriving in downtown. Off-site parking agreements for events along Ridgewalk could direct visitors to park along Ridgewalk and access downtown via foot or bike.

The combination of Riverwalk, Ridgewalk, a connected network of sidewalks, and perhaps an awareness campaign about carpooling, could help alleviate traffic congestion and improve quality of life.

South Churton Street has an average of 21,500 trips per day!

With limited space and growing population, it is important to expand non-car options to access downtown.



Funding Ridgewalk

GRANTS

There are a number of ways Hillsborough could pay for Ridgewalk, which would likely all be a combination of grants and local funds.

There are state and federal funding sources the Town could access, which are listed below. The greenway would likely need to draw on multiple funding sources with some local match. Eligibility and match requirements vary by funding source.

Potential funding sources include:

North Carolina Division of Parks and Recreation:

- Recreational Trails Program Grant
- Safety and Education Grant
- Connecting Communities to State Trails Grants
- Complete Trails Program
- Parks and Recreation Trust Fund

North Carolina Department of Transportation:

- Complete Streets
- Multimodal Planning Grant Initiative
- Integrated Mobility
- Highway Safety Program

United States Department of Transportation/
Federal Highway Administration

- Surface Transportation Block Grant program
- Transportation Alternative Set-Aside
- Recreational Trails Program
- Bicycle and Pedestrian Grant Program
- Discretionary Grants
- Wildlife Crossings Pilot Program
- Active Transportation Infrastructure Investment Program

United States Department of Housing and
Community Development:

- Community Development Block Grant
Neighborhood Revitalization Program

North Carolina Department of Natural and
Cultural Resources:

- Land and Water Conservation Fund

Durham-Chapel-Hill-Carrboro Metropolitan
Planning Organization:

- Transportation Alternatives Program Direct
Attributable
- Surface Transportation Block Grant
- Carbon Reduction Program
- Congestion Mitigation and Air Quality

United States Environmental Protection Agency:

- Community Change Grants

MUNICIPAL FUNDING

The Town may wish to dedicate existing resources to the project, or to create a new, specific fund by issuing a bond for the project. A bond would need to be approved by residents and would be used for only Ridgewalk.

Since Riverwalk and Ridgewalk are regional amenities, it would make sense to work with Orange County to fund the project.

OTHER SOURCES

To supplement grants and any other municipal funds the Town may wish to contribute, there are other, creative ways that the project budget could be supplemented.

Sources could include but are not limited to:

- Corporate sponsorships
- Personal donations
- Naming rights
- Partnership with Orange County
- Orange County Transit Tax
- Partnership with State elected
representatives

Conclusion

Riverwalk has made a tremendous positive impact on Hillsborough, and an investment in Ridgewalk would multiply that impact.

Ridgewalk would increase the number of people able to access Hillsborough destinations via bike or foot, increase equitable access to resources for all residents, reduce traffic congestion, and contribute to positive social interactions and physical health outcomes for residents.

Ridgewalk would help preserve habitat and safe highway crossings for wildlife, increase town residents' interaction with nature, and provide more opportunities for residents of all ages to learn about and interact with nature.

Ridgewalk can help Hillsborough gain positive impacts from the new commuter rail station, while mitigating the negative effects of increased traffic and parking needs.

There are many options to fund Ridgewalk, ranging from State and Federal grants to Town of Hillsborough funds to trail sponsorships.

By providing more opportunities for passive and active recreation, Ridgewalk would help Hillsborough residents live healthier, happier lives, support local businesses, and promote economic development.

“Very excited for this project and I hope it comes to fruition!”

- survey respondent



APPENDIX

Academic Sources

Pages 24-29 of this document lists “Key Findings,” references from multiple academic journal articles about the benefits of greenways. Source details are listed below, corresponding to the number listed with each.

1. Institute of Transportation Research and Education (ITRE): Evaluating the Economic Contribution of Shared Use Paths in North Carolina, 2018.
2. North Carolina Department of Transportation (NCDOT) and Institute of Transportation Research and Education (ITRE): Bikeways to Prosperity: Assessing the Economic Impact of Bicycle Facilities, 2006.
3. Virginia Department of Conservation: The Virginia Creeper Trail: An Assessment of User Demographics, Preferences, and Economics, 2004.
4. Kardeniz, D., The Impact of the Little Miami Scenic Trail on Single Family Residential Property Values, University of Cincinnati School of Planning, 2008.
5. National Association of Home Builders: What Home Buyers Really Want, 2021.
6. Crompton, J. and Nicholls, S.: The Impact of Greenways and Trails on Proximate Property Values: An Updated Review, Journal of Park and Recreation Administration, 2019.
7. Corning, S., R. Mowatt and H. Chancellor: Multiuse Trails: Benefits and Concerns of Residents and Property Owners, Journal of Urban Planning and Development, 2012.
8. Racca, D. and A. Dhanju: Property Value / Desirability Effects of Bike Paths Adjacent to Residential Areas. University of Delaware, 2006.
9. Montgomery County, PA Planning Commission: Return on Environment: The Economic Impact of Protected Open Space in Montgomery County, 2022.
10. Pennsylvania Department of Conservation and Natural Resources: Pennsylvania’s Statewide Comprehensive Outdoor Recreation Plan 2014- 2019.
11. BBC Research and Consulting: Economic and Health Benefits of Bicycling in Northwest Arkansas, 2018.
12. Montgomery County, PA Planning Commission: Return on Environment: The Economic Impact of Protected Open Space in Montgomery County, 2022.

13. Institute of Transportation Research and Education (ITRE) North Carolina State University: Evaluating the Economic Contribution of Shared Use Paths in North Carolina, 2018.

14. Brownson, R., et al.: Promoting Physical Activity in Rural Communities: Walking Trail Access, Use, and Effects, American Journal of Preventive Medicine, 2000.

15. Institute of Transportation Research and Education (ITRE) North Carolina State University: Evaluating the Economic Contribution of Shared Use Paths in North Carolina, 2018.

16. Mason, Z. and Coburn, M.: Small Town Traffic Congestion: Policies for Alleviating Traffic Congestion in Downtown Hanover and Norwich. Dartmouth College, NH, 2007.

17. Krizek, J.: Two approaches to valuing some bicycle facilities' presumed benefits. Journal of the American Planning Association, 2006.

Stakeholder Survey Results

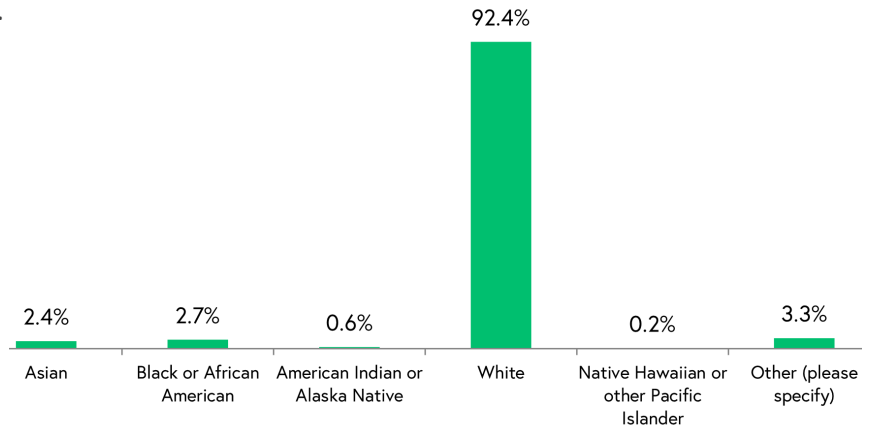
To gauge stakeholder impressions of Riverwalk, the Town released a survey in February 2024. The survey was available in English and Spanish, in digital and paper formats. Signs were placed along Riverwalk with a Quick Response (QR) code to the online survey. In the three months the survey was open, 586 people responded (583 in English and 3 in Spanish). That alone indicates the high level of interest Hillsborough stakeholders have in Riverwalk and greenways! The following pages show a summary of the survey results.

Where do you live?

The majority of respondents live in Hillsborough or Orange County with some respondents living in Durham, Chapel Hill, Mebane, or Raleigh.

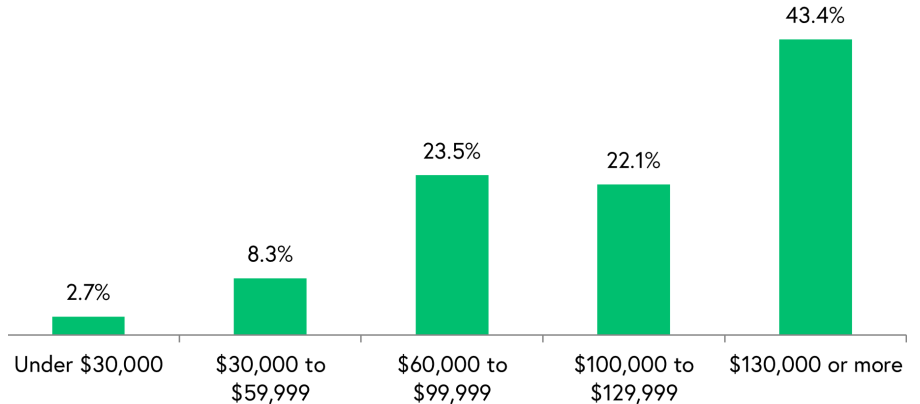
Which of the following best describes your race?

The demographics of the respondents mirror the population of Hillsborough, with slightly less minority populations represented than in the overall population. Of the survey respondents, 92% were White, 3% Black or African American, 3% Asian, and 3% Other. Additionally, respondents were 5% Hispanic, Latino, or Spanish ancestry.



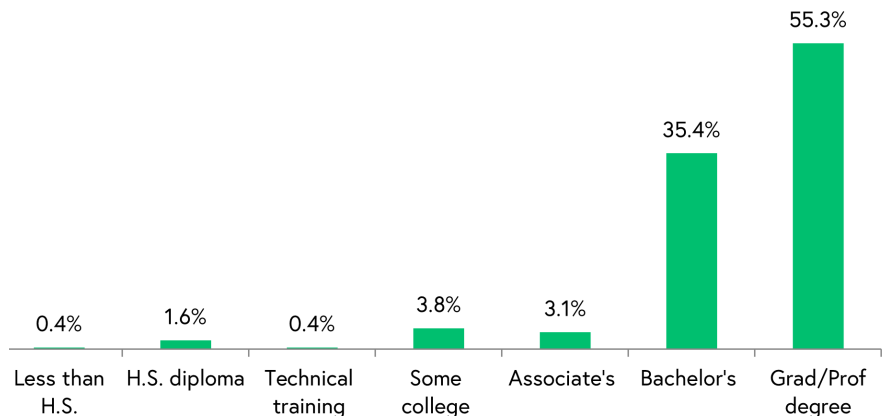
Would you say your total annual household income is:

Respondents of the survey were slightly wealthier than Hillsborough population overall. Hillsborough median household income in 2022 was \$86,250. 35% of respondent's households make less than \$100K and 65% make over \$100k.



Which of the following is the highest level of education you have completed?

Respondents were also well educated, with 55% of respondents have completed a graduate or professional degree. Additionally, 35% of respondents have completed a bachelor's degree and three and four percent have completed an associate degree and some college respectively.





583
people
responded
to the
survey!

GROWING GREENWAYS
Share your thoughts and experiences
to help us expand greenways in Hillsborough!
Disponible en Español.

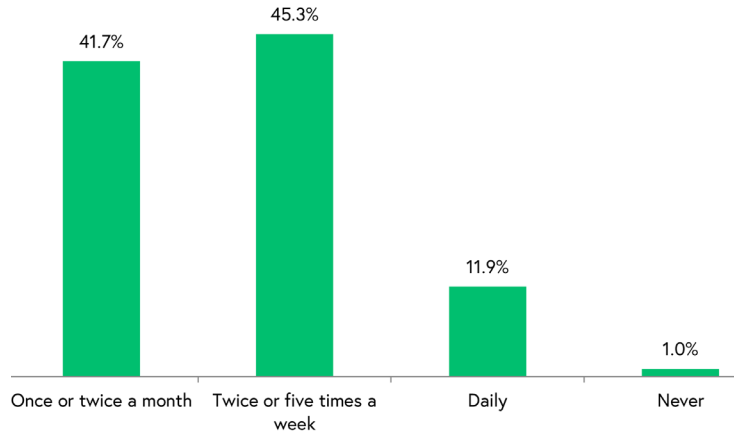


ENGAGE
HILLSBOROUGH

To receive a paper survey by mail, email smallplanning@summitca.com,
mailed the survey and provide your home address.

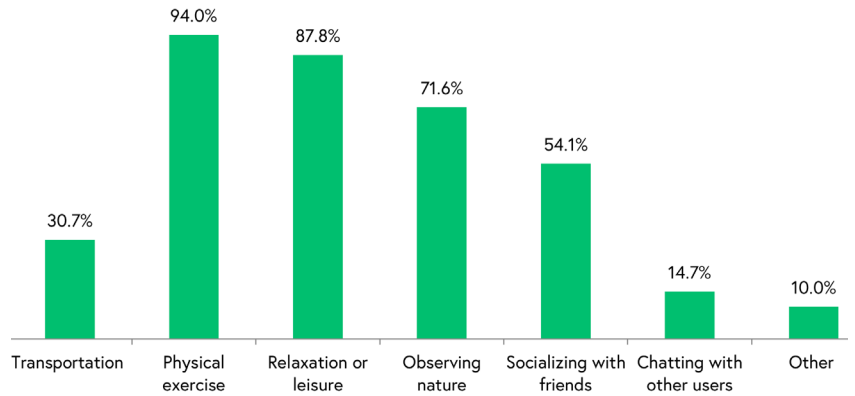
Question 1: How often do you use Riverwalk?

42% of respondents use Riverwalk once or twice a month and 45% use Riverwalk twice to five times a week. 12% use Riverwalk daily and 1% of respondents never use Riverwalk.



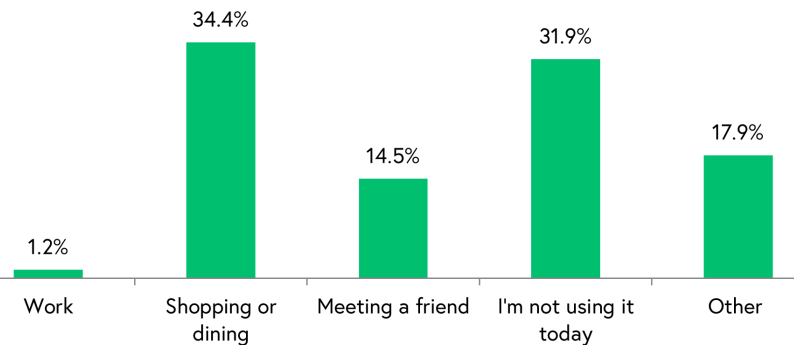
Question 2: For what purposes do you use Riverwalk?

Respondents were asked to indicate all purposes for which they use Riverwalk. The majority of respondents use Riverwalk for physical exercise followed by relaxation or leisure. Other major reasons include observing nature, socializing with friends, and transportation. Please note that the graph numbers indicated percentage of total responses, not percentage of responders.



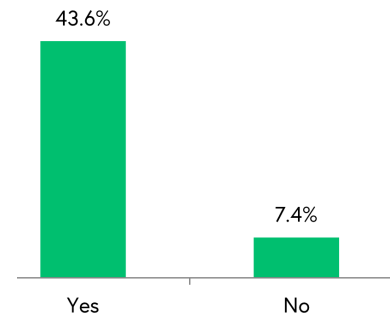
Question 3: If you are using Riverwalk to travel to a specific destination today, where are you going?

Of those respondents who were using Riverwalk for transportation, most were going shopping or dining (35%) or meeting a friend (15%).



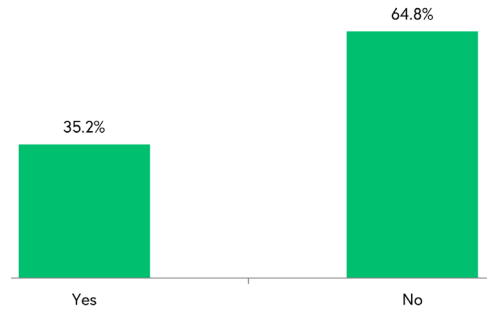
Question 4: If you weren't able to take Riverwalk to your destination today, would you have used an automobile?

Of those respondents who were using Riverwalk for transportation, 44% would have used a car if they were not able to use Riverwalk. (Please note that this answer excludes respondents using the trail for exercise or not on the trail when responding.)



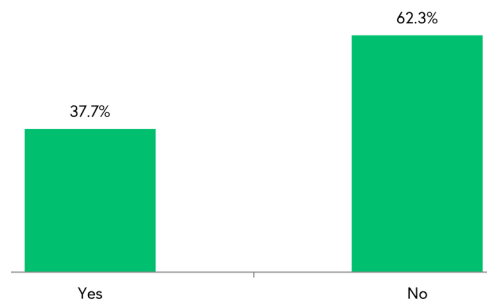
Question 5: Do you generally bring children with you when you use Riverwalk?

65% of respondents do not generally bring children with them to Riverwalk, while 35% of respondents do bring children.



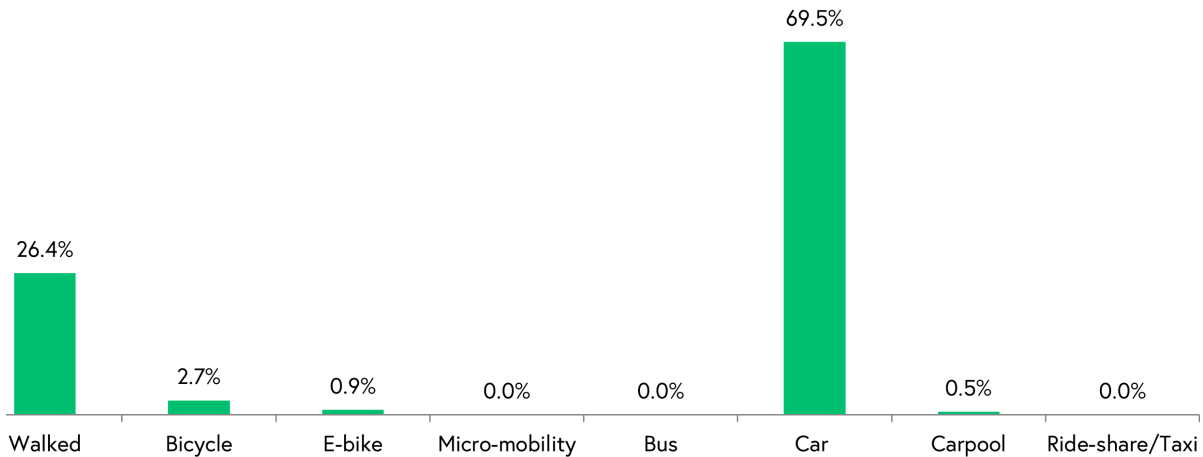
Question 6: Do you generally bring a pet with you when you use Riverwalk?

62% of respondents do not generally bring pets with them to Riverwalk, while 38% of respondents do bring pets.



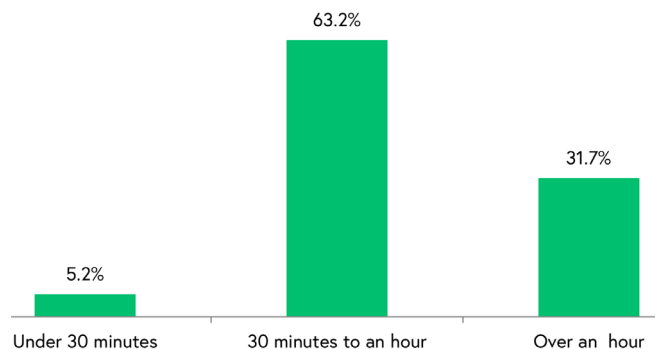
Question 7: How did you get to Riverwalk today?

The majority of Riverwalk users arrive by vehicle (70%). Some users arrived by walking (26%). The rest of users arrived by bicycle, e-bicycle, or carpooling.



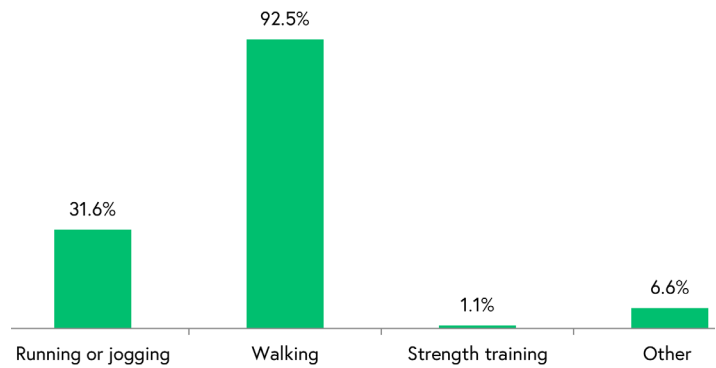
Question 8: How much time do you spend on Riverwalk?

The majority of respondents use Riverwalk between 30 minutes to an hour (63%). Other respondents use Riverwalk for over an hour (32%) or under 30 minutes (5%).



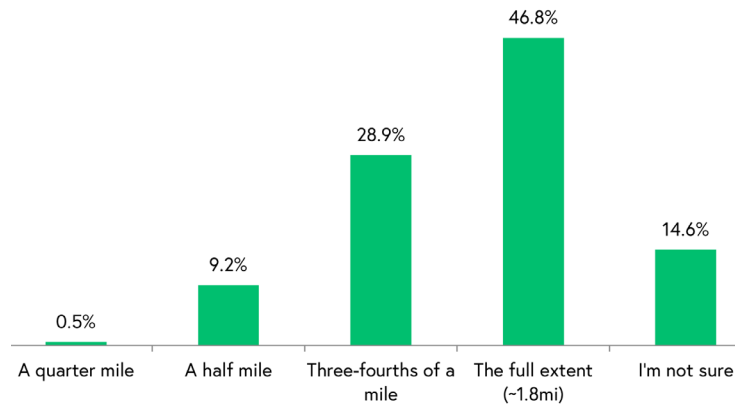
Question 9: If you exercise on Riverwalk, which exercise do you do?

Of those using Riverwalk for exercise, the most popular type of exercise is walking. Other popular types of exercise are running or jogging, and strength training. (Respondents were asked to check all that applied.)



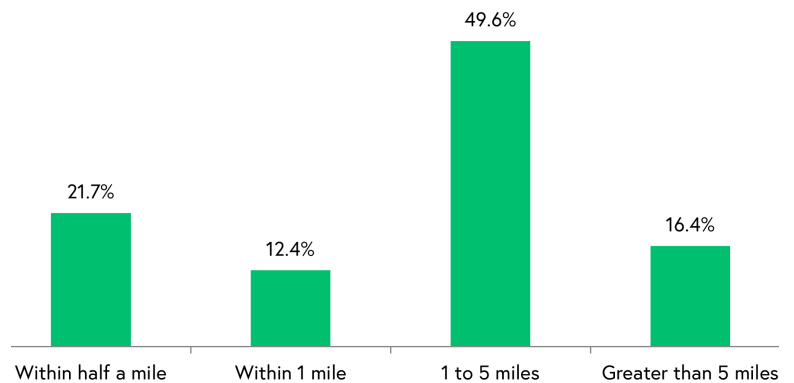
Question 10: How far do you usually go on Riverwalk?

Most respondents (47%) usually travel the entire 1.8 miles of Riverwalk. Other respondents travel a shorter distance, including three-fourths a mile (29%), a half mile (9%), or a quarter mile (0.5%). Other respondents were not sure how far they usually travel (15%).



Question 11: How far do you live from Riverwalk?

As most of the respondents to the survey live in Hillsborough, it follows that 84% of respondents live within 5 miles of Riverwalk. The other 16% of respondents live more than 5 miles away from Riverwalk.



Question 12: If you live in Hillsborough, do you ever shop or get something to eat before, after, or while using Riverwalk?

Respondents mentioned Weaver Street Market, Eno River Brewery, Wooden Nickel, OC Library, Antonia's, Whitt's, Ixtapa Restaurant, Bakeshop, and more.

Answers are shown to the right in a "word cloud," which shows answers in text size corresponding to the number of times the answer was repeated.



Question 13: If you don't live in Hillsborough, is Riverwalk the primary reason you come to Hillsborough? What else do you do while you're here?

Respondents mentioned a wide diversity of reasons they come to Hillsborough. Riverwalk was one of the main reasons, but respondents also mentioned riding bicycles, shopping in town, dining at restaurants, visiting breweries, grocery shopping, using the dog park, visiting friends, working in town, and more.

Question 15: What three words describe your experience using Riverwalk?

Relaxing, peaceful, and beautiful were the top three words mentioned about respondents experience with Riverwalk. Other words that were repeated include nature, safe, fun, convenient, calming, pleasant, enjoyable, scenic, and clean.

Responses to this question are displayed in the word cloud below. A word cloud displays words sized in relation to how many times they were repeated in all answers.

Question 14: How would you rate your experience of using Riverwalk? (Use a scale of 1 to 5, with 1 being "poor" and 5 being "great.")

The majority of respondents seem to have a great experience with Riverwalk, as the average response from this answer is 4.6 out of 5!



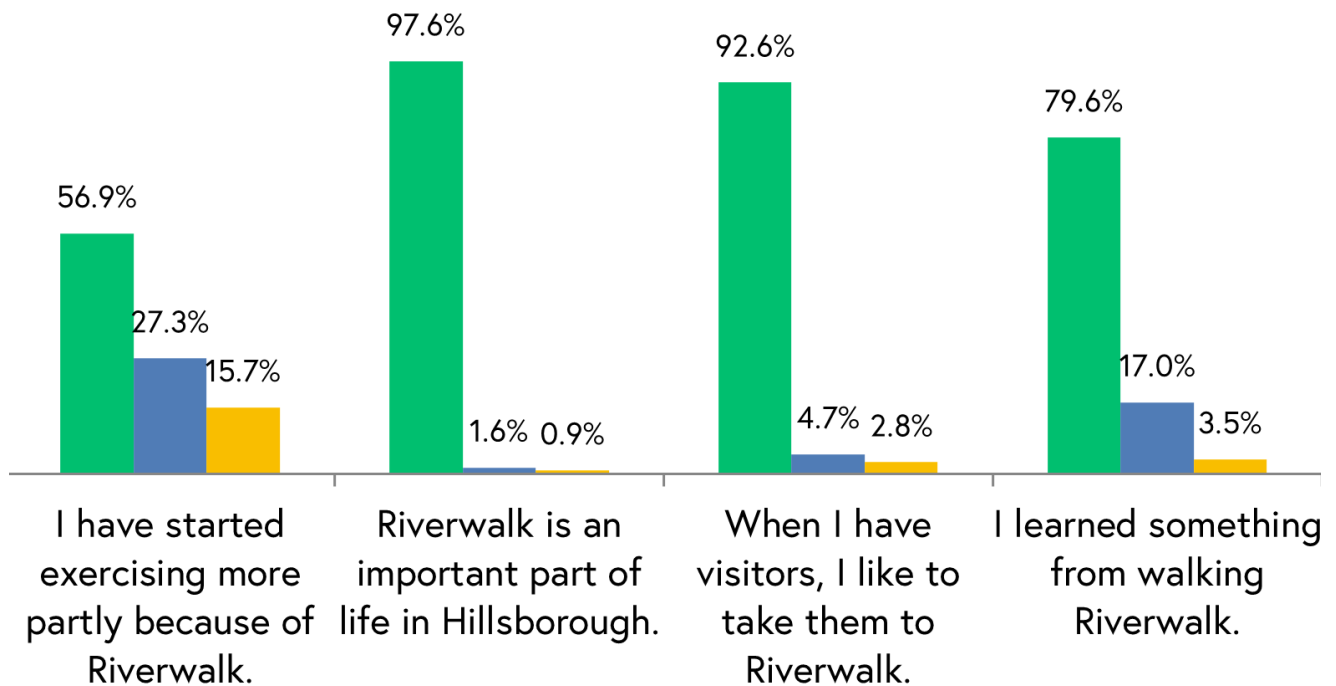
Question 16: Rate each statement below and respond with: Agree (green), No Opinion (blue), or Disagree (yellow).

Over half of survey respondents answered that they have started exercising more because of Riverwalk.

Almost all survey respondents said that Riverwalk is an important part of life in Hillsborough.

Nearly 93% of survey respondents said that when they have visitors, they take them to Riverwalk.

Nearly 80% of survey respondents said that they have learned something from Riverwalk.



■ Agree

■ No Opinion

■ Disagree

Question 17: If the town were to implement a north-south trail (Ridgewalk) connecting downtown Hillsborough to the southern portions of the community, would you use it?

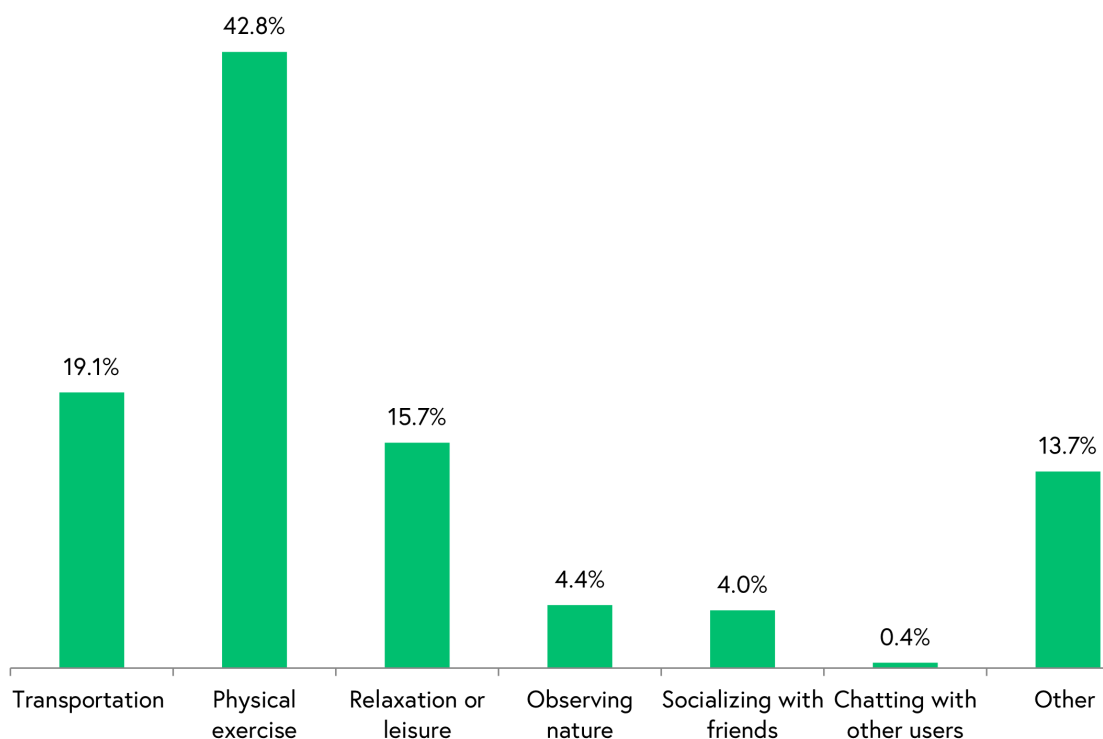
The majority of respondents said “yes” to this question. Some respondents added additional comments in support or against the additional greenway. One respondent said “Absolutely. I live in the southern portion of Hillsborough and dislike using a car to get downtown.”

Answers to this question are shown in the word cloud below.



Question 18: If yes, for which of the following activities would you use the new trail?

Answers to this question heavily favored “physical exercise,” which is consistent with how people use Riverwalk now. However, there were more responses that said they would use the new trail for transportation than they do Riverwalk. Of the “other” responses, most stated that they would use the trail for “all of the above.”



Question 19: Do you believe a second greenway would enhance the quality of life in Hillsborough? (1 = no enhancement, 10 = high enhancement)

The majority of respondents believe an additional greenway will enhance the quality of life in Hillsborough.

The average response from this answer is 9.4 out of 10.

Of those who responded less than 5 out of 10, they mentioned worries of a lack of bathroom facilities, distance from where they live to where Ridgewalk would be, some of which are programmatic issues that could be addressed in Ridgewalk's design.

Question 20: Please explain how a second greenway would enhance, or not enhance, the quality of life in Hillsborough.

Even when given an open choice, respondents expressed a diversity of reasons that they believed Ridgewalk **would enhance** quality of life in Hillsborough. Many respondents mentioned excitement about not needing to use a car as frequently and being able to bike into downtown. Some mentioned the potential for reduced traffic congestion if their neighborhood was accessible by bike trails. Other respondents mentioned access to greenspace for the residents and visitors of Hillsborough would greatly affect quality of life. Other respondents mentioned the health effects of having increased walkability and mobility options. **Overall respondents are very positive and believe Ridgewalk will increase quality of life.**

Some excerpts from responses to Question #21:

“Absolutely, we are south of 85, and would drive less if we could bike to errands.”

“If y’all put in some port-a-potties, I would!”

“All the time!! I would be very excited to have this option.”

“Probably not - there needs to be additional sidewalks or something safe to access the riverwalk”

Question 21: If a new greenway (Ridgewalk) were to connect Downtown Hillsborough with a planned train station in the southern end of town, would you use the greenway as part of your commute to work instead of driving?

There was about a fifty-fifty split between those that could use Ridgewalk to commute to work and those that could or would not. Other respondents mentioned being work from home, retired, or living in other communities. Of those who said they would not commute on it, many mentioned using it for other trips such as shopping and dining. Other respondents mentioned that it would depend on when and where the train stops are in the Triangle area.

Question 22: Do you have further comments about the idea of a second greenway in Hillsborough?

Respondents mentioned a variety of additional comments. Several folks mentioned the need for a connection to the north of Hillsborough in the future as well. Other folks mention the need to ensure future growth in Hillsborough is sustainable, as additional greenways and investment could spur more folks to move in from other areas. Other folks mention the need for amenities along the trail, such as water refill stations, bathrooms, places to sit, and places to lock bikes. A few folks mention the congestion of bikes and dogs on Riverwalk and encourage Ridgewalk to consider how to deal with that. On the other hand, other folks want to allow bicycles on additional trails, such as the Speedway Trail, so that they can be used for transportation around town.

More excerpts from responses to Question #21:

“Absolutely! This would be such a value add for Hillsborough, especially if there was a way for pedestrians to safely cross 70. We live 3.5 mi from the Riverwalk and can’t get there safely via bike because of 70.”

“I would donate money to get this project up and running.”

Town of Hillsborough, North Carolina Ridgewalk Greenway Feasibility Study

Phase II

September 2024

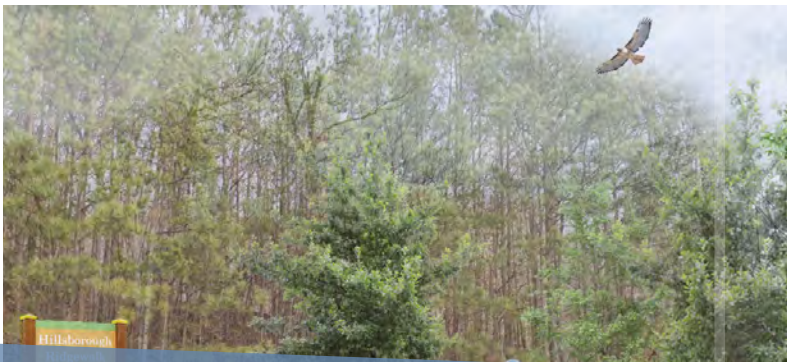
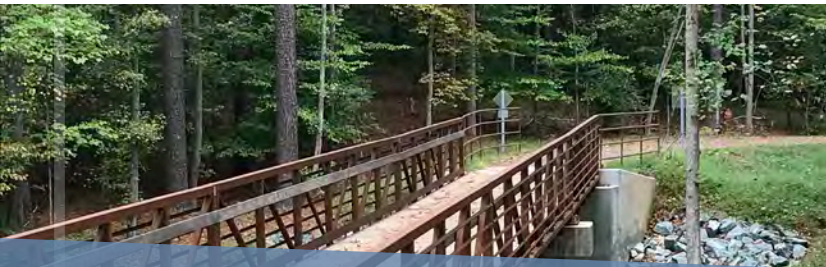




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- **Figure 1** – Ridgewalk Greenway Feasibility Study Phase II Planning Map
- **Figure 2** – Function Layout and Existing Utilities Maps for the Ridgewalk Greenway Feasibility Study Phase II Alternatives

Chapter 1: Executive Summary

Introduction

In June of 2023, the Ridgewalk Greenway Feasibility Study was developed for the Town of Hillsborough to evaluate potential alignment alternatives for a multi-use greenway. The assessment would support the Town's initiative to construct an accessible urban facility for pedestrians and bicyclists connecting downtown Hillsborough to valued locations such as the future train station site, Cates Creek Park and various developing and established neighborhoods. The alternatives developed were analyzed for accessibility and safety with the objective of maximizing community connectivity while minimizing environmental impacts. Strategies and constraints were mentioned to cross the North Carolina Railroad corridor south of downtown Hillsborough along with the Interstate 85 corridor (I-85). A study area was provided to designate the potential environmental, cultural, community, and utility resources near the proposed alignment alternatives shown in Figure 1 of the report. These resources with the existing conditions, environmental features and community plans would aid in determining the proposed design criteria and typical sections for the layout and geometry of the alternative alignments. Considerations were discussed to recommend a preferred alternative (referenced as the original alignment in this report).

The following content supplements and references the Ridgewalk Greenway Feasibility Study expanding on updated findings, considerations, and recommendations for the most viable and sustainable routes with potential to replace various segments along the original preferred alternative. Utilizing the same study area, this feasibility study refines the foundation for decision-making to ensure the Ridgewalk Greenway meets the evolving needs for the Town of Hillsborough while promoting sustainable urban development and further expansion of connectivity in the community. New goals of alternatives, connections to adjacent projects in the vicinity, and alternate alignment discussions for five various alternatives are outlined below to assist the Town in deciding the best path forward.

New Goals of Alternatives

The main goal in providing this supplemental report is to explore alternatives that meet a slightly different set of goals. While the begin and end connection points and overall destinations remain the same, other elements of the alternative designs were implemented for consideration. Networks of sidewalks were introduced differing from greenway only paths in the initial study and some road crossings were introduced. Five alternatives were developed and selected for this evaluation to the original preferred alignment. To minimize impacts, the typical section was modified for one alternative with the width of the greenway decreasing from 10 feet to 8 feet. The approach of crossing the railroad corridor varied in the alternatives from the original study. Another key focus was to eliminate the need for pedestrian bridges while minimizing boardwalk lengths and reducing construction costs. It is still unknown if the North Carolina Railroad will approve construction of structures within the railroad corridor included in the original alignment of the proposed greenway facility. Due to the uncertainty, the project study area includes alignment alternatives minimizing greenway at the railroad corridor below.

Connections to Adjacent Projects

Developments

Supplementing June 2023 Ridgewalk Greenway Feasibility Study, the Town of Hillsborough continues to receive proposals for private development. The following developments below are anticipated to be impacted by the alternatives. The developments shown in the Ridgewalk Greenway Feasibility Study that are not listed here are implied to not have any impacts from alternates that amend segments of the original design.

Collins Ridge

At the time of this report, the private housing development of Collins Ridge continues to be developed and is still currently under construction between Orange Grove Road and Interstate 85. The Town still has plans to receive the 10-foot-wide greenway once built by the developer to own and maintain. All alternatives in this study will not vary as the Ridgewalk Greenway connects at the northern tie-in of the Collins Ridge Greenway. This is consistent with the initially studied preferred alignment. However, Alternatives 4 and 5 differ from the original alignment in the initial report and will separate from the Collins Ridge Greenway sooner before crossing I-85.

Future Development Near Train Station

There are no set development plans at the time of this report. The Town of Hillsborough plans to reserve land surrounding the future passenger train station for mixed-use, transit-oriented development. The most recent train station plans include leaving more than 13 acres of the 19.6-acre parcel owned by the Town potentially available for development opportunities.

Alternative 1 would be constructed along the eastern and southern boundaries of the train station development site, and Alternative 3 would be constructed to provide access to the train station from the south. These alternatives would provide direct bicycle and pedestrian access to any future development from downtown Hillsborough, the Riverwalk, Collins Ridge, and neighborhoods along the proposed alignment.

Public Transportation Projects

P-5701 (Train Station)

The future train station site currently being designed is mentioned in the initial report. Ridgewalk is planned to be constructed through the site and adjacent to the station building. An entrance to Ridgewalk is anticipated from the parking lot of the train station site. Alternatives 1-3 currently propose the greenway located adjacent to the future facility.

I-5967 (Interstate 85 Widening)

Interstate 85 has been studied to be widened with improvements to the interchange at Churton Street. The proposed typical section includes a 6-lane section with a 27-foot paved median and 14-foot shoulders. This project is included in the current North Carolina Department of Transportation 2020-2029 State Transportation Improvement Plan. If selected, Alternatives 4 and 5 are impacted by this project and this project would require further coordination on the potential to lengthen the bridge over the railroad to adequately place the greenway under the bridge.

Chapter 2: Alternative Alignments Discussion

Design Criteria and Typical Section

Design Criteria

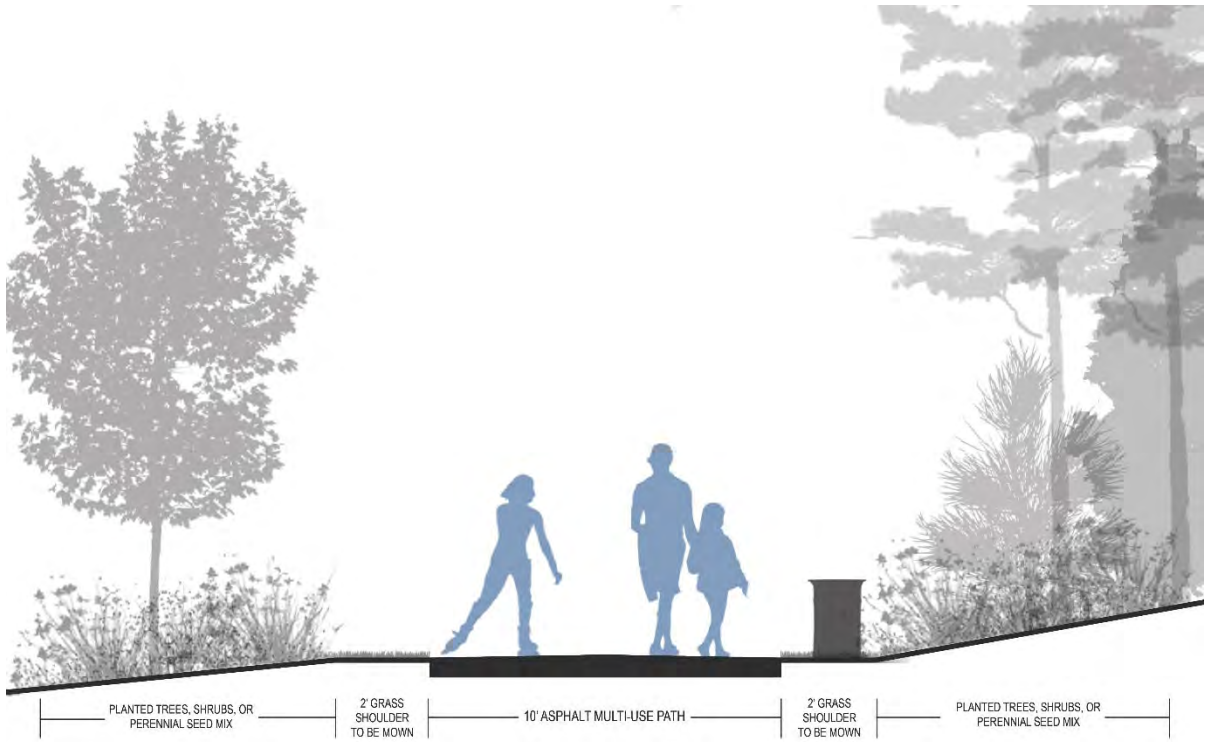
The Design Criteria used for this study remains consistent with the Ridgewalk Greenway Feasibility Study for a greenway and follows the same guidance, manuals, and Town standards and plans. In this study, a sidewalk segment is also utilized in the alternative analysis. The American Disabilities Act require the maximum running slope of a sidewalk to be no more than 5% with a maximum cross slope of 2%. At crosswalks, curb ramps are required utilizing a maximum running slope of 8.33% with level landings at the top and bottom of each ramp run. The design will abide by the U.S. Access Board Guidelines requiring the necessary review and developmental standards with Universal Design in mind creating an environment accessible, equitable, and simple to all users.

Typical Sections

Consistent with the initial Ridgewalk Greenway Feasibility Study, the typical sections for this report intend to provide a general plan for what the various parts of the proposed greenway may look like with regards to width, location, and materials. Not all minor variables are captured in the typical descriptions, but some are mentioned to reduce impacts. The recommended typical sections may need to be revised in specific sections of the greenway during final designs as further information is available. The description of typical sections below conveys changes and updates to the initial report from the proposed alternative segments considered to enhance the original alternative. The alternatives presented will not need the pedestrian bridge typical section discussed in the initial report resulting in greater costs savings when constructed at Interstate 85 or the railroad.

Greenway/Sidepath

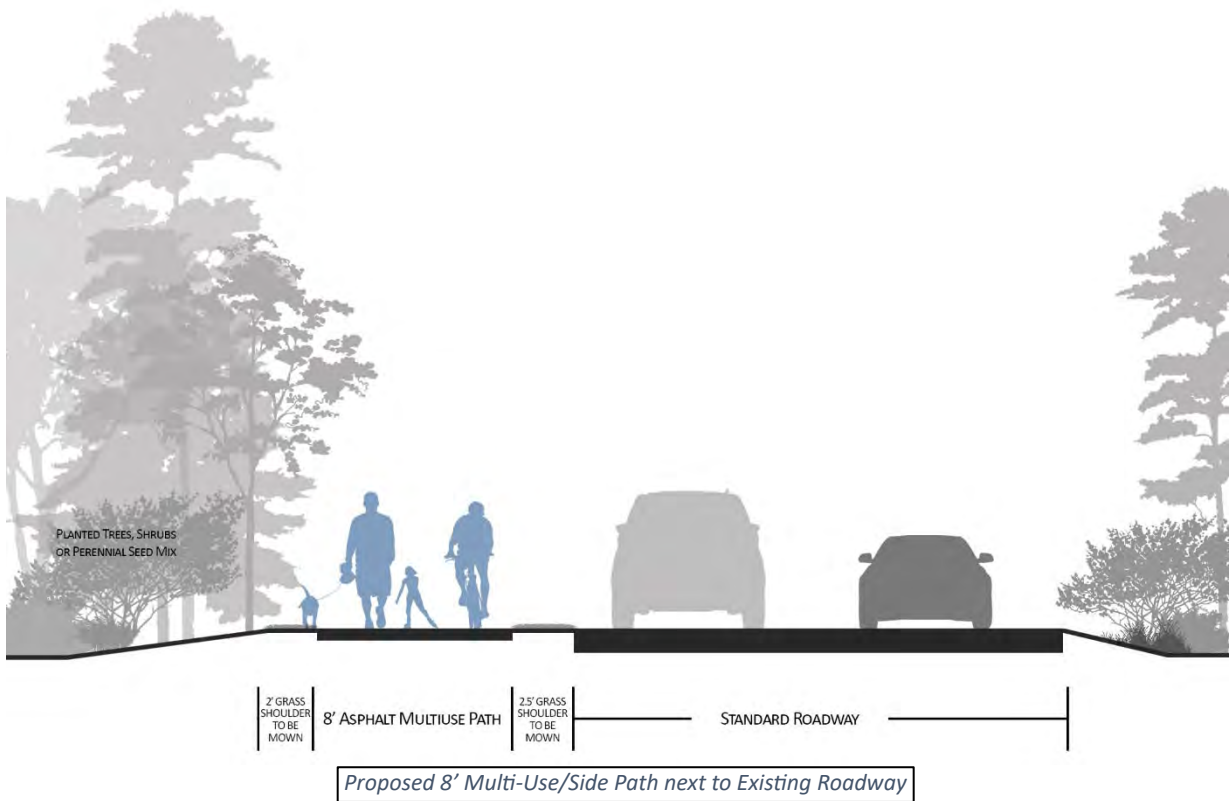
Alternatives 1 and 4 will match the typical section of the original alignment. The greenway typical section for Alternative 3 utilizes an 8-foot-wide multi-use/side path along Exchange Club Park to minimize impacts. Recommendations for maximum cut and fill slopes, and for the paving schedule are consistent with those for the original alignment from the initial study. As seen directly below are the three main greenway path typical sections used in the alternative designs of this report.



*Proposed 10' Greenway Typical Section
(Consistent with the Initial Report)*

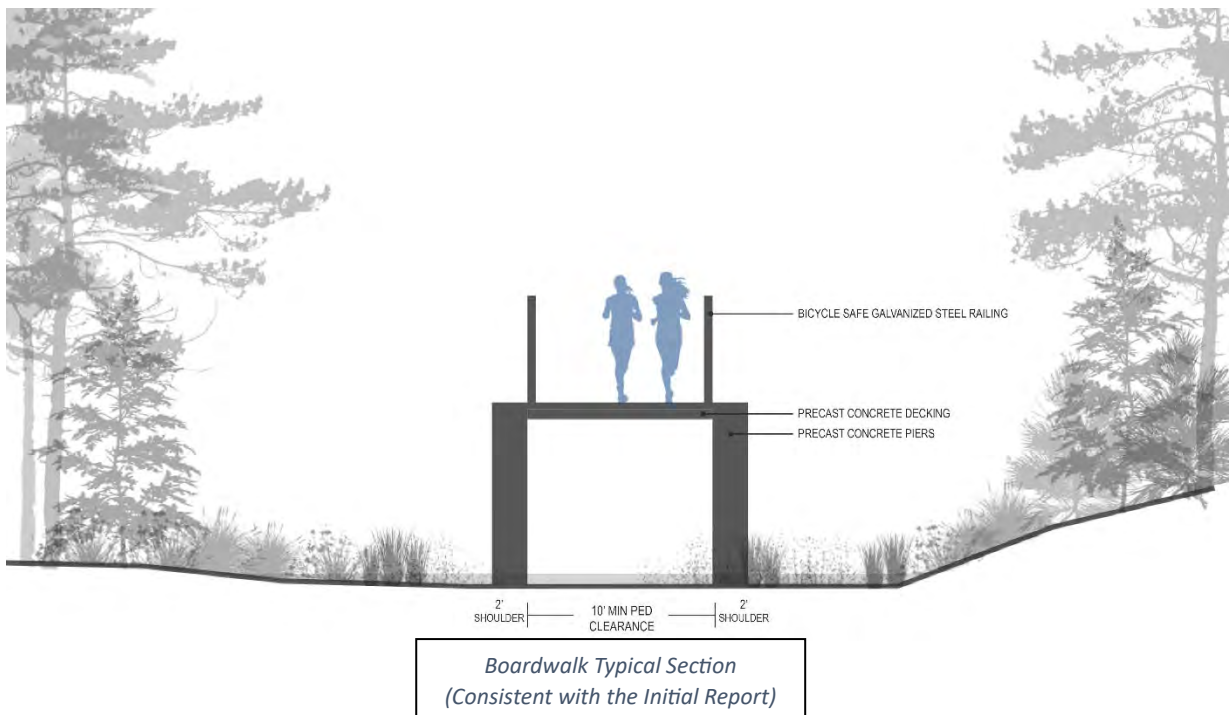


*Proposed 10' Multi-Use Path next to Existing Roadway
(Consistent with the Initial Report)*



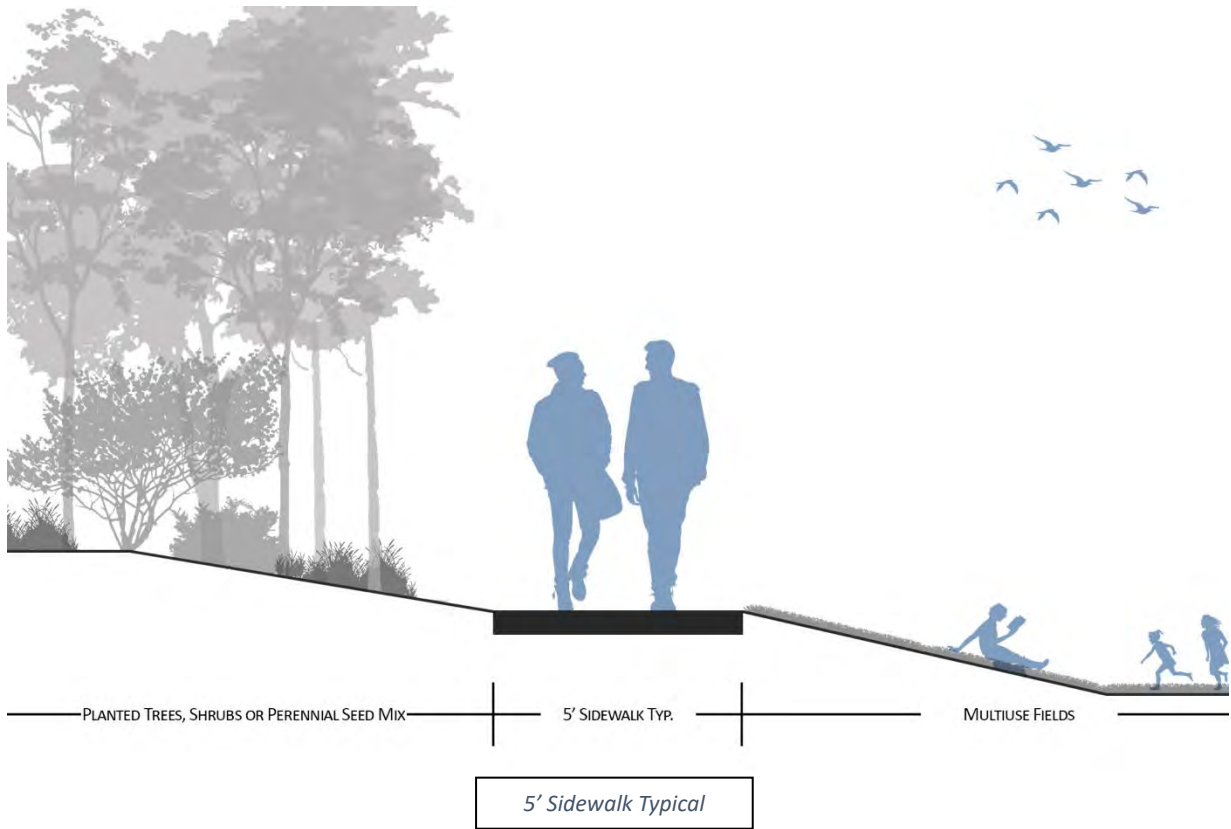
Boardwalk

The boardwalk typical section recommendations for Alternatives 1, 3 and 4 are consistent with those made for the original alignment and design. The difference is that these alternatives greatly reduce the length of boardwalk for implementation of the greenway project, greatly reducing cost to construct.



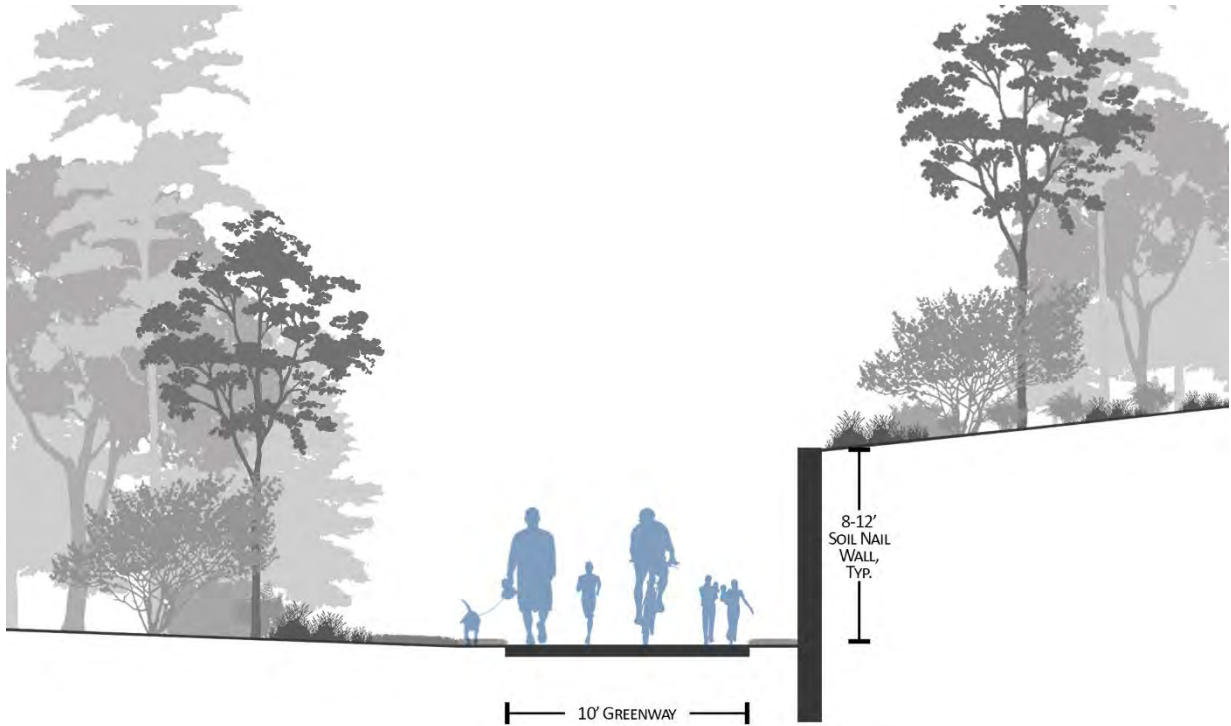
Sidewalk

Previously the existing sidewalk was used to tie-in to sidewalk network to the west side of Cates Creek Parkway with only a short section of proposed sidewalk to complete the connection for the gap at Cates Creek Parkway near the intersection of Empress Road. In addition to this area, for Alternative 3, a 5' wide, 4" thick concrete sidewalk typical section is proposed as the path crosses Churton Street from Orange Grove Road and continues along Orange Grove Street until heading north to tie back in with the original alignment's path at the future train station site.



Structures

As previously mentioned, each alternative evaluated in this study eliminates the need for pedestrian bridges in the areas where they would replace the original alignment discussed in the initial report. Another structure update to the typical section can be seen in Alternative 1. It is recommended to incorporate approximately 250' of an 8-12' soil nail wall to contain the existing South Churton Bridge slope and eliminate the need for temporary shoring under the bridge during construction.



Greenway with Proposed Soil Nail Wall Typical Section Typical Section

Figure 1

Ridgework Feasibility Phase 2 Planning

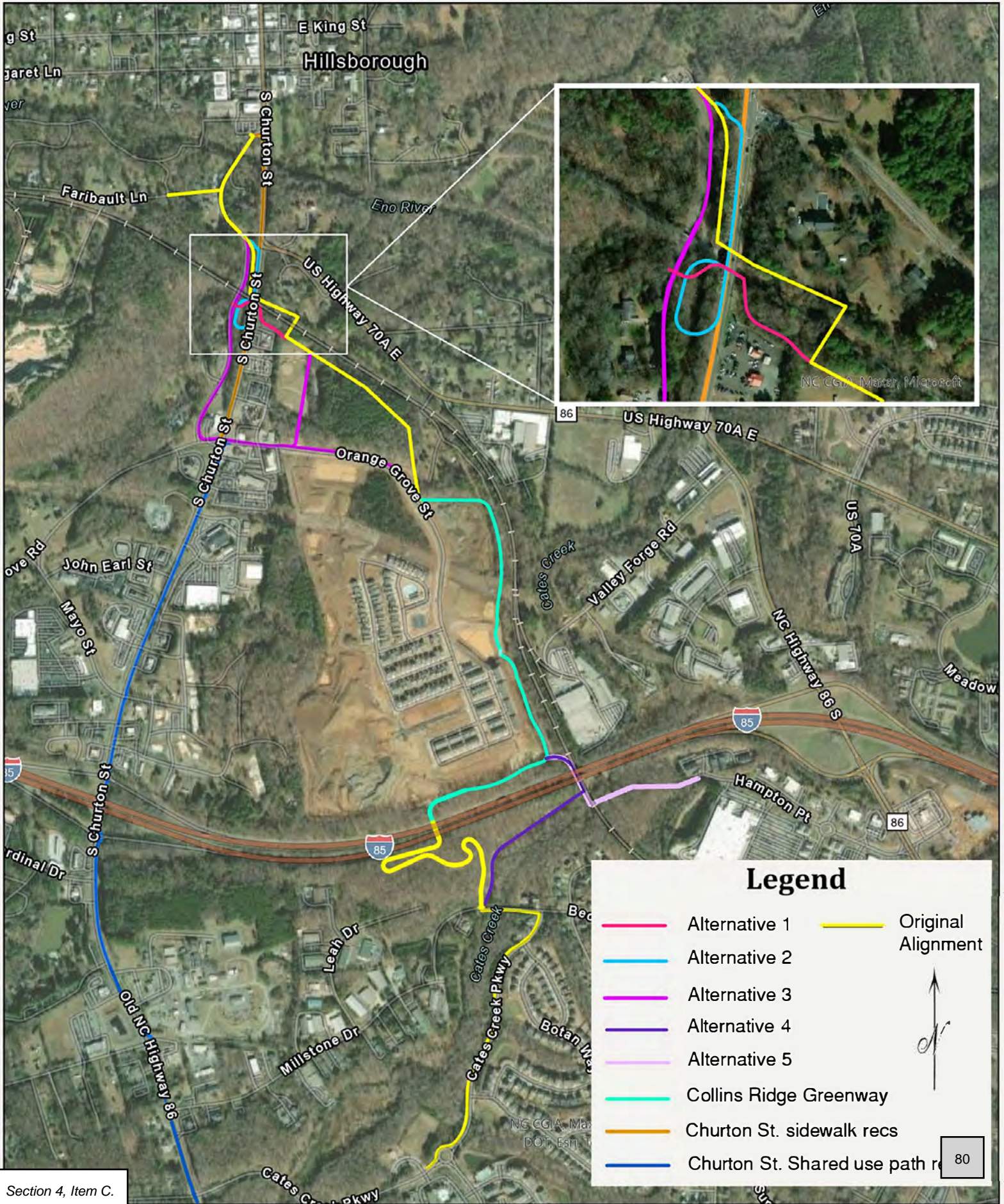
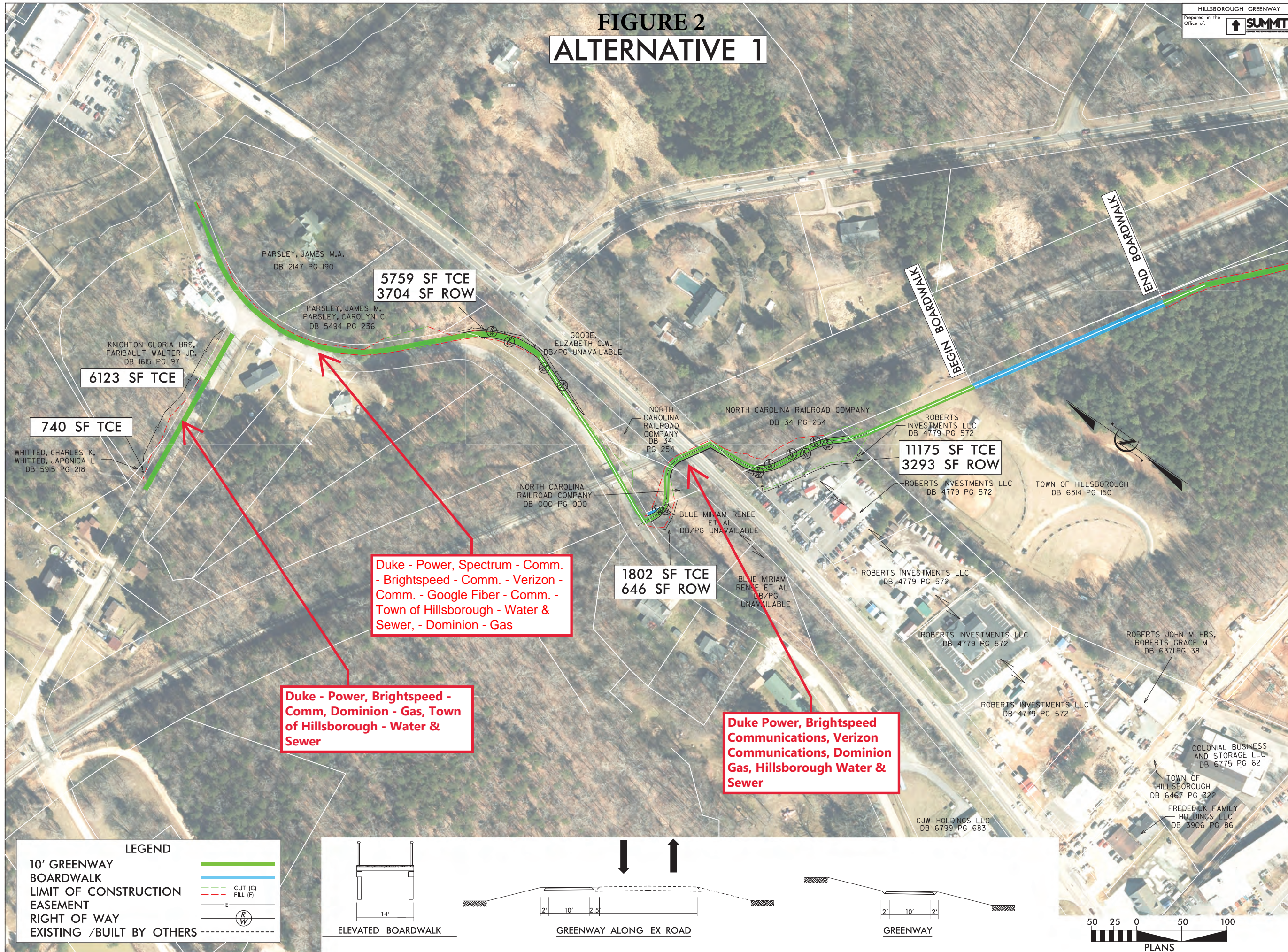


FIGURE 2 ALTERNATIVE 1

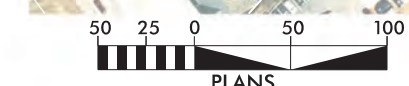
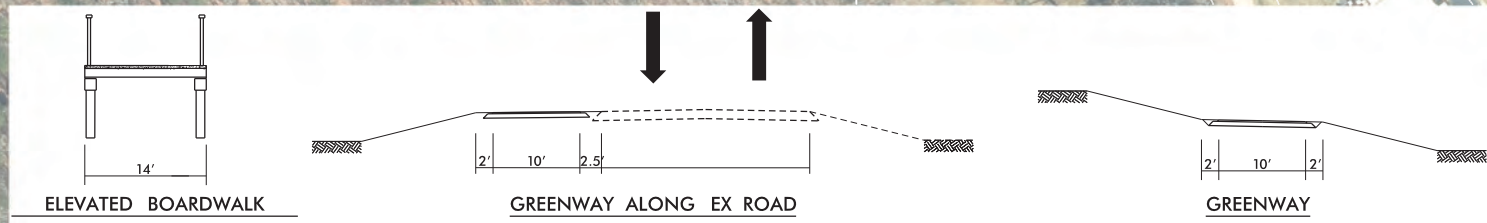
MATCHLINE 1



LEGEND

- 10' GREENWAY BOARDWALK
- LIMIT OF CONSTRUCTION
- EASEMENT
- RIGHT OF WAY
- EXISTING /BUILT BY OTHERS

——— CUT (C)
——— FILL (F)
- - - - E
R
W








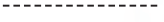
ALTERNATIVE 1 / DEVELOPER BUILT

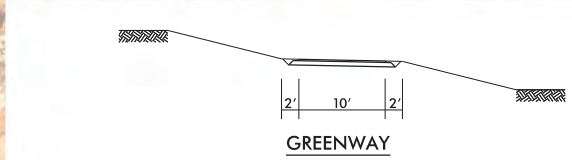
MATCHLINE 1

TOWN OF HILLSBOROUGH
DB 6314 PG 150

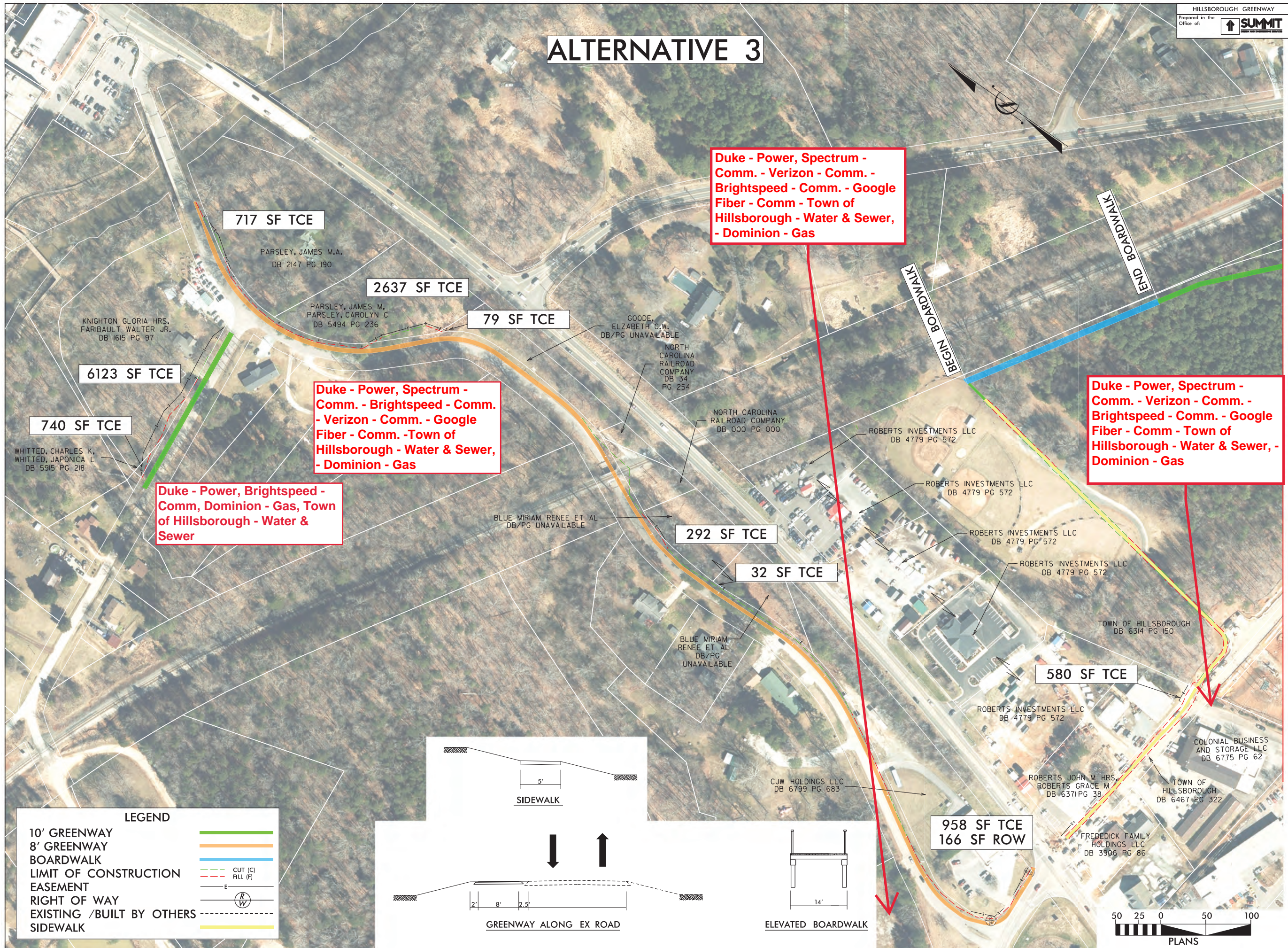
**Duke Power, Brightspeed
Communications, Spectrum
Communications**

LEGEND

10' GREENWAY	
BOARDWALK	
LIMIT OF CONSTRUCTION	
EASEMENT	
RIGHT OF WAY	
EXISTING /BUILT BY OTHERS	



ALTERNATIVE 3



Duke - Power, Spectrum - Comm. - Verizon - Comm. - Brightspeed - Comm. - Google Fiber - Comm - Town of Hillsborough - Water & Sewer, - Dominion - Gas

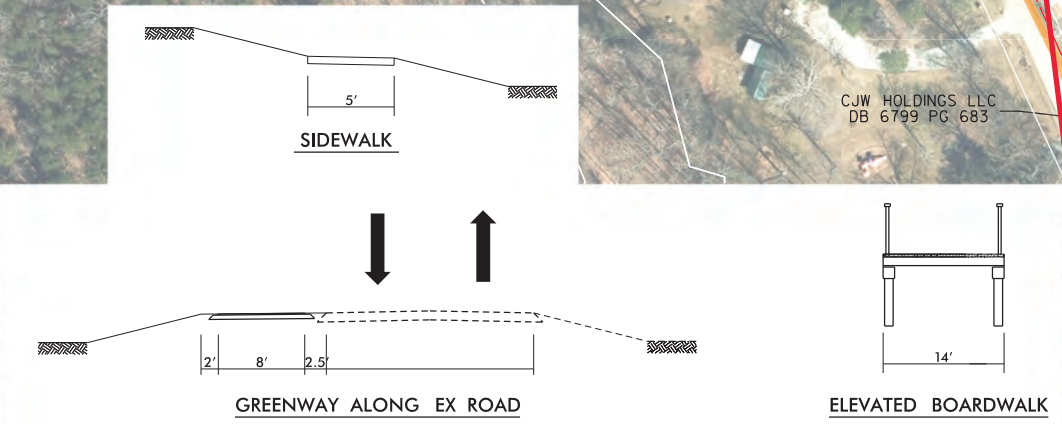
Duke - Power, Spectrum - Comm. - Brightspeed - Comm. - Verizon - Comm. - Google Fiber - Comm. -Town of Hillsborough - Water & Sewer, - Dominion - Gas

Duke - Power, Brightspeed - Comm, Dominion - Gas, Town of Hillsborough - Water & Sewer

Duke - Power, Spectrum - Comm. - Verizon - Comm. - Brightspeed - Comm. - Google Fiber - Comm - Town of Hillsborough - Water & Sewer, - Dominion - Gas

LEGEND

10' GREENWAY	
8' GREENWAY	
BOARDWALK	
LIMIT OF CONSTRUCTION	
EASEMENT	
RIGHT OF WAY	
EXISTING /BUILT BY OTHERS	
SIDEWALK	
CUT (C)	
FILL (F)	
E	
R/W	



MATCHLINE 1



PLANS

ALTERNATIVE 3/ DEVELOPER BUILT

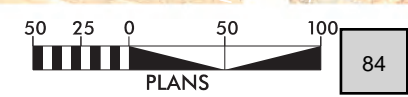
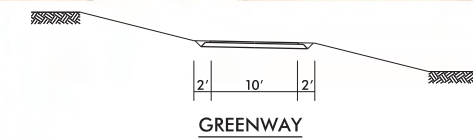
Duke - Power, - Brightspeed -
Comm. - Spectrum - Comm.

TOWN OF HILLSBOROUGH
DB 6314 PG 150



LEGEND

- 10' GREENWAY ———
- BOARDWALK ———
- LIMIT OF CONSTRUCTION - - - - -
- EASEMENT - - - - -
- RIGHT OF WAY R
- EXISTING /BUILT BY OTHERS - - - - -
- CUT (C) - - - - -
- FILL (F) - - - - -



**ALTERNATIVE 4/
 DEVELOPER BUILT**

MATCHLINE 3

MATCHLINE 2



**PEMC - Power -
 Spectrum - Comm. -
 Brightspeed - Comm. -
 Town of Hillsborough -
 Water & Sewer -
 Dominion - Gas**

**Town of Hillsborough -
 Water & Sewer**

**9938 SF TCE
 2772 SF ROW**

**END BOARDWALK
 BEGIN BOARDWALK**

LEGEND

- 10' GREENWAY BOARDWALK
- LIMIT OF CONSTRUCTION
- EASEMENT
- RIGHT OF WAY
- EXISTING / BUILT BY OTHERS

ELEVATED BOARDWALK **GREENWAY**

50 25 0 50 100
PLANS

Alternatives Considered

Original Alignment

The 2023 Ridgewalk Greenway Feasibility Study introduced the preferred north-south pedestrian connection. The recommended route starts near Weaver Street Market. A crosswalk will need to be added to help pedestrians cross to the east side of Exchange Park Lane. The greenway will extend south along Exchange Park Lane until just north of the North Carolina Railroad rail line. It then crosses under the Churton Street bridge running along the rail line. A retaining wall is proposed on the left side of the greenway, from where the route separates from the roadway to the east side of the bridge. The elevated boardwalk begins on the east side of the bridge and climbs to the height required to cross the railroad. After crossing the railroad on an elevated structure at the future train station, the grade gradually lowers as the boardwalk passes the future train station. A ramp is recommended to allow access from the parking lot of the future train station. On the east side of the train station site the boardwalk returns to asphalt greenway surface and runs parallel to the railroad before connecting into the portion of greenway being built by the Collins Ridge development completing Segment 1. With approximately 515 feet of the route proposed in the North Carolina Railroad operating corridor, indemnification fees should be anticipated with permanent installation of the corridor. These fees are not included in the cost estimate of this report but will likely be assigned per linear foot. At the south end of the greenway built by Collins Ridge, asphalt greenway continues up to a pedestrian bridge over Interstate 85. This will cross approximately ½ mile east of current Churton Street Interchange. Then a segment of boardwalk runs on the south side of the pedestrian bridge to fill height for the rest of the trail and transition back to a paved greenway section running down to Becketts Ridge, this route includes several switchbacks to avoid rapid changes in grade. The original alignment continues down to existing sidewalk to the west side of Cates Creek Park with a short section of sidewalk to fill a gap in the facility on Empress Road as the existing path transitions into greenway down to Cates Creek Park to end Segment 2.

Below are the five studied alternates that intend to replace various segments of the proposed greenway as potentially more feasible than the original alignment seen in Figure 1.

Alternative 1

This alternative explored building a 10-foot wide greenway, following an alignment starting near Weaver Street Market and continuing south along Exchange Park Lane. The greenway would then cross underneath the South Churton Street bridge parallel to the railroad south of the single-lane trestle. At the undergrade railroad bridge on Exchange Park Lane, a proposed signal system for pedestrian access under the railroad trestle will be needed due to the minimal horizontal clearance under the bridge. The horizontal clearance can only accommodate one vehicle with shoulders and is marked as a single lane passage. No sidewalks or pedestrian walkways can be accommodated. The High-Intensity Activated Crosswalk (HAWK) Pedestrian Crossing Beacon (explained further in the safety concerns) would allow for pedestrian access for a time limit that vehicular access is prohibited with the use of a signal arm and light system on each side of the bridge. The greenway would continue along the south side of the railroad for approximately 100 feet and turn east to cross under the South Churton Street bridge parallel to the railroad. Approximately 250 feet of retaining wall with an average height between 8 to 12 feet will be built within the crossing area under South Churton Street Bridge. The retaining wall will begin approximately 50 feet to the west of South Churton Street bridge and curve to the right to continue parallel

underneath the bridge. The pathway under the bridge will be located behind the existing pier and continue parallel to the railroad for approximately 25 feet to the east of the bridge where it will turn south for approximately 130 feet to its termination. North Carolina Railroad typically will not allow for a mechanically stabilized earth wall. For the section of retaining wall under the bridge the existing slope will need to be cut down to grade. To contain the existing bridge slope, a special retaining wall such as a soil nail wall will be needed to hold back the cut section as it is cut down to grade. Material such as shotcrete or cast-in-place concrete will then be applied to the front face of the soil nail wall for further slope containment. This type of retaining wall will eliminate the need for temporary shoring under the bridge.

At the termination of the retaining wall on the southeast side of the bridge, the greenway would then continue to the proposed Hillsborough Train Station site. From there the greenway would run along the same route as the boardwalk section on the primary greenway design. The alternate alignment would tie into the primary proposed greenway alignment where it transitions back to greenway from boardwalk. A benefit of this alternate is that it would greatly simplify construction since it uses asphalt greenway throughout the path and eliminates the need to build the bridge over the railroad and long section of boardwalk between Exchange Park Lane and the Hillsborough Train Station. It also strengthens the feasibility of concurrence from the North Carolina Railroad as a structure will not need additional coordination to construct said structure will be avoided at the railroad crossing. Approximately 175 feet of the route would be constructed in the North Carolina Railroad operating corridor, and indemnification fees may be required for this alternative. Right of way and temporary construction easement will likely be required for this alternative. This is explained further in the Right of Way Acquisition section and estimated costs are shown further below in the Appendix section. See below for Alternative 1 design and where it deviates from the original design at Segment 1.



Alternative 1 Design

Safety Concerns

This alternative alignment passes under the railroad through an existing one-lane railroad trestle on Exchange Park Lane which causes safety concerns for pedestrians using the greenway. Due to the configuration of the existing structure and the adverse impacts improvements to the structure would have to rail traffic, it is not feasible to improve the clear roadway width on Exchange Park Lane under this trestle to accommodate both pedestrian and vehicular traffic on separated facilities. To ensure pedestrian safety, a proposed installation of a pedestrian activated signal system is recommended. This would use a signal arm and light system to prevent vehicles from entering under the trestle while pedestrians are present. The HAWK Pedestrian Crossing Beacon or Pedestrian Hybrid Beacon would pose as a safer and less impactful alternative as drivers are provided with cues to bring awareness to the presence of a pedestrian. The HAWK beacon is illuminated when a pedestrian activates the system triggering a flashing warning yellow lens on the street. After a set amount of time, the indications turn to a solid yellow informing drivers to prepare to stop. The beacon then transitions to a dual solid red lens on the street and alternating flashing red light as pedestrians are then shown an upraised hand symbol with a countdown display to cross the section of roadway back to the designated path as a countdown is shown with the remaining time to make the passing. During the alternating flashing red lights, drivers can proceed after coming to a full stop and checking that pedestrians have already crossed their lane of travel. Each successive driver is legally required to come to a full stop before proceeding during the alternating flashing red phase. Thermoplastic stop bars should also be added about 50 feet from each side of the crossing at the trestle where it is clearly visible for approaching drivers giving them ample warning to stop when the beacon is activated. The thermoplastic stop bar allows better visibility and is effective over time.

The current speed limit at Exchange Park Lane is 20 miles per hour. In addition to a signal system, it would be recommended to consider installing a series of speed tables on each side of the trestle to encourage drivers to slow down and look for pedestrians.



HAWK System under the North Carolina Railroad at Exchange Park Lane

Evaluation of Drainage

At the beginning of the greenway on Exchange Park Lane, a base ditch will be required to tie into the existing base ditch adjacent to the hill. The ditch will outlet into the Eno River near the existing Exchange Park Lane bridge. Bank stabilization will be needed at the ditch outlet. Five potential cross pipe locations have been identified. Two of these may have an existing cross pipe, this will have to be verified by survey. Four of these locations are along the greenway on Exchange Park Lane at existing low points, or low points that will result from construction of the greenway. The last cross pipe will be required to carry water along the railroad. The existing ditch on the south side of the railroad will be filled because of the greenway construction. Due to future required maintenance, it is not recommended to have the cross pipe underneath the proposed greenway. The proposed cross pipe will have to cross underneath South Churton Street.

Utilities

Utility impacts do not significantly differ from those of Segment 1 of the original alignment as the same utility owners are present in the facility through the alternative alignment of this segment.

Right-of-way Acquisition

Construction will require the acquisition of over 5,700 square feet of temporary construction easement and approximately 3700 square feet of Right-of-Way from the parcel containing 203 and 205 US 70A (no deed book information available, owned by Goode, Elizabeth C W, PIN# 9874048143), around 1,800 square feet of temporary construction easement and just over 640 of Right-of-Way from the parcel located at 236 South Churton Street (no deed book information available, owned by Blue, Miriam Renee et al, PIN# 9874033799), around 11,175 square feet of temporary construction easement and approximately 3,290 square feet of Right-of-Way from the parcel located at 231 South Churton Street (DB 4779 PG 572, owned by Roberts Investments LLC).

For Alternate 1 estimate approximate costs, see Table 2 in cost estimate section and construction, right-of-way acquisition, and utility cost estimates in the appendix.

Alternative 2

This alternative would start around 223 Exchange Park Lane and turn east until coming to the west side of South Churton Street. The route would then run southward along the roadway crossing the railroad and continuing before turning west and forming a loop. After this loop the greenway would cross under the South Churton Street bridge running parallel with the railway until reaching the rail station.

It was determined that this alternative alignment was infeasible due to several factors. The grade between Exchange Park Lane and South Churton Street was too steep for the beginning of the alternative alignment. The loop included in the design was feasible with the grade, but the boardwalk would need to be 25-feet high for most of the loop. Also, the current sidewalk width on Churton Bridge is only 3.5 feet wide which is not compliant with the American Disabilities Act.

Alternative 3

This alternative utilized an 8-foot-wide greenway beginning at the tie in location with the original greenway alignment, and then continued south along Exchange Park Lane down to Orange Grove Road where it would turn east to run along the roadway until it connected with existing sidewalk on the east side of Churton Street. The proposed 5-foot wide sidewalk would turn north to Hillsborough Train Station. At the station, the alternate ties into the original proposed greenway path, continuing until it connects with the portion of greenway to be built by the Collins Ridge development. This alignment avoids passing under the Churton Street bridge in the rail corridor and constructing an elevated walkway over the North Carolina Railroad tracks. However, this alternate

passes under the railroad through an existing one-lane trestle which causes safety concerns for pedestrians using the greenway. Similar to Alternative 1 and the configuration of the existing structure and the adverse impacts improvements would have to rail traffic, it is not feasible to improve the clear roadway width on Exchange Park Lane under this trestle to accommodate both pedestrian and vehicular traffic on separated facilities and the HAWK Pedestrian System would be recommended for installation. There is also no direct connection to the future train station, even though the sidewalk would connect to the site. Though some discussion with North Carolina Railroad has already occurred, there is no guarantee that the railroad will agree to allow a greenway to run in the rail corridor. Temporary construction easement will likely be required for this alternative at multiple properties and right of way needed for one property. This explained further in the Right of Way Acquisition section with estimated costs are shown in the Appendix section. See below for alternative 3 design and where it deviates from the first segment of the original alignment.



Alternative 3 Design

Safety Concerns

This alternate passes under the railroad through an existing one-lane trestle which causes safety concerns for pedestrians using the greenway. For further discussion see the Safety Concerns section for alternative 1.

Evaluation of Drainage

The drainage recommendations for the beginning of the alignment are consistent with those made for Alternative 1. Two additional potential cross pipe locations were identified further along Exchange Park Lane. A ditch may be used to prevent erosion to the fill slope. For areas with minimal flow, toe protection may be used

instead. A ditch may be needed along the left side of the greenway near the intersection with South Churton Street. This would be connected to the proposed ditch on the other side of the road by a cross pipe under the street. In the sidewalk section of the alternative, it is recommended to allow water to sheet across the sidewalk where possible. It is highly recommended to construct the greenway to allow water to sheet across the greenway to avoid ditching and creating concentrated flow at the outlet.

Utilities

Impacts to existing utilities do not differ significantly from those of the original alignment and can be seen in Figure 2 of the Existing Utilities Maps for Alternative 3.

Right-of-way Acquisition

Construction will require the acquisition of over 700 square feet of temporary construction easement on the parcel located at 240 South Churton Street (DB 2147 PG 190, owned by Parsley, James M A), just over 2600 square feet of temporary construction easement on the additional parcel located at 240 South Churton Street (DB 5494 PG 236, Parsley, James M A), and approximately 80 square feet of temporary construction easement on the parcel located at 203/205 US 70A (no deed book information available, owned by Goode, Elizabeth C W, PIN# 9874048143), just over 290 square feet of temporary construction easement on the parcel located at 236 South Churton Street (no deed book information available, owned by Blue, Miriam Renee et al, PIN# 9874033799), approximately 30 square feet of temporary construction easement on the parcel located at 238 South Churton Street (no deed book information available, owned by Blue, Miriam Renee et al, PIN# 9874033671), about 960 square feet of temporary construction easement and 165 square feet of Right-of-Way on the parcel located at 250 South Churton Street (DB 6799 PG 683, owned by CJW Holdings LLC), approximately 580 square feet of temporary construction easement on the parcel located at 243 South Churton Street (DB 6371 PG 38, owned by Roberts, John M Heirs). This alternative requires over 11000 square feet less right-of-way in the area when compared to the originally proposed path.

For Alternate 3 estimate approximate costs, see Table 3 in cost estimate section and construction, right-of-way acquisition, and utility cost estimates in the appendix.

Alternative 4

This alternative path begins at the corner of Flat Ford Road and Brightleaf Road in the Collins Ridge development and runs south under the bridge on Interstate 85 that spans the railroad. In the section under the bridge, the greenway runs parallel to the railroad. Though some discussion with North Carolina Railroad has occurred, there is no guarantee that the railroad will allow a greenway to be constructed in the railroad right-of-way. Around 340 feet of the route would be constructed in the North Carolina Railroad operating corridor, and indemnification fees may be required. In addition, there is currently not enough room for the greenway under the Interstate 85 bridge to be accommodated in between the railroad, bridge pier and spill through slope. Lengthening the bridge by approximately 50 feet would allow adequate clearance to construct the greenway between the bottom of the spill through slope and outside of the bridge pier while also providing more clearance further away from the railroad corridor. After passing under the bridge, the path turns west and transitions from greenway to boardwalk for a span of around 70 feet with a maximum height of 16'. As mentioned in the original feasibility study, the boardwalk system, walking surface, and substructure will be constructed of precast concrete with driven piles, where possible. An example of a precast concrete boardwalk supplier would be PermaTrak North America, as their specifications will accommodate the minimum design standards listed in the Evaluation of Structures section of the original feasibility study. At the termination of the boardwalk the greenway continues southwest for around 750 feet before turning south and tying into the original proposed greenway path where it

intersects with Beckett's Ridge Drive. This alternative greatly reduces the length of the greenway, and the amount of material needed since it presents a much more direct path than the original plan's proposed path. It also eliminates the need to construct a pedestrian bridge over Interstate 85 and reduces the length of elevated boardwalk needed. With the potential need to lengthen of the bridge, if carried forward, both the North Carolina Department of Transportation (NCDOT) and Federal Highway Administration (FHWA) would likely be involved in the cost-sharing and splitting funds to lengthen the bridge since the project would be a locally adopted plan that provides transportation benefits. The town will have a better idea of the cost when designs of the Interstate 85 widening project progress. Lastly, it can serve as a wildlife corridor and a passage for wildlife crossing under the bridge if the existing bridge can be lengthened. Right-of-way and temporary construction easement acquisition will likely be needed along one parcel for this alternative and the costs can be seen in the appendix. See below for alternative 4 design and where it deviates from Segment 2 of the original design.



Alternative 4 Design

Safety Concerns

There are no unique safety hazards present along this alternate, and exposure to vehicle traffic is minimal. Pavement markings and signage will be needed at the crossing of Beckett's Ridge Drive.

Evaluation of Drainage

Drainage recommendations for Alternative 4 will be consistent with that of the original alternative. A potential cross pipe location was identified just before the crossing at Interstate 85. The drainage area for the pipe is uncertain due to the construction of the Collins Ridge subdivision. It is recommended that a ditch be constructed to carry flow to the cross pipe. Immediately after the crossing, a junction box will be required to tie the existing pipe to the outlet to avoid conflicts with the greenway. A ditch will be required on the section of greenway

between the end of the boardwalk and the intersection with Beckett's Ridge Road. Four additional cross pipe locations along the ditch were identified.

Utilities

In evaluating the existing utilities for this alternative segment, there is presence of Town of Hillsborough-owned water and sewer following the crossing of I-85 along with power and communications lines approaching Beckett's Ridge Drive as shown in Figure 2.

Right-of-way Acquisition

The right-of-way impacts will require approximately 10,000 square feet of temporary construction easement and 2,800 square feet of Right-of-Way on the parcel owned by Old Milling Properties LLC (DB 2075 PG 536).

For Alternate 4 estimate approximate costs, see Table 4 in cost estimate section and construction, right-of-way acquisition, and utility cost estimates in the appendix.

Alternative 5

This alternative alignment would begin southeast of the corner of Flat Ford Road and Brightleaf Road. This option was explored to determine the feasibility of connecting to the Hampton Pointe Apartments and shopping center. It runs south under the bridge carrying I-85 over the railroad. Currently there is not enough room for the greenway to fit under the I-85 bridge, to accommodate the greenway the bridge would have to be extended by 50'. The greenway would continue south running parallel to the railroad before turning east and crossing under the railroad trestle. The route would then continue eastward before tying into the sidewalk on Hampton Pointe. This alternative alignment was found to be infeasible. There is not enough room for the greenway under the railway trestle. There are also severe grading issues. The greenway would need to run along the railroad, cross under the trestle with enough clearance and then get high enough to stay out of Cates Creek. These competing elevations would make construction of the greenway infeasible. This alternative was analyzed to explore the feasibility of making a connection to Hampton Pointe Apartments and the shopping center.

Cost Estimates

Below are in Table 1 are the cost estimate summaries. These have been updated from 2023 for the original alignment. It should be noted that estimates have been calculated at current costs and costs will rise over time at an unknown rate. Material and labor costs have been volatile over the past several years and it is unknown how costs may change in the years ahead. An escalation of 6% was added to the cost estimates to account for inflation up to an estimated bid date in the second quarter of 2024. A further increase in cost should be anticipated for any later bid date.

Life-cycle costs will also be associated with maintenance of the greenway as well such as waste and recycling removal, repaving the greenway surface, mowing, and maintaining crosswalks to name a few. Ongoing Indemnification costs associated with permanent installation of the greenway in the North Carolina Railroad Operating Corridor may also be incurred and were not captured in the cost estimate. These life-cycle costs have not been estimated as part of this study, but they will be required throughout the life of the greenway.

In summary, Alternatives 1 & 3 provide options on the north segment (Segment 1) of the proposed greenway and Alternative 4 provides another option on the south segment (Segment 2). Alternatives 1 and 3 both significantly lower construction costs compared to the original Segment 1 design. This is largely because they eliminate the need for the construction of a pedestrian bridge and instead utilize less expensive greenway and

sidewalks options to cross Churton Street. Alternative 3 is the least expensive option for Segment 1 with sidewalk sections and less utility relocation anticipated. It eliminates the need for a pedestrian bridge, requires less earthwork, boardwalk and retaining wall structure length. Construction costs for Alternate 1 is driven up by the need for more pavement for the greenway in lieu of sidewalk section and a wider path at 10' when paved instead of 8' wide segment, especially at Exchange Park Lane. Both alternatives still utilize boardwalks in the area of the proposed train station.

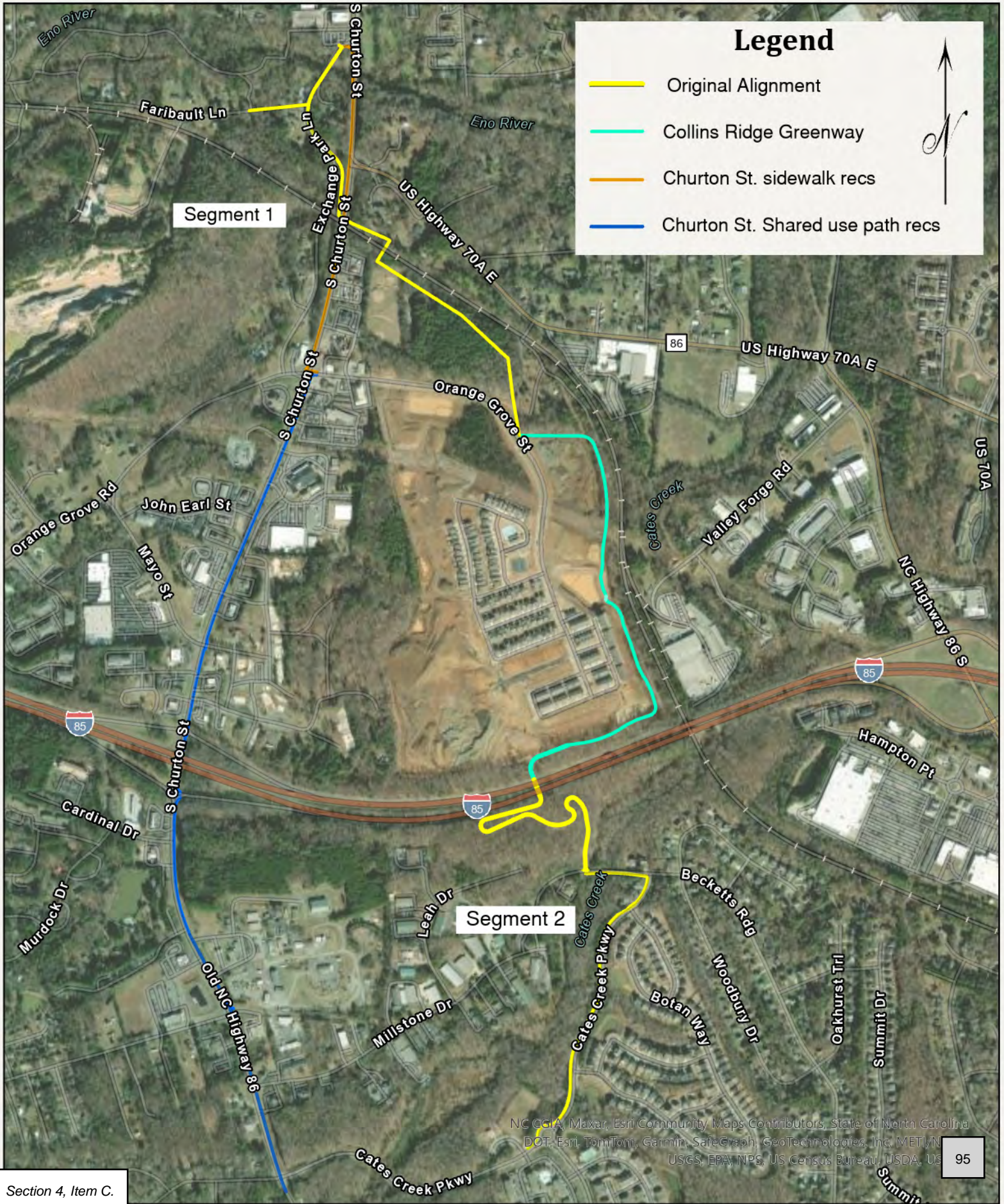
Alternative 4 significantly reduces construction costs when compared to the original Segment 2 plan. The alternative eliminates the need to construct a pedestrian bridge over I-85, greatly reduces the required length of boardwalk needed, and takes a much more direct route between the Collins Ridge development and Beckett's Ridge Drive. These changes significantly decrease the construction costs for phase 2 of greenway construction. See appendix for cost estimate breakdowns for construction costs, utility and right-of-way costs for the updated construction costs for the original alignment and Alternatives 1,3 and 4 and the utility relocation and right-of-way costs for Alternatives 1, 3 and 4.

Table 1. Original Alignment Cost Estimate Summaries

Segment 1 (Original Alignment)	COST ESTIMATE (2024)	Segment 2 (Original Alignment)	COST ESTIMATE (2024)
Construction	\$6,641,265	Construction	\$5,319,637
Utilities	\$319,680	Utilities	\$79,920
Right-of-Way	\$88,300	Right-of-Way	\$4,700
Design and Engineering Fees (10%)	\$704,925	Design and Engineering Fees (10%)	\$540,426
Construction Administration (10%)	\$704,925	Construction Administration (10%)	\$540,426
Contingency (20%)	\$1,409,849	Contingency (20%)	\$1,080,851
Segment 1 Total	\$9,868,943	Segment 2 Total	\$7,565,960

Figure 1

Original Alignment (Segment 1 & 2)

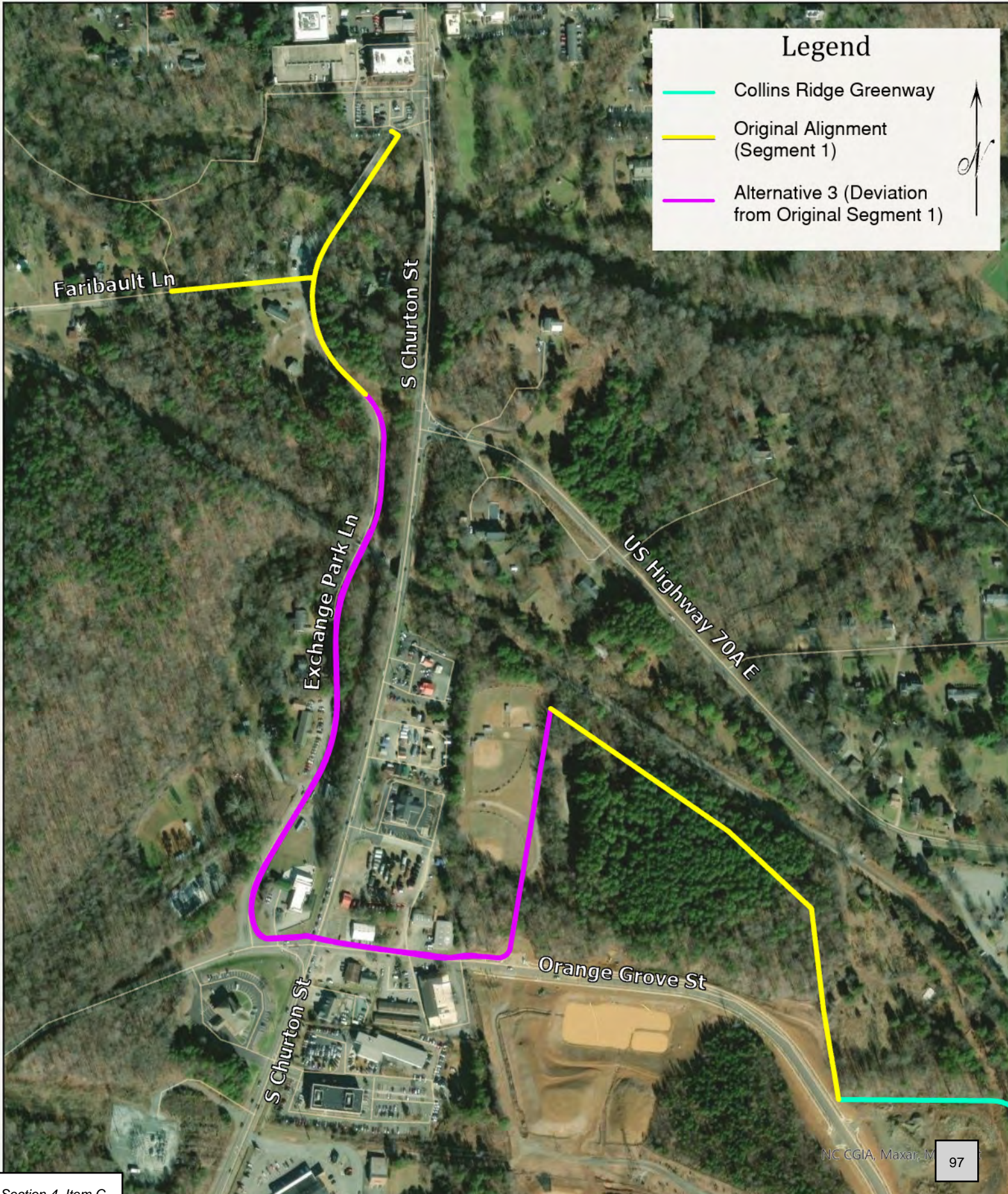


NC CGIA, Maxar, Esri Community Maps Contributors, State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/N USGS, EPA, NPS, US Census Bureau, USDA, US

Table 2. Alternative 1 (Segment 1) Cost Estimate Summary

Alternative 1 (Segment 1)	COST ESTIMATE (2024)
Construction	\$3,136,298
Utilities	\$243,985
Right-of-Way	\$136,000
Design and Engineering Fees (10%)	\$351,628
Construction Administration (10%)	\$351,628
Contingency (20%)	\$703,257
Alternative 1 (Segment 1) Total	\$4,922,796

Alternative 3



Legend

- Collins Ridge Greenway
- Original Alignment (Segment 1)
- Alternative 3 (Deviation from Original Segment 1)

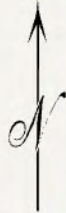
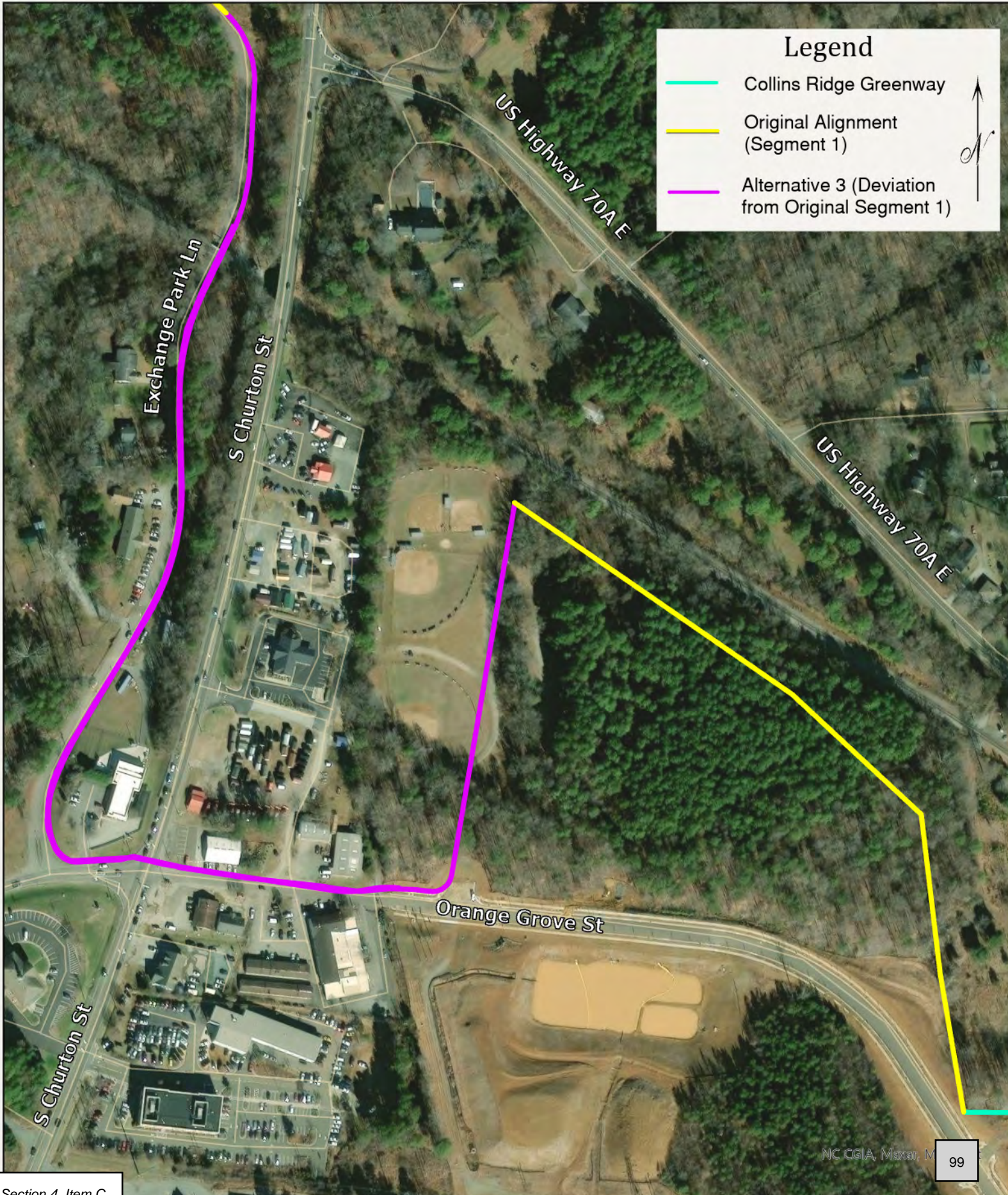


Table 3. Alternative 3 (Segment 1) Cost Estimate Summary

Alternative 3 (Segment 1)	COST ESTIMATE (2024)
Construction	\$2,971,740
Utilities	\$176,706
Right-of-Way	\$85,000
Design and Engineering Fees (10%)	\$323,345
Construction Administration (10%)	\$323,345
Contingency (20%)	\$646,689
Alternative 3 (Segment 1) Total	\$4,526,824

Alternative 3



Legend

- Collins Ridge Greenway
- Original Alignment (Segment 1)
- Alternative 3 (Deviation from Original Segment 1)

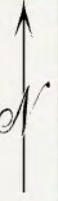
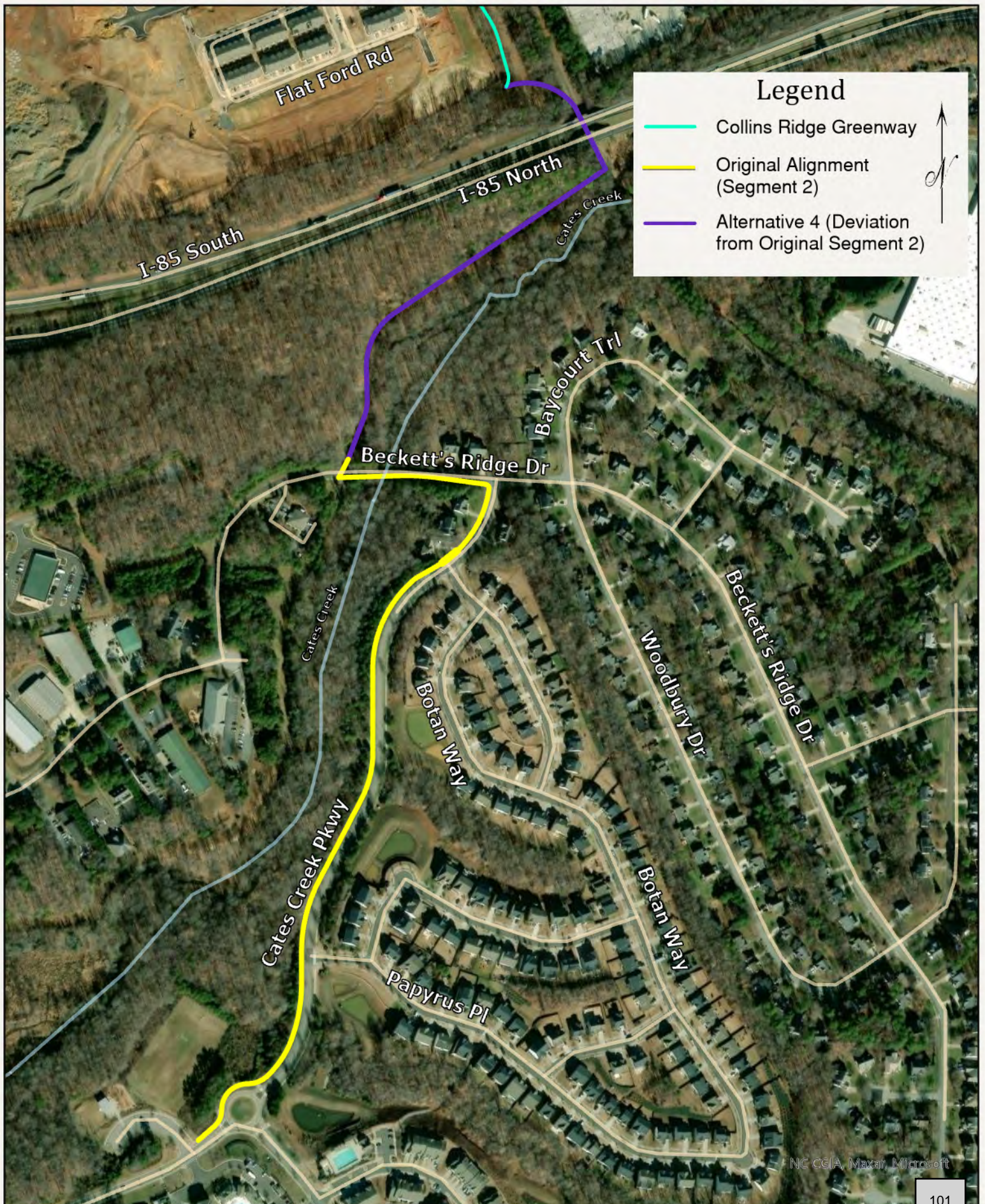


Table 4. Alternative 4 (Segment 2) Cost Estimate Summary

Alternative 4 (Segment 2)	COST ESTIMATE (2024)
Construction	\$1,750,720
Utilities	\$9,732
Right-of-Way	\$9,400
Design and Engineering Fees (10%)	\$176,985
Construction Administration (10%)	\$176,985
Contingency (20%)	\$353,970
Alternative 4 (Segment 2) Total	\$2,477,793

Alternative 4



Legend

- Collins Ridge Greenway
- Original Alignment (Segment 2)
- Alternative 4 (Deviation from Original Segment 2)



Continuing the Path Forward

This feasibility study has provided further recommendations and information and alternatives for the Ridgewalk greenway location, structures, utilities, right-of-way, segmentation, construction related costs, and desirable amenities. The Town of Hillsborough will need to review the supplemental information in addition to the initial report and determine if they would like to proceed with identifying and pursuing potential funding sources. Once funding has been allocated, a design team can be contracted to assist the Town with the final design implementation for the project, including right-of-way acquisition and utility coordination and relocations. Then construction on the Ridgewalk Greenway can commence.

References

Google Earth Aerial Imagery

<https://earth.google.com>

Natural Resources Conservation Service – Web Soil Survey Mapping Tool

<https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Natural Resources Conservation Service Published Soil Survey / US Geological Survey (USGS) Topographic GIS Data

<https://experience.arcgis.com/experience/a16078049de54d42a2bc384b9ceda91f>

NC Historic Preservation Office – HPOWEB 2.0 -

<https://nc.maps.arcgis.com/apps/webappviewer/index.html?id=d2d04d8d7e03403f889419526e682529>

NC Department of Environmental Quality GIS Data

<https://data-ncdenr.opendata.arcgis.com/datasets/ncdenr::ust-active-facilities/about>

Orange County GIS Data

<https://www.orangecountync.gov/2057/Download-GIS-Data>

Town of Hillsborough Community Connectivity Plan

<https://assets.hillsboroughnc.gov/media/documents/public/community-connectivity-plan.pdf>

Town of Hillsborough Draft Comprehensive Sustainability Plan

<https://assets.hillsboroughnc.gov/media/documents/public/draft-comprehensive-sustainability-plan-full-plan.pdf>

Town of Hillsborough Development Projects

<https://www.hillsboroughnc.gov/development-projects/>

Town of Hillsborough GIS Data

<https://hillsboroughnc.maps.arcgis.com/>

USDA Accessibility Guidebook for Outdoor Recreation and Trails

<https://www.fs.usda.gov/sites/default/files/Accessibility-Guide-Book.pdf>

US Environmental Protection Agency (EPA) Envirofacts/Enviromapper

<https://enviro.epa.gov/enviro/em4ef.home>

US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC)

<https://ipac.ecosphere.fws.gov/>

USFWS National Wetlands Inventory

<https://www.fws.gov/program/national-wetlands-inventory/wetlands-data>

USGS National Hydrography Dataset

<https://www.usgs.gov/national-hydrography/national-hydrography-dataset>

Safety Effectiveness of the HAWK Pedestrian Crossing Treatment
<https://www.fhwa.dot.gov/publications/research/safety/10045/>

Appendix



EXECUTIVE SUMMARY

Prepared For: Summit Design and Engineering Services

Project Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC Estimate Date: 8/27/2024

Project Area (SF): 8.8 ACRE Revised Date: _____

Project #: 23188 Palacio Lead Contact: Kaye Smith

Project Phase: Feasibility Study

Project Description: Greenway Trail

CONSTRUCTION COST SNAPSHOT				
PROJECT TYPE				TOTAL
Greenway Trail, Segment 1 (Original Alignment)				\$6,641,265
Greenway Trail, Segment 1 - Alternate 1				\$3,136,298
Greenway Trail, Segment 1 - Alternate 3				\$2,971,740
Greenway Trail, Segment 2 (Original Alignment)				\$5,319,637
Greenway Trail, Segment 2 - Alternate 4				\$1,750,720
Miscellaneous				\$775,834

ALTERNATES (INCLUDES COST OF WORK AND MARKUPS)		
1		
2		
3		
4		

ESTIMATE ASSUMPTIONS
Anticipated Bid Date: 2nd Quarter 2025 (Add 1.5% per quarter for market escalation beyond this point)
Design-Bid-Build delivery method
Receiving bids from at least four (4) qualified general contractors
General contractors to receive bids from at least four (4) qualified subcontractors per trade
Most of the bidders will be from the local market (within 1 hour driving distance)
Assumes normal working hours



PALACIO

Name: **Town of Hillsborough Greenway Trail**

Location: Town of Hillsborough

Date: 8/20/2024

Area (SF): _____

Rev. Date: _____

Segment 1 (Original Alignment)

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	Site Metrics				
	- length of trail segment	8,228	LF		
	- area of paving	24,975	SF		
	- limits of construction area	74,052	SF		
	- limits of construction area - acreage	1.7	AC		
	General Requirements				
	- mobilization	74	MSF	400.00	29,600
	- asbuilt drawings	1	LS	5,000.00	5,000
	- secured laydown area - 90' sq				
	grading	600	CY	8.00	4,800
	gravel paving	900	SY	30.00	27,000
	security fence w/ double gate	360	LF	60.00	21,600
	- tire wash	1	LS	4,000.00	4,000
	- clean roads	6	MO	500.00	3,000
	Site Prep				
	- survey / layout	74	MSF	200.00	14,800
	- site demo, allowance	1	LS	25,000.00	25,000
	- clearing and grubbing				
	trees, undergrowth, overgrowth	1.7	ACRE	10,000.00	17,000
	- grading				
	topsoil				
	remove / stockpile	0	CY	4.00	0
	replace or dispose	0	CY	7.00	0
	rough grading	74	MSF	200.00	14,800
	unclassified excavation, cut and waste	1,210	CY	20.00	24,200
	offsite borrow, compaction	730	CY	40.00	29,200
	unsuitable soil replacement, allowance	1	LS	5,000.00	5,000
	- finegrading				
	paving	24,975	SF	0.50	12,488
	grassing	49,077	SF	0.15	7,362
	- erosion control				
	silt fence	0	LF	7.00	3
	check dams	0	EA	500.00	0
	silt fence outlets	0	EA	800.00	0
	erosion control, allowance	1	LS	50,000.00	50,000
	- storm drain				
	culvert extension	0	EACH	10,000.00	0
	pipng	0	LF	150.00	0
	bioretention pond	0	EACH	100,000.00	0
	Site Paving				
	- asphalt paving				
	parking, 6" / 2"	0	SY	45.00	0
	greenway, 6" / 2"	2,775	SY	50.00	138,750
	- gravel paving				
	greenway, 3"	0	SY	25.00	0
	- concrete paving				
	walks	0	SF	7.00	0
	bench pad, 20 sq ft / each	4	EACH	400.00	1,600

MAT



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Town of Hillsborough

Date: 8/20/2024

Area (SF): _____

Rev. Date: _____

Segment 1 (Original Alignment)

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	curb ramps	4	EACH	750.00	3,000
	crosswalk	85	LF	64.00	5,440
	Site Improvements				
	- bridge				
	prefab bridge including railings	160	LF	6,965.06	1,114,410
	bridge piers	2	EA	50,000.00	100,000
	bridge embankments	0	EA	20,000.00	0
	- boardwalk				
	concrete boardwalk w/ spread footings & pilings	17,850	SF	120.00	2,142,000
	metal railings at both sides of boardwalk	1,642	LF	175.00	287,350
	- retaining wall				
	concrete w/ footing (4.7' avg height)	450	LF	350.00	157,500
	- site furnishings / metals				
	benches	4	EACH	1,500.00	6,000
	picnic tables	2	EACH	2,000.00	4,000
	waste receptacle / recycle receptacle	4	EACH	950.00	3,800
	dog waste receptacle	4	EACH	951.00	3,804
	bike racks	2	EACH	1,200.00	2,400
	steel bollards	1	EACH	1,000.00	1,000
	- signage				
	trailhead signs	2	EACH	5,000.00	10,000
	destination signs	6	EACH	5,000.00	30,000
	route makers	8	EACH	1,000.00	8,000
	wayfinding signs	3	EACH	3,600.00	10,800
	interpretive signs	2	EACH	2,000.00	4,000
	Landscaping				
	pedestrian lighting, pole every 100 ft.	0	EA	9,000.00	0
	landscaping lighting, pedestrian	3,900	LF	75.00	292,500
	grassing	0	SF	0.25	0
SUBTOTAL					\$4,621,206
	General Condition as %	7%			\$323,484
	Bonds as %	1%			\$49,447
	Insurance as %	1.50%			\$74,912
	Contractor Fee as %	3%			\$152,071
	Design/Market Conditions Contingency as %	20%			\$1,044,224
	Escalation as %	6%			\$375,921
TOTAL PROBABLE CONSTRUCTION COST					\$6,641,265



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Segment 1 -Alternate 1

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	Site Metrics				
	- length of trail segment	4,030	LF		
	- area of paving	34,443	SF		
	- limits of construction area	100,188	SF		
	- limits of construction area - acreage	2.3	AC		
	- mobilization	100	MSF	400.00	40,000
	- asbuilt drawings	1	LS	5,000.00	5,000
	- secured laydown area - 90' sq				
	grading	600	CY	8.00	4,800
	gravel paving	900	SY	30.00	27,000
	security fence w/ double gate	360	LF	60.00	21,600
	- tire wash	1	LS	4,000.00	4,000
	- clean roads	6	MO	500.00	3,000
	Site Prep				
	- survey / layout	100	MSF	200.00	20,000
	- site demo, allowance	1	LS	25,000.00	25,000
	- clearing and grubbing				
	trees, undergrowth, overgrowth	2.3	ACRE	10,000.00	23,000
	- grading				
	topsoil				
	remove / stockpile	0	CY	4.00	0
	replace or dispose	0	CY	7.00	0
	rough grading	100	MSF	200.00	20,000
	unclassified excavation, cut and waste	4,580	CY	20.00	91,600
	offsite borrow, compaction	423	CY	40.00	16,920
	unsuitable soil replacement, allowance	1	LS	9,000.00	9,000
	- finegrading				
	paving	34,443	SF	0.50	17,222
	grassing	65,745	SF	0.15	9,862
	- erosion control				
	silt fence	0	LF	7.00	3
	check dams	0	EA	500.00	0
	silt fence outlets	0	EA	800.00	0
	erosion control, allowance	1	LS	50,000.00	50,000
	- storm drain				
	culvert extension	0	EACH	10,000.00	0
	pipng	340	LF	150.00	51,000
	bioretention pond	1	50000	100,000.00	100,000
	Site Paving				
	- asphalt paving				
	parking, 6" / 2"	0	SY	45.00	0
	greenway, 6" / 2"	3,827	SY	50.00	191,350
	- gravel paving				
	greenway, 3"	0	SY	25.00	0
	- concrete paving				
	walks	0	SF	7.00	0
	bench pad, 20 sq ft / each	4	EACH	400.00	1,600



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Segment 1 -Alternate 1

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	curb ramps	4	EACH	750.00	3,000
	crosswalk	0	LF	64.00	0
	Site Improvements				
	- bridge				
	prefab bridge including railings	0	LF	6,965.06	0
	bridge embankments	0	EA	20,000.00	0
	- boardwalk				
	concrete boardwalk w/ spread footings & pilings	6,806	SF	120.00	816,720
	metal railings at both sides of boardwalk	919	LF	175.00	160,825
	- retaining wall				
	concrete w/ footing (4.7' avg height)	250	LF	350.00	87,500
	- site furnishings / metals				
	benches	4	EACH	2,000.00	8,000
	picnic tables	4	EACH	2,000.00	8,000
	waste receptacle / recycle receptacle	4	EACH	1,800.00	7,200
	dog waste receptacle	4	EACH	950.00	3,800
	bike racks	2	EACH	1,200.00	2,400
	steel bollards	1	EACH	1,000.00	1,000
	- signage				
	trailhead signs	2	EACH	5,000.00	10,000
	destination signs	6	EACH	5,000.00	30,000
	route makers	8	EACH	1,000.00	8,000
	wayfinding signs	3	EACH	3,600.00	10,800
	interpretive signs	2	EACH	2,000.00	4,000
	Landscaping				
	pedestrian lighting, pole every 100 ft.	0	EA	9,000.00	0
	landscaping lighting, pedestrian	3,636	LF	75.00	272,700
	grassing	65,745	SF	0.25	16,436
SUBTOTAL					\$2,182,337
	General Condition as %	7%			\$152,764
	Bonds as %	1%			\$23,351
	Insurance as %	1.50%			\$35,377
	Contractor Fee as %	3%			\$71,815
	Design/Market Conditions Contingency as %	20%			\$493,129
	Escalation as %	6%			\$177,526
TOTAL PROBABLE CONSTRUCTION COST					\$3,136,298



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Segment 1 - Alternate 3

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	Site Metrics				
	- length of trail segment	4,560	LF		
	- area of paving	33,093	SF		
	- limits of construction area	65,340	SF		
	- limits of construction area - acreage	1.5	AC		
	General Requirements				
	- mobilization	65	MSF	400.00	26,000
	- asbuilt drawings	1	LS	5,000.00	5,000
	- secured laydown area - 90' sq				
	grading	600	CY	8.00	4,800
	gravel paving	900	SY	30.00	27,000
	security fence w/ double gate	360	LF	60.00	21,600
	- tire wash	1	LS	4,000.00	4,000
	- clean roads	6	MO	500.00	3,000
	Site Prep				
	- survey / layout	65	MSF	200.00	13,000
	- site demo, allowance	1	LS	15,000.00	15,000
	- clearing and grubbing				
	trees, undergrowth, overgrowth	1.5	ACRE	10,000.00	15,000
	- grading				
	topsoil				
	remove / stockpile	0	CY	4.00	0
	replace or dispose	0	CY	7.00	0
	rough grading	65	MSF	200.00	13,000
	unclassified excavation, cut and waste	1,860	CY	20.00	37,200
	offsite borrow, compaction	423	CY	40.00	16,920
	unsuitable soil replacement, allowance	1	LS	7,000.00	7,000
	- finegrading				
	paving	33,093	SF	0.50	16,547
	grassing	32,247	SF	0.15	4,837
	- erosion control				
	silt fence	0	LF	7.00	3
	check dams	0	EA	500.00	0
	silt fence outlets	0	EA	800.00	0
	erosion control, allowance	1	LS	50,000.00	50,000
	- storm drain				
	culvert extension	0	EACH	10,000.00	0
	pipng	280	LF	150.00	42,000
	bioretention pond	1	EACH	50,000.00	50,000
	Site Paving				
	- asphalt paving				
	parking, 6" / 2"	0	SY	45.00	0
	greenway, 6" / 2"	3,677	SY	50.00	183,850
	- gravel paving				
	greenway, 3"	0	SY	25.00	0
	- concrete paving				
	walks	737	SF	7.00	5,159
	bench pad, 20 sq ft / each	6	EACH	400.00	2,400



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Segment 1 - Alternate 3

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	curb ramps	4	EACH	7,500.00	30,000
	crosswalk	70	LF	64.00	4,480
	Site Improvements				
	- bridge				
	prefab bridge including railings	0	LF	6,965.06	0
	bridge embankments	0	EA	50,000.00	0
	- boardwalk				
	concrete boardwalk w/ spread footings & pilings	6,495	SF	120.00	779,400
	metal railings at both sides of boardwalk	935	LF	175.00	163,625
	- retaining wall				
	concrete w/ footing (4.7' avg height)	0	LF	350.00	0
	- site furnishings / metals				
	benches	6	EACH	2,000.00	12,000
	picnic tables	0	EACH	2,000.00	0
	waste receptacle / recycle receptacle	6	EACH	1,800.00	10,800
	dog waste receptacle	6	EACH	950.00	5,700
	bike racks	2	EACH	1,200.00	2,400
	steel bollards	2	EACH	1,000.00	2,000
	- signage				
	trailhead signs	2	EACH	5,000.00	10,000
	destination signs	6	EACH	5,000.00	30,000
	route makers	12	EACH	1,000.00	12,000
	wayfinding signs	3	EACH	3,600.00	10,800
	interpretive signs	2	EACH	2,000.00	4,000
	Landscaping				
	pedestrian lighting, pole every 100 ft.	0	EA	9,000.00	0
	landscaping lighting, pedestrian	5,590	LF	75.00	419,250
	grassing	32,247	SF	0.25	8,062
SUBTOTAL					\$2,067,832
	General Condition as %	7%			\$144,748
	Bonds as %	1%			\$22,126
	Insurance as %	1.50%			\$33,521
	Contractor Fee as %	3%			\$68,047
	Design/Market Conditions Contingency as %	20%			\$467,255
	Escalation as %	6%			\$168,212
TOTAL PROBABLE CONSTRUCTION COST					\$2,971,740



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Segment 2 (Original Alignment) South of I-85

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	Site Metrics				
	- length of trail segment	4,574	LF		
	- area of paving	24,525	SF		
	- limits of construction area	91,476	SF		
	- limits of construction area - acreage	2.1	AC		
	General Requirements				
	- mobilization	91	MSF	400.00	36,400
	- asbuilt drawings	1	LS	5,000.00	5,000
	- secured laydown area - 90' sq				
	grading	600	CY	8.00	4,800
	gravel paving	900	SY	30.00	27,000
	security fence w/ double gate	360	LF	60.00	21,600
	- tire wash	1	LS	4,000.00	4,000
	- clean roads	6	MO	500.00	3,000
	Site Prep				
	- survey / layout	91	MSF	200.00	18,200
	- site demo, allowance	1	LS	25,000.00	25,000
	- clearing and grubbing				
	trees, undergrowth, overgrowth	2.1	ACRE	10,000.00	21,000
	- grading				
	topsoil				
	remove / stockpile	0	CY	4.00	0
	replace or dispose	0	CY	7.00	0
	rough grading	91	MSF	200.00	18,200
	unclassified excavation, cut and waste	7,730	CY	20.00	154,600
	offsite borrow, compaction	3,470	CY	40.00	138,800
	unsuitable soil replacement, allowance	1	LS	9,000.00	9,000
	- finegrading				
	paving	24,525	SF	0.50	12,263
	grassing	66,951	SF	0.15	10,043
	- erosion control				
	silt fence	0	LF	7.00	3
	check dams	0	EA	500.00	0
	silt fence outlets	0	EA	800.00	0
	erosion control, allowance	1	LS	75,000.00	75,000
	- storm drain				
	culvert extension	0	EACH	10,000.00	0
	pipng	200	LF	150.00	30,000
	bioretention pond	0	EACH	100,000.00	0
	Site Paving				
	- asphalt paving				
	parking, 6" / 2"	0	SY	45.00	0
	greenway, 6" / 2"	2,725	SY	50.00	136,250
	- gravel paving				
	greenway, 3"	0	SY	25.00	0
	- concrete paving				
	walks	684	SF	7.00	4,788
	bench pad, 20 sq ft / each	3	EACH	400.00	1,200
	curb ramps	1	EACH	750.00	750



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Segment 2 (Original Alignment) South of I-85

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	crosswalk	25	LF	64.00	1,600
	Site Improvements				
	- bridge				
	prefab bridge including railings	170	LF	10,447.59	1,776,091
	bridge piers	3	EA	75,000.00	225,000
	bridge embankments	0	EA	20,000.00	0
	traffic control	1	LS	100,000.00	100,000
	- boardwalk				
	concrete boardwalk w/ spread footings & pilings	3,205	SF	120.00	384,600
	metal railings at both sides of boardwalk	0	LF	175.00	0
	- retaining wall				
	concrete w/ footing (4.7' avg height)	200	LF	350.00	70,000
	- site furnishings / metals				
	benches	3	EACH	2,000.00	6,000
	picnic tables	2	EACH	2,000.00	4,000
	waste receptacle / recycle receptacle	3	EACH	1,800.00	5,400
	dog waste receptacle	3	EACH	950.00	2,850
	bike racks	2	EACH	1,200.00	2,400
	steel bollards	1	EACH	1,000.00	1,000
	- signage				
	trailhead signs	1	EACH	5,000.00	5,000
	destination signs	3	EACH	5,000.00	15,000
	route makers	6	EACH	1,000.00	6,000
	wayfinding signs	0	EACH	3,600.00	0
	interpretive signs	2	EACH	2,000.00	4,000
	Benches	0	EACH	1,500.00	0
	Picnic Tables	0	EACH	2,000.00	0
	Trash Can	0	EACH	950.00	0
	Dog Waste	0	EACH	500.00	0
	Bollards	0	EACH	850.00	0
	Bike Racks	0	EACH	2,500.00	0
	Landscaping				
	pedestrian lighting, pole every 100 ft.	0	EA	9,000.00	0
	landscaping lighting, pedestrian	2,920	LF	75.00	219,000
	grassing	66,951	SF	0.25	16,738
	plantings	1	LS	100,000.00	100,000
SUBTOTAL					\$3,701,574
	General Condition as %	7%			\$259,110
	Bonds as %	1%			\$39,607
	Insurance as %	1.50%			\$60,004
	Contractor Fee as %	3%			\$121,809
	Design/Market Conditions Contingency as %	20%			\$836,421
	Escalation as %	6%			\$301,112
TOTAL PROBABLE CONSTRUCTION COST					\$5,319,637



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Segment 2 - Alternate 4

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	Site Metrics				
	- length of trail segment	1,850	LF		
	- area of paving	17,757	SF		
	- limits of construction area	52,272	SF		
	- limits of construction area - acreage	1.2	AC		
	General Requirements				
	- mobilization	52	MSF	400.00	20,800
	- asbuilt drawings	1	LS	5,000.00	5,000
	- secured laydown area - 90' sq				
	grading	600	CY	8.00	4,800
	gravel paving	900	SY	30.00	27,000
	security fence w/ double gate	360	LF	60.00	21,600
	- tire wash	1	LS	4,000.00	4,000
	- clean roads	6	MO	500.00	3,000
	Site Prep				
	- survey / layout	52	MSF	200.00	10,400
	- site demo, allowance	1	LS	15,000.00	15,000
	- clearing and grubbing				
	trees, undergrowth, overgrowth	1.2	ACRE	10,000.00	12,000
	- grading				
	topsoil				
	remove / stockpile	0	CY	4.00	0
	replace or dispose	0	CY	7.00	0
	rough grading	52	MSF	200.00	10,400
	unclassified excavation, cut and waste	6,155	CY	20.00	123,100
	offsite borrow, compaction	10,485	CY	40.00	419,400
	unsuitable soil replacement, allowance	1	LS	27,000.00	27,000
	- finegrading				
	paving	17,757	SF	0.50	8,879
	grassing	34,515	SF	0.15	5,177
	- erosion control				
	silt fence	0	LF	7.00	3
	check dams	0	EA	500.00	0
	silt fence outlets	0	EA	800.00	0
	erosion control, allowance	1	LS	50,000.00	50,000
	- storm drain				
	culvert extension	0	EACH	10,000.00	0
	pipng	352	LF	150.00	52,800
	bioretention pond	0	EACH	100,000.00	0
	Site Paving				
	- asphalt paving				
	parking, 6" / 2"	0	SY	45.00	0
	greenway, 6" / 2"	1,973	SY	50.00	98,650
	- gravel paving				
	greenway, 3"	0	SY	25.00	0
	- concrete paving				
	walks	0	SF	7.00	0
	bench pad, 20 sq ft / each	2	EACH	400.00	800



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Segment 2 - Alternate 4

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	curb ramps	1	EACH	750.00	750
	crosswalk	30	LF	64.00	1,920
	Site Improvements				
	- bridge				
	prefab bridge including railings	0	LF	6,965.06	0
	bridge embankments	0	EA	50,000.00	0
	- boardwalk				
	concrete boardwalk w/ spread footings & pilings	705	SF	120.00	84,600
	metal railings at both sides of boardwalk	140	LF	175.00	24,500
	- retaining wall				
	concrete w/ footing (4.7' avg height)	0	LF	350.00	0
	- site furnishings / metals				
	benches	2	EACH	2,000.00	4,000
	picnic tables	0	EACH	2,000.00	0
	waste receptacle / recycle receptacle	2	EACH	1,800.00	3,600
	dog waste receptacle	2	EACH	950.00	1,900
	bike racks	0	EACH	1,200.00	0
	steel bollards	1	EACH	1,000.00	1,000
	- signage				
	trailhead signs	2	EACH	5,000.00	10,000
	destination signs	2	EACH	5,000.00	10,000
	route makers	4	EACH	1,000.00	4,000
	wayfinding signs	0	EACH	3,600.00	0
	interpretive signs	2	EACH	2,000.00	4,000
	Landscaping				
	pedestrian lighting, pole every 100 ft.	0	EA	9,000.00	0
	landscaping lighting, pedestrian	1,860	LF	75.00	139,500
	grassing	34,515	SF	0.25	8,629
SUBTOTAL					\$1,218,207
	General Condition as %	7%			\$85,274
	Bonds as %	1%			\$13,035
	Insurance as %	1.50%			\$19,748
	Contractor Fee as %	3%			\$40,088
	Design/Market Conditions Contingency as %	20%			\$275,270
	Escalation as %	6%			\$99,097
TOTAL PROBABLE CONSTRUCTION COST					\$1,750,720



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Miscellaneous

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	Site Metrics				
	- length of trail segment	0	LF		
	- area of paving	0	SF		
	- limits of construction area	165,528	SF		
	- limits of construction area - acreage	3.8	AC		
	- mobilization	165	MSF	400.00	66,000
	- asbuilt drawings	1	LS	5,000.00	5,000
	- secured laydown area - 90' sq				
	grading	0	CY	15.00	0
	gravel paving	0	SY	30.00	0
	security fence w/ double gate	0	LF	60.00	0
	- tire wash	0	LS	4,000.00	0
	- clean roads	0	MO	500.00	0
	Site Prep				
	- survey / layout	165	MSF	200.00	33,000
	- site demo, allowance	1	LS	15,000.00	15,000
	- clearing and grubbing				
	trees, undergrowth, overgrowth	3.8	ACRE	10,000.00	38,000
	- grading				
	topsoil				
	remove / stockpile	0	CY	4.00	0
	replace or dispose	0	CY	7.00	0
	rough grading	165	MSF	200.00	33,000
	unclassified excavation, cut and waste	0	CY	30.00	0
	offsite borrow, compaction	0	CY	60.00	0
	unsuitable soil replacement, allowance	0	LS	40,000.00	0
	- finegrading				
	paving	0	SF	0.50	0
	grassing	0	SF	0.50	0
	- erosion control				
	silt fence	0	LF	7.00	0
	check dams	0	EA	500.00	0
	silt fence outlets	0	EA	800.00	0
	erosion control, allowance	1	LS	10,000.00	10,000
	- storm drain				
	culvert extension	0	EACH	10,000.00	0
	piping	0	LF	150.00	0
	bioretention pond	0	EACH	100,000.00	0
	Site Paving				
	- asphalt paving				
	parking, 6" / 2"	0	SY	45.00	0
	greenway, 6" / 2"	0	SY	50.00	0
	- gravel paving				
	greenway, 3"	0	SY	25.00	0
	- concrete paving				
	walks	0	SF	7.00	0
	bench pad, 20 sf / each	4	EACH	400.00	1,600

MAT



PALACIO

Name: Town of Hillsborough Greenway Trail

Location: Hillsborough, NC

Date: 8/27/2024

Area (SF): _____

Rev. Date: _____

Miscellaneous

ESTIMATE SUMMARY					
GROUP	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
	curb ramps	0	EACH	750.00	0
	crosswalk	0	LF	64.00	0
	Site Improvements				
	- bridge				
	prefab bridge including railings	0	LF	6,965.06	0
	bridge embankments	0	EA	50,000.00	0
	- boardwalk				
	concrete boardwalk w/ spread footings & pilings	0	SF	120.00	0
	metal railings at both sides of boardwalk	0	LF	175.00	0
	- retaining wall				
	concrete w/ footing (4.7' avg height)	0	LF	750.00	0
	- site furnishings / metals				
	benches	4	EACH	2,000.00	8,000
	picnic tables	0	EACH	2,000.00	0
	waste receptacle / recycle receptacle	2	EACH	1,800.00	3,600
	dog waste receptacle	2	EACH	950.00	1,900
	bike racks	0	EACH	1,200.00	0
	steel bollards	0	EACH	1,000.00	0
	- signage				
	trailhead signs	0	EACH	5,000.00	0
	destination signs	3	EACH	5,000.00	15,000
	route makers	6	EACH	1,000.00	6,000
	wayfinding signs	0	EACH	3,600.00	0
	interpretive signs	0	EACH	2,000.00	0
	Landscaping				
	pedestrian lighting, pole every 100 ft.	0	EA	9,000.00	0
	landscaping lighting, pedestrian	4,050	LF	75.00	303,750
	grassing	0	SF	0.25	0
SUBTOTAL					\$539,850
	General Condition as %	7%			\$37,790
	Bonds as %	1%			\$5,776
	Insurance as %	1.50%			\$8,751
	Contractor Fee as %	3%			\$17,765
	Design/Market Conditions Contingency as %	20%			\$121,986
	Escalation as %	6%			\$43,915
TOTAL PROBABLE CONSTRUCTION COST					\$775,834



UTILITY COST ESTIMATE

Project: **Hillsborough Greenway**

County: Orange

Description: Greenway Extension through the Town of Hillsborough – Alternate 1

Field Inspection: **Evidence of Utilities**

Gas: Yes Electric: Yes Telephone: Yes CATV: Yes

Water: Yes Sewer: Yes Drainage: Yes Other: Yes

Anticipated Relocation:

Gas: Yes Electric: Yes Telephone: Yes CATV: Yes

Water: No Sewer: No Drainage: Yes Other: Yes

Relocation Totals	Construction Totals	Alternate Totals
Power Poles: \$ 149,758.00	Power Poles:	Relocation Total: \$ 243,985.00
Power Items:	Power Items:	Construction Total:
Telephone Poles: \$ 20,430.00	Telephone Poles:	
Telephone Items: \$ 10,000.00	Telephone Items:	Alternate Total: \$ 243,985.00
Gas Line: \$ 15,000.00	Gas Line:	
Gas Items:	Gas Items:	
Water Line:	Water Line:	
Water Items:	Water Items:	
Sewer Line:	Sewer Line:	
Sewer Items:	Sewer Items:	
Misc. Items: \$ 48,797.00	Misc. Items:	

UTILITY COST ESTIMATE

Project: **Hillsborough Greenway**

County: Orange

Description: Greenway Extension through the Town of Hillsborough – Alternate 3

Field Inspection: **Evidence of Utilities**

Gas: Yes Electric: Yes Telephone: Yes CATV: Yes

Water: Yes Sewer: Yes Drainage: Yes Other: Yes

Anticipated Relocation:

Gas: No Electric: Yes Telephone: Yes CATV: Yes

Water: No Sewer: No Drainage: Yes Other: Yes

Relocation Totals	Construction Totals	Alternate Totals
Power Poles: \$ 114,086.00	Power Poles:	Relocation Total: \$ 172,430.00
Power Items:	Power Items:	Construction Total: \$ 4,276.00
Telephone Poles: \$ 12,258.00	Telephone Poles:	
Telephone Items: \$ 11,600.00	Telephone Items:	Alternate Total: \$ 176,706.00
Gas Line:	Gas Line:	
Gas Items:	Gas Items:	
Water Line:	Water Line:	
Water Items:	Water Items: \$ 4,276.00	
Sewer Line:	Sewer Line:	
Sewer Items:	Sewer Items:	
Misc. Items: \$ 34,486.00	Misc. Items:	

UTILITY COST ESTIMATE

Project: **Hillsborough Greenway**

County: Orange

Description: Greenway Extension through the Town of Hillsborough – Alternate 4

Field Inspection: **Evidence of Utilities**

Gas: Yes Electric: Yes Telephone: Yes CATV: Yes

Water: Yes Sewer: Yes Drainage: Yes Other: Yes

Anticipated Relocation:

Gas: No Electric: No Telephone: No CATV: No

Water: No Sewer: No Drainage: No Other: Yes

Relocation Totals	Construction Totals	Alternate Totals
Power Poles:	Power Poles:	Relocation Total:
Power Items:	Power Items:	Construction Total: \$ 9,732.00
Telephone Poles:	Telephone Poles:	
Telephone Items:	Telephone Items:	Alternate Total: \$ 9,732.00
Gas Line:	Gas Line:	
Gas Items:	Gas Items:	
Water Line:	Water Line:	
Water Items:	Water Items:	
Sewer Line:	Sewer Line:	
Sewer Items:	Sewer Items: \$ 9,732.00	
Misc. Items:	Misc. Items:	

REQUEST FOR R/W COST ESTIMATE / RELOCATION EIS

COST ESTIMATE REQUEST

RELOCATION EIS REPORT

NEW REQUEST:

UPDATE REQUEST:

REVISION REQUEST:

Update to ____ Estimate

Revision to ____ Estimate

Revision No.: ____

DATE RECEIVED: 5/21/2024

DATE ASSIGNED: 5/21/2024

of Alternates Requested: 3

DATE DUE: 6/4/2024

TIP No.:	DESCRIPTION: <u>Hillsborough Greenway (Phase II) Feasibility Study</u>
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WBS ELEMENT: **COUNTY:** Orange **DIV:** 7 **APPRAISAL OFFICE:** 3

REQUESTOR: Faith Jahnke, PE **DEPT:** Summit, Senior Project Manager

TYPE OF PLANS: HEARING MAPS | LOCATION MAP | AERIAL | VICINITY | PRELIMINARY | CONCEPTUAL

** Based on past project historical data, the land and damage figures have been adjusted to include condemnation and administrative increases that occur during settlement of all parcels.**

APPRAISER: TELICS **COMPLETED:** 6/4/2024 **# of Alternates Completed:** 3

TYPE OF ACCESS:	Alt. 1		Alt. 3		Alt. 4			
	NONE: <input type="checkbox"/>	LIMITED: <input type="checkbox"/>	NONE: <input type="checkbox"/>	LIMITED: <input type="checkbox"/>	NONE: <input type="checkbox"/>	LIMITED: <input type="checkbox"/>	NONE: <input type="checkbox"/>	LIMITED: <input type="checkbox"/>
	PARTIAL: <input type="checkbox"/>	FULL: <input checked="" type="checkbox"/>	PARTIAL: <input type="checkbox"/>	FULL: <input checked="" type="checkbox"/>	PARTIAL: <input type="checkbox"/>	FULL: <input checked="" type="checkbox"/>	PARTIAL: <input type="checkbox"/>	FULL: <input type="checkbox"/>
ESTIMATED NO. OF PARCELS:	5		9		1			
RESIDENTIAL RELOCATEES:	0	\$ 0		\$		\$		\$
BUSINESS RELOCATEES:	0	\$ 0		\$		\$		\$
GRAVES:	0	\$ 0		\$		\$		\$
CHURCH / NON – PROFIT:	0	\$ 0		\$		\$		\$
MISC:	0	\$ 0		\$		\$		\$
SIGNS:	0	\$ 0		\$		\$		\$
LAND, IMPROVEMENTS, & DAMAGES:	\$ 113,000		\$ 36,000		\$ 400		\$	
ACQUISITION:	\$ 23,000		\$ 49,000		\$ 9,000		\$	
TOTAL ESTIMATED R/W COST:	\$ 136,000		\$ 85,000		\$ 9,400		\$	

** The estimated number of above relocatees includes those parcels where the proposed acquisition areas involve relocation of livable or business units only. **

NOTES: Estimate assumes 50% of the parcels will require appraisals/titles/attorney closings.

***DISCLAIMER:** COSTS MAY BE DIFFERENT WHEN DESIGNS ARE FURHTER DETERMINED

Ridgewalk Phase II Detailed Right-of-Way Estimate (Alternate 3)

Number	TAX ID	Owner Name	Property Address	Classification	Improvement	value with	Value	with 50%	Value	Land Size (AC)	Value/AC	ROW (SF)	ROW (AC)	TCE (SF)	TCE (AC)	\$ ROW ACQ	Easements	Remainder	Land	Improvements COST	Improvement	Improvement Value	ROW Costs		
001	9874000000	KNIGHTON GLORIA E HRSFARIBUALT WALTER 115 FARIBUALT LN162 EXC			\$380,380.00	\$570,570.00	\$1,424,519.30	\$2,136,778.95	\$2,707,348.95	3.03	\$349,464.03	0	0.000	6123	0.149564738	0	\$14,736.70	0.00%	\$2,122,042.25	\$0.00	\$0.00	0.00%	\$570,570.00	\$2,692,612.25	\$14,736.70
002	9865000000	WHITTED CHARLES K WHITTED JAPONICA L	281 EXCHANGE PARK LN		\$901,574.00	\$452,361.00	\$539,761.56	\$539,842.34	\$992,003.34	1.27	\$46,001.57	0	0.000	740	0.01698062	0	\$234.44	0.00%	\$539,407.90	\$0.00	\$0.00	0.00%	\$452,361.00	\$991,768.90	\$234.44
003	987404855	PARSLEY JAMES M A	240 S CHURTON ST	ntallImproved	\$349,300.00	\$523,950.00	\$97,800.00	\$146,700.00	\$670,650.00	3.01	\$48,737.54	0	0.000000000	717	0.016460055	\$0.00	\$240.67	0.00%	\$146,459.33	\$0.00	\$0.00	0.00%	\$523,950.00	\$670,409.33	\$240.67
004	9874044773	PARSLEY JAMES M PARSELEY CAROLYN C	NO PHYSICAL ADDRESS(EXCHA	Unimproved	\$0.00	\$0.00	\$71,100.00	\$106,650.00	\$106,650.00	2.08	\$51,274.04	0	0.000000000	2637	0.060537190	\$0.00	\$931.20	0.00%	\$105,718.80	\$0.00	\$0.00	0.00%	\$0.00	\$105,718.80	\$931.20
005	9874048143	GOODE ELIZABETH C W	203 US 70A205 US 70A	ntallImproved	\$381,400.00	\$572,100.00	\$202,000.00	\$303,000.00	\$875,100.00	6.92	\$43,786.13	0	0.000000000	79	0.001813590	\$0.00	\$23.82	0.00%	\$302,976.18	\$0.00	\$0.00	0.00%	\$572,100.00	\$875,076.18	\$23.82
004	9874033799	BLUE MIRIAM RENEE ET ALBLUE THOMPSON	236 S CHURTON ST	Unimproved	\$0.00	\$0.00	\$1,600.00	\$2,400.00	\$2,400.00	0.37	\$6,486.49	0	0.000000000	292	0.006703398	\$0.00	\$13.04	0.00%	\$2,386.96	\$0.00	\$0.00	0.00%	\$0.00	\$2,386.96	\$13.04
005	9874033671	BLUE MIRIAM RENEE ET ALBLUE THOMPSON	236 S CHURTON ST	Unimproved	\$0.00	\$0.00	\$5,000.00	\$7,500.00	\$7,500.00	0.57	\$13,157.89	0	0.000000000	32	0.000734619	\$0.00	\$2.90	0.00%	\$7,497.10	\$0.00	\$0.00	0.00%	\$0.00	\$7,497.10	\$2.90
006	9874032028	CWH HOLDINGS LLC	250 S CHURTON ST	Commercial	\$177,000.00	\$265,500.00	\$585,100.00	\$877,650.00	\$1,143,150.00	3.87	\$26,782.95	166	0.003810836	958	0.021992454	\$864.23	\$1,496.27	0.00%	\$875,389.50	\$0.00	\$0.00	0.00%	\$365,500.00	\$1,140,789.50	\$2,360.50
007	9874025866	ROBERTS JOHN M HRSROBERTS GRACE M	231 ORANGE GROVE ST243 S	CrrialImproved	\$188,200.00	\$282,300.00	\$567,600.00	\$851,400.00	\$1,133,700.00	1.29	\$660,000.00	0	0.000000000	580	0.011314968	\$0.00	\$2,636.36	0.00%	\$848,763.64	\$0.00	\$0.00	0.00%	\$282,300.00	\$1,131,063.64	\$2,636.36

TOTAL RELO COST **\$0.00** \$21,179.63
\$36,005.38 X 1.7 **\$21,179.63**
\$36,005.38

	Appraisals /
Number of App	4
	\$19,800.00
	Negotiation
	Cost
Total Parcels	7
	\$29,400.00
	Relocation
Res Relo	0
Com Relo	0
Sign Relo	0
BB Relo	0
Misc Move	0
	\$0.00
	Appraisals
	\$19,800.00
	Negotiations
	\$29,400.00
	Relocations
	\$0.00
	Acquisition
	Consultant
	Costs Total
	\$49,200.00
	Rounded
	\$49,000.00
	Row Acq w/
	1.7 factor
Row Acq Cost	\$21,180
	\$36,005.38
	\$36,000.00
	COM RELO
	0
	\$0.00
	RES RELO
	0
	\$0.00
	SIGN RELO
	0
	\$0.00
	BB MOVE
	0
	\$0.00
	MISC MOVE
	0
	\$0.00
	Land, Imp. & Damages
	\$36,000.00
	Acquisition
	\$49,000.00
	\$85,000.00

Ridgewalk Phase II Detailed Right-of-Way Estimate (Alternate 4)

Number	TAX ID	Owner Name	Property Address	Classification	Improvement	value with	Value	with 50%	Value	Land Size (AC)	Value/AC	ROW (SF)	ROW (AC)	TCE (SF)	TCE (AC)	\$ ROW ACQ	Easements	Remainder	Land	Improvements COST	Improvement	Improvement Value	ROW Costs																			
001	9873286950	OLD MILL PROPERTIES LLC	NO PHYSICAL ADDRESS(BECKE	Unimproved	\$0.00	\$0.00	\$1,900.00	\$2,850.00	\$2,850.00	1.79	\$1,592.18	2772	0.063636364	9938	0.228145087	\$101.32	\$108.97	0.00%	\$2,639.71	\$0.00	\$0.00	\$0.00	\$2,639.71	\$210.29																		
TOTAL RELO COST																					\$0.00																				\$210.29	\$357.50

		Appraisals /
Number of App	1	\$4,950.00
		Negotiation Cost
Total Parcels	1	\$4,200.00
		Relocation
Res Relo	0	\$0.00
Com Relo	0	\$0.00
Sign Relo	0	\$0.00
BB Relo	0	\$0.00
Misc Move	0	\$0.00
		\$0.00
		\$4,250.00
		\$4,200.00
		\$0.00
		Acquisition Consultant Costs Total Rounded
		\$9,150.00
		\$9,000.00
		Row Acq w/ 1.7 Factor
Row Acq Cost	\$210	\$357.50
		\$400.00
COM RELO	0	\$0.00
RES RELO	0	\$0.00
SIGN RELO	0	\$0.00
BB MOVE	0	\$0.00
MISC MOVE	0	\$0.00
		\$400.00
		\$9,000.00
		\$9,400.00