



GWINNETT PLACE **CONNECTED**

McDaniel Farm Park
to Gwinnett Place

2016





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>> ACKNOWLEDGMENTS

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Gwinnett County Department of
Transportation

Atkins Global

Hennessey Automotive Group

Pars Cars

Mega Mart

Satellite Place Offices

Gwinnett Place Mall

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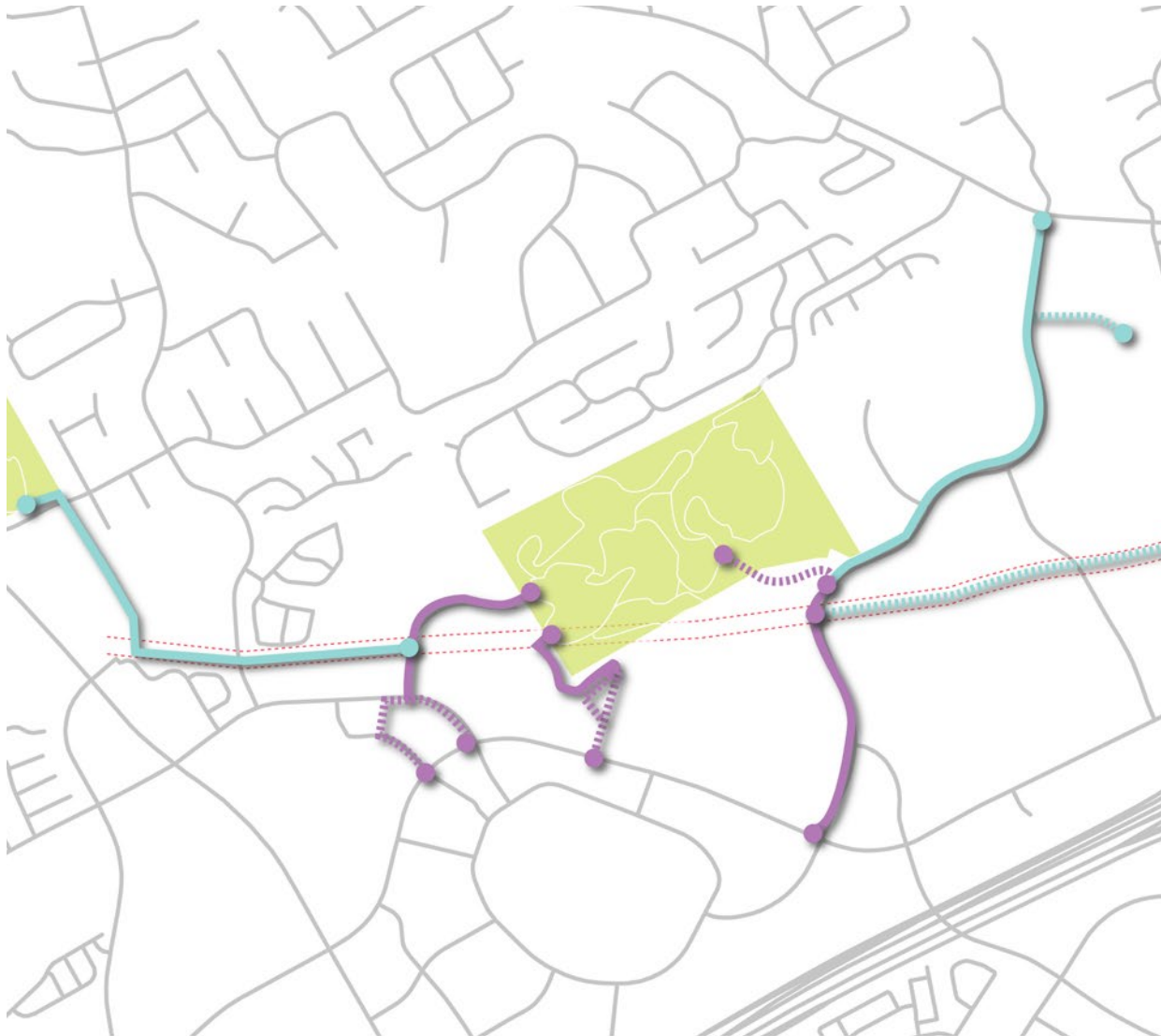
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>> 0.0 PROJECT OVERVIEW

Purpose
Process
Goals

0.1 >> PURPOSE & PROCESS

GWINNETT PLACE CONNECTED envisions a strategy for connecting residential, commercial, and recreational destinations in the greater Gwinnett Place area.

This report builds upon previous studies, including the Gwinnett Livable Centers Initiative and the ACTivate Gwinnett Place Multimodal Green Corridor Master Plan (outlined on pages 18-19 and 124-125), that map out strategies for economic development and improved regional transportation in Gwinnett County, and more specifically in the Gwinnett Place area.

The network of trails proposed in the following pages represents one piece of a broader effort to spark redevelopment in Gwinnett Place, promote denser redevelopment patterns, and enhance connectivity via a range of transportation options. Investing in pedestrian and bike transportation routes is an important step toward redeveloping Gwinnett Place

into an urban, walkable, more sustainable town center. The purpose of this report is to identify feasible routes for multi-use trails that will connect important residential, commercial, and recreational origins and destinations in Gwinnett Place.

Safer, more scenic, and more direct pedestrian routes are an attractive asset that could help spark redevelopment in Gwinnett Place. Additionally, providing transportation options can help minimize vehicular congestion, increasing the lifespan of the area's transportation infrastructure. The trails will increase walkability and improve the pedestrian experience in the immediate Gwinnett Place area, but this proposed network of trails will also complete a section of Gwinnett County's Greenway system, connecting Gwinnett Place to destinations throughout the County.

The project process is summarized on the opposite page. The network of trails ultimately proposed in this report has the potential to promote redevelopment in Gwinnett Place, create new transportation options between key destinations, and provide opportunities for healthy living and experiences of nature in this highly developed area.



THE PROJECT PROCESS



0.2 >> PROJECT GOALS



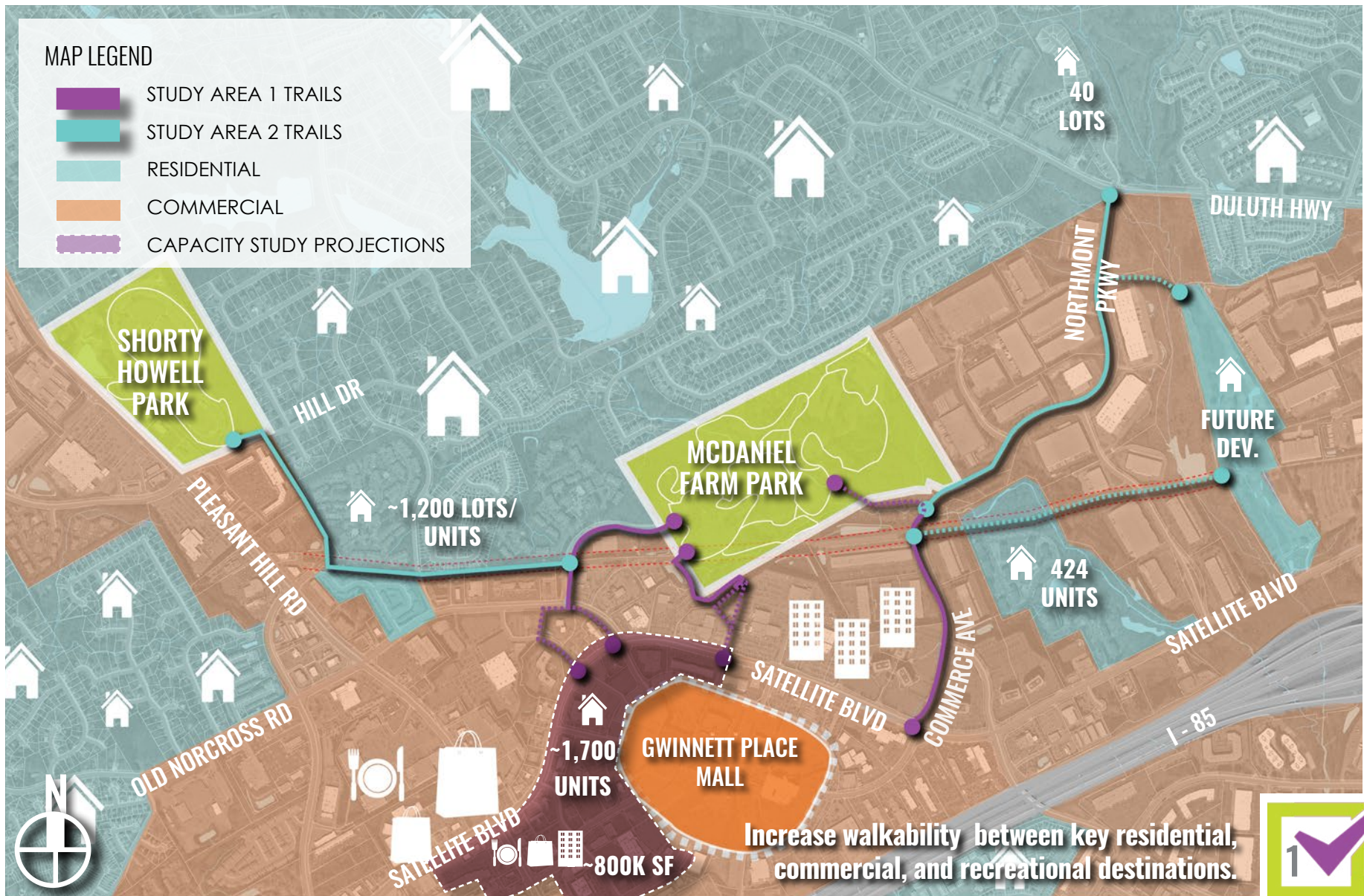
Increase walkability between key residential, commercial, and recreational destinations, to spur redevelopment in the Gwinnett Place area.

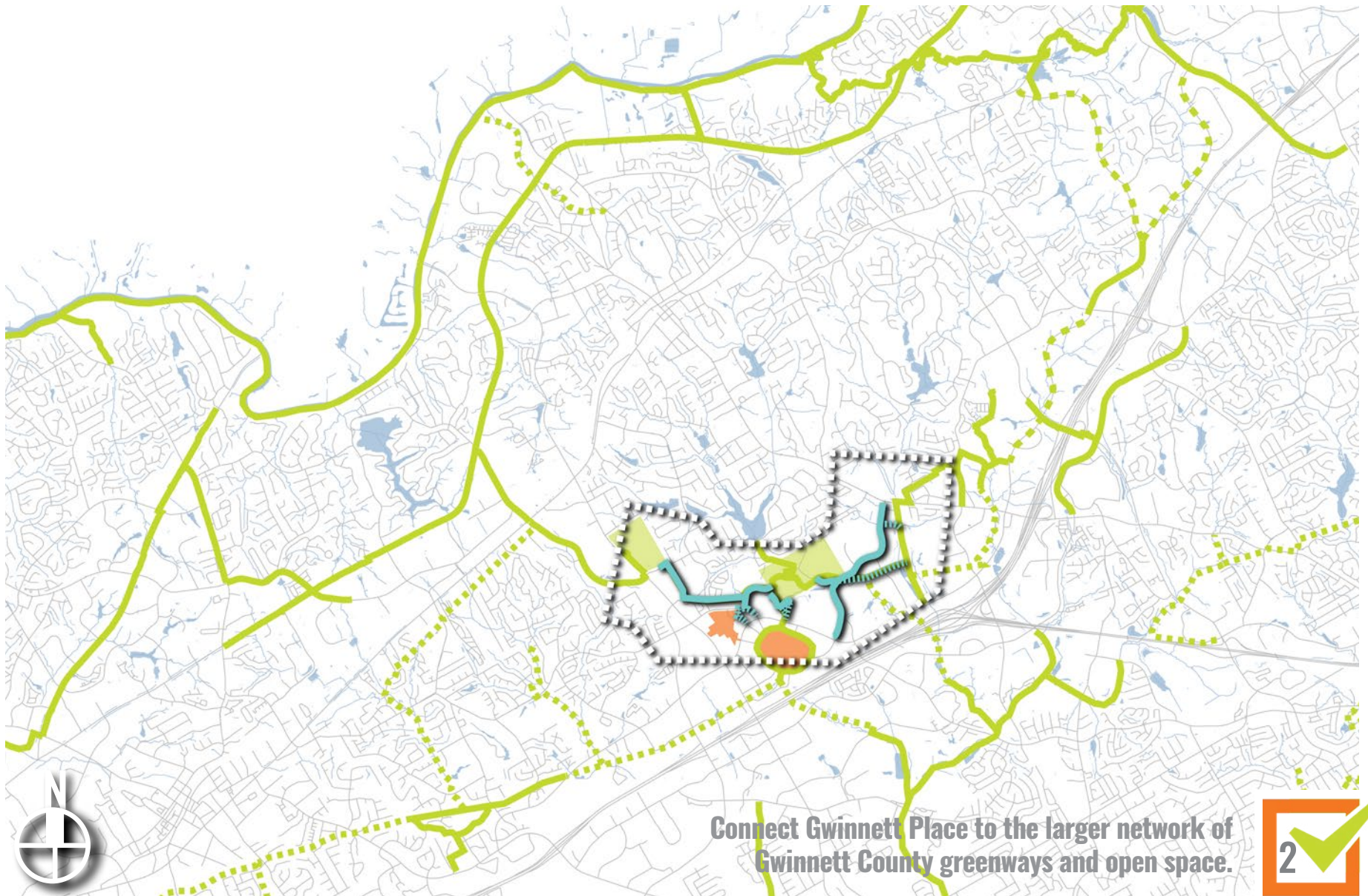


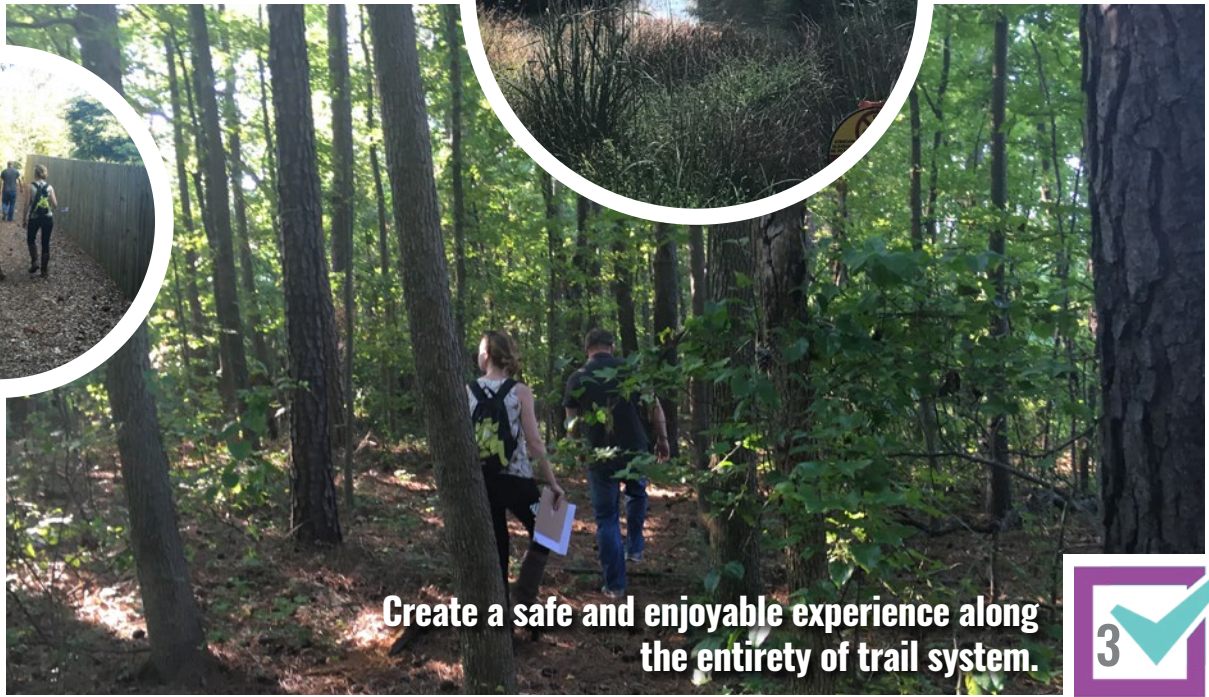
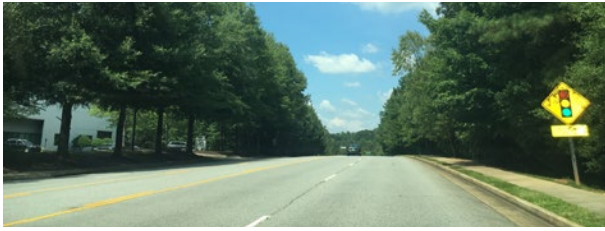
Connect Gwinnett Place to the larger network of Gwinnett County greenways and open space, to provide alternative transportation options to destinations throughout the County.



Create a safe and enjoyable experience along the entirety of the trail system, to encourage walking and biking as transportation alternatives.







Create a safe and enjoyable experience along the entirety of trail system.



0.3 >> PROJECT SUMMARY

THE MAP TO THE RIGHT shows the final set of trails believed to be the most feasible options – based on the process outlined on page 6 – for accomplishing the project goals described in the previous pages.

Study Area 1

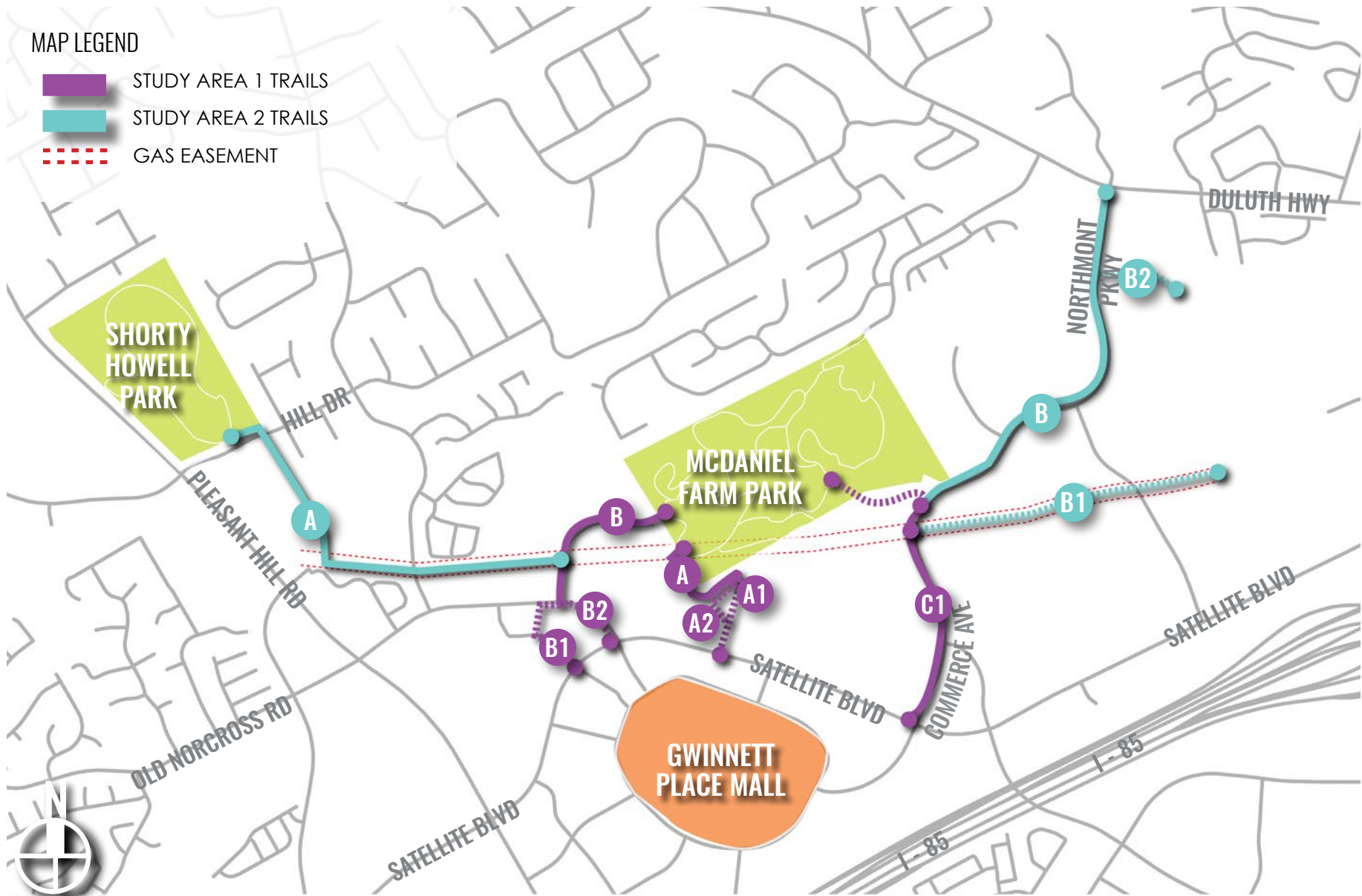
This feasibility study was conducted in two phases. The goal of the initial study phase was to create connections between Gwinnett Place Mall area and McDaniel Farm Park. The pink lines on the facing page represent the trail options proposed for Study Area 1. The dashed pink lines demonstrate alternate options for reaching destinations; in each case, both route options were found to be feasible and either could be implemented. More detailed information about each of the trails in Study Area 1 can be found in Section 4.0.

Study Area 2

The second part of the study looked at extending the trails in Study Area 1, to connect them to Shorty Howell Park, existing residential development, and the larger Gwinnett County Greenway system. The blue lines on the facing page show the routes found to be the most feasible options for completing the Gwinnett Place area trail network. The solid blue lines represent the primary proposed trails. The dashed blue lines represent additional feasible trails that would connect to a proposed multi-family residential development. Most of the trails proposed in Study Area 2 run along utility easements and buffers; this is land that is not suitable for structural development and provides a unique experience of nature in this highly developed area. More detailed information about the trails in Study Area 2 can be found in Section 5.0



The image above shows the enjoyable and scenic experience of the trails in Study Area 2 that utilize the existing gas easement.



>> STUDY AREA 1



WEST CONNECTOR

TRAIL B
TRAIL B1
TRAIL B1: EXPERIENTIAL BRIDGE
TRAIL B2
TRAIL B2: AT-GRADE CROSSING

1,700 LF (~0.3 MILE)
1,000 LF (~0.2 MILE)
N/A
800 LF (~0.14 MILE)
N/A

\$414,260
\$660,830
\$5,370,000
\$530,500
\$49,000

ALL TRAIL w/in PUBLIC ROW
2 COMMERCIAL
2 COMMERCIAL
ALL TRAIL w/in PUBLIC ROW
N/A

GWINNETT PRADO REDEVELOPMENT
GWINNETT PLACE AREA REDEVELOPMENT
GWINNETT PRADO REDEVELOPMENT
EXISTING BUSINESSES

CENTRAL CONNECTOR

TRAIL A
TRAIL A1
TRAIL A2
AT-GRADE CROSSING

1,100 LF (~0.2 MILE)
825 LF (~0.16 MILE)
820 LF (~0.16 MILE)
N/A

\$929,795
\$650,777
\$794,965
\$82,000

3 COMMERCIAL
2 COMMERCIAL
2 COMMERCIAL
N/A

EXISTING BUSINESSES
GWINNETT PLACE AREA REDEVELOPMENT

EAST CONNECTOR

TRAIL C1
AT-GRADE CROSSING

2,200 LF (~0.4 MILE)
N/A

\$1,900,335
\$101,000

ALL TRAIL w/in PUBLIC ROW
N/A

EXISTING BUSINESSES
GWINNETT PLACE AREA REDEVELOPMENT

>> STUDY AREA 2



WEST EXTENSION: A

5,400 LF (~1 MILE)

\$2,513,321

6 COMMERCIAL
1 MULTI-FAMILY RESIDENTIAL

1,200 RESIDENTIAL LOTS/UNITS

EAST EXTENSION: B AT-GRADE CROSSING

7,400 LF (~1.4 MILE)
N/A

\$4,078,089
\$34,960

ALL TRAIL w/in PUBLIC ROW
N/A

40 RESIDENTIAL LOTS
FUTURE GREENWAY RESIDENTIAL CONNECTIONS

EAST EXTENSION (B1)

3,805 LF (~0.7 MILE)

\$2,799,320

1 MULTI-FAMILY RESIDENTIAL
4 HEAVY INDUSTRIAL
1 VACANT COMMERCIAL

424 RESIDENTIAL UNITS
FUTURE RESIDENTIAL DEVELOPMENT

EAST EXTENSION (B2)

1,000 LF (~0.2 MILE)

\$602,694

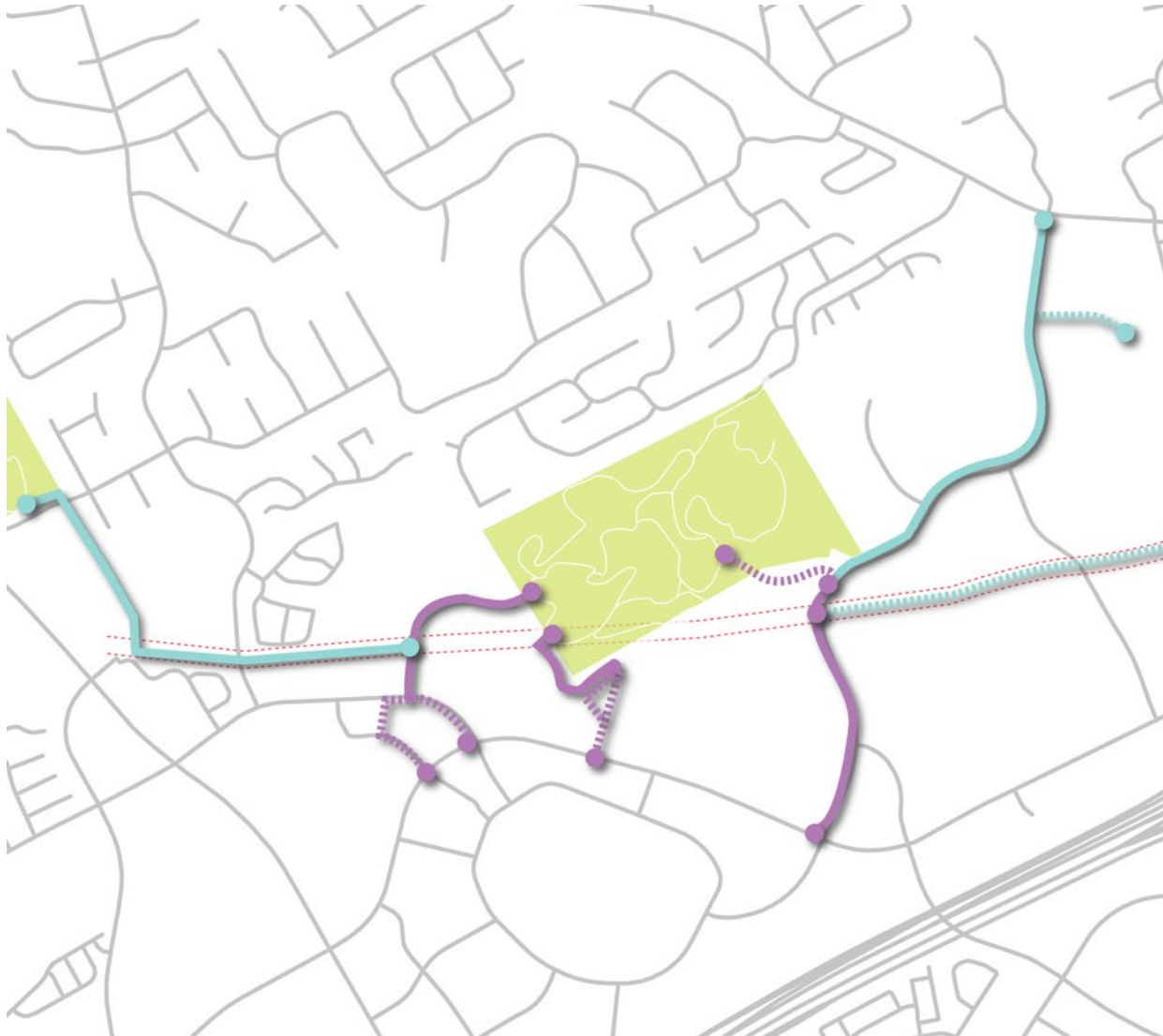
2 VACANT COMMERCIAL

FUTURE RESIDENTIAL DEVELOPMENT

The results of this two-part study present an exciting opportunity for the Gwinnett Place area and for broader Gwinnett County. As Gwinnett Place redevelops, there are several feasible options for creating pedestrian connections between Gwinnett Place and important commercial, residential, and greenspace destinations. There is an opportunity to vastly improve the pedestrian experience in this area and provide alternatives to vehicular travel. The graphic to the right describes the actions necessary to continue the momentum of this feasibility study and implement the proposed trail system.

NEXT STEPS>>	TIMEFRAME	COST EST
LANDOWNER MEETINGS	2 TO 4 MONTHS	\$8,000 - \$10,000
IDENTIFY FUNDING SOURCES	1 TO 3 MONTHS	\$8,000 - \$10,000
IDENTIFY IMPLEMENTATION PHASES	1 TO 3 MONTHS	\$12,000 - \$15,000
SITE SURVEY*	4 MONTHS	\$10,000 - \$300,000
INTERSECTION ANALYSIS & ENGINEERING*	6 TO 12 MONTHS	\$50,000 - \$1.5 M
NEGOTIATE RIGHT OF WAY & EASEMENTS*	9 TO 12 MONTHS	\$0 - \$650,000
TRAIL DESIGN	6 TO 9 MONTHS	10% - 12% OF CONSTRUCTION COST

*COST VARIES SIGNIFICANTLY BASED UPON WHICH AND HOW MANY TRAILS ARE IMPLEMENTED



>> 1.0 EXISTING CONDITIONS

Related Initiatives
Site Analysis

1.1 >> RELATED INITIATIVES

PREVIOUS PLANNING STUDIES were reviewed as part of the initial research portion of the Trail Feasibility Study to connect McDaniel Farm Park to the greater Gwinnett Place area.

The plans and studies that were reviewed include (see pages 18-19 and Appendix):

- McDaniel Farm Park Phase II Park Improvements (2016)
- ACTivate Gwinnett Place Multimodal Green Corridor Master Plan (2015)
- Gwinnett Livable Centers Initiative (2012)
- Final Mitigation Plan I-85/SR 316 Interchange - McDaniel Farm Park Mitigation (2005)
- McDaniel Farm Park Master Plan (2001)

McDaniel Farm Park Phase II Park Improvements

This plan was created for the Gwinnett County Department of Community Services

(Parks and Recreation) and proposes new facilities for McDaniel Farm Park. Construction of improvements in the northeast portion of the park including a dog park, a playground, a restroom building, a trail extension, a picnic pavilion and amenities, entry signage, an information kiosk, and a parking lot is almost complete as of fall 2016.

ACTivate Gwinnett Place

This plan, sponsored by Gwinnett County, Gwinnett Place CID, the Atlanta Regional Commission, and the National Association of Realtors, helps advance the goals of the 2012 LCI study (summarized in the Appendix). The plan defined the experiences for public spaces, proposed design attributes, and identified infrastructure recommendations. The infrastructure elements address connectivity, livability, and redevelopment.

Two priority projects from this plan are the experiential pedestrian bridge over Satellite Boulevard to McDaniel Farm Park, and the



The image above shows the conceptual site plan for the planned improvements in the northeast portion of McDaniel Farm Park (Gwinnett County Department of Community Services, 2016).



The above image shows the final master plan from the ACTivate Gwinnett Place study, which includes the Grand Promenade, intersection improvement, stormwater management park, high-density development, and pedestrian and bike improvements (ACTivate Gwinnett Place, 2015).

enhanced regional detention pond south of Gwinnett Place Mall that could function as a public amenity. The envisioned Grand Promenade will vary between 15'-0" to 1,000'-0" wide, depending on site conditions and will feature multi-cultural gardens and spaces with cultural references. A traffic circle at Pleasant Hill Road and Satellite Boulevard could be used as a regional park.

ACTivate Gwinnett Place Key Recommendations

This plan aims to make Gwinnett Place the Central Business District for Gwinnett County. Recommendations include the following:

- Investment in public open space to catalyze redevelopment (i.e. a stormwater management solution serving as a public amenity)
- A pedestrian and bike-friendly environment through road diets, bike paths, and sidewalks
- A traffic circle (or other intersection improvement) at Satellite Boulevard and Pleasant Hill Road
- A linear park (Grand Promenade) that connects the catalyst projects
- An experiential pedestrian and bicycle bridge over Satellite Boulevard to link McDaniel Farm Park to the study area
- A trail connection from Commerce Avenue to McDaniel Farm Park

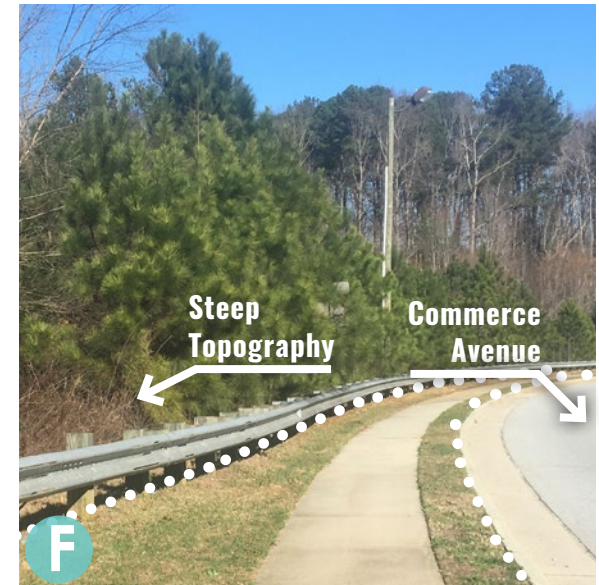
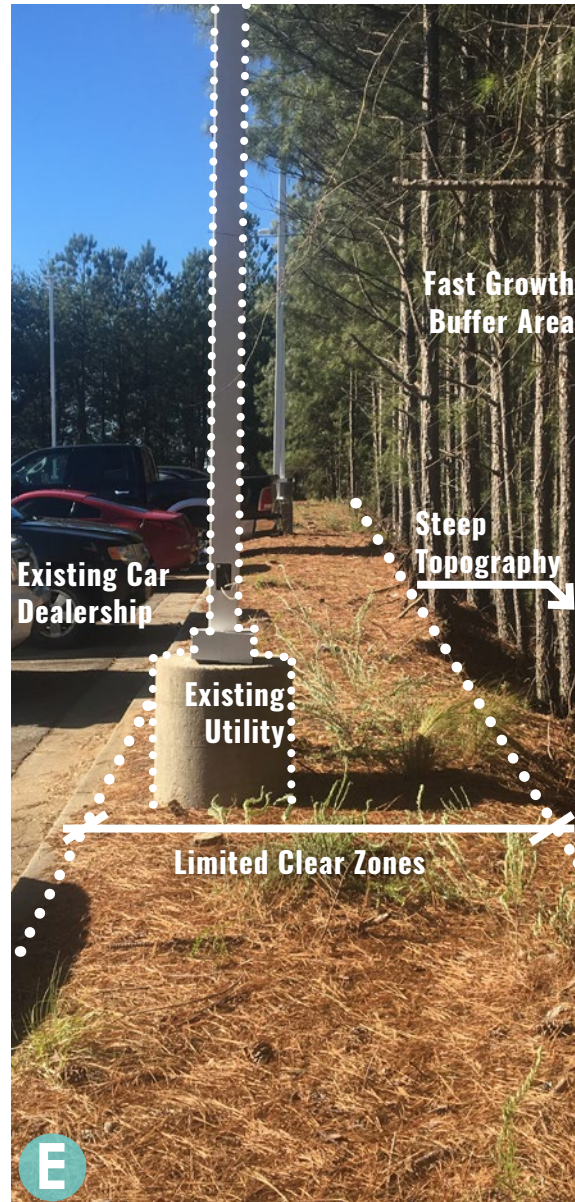
1.2 >> SITE ANALYSIS

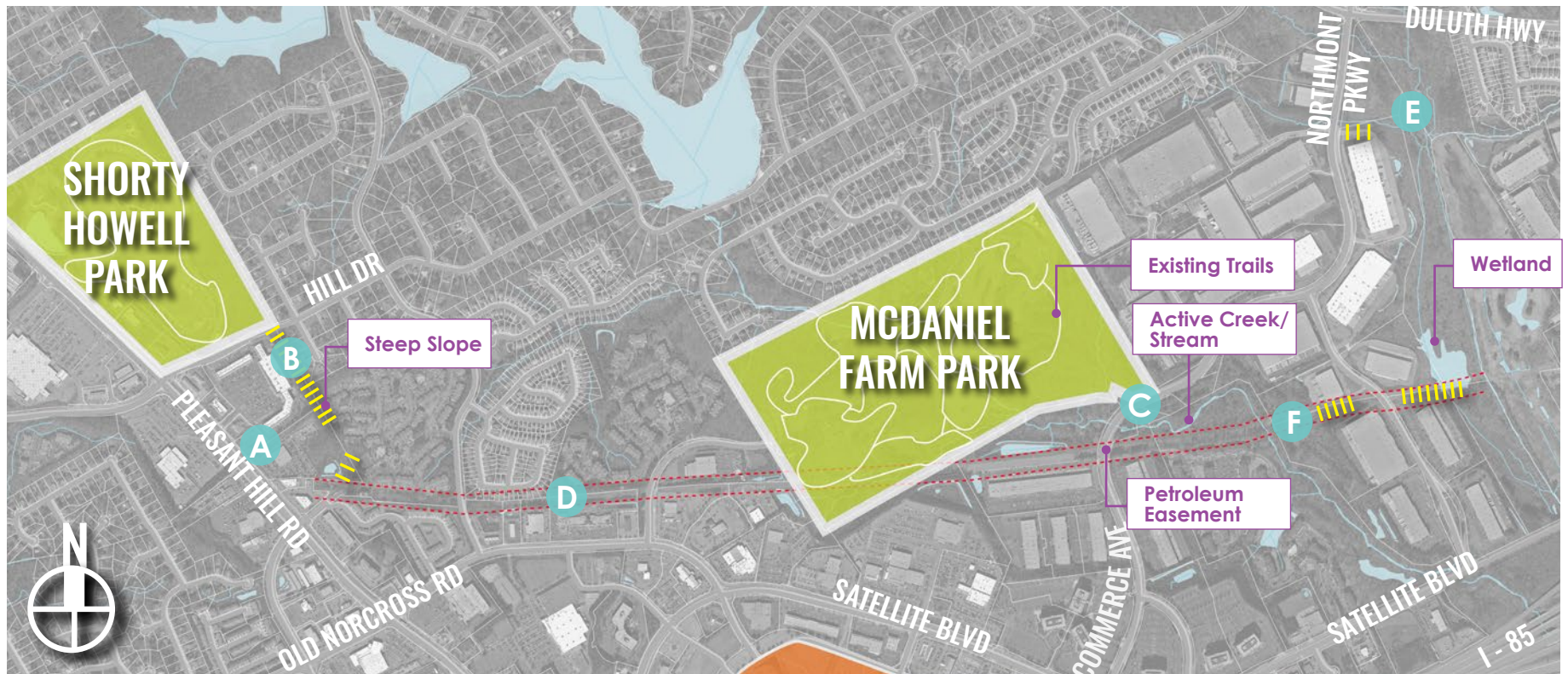
SITE ANALYSIS was conducted prior to creating trail options. This process included multiple site visits to analyze existing conditions and potential challenges.

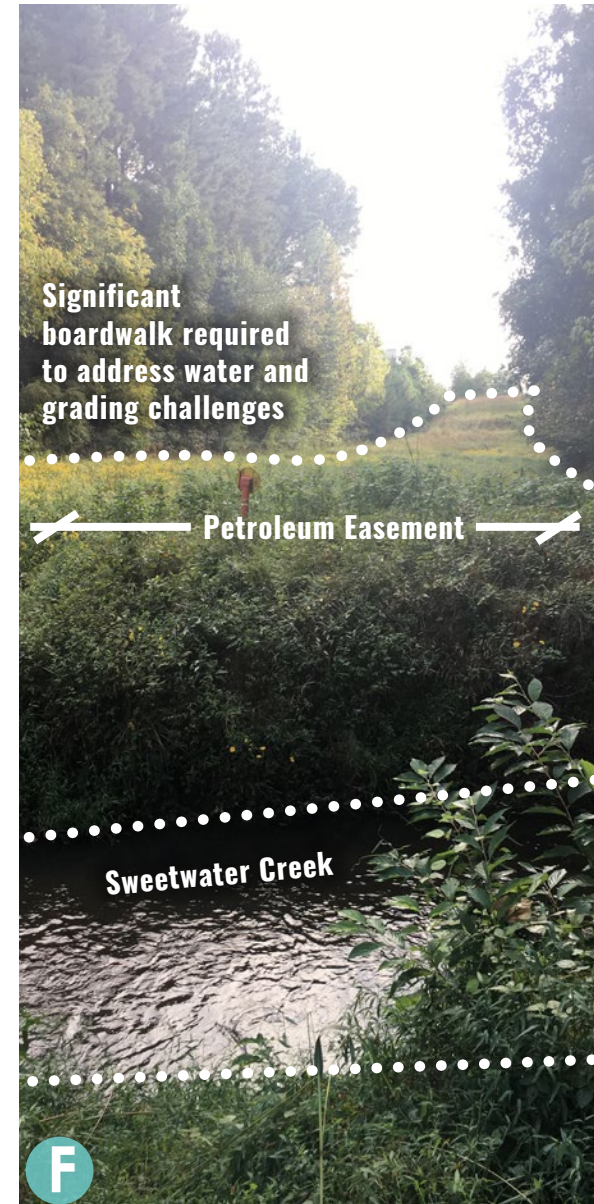
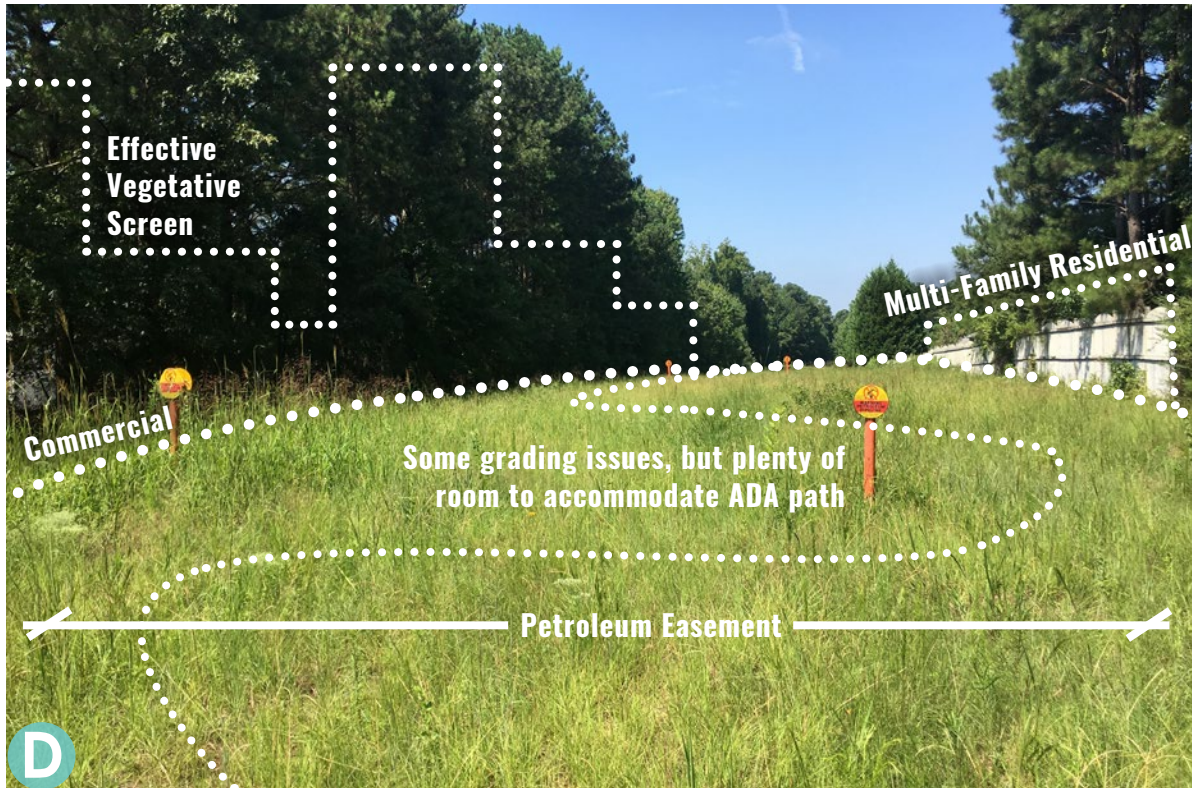
Analysis methods included:

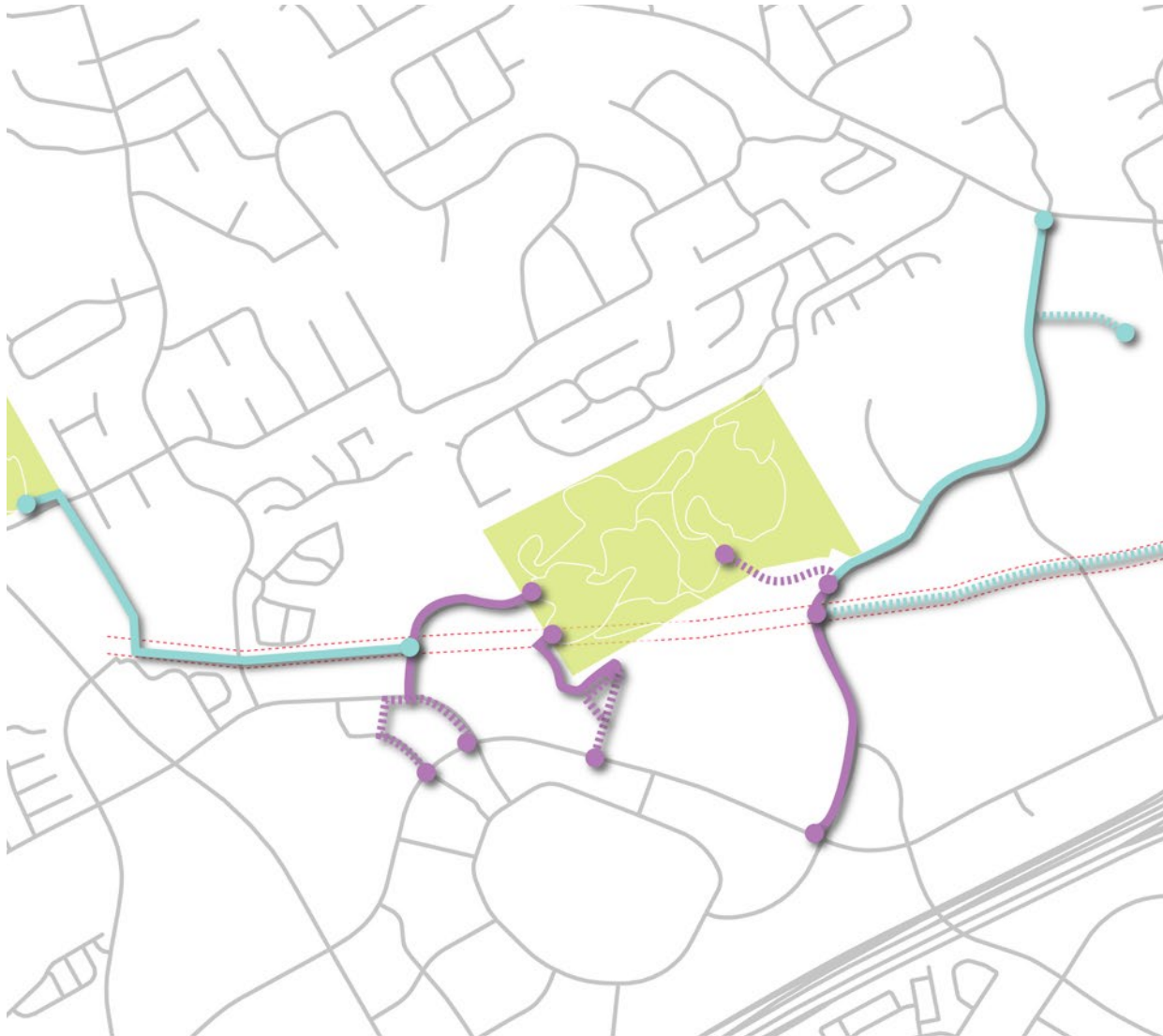
- Site walk to document existing conditions
- Photo inventory to identify key features and challenges
- Topography analysis to identify construction limitations











>> 2.0 PUBLIC OUTREACH

Process
Intercepts
Survey Results

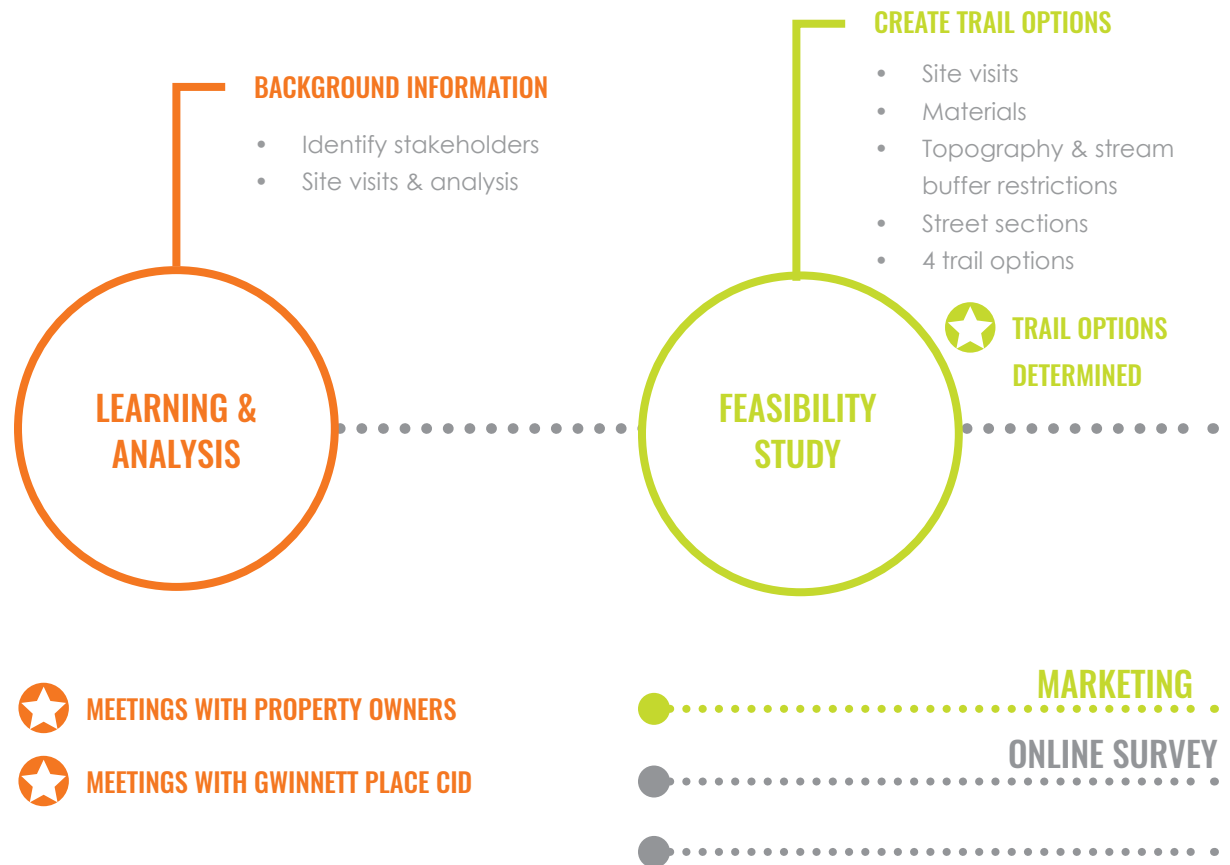
2.1 >> PROCESS

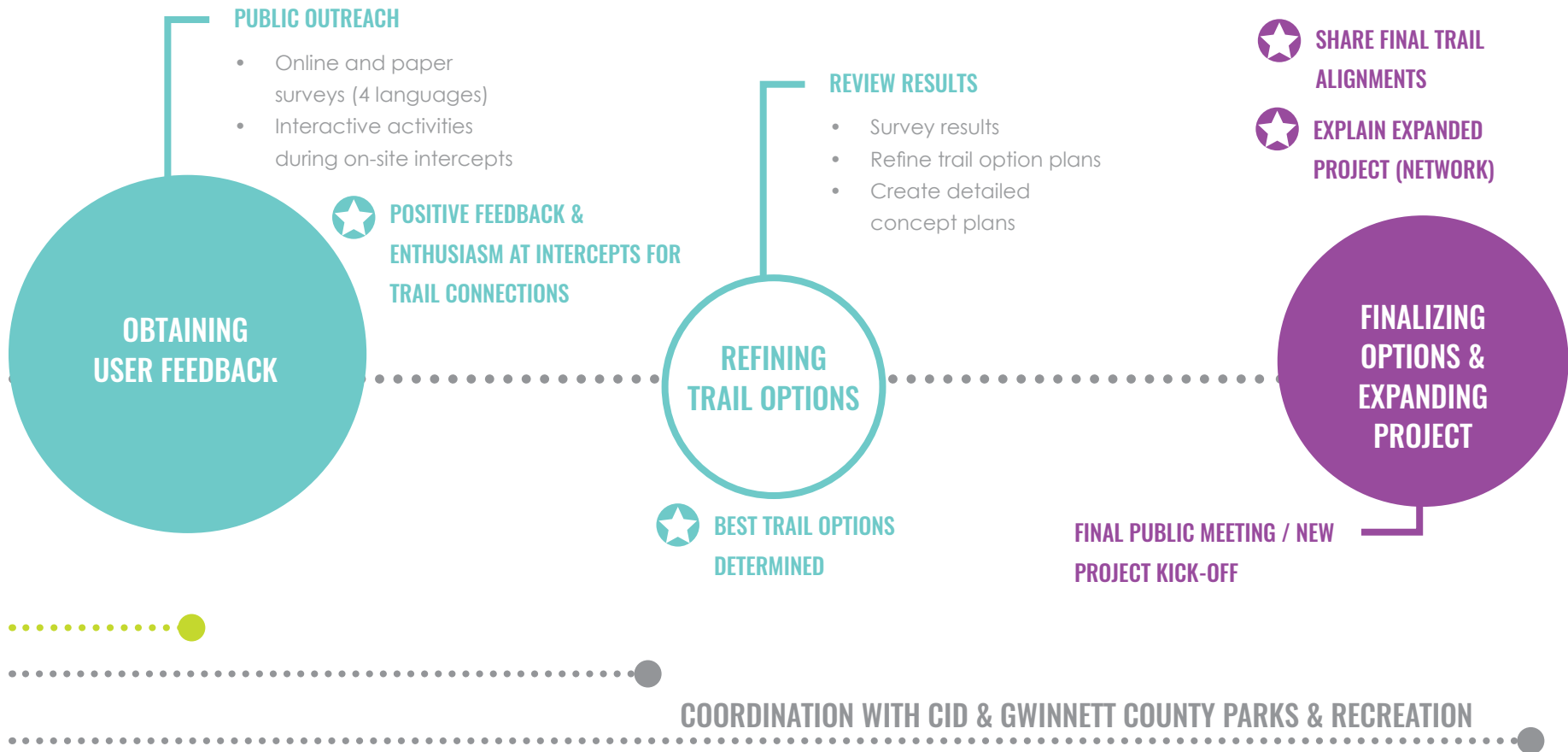
THE OUTREACH PROCESS employed multiple methods, including marketing and survey materials in four languages, to involve key stakeholders and users.

The following methods were used:

- Online surveys in four languages: English, Spanish, Korean, and Mandarin
- Paper surveys (identical to online surveys) in four languages
- Email blast and social media post by Gwinnett Place CID
- Meetings with adjacent property owners for the preliminary trail options (Hennessey Automotive Group, Pars Cars) to determine feasibility and interest
- On-site intercepts at multiple locations to talk with potential and current park and trail users

Prior to the intercepts, marketing materials were distributed to nearby businesses and organizations that are part of the Gwinnett Place CID, on the Gwinnett Place CID Facebook and Twitter, in the Atlanta Journal-Constitution, and in e-mail blasts for the Satellite Place Office buildings. Links to the online survey and dates for the intercepts were provided in these media releases.





2.2 >> INTERCEPTS

ON-SITE INTERCEPTS were conducted at the Satellite Place Offices, McDaniel Farm Park, MegaMart, and the central fountain at Gwinnett Place Mall over two days in March 2016.

Intercept Format

The intercepts focused on obtaining feedback from potential park and trail users about the addition of a trail system, and educating them about the planning process. Participants could take the survey on paper, take a business card-sized flyer with the survey link (top, right) to take the survey online at a later date, speak with the TSW Team about the project, and participate in interactive activities. The interactive activities involved a Visual Preference Survey (VPS) for potential development types, an origin-destination map to understand where people work / live and visit most frequently in the Gwinnett



>> INTERCEPT MARKETING MATERIALS

Place area, and a dot exercise related to how people currently, or would prefer to, go to and from McDaniel Farm Park. A final board displayed the preliminary trail options that the TSW Team created based on the site analysis and discussions with Gwinnett Place CID and adjacent property owners. The sidebar to the right on page 25 summarizes each of the intercept events.

The above images show some of the marketing materials created for the on-site intercepts to gain input from potential trail and McDaniel Farm Park users. The images to the right show the intercepts at Satellite Place Offices (top, bottom left) and McDaniel Farm Park (bottom right).



>> INTERCEPT LOCATIONS & DATES

- Satellite Place Offices - March 17, 2016; 8:00 AM to 11:00 AM**
 The TSW Team set up in the Merial Limited and one of the Banyan Street buildings during the morning to capture workers arriving at work. Approximately 70 paper surveys were completed and many people participated in the input activities.
- McDaniel Farm Park- March 19, 2016; 11:00 AM to 1:00 PM**
 The TSW Team set up at the restroom pavilion and parking lot at McDaniel Farm Park to capture feedback from weekend park users, and online surveys were collected using portable kiosks with the survey loaded on an iPad.
- Gwinnett Place Mall- March 19, 2016; 10:00 AM to 1:00 PM**
 The TSW Team set up at the center court and MegaMart to capture feedback from weekend shoppers and to attempt to talk with people who speak other languages.

>> Intercept Results Summary

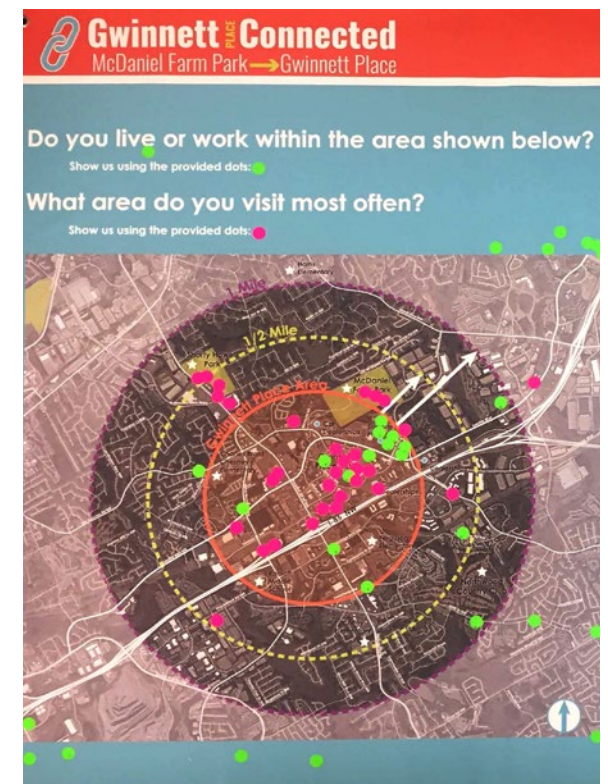
At the Satellite Place Offices, the Merial Limited Building (Building 500) was much more active and busy during the intercept than the Banyan Street Building (Building 400). The intercepts at McDaniel Farm Park and Gwinnett Place Mall, more specifically the center court and MegaMart, experienced moderate activity level.

The following are some of the comments received at the intercepts:

- Many participants at Satellite Place were unaware of McDaniel Farm Park's existence
- Some participants at the Satellite Place Offices do not spend time in the Gwinnett Place area except for work
- Participants would love to get to the park by biking or walking
- The Gwinnett Place Mall area needs to be revitalized with new development, like sidewalk shops and restaurants
- Formalized trails would be a good

addition to the park

- Build an entrance and boardwalk trail from Commerce Avenue / Northmont into the park and along the stream and utility lines (image on adjacent page)
- Build an entrance from Satellite Boulevard near Pars Cars into the park
- Improve park access while preserving the natural setting
- Develop a connection between McDaniel Farm Park and Shorty Howell Park
- Build a trail system along Sweetwater Creek from McDaniel Farm Park toward Evergreen Boulevard and Satellite



Boulevard

- Compact, downtown development that encourages walkability is preferred for the Gwinnett Place area
- Enhance the sidewalk network in the Gwinnett Place area (especially along Highway 120, Satellite Boulevard, Evergreen Boulevard)



Adjacent, left: This image shows the preferences for the type of development preferred in the Gwinnett Place Area.

Adjacent, top right: The origin-destination map from the intercepts. Pink dots show the most frequented destinations, and the green dots represent residences & work places.

Above: A running group currently jumps the guardrail to enter the park from Commerce Avenue.



~75
PAPER
SURVEYS

At the intercepts, more than 75 paper surveys were completed (and later added to the online survey by the TSW Team) throughout the days, the majority of which came from the Satellite Place Offices intercept.



50/50
★ WALK / DRIVE
TO THE PARK

Current transportation to the park is approximately split between walking and driving. This could be due to people walking to the park during their lunch breaks. As noted, most people would prefer to walk or bike to the park instead of drive.



55%
USE THE PARK FOR
WALKING, DOG WALKING,
RUNNING

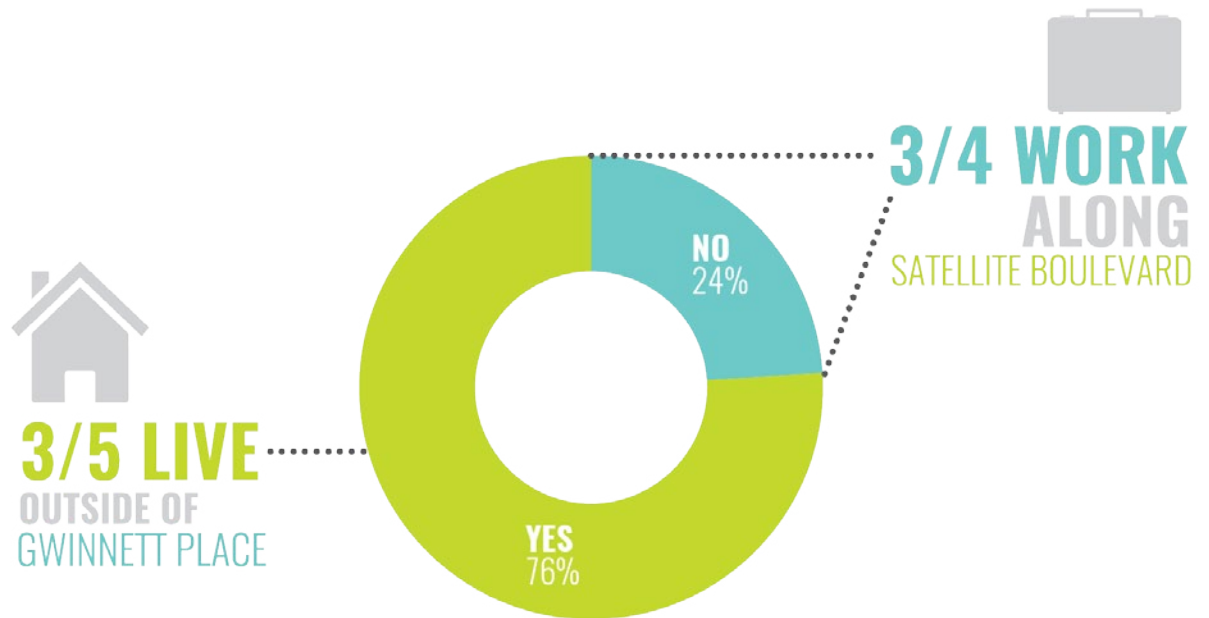
The results from the dot exercise at the intercepts showed that more than half the people that use the park use it for walking (in some form) or running, shown in the adjacent infographic. An enhanced trail network that connects Gwinnett Place to the park would be beneficial for these park users.

2.3 >> SURVEY RESULTS

ONLINE AND PAPER SURVEYS were provided in four languages for a month-long time period in March 2016 to obtain feedback on the use of McDaniel Farm Park and trail connections.

Survey Responses

A total of 125 surveys were received from the community. As stated on the previous page, 75 of the surveys were received from the intercepts at Satellite Place Offices. Because of the skip-logic of the online survey, thirty (30) surveys were not 100% complete because the respondents were not familiar with McDaniel Farm Park. The infographics on the following pages summarize the results of the surveys.



FAMILIARITY WITH MCDANIEL FARM PARK

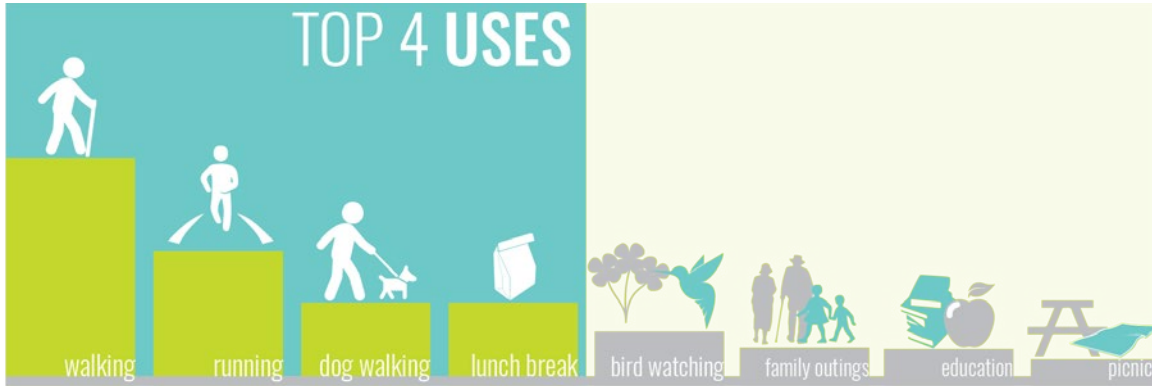
★ **43%**
VISIT THE PARK
≥ 1 TIME / MONTH

Most people who took the survey were familiar with McDaniel Farm Park; however, of those who were not, 75% (3/4) work nearby, along Satellite Boulevard. 60% (3/5) of those who are familiar with the park live outside the Gwinnett Place area.

43% of the survey respondents familiar with McDaniel Farm Park visit the park at least one time per month, and many visit it more than once a month.



MOST FREQUENTED DESTINATIONS IN GWINNETT PLACE AREA



HOW DO YOU USE MCDANIEL FARM PARK?

Most of the respondents who use the park use it for walking, hiking, running, or walking their dogs, in addition to lunch break use. Other frequent uses include nature and bird watching, family outings, history and educational purposes, and picnics. The infographic above shows a proportional bar chart for each of the park uses.

The most frequented destinations in the Gwinnett Place area are restaurants, nearby offices, retail locations, and McDaniel Farm Park. Other choices in the survey included schools, car dealerships, and places of worship.

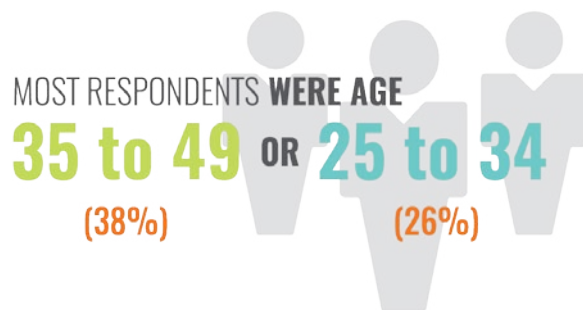
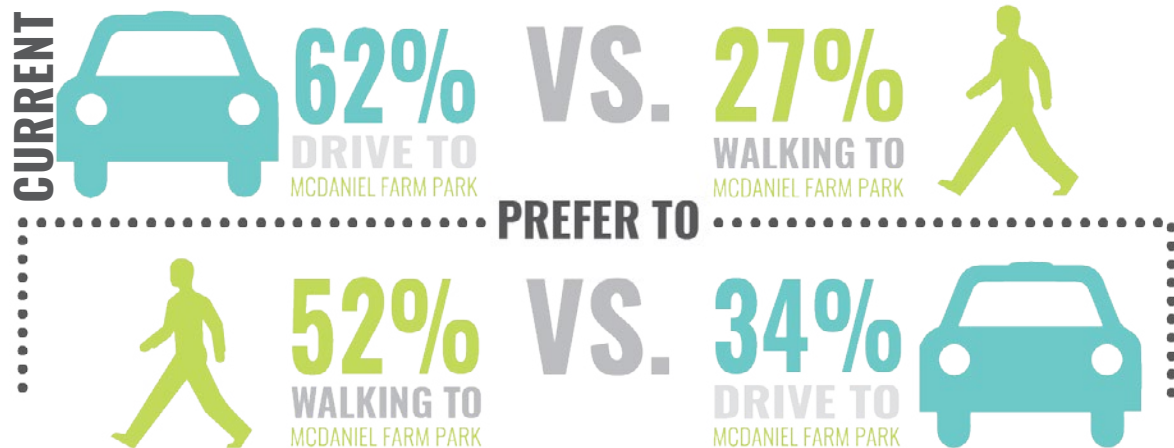


The majority of the respondents who use McDaniel Farm Park visit during their lunch breaks, but many also visit in the afternoons and evenings. Many respondents use the park on the weekends as well. The infographic above is a bar chart to show proportionally how many people use the park in the mornings, during lunch breaks, afternoons, or evenings.

>70% PREFER FUTURE DEVELOPMENT TO BE A TOWN CENTER WITH RESIDENTIAL

More than 70% of the survey respondents preferred a new town center with residential uses, as illustrated in image number one, for the Gwinnett Place area. Town center developments involve compact, mixed-use development supported by usable open space and residential uses. The images at the bottom of this page show the other three options in the survey. All images are from the TSW image library. Other options in the survey included keeping the area as it is today (2); a retrofit of the current retail establishments to be slightly more pedestrian-friendly (3); and compact, pedestrian-friendly, commercial (retail and office)-only development (4).





Most people who use McDaniel Farm Park drive there, but more than a quarter of the people walk there. The majority of people who use the park would like the option to walk to the park, as opposed to 34% who would still prefer to drive there. The infographic at the top represents this.

Most survey respondents were fairly young - between the ages of 25 and 49 (infographic, left).

>> SURVEY RESULTS SUMMARY

- **Most respondents have heard of McDaniel Farm Park**

Those who are familiar with the park use it fairly frequently each month.

- **People would prefer to walk to the park, but most people currently drive to the park**

This presents support for a trail connection from Gwinnett Place into the park.

- **New, compact development is supported**

More than 70% of the survey respondents prefer new development to include mixed-use, compact development with residential units.

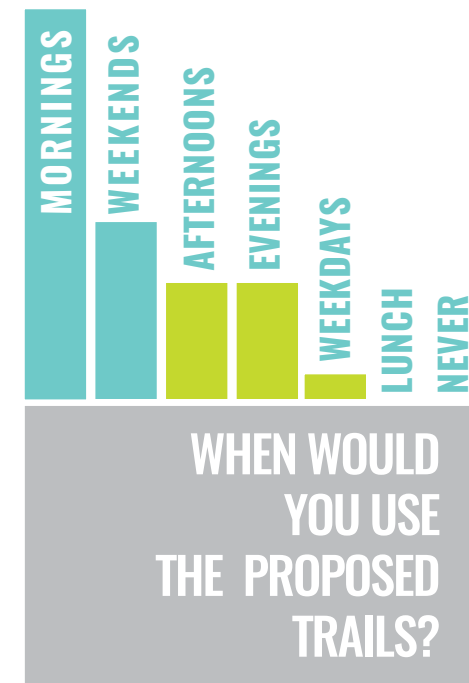
>> STUDY AREA 2 PUBLIC OUTREACH

- A second phase of public outreach was conducted to gauge community interest in an extension of the initial trail options
- **Shorty Howell Park - October 3, 2016; 9:00 AM to 12:00 PM**
The TSW Team set up by the lake at Shorty Howell Park and interacted with people using the existing trail system. The team collected 13 paper surveys and verbal feedback regarding the proposed trail extensions.
- **Property Owner Outreach**
Owners of properties adjacent to the proposed trail system were contacted via mail, email, and phone, in an attempt to gauge interest, concerns, and potential roadblocks to land acquisition.

WHAT DO YOU **VALUE** MOST IN A RECREATIONAL TRAIL?



Respondents that the TSW team interacted with were enthusiastic about the proposed connections. The community members placed the highest value on safety, scenery, and proximity to home. This value hierarchy influenced the exploration and ultimate selection of routes that utilize utility easements, and separate pedestrians from vehicular traffic as much as possible. Respondents plan to use the trails primarily in the mornings and on the weekends, and value residential/trail connections. This led to prioritized connections to existing and proposed residential developments. Community members responded that they would use the trails primarily for recreation and as transportation to work, so maximizing connections to the Gwinnett Place Mall and Gwinnett Prado areas was another key consideration in trail design for the second phase of this project.





>> 3.0 REGIONAL CONTEXT

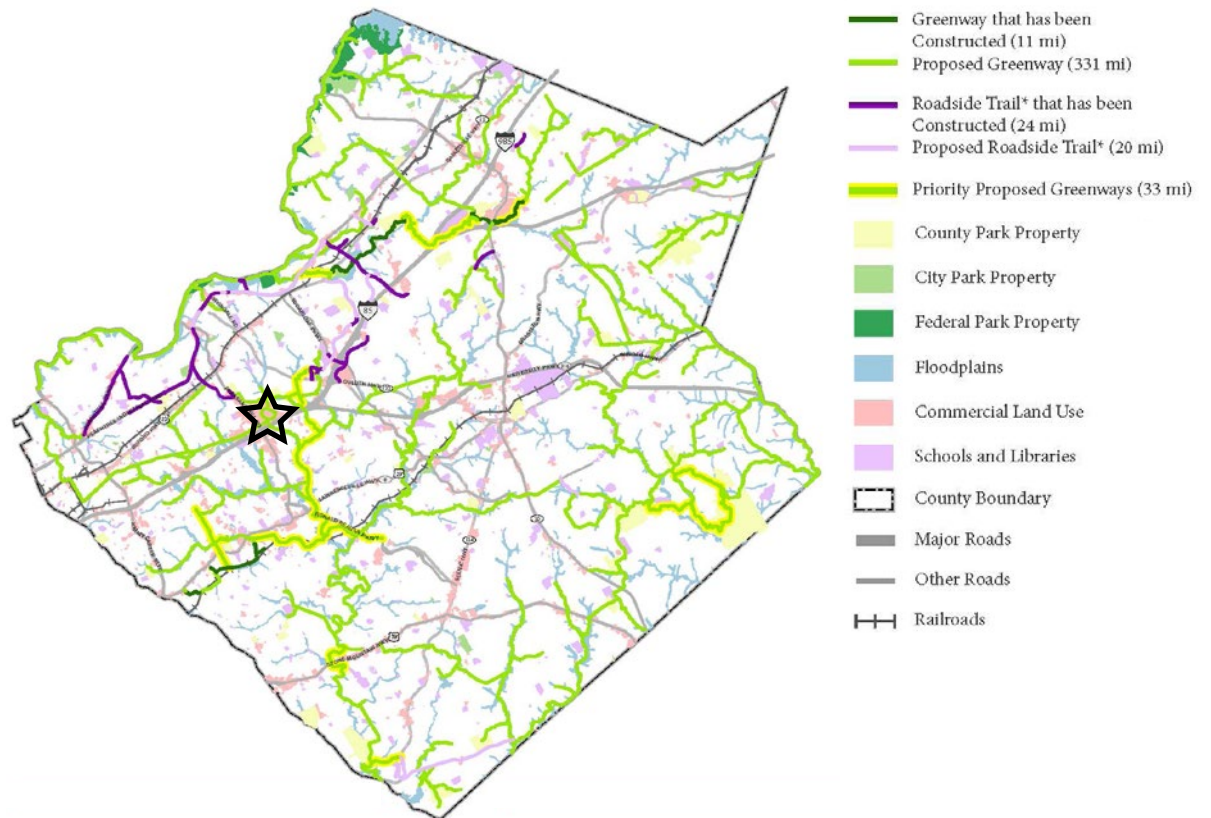
Regional Connections

3.1 >> REGIONAL CONNECTIONS

REGIONAL CONNECTIONS were studied to understand the greater connectivity opportunities for Gwinnett County. The McDaniel Farm Park and Gwinnett Place trail options become an important portion of the overall network.

Open Space & Greenways

The map to the right shows the County's plan for the Open Space and Greenway network (Gwinnett Place is indicated by a star). The connections to Gwinnett Place from this plan are shown on the enlarged map on the adjacent page. Adding a trail through McDaniel Farm Park would open connections to the proposed trails on all sides of the park and to the larger County network. An additional trail connection on Commerce Avenue into the park would provide greater access to the trails proposed northeast and southeast of the park. The proposed extension running



west of the park would connect to the existing greenway trail in Shorty Howell Park. Together, the trail options in this feasibility study would complete an important portion of the proposed system.

Image, above: This map shows proposed and existing Open Space and Greenways for all of Gwinnett County (Open Space & Greenway Master Plan Update, 2014).
Image, opposite page: This map illustrates how the proposed and existing greenway trail currently interact with McDaniel Farm Park.

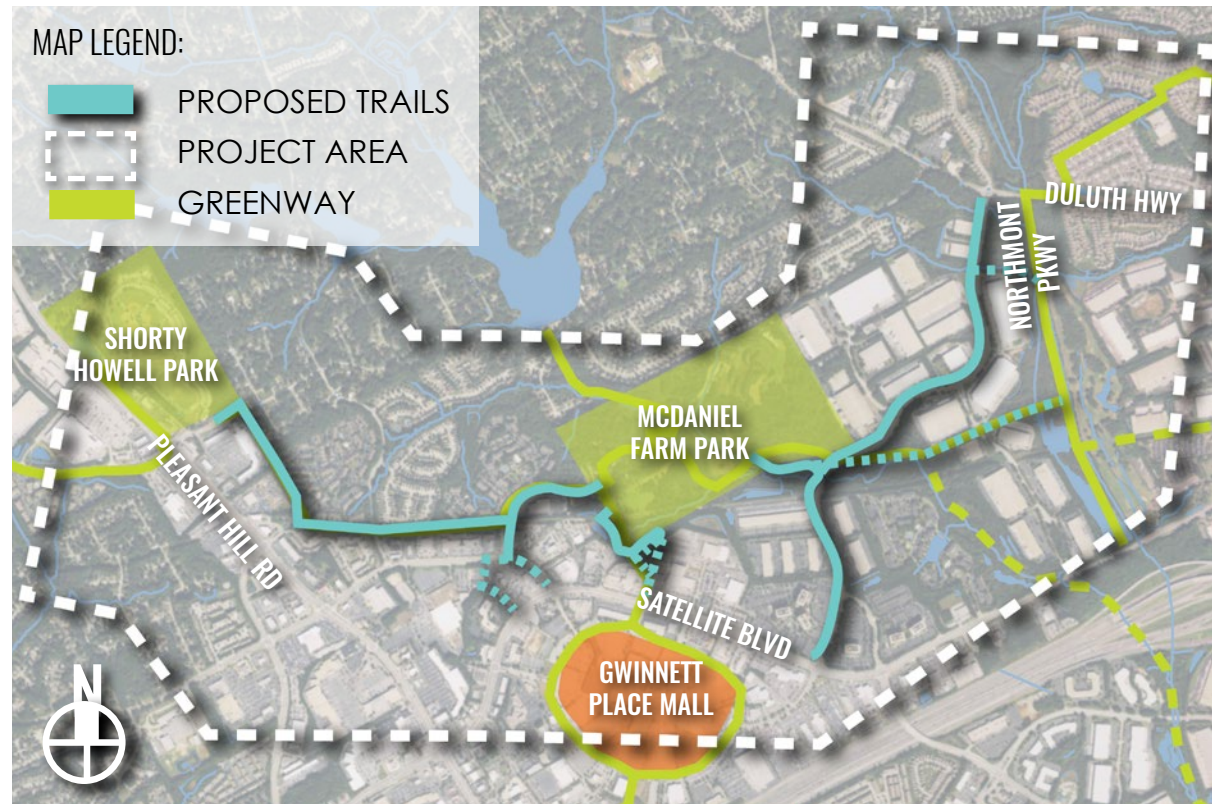


IMPORTANT CONNECTIONS

- Gwinnett County has a plan for an extensive open space and greenway network
- A trail connection through McDaniel Farm Park serves current and future connectivity needs
Current needs are pedestrian access for the workers and residents in the area into the park. Future needs are the greater trail connectivity as a connection piece for the trails proposed on all sides of the park.
- Gwinnett Loop (see page 38-39 for description).








Gwinnett Loop

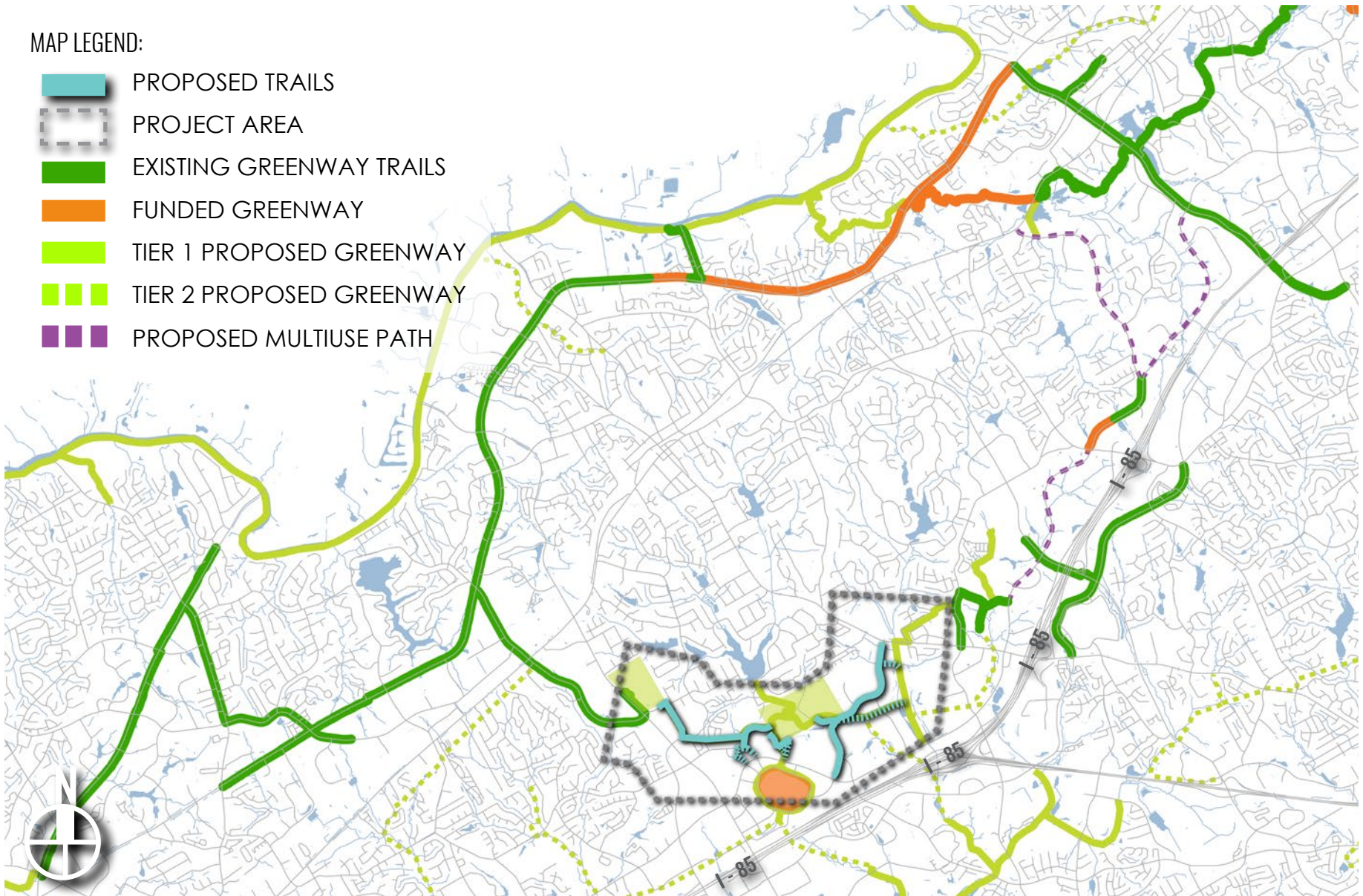
The Gwinnett Loop is a greenway loop from the Gwinnett County Open Space and Greenway Master Plan. The trails proposed in the report complete one section of a larger loop trail system proposed in the Gwinnett County Open Space and Greenway Master Plan Update. The 16-mile greenbelt will be a combination of multi-use path along roadways and meandering paved trails through greenspace and parks. It will provide bike and pedestrian connections between McDaniel Farm Park, Shorty Howell Park, Peachtree Ridge Park, and Suwanee Creek Park. Along the way, the greenway will link to the Infinite Energy Center and multiple businesses and residences in Gwinnett Place CID, Sugarloaf CID, Duluth, Suwanee, Berkeley Lake, and Peachtree Corners.



Above: The image above shows how the trails proposed in this report connect to the existing and planned portions of Gwinnett County's larger Greenway system.

MAP LEGEND:

-  PROPOSED TRAILS
-  PROJECT AREA
-  EXISTING GREENWAY TRAILS
-  FUNDED GREENWAY
-  TIER 1 PROPOSED GREENWAY
-  TIER 2 PROPOSED GREENWAY
-  PROPOSED MULTIUSE PATH





>> 4.0 STUDY AREA 1: TRAIL OPTIONS FOR MCDANIEL FARM PARK

- Study Area 1 Overview
- West Connector
- Central Connector
- East Connector
- Intersection Crossings
- Experiential Bridge
- Study Area 1 Summary

4.1 STUDY AREA 1 OVERVIEW

TRAIL OPTIONS TO MCDANIEL FARM PARK were created based on the site analysis and discussions with the Gwinnett Place CID and affected property owners to determine feasibility.

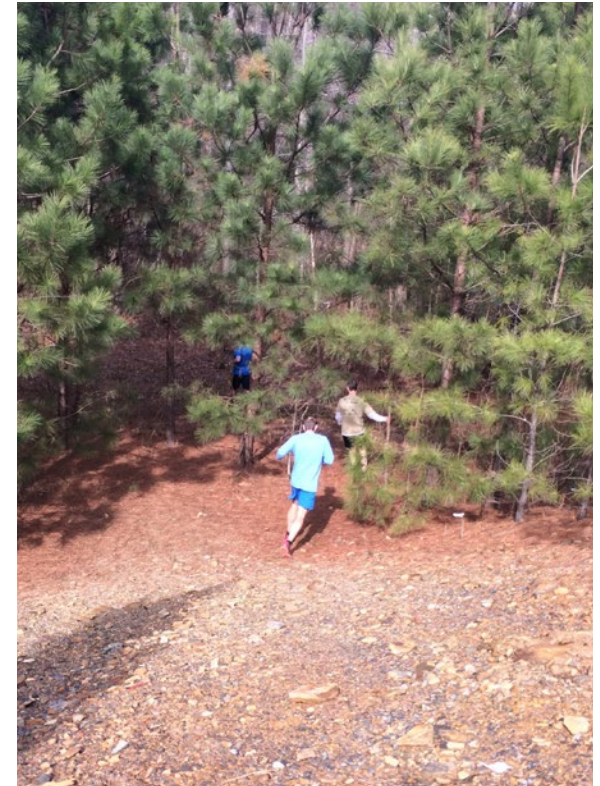
Proposed Options:

The following trail options were developed based on the information gathered through on-site analysis and feedback from the Gwinnett Place CID, affected property owners, and members of the community who work and/or live in the immediate area.

The goal of this study was to find a minimum of two access points into McDaniel Farm Park that would successfully create an active pedestrian connection between the Park and the future growth / redevelopment of the Gwinnett Place area.

An evaluation matrix was developed to help identify feasible trail options. The matrix factored in different concerns / issues including the following: use of land, cost, access, environmental, and community support. Criteria related to each issue were ranked on a scale of 1-5 (5 being the best). The results of the matrix evaluation are summarized on pages 44-45.

The following pages review each of these concerns and how they apply to each of the trail options depicted in the diagram on the opposite page. It is important to note that the options are organized into three groups: Trail A, Trail B, and Trail C. As illustrated in the diagram on the next page, Trails A and B have additional routes that provide alternative destination points.



Above: Coworkers from a local office building are seen entering the park along Commerce Avenue for a morning run.

Currently, McDaniel Farm Park does not have a dedicated entrance along Commerce Avenue.

Adjacent Page: Map illustrating the different trail options for McDaniel Park.



Matrix Rankings Summary >>

The matrix to the right shows how the trail options were compared, and the overall criteria used to rank them. Each set of criteria had individual items that were scored on a scale of 1-5, with 5 being the best and 1 being the worst. Some items were weighted based on importance. The connectors were ranked based on how individual criteria scored for each option. Trail A and Trail B were held constant for the Central and West Connectors, as the scores depended on which trail option was paired with them.

Though the East and West Connectors are ranked 2nd and 1st, respectively, the two scores were very close. Ultimately, it came down to what the connectors could offer to current and future users in regards to access. The access category considered items such as ADA access, number of users reached, type of crossing required, and connectivity to nearby projects (current and proposed).

All of the trail options are feasible, and other factors may determine which trail is built first, such as the availability of funding or the occurrence of future redevelopment on adjacent parcels that could affect the construction or land acquisition processes.



USE OF LAND

Land Acquisition
Use of Easements
Length
Property Owners



COST

Owner Cost
SPLOST
Overall



ACCESS

ADA Access
People Reached
Signalized intersection
Connection to nearby projects



ENVIRONMENTAL

Land Disturbance
Tree Removal



**COMMUNITY SUPPORT
TO BE SCORED**

SCORING

Scale of 1 to 5

1 = worst
5 = best

Some are weighted based on their perceived importance to decision making

Highest score wins

	COST	USE OF LAND	ACCESS	ENVIRONMENTAL	EXPERIENCE	TOTAL
CENTRAL CONNECTOR					★	3rd
Trail A	HELD CONSTANT FOR BOTH OPTIONS					
Option A1	☑	☑	☑	☑		
Option A2			☑		☑	
WEST CONNECTOR			★	★		1st
Trail B	HELD CONSTANT FOR BOTH OPTIONS					
Option B1					☑	
Option B2	☑	☑	☑	☑	☑	
EAST CONNECTOR	★	★				2nd
Trail C1	ONLY OPTION					

☑ Best option between Trail Options within the Connectors

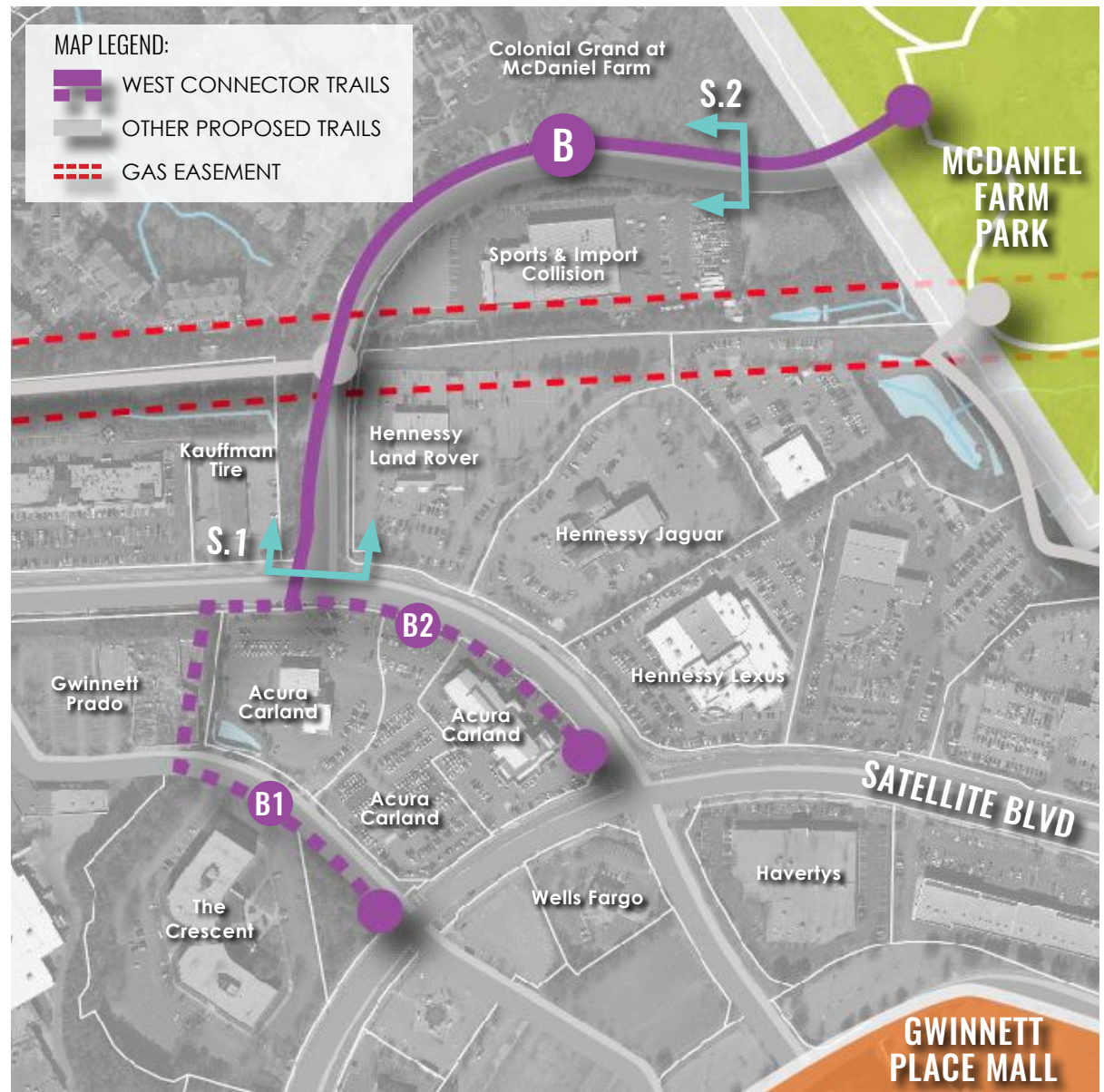
★ Best option between Central, West, East Connectors

4.2 >> WEST CONNECTOR

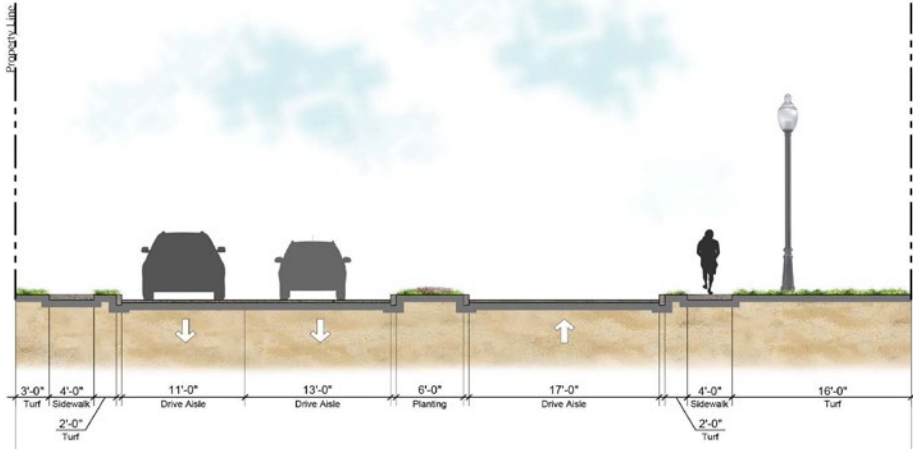
West Connector >> Trail B

Trail B extends from the main entrance of the park to Old Norcross Road. As the entry road into McDaniel Farm Park, McDaniel Road provides a great opportunity for a statement. Currently, this road is used to access one apartment complex and two automotive-based businesses. Due to the large right-of-way, there is a great opportunity for improvement without infringing on private property.

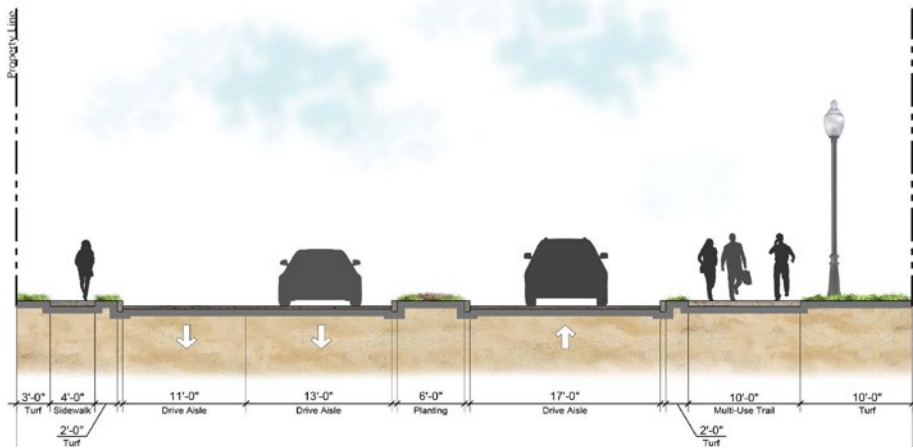
This section of the route is proposed along a new McDaniel Road streetscape, which will extend from the park's entry gate to the intersection of McDaniel Road and Old Norcross Road. From this intersection, two alternatives are proposed to connect to Satellite Boulevard. These options are identified as options B1 and B2; they are reviewed on the following pages.



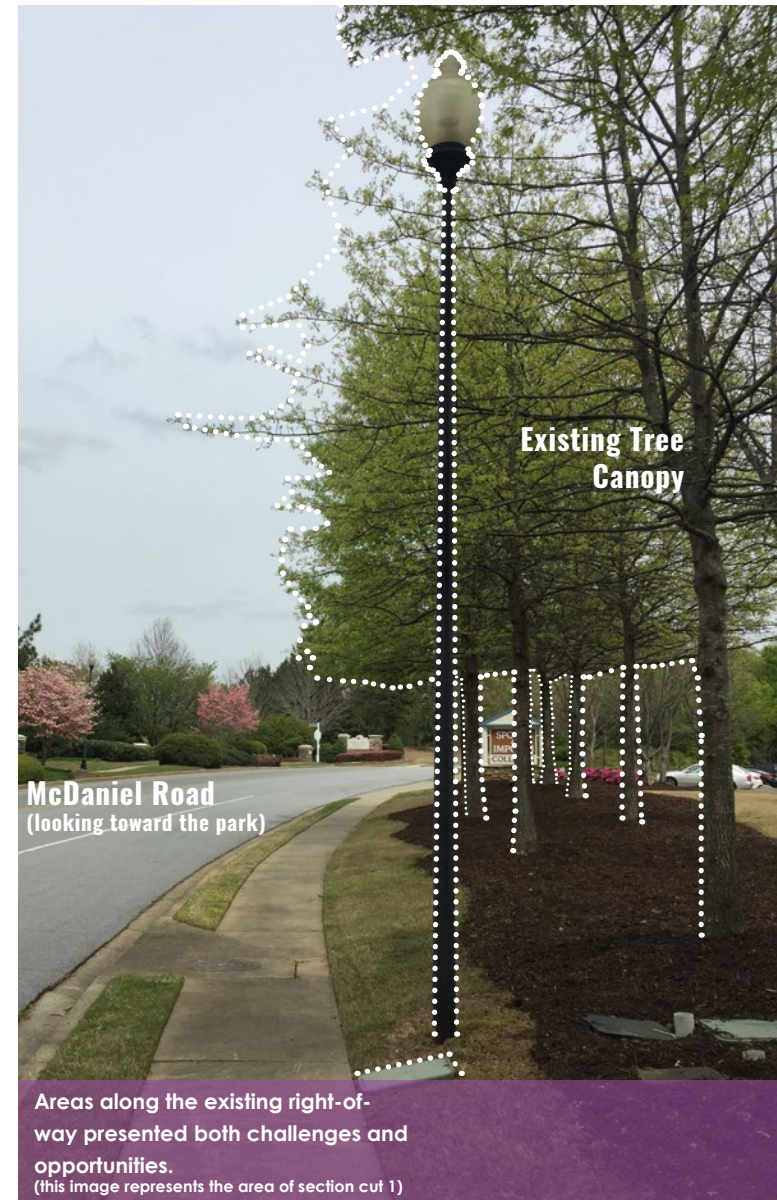
Existing



Proposed



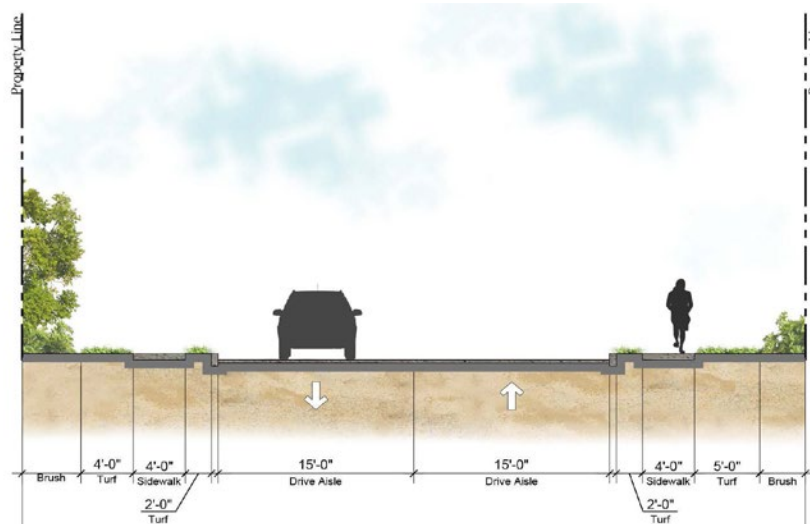
TRAIL B: TYPICAL SECTION S.1



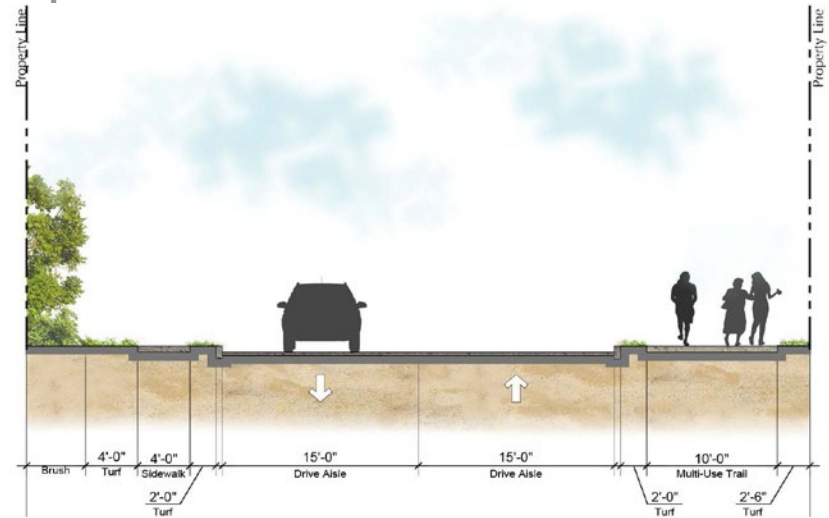
West Connector >>

Trail B

Existing



Proposed



TRAIL B: TYPICAL SECTION S.2



TRAIL B OVERVIEW:

Construction Cost: \$351,068
Eng. & Survey Cost: \$63,192
Land Acquisition Cost: N/A
Total Cost: \$414,260

Items Driving Cost:

- Demolition and grading for the new streetscape

Use of Land:

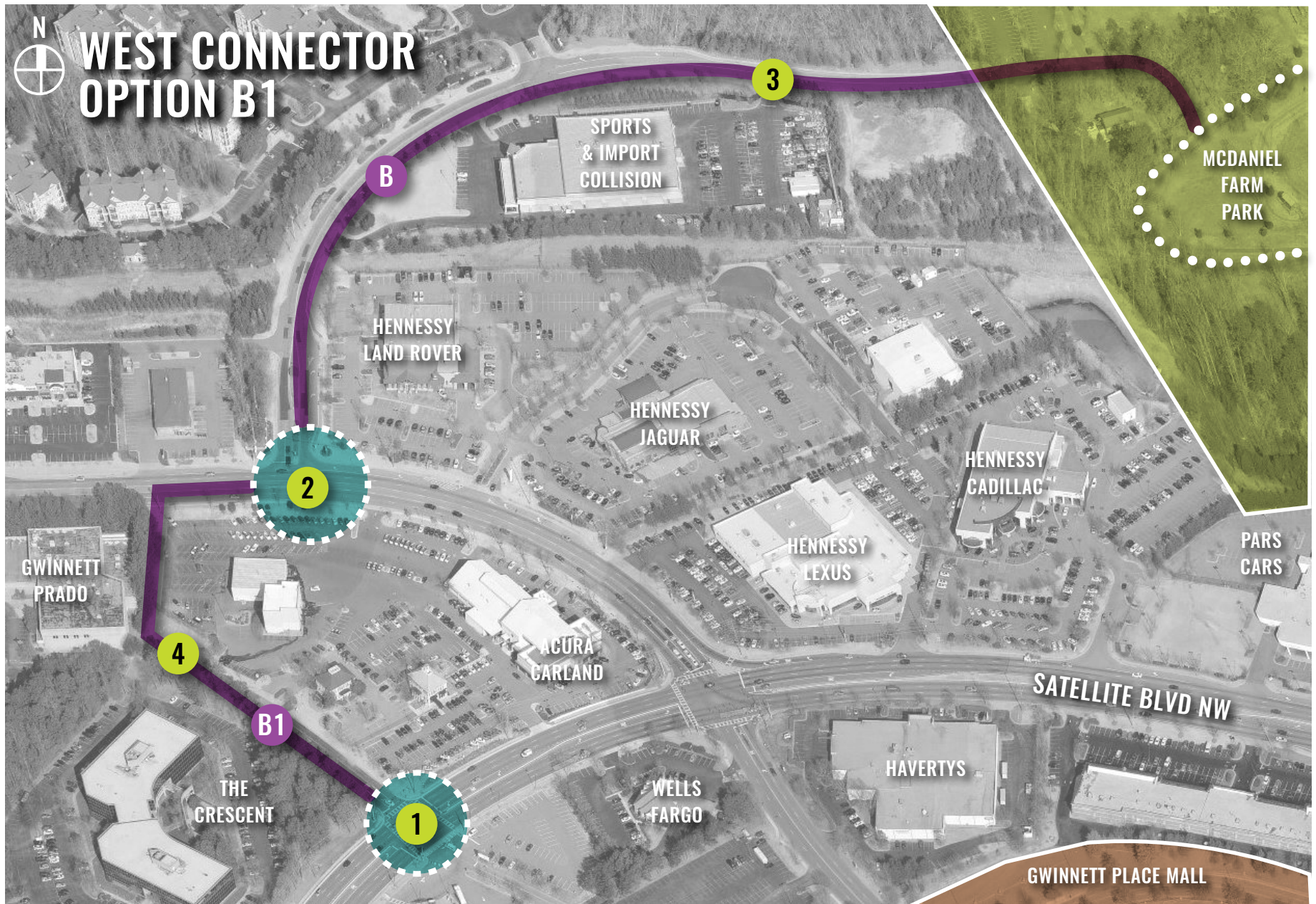
- Streetscape adjustment
- Existing right-of-way to accommodate proposed trail

Access:

- 1,675 feet long
- Good visibility along McDaniel Road

Environmental:

- Flat topography



WEST >> SITE CHARACTER

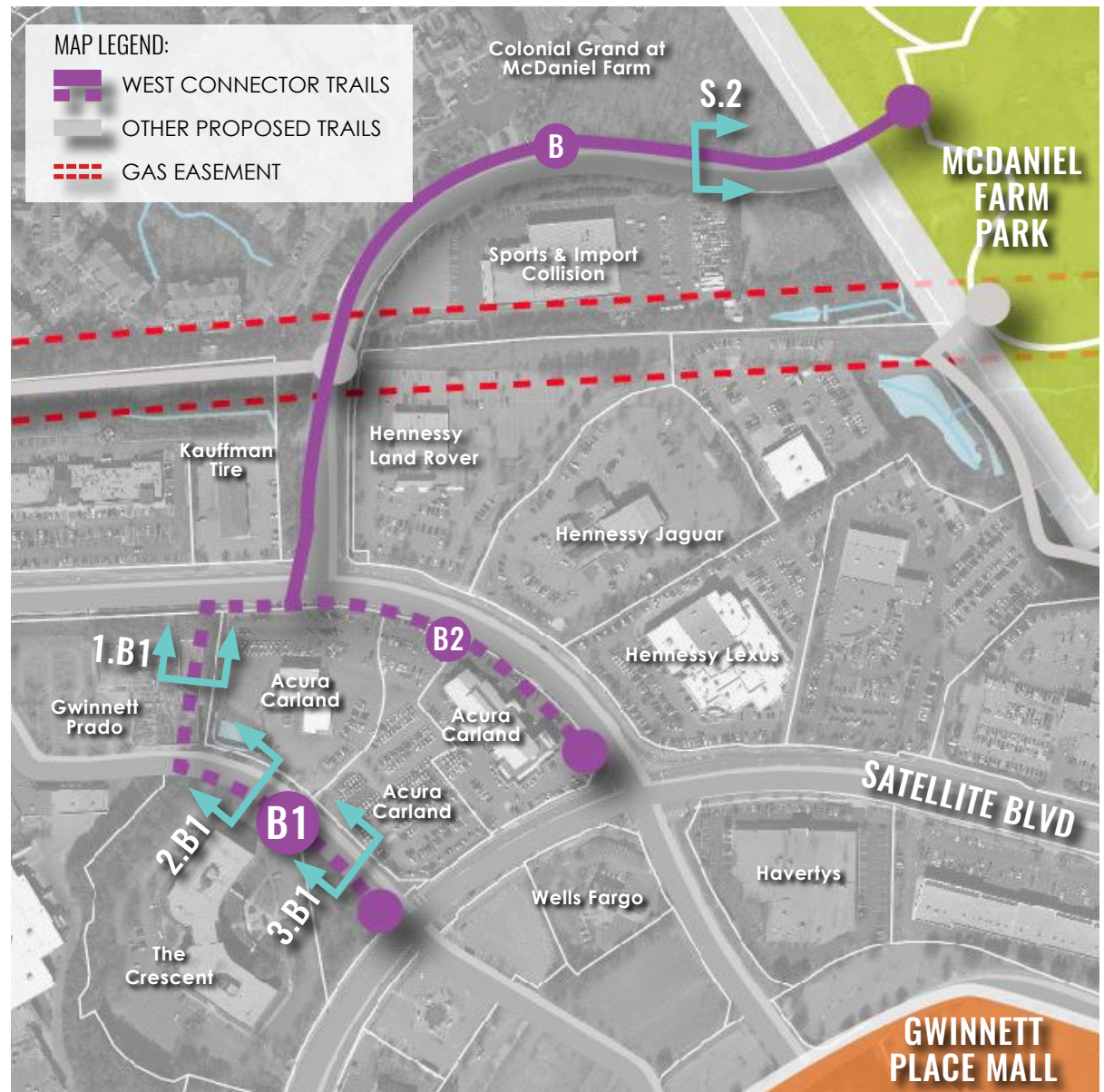


West Connector >>

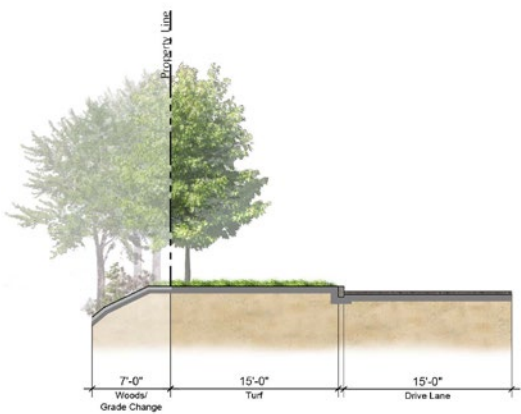
Option B1 from McDaniel Road

Extending from Trail B, Option B1 crosses Old Norcross Road at-grade and extends west toward the rear property line of Acura Carland. The trail will run along the boundary line of Acura Carland and Gwinnett Prado, where the topography drops off toward Gwinnett Prado. Because of this, guardrails and retaining walls may be necessary. Additionally, this option will require two streetscape adjustments (Old Norcross Road and Gwinnett Plantation Way), and land acquisition along the rear of the Acura dealership.

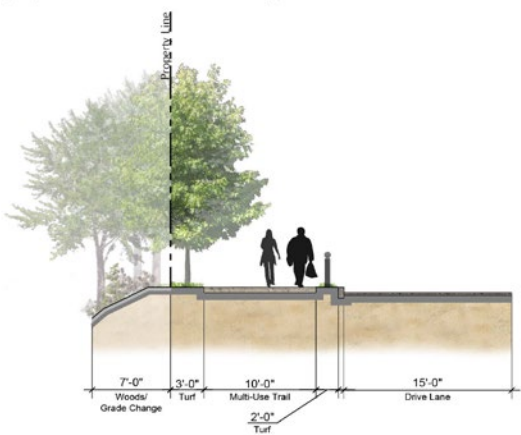
Option B1 provides a great opportunity to energize an area that is otherwise ignored. As of July 2016, the Gwinnett Prado property, which the parcel data says includes Gwinnett Plantation Way, has been purchased with the intention of implementing a mixed-use redevelopment. This would provide a catalyst for pedestrian connections to both the park and future redevelopment around Gwinnett Place Mall.



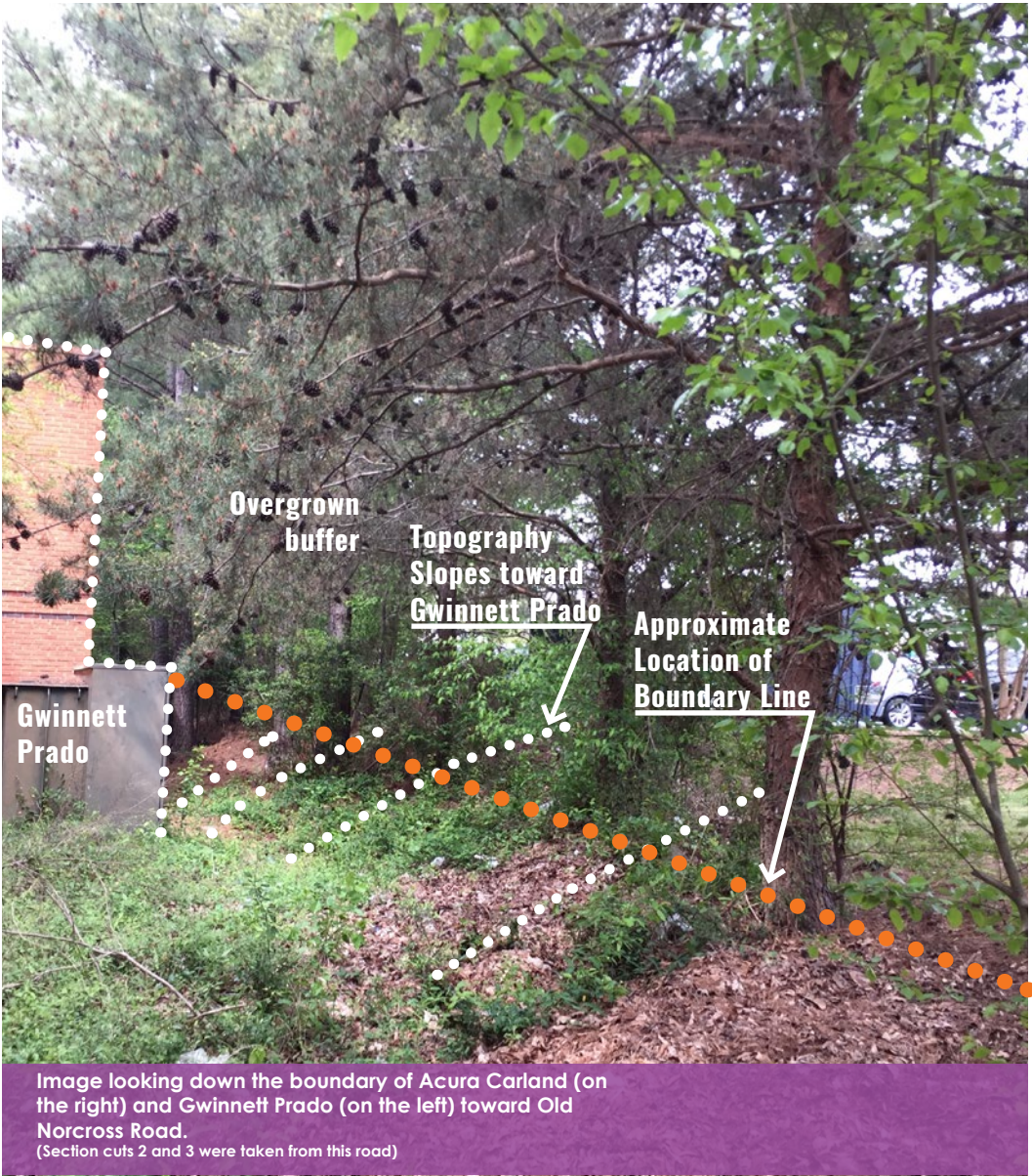
Existing



Proposed



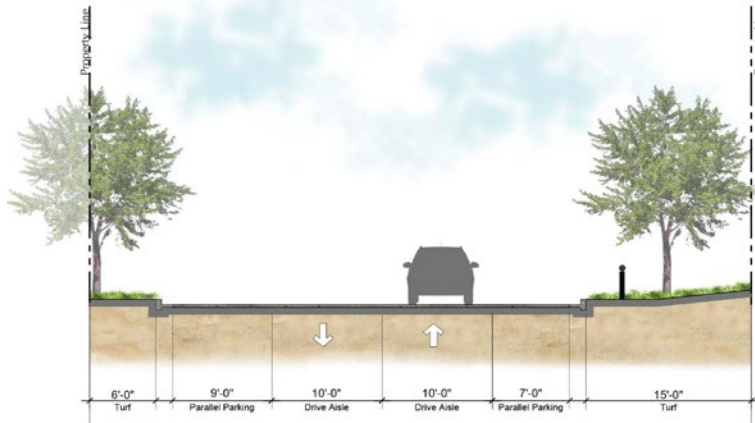
OPTION B1: TYPICAL SECTION 1.B1



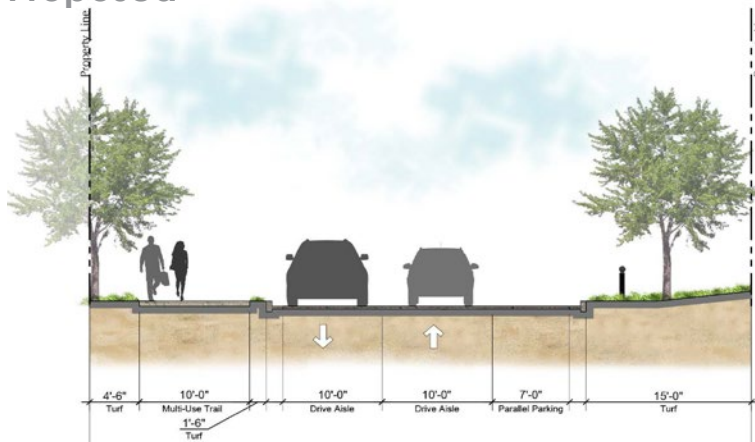
West Connector >>

Option B1 from McDaniel Road

Existing

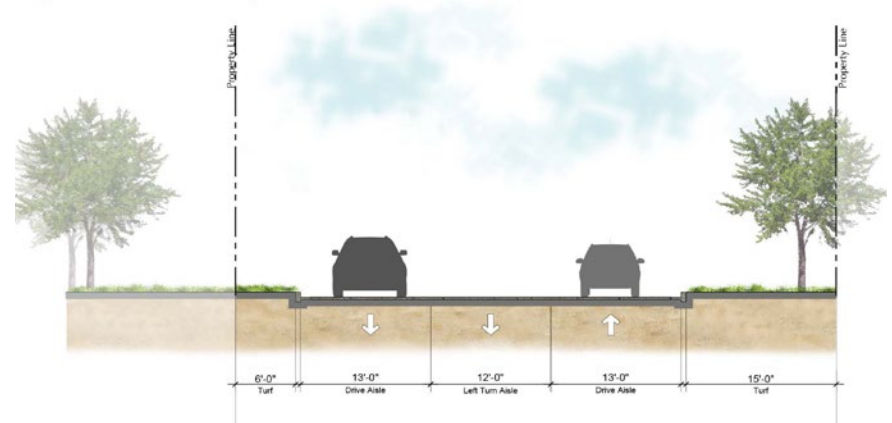


Proposed

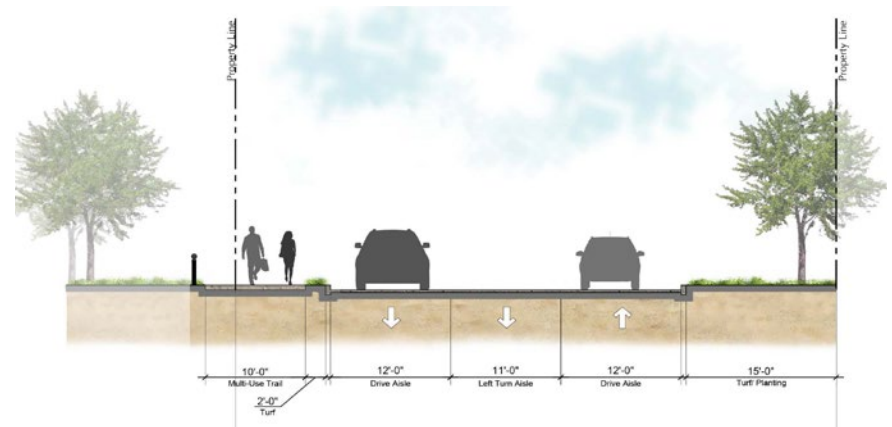


OPTION B1: TYPICAL SECTION 2.B1

Existing



Proposed



OPTION B1: TYPICAL SECTION 3.B1



**Acura
Dealership**

**The Crescent
Office Building**

**36 Feet of
Concrete from
Curb to Curb**

Image looking down Gwinnett Plantation Way toward Gwinnett Place Mall. This road is very wide and currently underutilized.
(Section cuts 2 and 3 were taken from this road)

OPTION B1 OVERVIEW:

Construction Cost: \$473,170
Eng. & Survey Cost: \$85,171
Land Acquisition Cost: \$102,490
Total Cost: \$660,830

Items Driving Cost:

- Retaining wall along Old Norcross Road at Acura dealership

Use of Land:

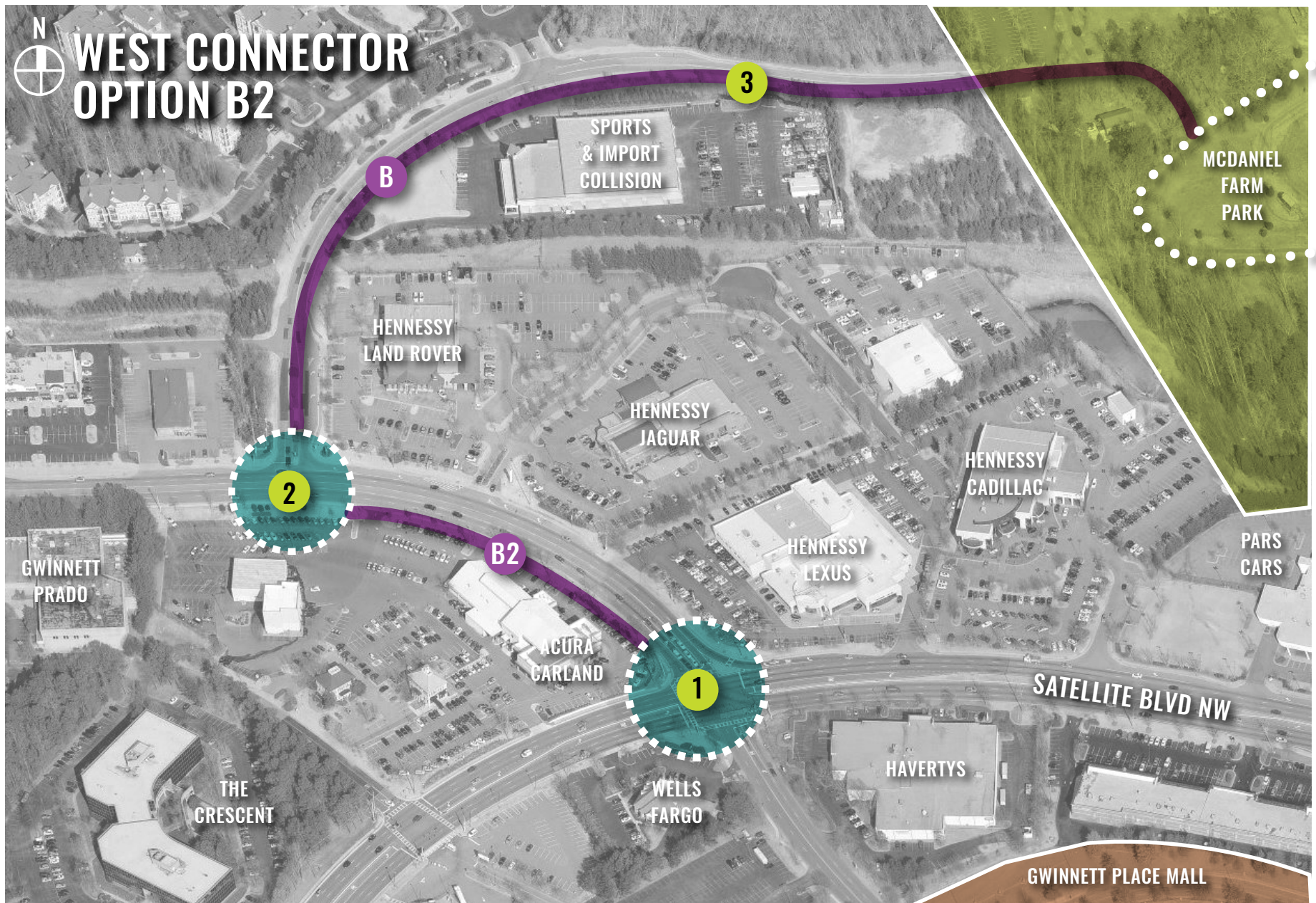
- Two property owners
- Trail rear boundary line of Acura dealership
- Limited visibility of users from public right-of-way

Access:

- 1,048 feet long
- Need a signalized at-grade pedestrian crossing across Old Norcross Road

Environmental:

- Topography along edges of Acura dealership to be addressed with



WEST >> SITE CHARACTER



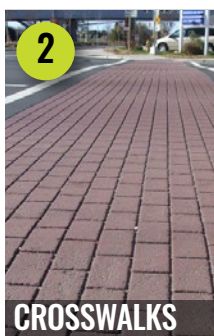
PEDESTRIAN CENTERED INTERSECTIONS



THERMOPLASTIC CROSSWALKS



WIDE PED PATHS



CROSSWALKS



WIDE PEDESTRIAN LINEAR PARKS

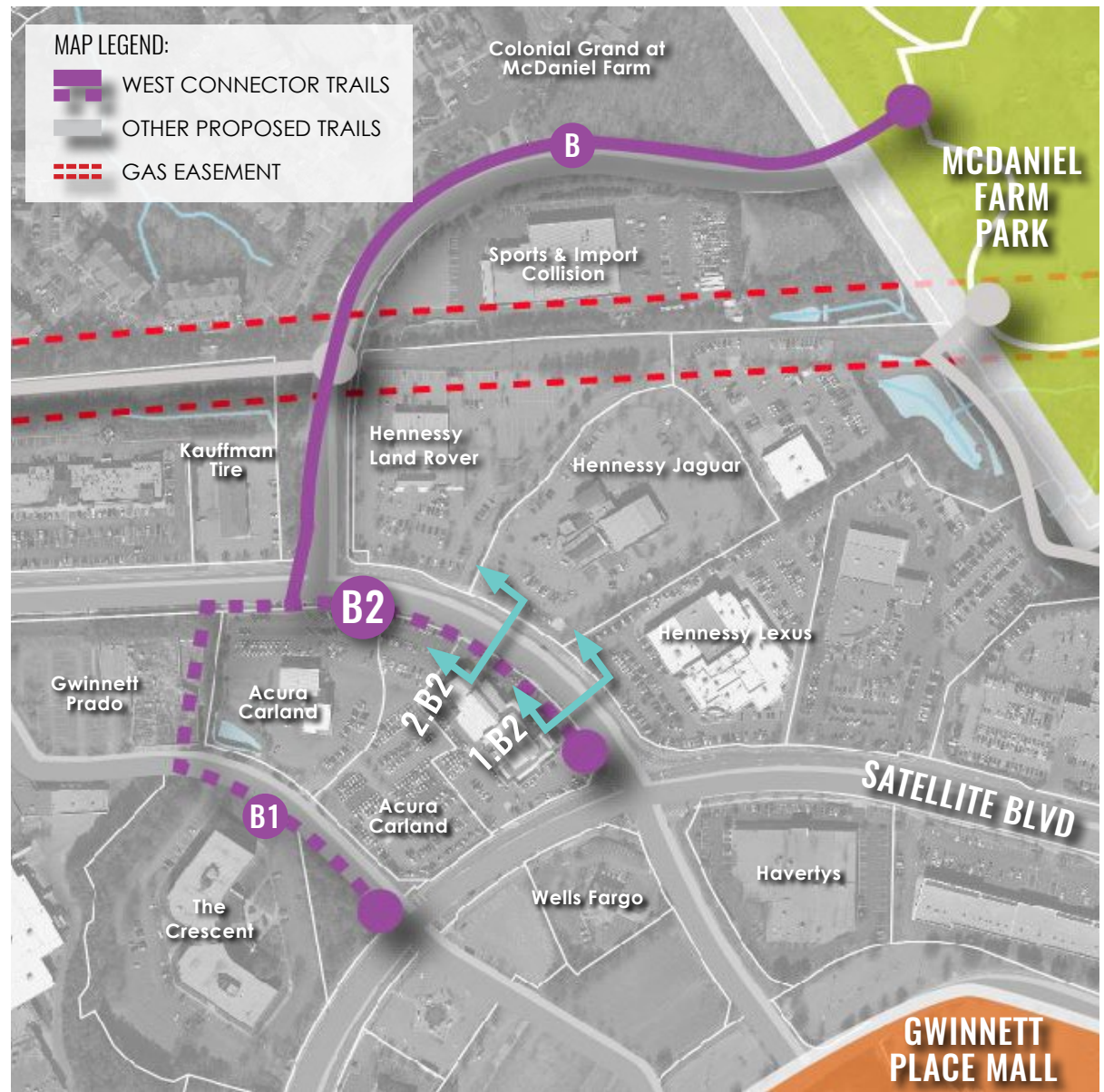


URBAN PEDESTRIAN TRAIL

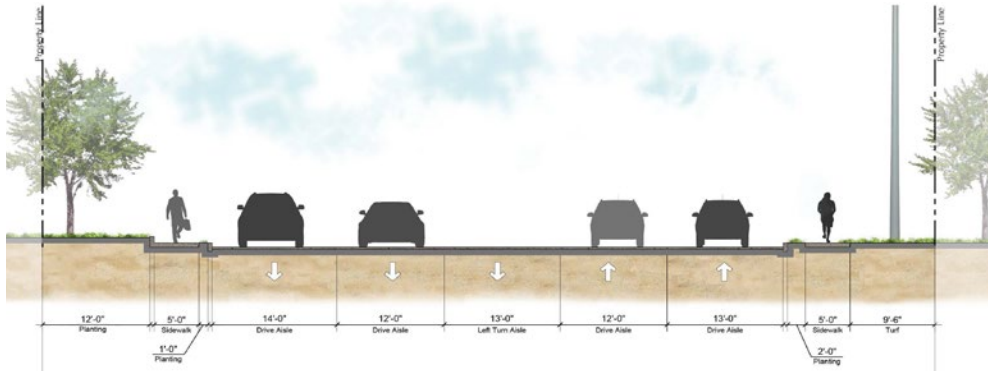
West Connector >>

Option B2 from McDaniel Road

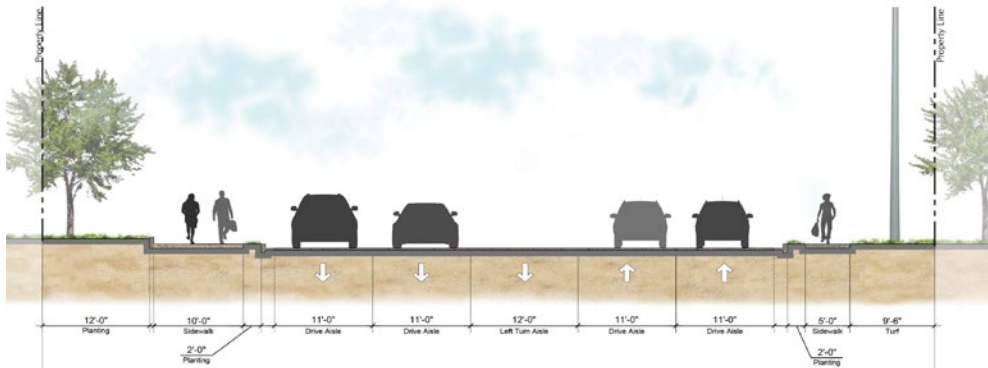
As with Option B1, Option B2 will cross Old Norcross Road at-grade toward the southern right-of-way. The trail is proposed to extend toward Satellite Boulevard. This route provides the most direct extension of Trail B however, the user experience for this section is much lower than that of Option B1. This proposal will require the lanes of Old Norcross Road to be reduced by a minimum of one foot each, taking them from approximately 12 feet to 11 feet. Reducing the lane widths will allow for the existing sidewalk to be widened, accommodating the proposed path toward Satellite Boulevard.



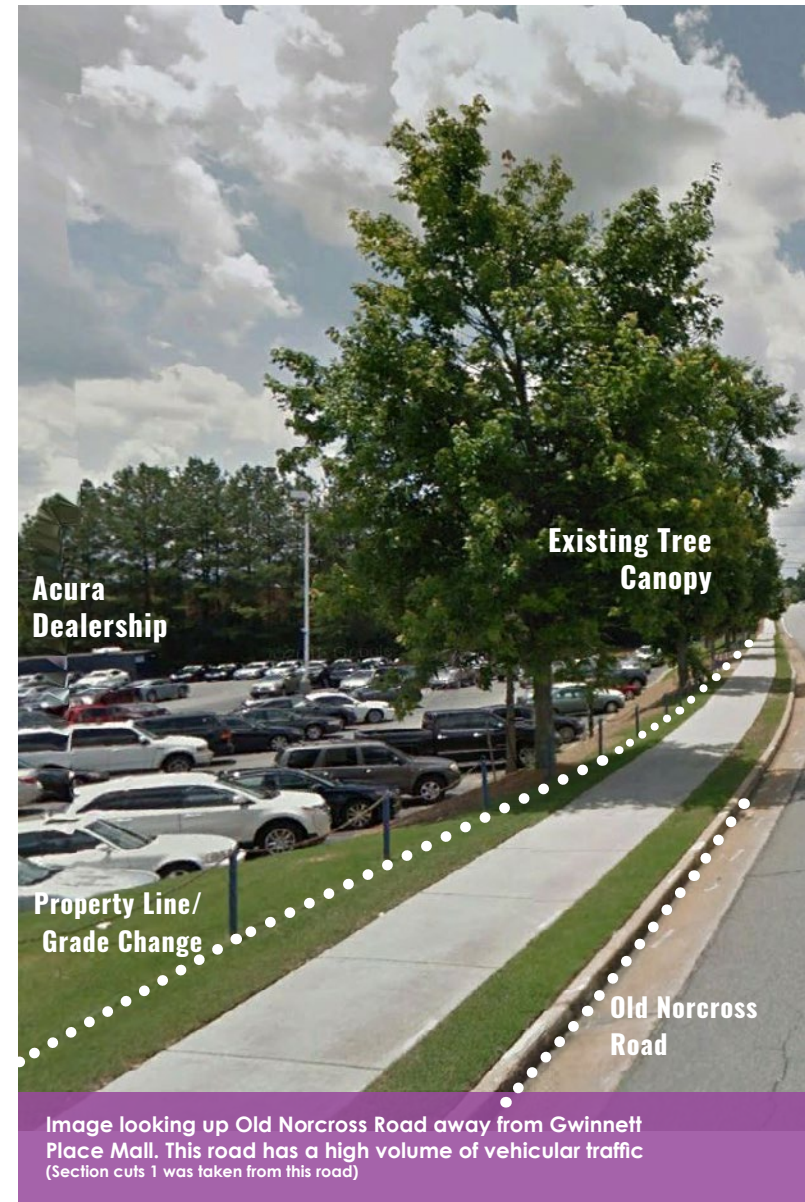
Existing



Proposed



OPTION B2: TYPICAL SECTION 1.B2

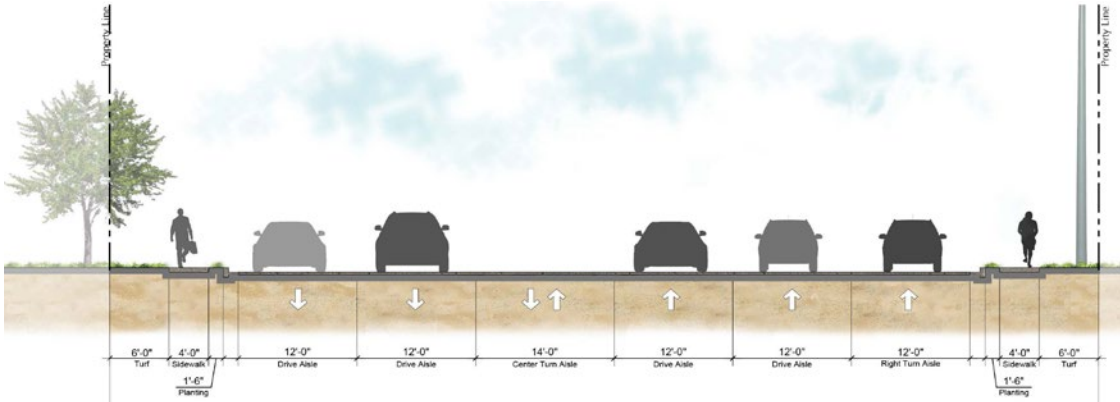


West Connector >>

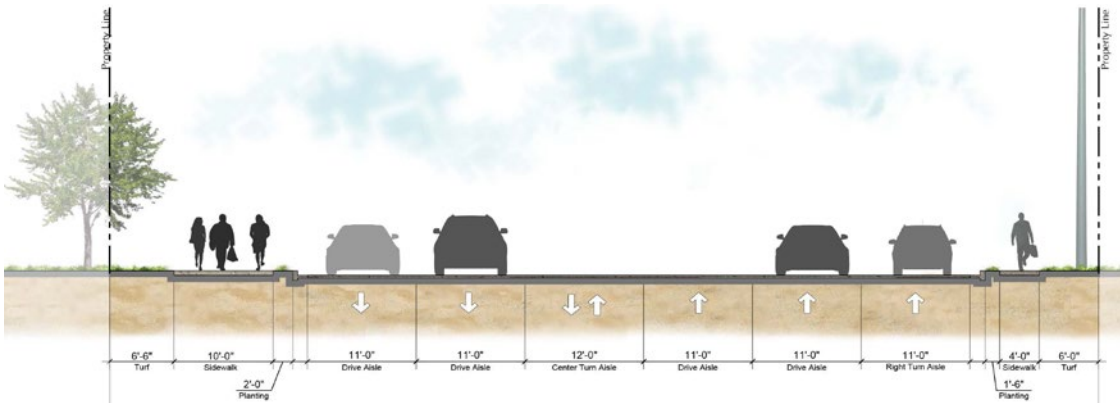
Option B2 from McDaniel Road



Existing



Proposed



OPTION B2: TYPICAL SECTION 2.B2

OPTION B2 OVERVIEW:

Construction Cost: \$449,576

Eng. & Survey Cost: \$80,924

Land Acquisition Cost: N/A

Total Cost: \$530,500

Items Driving Cost:

- Demolition and grading to accommodate trail along portions of Acura Carland

Use of Land:

- Travel lanes to be reduced by an average of 1 foot each
- Existing right-of-way to accommodate proposed trail

Access:

- 760 feet long
- Great pedestrian visibility along Old Norcross Road

Environmental:

- Topography along edges of Acura Carland to be addressed with retaining walls and guardrails

4.3 >> CENTRAL CONNECTOR

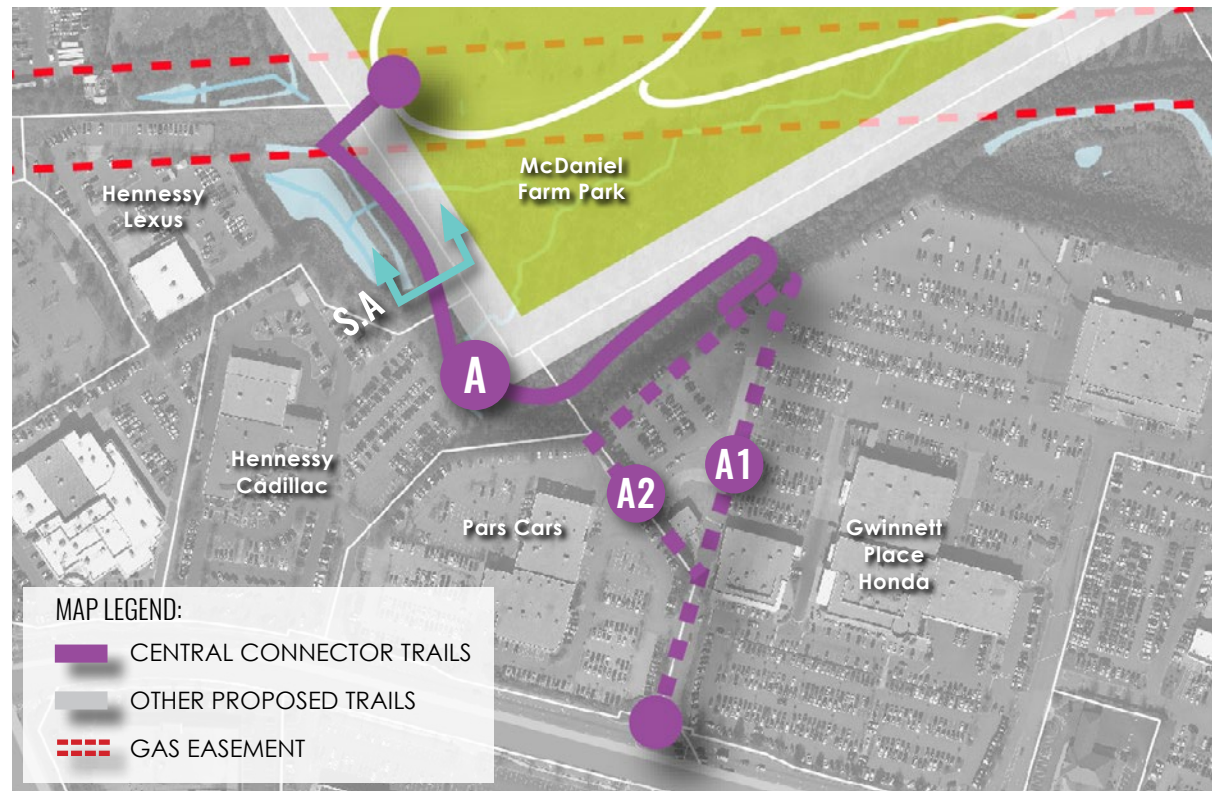
Central Connector >>

Trail A

The goal of Trail A was to develop a trail section that will work with the site's many environmental challenges; this will establish an initial section that provides direct access to Satellite Boulevard through two trail extension options (A1 & A2) as described in the following pages.

Trail A is routed through areas unsuitable for structural development. However, by constructing bridges, working with the existing topography, and gas / sanitary sewer easements, it is plausible to extend a connection as shown on the diagram.

It should also be noted that Trail A lies within four (4) properties, two (2) of which are owned by the same entity. Additionally, this option makes use of two utility easements



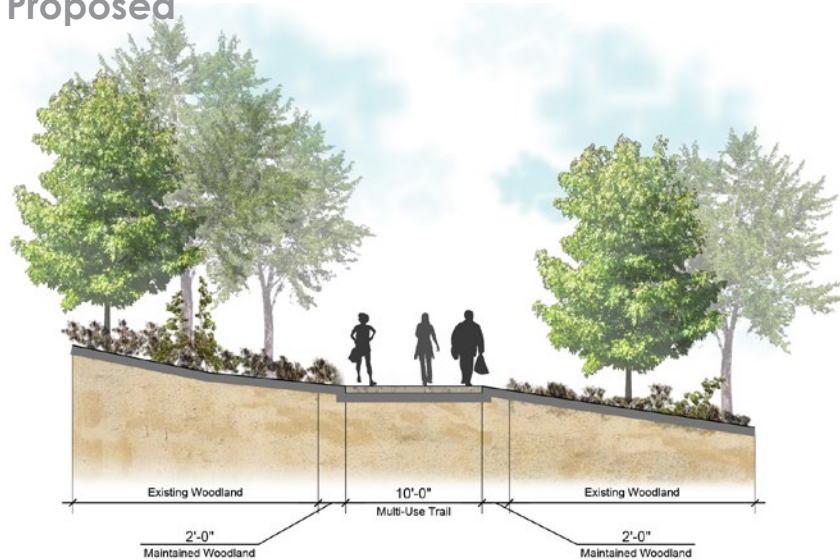
that are to be maintained as areas cleared of all vegetation and structural development.

The diagram above illustrates the recommended path segment for Trail A and the two optional routes from Trail A to Satellite Boulevard.

Existing



Proposed



TRAIL A: TYPICAL SECTION S.A

TRAIL A OVERVIEW:

Construction Cost:	\$711,286
Eng. & Survey Cost:	\$128,031
Land Acquisition Cost:	\$90,478
Total Cost:	\$929,795

Items Driving Cost:

- Pedestrian bridges (2 needed)
- Guardrail for areas of trail with challenging topography

Use of Land:

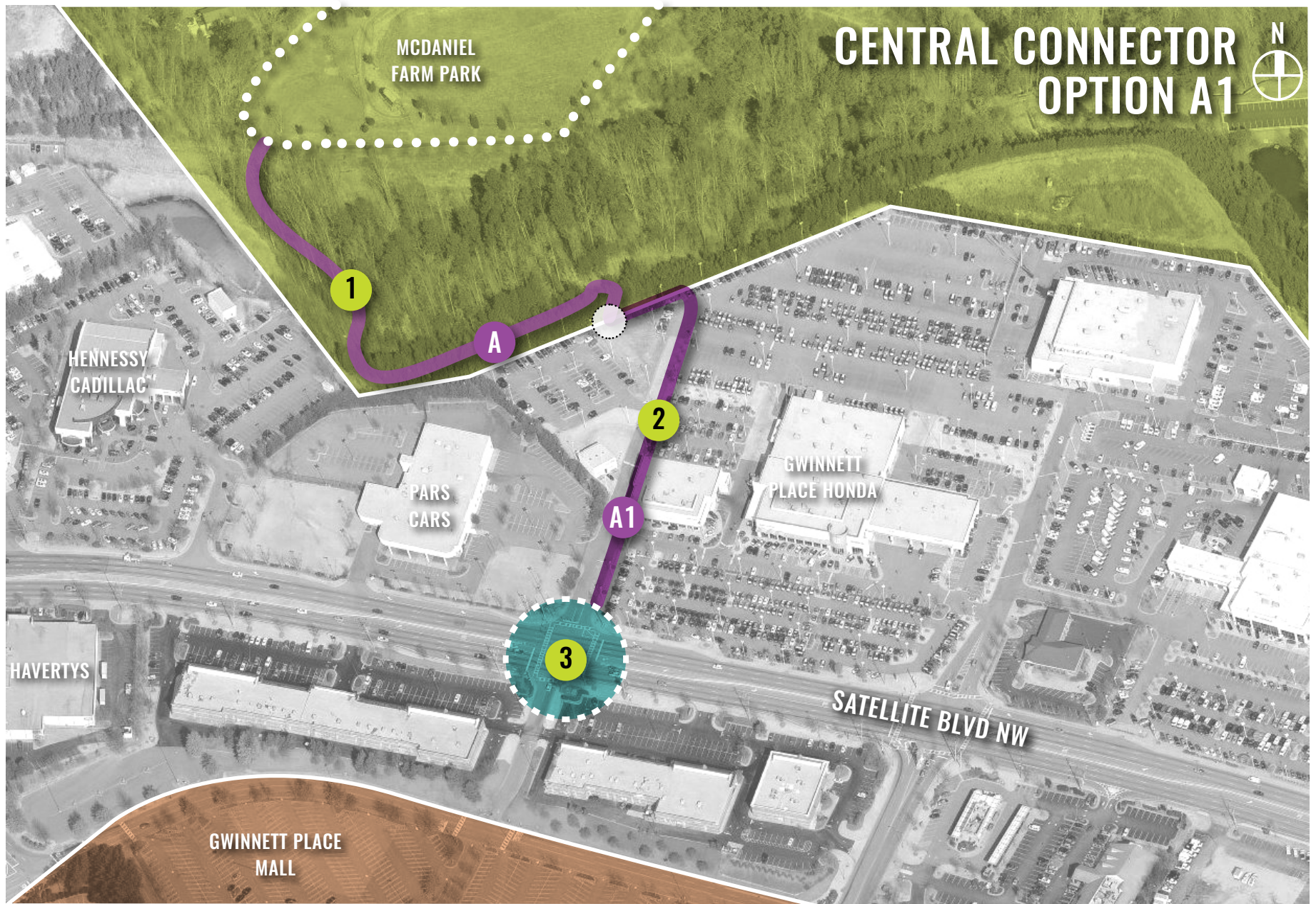
- Three property owners
- Trail does not interfere with land suitable for structural development

Access:

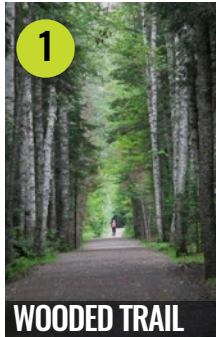
- Provides most direct route from park to future development at Gwinnett Place Mall

Environmental:

- Mostly flat within existing sewer and gas easements
- Topography challenging on Gwinnett Place Honda property



CENTRAL >> SITE CHARACTER

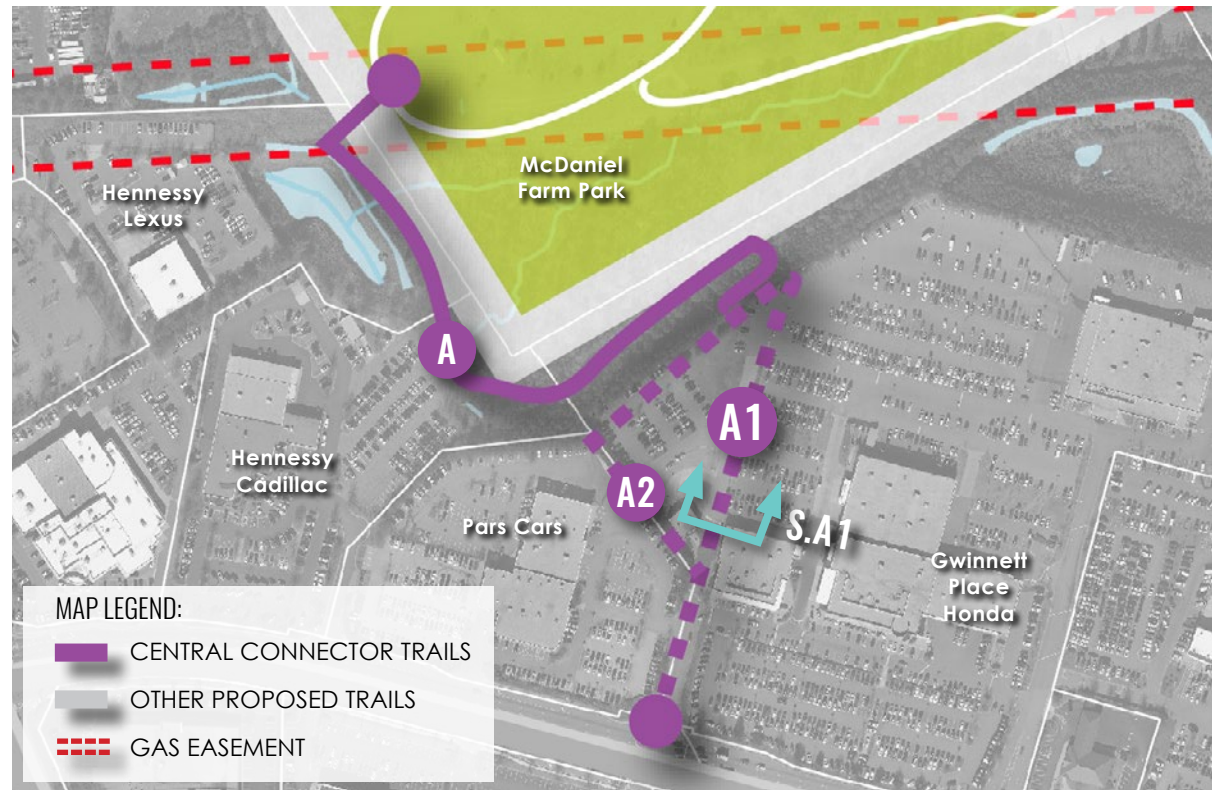


Central Connector >>

Option A1 from Trail A

Extending from Trail A, Option A1 provides the most direct path toward Satellite Boulevard. In order to provide this direct connection, it is proposed that the path extend through part of the property owned by Gwinnett Place Honda. This option is proposed to encroach on part of the “back of house” operations at the Gwinnett Place Honda Dealership. This may prove to be difficult; however, with proper security and safety measures (such as guardrails, pedestrian lighting, wayfinding, clear views, and security cameras) in place, it could be a plausible option.

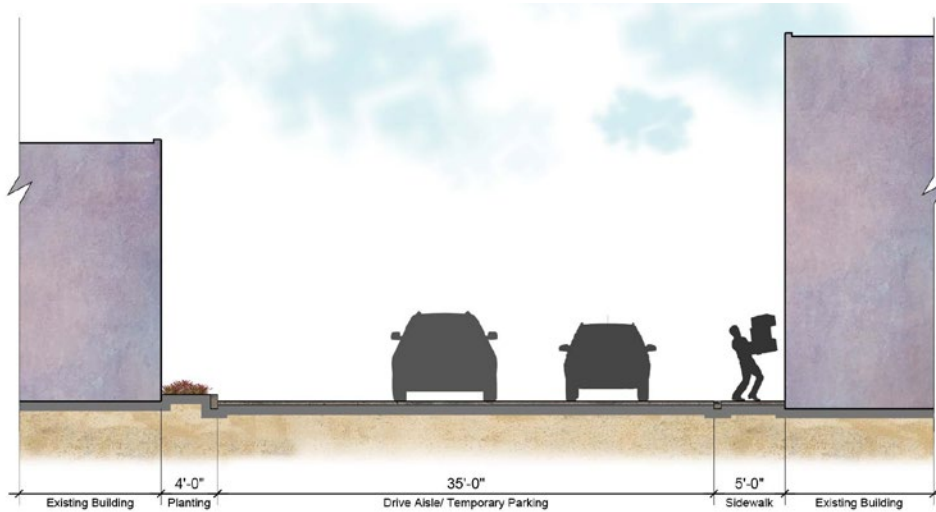
Additionally, as Option A1 moves beyond “back of house” operations, it crosses into the neighboring Pars Cars property. At this point, the path is proposed to stay within a newly planted buffer area that will extend toward Satellite Boulevard.



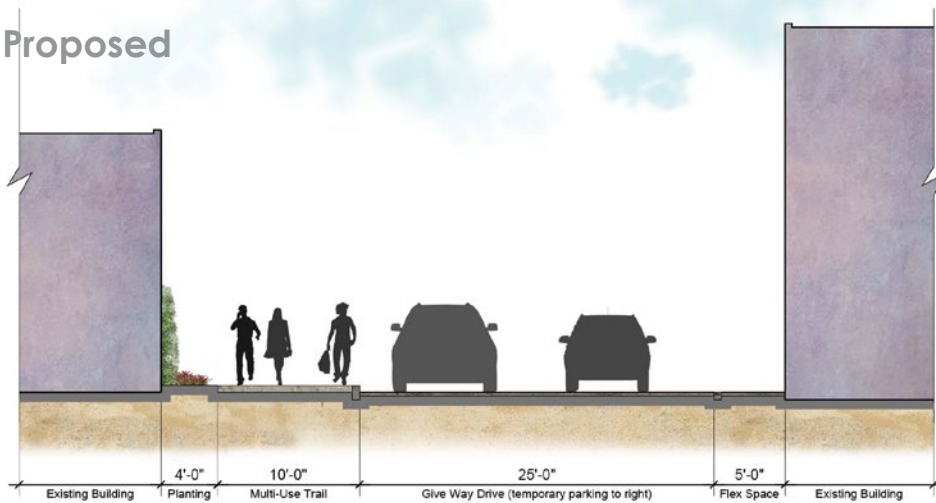
While Option A1 provides the shortest route from the park to Gwinnett Place Mall, it does prove challenging for safety and security, and requires the full support of both Gwinnett Place Honda and Pars Cars.

The diagram above illustrates the recommended path segment for Trail A and the two optional routes from Trail A to Satellite Boulevard.

Existing



Proposed



TRAIL OPTION A1: TYPICAL SECTION S.A1 (Gwinnett Place Honda Dealership Parking lot)

OPTION A1 OVERVIEW:

Construction Cost: \$500,870
 Eng. & Survey Cost: \$90,157
 Land Acquisition Cost: \$59,751

Total Cost: \$650,777

Items Driving Cost:

- Fencing to provided security for dealership and trail users
- New curb and gutter in areas to accommodate trail

Use of Land:

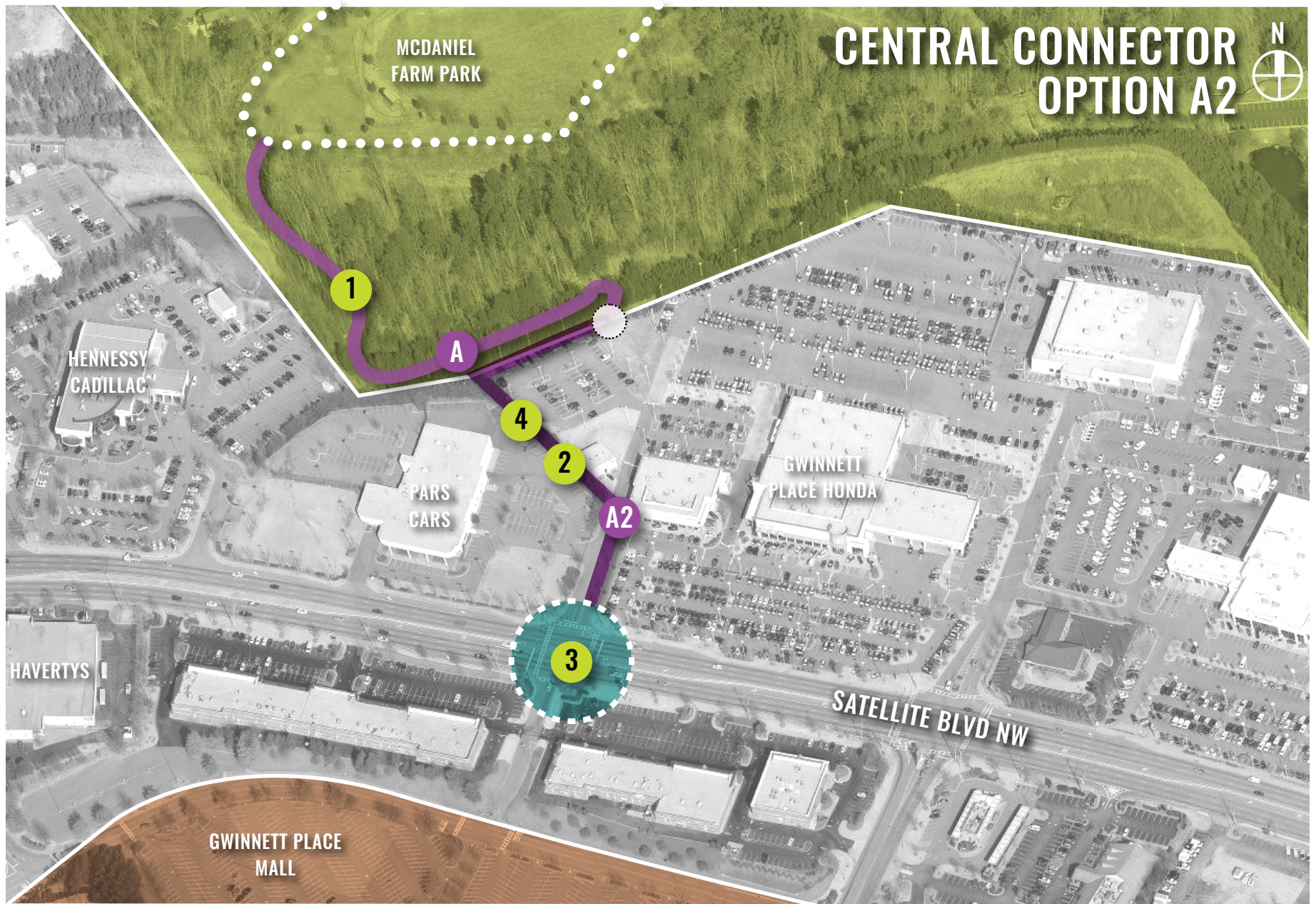
- Two property owners
- Trail is within "back of house" operations for Honda Dealership

Access:

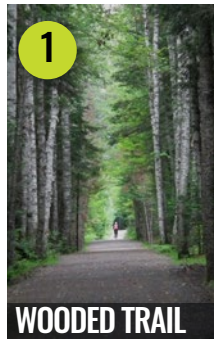
- 825 feet long
- Provides most direct route from Park to future development at Gwinnett Place Mall

Environmental:

- Mostly flat



CENTRAL >> SITE CHARACTER

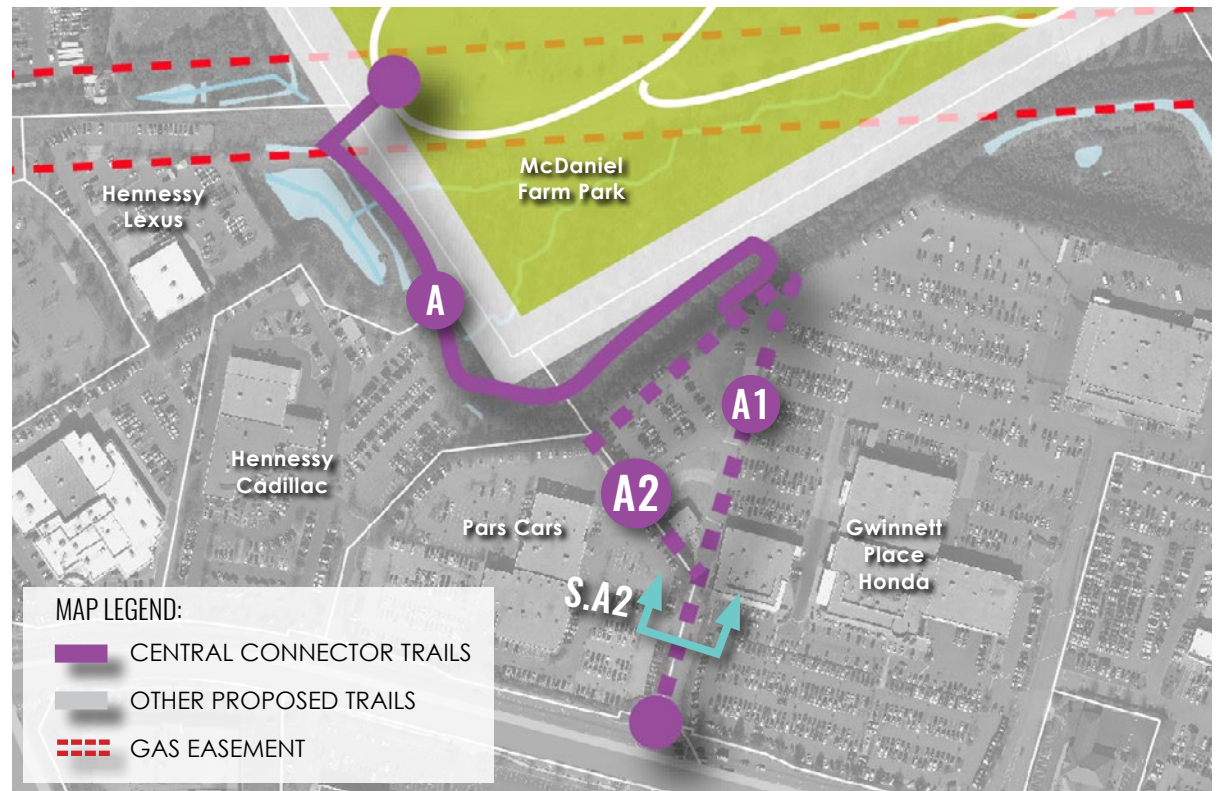


Central Connector >>

Option A2 from Trail A

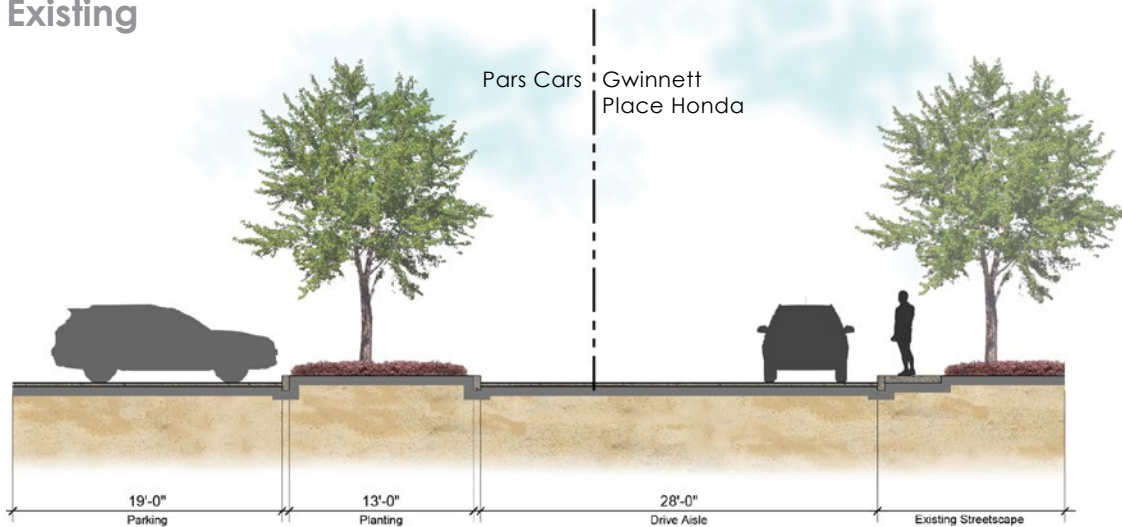
Extending from Trail A, Option A2 gently ramps up toward the planted buffer area between Pars Cars and Gwinnett Place Honda. In order to avoid direct contact / interference with “back of house” operations at the dealerships it is proposed that the path is routed along the existing planted buffer following the property line toward Satellite Boulevard.

Although this option avoids direct interference with the dealerships, safety and security may still be of concern for both the trail users and the business owners. As previously stated, it is important that these concerns be addressed (through implementation of guardrails, pedestrian lighting, wayfinding, clear views, and security cameras) and that the trail option has the full support of both Pars Cars and Gwinnett Place Honda.

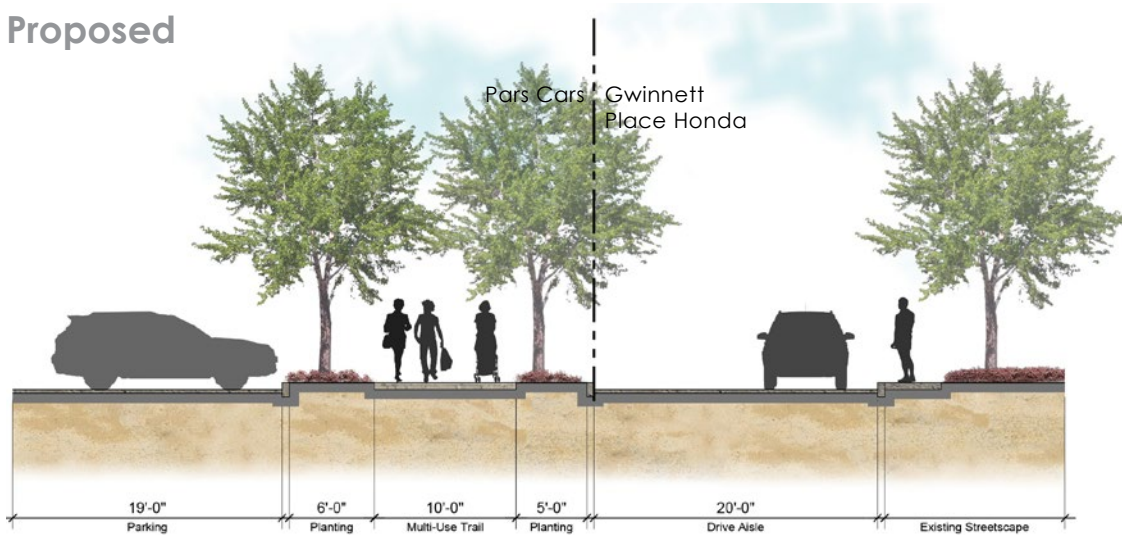


The diagram above illustrates the recommended path segment for Trail A and the two optional routes from Trail A to Satellite Boulevard.

Existing



Proposed



TRAIL OPTION A2: TYPICAL SECTION S.A2

Option A2 Overview:

Construction Cost: \$597,114
 Eng. & Survey Cost: \$107,481
 Land Acquisition Cost: \$90,370
Total Cost: \$794,965

Items Driving Cost:

- Railing along ramp
- Demolition and grading to accommodate trail

Use of Land:

- Two property owners
- Trail is within "back of house" operations for dealership
- Trail primarily follows property line of Gwinnett Place Honda and Pars Cars

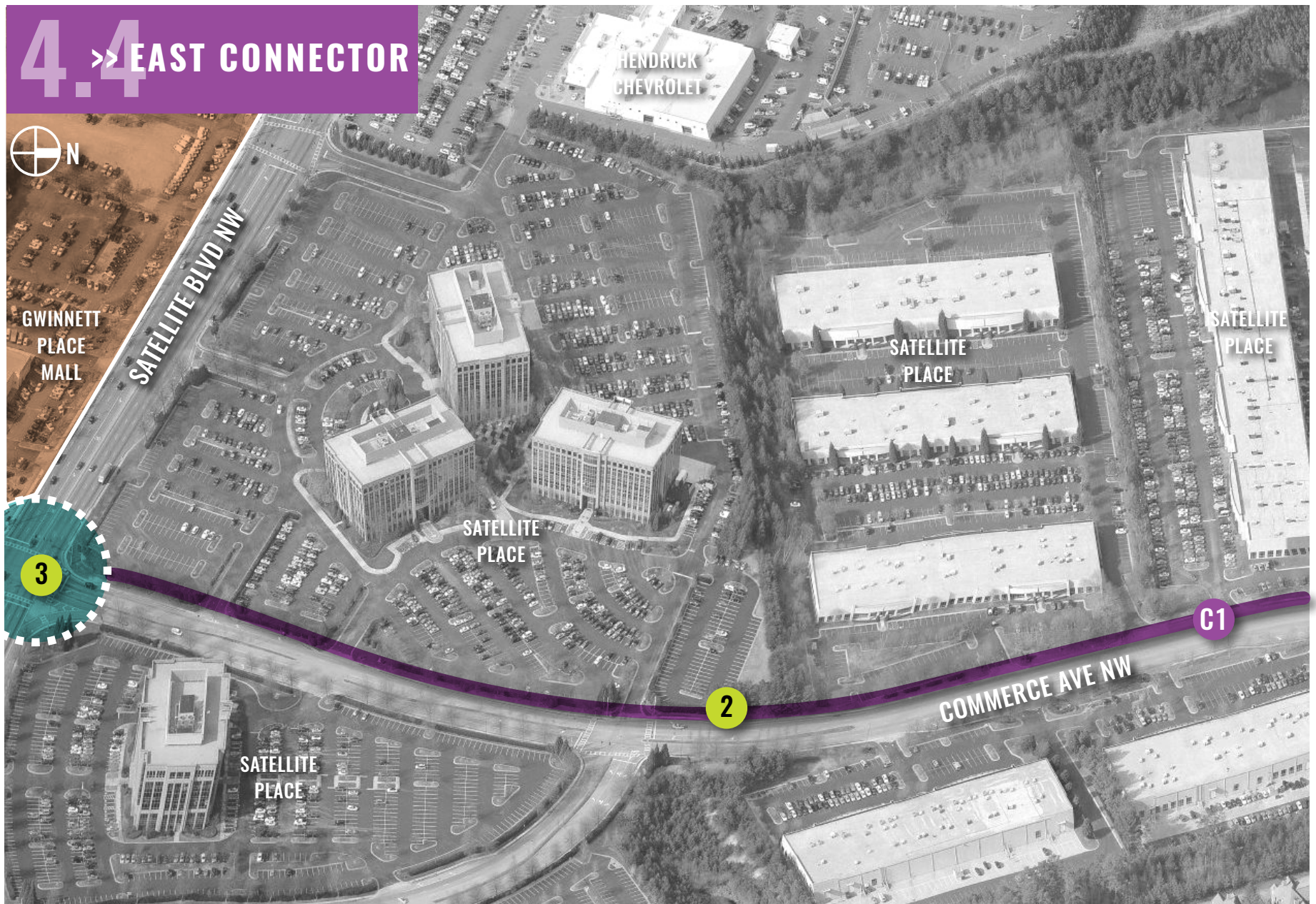
Access:

- 820 feet long
- Lack of clear public visibility

Environmental:

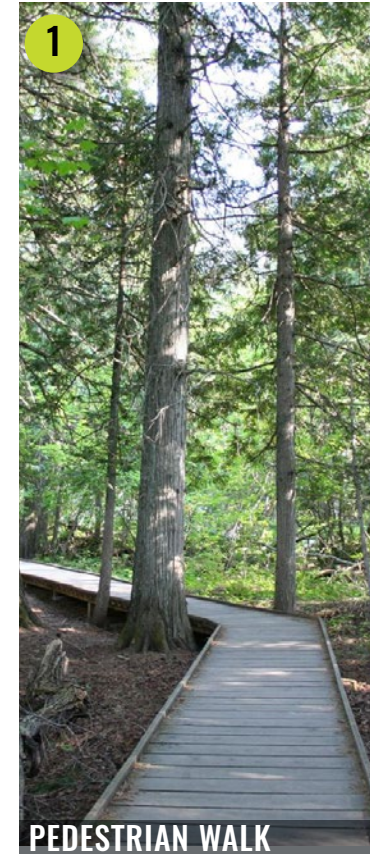
- Trail requires guardrails for approximately 260 feet due to topography

4.4 >> EAST CONNECTOR





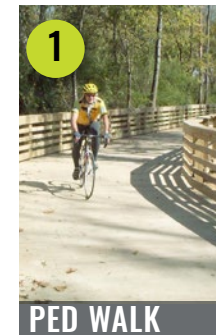
EAST >> SITE CHARACTER



PEDESTRIAN WALK



URBAN PEDESTRIAN PATH



PED WALK



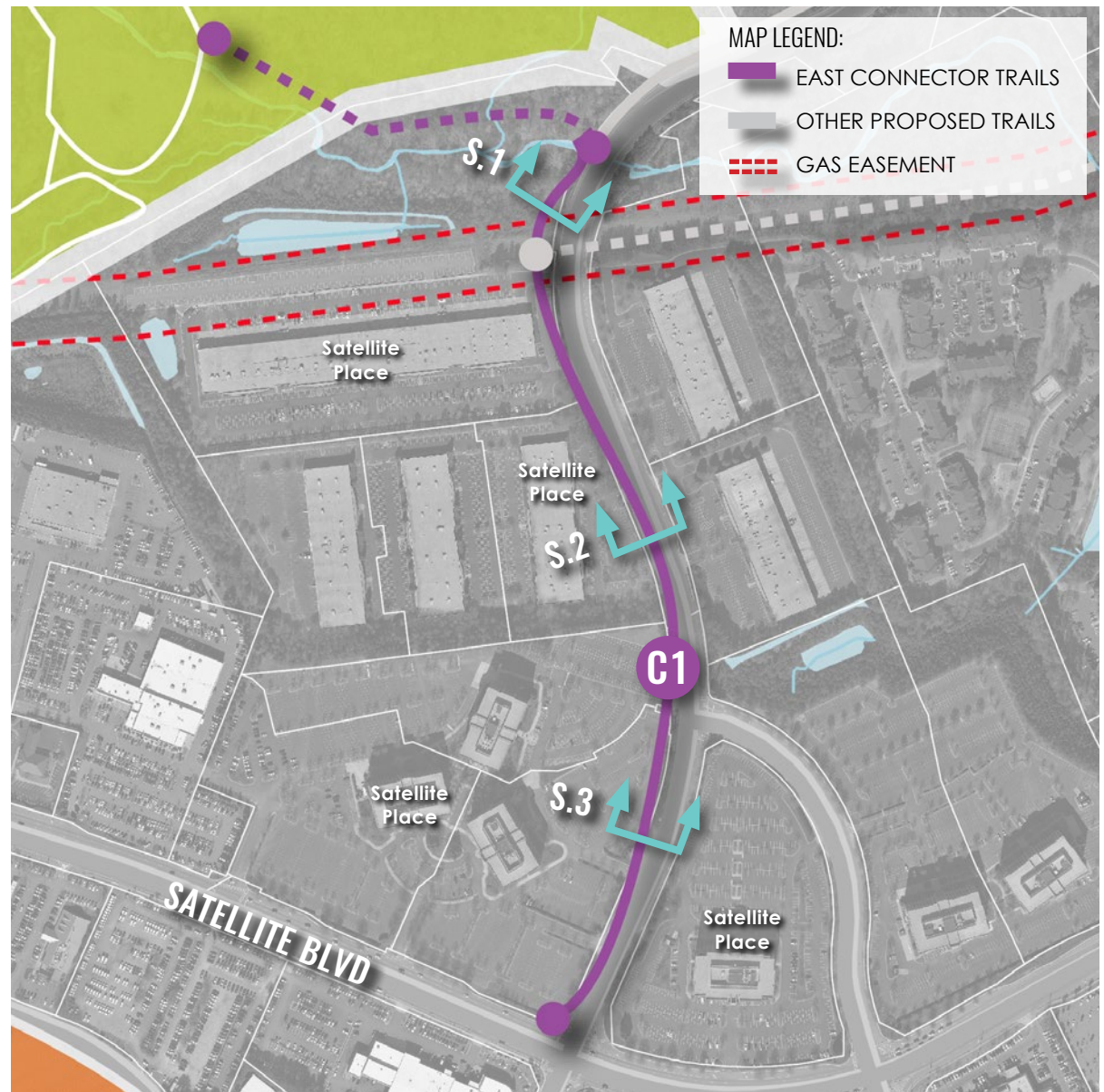
PEDESTRIAN-CENTERED INTERSECTIONS

East Connector >>

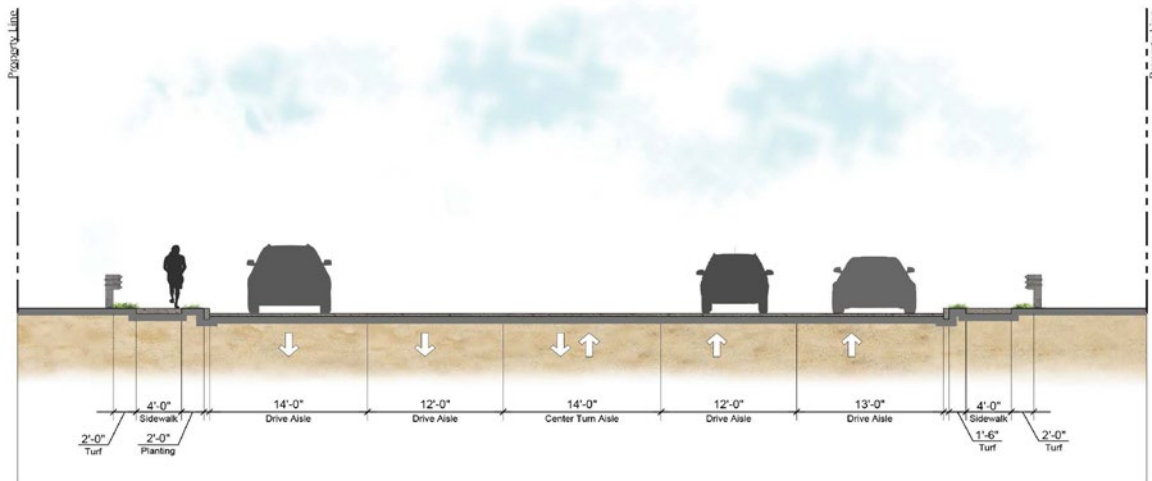
Trail C1 Commerce Avenue

There is a need for a pedestrian connection into McDaniel Farm Park from Commerce Avenue. This study proposes adjusting Commerce Avenue to accommodate a suitable connection from Satellite Boulevard to the proposed entry point of the park.

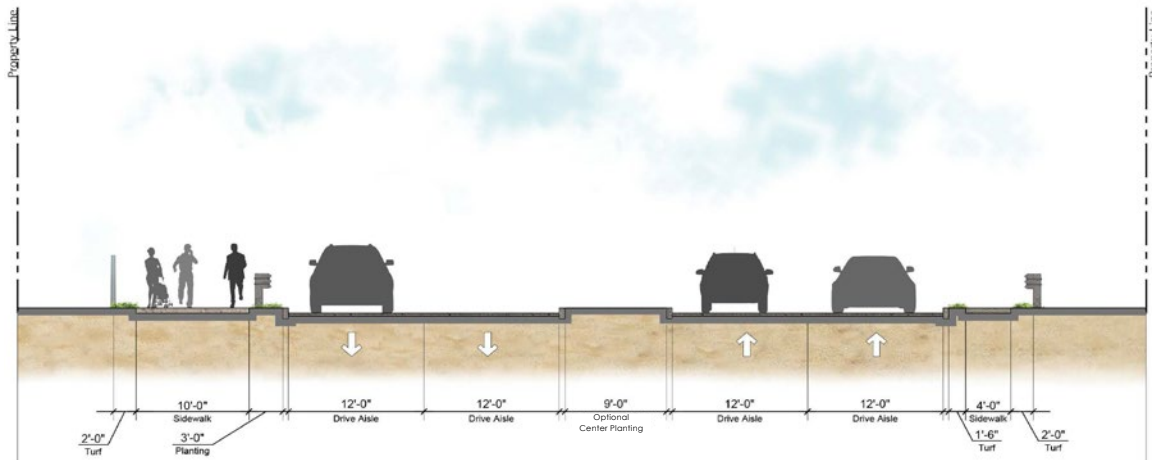
The implementation of a path along Commerce Avenue will require the reduction of lane widths from approximately 12 feet to 11 feet, which will allow the existing sidewalk to be widened (keeping it within the existing right-of-way) to a typical path width of 10'. The path will connect to a trail extension (currently being developed) within McDaniel Farm Park to Commerce Avenue (trail shown in pink) southward toward Satellite Boulevard.



Existing



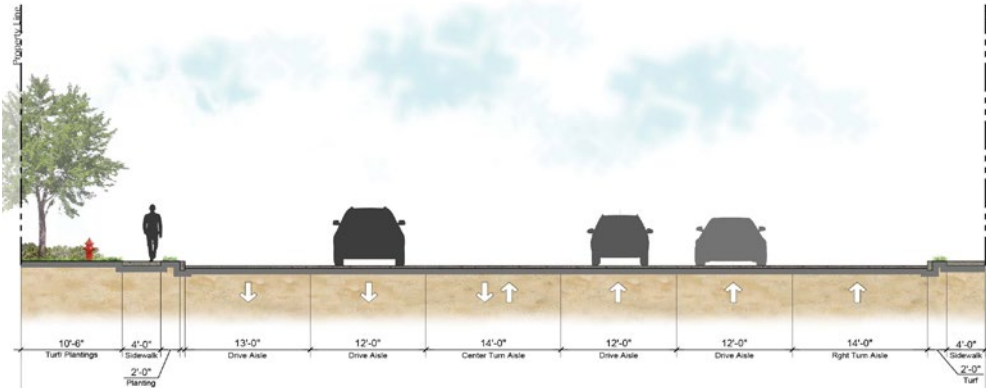
Proposed



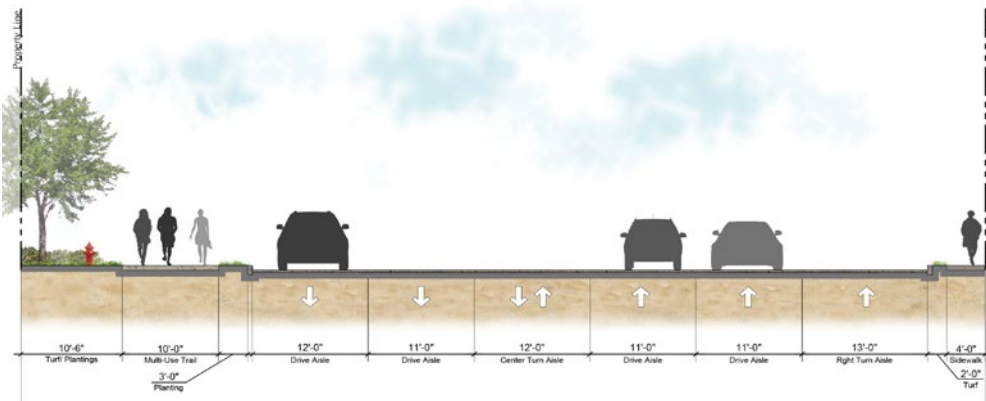
TRAIL C: TYPICAL SECTION S.1



Existing



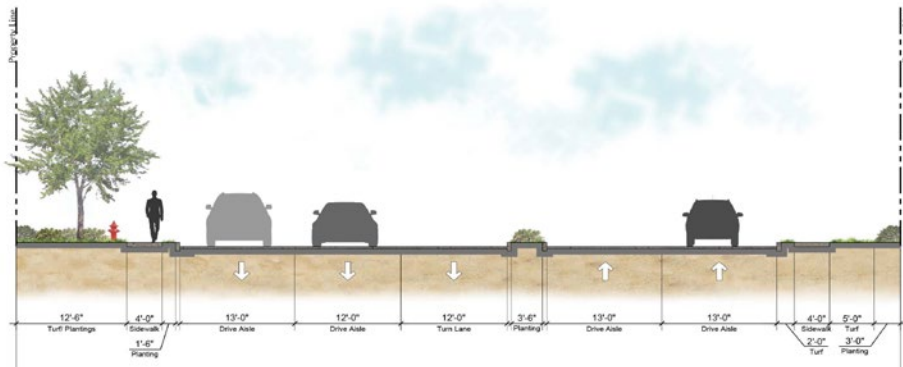
Proposed



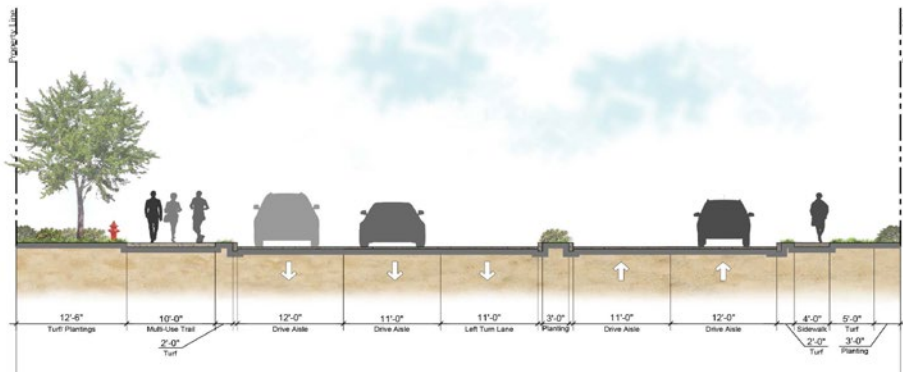
TRAIL C: TYPICAL SECTION S.2



Existing



Proposed



TRAIL C: TYPICAL SECTION S.3

OPTION C1 OVERVIEW:

Construction Cost: \$1,610,453
 Eng. & Survey Cost: \$289,882
 Land Acquisition Cost: N/A
Total Cost: \$1,900,335

Items Driving Cost:

- Demolition and grading to accommodate trail

Use of Land:

- Travel lanes to be reduced by an average of one foot
- Existing right-of-way to accommodate proposed trail

Access:

- 2,155 feet long
- Great pedestrian visibility along Commerce Avenue

Environmental:

- Steep topography at entry point into the park

4.5 INTERSECTION CROSSING

A STUDY TO PROVIDE ENHANCED CROSSINGS OF SATELLITE BOULEVARD at three locations and a grade separated crossing at one location was evaluated.

Crossing Summary

The McDaniel Farm Connectivity Study looked for opportunities to enhance pedestrian crossings of major roadways in the area. The following three crossings of Satellite Boulevard were studied: Old Norcross Road, the entrance drive that serves Pars Cars and Gwinnett Place Honda, and Commerce Avenue. A fourth at-grade crossing was evaluated at McDaniel Road and Old Norcross Road. Additionally, a grade separated crossing near the Satellite Boulevard / Gwinnett Plantation Way intersection was explored.

Existing Conditions

Satellite Boulevard is a major arterial in Gwinnett County that runs somewhat parallel to I-85. In the area of the intersections investigated, Satellite Boulevard is six lanes wide (excluding turn lanes), concrete median divided, and has an ADT of approximately 30,000. The characteristics of each intersection are very similar in that all are signalized using strain poles and span wire signal installations, have standard marked crosswalks and pedestrian signal heads, ADA accessible ramps and sidewalks, and protected left-turn signal phases for left-turning vehicles. Lane widths on Satellite Boulevard are approximately 12 feet, and the built environment, along with pedestrian facilities, is typical of traditional suburban development. However, the Gwinnett Place CID has made investments in the area in the form of improved sidewalks and benches in some locations.

Strengths

One of the area's strengths is a sidewalk system that is in good condition and extends through much of the district. An investment has been made in improving pedestrian connectivity and this investment is continuing in the form of additional streetscape improvements led by Gwinnett County and the Gwinnett Place CID. Another strength is that pedestrian signal heads are located at each intersection along with ADA ramps.

Weaknesses

Pedestrians wishing to cross Satellite Boulevard at one of the intersections investigated must cross six travel lanes and typically one or two turn lanes. With lane widths of approximately 12 feet, those crossing distances are between 84 feet and 96 feet. There are no pedestrian refuge islands for pedestrians that cannot cross in the time allotted, and there is little to no shade provided in the form of street trees or shade structures.

Opportunities

The potential to reduce lane widths through the intersections by approximately one foot per lane can provide the opportunity to provide pedestrian refuge. This will also create the opportunity to enhance the crossing locations, making them more identifiable and potentially provide room for some type of shade structure.

Improving the safety and experience of pedestrian crossings is an important piece of Gwinnett Place's overall redevelopment into a walkable, more sustainable town center. Roadway and crossing changes will be made in coordination with any potential new mobility options proposed for the area, working to enhance, and in no way impede, Gwinnett County transit improvements.

Threats

Satellite Boulevard is a major arterial for Gwinnett County and, as such, the design of any improvements to pedestrian crossings along Satellite Boulevard will have to be developed so that they don't significantly impact the operational characteristics of the corridor.

Intersection Treatment >> At-Grade

Crossing concepts were developed at the four potential at-grade crossing locations and one grade separated location. The diagrams on the next page illustrate the recommended improvements and cost summary. The top images show existing conditions and the bottom images illustrate proposed enhancements. For the at-grade crossing locations, the approach was the same and includes the following elements:

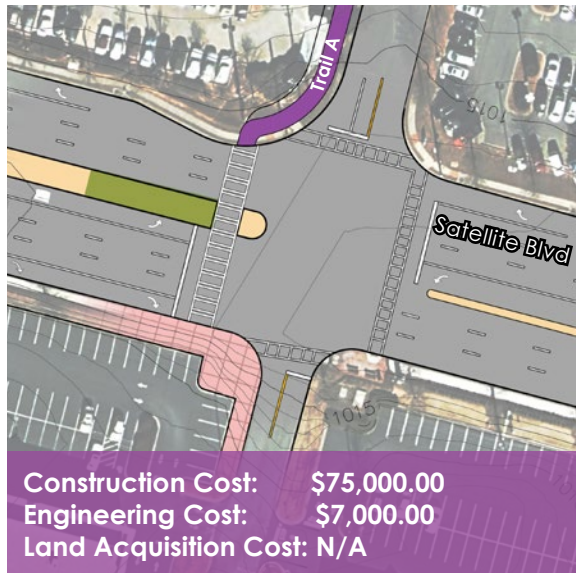
- Reduce the through lane and turn lane widths from 12 feet to 11 feet, providing an additional 7-8 feet that can be used for a pedestrian refuge island.
- Pull the crosswalks back from the intersection to allow the crosswalk to pass through the refuge island.
- Increase the width of the crosswalk (15 feet is shown) to increase visibility and to handle larger pedestrian volumes.
- Add pedestrian countdown signal heads at each location.

AT-GRADE CROSSING >> INSPIRATION PHOTOS



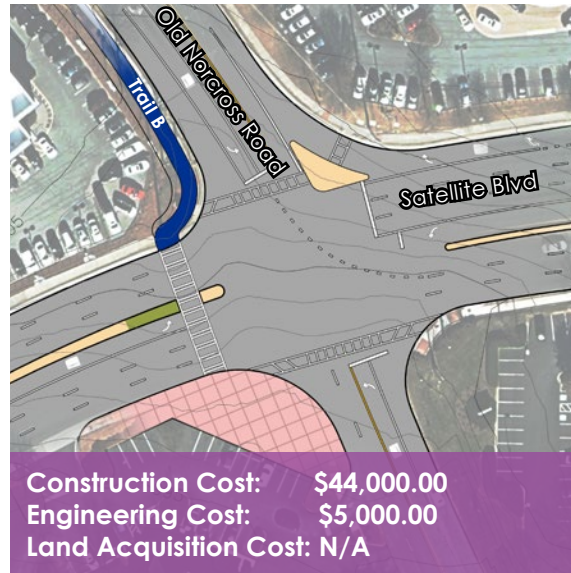
Central Connector >> Trail A

At-Grade Intersection



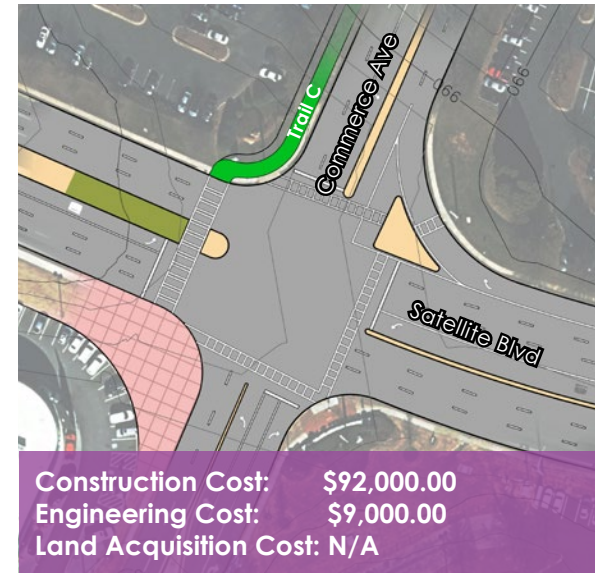
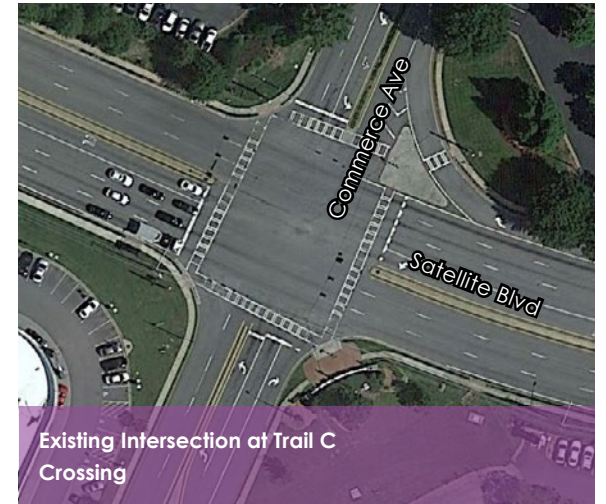
West Connector >> Trail B

At-Grade Intersection



East Connector >> Trail C

At-Grade Intersection



GRADE-SEPARATED>> INSPIRATION PHOTOS

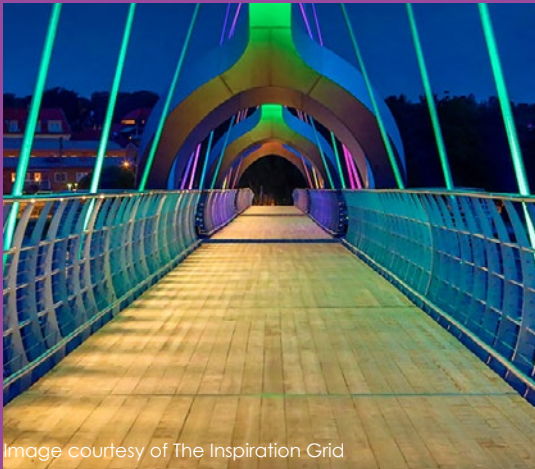


Image courtesy of The Inspiration Grid

The following images represent different styles of pedestrian bridges that achieve a "signature style." The visual impact represented in these designs is intended to be seen as inspiration for the Gwinnett Place Experiential Bridge.



Image courtesy of Metrostudio.it



Image courtesy of Confluence.com

INTERSECTION TREATMENT >> Grade-Separated Experiential Bridge

The grade separated crossing that would lead to McDaniel Farm Park is located near the Satellite Boulevard and Gwinnett Plantation Way intersection. The topography on the western side of Satellite Boulevard in this area makes this a more favorable crossing location. Because this intersection is signalized, the location and visibility of the signal heads must be considered. Two alternatives (as seen on pages 86-87) were developed for this reason: one with the grade separated crossing away from the signalized intersection, and one near the signalized intersection.

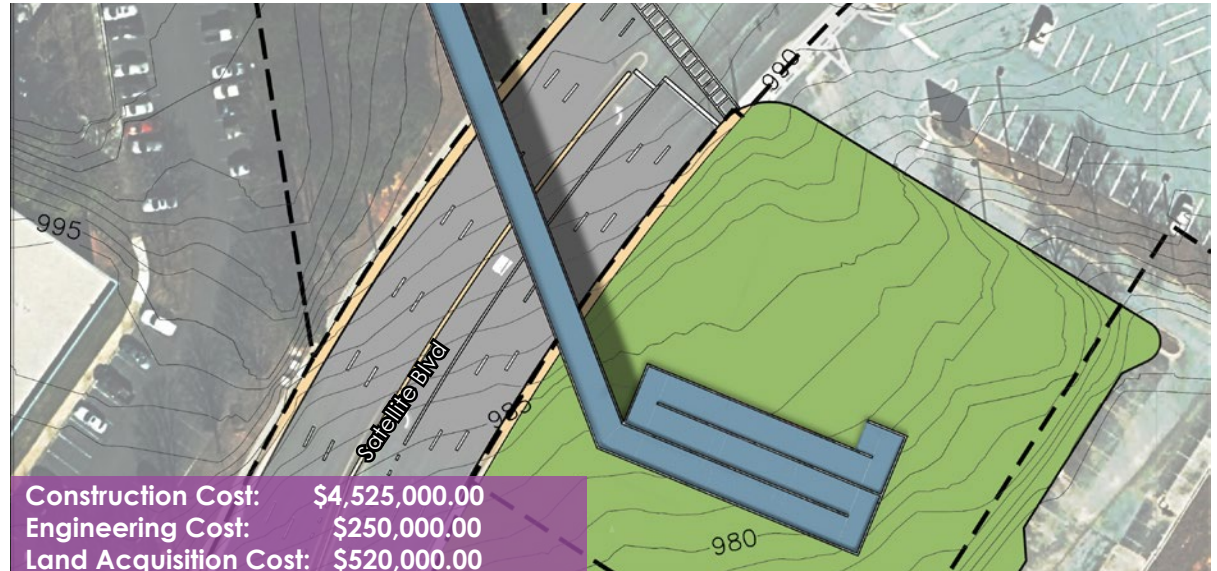
4.6 >> EXPERIENTIAL BRIDGE

The adjacent sketches illustrate how a pedestrian bridge at this location might interact within a proposed public green space with surrounding retail and office space.

Experiential Bridge Overview >>

Alternative 1

Alternative 1 crosses Satellite Boulevard south of the intersection. The profile for the structure was based on a minimum clearance of 17 feet above the roadway plus another 3 feet for the approximate depth of the bridge structure. This location will require a supplemental signal head mounted on or in front of the structure.



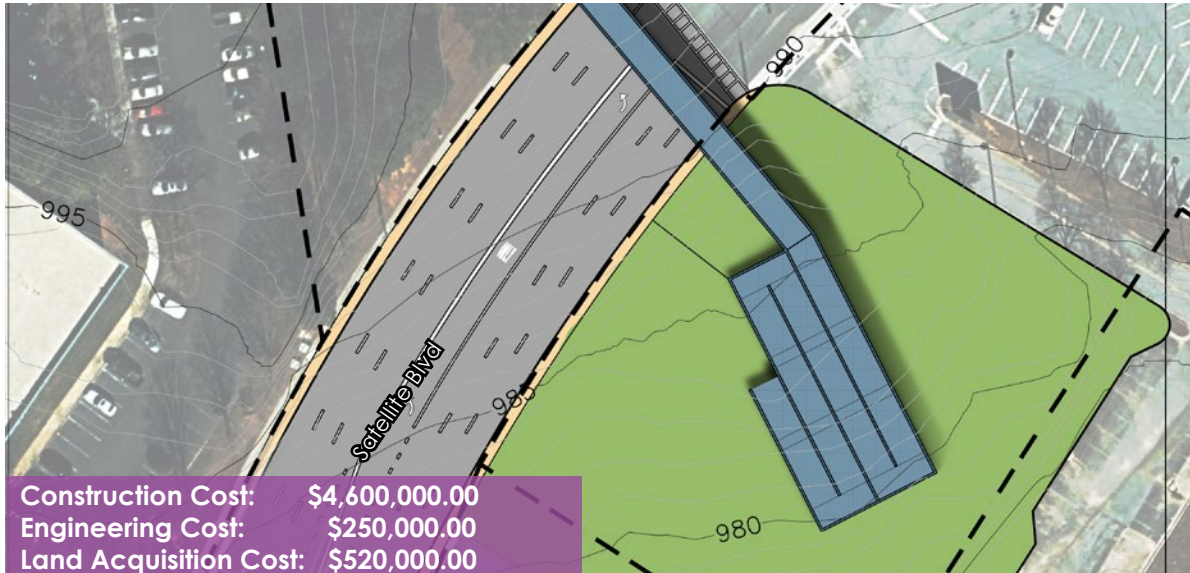
Experiential Bridge Overview >>

Alternative 2

Alternative 2 crosses Satellite Boulevard at the intersection. The profile for the structure was based on a minimum clearance of 21 feet above the roadway. As shown in the adjacent diagram, this is due to the required 17 feet of roadway clearance and another 4 ft. of clearance for the signal heads located at the intersection. The bridge profile is another 3 feet above that to account for the approximate depth of the bridge structure.



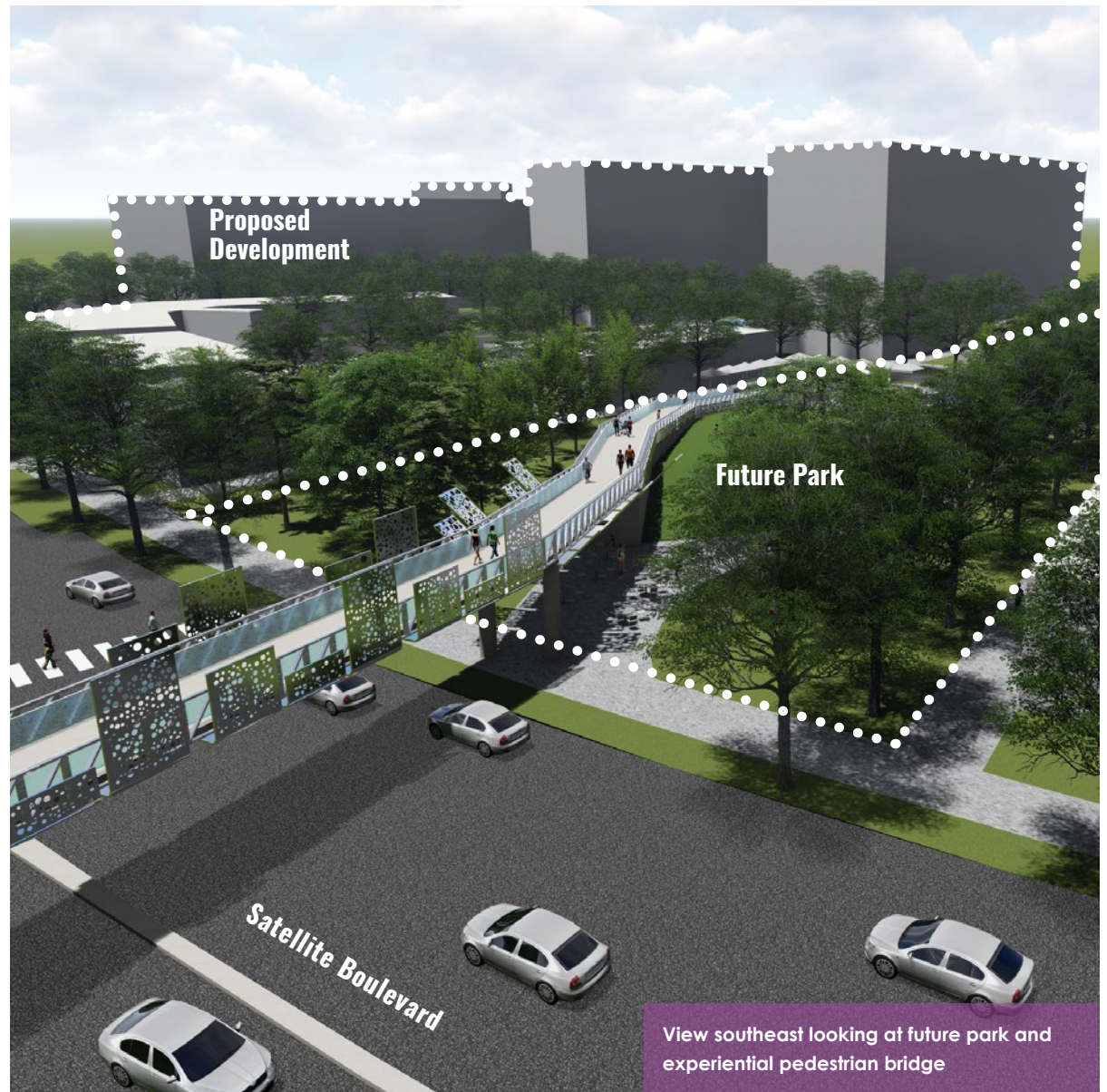
The adjacent sketches illustrate how a pedestrian bridge at this location might interact within a proposed public green space with surrounding retail and office space.



Experiential Bridge >>

Conceptual Design

The following images depict how an experiential bridge could connect the northern and southern sides of Satellite Boulevard. The following images illustrate a pedestrian bridge crossing Satellite Boulevard toward what is now a Gwinnett County transit center and underutilized surface parking. Any future transit center enhancements serving the Gwinnett Place area could be implemented in this space. It is also proposed that the current programming of these lots be reconsidered in order to create an active plaza surrounded by low to mid rise buildings—likely a mix of office with ground floor retail and mixed-use residential. The proposed bridge will slope down a large landscaped berm until it meets existing grade. It is important to note that these images are based on preliminary studies; further analysis in regards to engineering and land acquisition will be required if a pedestrian bridge is to be perused.

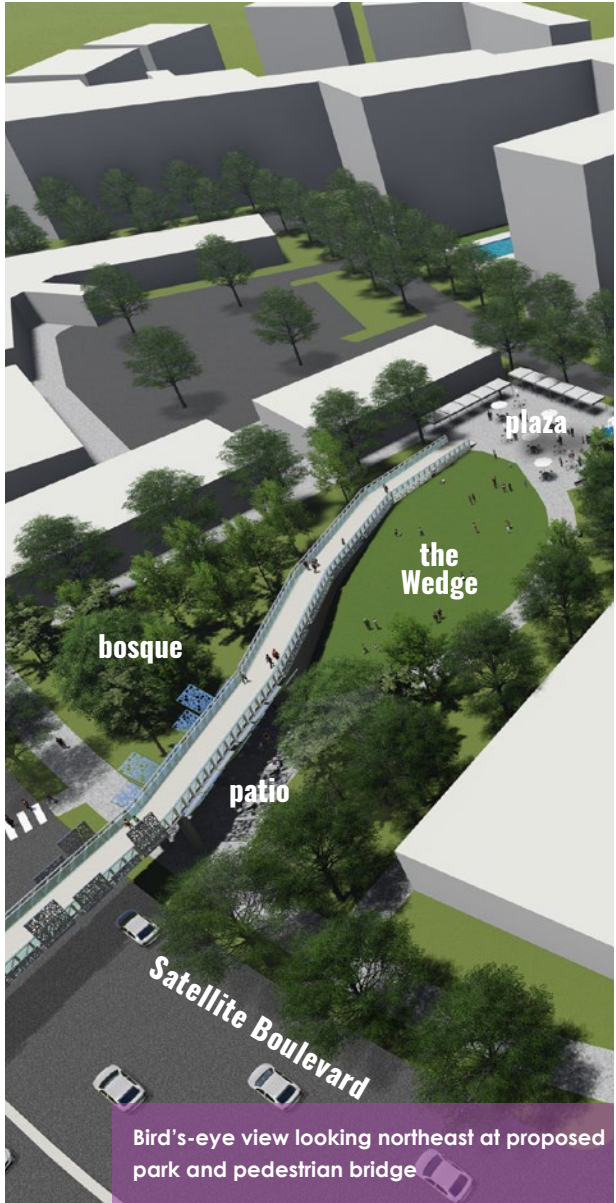




Bird's-eye view looking north at the proposed park and pedestrian bridge



Street view looking southeast on Satellite Boulevard toward proposed park



Bird's-eye view looking northeast at proposed park and pedestrian bridge

Experiential Bridge >>

Conceptual Design



Walking across bridge toward proposed park



View within proposed park



View looking south within park toward base of pedestrian bridge



View within park looking under proposed pedestrian bridge

4.7 STUDY AREA 1 SUMMARY

WEST CONNECTOR

TRAIL B
TRAIL B1
TRAIL B1: EXPERIENTIAL BRIDGE
TRAIL B2
TRAIL B2: AT-GRADE CROSSING



1,700 LF (~0.3 MILE)
1,000 LF (~0.2 MILE)
N/A
800 LF (~0.14 MILE)
N/A



\$414,260
\$660,830
\$5,370,000
\$530,500
\$49,000



ALL TRAIL w/in PUBLIC ROW
2 COMMERCIAL
2 COMMERCIAL
ALL TRAIL w/in PUBLIC ROW
N/A



GWINNETT PRADO REDEVELOPMENT
GWINNETT PLACE AREA REDEVELOPMENT
GWINNETT PRADO REDEVELOPMENT
EXISTING BUSINESSES

CENTRAL CONNECTOR

TRAIL A
TRAIL A1
TRAIL A2
AT-GRADE CROSSING

1,100 LF (~0.2 MILE)
825 LF (~0.16 MILE)
820 LF (~0.16 MILE)
N/A

\$929,795
\$650,777
\$794,965
\$82,000

3 COMMERCIAL
2 COMMERCIAL
2 COMMERCIAL
N/A

EXISTING BUSINESSES
GWINNETT PLACE AREA REDEVELOPMENT

EAST CONNECTOR

TRAIL C1
AT-GRADE CROSSING

2,200 LF (~0.4 MILE)
N/A

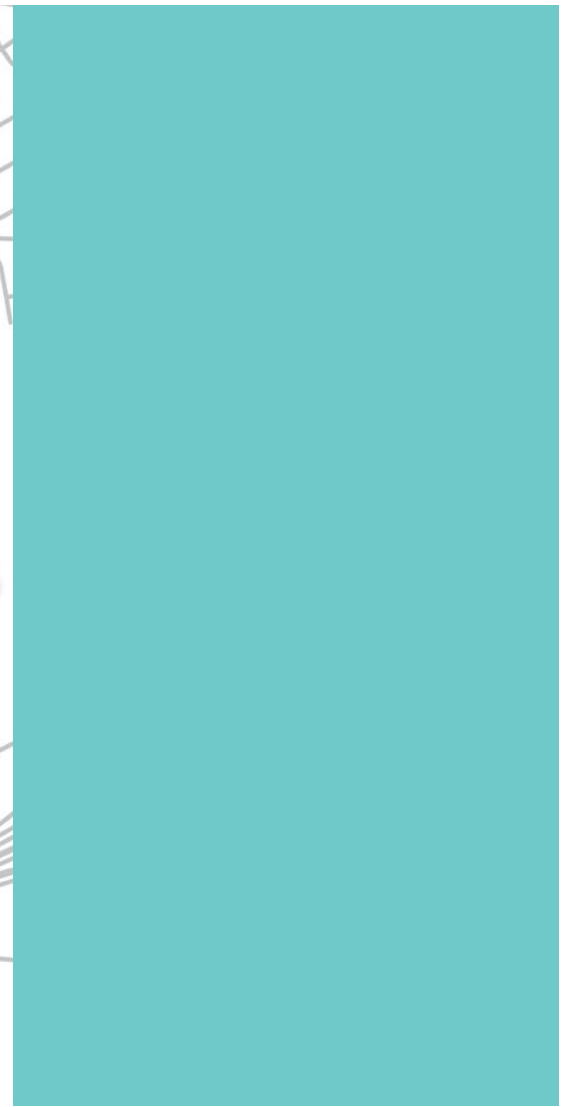
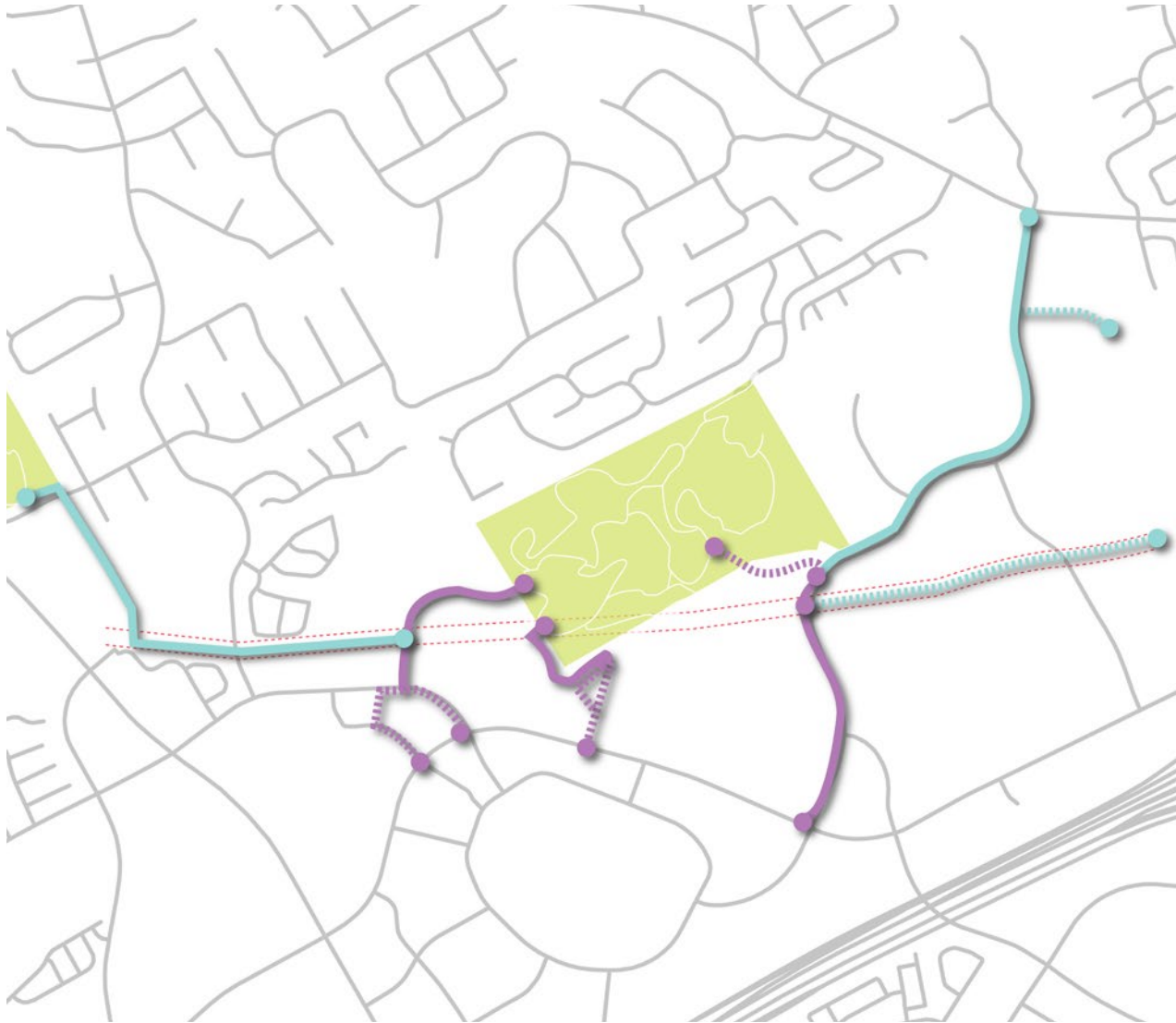
\$1,900,335
\$101,000

ALL TRAIL w/in PUBLIC ROW
N/A

EXISTING BUSINESSES
GWINNETT PLACE AREA REDEVELOPMENT







>> 5.0 STUDY AREA 2: TRAIL OPTIONS FOR GWINNETT PLACE CONNECTIVITY

- Study Area 2 Overview
- West Extension
- East Extension B
- East Extension B1
- East Extension B2
- Study Area 2 Summary

5.1 STUDY AREA 2 OVERVIEW

STUDY AREA 2 TRAIL OPTIONS TO ENHANCE GWINNETT PLACE CONNECTIONS were created based on the site analysis and discussions with affected property owners to determine feasibility.

>> Proposed Options:

The routes in Study Area 1 primarily provide connections between McDaniel Farm Park and nearby existing and proposed commercial developments. The second phase of this study investigated extensions that would connect the Study Area 1 routes to residential areas, Shorty Howell Park, and the larger Gwinnett County Greenway system. Site analysis, feedback from Gwinnett Place CID, and input from affected community members and landowners influenced the selection of the routes studied.

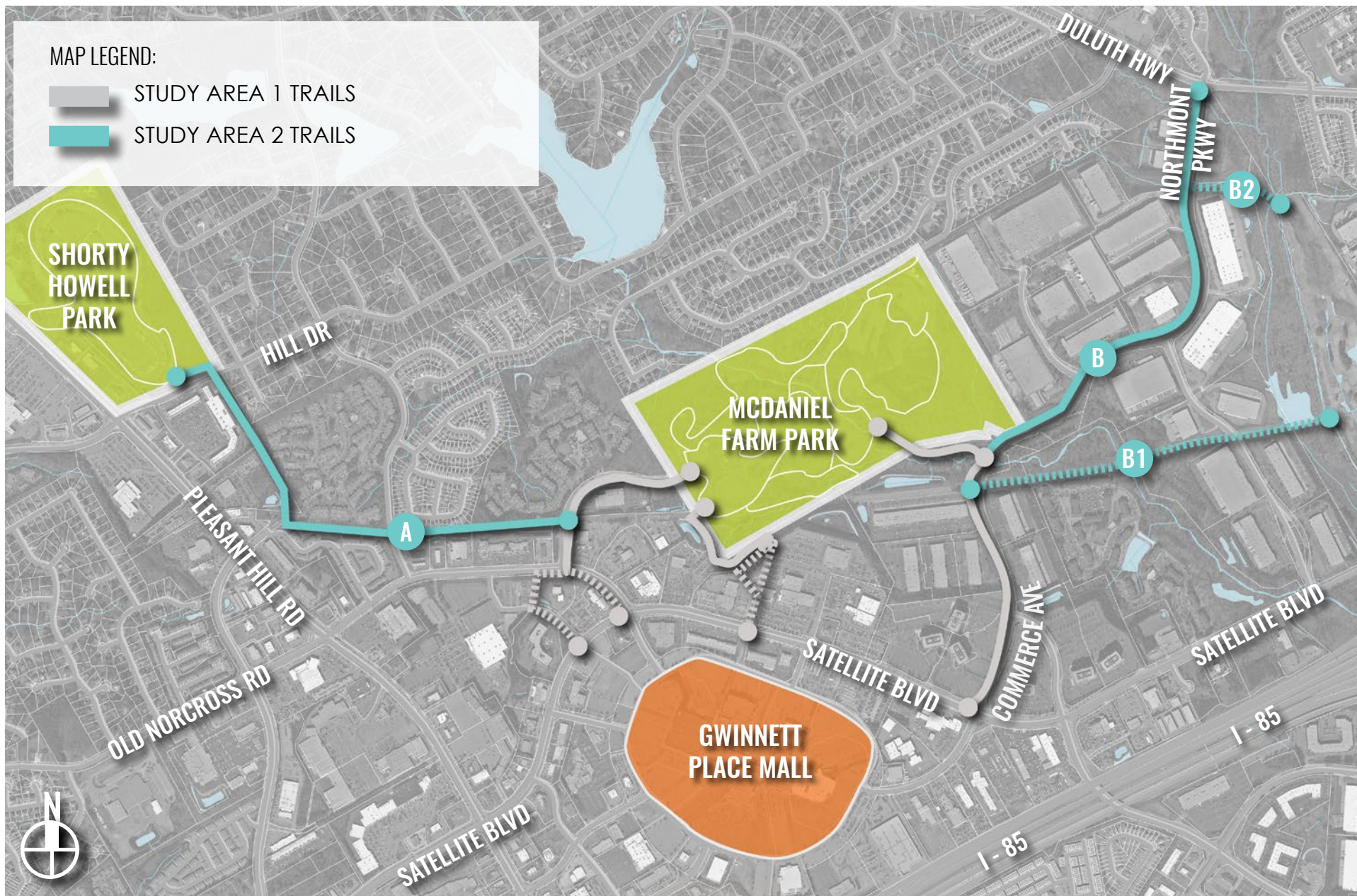
As in Study Area 1, the feasibility of each route was scored using a matrix. The

matrix for Study Area 2 considered factors including cost, use of land, access, and user experience. The results of the matrix evaluation are summarized in the following pages. While the matrix scores may inform prioritization or phasing of the various trails, all routes were found to be feasible and overall scores were quite close.

The following pages explore each of the trail options depicted in the diagram on the opposite page, and address various strengths and weaknesses brought to light by the application of the scoring matrix. The solid blue lines on page 97 indicate the primary proposed extensions, which would complete a portion of Gwinnett County's planned Greenway system. The dotted blue lines indicate additional routes that would create a valuable connection to an area targeted for residential development. Primarily utilizing existing easements and buffers, the Study Area 2 trails offer a unique experience of nature in the Gwinnett Place area.



Above: Low point in the gas easement within the proposed B1 trail extension. Boardwalks would be necessary in this portion of the trail system. Adjacent Page: Map illustrating the different Study Area 2 trail options.



Matrix Rankings Summary >>

The matrix to the right shows how the trail options were compared, and the overall criteria used to rank them. Each set of criteria had individual items that were scored on a scale of 1-5, with 5 being the best and 1 being the worst. As necessary, some items were weighted based on importance.

All of the trail options were found to be feasible within each category. And while each of the routes has unique strengths and weaknesses, the overall scores were quite comparable. The relative rankings could help prioritize the phasing of this project. Unknown factors, however, such as where and when future development will take place, may impact the implementation phases of the proposed routes.



USE OF LAND

Land Acquisition
Use of Easements
Property Owners



COST

Overall Cost



ACCESS

ADA Access
People Reached
Connection to Nearby
Projects



EXPERIENCE

Real/Perceived Safety
Scenery

SCORING

Scale of 1 to 5

1 = worst
5 = best

Some are weighted based on their perceived importance to decision making

Highest score wins

	COST	USE OF LAND	ACCESS	EXPERIENCE	TOTAL
WEST EXTENSION A	★	★	★	★	2nd
EAST EXTENSION B	★	★	★	★	1st
EAST EXTENSION B1	★	★	★	★	4th
EAST EXTENSION B2	★	★	★	★	3rd



Matrix category ranking

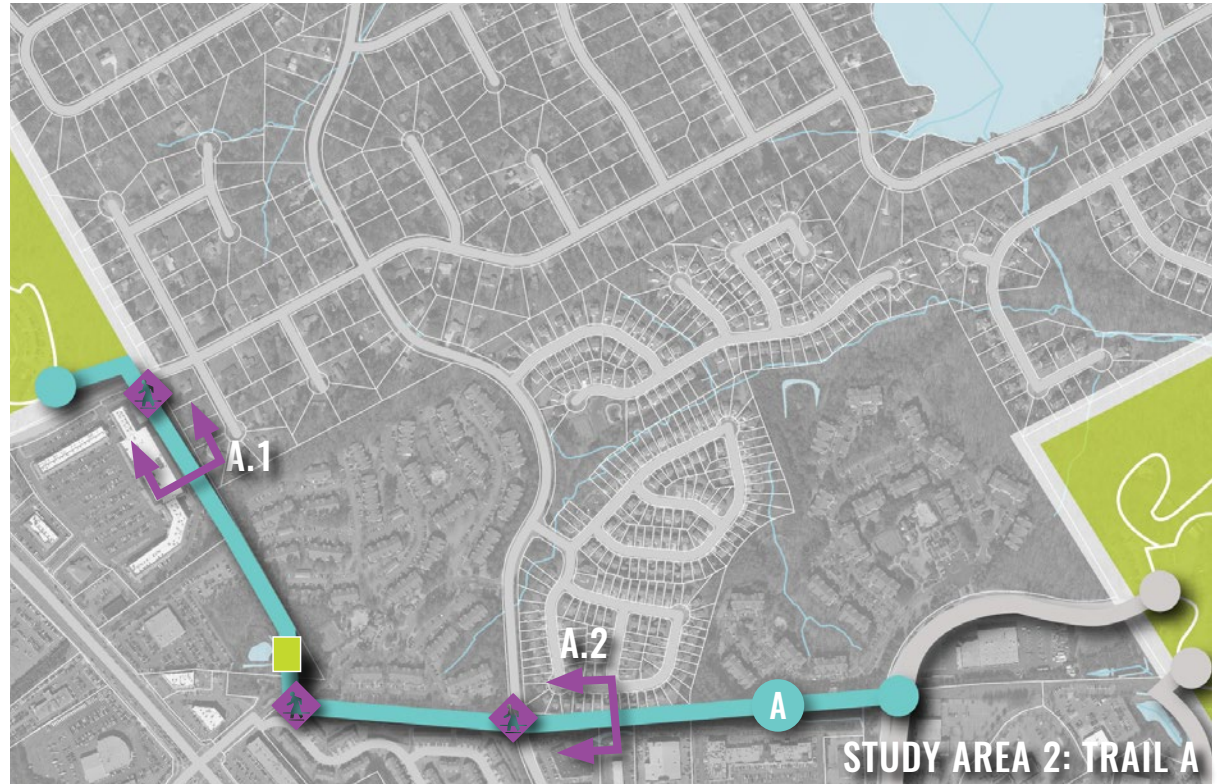
5.2 >> WEST EXTENSION

West Extension >>

Trail A

Trail A connects McDaniel Farm Park to Shorty Howell Park. The goal of Trail A was to develop a trail section that will work with the site's many environmental and vehicular traffic challenges; this will establish an initial section that provides direct access to Shorty Howell Park, McDaniel Farm Park, several residential properties, and several commercial retail properties.

Sections A.1 and A.2 are routed through areas unsuitable for structural development, but both sections are highly feasible options for pedestrian trail implementation. Section A.1 runs within a required vegetated buffer, but this encroachment is authorized because this section of trail is included in the official Gwinnett County Open Space and Greenways Master Plan (Gwinnett County

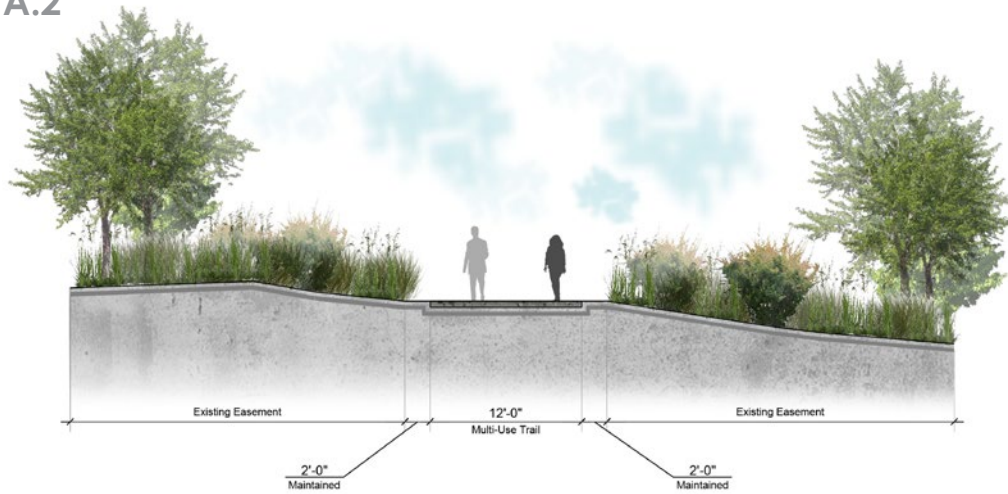


Unified Development Ordinance, Section 610-20.8).

Section A.2 utilizes an existing gas easement. Although there is major grade change in this area, there is plenty of space through which to gently weave an accessible trail.

The diagram above illustrates the recommended path segment for Trail A and the two optional routes from Trail A to Satellite Boulevard.

A.2



A.1



TRAIL A: TYPICAL PROPOSED SECTIONS

TRAIL A OVERVIEW:

Construction Cost:	\$1,607,972
Eng. & Survey Cost:	\$289,435
Land Acquisition Cost:	\$615,914
Total Cost:	\$2,513,321

Items Driving Cost:

- Land acquisition
- Three at-grade road crossings

Use of Land:

- Six commercial landowners, one multi-family residential landowner
- Situated within an existing gas easement and a required buffer, but authorized by the Gwinnett County UDO

Access:

- Connects McDaniel Farm Park to Shorty Howell Park
- Completes a portion of the County's Greenway system
- Significant residential connections

Experience:

- Separated from vehicular traffic
- Pleasant experience of nature



WEST.A >> SITE CHARACTER



5.3 >> East Extension: B

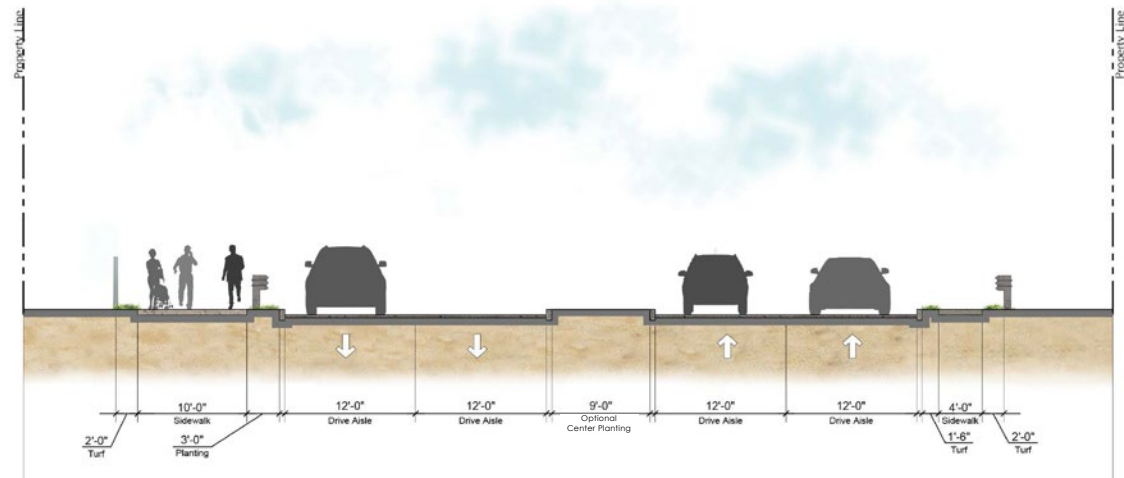
East Extension: B >>

East Extension B continues the East Connector C1 from Study Area 1, where Commerce Avenue turns into Northmont Parkway. Like C1 in Study Area 1, this extension will require the reduction of lane widths from approximately 12 feet to 11 feet, which will allow the existing sidewalk to be widened (keeping it within the existing right-of-way) to a typical path width of 10 feet.

This path will connect to two trail extensions (currently being developed within Study Area 2) that help connect the East-side trails to future residential development.



The diagram above illustrates the recommended path segment for Trail B and the two optional routes from Trail B to Satellite Boulevard.



TRAIL B: TYPICAL PROPOSED SECTION B

TRAIL B OVERVIEW:

Construction Cost:	\$3,456,001
Eng. & Survey Cost:	\$622,081
Land Acquisition Cost:	NA
Total Cost:	\$4,078,089

Reworking of Duluth Highway /
Northmont Parkway Intersection Cost:
\$34,950

Items Driving Cost:

- Length of new trail and curb
- Reworking of Duluth Highway Intersection

Use of Land:

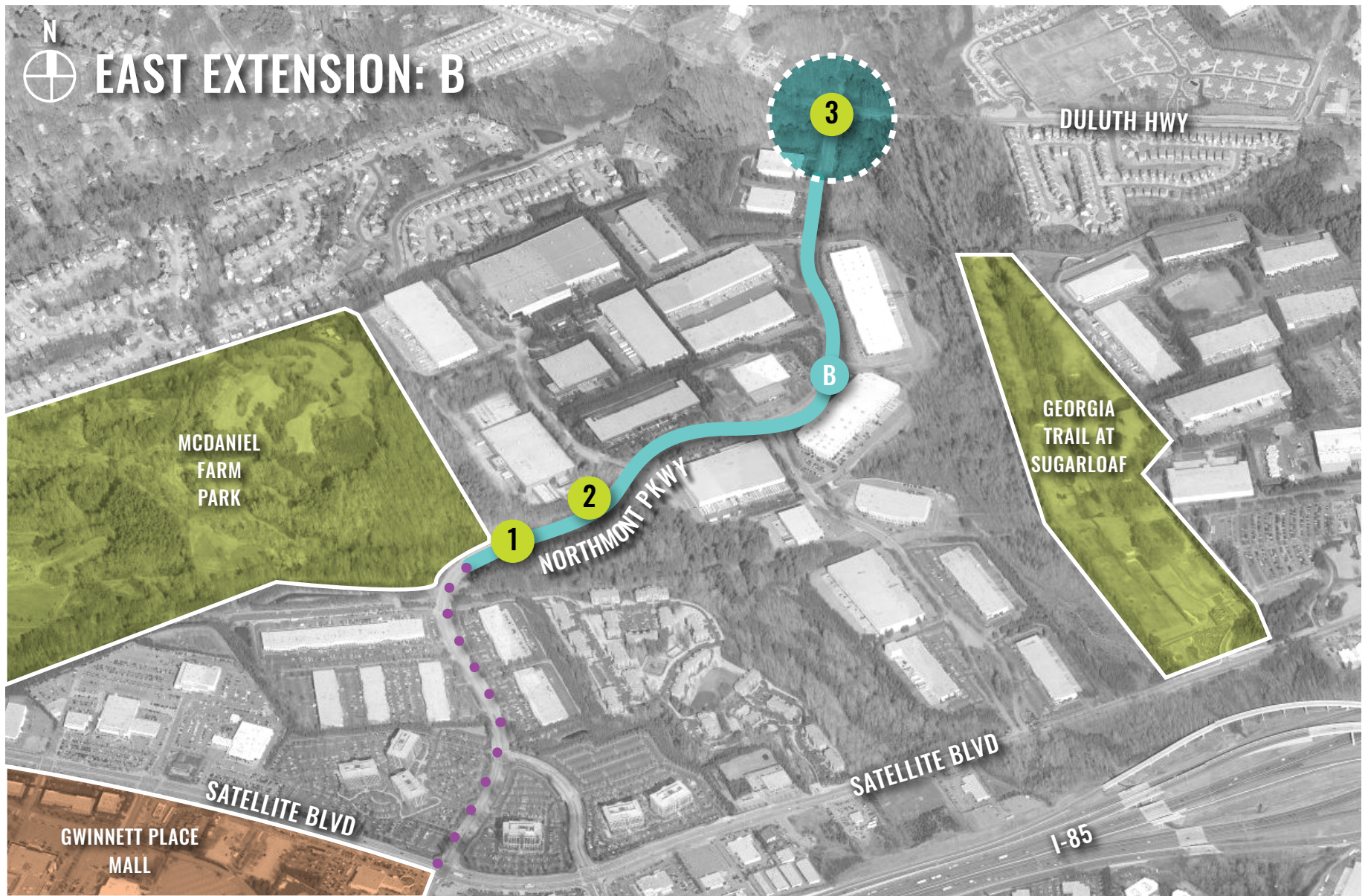
- The entire trail is within the public right-of-way

Access:

- Connects Study Area 1 trail to the County Greenway system
- Existing

Experience:

- Widened path and landscape buffer will improve the pedestrian experience on Commerce Avenue / Northmont Parkway



EAST-D

>> SITE CHARACTER



5.4 >> East Extension: B1

THE TRAIL OPTIONS WERE CREATED based on the site analysis and discussions with affected property owners to determine feasibility.

East Extension: B1 >>

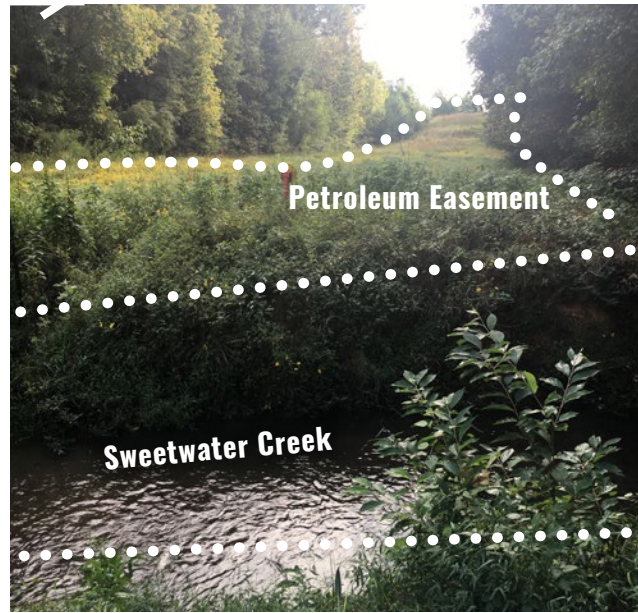
East Extension B1 connects future residential development to Commerce Avenue, and thus, both parks through the connected trail extension system.

This particular segment would be especially pleasant in terms of user experience, taking advantage of scenic views the natural topography provides, passing over Sweetwater Creek, and passing adjacent to mature vegetation.



A significant amount of boardwalk would be required, though, to address extreme water and topography issues currently existing on site.

The diagram above illustrates the recommended path segment for Trail B and the two optional routes from Trail B to Satellite Boulevard



TRAIL B1 OVERVIEW:

Construction Cost:	\$2,097,800
Eng. & Survey Cost:	\$377,604
Land Acquisition Cost:	\$323,916
Total Cost:	\$2,799,314

Items Driving Cost:

- Significant boardwalks/bridges required

Use of Land:

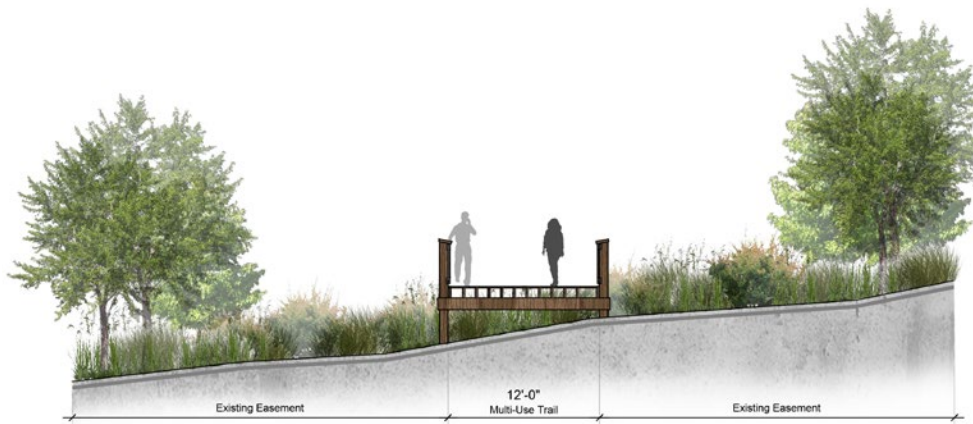
- Six landowners
- Trail does not interfere with land suitable for structural development

Access:

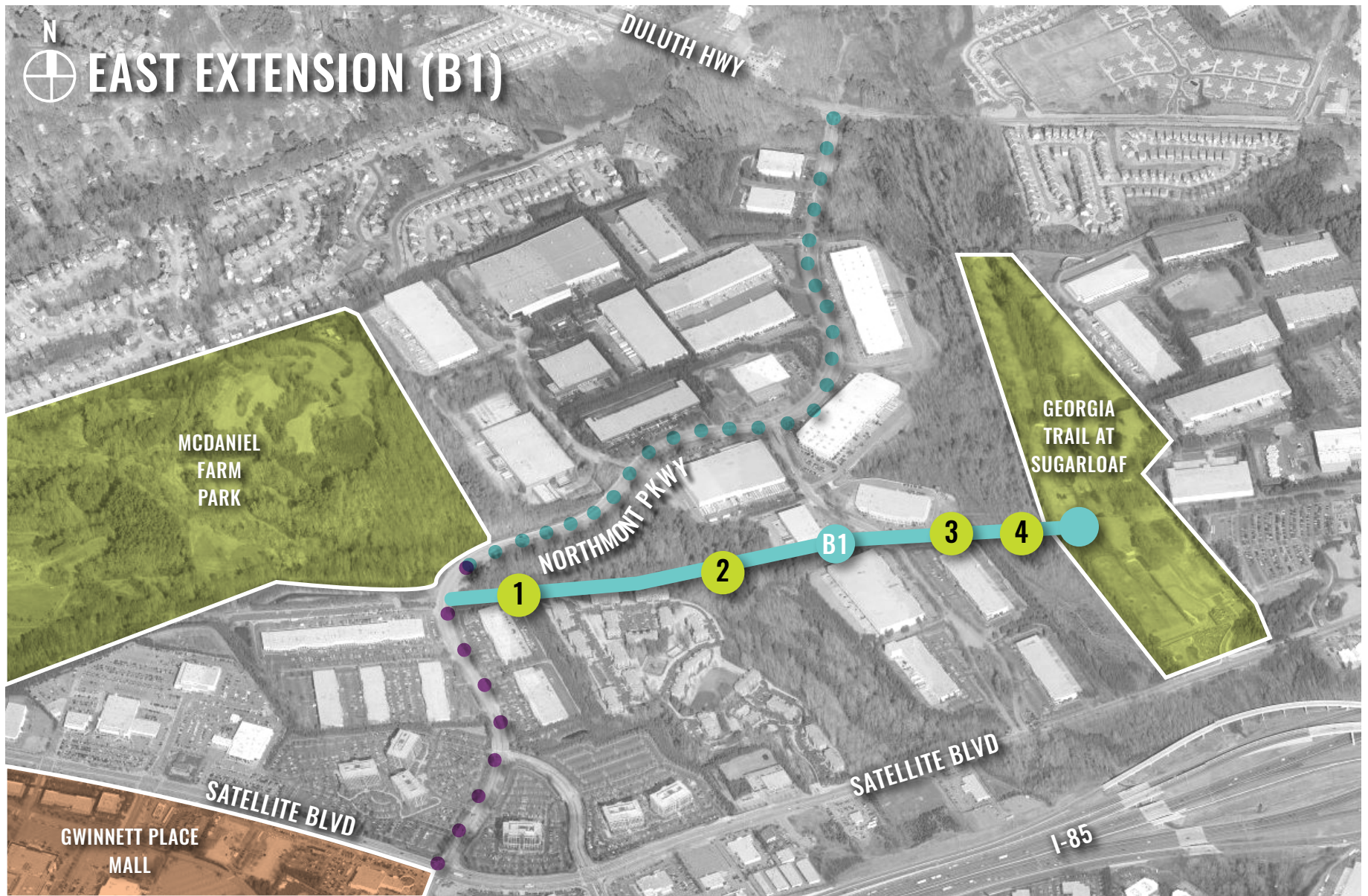
- Topography and wet areas make ADA access difficult, but possible using ramps and boardwalks
- Connects to one existing and one planned residential development

Experience:

- Highly scenic route exhibiting a range of upland and wetland habitats



TRAIL B: REPRESENTATIVE PROPOSED SECTION B1



EAST-B1

>>SITE CHARACTER



5.5

>> East Extension: B2

THE TRAIL OPTIONS WERE CREATED based on the site analysis and discussions with affected property owners to determine feasibility.

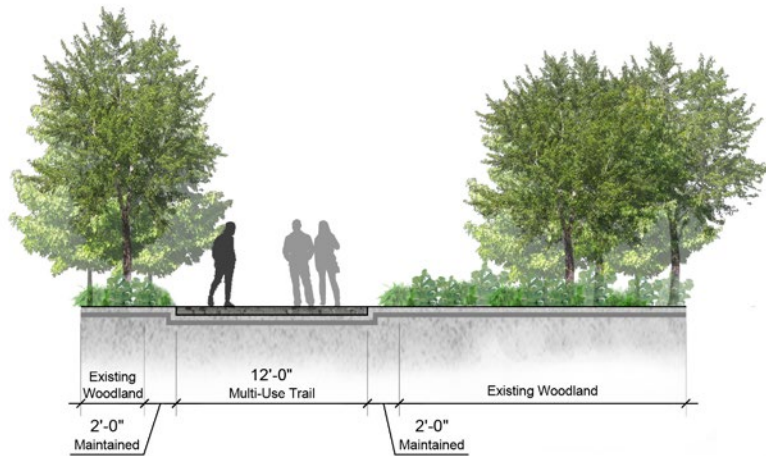
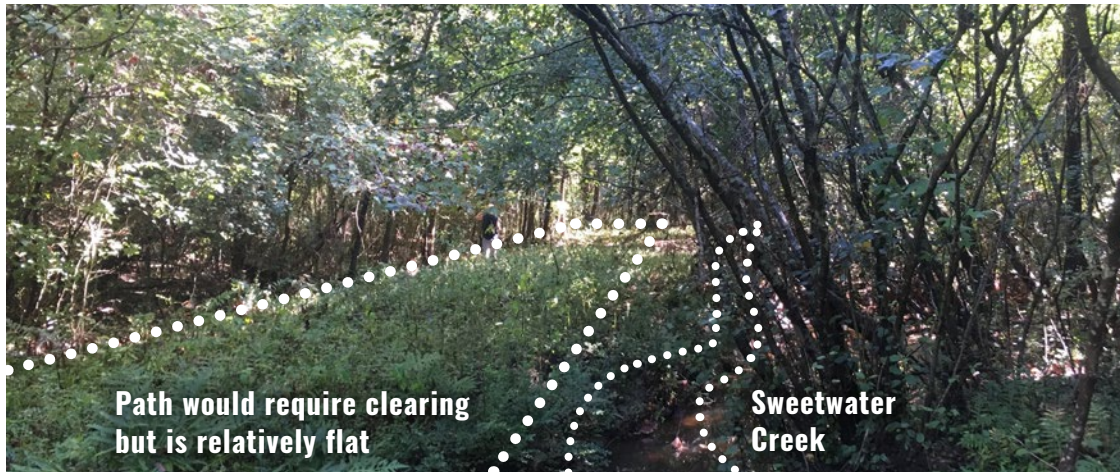
East Extension: B2 >>

Like B1, Connection Segment B2 links the trail system to a proposed residential development. This segment would require clearing and grubbing of trees, but is relatively flat, requiring very little grading for accessibility. The trail would need to be built beyond the 50 foot undisturbed riparian buffer required by Gwinnett County. Additionally, the trail needs to be constructed as a boardwalk, or out of a permeable material such as fines or permeable pavers.



The user experience of this segment would be positive, mostly in the shade of existing trees and near the Sweetwater Creek running adjacent to the proposed path.

The diagram above illustrates the recommended path connector segment for Trail B2.



TRAIL B: TYPICAL PROPOSED SECTION B2

TRAIL B2 OVERVIEW:

Construction Cost:	\$489,740
Eng. & Survey Cost:	\$88,153
Land Acquisition Cost:	\$24,801
Total Cost:	\$602,694

Items Driving Cost:

- Boardwalk required due to riparian buffer

Use of Land:

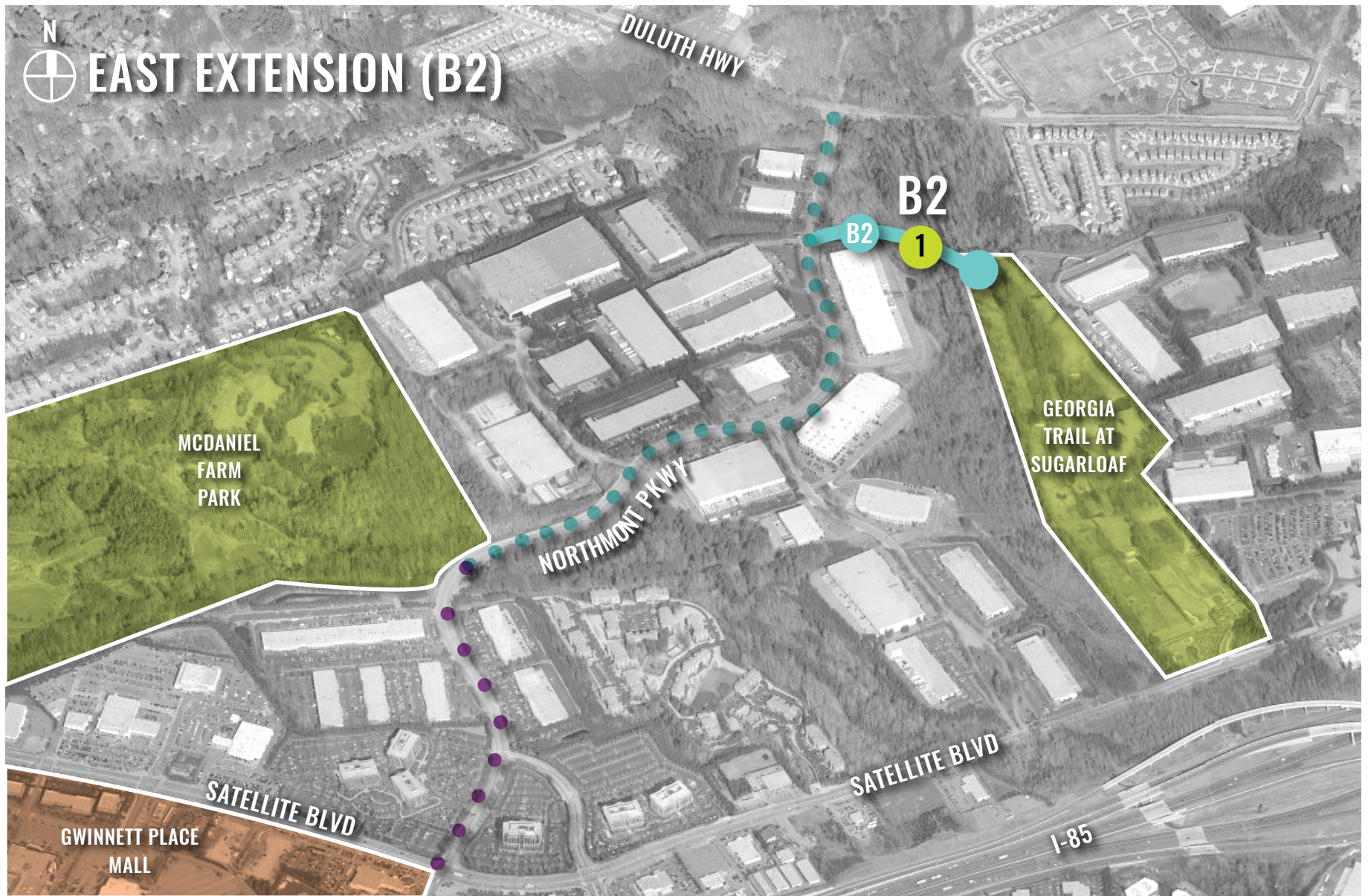
- Two property owners
- Path needs to be outside of 50 foot undisturbed riparian buffer and constructed of permeable material

Access:

- Aside from a steep access point, the path is mostly flat
- Connects to a proposed residential development

Experience:

- Wooded and winding along Sweetwater Creek
- Somewhat secluded, could be a safety concern







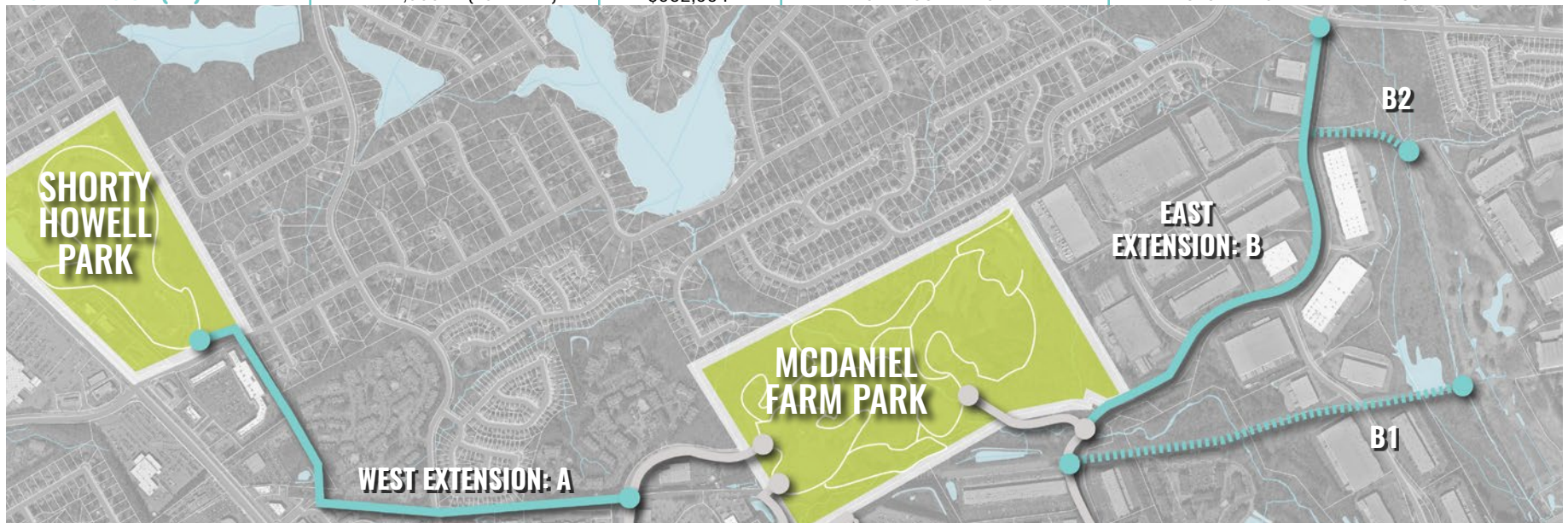
EAST-B2

>>SITE CHARACTER

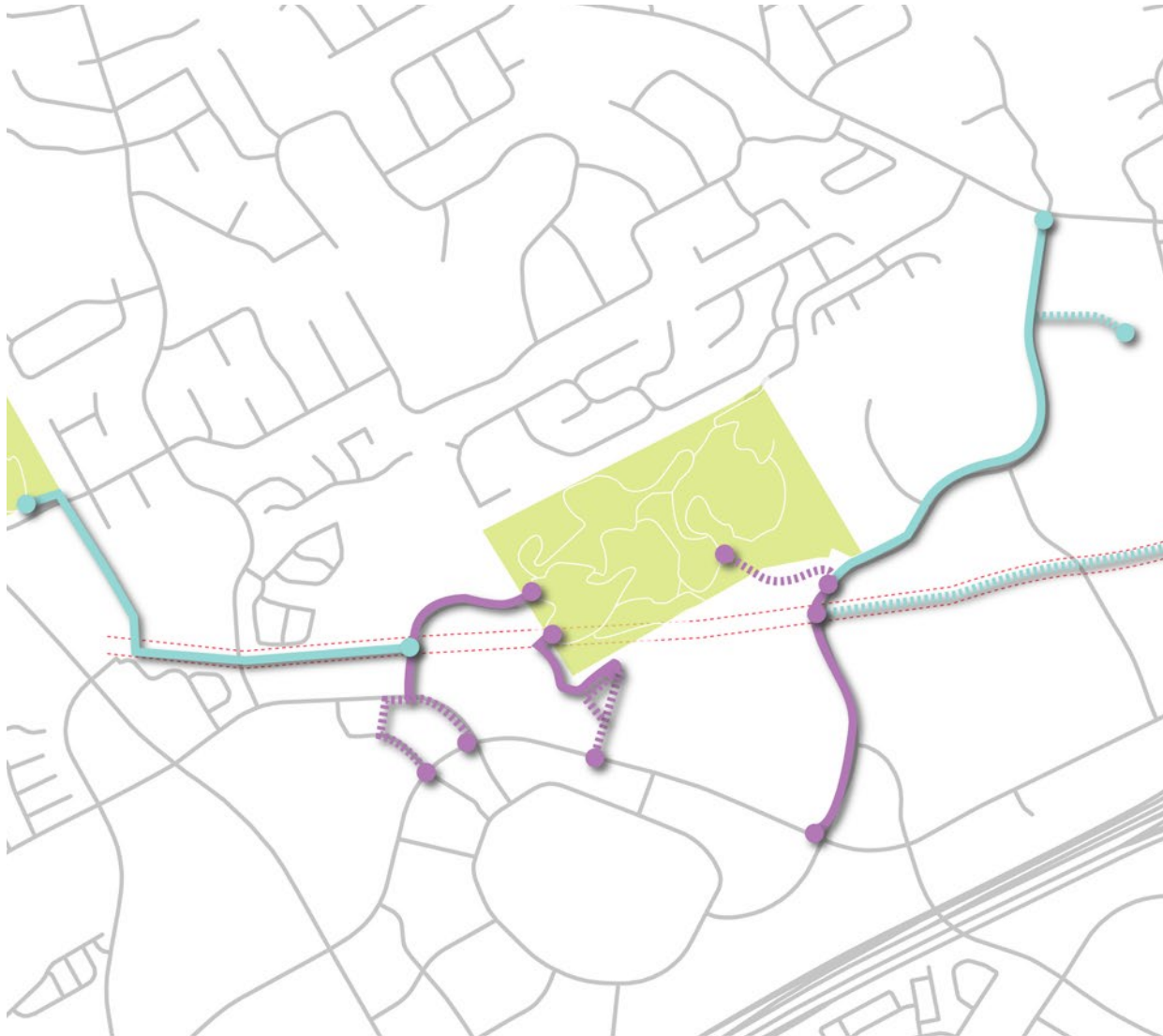


5.6 STUDY AREA 2 SUMMARY

				
WEST EXTENSION: A	5,400 LF (~1 MILE)	\$2,513,321	6 COMMERCIAL 1 MULTI-FAMILY RESIDENTIAL	1,200 RESIDENTIAL LOTS/UNITS
EAST EXTENSION: B AT-GRADE CROSSING	7,400 LF (~1.4 MILE) N/A	\$4,078,089 \$34,960	ALL TRAIL w/in PUBLIC ROW N/A	40 RESIDENTIAL LOTS FUTURE GREENWAY RESIDENTIAL CONNECTIONS
EAST EXTENSION (B1)	3,805 LF (~0.7 MILE)	\$2,799,320	1 MULTI-FAMILY RESIDENTIAL 4 HEAVY INDUSTRIAL 1 VACANT COMMERCIAL	424 RESIDENTIAL UNITS FUTURE RESIDENTIAL DEVELOPMENT
EAST EXTENSION (B2)	1,000 LF (~0.2 MILE)	\$602,694	2 VACANT COMMERCIAL	FUTURE RESIDENTIAL DEVELOPMENT







>> 6.0 NEXT STEPS

>>Next Steps

>> Steps for Implementation

This implementation plan will include, but is not limited to, the following:

- Next steps for the Gwinnett Place CID
- Next steps for Gwinnett County
- Recommended focus studies
- Funding opportunities



LANDOWNER MEETINGS



INTERSECTION ANALYSIS & ENGINEERING





IDENTIFY FUNDING SOURCES



IDENTIFY IMPLEMENTATION PHASES



SITE SURVEY



NEGOTIATE RIGHT OF WAY AND EASEMENTS



SCHEMATIC TRAIL DESIGN





>>APPENDIX

Related Initiatives

Study Area 1 Cost Est.

Study Area 2 Cost Est.

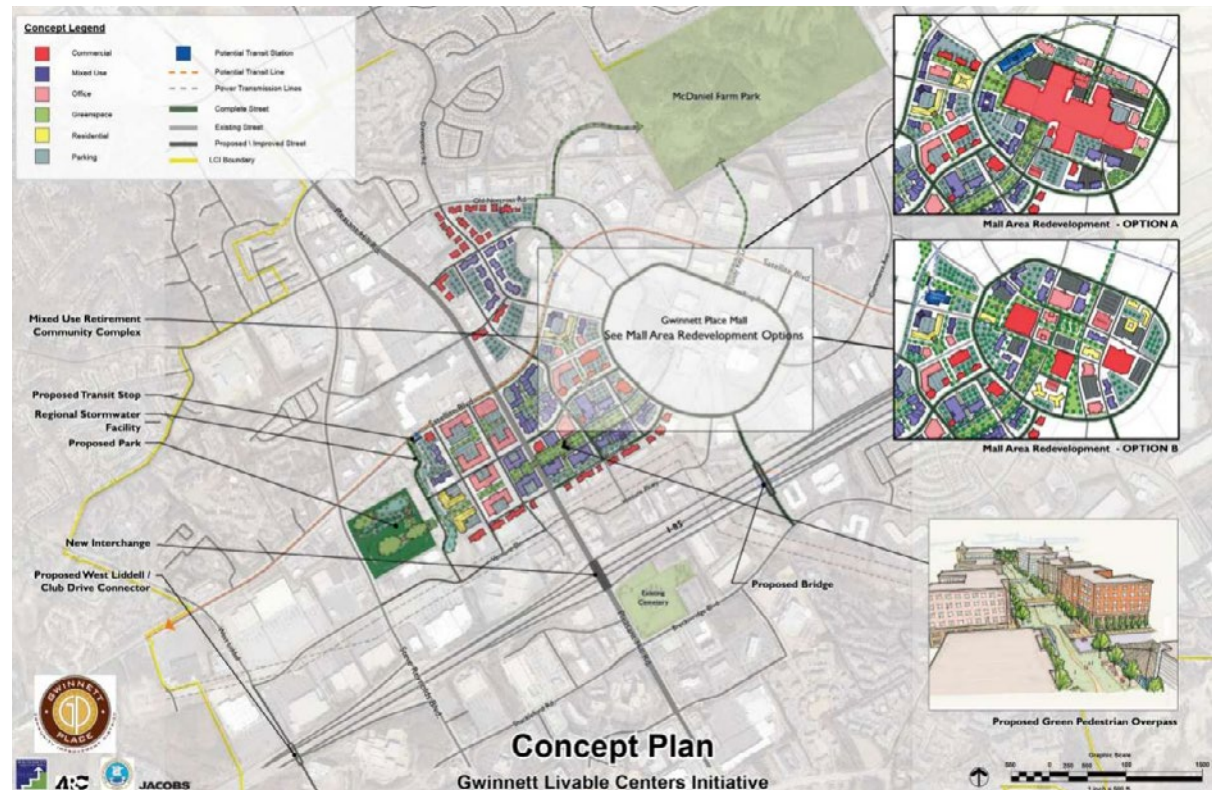
Photo Credits

A.1 >> RELATED INITIATIVES

Gwinnett Livable Centers Initiative (LCI)

This study was the 10-year update for the initial Gwinnett LCI study completed in 2001, but it focuses on the area around Gwinnett Place Mall, rather than the Gwinnett Center / Sugarloaf area. The vision transforms Gwinnett Place into a mixed-use activity center through economic development, revising land use policies, transportation investments, and public investments that change the suburban development patterns. The key recommendations include:

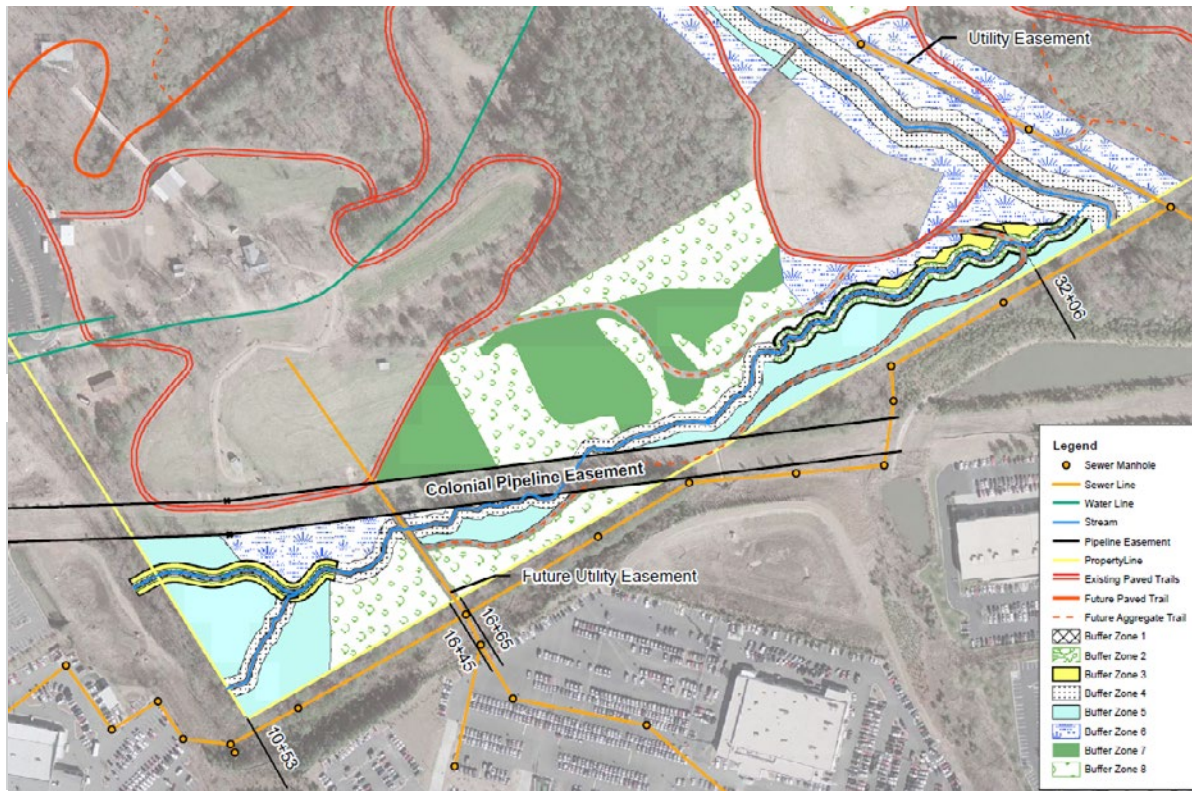
- **The Great Lawn**, which would be a public space spanning both sides of Pleasant Hill Road with venues for public gatherings, art, entertainment, and recreation.
- **Transportation recommendations**, which focus on the need for multimodal facilities with complete streets, pedestrian facilities, and transit options.



- **Public-private partnerships** to implement many elements of the plan

Some of the proposed transportation projects include new streets, streetscape and intersection changes to specific streets (like Satellite Boulevard), and a multi-use path on McDaniel Road to connect to McDaniel Farm Park. The plan also defined

catalyst redevelopment blocks and created different development scenarios: low-rise, low-intensity and mid-rise, and higher intensity.



Opposite Page: The image above shows the conceptual master plan from the 2012 LCI Study (Gwinnett Place, 2012).

Above: Stream buffers around the Sweetwater Creek tributary in McDaniel Farm Park from the Final Mitigation Plan conducted in 2005 (Final Mitigation Plan, 2005). These areas cannot have recreational activities, and only the trails proposed in the map are permitted.

Final Mitigation Plan - McDaniel Farm Park

The plan presents stream mitigation techniques for the tributary to Sweetwater Creek at McDaniel Farm Park, supporting the mitigation for the I-85 / SR 316 Interchange. The plan created a series of buffers around the stream and required a

Declaration of Restrictive Covenants, which protects the streambank in perpetuity per U.S. Army Corps of Engineers Guidelines. Limited recreation activities are permitted in these buffers and must be integrated with the mitigation sites. Easements and trails are not counted toward mitigation credits, and the future use of mitigation areas are restricted to the proposed low-impact, aggregate trails and sewer lines shown on the map (left). Additionally, signage should be provided for “no access” and “no land disturbing activities.” The mitigation and monitoring are currently in progress.

McDaniel Farm Park Master Plan (2001)

The plan researched many components of the park (i.e. topography, stormwater, vegetation, views, soils, etc.) to create recommendations for a passive, historical park with pedestrian and vehicular circulation paths that follow and respect the terrain, small shelters and buildings, limited parking, an open meadow, and woodlands. The plan also makes recommendations for stormwater management practices and utility placement.

A.2 STUDY AREA 1 COST ESTIMATES

West Connector >> Trail B

STUDY AREA 1 - WEST CONNECTOR TRAIL B, MCDANIEL ROAD - 1,535 LF OF CONCRETE AND 140 LF OF ASPHALT TRAIL (W. EXIST RD).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	20000	TRAFFIC CONTROL	\$20,000.00
151-1001	1	LS	25000	MOBILIZATION	\$25,000.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	260	MULCH - HAY	\$1,300.00
163-0300	1	EA	1800	CONSTRUCTION EXIT	\$1,800.00
163-0550	0	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$0.00
165-0030	3350	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$4,053.50
165-0101	1	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$750.00
165-0105	3	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$6.00
167-1000	0	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$0.00
167-1500	0	MO	1300.00	WATER QUALITY INSPECTIONS	\$0.00
171-0030	3350	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$12,897.50
201-1500	1	LS	20000.00	CLEARING & GRUBBING-PROJECT	\$20,000.00
210-0100	1	ALLOW.	50000.00	GRADING COMPLETE-PROJECT	\$50,000.00
310-5080	2000	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$40,000.00
441-0106	1705	SY	50.00	CONCRETE TRAIL 6"	\$85,250.00
402-3113	15	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$1,846.80
402-3190	25	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$2,250.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
441-0018	0	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$0.00
441-0104	0	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$0.00
441-6012	25	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$375.00
444-1000	0	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$0.00
444-2000	25	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$150.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR PVMT WIDENING 10"	\$0.00
550-1180	0	LF	52.00	STORM DRAINAGE PIPE, 18 IN H1-10	\$0.00
603-2181	0	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$0.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	0	SY	100.00	REMOVE CONCRETE WALK	\$0.00
610-0355	25	LF	6.50	REMOVE CONCRETE CURB	\$162.50
611-4003	0	EA	3500.00	RECONSTRUCT MISC. DRAINAGE STRUCTURE	\$0.00
610-8515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	0	EA	1200.00	ADJUST MANHOLE TO GRADE	\$0.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	0	EA	75.00	GUARDRAIL	\$0.00
643-8200	1640	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$4,100.00
643-820X	0	LF	65.00	FENCING	\$0.00
653-1704	0	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$0.00
653-1502	0	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$0.00
653-1804	0	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$0.00
680-000X	0	ALLOW	15000.00	TRAFFIC SIGNAL IMPROVEMENTS	\$0.00
681-3600	0	EA	7500.00	LIGHTING/SECURITY CAMERAS	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	0	EA	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$0.00

700-6910	1	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$1,200.00
700-7000	1	TN	90.00	AGRICULTURAL LIME	\$90.00
700-8000	1	TN	1000.00	FERTILIZER MIXED GRADE	\$1,000.00
700-8100	50	LB	5.00	FERTILIZER NITROGEN CONTENT	\$250.00
700-9300	750	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$6,750.00
702-0071	0	EA	30.00	SHRUB- 3 GAL.	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8" HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14'-16" HT.	\$0.00
708-9025	0	SY	5.00	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	250	SF	25.00	PAVING NODE IN PARK	\$6,250.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	0	EA	1500.00	BOLLARDS AT TRAIL	\$0.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	1	EA	1500.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$1,500.00
009-9004	1	ALLOW	5000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$5,000.00
SUBTOTAL - CONSTRUCTION COST					\$282,556.30
CONTINGENCY (20%)					\$56,511.26
TOTAL - CONSTRUCTION COST					\$339,067.56
ENGINEERING & SURVEY COST (18%)					\$63,192.16
LAND ACQUISITION COST					\$0.00
TRAIL SEGMENT TOTAL					\$414,259.72
*** Cost Estimate does not include utility relocations other than what is listed above.					

West Connector >> Trail B1

STUDY AREA 1 - WEST CONNECTOR -TRAIL B1-PLANTATION WAY- 1048 LF OF CONCRETE AND 0 LF OF ASPHALT TRAIL (ROAD DIET SOUTH WEST OF SIDE OF EXIST ROAD).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	25000	TRAFFIC CONTROL	\$25,000.00
					\$0.00
151-1001	1	LS	25000	MOBILIZATION	\$25,000.00
					\$0.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	260	MULCH - HAY	\$1,300.00
163-0300	1	EA	1800	CONSTRUCTION EXIT	\$1,800.00
163-0550	0	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$0.00
					\$0.00
165-0030	2100	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$2,541.00
165-0101	2	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$1,500.00
165-0105	3	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$6.00
167-1000	0	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$0.00
167-1500	0	MO	1300.00	WATER QUALITY INSPECTIONS	\$0.00
					\$0.00
171-0030	2100	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$8,085.00
					\$0.00
201-1500	1	LS	30000.00	CLEARING & GRUBBING-PROJECT	\$30,000.00
					\$0.00
210-0100	1	ALLOW.	75000.00	GRADING COMPLETE-PROJECT	\$75,000.00
					\$0.00
310-5080	1200	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$24,000.00
					\$0.00
441-0106	1164	SY	50.00	CONCRETE TRAIL 6"	\$58,200.00
					\$0.00
402-3113	0	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	\$0.00
				MATL & H LIME	\$0.00
402-3190	0	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM	\$0.00
				MATL & H LIME	\$0.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM	\$0.00
				MATL & H LIME	\$0.00
					\$0.00
441-0018	0	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$0.00
441-0104	0	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$0.00
441-6012	300	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$4,500.00
					\$0.00
444-1000	0	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$0.00
444-2000	50	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$300.00
					\$0.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR PMVT WIDENING 10"	\$0.00
550-1180	30	LF	52.00	STORM DRIANAGE PIPE, 18 IN H1-10	\$1,560.00
603-2181	0	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$0.00
607-1000	125	CY	266.25	MORTAR RUBBLE MASONRY	\$33,281.25
610-2815	0	SY	100.00	REMOVE CONCRETE WALK	\$0.00
610-0355	300	LF	6.50	REMOVE CONCRETE CURB	\$1,950.00
611-3030	2	EA	3500.00	CONSTRUCT MISC DRIANAGE STRUCTURE	\$7,000.00
610-6515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	2	EA	1200.00	ADJUST MANHOLE TO GRADE	\$2,400.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	548	EA	75.00	GUARDRAIL	\$41,100.00
643-8200	2100	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$5,250.00
643-820X	318	LF	65.00	FENCING	\$20,670.00
					\$0.00
653-1704	0	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$0.00
653-1502	0	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$0.00
653-1804	0	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$0.00
					\$0.00
680-000X	0	ALLOW	150000.00	TRAFFIC SIGNAL IMPROVEMENTS	\$0.00
681-3600	0	EA	7500.00	LIGHTING/SECURITY CAMERAS	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00

670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	0	EA	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$0.00
					\$0.00
700-6910	1	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$1,200.00
700-7000	1	TN	90.00	AGRICULTURAL LIME	\$90.00
700-8000	1	TN	1000.00	FERTILIZER MIXED GRADE	\$1,000.00
700-8100	50	LB	5.00	FERTILIZER NITROGEN CONTENT	\$250.00
700-9300	500	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$4,500.00
702-0071	0	EA	30.00	SHRUB- 3 GAL	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8' HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14'-16' HT.	\$0.00
708-9025	0	SY	5.00	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	250	SF	25.00	PAVING NODE IN PARK	\$6,250.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	0	EA	1500.00	BOLLARDS AT TRAIL	\$0.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	1	EA	2500.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$2,500.00
009-9004	1	ALLOW	7500.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$7,500.00
SUBTOTAL - CONSTRUCTION COST					\$394,308.25
CONTINGENCY (20%)					\$78,861.65
TOTAL - CONSTRUCTION COST					\$473,169.90
ENGINEERING & SURVEY COST (18%)					\$85,170.58
LAND ACQUISITION COST					\$102,489.98
TRAIL SEGMENT TOTAL					\$660,830.46
*** Cost Estimate does not include utility relocations other than what is listed above.					

West Connector >> Trail B2

STUDY AREA 1 - WEST CONNECTOR -TRAIL B2 OLD NORCROSS ROAD 760 LF OF CONCRETE AND 0 LF OF ASPHALT TRAIL (ROAD DIET SOUTH WEST OF SIDE OF EXIST ROAD).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	35000	TRAFFIC CONTROL	\$35,000.00
					\$0.00
151-1001	1	LS	50000	MOBILIZATION	\$50,000.00
					\$0.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	260	MULCH - HAY	\$1,300.00
163-0300	1	EA	1800	CONSTRUCTION EXIT	\$1,800.00
163-0550	0	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$0.00
					\$0.00
165-0030	1520	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$1,839.20
165-0101	1	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$750.00
165-0105	3	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$6.00
167-1000	0	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$0.00
167-1500	0	MO	1300.00	WATER QUALITY INSPECTIONS	\$0.00
					\$0.00
171-0030	1520	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$5,852.00
					\$0.00
201-1500	1	LS	25000.00	CLEARING & GRUBBING-PROJECT	\$25,000.00
					\$0.00
210-0100	1	ALLOW.	75000.00	GRADING COMPLETE-PROJECT	\$75,000.00
					\$0.00
310-5080	850	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$17,000.00
					\$0.00
441-0106	850	SY	50.00	CONCRETE TRAIL 6"	\$42,500.00
					\$0.00
402-3113	0	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
402-3190	0	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
					\$0.00
441-0018	250	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$13,875.00
441-0104	0	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$0.00
441-6012	760	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$11,400.00
					\$0.00
444-1000	200	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$1,800.00
444-2000	760	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$4,560.00
					\$0.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR P/MT WIDENING 10"	\$0.00
500-1180	30	LF	52.00	STORM DRAINAGE PIPE, 18 IN H1-10	\$1,560.00
603-2181	0	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$0.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	450	SY	100.00	REMOVE CONCRETE WALK	\$45,000.00
610-0355	760	LF	6.50	REMOVE CONCRETE CURB	\$4,940.00
611-3030	3	EA	3500.00	CONSTRUCT MISC DRAINAGE STRUCTURE	\$10,500.00
610-6515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	3	EA	1200.00	ADJUST MANHOLE TO GRADE	\$3,600.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	0	EA	75.00	GUARDRAIL	\$0.00
643-8200	760	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$1,900.00
643-820X	0	LF	65.00	FENCING	\$0.00
					\$0.00
653-1704	0	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$0.00
653-1502	0	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$0.00
653-1804	0	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$0.00
					\$0.00
680-000X	0	ALLOW	150000.00	TRAFFIC SIGNAL IMPROVEMENTS	\$0.00
681-3600	0	EA	7500.00	LIGHTING/SECURITY CAMERAS	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00

700-6910	1	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$1,200.00
700-7000	1	TN	90.00	AGRICULTURAL LIME	\$90.00
700-8000	1	TN	1000.00	FERTILIZER MIXED GRADE	\$1,000.00
700-8100	50	LB	5.00	FERTILIZER NITROGEN CONTENT	\$250.00
700-9300	400	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$3,600.00
702-0071	0	EA	30.00	SHRUB- 3 GAL	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8" HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE, 3" CAL., 14'-16" HT.	\$0.00
708-9025	0	SY	5.00	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	250	SF	25.00	PAVING NODE IN PARK	\$6,250.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	0	EA	1500.00	BOLLARDS AT TRAIL	\$0.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	1	EA	1500.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$1,500.00
009-9004	1	ALLOW	5000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$5,000.00
SUBTOTAL - CONSTRUCTION COST					\$374,647.20
CONTINGENCY (20%)					\$74,929.44
TOTAL - CONSTRUCTION COST					\$449,576.64
ENGINEERING & SURVEY COST (18%)					\$80,923.80
LAND ACQUISITION COST					\$0.00
TRAIL SEGMENT TOTAL					\$530,500.44
*** Cost Estimate does not include utility relocations other than what is listed above.					

Central Connector >> Trail A

STUDY AREA 1 - CENTRAL CONNECTION TRAIL, A, 120 LF OF ASPHALT TRAIL AND TWO BRIDGES (IN THE WOODS).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	5000	TRAFFIC CONTROL	\$5,000.00
					\$0.00
151-1001	1	LS	50000	MOBILIZATION	\$50,000.00
					\$0.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	260	MULCH - HAY	\$1,300.00
163-0300	2	EA	1800	CONSTRUCTION EXIT	\$3,600.00
163-0550	0	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$0.00
					\$0.00
165-0030	2500	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$3,025.00
165-0101	2	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$1,500.00
165-0105	0	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$0.00
167-1000	1	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$360.00
167-1500	12	MO	1300.00	WATER QUALITY INSPECTIONS	\$15,600.00
					\$0.00
171-0030	2500	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$9,625.00
					\$0.00
201-1500	1	ALLOW.	50000.00	CLEARING & GRUBBING-PROJECT	\$50,000.00
					\$0.00
210-0100	1	ALLOW.	75000.00	GRADING COMPLETE-PROJECT	\$75,000.00
					\$0.00
310-5080	1250	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$25,000.00
					\$0.00
441-0106	0	SY	50.00	CONCRETE TRAIL 6"	\$0.00
					\$0.00
402-3113	110	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$13,543.20
402-3190	175	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$15,750.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
					\$0.00
441-0018	0	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$0.00
441-0104	0	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$0.00
441-6012	0	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$0.00
					\$0.00
444-1000	0	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$0.00
444-2000	0	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$0.00
					\$0.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR PMVT WIDENING 10"	\$0.00
550-1180	30	LF	52.00	STORM DRIANAGE PIPE, 18 IN H1-10	\$1,560.00
603-2181	50	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$2,900.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	0	SY	100.00	REMOVE CONCRETE WALK	\$0.00
610-0355	0	LF	6.50	REMOVE CONCRETE CURB	\$0.00
611-3030	4	EA	3500.00	CONSTRUCT MISC. DRIANAGE STRUCTURE	\$14,000.00
610-6515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	0	EA	1200.00	ADJUST MANHOLE TO GRADE	\$0.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	2240	EA	75.00	GUARDRAIL	\$168,000.00
643-8200	2500	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$6,250.00
					\$0.00
653-1704	0	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$0.00
653-1502	0	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$0.00
653-1804	0	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$0.00
					\$0.00
680-000X	0	ALLOW	75000.00	TRAFFIC SIGNAL IMPROVEMENTS (HAWK)	\$0.00
681-3600	0	ALLOW	0.00	LIGHTING	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	0	EA	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$0.00

700-6910	2	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$2,400.00
700-7000	0	TN	90.00	AGRICULTURAL LIME	\$0.00
700-8000	1	TN	1000.00	FERTILIZER MIXED GRADE	\$1,000.00
700-8100	200	LB	5.00	FERTILIZER NITROGEN CONTENT	\$1,000.00
700-9300	0	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$0.00
702-0071	0	EA	30.00	SHRUB- 3 GAL	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8' HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14'-16' HT.	\$0.00
708-9025	0	SY	0.88	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	250	SF	25.00	PAVING NODE IN PARK	\$6,250.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	3	EA	1500.00	BOLLARDS AT TRAIL	\$4,500.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	2	ALLOW.	50000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$100,000.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	2	EA	2500.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$5,000.00
009-9004	1	ALLOW	10000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$10,000.00
SUBTOTAL - CONSTRUCTION COST					\$592,738.20
CONTINGENCY (20%)					\$118,547.64
TOTAL - CONSTRUCTION COST					\$711,285.84
ENGINEERING & SURVEY COST (18%)					\$128,031.45
LAND ACQUISITION COST					\$90,478.00
TRAIL SEGMENT TOTAL					\$929,795.29
*** Cost Estimate does not include utility relocations other than what is listed above.					

Central Connector >> Trail A1

STUDY AREA 1 - CENTRAL CONNECTOR -TRAIL A1-640 LF OF CONCRTE AND 185 LF OF ASPHALT TRAIL (REDUCT. IN DRIVE AISLE/PL).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	10000	TRAFFIC CONTROL	\$10,000.00
151-1001	1	LS	35000	MOBILIZATION	\$35,000.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	280	MULCH - HAY	\$1,300.00
163-0300	2	EA	1800	CONSTRUCTION EXIT	\$3,600.00
163-0550	3	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$675.00
165-0030	2240	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$2,710.40
165-0101	2	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$1,500.00
165-0105	3	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$6.00
167-1000	0	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$0.00
167-1500	0	MO	1300.00	WATER QUALITY INSPECTIONS	\$0.00
171-0030	1650	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$6,352.50
201-1500	1	LS	25000.00	CLEARING & GRUBBING-PROJECT	\$25,000.00
210-0100	1	ALLOW.	75000.00	GRADING COMPLETE-PROJECT	\$75,000.00
310-5080	1000	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$20,000.00
441-0106	711	SY	50.00	CONCRETE TRAIL 6"	\$35,550.00
402-3113	25	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$3,078.00
402-3190	35	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$3,150.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
441-0018	0	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$0.00
441-0104	0	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$0.00
441-6012	1260	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$18,900.00
444-1000	0	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$0.00
444-2000	1260	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$7,560.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR PVMT WIDENING 10"	\$0.00
550-1180	30	LF	52.00	STORM DRAINAGE PIPE, 18 IN H1-10	\$1,560.00
603-2181	0	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$0.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	0	SY	100.00	REMOVE CONCRETE WALK	\$0.00
610-0355	640	LF	6.50	REMOVE CONCRETE CURB	\$4,160.00
611-3030	3	EA	3500.00	CONSTRUCT MISC. DRAINAGE STRUCTURE	\$10,500.00
610-6515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	3	EA	1200.00	ADJUST MANHOLE TO GRADE	\$3,600.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	370	EA	75.00	GUARDRAIL	\$27,750.00
643-8200	1650	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$4,125.00
643-820X	500	LF	65.00	FENCING	\$32,500.00
653-1704	0	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$0.00
653-1502	640	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$480.00
653-1804	0	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$0.00
680-000X	0	ALLOW	150000.00	TRAFFIC SIGNAL IMPROVEMENTS	\$0.00
681-3600	8	EA	7500.00	LIGHTING/SECURITY CAMERAS	\$60,000.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	0	EA	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$0.00

700-6910	1	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$1,200.00
700-7000	1	TN	90.00	AGRICULTURAL LIME	\$90.00
700-8000	1	TN	1000.00	FERTILIZER MIXED GRADE	\$1,000.00
700-8100	50	LB	5.00	FERTILIZER NITROGEN CONTENT	\$250.00
700-9300	330	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$2,970.00
702-0071	0	EA	30.00	SHRUB- 3 GAL.	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7-8' HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14-16' HT.	\$0.00
708-9025	400	SY	5.00	LANDSCAPE MULCH	\$2,000.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	250	SF	25.00	PAVING NODE IN PARK	\$6,250.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	0	EA	1500.00	BOLLARDS AT TRAIL	\$0.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	1	EA	2500.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$2,500.00
009-9004	1	ALLOW	6500.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$6,500.00
SUBTOTAL - CONSTRUCTION COST					\$417,391.90
CONTINGENCY (20%)					\$83,478.38
TOTAL - CONSTRUCTION COST					\$500,870.28
ENGINEERING & SURVEY COST (18%)					\$90,156.65
LAND ACQUISITION COST					\$59,750.54
TRAIL SEGMENT TOTAL					\$650,777.47
*** Cost Estimate does not include utility relocations other than what is listed above.					

Central Connector >> Trail A2

PHASE I- CENTRAL CONNECTOR TRAIL A2, 560 LF OF CONCRETE AND 260 LF OF ASPHALT TRAIL					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	10000	TRAFFIC CONTROL	\$10,000.00
151-1001	1	LS	25000	MOBILIZATION	\$25,000.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	260	MULCH - HAY	\$1,300.00
163-0300	2	EA	1800	CONSTRUCTION EXIT	\$3,600.00
163-0550	3	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$675.00
165-0030	1640	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$1,984.40
165-0101	2	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$1,500.00
165-0105	3	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$6.00
167-1000	0	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$0.00
167-1500	0	MO	1300.00	WATER QUALITY INSPECTIONS	\$0.00
171-0030	1640	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$6,314.00
201-1500	1	LS	20000.00	CLEARING & GRUBBING-PROJECT	\$20,000.00
210-0100	1	ALLOW.	100000.00	GRADING COMPLETE-PROJECT	\$100,000.00
310-5080	650	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$13,000.00
441-0106	622	SY	50.00	CONCRETE TRAIL 6"	\$31,100.00
402-3113	30	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$3,693.60
402-3190	50	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$4,500.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
441-0018	0	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$0.00
441-0104	0	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$0.00
441-6012	1260	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$18,900.00
444-1000	0	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$0.00
444-2000	560	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$3,360.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR PMVT WIDENING 10"	\$0.00
550-1180	30	LF	52.00	STORM DRIANAGE PIPE, 18 IN H1-10	\$1,560.00
603-2181	0	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$0.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	0	SY	100.00	REMOVE CONCRETE WALK	\$0.00
610-0355	560	LF	6.50	REMOVE CONCRETE CURB	\$3,640.00
611-3030	3	EA	3500.00	CONSTRUCT MISC. DRIANAGE STRUCTURE	\$10,500.00
610-6515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	3	EA	1200.00	ADJUST MANHOLE TO GRADE	\$3,600.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	520	EA	75.00	GUARDRAIL	\$39,000.00
643-8200	1640	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$4,100.00
643-820X	800	LF	65.00	FENCING	\$52,000.00
653-1704	0	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$0.00
653-1502	560	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$420.00
653-1804	0	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$0.00
680-000X	0	ALLOW	150000.00	TRAFFIC SIGNAL IMPROVEMENTS	\$0.00
680-000X	2	EA	25000.00	PED. SIGNAL IMPROVEMENTS (Satellite, Old Norcross)	\$50,000.00
681-3600	6	EA	10000.00	LIGHTING/SECURITY CAMERAS	\$60,000.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00

700-6910	1	AC	1200.00	PERMANENT GRASSING - SEEDDED LAWN	\$1,200.00
700-7000	1	TN	90.00	AGRICULTURAL LIME	\$90.00
700-8000	1	TN	1000.00	FERTILIZER MIXED GRADE	\$1,000.00
700-8100	50	LB	5.00	FERTILIZER NITROGEN CONTENT	\$250.00
700-9300	303	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$2,727.00
702-0071	0	EA	30.00	SHRUB- 3 GAL	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8" HT.	\$0.00
702-0897	10	EA	600.00	SHADE TREE- 3" CAL., 14'-16" HT.	\$6,000.00
708-9025	350	SY	5.00	LANDSCAPE MULCH	\$1,750.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	250	SF	25.00	PAVING NODE IN PARK	\$6,250.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	0	EA	1500.00	BOLLARDS AT TRAIL	\$0.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	2	EA	1500.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$3,000.00
009-9004	1	ALLOW	5000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$5,000.00
SUBTOTAL - CONSTRUCTION COST					\$497,595.00
CONTINGENCY (20%)					\$99,519.00
TOTAL - CONSTRUCTION COST					\$597,114.00
ENGINEERING & SURVEY COST (18%)					\$107,480.52
LAND ACQUISITION COST					\$90,370.00
TRAIL SEGMENT TOTAL					\$794,964.52
*** Cost Estimate does not include utility relocations other than what is listed above.					

East Connector >> Trail C1

PHASE I- EAST CONNECTOR -TRAIL C1-COMMERCE DRIVE 2,155 LF OF CONCRETE AND 0 LF OF ASPHALT TRAIL (ROAD DIET SOUTHBOUND LANES, MEDIAN DEMOLITION AND CONSTRUCTION).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	ALLOW.	85000	TRAFFIC CONTROL	\$85,000.00
					\$0.00
151-1001	1	ALLOW.	85000	MOBILIZATION	\$85,000.00
					\$0.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	260	MULCH - HAY	\$1,300.00
163-0300	2	EA	1800	CONSTRUCTION EXIT	\$3,600.00
163-0550	12	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$2,700.00
					\$0.00
165-0030	2155	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$2,607.55
165-0101	2	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$1,500.00
165-0105	12	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$24.00
167-1000	12	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$4,320.00
167-1500	12	MO	1300.00	WATER QUALITY INSPECTIONS	\$15,600.00
					\$0.00
171-0030	2155	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$8,296.75
201-1500	1	ALLOW.	100000.00	CLEARING & GRUBBING-PROJECT	\$100,000.00
					\$0.00
210-0100	1	ALLOW.	125000.00	GRADING COMPLETE-PROJECT	\$125,000.00
					\$0.00
310-5080	2500	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$50,000.00
					\$0.00
441-0106	2500	SY	50.00	CONCRETE TRAIL 6"	\$125,000.00
					\$0.00
402-3113	0	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	\$0.00
					\$0.00
402-3190	0	TN	90.00	MATL & H LIME	\$0.00
					\$0.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM	\$0.00
					\$0.00
432-0206	0	SY	2.50	MATL & H LIME	\$0.00
					\$0.00
441-0018	500	SY	55.50	MILL ASPHALT CONCRTE PAVEMENT, 1-1/2' DEPTH	\$27,750.00
441-0104	0	SY	40.00	DRIVEWAY CONCRETE, 8' N TK	\$0.00
441-6012	2155	LF	15.00	CONCRETE SIDEWALK, 4 IN	\$32,325.00
					\$0.00
444-1000	500	LF	9.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$4,500.00
444-2000	5000	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$30,000.00
					\$0.00
457-1005	300	SY	7.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$2,100.00
500-3107	0	CY	660.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-9999	100	CY	250.00	CLASS A RETAINING WALL	\$25,000.00
550-1180	60	LF	62.00	CLASS B BASE OR PVT WIDENING 10"	\$3,720.00
603-2181	0	SY	58.00	STORM DRIANAGE PIPE, 18 IN H1-10	\$0.00
607-1000	100	CY	266.25	STN DUMPED RIP RAP, TP 3, 24 IN	\$26,625.00
610-2815	1000	SY	90.00	MORTAR RUBBLE MASONRY	\$90,000.00
610-0355	2155	LF	6.50	REMOVE CONCRETE WALK	\$14,007.50
611-3030	0	EA	3500.00	REMOVE CONCRETE CURB	\$21,000.00
610-6515	1	ALLOW.	5000.00	CONSTRUCT MISC. DRIANAGE STRUCTURE	\$5,000.00
611-5360	1	ALLOW.	25000.00	REMOVE HWY SIGN	\$25,000.00
611-8050	6	ALLOW.	1200.00	RESET HIGHWAY SIGNAGE STD.	\$7,200.00
611-8120	6	ALLOW.	650.00	ADJUST MANHOLE TO GRADE	\$3,900.00
641-1100	300	LF	75.00	ADJUST WATER METER BOX TO GRADE	\$22,500.00
643-8200	2100	LF	2.50	GUARDRAIL	\$5,250.00
643-820X	0	LF	65.00	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$0.00
					\$0.00
653-1501	8650	LF	0.75	FENCING	\$6,487.50
653-1502	2155	LF	0.75	THERMO PLASTIC SOLID TRAFFIC STRIP 5' WHITE	\$1,616.25
653-1704	500	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$4,000.00
653-1804	240	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$600.00
657-5016	12	EA	1600.00	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$19,200.00
653-3501	8620	LF	2.00	PREF. PLASTIC PAVEMTN MARK WORD AND SYMBOLS ARROW TP1 WH TP BB	\$17,240.00
653-0120	12	EA	5.00	SKIP TRAFFIC STRIP 6 IN WHITE (2 SEG 6" GAP)	\$60.00
					\$0.00

680-000X	2	ALLOW	150000.00	TRAFFIC SIGNAL IMPROVEMENTS	\$300,000.00
681-3600	0	EA	7500.00	LIGHTING/SECURITY CAMERAS	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	0	EA	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$0.00
					\$0.00
700-6910	1	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$1,200.00
700-7000	1	TN	90.00	AGRICULTURAL LIME	\$90.00
700-8000	1	TN	1000.00	FERTILIZER MIXED GRADE	\$1,000.00
700-8100	50	LB	5.00	FERTILIZER NITROGEN CONTENT	\$250.00
700-9300	1000	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$9,000.00
702-0071	0	EA	30.00	SHRUB- 3 GAL.	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7-8' HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14-16' HT.	\$0.00
708-9025	0	SY	5.00	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	300	SF	25.00	PAVING NODE IN PARK	\$7,500.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	0	EA	1500.00	BOLLARDS AT TRAIL	\$0.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	2	EA	1500.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$3,000.00
009-9004	1	ALLOW	15000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$15,000.00
				SUBTOTAL - CONSTRUCTION COST	\$1,342,044.55
				CONTINGENCY (20%)	\$268,408.91
				TOTAL - CONSTRUCTION COST	\$1,610,453.46
				ENGINEERING & SURVEY COST (18%)	\$289,881.62
				LAND ACQUISITION COST	\$0.00
				TRAIL SEGMENT TOTAL	\$1,900,335.08

*** Cost Estimate does not include utility relocations other than what is listed above.

East Connector Cost >> Intersection

East Connector >> Trail C1 At-Grade Intersection

Cost Breakdown:

Construction Cost: \$92,000.00
 Engineering Cost: \$9,000.00
 Land Acquisition Cost: n/a
Total: \$101,000.00

ROADWAY ITEMS

Item Number	Quantity	Units	Item Description
150-1000	1	LS	TRAFFIC CONTROL -
210-0100	1	LS	GRADING COMPLETE -
432-5010	6800	SY	MILL ASPH CONC PVT, VARIABLE DEPTH
441-0104	40	SY	CONC SIDEWALK, 4 IN
441-0754	370	SY	CONCRETE MEDIAN, 7 1/2 IN
441-6222	810	LF	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2

MISCELLANEOUS ITEMS

Item Number	Quantity	Units	Item Description
	1	LS	THERMOPLASTIC PAVEMENT MARKING
647-1000	1	LS	TRAFFIC SIGNAL INSTALLATION NO -

Central and West Connector Cost >> Intersection

Central Connector >> Trail A At-Grade Intersection Cost Breakdown:

Construction Cost: \$75,000.00
 Engineering Cost: \$7,000.00
 Land Acquisition Cost: n/a
Total: \$82,000.00

ROADWAY ITEMS

Item Number	Quantity	Units	Item Description
150-1000	1	LS	TRAFFIC CONTROL -
210-0100	1	LS	GRADING COMPLETE -
432-5010	4800	SY	MILL ASPH CONC PVMT, VARIABLE DEPTH
441-0104	40	SY	CONC SIDEWALK, 4 IN
441-0754	230	SY	CONCRETE MEDIAN, 7 1/2 IN
441-6222	510	LF	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2

MISCELLANEOUS ITEMS

Item Number	Quantity	Units	Item Description
	1	LS	THERMOPLASTIC PAVEMENT MARKING
647-1000	1	LS	TRAFFIC SIGNAL INSTALLATION NO -

West Connector >> Trail B At-Grade Intersection at Old Norcross Road and Satellite Boulevard Cost Breakdown:

Construction Cost: \$44,000.00
 Engineering Cost: \$5,000.00
 Land Acquisition Cost: n/a
Total: \$49,000.00

ROADWAY ITEMS

Item Number	Quantity	Units	Item Description
150-1000	1	LS	TRAFFIC CONTROL -
210-0100	1	LS	GRADING COMPLETE -
432-5010	1200	SY	MILL ASPH CONC PVMT, VARIABLE DEPTH
441-0104	40	SY	CONC SIDEWALK, 4 IN
441-0754	40	SY	CONCRETE MEDIAN, 7 1/2 IN
441-6222	170	LF	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2

MISCELLANEOUS ITEMS

Item Number	Quantity	Units	Item Description
	1	LS	THERMOPLASTIC PAVEMENT MARKING
647-1000	1	LS	TRAFFIC SIGNAL INSTALLATION NO -

West Connector Cost Breakdown >> Experiential Bridge

Experiential Bridge Overview >> Alternative One Cost Breakdown:

Construction Cost: \$4,525,000.00
Engineering Cost: \$250,000.00
Land Acquisition Cost: \$520,000.00
Total: \$5,295,000.00

ROADWAY ITEMS

Item Number	Quantity	Units	Item Description
150-1000	1	LS	TRAFFIC CONTROL -
210-0100	1	LS	GRADING COMPLETE -
	2455	LF	PATHWAY

Major Structures

Item Number	Quantity	Units	Item Description
	13700	SF	Retaining Wall under 30'
	2400	SF	Signature Bridge

MISCELLANEOUS ITEMS

Item Number	Quantity	Units	Item Description
647-1000	1	LS	TRAFFIC SIGNAL INSTALLATION NO -

Experiential Bridge Overview >> Alternative Two Cost Breakdown:

Construction Cost: \$4,600,000.00
Engineering Cost: \$250,000.00
Land Acquisition Cost: \$520,000.00
Total: \$5,370,000.00

ROADWAY ITEMS

Item Number	Quantity	Units	Item Description
150-1000	1	LS	TRAFFIC CONTROL -
210-0100	1	LS	GRADING COMPLETE -
	2475	LF	PATHWAY

Major Structures

Item Number	Quantity	Units	Item Description
	18500	SF	Retaining Wall under 30'
	2700	SF	Signature Bridge

MISCELLANEOUS ITEMS

Item Number	Quantity	Units	Item Description
647-1000	1	LS	TRAFFIC SIGNAL INSTALLATION NO -

A.3 STUDY AREA 2 COST ESTIMATES

West Extension >> Trail A

STUDY AREA 2 -WEST EXTENSION TRAIL, A-6,336 LF OF ASPHALT TRAIL AND 156 LF OF BOARDWALK (EASEMENT AND IN THE WOODS).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	25000	TRAFFIC CONTROL	\$25,000.00
					\$0.00
151-1001	1	LS	100000	MOBILIZATION	\$100,000.00
					\$0.00
163-0232	2	AC	575	TEMPORARY GRASSING	\$1,150.00
163-0240	20	TN	260	MULCH - HAY	\$5,200.00
163-0300	3	EA	1800	CONSTRUCTION EXIT	\$5,400.00
163-0550	3	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$675.00
					\$0.00
165-0030	13000	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$15,730.00
165-0101	3	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$2,250.00
165-0105	3	EA	250.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$750.00
167-1000	3	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$1,080.00
167-1500	18	MO	1300.00	WATER QUALITY INSPECTIONS	\$23,400.00
					\$0.00
171-0030	13000	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$50,050.00
					\$0.00
201-1500	1	LS	150000.00	CLEARING & GRUBBING-PROJECT	\$150,000.00
					\$0.00
210-0100	1	ALLOW.	250000.00	GRADING COMPLETE-PROJECT	\$250,000.00
					\$0.00
310-5080	7040	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$140,800.00
					\$0.00
441-0106	0	SY	50.00	CONCRETE TRAIL 6"	\$0.00
					\$0.00
402-3113	600	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$73,872.00
402-3190	1000	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$90,000.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
					\$0.00
441-0018	0	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$0.00
441-0104	500	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$20,000.00
441-6012	500	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$7,500.00
					\$0.00
444-1000	0	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$0.00
444-2000	500	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$3,000.00
					\$0.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR P/MT WIDENING 10"	\$0.00
550-1180	60	LF	52.00	STORM DRIANAGE PIPE, 18 IN H1-10	\$3,120.00
603-2181	300	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$17,400.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	0	SY	100.00	REMOVE CONCRETE WALK	\$0.00
610-0355	0	LF	6.50	REMOVE CONCRETE CURB	\$0.00
611-3030	12	EA	3500.00	CONSTRUCT MISC. CONSTRUCT MISC. DRIANAGE STRUCTURE	\$42,000.00
610-6515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	0	EA	1200.00	ADJUST MANHOLE TO GRADE	\$0.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	0	EA	75.00	GUARDRAIL TP T	\$0.00
643-8200	13000	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$32,500.00
					\$0.00
653-1704	0	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$0.00
653-1502	1000	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$750.00
653-1804	2500	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$6,250.00
					\$0.00
680-000X	2	ALLOW	75000.00	TRAFFIC SIGNAL IMPROVEMENTS (HAWK)	\$150,000.00
681-3600	0	ALLOW	0.00	LIGHTING	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	0	EA	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$0.00

700-6910	3	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$3,600.00
700-7000	0	TN	90.00	AGRICULTURAL LIME	\$0.00
700-8000	2	TN	1000.00	FERTILIZER MIXED GRADE	\$2,000.00
700-8100	500	LB	5.00	FERTILIZER NITROGEN CONTENT	\$2,500.00
700-9300	0	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$0.00
702-0071	0	EA	30.00	SHRUB- 3 GAL	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8" HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14'-16" HT.	\$0.00
708-9025	0	SY	0.88	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	0	SF	25.00	PAVING NODE IN PARK	\$0.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	4	EA	1500.00	BOLLARDS AT TRAIL	\$6,000.00
800-2002	156	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$78,000.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	2	EA	5000.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$10,000.00
009-9004	1	ALLOW	20000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$20,000.00
SUBTOTAL - CONSTRUCTION COST					\$1,339,977.00
CONTINGENCY (20%)					\$267,995.40
TOTAL - CONSTRUCTION COST					\$1,607,972.40
ENGINEERING & SURVEY COST (18%)					\$289,435.03
LAND ACQUISITION COST					\$615,913.77
TRAIL SEGMENT TOTAL					\$2,513,321.20
*** Cost Estimate does not include utility relocations other than what is listed above.					

East Extension >> Trail B

PHASE II EAST EXTENSION -TRAIL B, NORTHMONT PKWY- 7,416 LF OF CONCRETE AND 0 LF OF ASPHALT TRAIL.					
(PROPOSED ROAD DIET- SOUTHBOUND LANES AND MEDIAN CONSTRUCTION).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	ALLOW.	175000	TRAFFIC CONTROL	\$175,000.00
					\$0.00
151-1001	1	ALLOW.	100000	MOBILIZATION	\$100,000.00
					\$0.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	260	MULCH - HAY	\$1,300.00
163-0300	3	EA	1800	CONSTRUCTION EXIT	\$5,400.00
163-0550	18	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$4,050.00
					\$0.00
165-0030	7500	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$9,075.00
165-0101	3	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$2,250.00
165-0105	24	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$48.00
167-1000	6	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$2,160.00
167-1500	18	MO	1300.00	WATER QUALITY INSPECTIONS	\$23,400.00
					\$0.00
171-0030	7500	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$28,875.00
					\$0.00
201-1500	1	ALLOW.	100000.00	CLEARING & GRUBBING-PROJECT	\$100,000.00
					\$0.00
210-0100	1	ALLOW.	300000.00	GRADING COMPLETE-PROJECT	\$300,000.00
					\$0.00
310-5080	8500	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$170,000.00
					\$0.00
441-0106	8500	SY	50.00	CONCRETE TRAIL 6"	\$425,000.00
					\$0.00
402-3113	0	TN	95.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	
				MATL & H LIME	\$0.00
402-3190	0	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM	\$0.00
				MATL & H LIME	\$0.00
402-3121	0	TN	85.00	MATL & H LIME	\$0.00
432-0206	0	SY	2.50	MILL ASPHALT CONCRTE PAVEMENT, 1 1/2" DEPTH	\$0.00
					\$0.00
441-0018	750	SY	55.50	DRIVEWAY CONCRETE, 8 N TK	\$41,625.00
441-0104	0	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$0.00
441-6012	7500	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$112,500.00
					\$0.00
444-1000	500	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$4,500.00
444-2000	7500	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$45,000.00
					\$0.00
457-1005	600	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$4,200.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	25	CY	250.00	CLASS B BASE OR PVTM WIDENING 10"	\$6,250.00
550-1180	60	LF	52.00	STORM DRIANAGE PIPE, 18 IN H1-10	\$3,120.00
603-2181	50	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$2,900.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	4120	SY	90.00	REMOVE CONCRETE WALK	\$370,800.00
610-0335	7412	LF	6.50	REMOVE CONCRETE CURB	\$48,178.00
611-3030	6	EA	3500.00	CONSTRUCT MISC. DRIANAGE STRUCTURE	\$21,000.00
610-6515	1	EA	10000.00	REMOVE HWY SIGN	\$10,000.00
611-5360	1	EA	25000.00	RESET HIGHWAY SIGNAGE STD.	\$25,000.00
611-8050	12	EA	1200.00	ADJUST MANHOLE TO GRADE	\$14,400.00
611-8120	12	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$7,800.00
641-1100	7400	LF	75.00	GUARDRAIL	\$555,000.00
643-8200	7400	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$18,500.00
643-820X	0	LF	65.00	FENCING	\$0.00
					\$0.00
653-1501	30000	LF	0.75	THERMO PLASTIC SOLID TRAFFIC STRIP 5" WHITE	\$22,500.00
653-1502	7400	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$5,550.00
653-1704	100	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$800.00
653-1804	500	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$1,250.00
657-5016	4	EA	1600.00	PREF. PLASTIC PAVEMTN MARK WORD AND SYMBOLS ARROW TP1 WH TP BB	\$6,400.00
653-3501	15000	LF	1.50	SKIP TRAFFIC STRIP 6 IN WHITE (2 SEG 6" GAP)	\$22,500.00
653-0120	4	EA	5.00	THERMO PVTM MARKING ARROW TP2	\$20.00

680-000X	0	EA	150000.00	TRAFFIC SIGNAL IMPROVEMENTS	\$0.00
680-00XX	2	EA	25000.00	PED. SIGNAL IMPROVEMENTS (Duluth, an Evergreen Blvd)	\$50,000.00
681-3600	0	EA	7500.00	LIGHTING/SECURITY CAMERAS	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	6	ALLOW	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$6,000.00
					\$0.00
700-6910	2	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$2,400.00
700-7000	2	TN	90.00	AGRICULTURAL LIME	\$180.00
700-8000	2	TN	1000.00	FERTILIZER MIXED GRADE	\$2,000.00
700-8100	100	LB	5.00	FERTILIZER NITROGEN CONTENT	\$500.00
700-9300	7500	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$67,500.00
702-0071	0	EA	30.00	SHRUB- 3 GAL	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8" HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14'-16" HT.	\$0.00
708-9025	0	SY	5.00	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	0	SF	25.00	PAVING NODE IN PARK	\$0.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	3	EA	1500.00	BOLLARDS AT TRAIL	\$4,500.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	3	EA	5000.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$15,000.00
009-9004	1	ALLOW	35000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$35,000.00
				SUBTOTAL - CONSTRUCTION COST	\$2,880,066.00
				CONTINGENCY (20%)	\$576,013.20
				TOTAL - CONSTRUCTION COST	\$3,456,079.20
				ENGINEERING & SURVEY COST (18%)	\$622,081.30
				LAND ACQUISITION COST	\$0.00
				TRAIL SEGMENT TOTAL	\$4,078,088.50
*** Cost Estimate does not include utility relocations other than what is listed above.					

At-Grade Intersection at Northmont Parkway & Duluth Highway

ROADWAY ITEMS					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	\$1,200.00	TRAFFIC CONTROL -	\$1,200.00
210-0100	1	LS	\$1,200.00	GRADING COMPLETE -	\$1,200.00
Subtotal:					\$2,400.00

MISCELLANEOUS ITEMS					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
	1	LS	\$5,000.00	THERMOPLASTIC PAVEMENT MARKING	\$5,000.00
647-1000	1	LS	\$23,000.00	COUNTDOWN PEDESTRIAN SIGNAL HEADS	\$23,000.00
Subtotal:					\$28,000.00

Construction Cost	\$30,400.00
Engineering and Inspection (5.0 %)	\$1,520.00
Contingency (10.0%)	\$3,040.00
Total Construction Cost	\$34,960.00

East Extension >> Trail B1

PHASE II-EAST CONNECTION TRAIL, B1-2,536 LF OF ASPHALT TRAIL AND APPOX-2,018+ LF OF BOARDWALK (UTIL. EASEMNT).					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	5000	TRAFFIC CONTROL	\$5,000.00
151-1001	1	LS	50000	MOBILIZATION	\$50,000.00
163-0232	2	AC	575	TEMPORARY GRASSING	\$1,150.00
163-0240	10	TN	260	MULCH - HAY	\$2,600.00
163-0300	3	EA	1800	CONSTRUCTION EXIT	\$5,400.00
163-0550	0	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$0.00
165-0030	9112	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$11,025.52
165-0101	3	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$2,250.00
165-0105	3	EA	250.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$750.00
167-1000	2	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$720.00
167-1500	12	MO	1300.00	WATER QUALITY INSPECTIONS	\$15,600.00
171-0030	9112	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$35,081.20
201-1500	1	LS	100000.00	CLEARING & GRUBBING-PROJECT	\$100,000.00
210-0100	1	ALLOW.	100000.00	GRADING COMPLETE-PROJECT	\$100,000.00
310-5080	3000	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$60,000.00
441-0106	0	SY	50.00	CONCRETE TRAIL 6"	\$0.00
402-3113	250	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$30,780.00
402-3190	400	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$36,000.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
441-0018	0	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$0.00
441-0104	500	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$20,000.00
441-6012	500	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$7,500.00
444-1000	0	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$0.00
444-2000	500	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$3,000.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR P/MT WIDENING 10"	\$0.00
550-1180	30	LF	52.00	STORM DRIANAGE PIPE, 18 IN H1-10	\$1,560.00
603-2181	200	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$11,600.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	0	SY	100.00	REMOVE CONCRETE WALK	\$0.00
610-0355	0	LF	6.50	REMOVE CONCRETE CURB	\$0.00
611-3030	6	EA	3500.00	CONSTRUCT MISC. DRIANAGE STRUCTURE	\$21,000.00
610-6515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	0	EA	1200.00	ADJUST MANHOLE TO GRADE	\$0.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	0	EA	75.00	GUARDRAIL TP T	\$0.00
643-8200	11100	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$27,750.00
653-1704	0	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$0.00
653-1502	1000	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$750.00
653-1804	2500	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$6,250.00
680-000X	2	ALLOW	75000.00	TRAFFIC SIGNAL IMPROVEMENTS (HAWK)	\$150,000.00
681-3600	0	ALLOW	0.00	LIGHTING	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	0	EA	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$0.00

700-6910	2	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$2,400.00
700-7000	0	TN	90.00	AGRICULTURAL LIME	\$0.00
700-8000	0	TN	1000.00	FERTILIZER MIXED GRADE	\$0.00
700-8100	0	LB	5.00	FERTILIZER NITROGEN CONTENT	\$0.00
700-9300	0	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$0.00
702-0071	0	EA	30.00	SHRUB- 3 GAL	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8" HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14'-16" HT.	\$0.00
708-9025	0	SY	0.88	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	0	SF	25.00	PAVING NODE IN PARK	\$0.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	4	EA	1500.00	BOLLARDS AT TRAIL	\$6,000.00
800-2002	2018	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$1,009,000.00
800-2003	0	LS	128000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$0.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	2	EA	5000.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$10,000.00
009-9004	1	ALLOW	15000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$15,000.00
SUBTOTAL - CONSTRUCTION COST					\$1,748,166.72
CONTINGENCY (20%)					\$349,633.34
TOTAL - CONSTRUCTION COST					\$2,097,800.06
ENGINEERING & SURVEY COST (18%)					\$377,604.01
LAND ACQUISITION COST					\$323,515.75
TRAIL SEGMENT TOTAL					\$2,799,319.83
*** Cost Estimate does not include utility relocations other than what is listed above.					

East Extension >> Trail B2

PHASE 2-EAST CONNECTION TRAIL, B2-1,040 LF OF ASPHALT TRAIL AND 52 LF OF BOARDWALK (OFF ROAD TO THE WOODS).					
(1-POTENTIAL STREAM CROSSING)					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	5000	TRAFFIC CONTROL	\$5,000.00
					\$0.00
151-1001	1	LS	50000	MOBILIZATION	\$50,000.00
					\$0.00
163-0232	1	AC	575	TEMPORARY GRASSING	\$575.00
163-0240	5	TN	260	MULCH - HAY	\$1,300.00
163-0300	1	EA	1800	CONSTRUCTION EXIT	\$1,800.00
163-0550	0	EA	225	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$0.00
					\$0.00
165-0030	2126	LF	1.21	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$2,572.46
165-0101	1	EA	750.00	MAINTENANCE OF CONSTRUCTION EXIT	\$750.00
165-0105	1	LF	2.00	MAINTENANCE OF INLET SEDIMENT TRAP	\$2.00
167-1000	1	EA	360.00	WATER QUALITY MONITORING AND SAMPLING	\$360.00
167-1500	8	MO	1300.00	WATER QUALITY INSPECTIONS	\$10,400.00
					\$0.00
171-0030	2126	LF	3.85	TEMPORARY SILT FENCE, TYPE C	\$8,185.10
					\$0.00
201-1500	1	LS	50000.00	CLEARING & GRUBBING-PROJECT	\$50,000.00
					\$0.00
210-0100	1	ALLOW.	100000.00	GRADING COMPLETE-PROJECT	\$100,000.00
					\$0.00
310-5080	1200	SY	20.00	GR AGGR BASE CRS, 8 INCH, INCL MATL	\$24,000.00
					\$0.00
441-0106	0	SY	50.00	CONCRETE TRAIL 6"	\$0.00
					\$0.00
402-3113	100	TN	123.12	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$12,312.00
402-3190	160	TN	90.00	RECYCLED ASPH CONC 19. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$14,400.00
402-3121	0	TN	85.00	RECYCLED ASPH CONC 25. MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$0.00
					\$0.00
441-0018	0	SY	55.50	DRIVEWAY CONCRETE, 8I N TK	\$0.00
441-0104	80	SY	40.00	CONCRETE SIDEWALK, 4 IN	\$3,200.00
441-6012	200	LF	15.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	\$3,000.00
					\$0.00
444-1000	0	LF	9.00	SAWED JOINTS IN EXIST PAVEMENTS - PCC	\$0.00
444-2000	200	LF	6.00	SAWED JOINTS IN EXIST PAVEMENTS - ASPHALT	\$1,200.00
					\$0.00
457-1005	0	SY	7.00	GEOGRID REINFORCEMENT, TP A	\$0.00
500-3107	0	CY	660.00	CLASS A RETAINING WALL	\$0.00
500-9999	0	CY	0.00	CLASS B BASE OR PVMT WIDENING 10"	\$0.00
550-1180	10	LF	52.00	STORM DRIANAGE PIPE, 18 IN H1-10	\$520.00
603-2181	50	SY	58.00	STN DUMPED RIP RAP, TP 3, 24 IN	\$2,900.00
607-1000	0	CY	266.25	MORTAR RUBBLE MASONRY	\$0.00
610-2815	0	SY	100.00	REMOVE CONCRETE WALK	\$0.00
610-0355	0	LF	6.50	REMOVE CONCRETE CURB	\$0.00
611-3030	2	EA	3500.00	CONSTRUCT MISC. DRIANAGE STRUCTURE	\$7,000.00
610-6515	0	EA	500.00	REMOVE HWY SIGN	\$0.00
611-5360	0	EA	400.00	RESET HIGHWAY SIGNAGE STD.	\$0.00
611-8050	0	EA	1200.00	ADJUST MANHOLE TO GRADE	\$0.00
611-8120	0	EA	650.00	ADJUST WATER METER BOX TO GRADE	\$0.00
641-1100	0	EA	75.00	GUARDRAIL TP T	\$0.00
643-8200	2126	LF	2.50	BARRIER FENCE (ORANGE), 4 FT - TREE PROTECTION	\$5,315.00
					\$0.00
653-1704	300	LF	8.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$2,400.00
653-1502	300	LF	0.75	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$225.00
653-1804	0	LF	2.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$0.00
					\$0.00
680-000X	0	ALLOW	75000.00	TRAFFIC SIGNAL IMPROVEMENTS (HAWK)	\$0.00
681-3600	0	ALLOW	0.00	LIGHTING	\$0.00
670-9710	0	EA	2500.00	RELOCATE EXIST FIRE HYDRANT	\$0.00
670-9720	0	EA	3000.00	RELOCATE EXIST WATER VALVE, INCL BOX	\$0.00
670-9730	0	EA	1000.00	RELOCATE EXIST WATER METER, INCL BOX	\$0.00

700-6910	1	AC	1200.00	PERMANENT GRASSING - SEEDED LAWN	\$1,200.00
700-7000	0	TN	90.00	AGRICULTURAL LIME	\$0.00
700-8000	1	TN	1000.00	FERTILIZER MIXED GRADE	\$1,000.00
700-8100	200	LB	5.00	FERTILIZER NITROGEN CONTENT	\$1,000.00
700-9300	500	SY	9.00	SOD-BERMUDA TIFFWAY 419	\$4,500.00
702-0071	0	EA	30.00	SHRUB- 3 GAL	\$0.00
702-0180	0	EA	350.00	FLOWERING TREE - 2" CAL., 7'-8' HT.	\$0.00
702-0897	0	EA	600.00	SHADE TREE- 3" CAL., 14'-16' HT.	\$0.00
708-9025	0	SY	0.88	LANDSCAPE MULCH	\$0.00
708-1000	0	CY	116.02	PLANT TOPSOIL	\$0.00
900-0039	0	SF	25.00	PAVING NODE IN PARK	\$0.00
711-0100	0	SY	3.33	TURF REINFORCING MAT	\$0.00
754-4000	0	EA	1500.00	WASTE RECEPTACLE	\$0.00
754-4001	0	EA	750.00	BIKE RACK	\$0.00
754-5000	0	EA	3000.00	BENCH	\$0.00
754-5001	2	EA	1500.00	BOLLARDS AT TRAIL	\$3,000.00
800-2002	0	LF	500.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BOARDWALK	\$0.00
800-2003	1	ALLOW.	75000.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD BRIDGE #1	\$75,000.00
800-2006	0	LF	75.00	MISC. LANDSCAPE ITEMS - PRESSURE TREATED WOOD RAILING	\$0.00
800-2007	0	EA	50.00	MISC. LANDSCAPE ITEMS - TREE WATERING BAG DEVICE	\$0.00
800-2008	1	EA	5000.00	MISC. LANDSCAPE ITEMS - TRAIL SIGNAGE	\$5,000.00
009-9004	1	ALLOW	10000.00	GEOTECHNICAL AND MATERIAL CONSTRUCTION TESTING	\$10,000.00
SUBTOTAL - CONSTRUCTION COST					\$408,116.56
CONTINGENCY (20%)					\$81,623.31
TOTAL - CONSTRUCTION COST					\$489,739.87
ENGINEERING & SURVEY COST (18%)					\$88,153.18
LAND ACQUISITION COST					\$24,800.77
TRAIL SEGMENT TOTAL					\$602,693.82
*** Cost Estimate does not include utility relocations other than what is listed above.					

A.4 >> PHOTO CREDITS

Page 75:

LID strategies: http://witandwisdomofanengineer.blogspot.com/2013_02_24_archive.html

Thermoplastic crosswalk: <http://www.patternpaving.com/img2/profiles/stamped/charlotte2/charlottestamped2-3.jpg>

Wide pedestrian paths (Cultural Trail): <http://www.connectourcore.org/>

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Pedestrian-centered intersections: https://s3.amazonaws.com/ipcinstaller/system/content_images/images/1188/large_SP_CrosswalkinBurlinton_NC_2_.JPG?1336149852

Thermoplastic crosswalk: <http://www.patternpaving.com/img2/profiles/stamped/charlotte2/charlottestamped2-3.jpg>

Thermoplastic crosswalk (blue): <http://www.ennisflintamericas.com/get-inspired/broad-street>

Urban Pedestrian Trail: <http://urbankchoze.blogspot.com/2014/07/sidewalk-design-fail-when-pedestrians.html>

Wide pedestrian linear parks: <http://www.gautierconquet.fr/fr/projet/requalification-de-lavenue-mermoz-suppression-de-lautopont-a43/>

Wide pedestrian paths (Cultural Trail): <http://www.connectourcore.org/>

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Birch, wooded trail: http://www.americantrails.org/NRTDatabase/trailPhotos/335_BirchForest.jpg

Thermoplastic crosswalk: <http://www.patternpaving.com/img2/profiles/stamped/charlotte2/charlottestamped2-3.jpg>

Thermoplastic crosswalk (blue): <http://www.ennisflintamericas.com/get-inspired/broad-street>

Wide urban trail: <https://www.flickr.com/photos/erussell1984/20210129711/>

Wide urban trail 2: <http://www.gautierconquet.fr/fr/projet/requalification-de-lavenue-mermoz-suppression-de-lautopont-a43/>

Wooded trail: <http://www.hermannpark.org/visit/park-guides/walks/>

Page 81:

Birch, wooded trail: http://www.americantrails.org/NRTDatabase/trailPhotos/335_BirchForest.jpg

LID strategies: http://witandwisdomofanengineer.blogspot.com/2013_02_24_archive.html

Parking lot safety: <http://www.teleguardian.com/products-4/>

Thermoplastic crosswalk: <http://www.patternpaving.com/img2/profiles/stamped/charlotte2/charlottestamped2-3.jpg>

Thermoplastic crosswalk (blue): <http://www.ennisflintamericas.com/get-inspired/broad-street>

Wooded trail: <http://www.hermannpark.org/visit/park-guides/walks/>

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Pedestrian-centered intersections: https://s3.amazonaws.com/ipcinstaller/system/content_images/images/1188/large_SP_CrosswalkinBurlinton_NC_2_.JPG?1336149852

Urban pedestrian path (Indianapolis Cultural Trail): http://www.pedbikeinfo.org/images/library/IndianapolisCulturalTrail_01.jpg