

Swamp Rabbit Trail Extension Master Plan

City of Greenville, South Carolina

November, 2020



Stantec's Urban Places
Alta Planning + Design
Overstreet Studio

ACKNOWLEDGEMENTS

This planning effort would not have been possible without the commitment of many individuals who are enthusiastic about the vision presented within this document. Dedicated city staff and elected officials, passionate Steering Committee members, involved citizens and stakeholders, along with a team of skilled consultants made for a dynamic combination.

Greenville Mayor & City Council

Mayor Knox White
Council Member John Deworken
Council Member Lillian B. Flemming
Council Member Ken Gibson
Council Member Wil Brasington
Council Member Dorothy Dowe
Council Member Russell Stall

City of Greenville Key Economic Development Staff

Kevin Howard, Project Manager
Tracy D. Ramseur, Senior Project Manager

City of Greenville Staff

Ginny Stroud
Calin Owens
Edward Kinney
Courtney Powell
Jonathan B. Graham
Clint Link
Shannon Lavrin

Consultant Team

Prime Consultant:
Stantec Urban Places
Craig Lewis, Principal/Project Manager
Ashley Thompson, Asst Project Manager
Amanda Morrell, Landscape Architect
Dylan McKnight, Urban Designer
David Walters, Urban Planner
Courtney Hillery, Planner

Subconsultant:
Alta Planning and Design
Kat Maines
Diane Jlelaty
Emily Condon

Subconsultant:
Overstreet Studio
Pat Dilger

Steering Committee Members

Chris Fay
Lara Kaufmann
Ty Houck
Jeff Rose
Sylvia Palmer
Chris Stover
David Clayton
Beth Crews
Aaron Barr
Kevin Feeney
Rob Howell

CONTENTS

Executive Summary...1

01 Plan Framework & Goals...7

02 Reconnaissance...13

03 Summary of Public Input...25

04 Mobility & Access Strategies...31

05 Development & Redevelopment Strategies...67

06 Policy Strategies...97

07 Implementation...101

A Appendix...111



Executive Summary

The Prisma Health Swamp Rabbit Trail is a 22-mile greenway system routed between the City of Greenville and Travelers Rest. The system boasts 500,000+ annual users and clearly reaches its goals of providing active transportation alternatives while simultaneously promoting economic vitality in the region. The Prisma Health Swamp Rabbit Trail Extension is a planned 4.5-mile extension on an abandoned rail bed that begins at Cleveland Park on the edge of downtown Greenville and extends southeast to Clemson University’s International Center for Automotive Research (ICAR). The extension differs greatly from the existing trail, creating new and exciting opportunities. It runs through a dense, built environment providing proximity to a larger resident population. This difference greatly influenced the overall goals and vision for the extension master plan.

The overarching goal of this area master plan is to ensure connectivity and access to the future trail from surrounding neighborhoods. Additionally, this plan provides a detailed investigation of the opportunities for trail-supportive development and redevelopment along the Laurens Road corridor that encourage housing diversity and promote economic growth. The vision was developed with the community through a wide range of engagement events including small and large group discussions, public design sessions, and online surveys. In anticipation of the trail’s extension in the spring of 2022, this plan sets forth a series of public investments, development policies, and design guidelines to guide the growth and change of this corridor. The timeline of the top 10 projects identified in this plan will no doubt be affect by our post-COVID-19 recovery, but there is no doubt that this corridor will be a long-term success story for the City of Greenville and Greenville County.



Project Goals



1 Fill the trail with people

The Swamp Rabbit Trail is a community amenity intended for everyone—all ages, races, and ability levels. While recreation activities will contribute to a vast amount of trail use, commuters, tourists, and business patrons will all find a safe mobility option in the trail extension.



2 Connect every nearby neighborhood to the trail

Neighborhood connectivity is about providing safe access and predictable trailhead locations along the route. Connectivity is also about ensuring neighborhood streets have adequate pedestrian and cyclist facilities.



3 Transform Laurens Road

As redevelopment occurs, Laurens Road should be transformed to create a parallel multi-modal route to the Swamp Rabbit Trail.



4 Build walkable density in the study area

Building compact critical mass will provide nodes of activity and capitalize on increased property value perpetuated by the trail’s success. Density also increases opportunities for affordable housing when balancing the finances of a new development which promotes diversity and inclusion.



5 Respect the trail as a “Main Street”

Engaging the trail as a second “front door” to new development will help create a cohesive, walkable neighborhood. The transference of activity works in both directions and will also allow activity to permeate into the trail from the new development.



6 Preserve housing and economic diversity in the study area

The stock of established housing, both single family and multifamily, should be blended with any new development. Keeping the age and typology of housing varied will promote a mixed income, multi-generational community in and around the Swamp Rabbit Trail Extension.

TOP PUBLIC PRIORITIES

These public priority projects were identified in conjunction with the City of Greenville, the stakeholders, through public input, the design process, and implementation analysis. Please review the implementation chapter for detailed information on the timing of these individual projects, as not all will occur at once, in the short-term or in the order as presented on these pages. Many of these projects will take time and unfortunately, may be impacted by the COVID-19 pandemic. Not all of these projects are publicly funded by the City of Greenville. The City will work with other public entities, including federal, county, and regional governments, as well as private entities to share costs or pursue alternative funding resources such as grants.



Enhance priority crosswalks

(see Chapter 4: Mobility and Access Strategies and Appendix A for specific priority crosswalks)



Laurens Road streetscape improvements (Washington to W. Antrim)



Laurens Road streetscape improvements (W. Antrim to Waite)



Elimination or reduction of parking standards for adaptive re-use/infill



Land acquisition or easements for green/open space



Implement design guidelines in ordinance or overlay district



Laurens Road at Pleasantburg Drive intersection plan



Airport Road realignment



PLAN FRAMEWORK & GOALS

01

01 Plan Framework & Goals

Creating a plan that promotes transformative change is about understanding the overall principles and goals while also considering the current successes on which to build. Before we start “doing” we must have an end goal in our sights to ensure that each decision is properly executed with the vision in mind.

In this Chapter:

- 1. Purpose
- 2. The Study Area
- 3. Core Values
- 4. Project Goals

Purpose

The Swamp Rabbit Trail Extension Master Plan establishes a vision for the study area. The master plan was identified as a priority by the City to get ahead of anticipated growth catalyzed by the Swamp Rabbit Trail Extension. The vision was developed with stakeholders, focus groups, and the general public to establish the vision for how the community would like to grow and engage with the trail through land use and zoning. The vision will also help guide future development so that it addresses the trail as a second front door. The ultimate goal is for the trail to not simply be a strip of asphalt through the woods, but for the trail to help grow a vibrant, cohesive community around it.

The overall master plan was designed within a feedback loop with the public over a series of public engagement sessions including: stakeholder interviews, focus group meetings, a week-long charrette, public meetings, and an online survey. Through this process the following priorities came to light and are further explored in the rest of the document. The master plan will provide analysis and propose solutions for access framework and connectivity improvements to ensure safe and quality access to the trail from the surrounding neighborhoods, including a close look at the challenging Laurens Road. The master plan will explore development opportunities through the detailed design of focus areas with the most catalytic opportunities to positively impact the community. It will address challenges in affordable housing, shared parking, open space, and adaptive re-use/infill. And the master plan includes key recommendations and policies for key projects to implement over the coming years to fulfill the established vision

The master plan was developed with a companion document, the Swamp Rabbit Trail Extension Design Guidelines, which establishes design guidelines as an overlay to the study area to ensure quality development and redevelopment and provide the tools to execute the vision for a vibrant, walkable community.

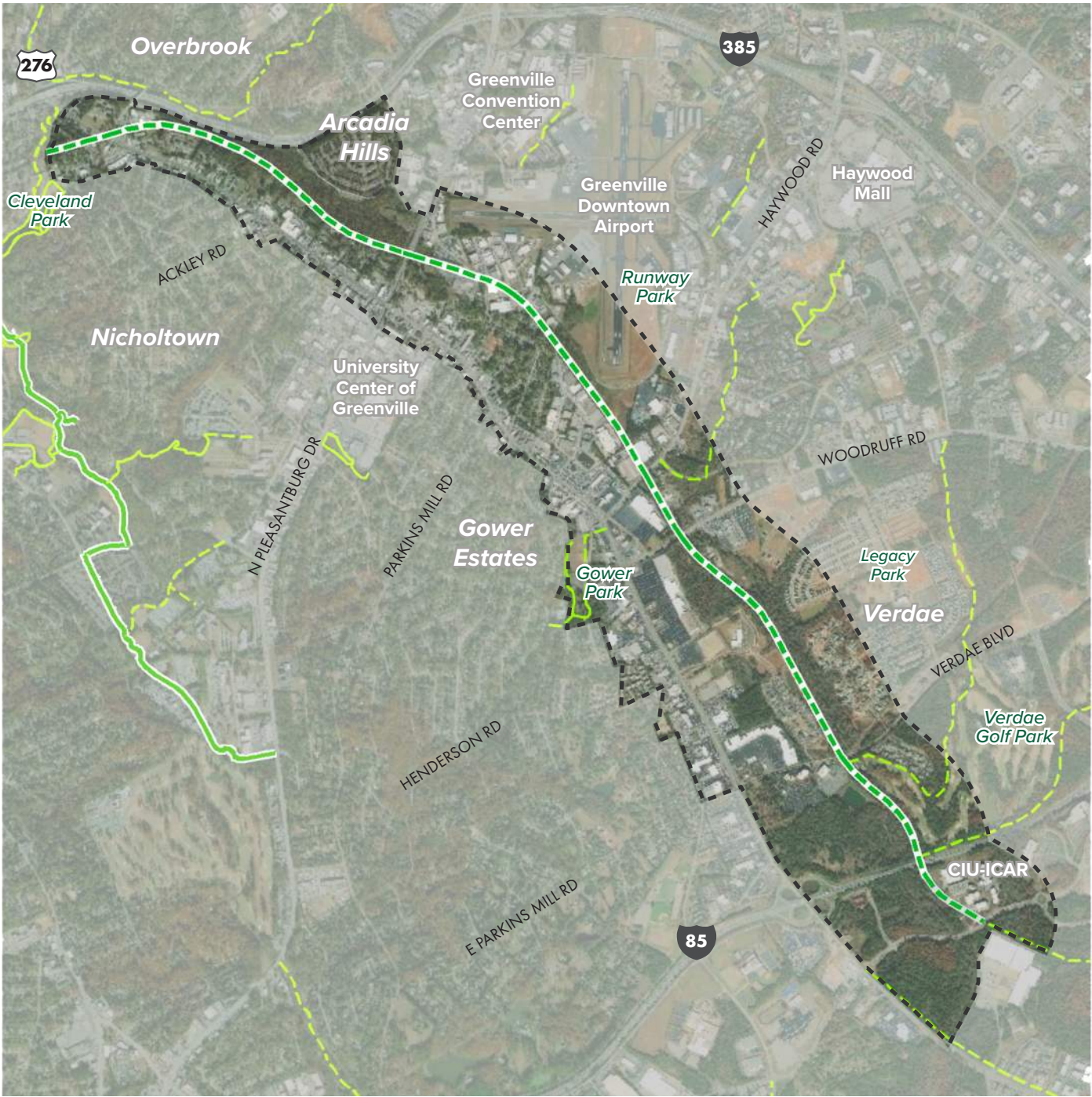
The Study Area

The study area consists of 2.5 square miles within a 5-to10-minute walk (1/4 to 1/2 mile buffer) of the Swamp Rabbit Trail Extension. It is roughly 4.5 linear miles along Laurens Road, which bisects the study area and is a major barrier for southwestern neighborhoods to access the trail. The study area begins approximately a mile from Downtown Greenville, running from Cleveland Park to the northwest, which is where the current Swamp Rabbit Trail ends, and CU-ICAR to the southeast. The surrounding neighborhoods identified as priorities for trail access include, but are not limited to, Overbrook, Arcadia Hills, Nicholtown, Gower Estates, Verdae, and various multi-family complexes, specifically between Haywood Road and Woodruff Road.

New development is already moving to the area as exhibited by key local destinations such as Willy Taco, Kitchen Sync, Farmhouse Tacos, Cohesive Coffee, White Duck Taco, and Think Tank.

The Study Area

- Swamp Rabbit Trail (SRT)
- SRT Extension
- Other Trails
- Streets
- The Study Area



Core Values

The core values serve to inspire the plan details, and their purpose is to promote a vision of inclusion and forward thinking. These core values are meant to ensure the success story of the master plan includes walkability, equity, and diversity.



WALKABILITY

The first core value is to create a safe, walkable environment. Walkability is directly tied to quality of life for residents and also promotes tourism to the area. When walkability is valued, vibrancy follows along with a resilient local economy.

EQUITY

The second guiding value is equity. The planned public access points are limited due to environmental and transportation challenges in the study area. The fulfillment of this value will increase equitable access to the Swamp Rabbit Trail Extension.

DIVERSITY

The third core value is to create a diverse community that is welcoming to all people. Diversity also includes mobility choices (e.g., walk, bike, stroller, wheelchair, electric scooter, car, bus, automated vehicle) and trail oriented development (e.g., housing, retail, office, restaurants). The fulfillment of this value will increase the diversity of people, places, and mobility in every new development catalyzed by the Swamp Rabbit Trail Extension.

Project Goals

The core values influence every aspect of the master plan, which perhaps most importantly include the project goals. The success of the master plan will be measured by the success of the following goals.



1 Fill the trail with people

The Swamp Rabbit Trail is a community amenity intended for everyone—all ages, races, and ability levels. While recreation activities will contribute to a vast amount of trail use, commuters, tourists, and business patrons will all find a safe mobility option in the trail extension.



2 Connect every nearby neighborhood to the trail

Neighborhood connectivity is about providing safe access and predictable trailhead locations along the route. Connectivity is also about ensuring neighborhood streets have adequate pedestrian and cyclist facilities.



3 Transform Laurens Road

As redevelopment occurs, Laurens Road should be transformed to create a parallel multi-modal route to the Swamp Rabbit Trail.



4 Build walkable density in the study area

Building compact critical mass will provide nodes of activity and capitalize on increased property value perpetuated by the trail's success. Density also increases opportunities for affordable housing when balancing the finances of a new development which promotes diversity and inclusion.



5 Respect the trail as a "Main Street"

Engaging the trail as a second "front door" to new development will help create a cohesive, walkable neighborhood. The transference of activity works in both directions and will also allow activity to permeate into the trail from the new development.



6 Preserve housing and economic diversity in the study area

The stock of established housing, both single family and multifamily, should be blended with any new development. Keeping the age and typology of housing varied will promote a mixed income, multi-generational community in and around the Swamp Rabbit Trail Extension.



RECONNAISSANCE

02

02 Reconnaissance

This chapter serves to summarize the existing conditions of the study area and its surrounding context, including the history of the Swamp Rabbit Trail and the goals of the extension.

The demographics analyzed for the study area included the population within one mile of the trail and was broken into three subareas (West, Central, and East) for further analysis. Market analyses done prior to the master plan provided insight into the area’s economic stability for office and employment, as well as housing affordability. Planning analysis was conducted with a focus on developmental, mobility, and natural existing attributes that may impact the master plan.

In this Chapter:

- 1. The History of the Swamp Rabbit Trail
- 2. The Swamp Rabbit Trail Extension
- 3. Demographics
- 4. Market Study
- 5. Planning Analysis

The SRT Extension

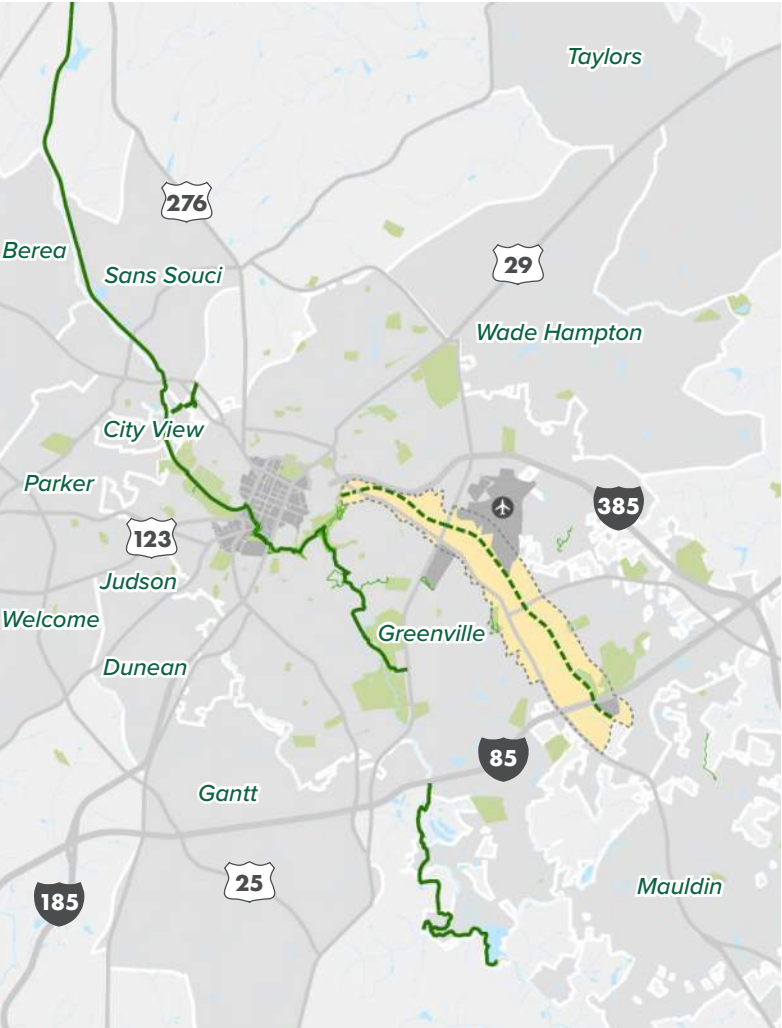
- | | |
|-----------------------|----------------------------------|
| Swamp Rabbit Trail | Landmarks |
| SRT Extension | Open Space |
| Other Existing Trails | Incorporated Places |
| Study Area | Unincorporated Greenville County |
| Streets | |

The History of the Swamp Rabbit Trail

The Prisma Health Swamp Rabbit Trail is a 22-mile greenway system routed between the City of Greenville and Travelers Rest. The trail boasts 500,000+ annual users and connects schools, parks, and local businesses. It was opened in 2009 and there are on-going plans for expanding the network. According to an impact study made by Furman University in 2013, conducted from 2010-2013, trail use increased by 20%. Of the overall users studied, 25% were tourists, spending \$6.7 million on products and businesses in Greenville County.

The greenway system was implemented in partnership with The Greenville Health System, now Prisma Health, in order to combat unhealthy lifestyle choices resulting in health risks and obesity. The system is meant to provide active transportation mode alternatives while simultaneously promoting economic vitality.

There is an interactive map available at: <https://citygis.greenvillesc.gov/swamprabbittrail/index.html> to find details about points of interest and help plan trail visits.



Regional map with the Prisma Health Swamp Rabbit Trail greenway system



The Swamp Rabbit Trail Extension

The Prisma Health Swamp Rabbit Trail Extension is a 4.5-mile extension of the Green Line with in the overall greenway system. The route will begin at Cleveland Park, which is where the trail currently ends, to CU-ICAR. The alignment is along an abandoned rail bed and roughly parallels Laurens Road. Construction of the trail is anticipated to be complete in Spring, 2022 and is being managed by Greenville County Recreation District.

The extension will have seven planned public trailheads to access the trail. There is only one at-grade crossing at Keith Drive and Airport Road. This will be a green diagonal crossing in the intersection, the first of its kind in the region. The bridge crossings at Laurens Road, Haywood Road, Woodruff Road, and Verdae Boulevard, as well as the tunnel crossings at Pleasantburg Drive and I-85 will have connections to the sidewalks along their respective streets.

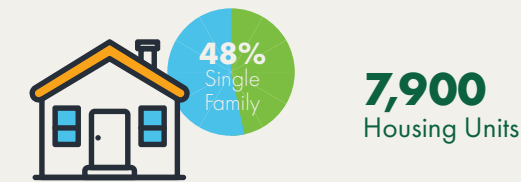
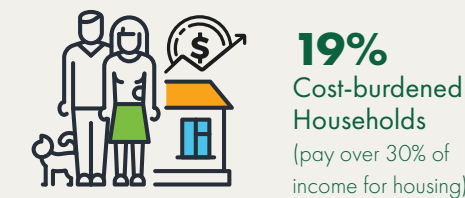
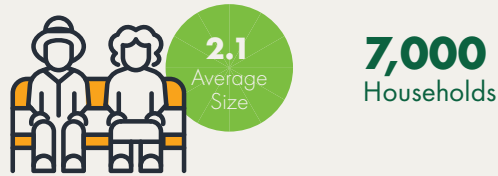
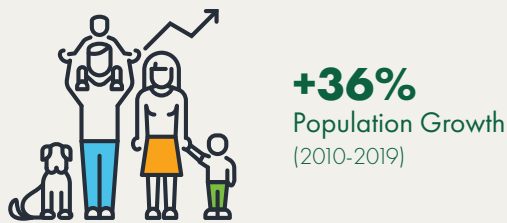
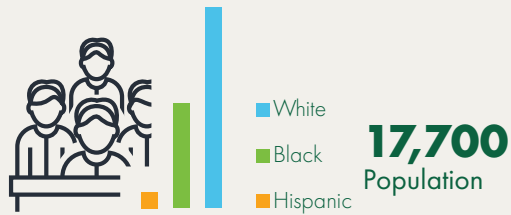
Demographics

The study area was broken down into three subareas: West, Central, and East. The catchment area for the demographic analysis below includes each subarea plus a one-mile buffer from the trail alignment.

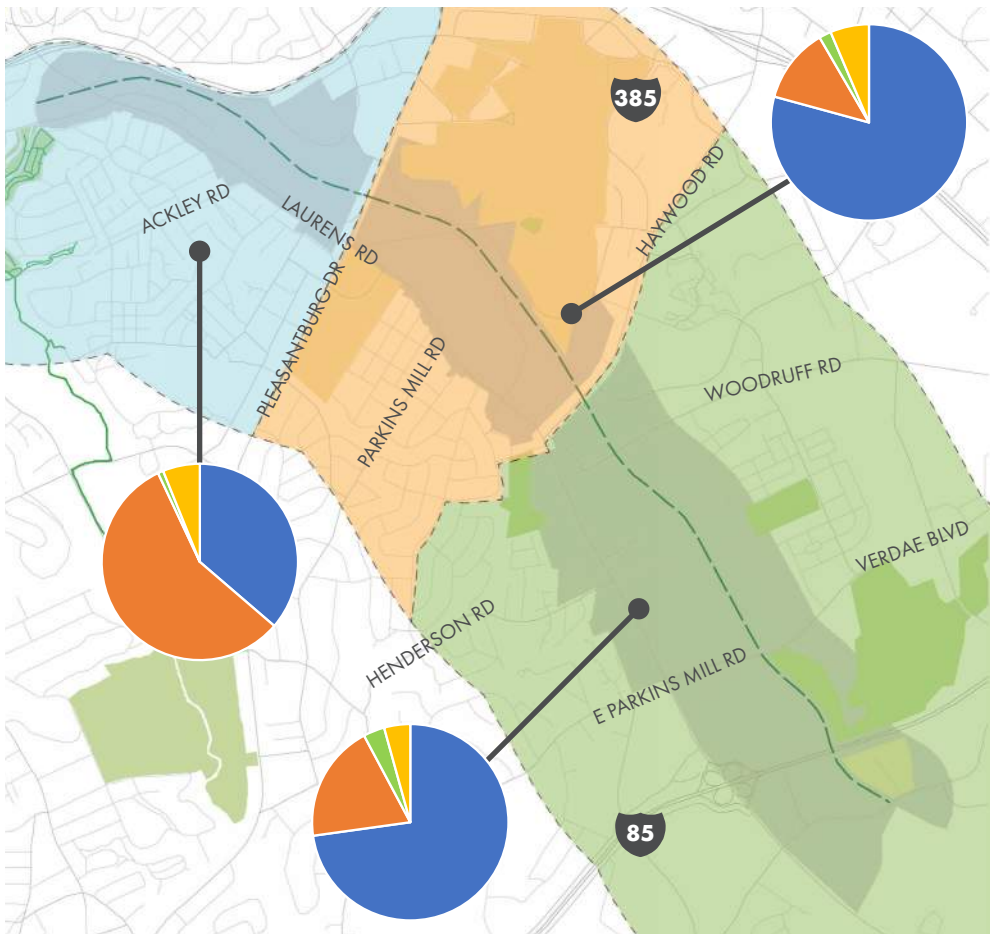
Overall

The study area has a total population of 17,700 across 7,000 households (2.1 people per household). There are 32,000 employees that work in the study area. When broken down by race, 57% of the population is white, 30% are black, and 5.5% are Hispanic/Latino. There are 48% single-family households. Of the households in the area, 19% are cost-burdened, meaning they spend more than 30% of their total household income on housing. Of those who rent in the area, 13% of the households do not own a personal vehicle, which exemplifies the need for safe and convenient ways to walk, bike, and use public transportation in the area. The population around the Swamp Rabbit Trail has grown 36% since 2010, with much of the growth related to new development particularly around the Verdae area.

Snapshot Statistics
(within 1 mile of the trail)



Data Source: U.S. Census 2010 & American Community Survey 2013-2017



Subareas with 1-mile Buffers

- West
- Central
- East

Base Map Layers

- SRT Extension
- Streets
- Landmarks
- Open Space

Racial Composition
(Pie Charts on map)

- White alone
- Black alone
- Asian alone
- Other races

West Subarea

The West Subarea saw a population growth rate of 16% from 2010 to 2019, bringing the population to 6,450 people. The majority of the population in this subarea is black. This subarea has the largest number of households that are cost-burdened by housing at 25% of the population, with 10% of the population paying 50% or more of their income towards housing. Of those renting in this subarea, 21% do not have a personal vehicle, so the need for public transportation is high.

Central Subarea

The Central Subarea has seen the smallest growth in population from 2010 to 2019 with an influx of 2,700 people (a rate of 4.5%). The majority of the population in this subarea is white. Only 16% of the households in this subarea are cost-burdened by housing and 3% of the renter households do not have a personal vehicle.

East Subarea

The East Subarea has seen the most significant growth in population since 2010 and is now the largest subarea. The subarea has seen a growth rate of 78%, or 8,500 people, with the growth due mainly to the new Verdae neighborhood development. The majority of the subarea population is white, 16% of the population is cost-burdened by housing, and only 3% of the renter households are living without a personal vehicle.

Population Change 2010-2019

Source: US Census 2010 & ESRI Forecast 2019

+16%/6,450

+4.5%/2,700

+78%/8,500

Housing Cost Burden

Source: American Community Survey 2013-2017

25% 16% 16%

Renter Households without a Vehicle

Source: American Community Survey 2013-2017

21% 3% 3%

Market Study

Market analysis done prior to our study provided great insight into the City of Greenville’s economic stability. Two previous documents were referenced for the market study: Greenville Office & Employment Growth Strategy (2019) by HR&A and the Balancing Prosperity and Housing Affordability in Greenville, SC (2016) by czb, LLC, which can be found online here: <https://sc-greenville2.civicplus.com/DocumentCenter/View/11456/Balancing-Prosperity-and-Housing-Affordability-in-Greenville>

Office and Employment

There are a few challenges that have hindered Greenville’s economic growth; industrial heavy community, limited focus on targeting small or medium sized office users, location between two significant economic markets - Charlotte and Atlanta, and priority of public spending being leveraged elsewhere.

Existing industry strengths in the Greenville region are manufacturing, administrative & support services, and Professional, Scientific, & Technical Service. The Manufacturing sector, the largest in the area, accounts for 26.8% of the total regional economic output and supplies 58,000 jobs. Industries where there is potential growth in the region include Rubber, Plastic, and Chemical Manufacturing; Telecommunications; Commercial Lending; Professional, Scientific, and Technical Services; and Technology and Innovation.

The workforce in the Greenville area has aged since 2010, with the 25-34 age cohort increasing 21%. Greenville has a large inventory of aging office buildings, which provides a challenge to enticing new and smaller firms who are interested in move-in ready spaces. Moving forward the city needs to encourage owners and developers to invest in the existing buildings and use the existing space more efficiently.

According to the HR&A study, in order for Greenville to attract new businesses to move into the region they need to focus on endemic growth over high-cost headquarters recruitment, change the narrative of Greenville to include more business-focused messaging, create city-based programs that reduce real estate costs and reward re-investment, expand low-cost opportunities for small firms and entrepreneurs, create an innovation strategy that leverages the City’s existing strengths and incentivize quality jobs and encourage growth of firms of all sizes.

Snapshot Statistics

Income



\$41,147
Median Income

Housing



Shortage of
Affordable Housing
Options

Development



Citizens want to see more of...
Residential + Mixed Use



\$739
Median Monthly Rent



Substantial recent development along
Laurens Road



Commercial + Restaurants

Housing (Affordable)

According to the study by czb, LLC, the City of Greenville has a median income of \$41,147 and a median monthly rent of \$739. If a household is paying 30% of their gross income on rent, they would be considered cost burdened. At the average monthly rent of \$739, a household needs an income of \$29,560 in order to not be cost burdened in Greenville. The City of Greenville is experiencing gentrification and housing pressures near downtown, displacing a number of low-income households. The City has a shortage of housing options that cost less than \$500 a month, and affordable housing options that are available are not distributed well throughout the city. The lowest-cost rentals in Greenville are heavily concentrated in weaker housing markets. The czb study recommendation states that the City must make housing a priority in Greenville in order to see a healthy and full housing economy.

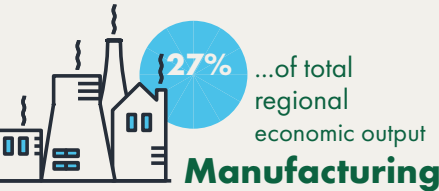
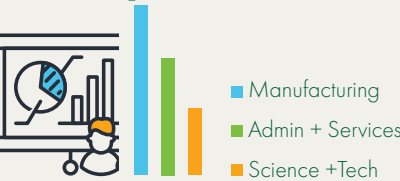
Recent Development

There has been substantial recent development along the Laurens Road corridor. The existing key commercial developments include: Clemson University International Center for Automotive Research (CU-ICAR), a 250-acre campus focused on automotive and motorsports research; Verdae, a large-scale neighborhood with a variety of housing typologies and a mixed-use center; and a number of restaurants including, Farmhouse Pizza, Kitchen Sync, and Willy Taco.

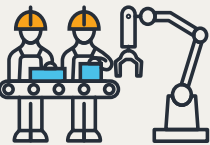
The study area is expecting to see more development in the upcoming years with a strong pipeline of planning projects including new restaurants, mixed-use developments, residential, and retail.

Snapshot Statistics

Industry



Employment

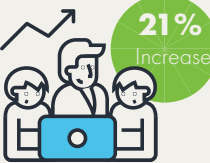
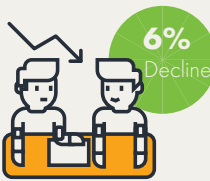


58,000
Manufacturing Jobs



Large inventory of
Aging Office Buildings

Workforce



Planning Analysis

The study area and surrounding context analysis helps to explain the existing physical attributes that may impact the master plan.

Natural & Community Amenities

There are many educational facilities around the trail extension, including: the University Center, CU-ICAR, Greenville Technical College, and a few primary and secondary schools. There are some substantial parks in and around the study area, most notably is Cleveland Park at the northwest starting point for the trail extension. Other key amenities include: a medical campus, the Greenville Downtown Airport, and Greenville Convention Center.

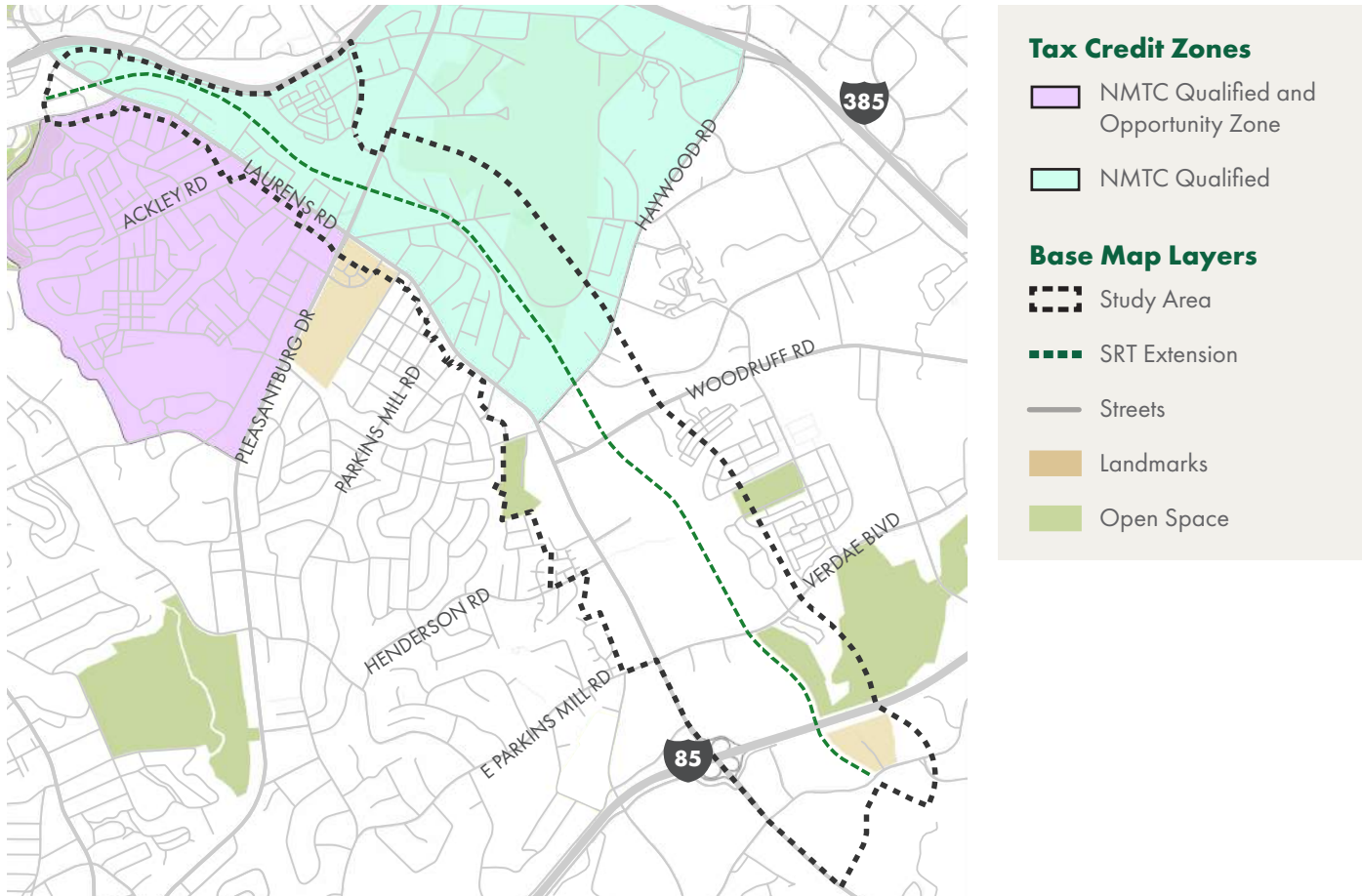
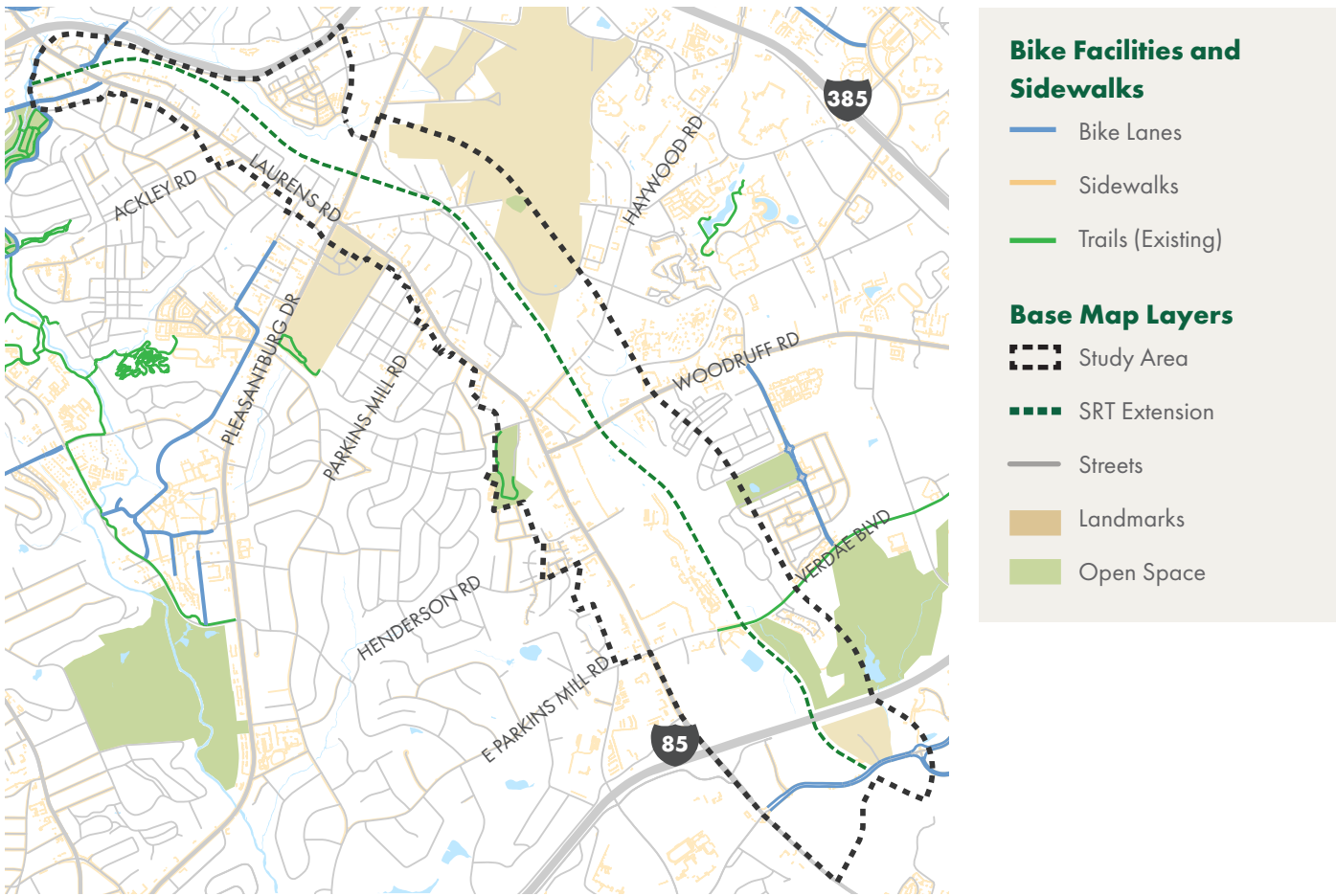
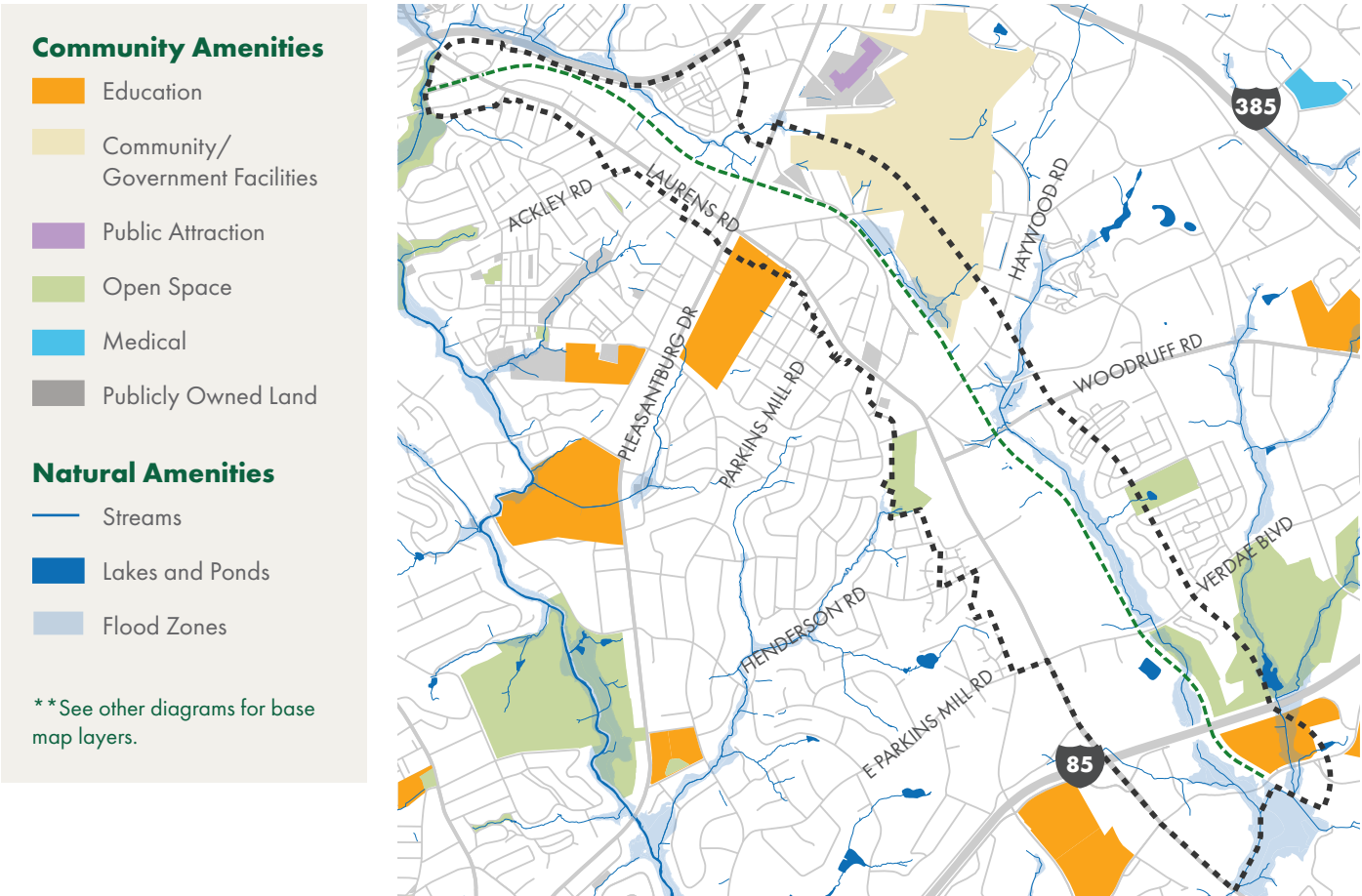
The key takeaway from the natural amenities analysis is the stream network and floodplain that runs parallel to parts of the trail extension. Not shown in the diagram, but noted during analysis, is the extreme topography throughout the study area.

Bike Facilities & Sidewalks

The study area itself has three bike lanes (Hillside Drive, Washington Street, and Millennium Boulevard/Fairforest Way). Only Hillside Drive and Millennium Boulevard directly connect to the trail extension. Immediately adjacent to the study area, on Parkins Mill Rd, there is also a bike lane that connects to its intersection with Laurens Rd. Additionally, there is a multi-use path along Verdae Boulevard, from Bonaventure Circle to Woodruff Road; as well as a lack of sidewalks in the surrounding neighborhoods and along the busier corridors, such as Laurens Road and Pleasantburg Drive.

Tax Credit Zones

There are two census tracts in the study area that qualify for the New Markets Tax Credits (NMTC) Program (Tract 43 and 44) and one Opportunity Zone (Tract 43). These designations allow investors to leverage federal tax credits for qualifying developments.



Current Valuation

The map below shows the current tax market value of the parcels by subarea: West - \$73 million, Central - \$115 million, and East - \$409 million. The total current valuation for the study area is almost \$600 million.

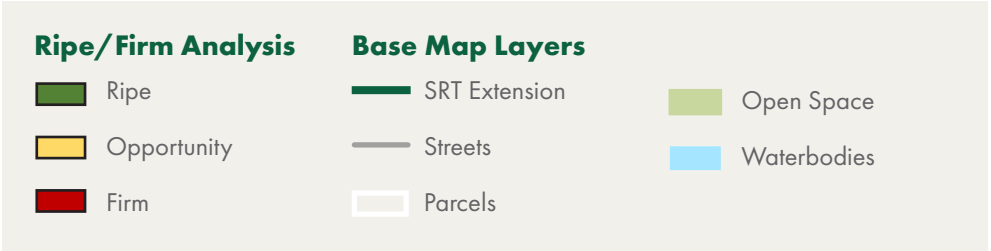
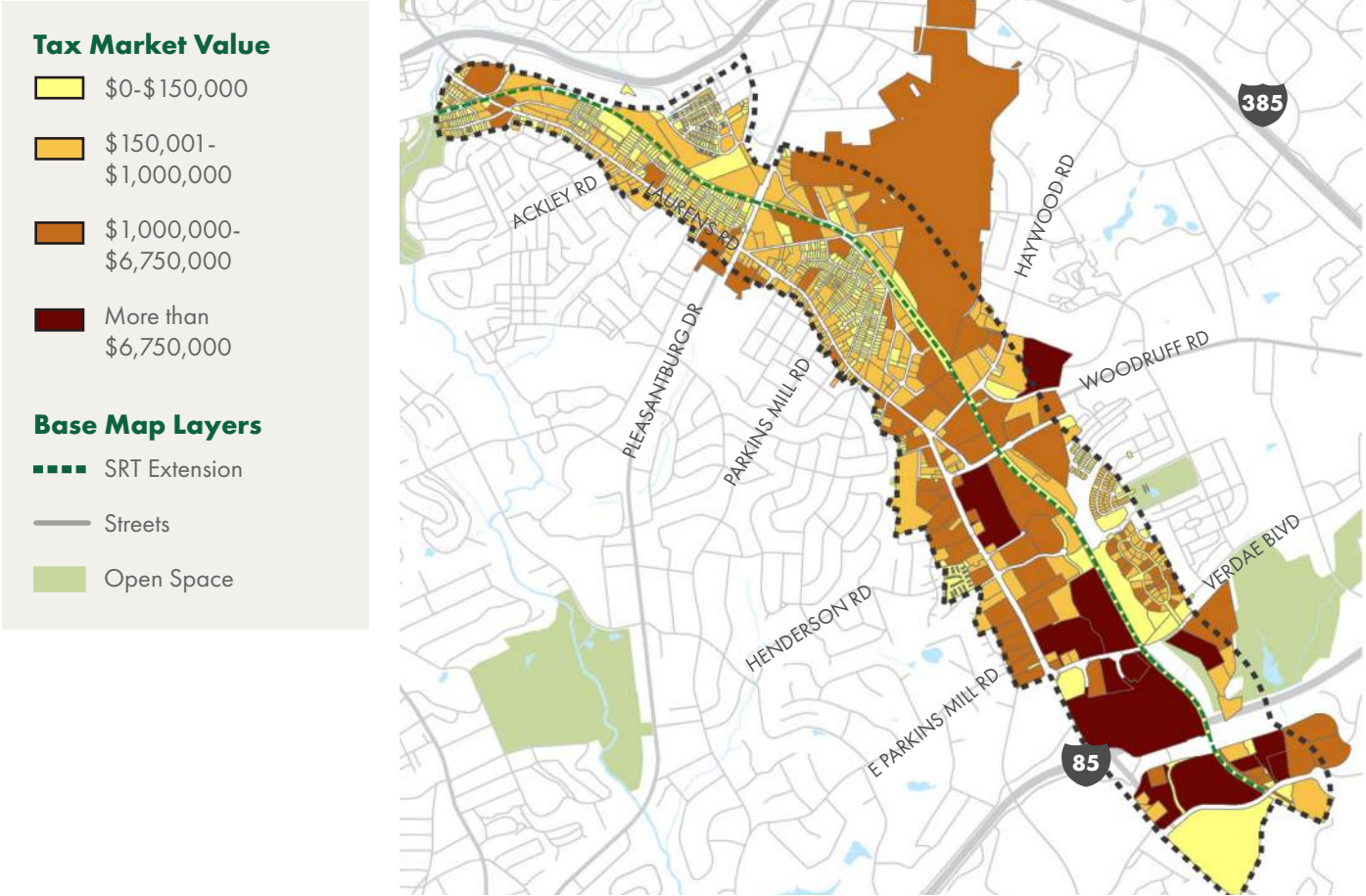
Ripe/Firm

Each individual parcel in the study area was analyzed to determine if they were ripe for redevelopment (ripe), could be a potential opportunity for redevelopment with the building either not being the highest use or highest quality building (opportunity), or in its highest and best use (firm).

The parcels that were deemed ripe for redevelopment were vacant lots, parking lots (without buildings), vacant or dilapidated buildings, or sites owned by the county or city not currently at their highest/best use or condition.

Those parcels that were considered as opportunity were either dilapidated, yet occupied buildings, tenants not conducive to the pedestrian oriented vision of the study area (e.g. car-oriented tenants, fast food, industrial uses), and non-urban site plans (e.g. strips malls with extensive parking lots, parking lots in front of buildings).

Firm parcels are single-family homes, high quality buildings with good tenants, and specific to this project, established car dealerships along ‘motor mile’. Some exceptions have been made to the categorization based on further analysis.





SUMMARY OF
PUBLIC INPUT

03

03 Summary of Public Engagement

This chapter serves to summarize the public engagement conducted during the planning process of the master plan.

Over the course of the project, multiple meetings and public presentations were given and all feedback was considered during the formation of this document. The most well-attended public meeting was the public open house; however, the online survey generated the most feedback. The most notable event was the week-long charrette where the design team immersed themselves in the study area to create a consistent feedback loop during the planning process.

In this Chapter:

- 1. Steering Committee
- 2. Stakeholder Meetings
- 3. Public Open House
- 4. Online Survey
- 5. The Charrette and Preliminary Recommendations

Steering Committee

The steering committee consisted of 15 individuals, including city and county employees and key members of the community. They met periodically throughout the duration of the project, focusing on topics such as desired outcomes and expectations from the project, the impact that the project will have on the community and the surrounding environment, and how to effectively make connections to the trail. The steering committee was included in every step of the planning process and played a vital role in the outcome of the master plan.

Stakeholder Meetings

The stakeholder process for the master plan consisted of various one-on-one and small group meetings with over 20 key stakeholders. Conversations with those who plan to actively invest in the anticipated growth around the study area focused on ways to build a cohesive vision for the community.

The majority of the stakeholder meetings identified common themes: safety of pedestrians walking and biking while traveling around the study area; affordability of housing surrounding the trail; providing safe crossings and connections to and from the trail and new development. There was consistent interest in developing public and private partnerships to implement the overall vision established during the master planning process.

Public Open House

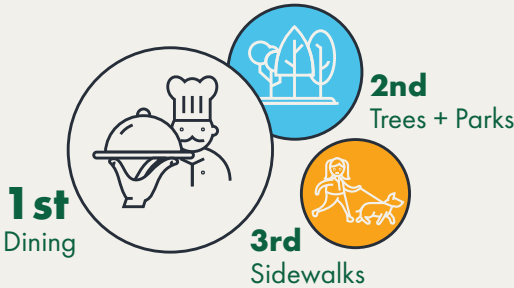
The public open house on November 4, 2019 at the University Center was well attended. The meeting began with an overview of the study area, a snapshot in time of the plan's progress, the timeline for trail construction, and an understanding of the current demographics. There were seven stations set up around the room where attendees could provide thoughts and opinions on key destinations, potential trail connections, issue areas, where participants would like to see the city prioritize spending, and their vision for mobility around the study area.

The majority of respondents at the public open house would like to see more trees and dining options and investments in trail spurs and neighborhood connections. Some key destinations that were identified to connect to were Cleveland Park, Gower Park, and CU-ICAR. The community members revealed that once the trail is complete they envision being able to:

- Bike, walk, or use public transit for recreation and commuting
- Minimize driving
- Connect with their community and neighbors
- Be active and stay healthy

Snapshot of Public Opinion

What the Study Area Needs More of...



What the Study Area Needs Less of...



Public Investment Priorities



Photos from the Public Open House.

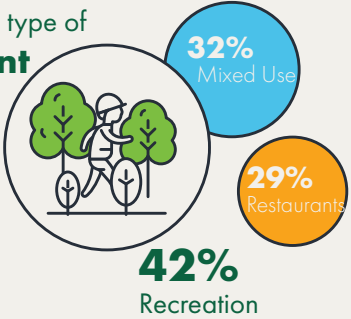
Online Survey

An online survey asked a series of questions about strengths, weaknesses, and current ways people move around the study area. They were also asked questions about improvements and changes they would like to see in the future.

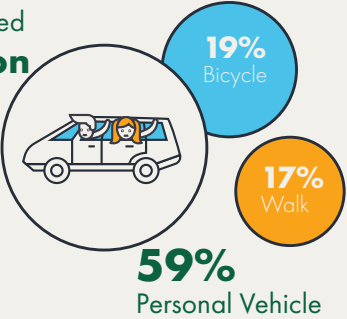
Survey respondents varied in age, occupation, and relationship to the area contributing to an overwhelming and diverse response from nearly 900 individuals.

Online Survey Snapshot Results

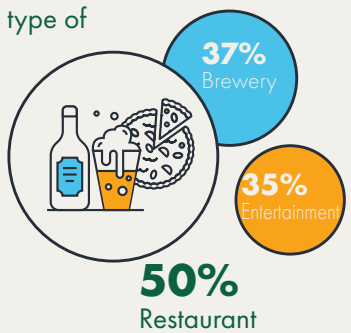
Most Appropriate type of Development



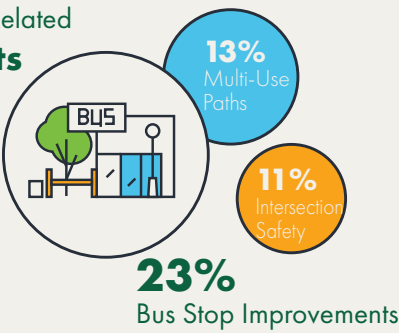
Most Commonly Used Transportation



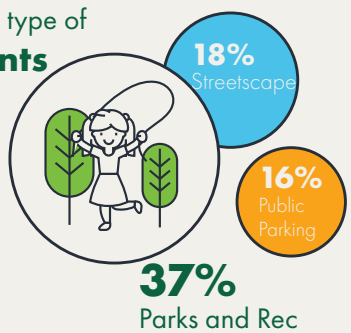
Most Appropriate type of Business



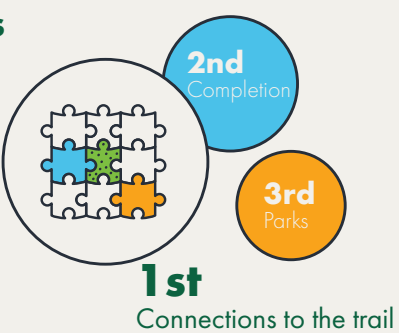
Preferred Mobility-Related Improvements



Most Appropriate type of Improvements



Key Priorities for Respondents



Photos taken during the charrette process.

The Charrette & Preliminary Recommendations

A week-long charrette was held December 2-5th at TPM, in the middle of the study area, with the entire planning team: urban planners and designers, architects, landscape architects, transportation planners and engineers, and pedestrian/cycling specialists. This experience allowed the team to immerse themselves in the local environment and explore the study area for an extended period of time.

One-on-One Discussions

During the charrette, the door was open to anyone who wanted to stop by and chat with the design team. Most participants had general comments based on specific interests and engaged with the planning team to see the master planning process in action. Some of the specific comments included: concerns about safety on the trail and access to the trail, concerns about capacity of the trail and its ability to expand in areas to accommodate greater activity, and partnering with public open spaces and private businesses expressing the desire to engage with the trail.

The Hanger

On the third day of the charrette, the general public was invited to drop in at The Hanger at the Greenville Downtown Airport to view the work in progress. The comments gathered were supportive and everyone seemed excited for the vision and future growth opportunities in the study area.

Public Presentation of Preliminary Recommendations

After the charrette, the design team compiled and revised the work conducted during the charrette in accordance with public and steering committee feedback and presented preliminary recommendations to the public on December 17th.

Key Comments from the public include:

- Laurens Road transformation
- Public open space opportunities along the trail
- Connectivity and access through neighborhoods
- Tree preservation with development
- Connections to the northern neighborhoods not just those required to cross Laurens Road

All feedback during the charrette process and preliminary recommendations presentation were taken into account moving forward with the final master plan report and recommendations.



MOBILITY
& ACCESS
STRATEGIES

04

04 Mobility & Access Strategies

Mobility and access is the tie that binds all of the strategies together. From small sidewalk connections to a more substantive road improvement, each create their own value within the public realm that can be leveraged for not just economic value but also for raising quality of life for the current residents.

The underlying goal is to create the safest and most enjoyable walking and biking environment by providing not just recreation choices but also true mobility options for moving around without a car.

In this Chapter:

- 1. Overall Mobility and Access Strategies
- 2. Trail Access Strategy Plans
- 3. Shared Parking Strategies
- 4. Mobility Strategies - Laurens Road
- 5. Mobility Strategies - Secondary Roads
- 6. Smart Mobility

Overall Mobility and Access Strategies

High Quality Intersections

- In the short-term, first, prioritize improvements to existing intersections that are vital to trail access in which trail users must cross dangerous corridors, such as Laurens Road or Haywood Road.
- In the short-term, second, prioritize implementation of proposed traffic signals at existing intersections that are vital to trail access.
- In the short-term, third, prioritize improvements to existing stop-controlled intersections that are vital to trail access.
- In the long-term, prioritize implementation of proposed traffic signals at proposed intersections with new streets or re-aligned streets that are vital to trail access. Some re-alignments are time sensitive due to pending development and should be considered for higher priority.
- Develop a case-by-case strategy and implement mid-block crossings in areas without 3- or 4-way intersections where access to the trail is vital. These may require other streetscape improvements such as limiting traffic to right-in, right-out at nearby side streets to increase safety.

Connectivity

- Create a more complete, safer street network.
- In the short-term, prioritize improvements to existing streets that are vital for pedestrian or bicyclist access to the trail.
- In the long-term, prioritize implementation of proposed new streets, re-aligned streets, and proposed new pathways that are vital to trail access.
- Continue or tie into existing connections, such as bike lanes and greenways.
- Transform Laurens Road into a walkable, urban corridor with a high quality streetscape, wide sidewalks, and bike-supportive infrastructure.
- Improve transit service by improving bus stop amenities, enhancing connections between bus stops and the Swamp Rabbit Trail, increasing the frequency of bus service, and supporting the addition of new routes to serve the study area.

Trail Access

- In the short-term, prioritize public trailheads and access at the connections provided by the County with the trail extension construction.
- In the long-term, prioritize proposed public trailheads through partnerships with institutions, including the Downtown Airport and CU-ICAR, and private landowners. Consider trailheads in every future plan as the area redevelops.

Mobility & Access Strategies

Laurens Road

High Quality Intersections (existing and vital to trail access)

High Quality Intersections (existing signal dependent on development, proposed traffic signal, proposed new street, or re-aligned street and vital to trail access)

High Quality Intersections (mid-block crossings that are vital to trail access)

High Quality Intersections (non-essential for trail connectivity but important as Laurens Road enhances)

High Quality Intersections (existing with stop signs and vital to trail access)

Existing Road Connections (vital for ped/bike access to trail and improvements may be required)

New Ped/Bike Connections (proposed streets, re-aligned streets, and/or pathways)

SRT Extension

Proposed Laurel Creek Greenway

SRT Extension Public Trailheads

SRT Extension Private Trailheads

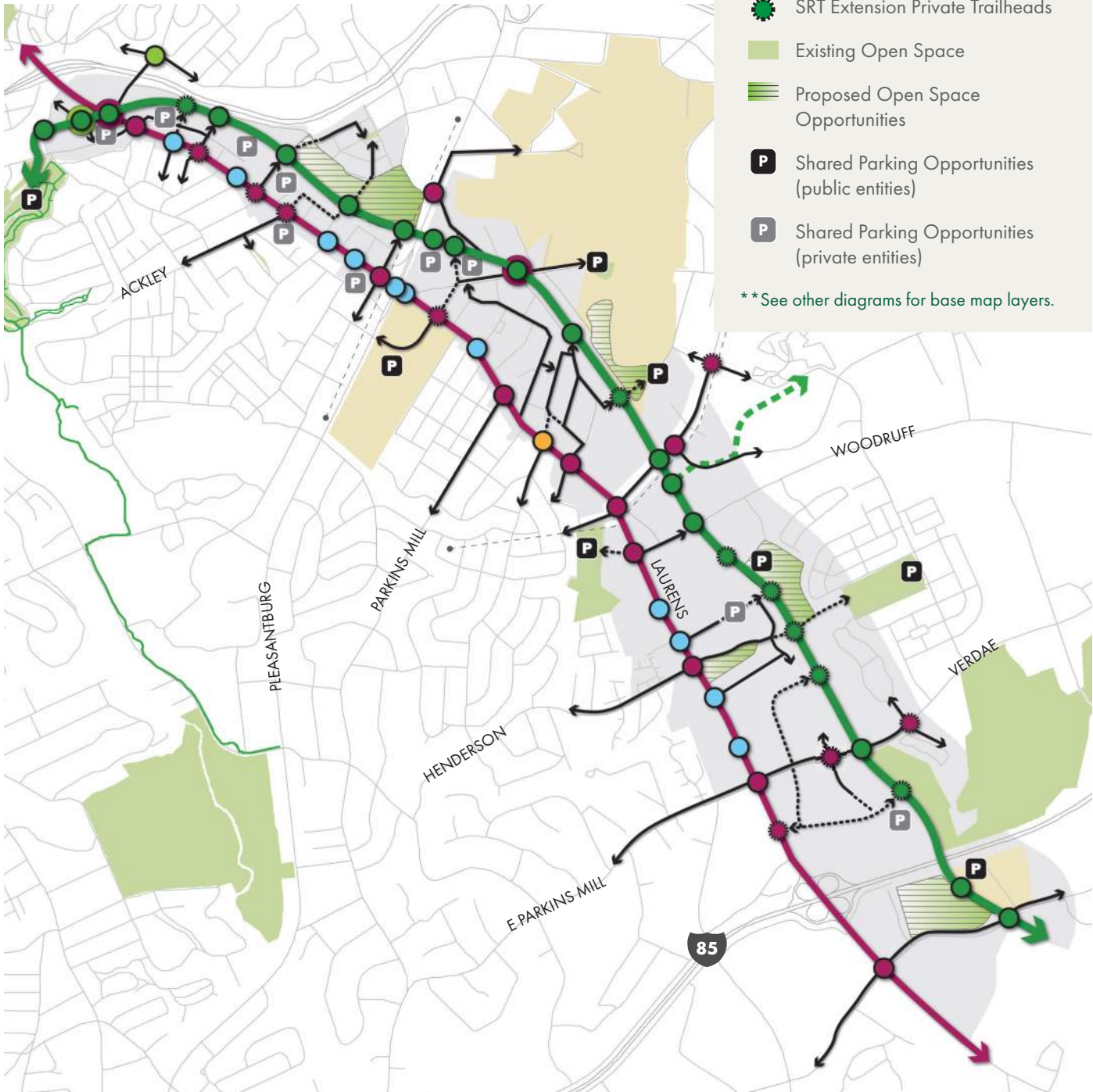
Existing Open Space

Proposed Open Space Opportunities

Shared Parking Opportunities (public entities)

Shared Parking Opportunities (private entities)

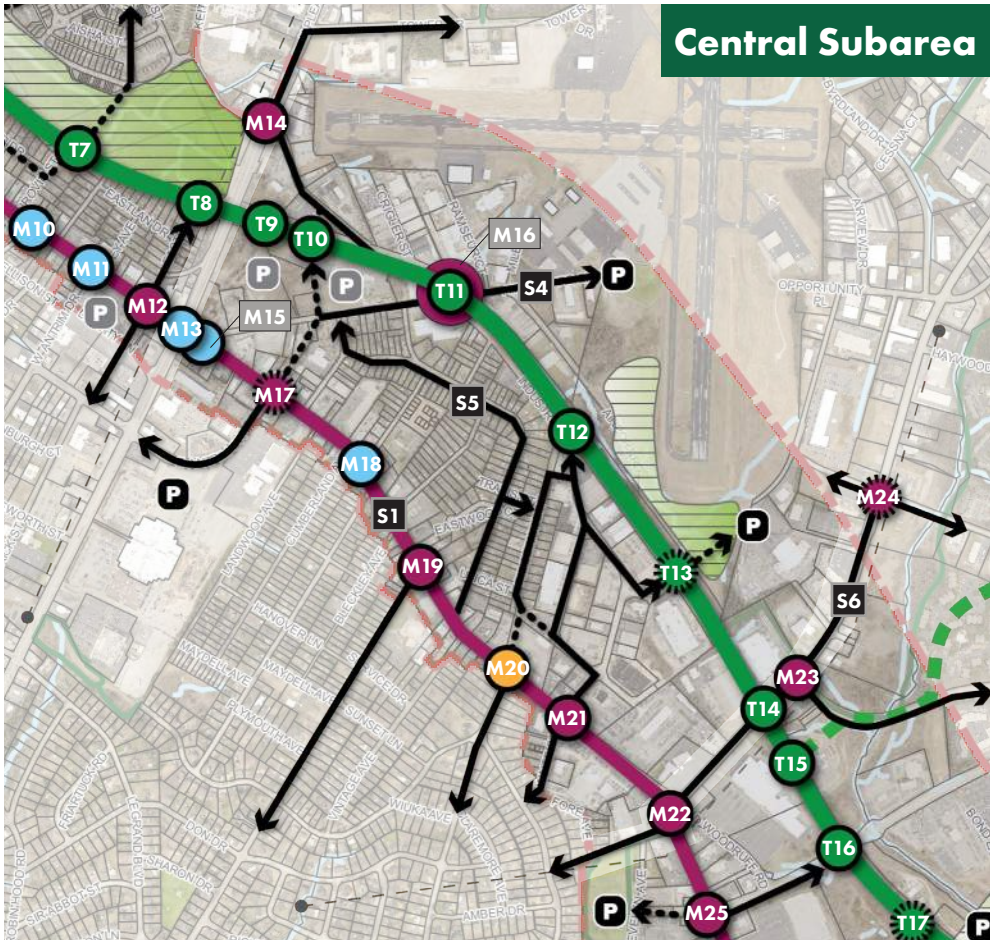
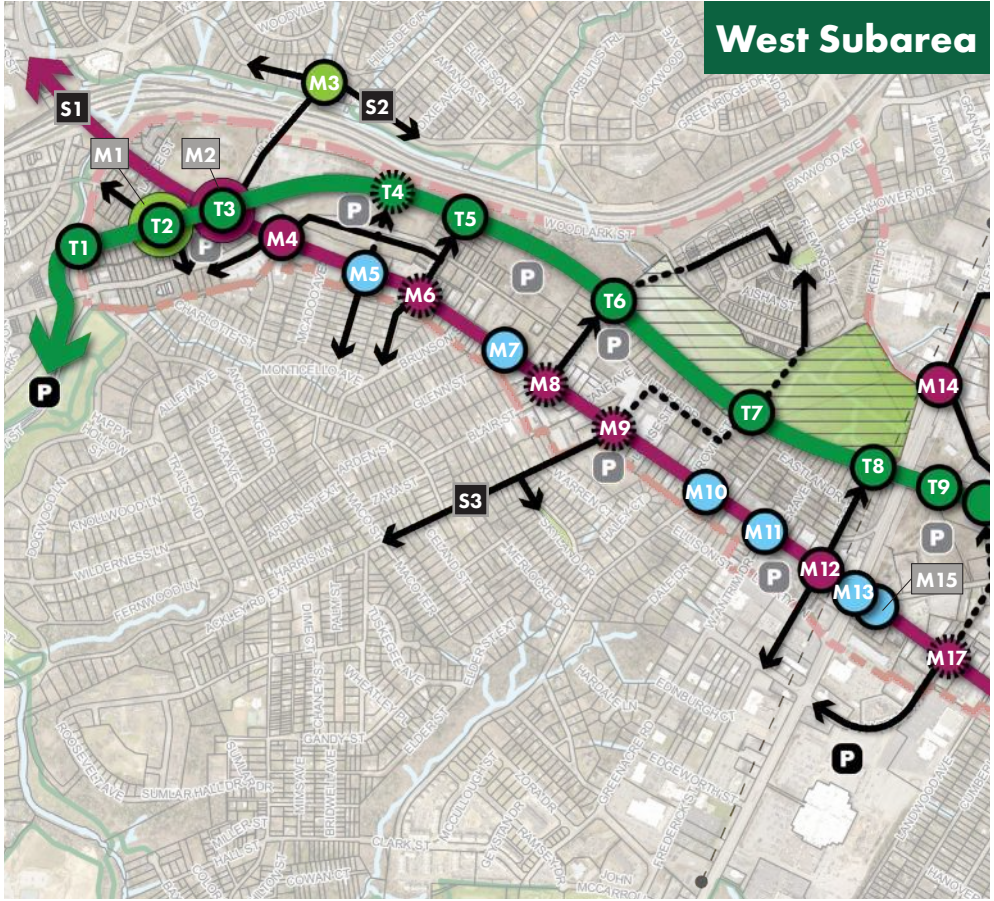
**See other diagrams for base map layers.



High Quality Intersections

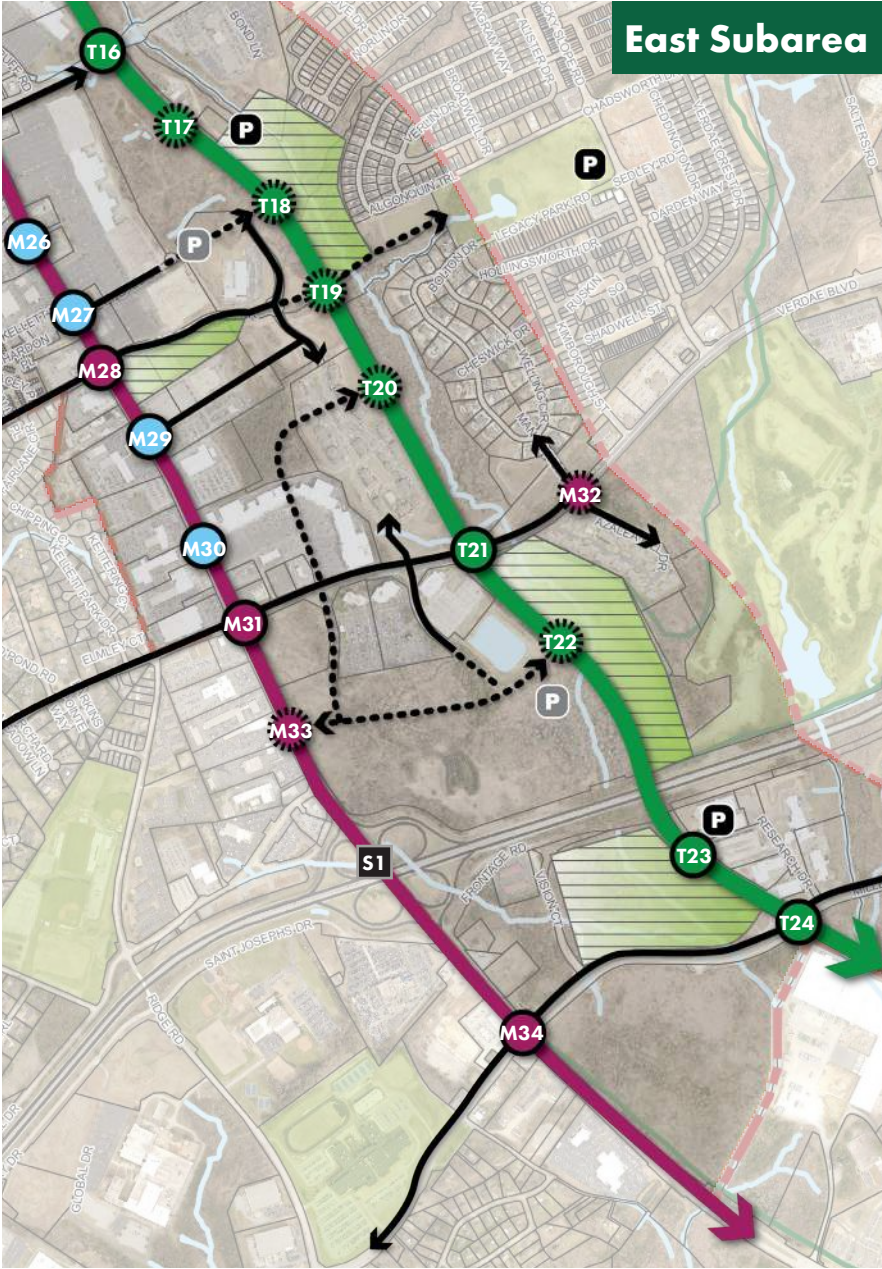
** If only one street is listed, the intersecting street is Laurens Road
 ** See legend on previous spread for base layer specifics

- M1 Traxler St & Ebaugh Ave
- M2 Hillside Dr
- M3 Hillside Dr & Lowndes Hill Rd
- M4 Washington St
- M5 Underwood Ave
- M6 Darwin Ave (re-aligned)
- M7 Glenn St
- M8 Lenox Ave
- M9 Ackley Rd/Lane Ave (re-aligned)
- M10 Webster Rd
- M11 W. Antrim Dr
- M12 Eastlan Dr/ Shoppers Dr
- M13 Pleasantburg exit ramps & bridge
- M14 Pleasantburg Dr & Keith Dr
- M15 Airport Rd
- M16 Airport Rd & Keith Dr
- M17 E. Antrim Dr (with Airport Rd realignment)
- M18 Ridgeway Ave
- M19 Parkins Mill Rd
- M20 Wembley Rd
- M21 Waite St/ Industrial Dr
- M22 Haywood Rd
- M23 Haywood Rd & Halton Rd



West Subarea

Central Subarea



- M24 Haywood Rd & Transit Dr
- M25 Woodruff Rd
- M26 Existing signal (remove or improve to high-quality)
- M27 Marketplace Dr
- M28 Henderson Rd/Verdae Commons
- M29 New Street #9 (see Verdae Commons focus area)
- M30 New Street #1 (see Verdae Blvd focus area)
- M31 E. Parkins Mill Rd/Verdae Blvd
- M32 Verdae Blvd & Welling Cir/ Azalea Hill Dr
- M33 New Street #2 (see Verdae Blvd focus area)
- M34 Fairforest Way/Millennium Blvd

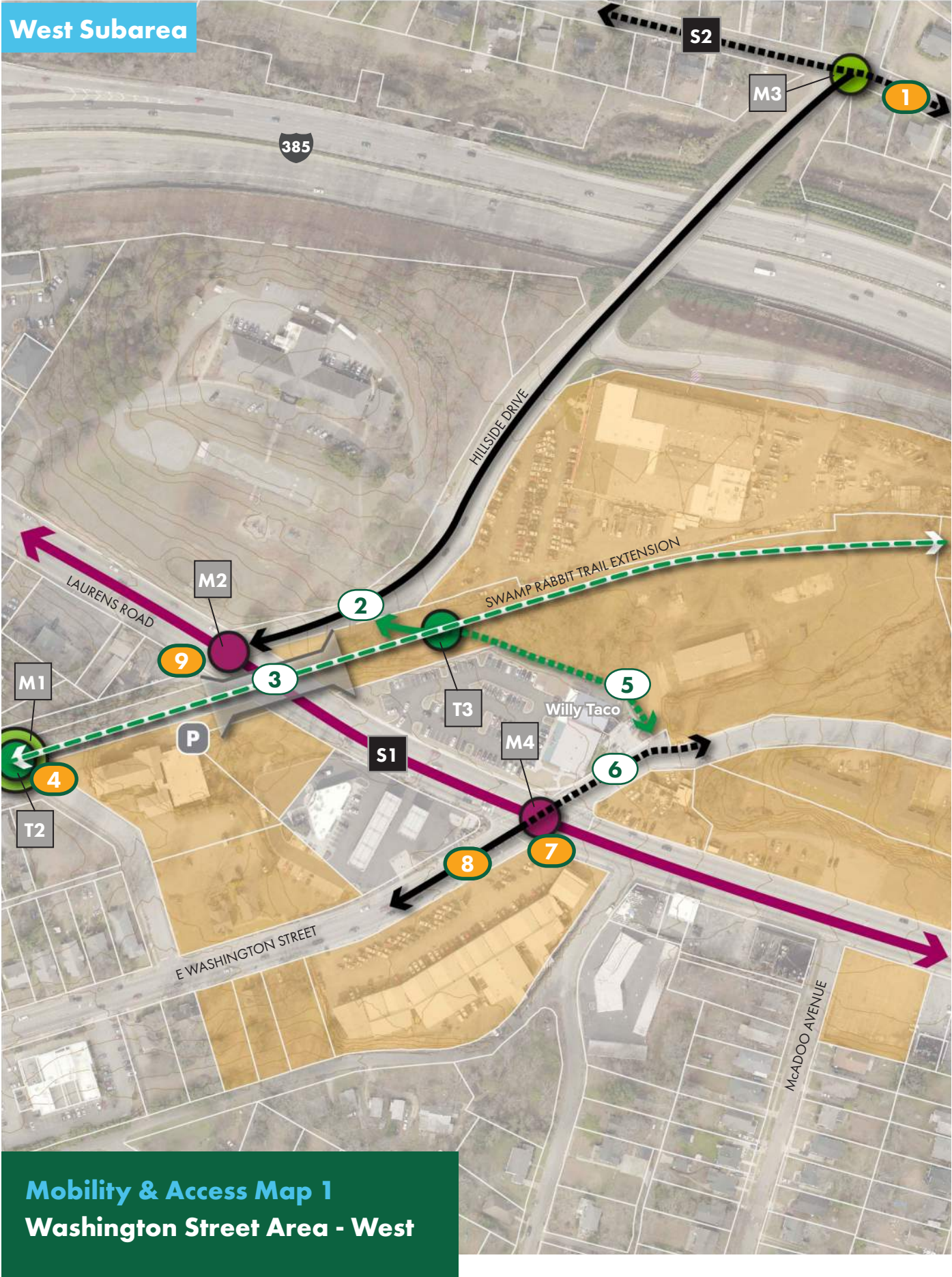
Priority Streetscape Improvements

- S1 Laurens Rd
- S2 Lowndes Hill Rd
- S3 Ackley Rd
- S4 Airport Rd
- S5 Sycamore Dr
- S6 Haywood Rd

Swamp Rabbit Trail Extension Trailheads & Access Points

- T1 Richland Way & Traxler St
- T2 Traxler St & Ebaugh Ave
- T3 Laurens Rd
- T4 Washington Heights
- T5 Darwin Ave
- T6 Lenox Ave
- T7 Dunrovin St (from Ackley Rd)
- T8 Eastlan Dr/ Shoppers Dr
- T9 County-owned Land (see Pleasantburg Dr focus area)
- T10 New Street #3 (see Pleasantburg Dr focus area)
- T11 Airport Rd/Keith Dr
- T12 Ridgeway Dr/Industrial Dr
- T13 ProSource Plumbing Supply (proposed adaptive re-use)
- T14 Haywood Rd
- T15 Future Laurel Creek Greenway connection

- T16 Woodruff Rd
- T17 Arlington Apartments
- T18 Marketplace Dr extension
- T19 Verdae Commons
- T20 Velo Verdae Apartments
- T21 Verdae Blvd
- T22 New Street #2 (see Verdae Blvd focus area)
- T23 CU-ICAR
- T24 Millennium Blvd



Mobility & Access Map 1 - Washington Street Area, West

- 1 Construct sidewalks on Lowndes Hill Road and Lowndes Avenue connecting to Greenville Middle Academy and install a high-quality intersection at Hillside Drive and Lowndes Hill Road (**Priority Streetscape Improvements S2 and High Quality Intersection M3**)
- 2 Trail construction to include connection to existing bike lanes on Hillside Drive
- 3 Trail construction to include bridge across Laurens Road
- 4 Trail construction to include at-grade intersection at Traxler Street & Ebaugh Avenue and should include an additional trailhead (**High Quality Intersection M1 and Trailhead T2**)
- 5 Consider connecting the Laurens Road trailhead to Willy Taco and bike lanes on Washington Street
- 6 Continue Washington Street bike lanes on opposite side of Laurens Road
- 7 Improve existing intersection at Washington Street and Laurens Road to a high-quality intersection in the near-term. Install high visibility crosswalks and improved signal timing for pedestrians —continue bike lane through intersection using green dashed markings to highlight conflict zones and increase bicyclists conspicuity, per AASHTO guidance (*AASHTO Guide for the Development of Bicycle Facilities*, 2012) (**High Quality Intersection M4**)
- 8 Per the AASHTO Bike Guide, there may not be a bike lane to the right of a dedicated right-turn lane (*AASHTO Guide for the Development of Bicycle Facilities*, 2012)— remove right turn lane or create mixing zone in advance of the right-turn lane
- 9 Improve existing intersection at Hillside Drive and Laurens Road to a high-quality intersection in the near-term



For more information on the AASHTO Bike Guide, please follow this link:
https://nacto.org/wp-content/uploads/2015/04/AASHTO_Bicycle-Facilities-Guide_2012-toc.pdf

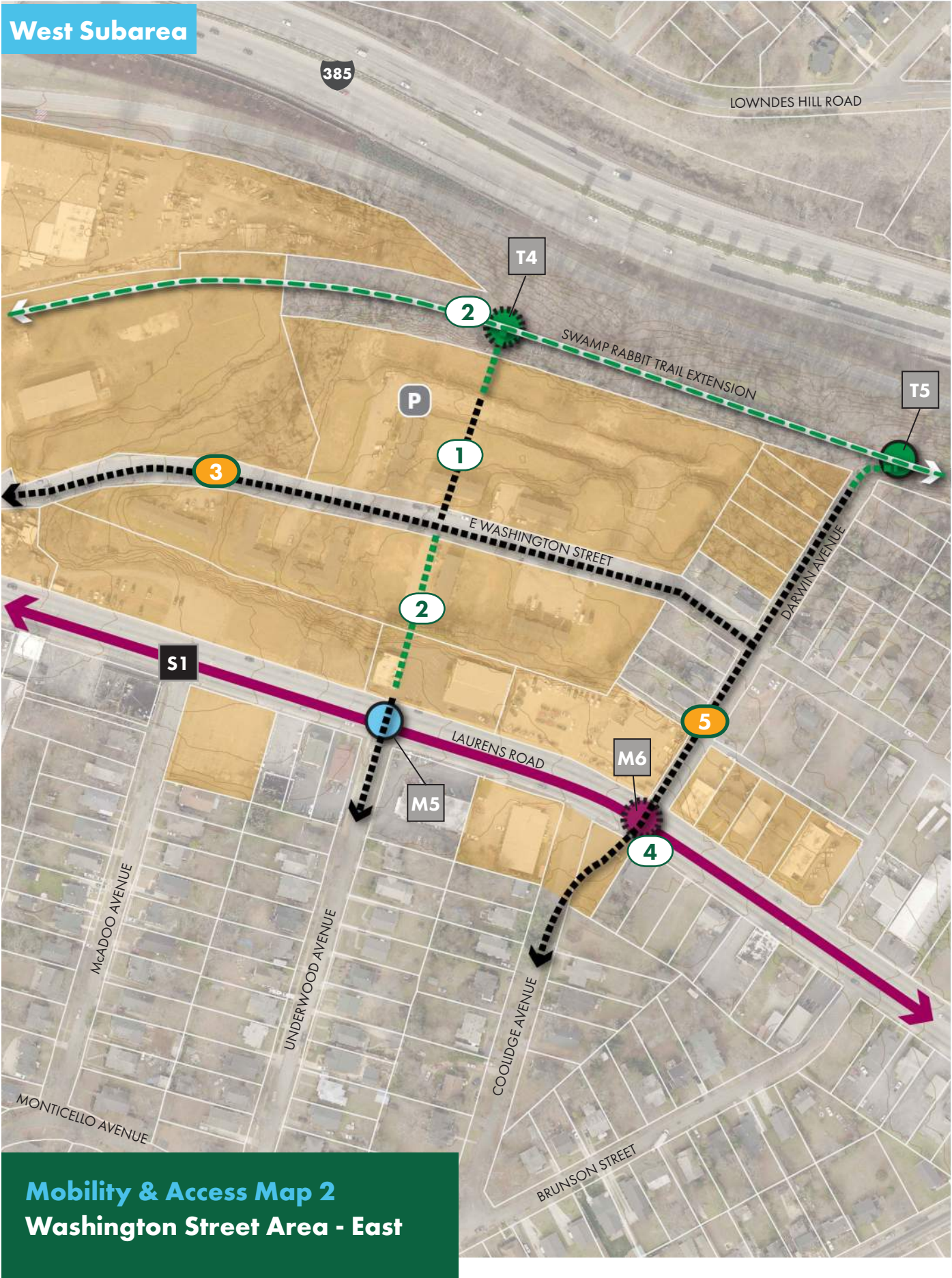
HIGH PRIORITY ITEM

Strategies Legend

- Laurens Road
- Existing Road Connections vital for ped/bike access to trail
- New Ped/Bike Connections In Street Right of Way
- SRT Extension

- SRT Access Connections
- Bridge
- Redevelopment Opportunity (see Chapter 5: Development and Redevelopment Strategies)
- SRT Extension Public Trailheads

- SRT Extension Private Trailheads
- High Quality Intersections (existing and vital to trail access)
- High Quality Intersections (existing with stop signs and vital to trail access)
- Shared Parking Opportunities (private entities)



Mobility & Access Map 2 - Washington Street Area, East

- 1

Any new street as part of future redevelopment should include dedicated walking and biking facilities
- 2

Create a continuous pedestrian axis through the redevelopment site from Underwood Avenue to the trail—an accessible route may be infeasible due to topographic challenges
- 5

Manage vehicle speeds to 25 mph and volumes of 2,000 AADT maximum to maintain a low-stress shared street for bicyclists—prioritize sidewalk construction here when access point to trail is constructed



- 3

Re-stripe Washington Street with bike lanes
- 4

Potential future location of full signal at Darwin Avenue with the re-alignment of Coolidge Avenue—this will be the primary accessible route from the trail into Nicholtown (**High Quality Intersection M6**)



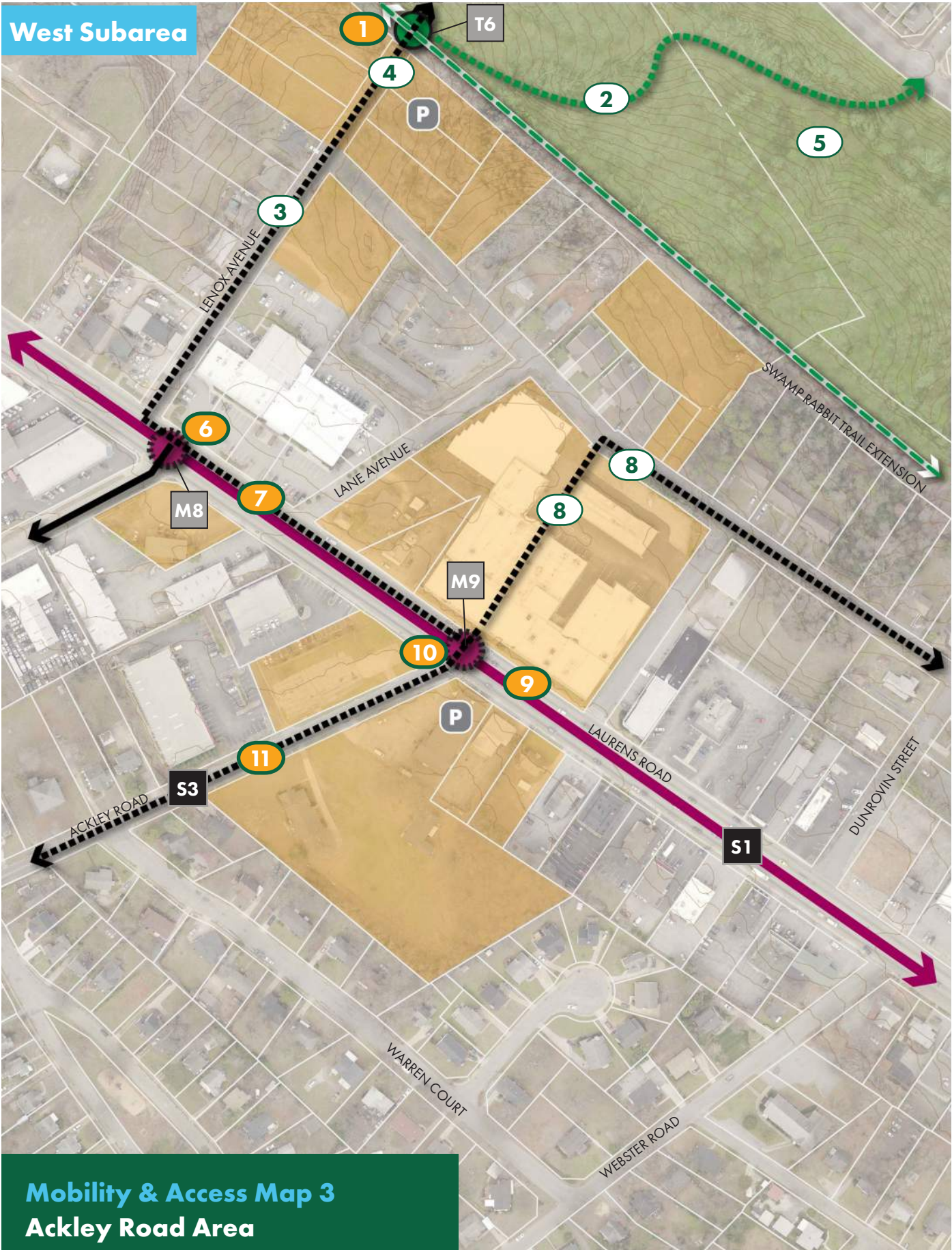
HIGH PRIORITY ITEM

Strategies Legend

- Laurens Road
- New Ped/Bike Connections In Street Right of Way
- SRT Extension
- SRT Access Connections
- Redevelopment Opportunity (see Chapter 5: Development and Redevelopment Strategies)

- SRT Extension Public Trailheads
- SRT Extension Private Trailheads
- High Quality Intersections (existing with signal and vital to trail access - signal dependent on development, proposed traffic signal, proposed new street, or re-aligned street)

- High Quality Intersections (non-essential for trail connectivity but important as Laurens Road enhances)
- Shared Parking Opportunities (private entities)



Mobility & Access Map 3
Ackley Road Area

Mobility & Access Map 3 - Ackley Road Area

- 1** In the short term, construct switchback ramps from end of Lenox Avenue to access the trail (**Trailhead T6**)
- 2** Connection to Arcadia Hills will require bridge structure and/or boardwalk to overcome floodplain and topography challenges, but is key to connecting these neighbors to the trail—near term access could be accomplished through natural surface footpaths but would not be ADA-accessible
- 3** Lenox Avenue (~20 ft existing roadway) calm enough for shared street. As redevelopment occurs, install sidewalks and, if necessary, use speed and volume management to maintain maximum vehicular speeds of 25 mph and volumes of 2,000 AADT
- 4** If future development at Lenox Avenue comes before the strategies 1-3 are accomplished, it may be most beneficial to follow this strategy instead: steadily depress Lenox Avenue and continue the road to Arcadia Hills; build a bridge over Lenox Avenue for the trail; and create a switch-back connection to the elevated trail from Lenox Avenue
- 5** Topography presents challenges to developing this land, therefore it presents an opportunity for mountain biking trails. With the future mountain bike features at Holland Park and Gower Park, this could help make the trail a regional destination for mountain bicyclists
- 6** Install high-quality intersection at Blair Street and Laurens Road in the near-term. (**High Quality Intersection M8**)
- 7** In the short-term, connect trail to nearest signalized intersection to Ackley Road by prioritizing streetscape improvements along Laurens Road (**Priority Streetscape Improvements S1**)
- 8** As the area develops, create high quality intersections—in the long-term, consider improving Luther Drive to provide additional trail access options at future trailheads further to the east
- 9** Narrow sidewalk presents a challenge to connecting pedestrians and bicyclists from Nicholtown via Ackley Road to the trail. The existing sidewalk is approximately 4 ft wide. In the short-term, remove the retaining wall and extend the sidewalk as much as possible. In the long-term, redevelop the site and implement the proposed Laurens Road improvements (**Priority Streetscape Improvements S1**)
- 10** Improve existing intersection to a high-quality intersection at Ackley Road in the near-term, consider re-aligning Lane Avenue as redevelopment occurs (**High Quality Intersection M9**)
- 11** Ackley is the main connection point into the Nicholtown neighborhood. Proposed streetscape improvements to Ackley Road would include a bike boulevard and a sidewalk on the east side of the street. Traffic calming should be used to maintain low vehicles speeds and volumes. (**Priority Streetscape Improvements S3**)



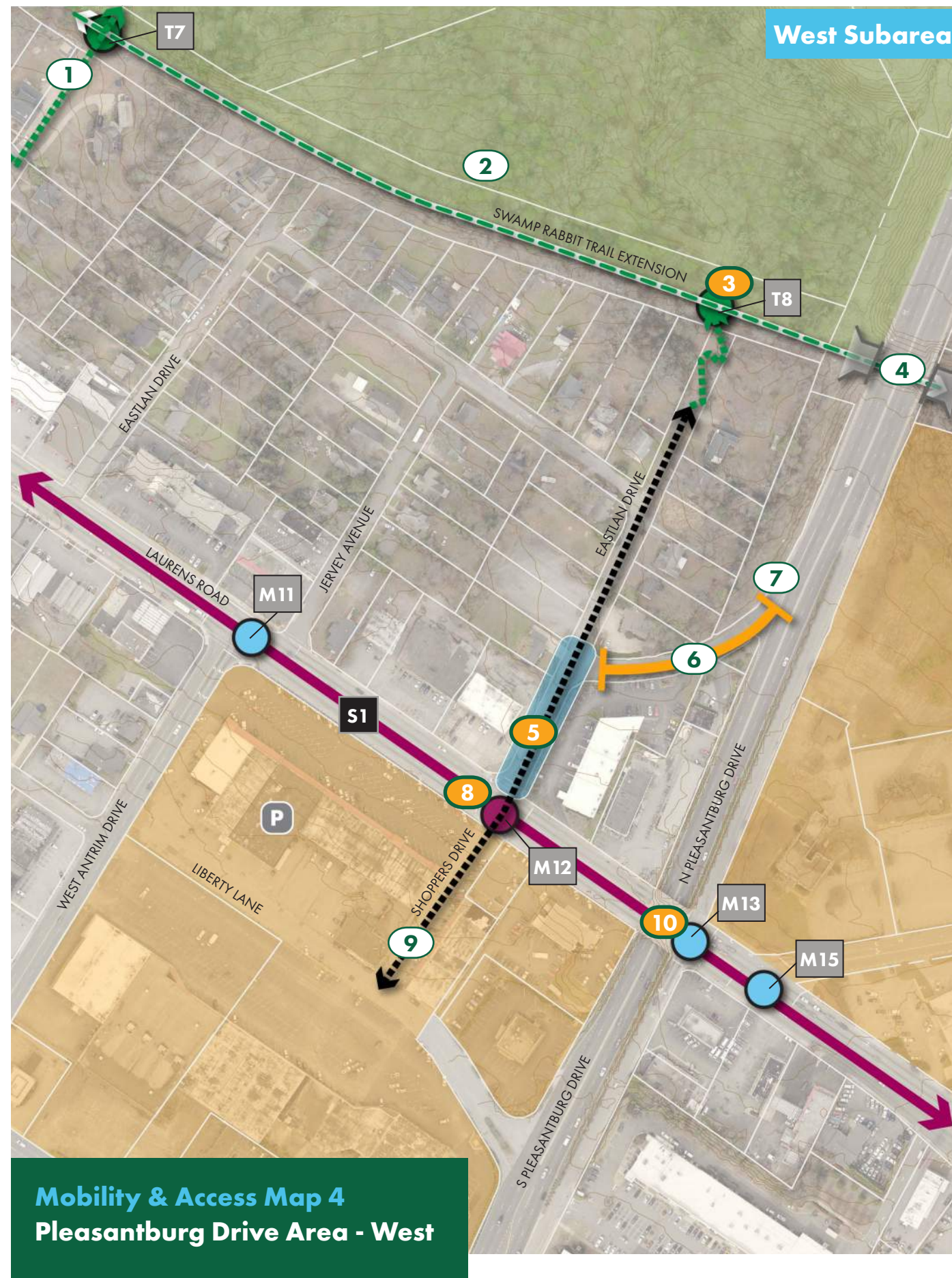
HIGH PRIORITY ITEM

Strategies Legend

- Laurens Road
- New Ped/Bike Connections In Street Right of Way
- SRT Extension
- SRT Access Connections

- Redevelopment Opportunity (see Chapter 5: Development and Redevelopment Strategies)
- Open Space Opportunity
- SRT Extension Public Trailheads

- High Quality Intersections (existing with signal and vital to trail access - signal dependent on development, proposed traffic signal, proposed new street, or re-aligned street)
- Shared Parking Opportunities (private entities)



Mobility & Access Map 4 - Pleasantburg Drive Area, West

- 1 In the long-term, consider connecting Dunbrovin Street to the trail (**Trailhead T7**)
 - 2 Opportunity for public/conserved open space due to topography and floodplain (confirm floodplain)
 - 3 In conjunction with Eastlan Drive improvements, connect Eastlan Drive to the trail—steep grades will require switchbacks to create accessible path connection (**Trailhead T8**)
 - 4 Existing trail under-crossing beneath Pleasantburg Drive, but no direct access from trail to Pleasantburg Drive
 - 5 This section of Eastlan Drive is currently one-way to enable free flow off of Pleasantburg Drive—convert to two-way traffic or install contra-flow bike lane to create two-way trail connection
 - 6 Southbound traffic uses this off-ramp to access Laurens Road from Pleasantburg Drive, then continues onto Eastlan Drive. This makes Eastlan Drive operate like a highway off-ramp, even though it is a neighborhood street—consider closing this off-ramp to reduce volumes and simplify traffic patterns on Eastlan Drive
 - 7 Sidewalk ends here, so pedestrians must divert up to Laurens Road and Liberty Lane to continue south on Pleasantburg Drive
 - 8 Improve existing intersection at Eastlan/Shoppers Drive and Laurens Road to a high-quality intersection in the near-term—add high-visibility crosswalks and accessible curb ramps at all legs of intersection, and increase pedestrian crossing timing (**High Quality Intersection M12**)
 - 9 Low-stress walking and biking facilities should connect to this future activity node via Shoppers Drive—angled parking should be removed or converted to parallel parking to minimize safety issues
 - 10 The current configuration of the multiple intersections and exit ramps of Pleasantburg Drive and Laurens Road cause access, safety, and efficiency issues that affect the surrounding neighborhoods. In the short-term, redesign the Laurens Road intersections from West Antrim Drive to East Antrim Drive to better work together to benefit drivers, pedestrians, and bicyclist alike. (**High Quality Intersections M11, M12, M13, M15, and M17 (shown on next access diagram)**)
 - 10 In the long-term, consider redesigning Laurens Road at Pleasantburg Drive as an at-grade intersection to improve connectivity and create a more logical street grid.
- More information for the Pleasantburg Drive and Laurens Road intersection redesign can be found in the Mobility Strategies section of this chapter.



HIGH PRIORITY ITEM

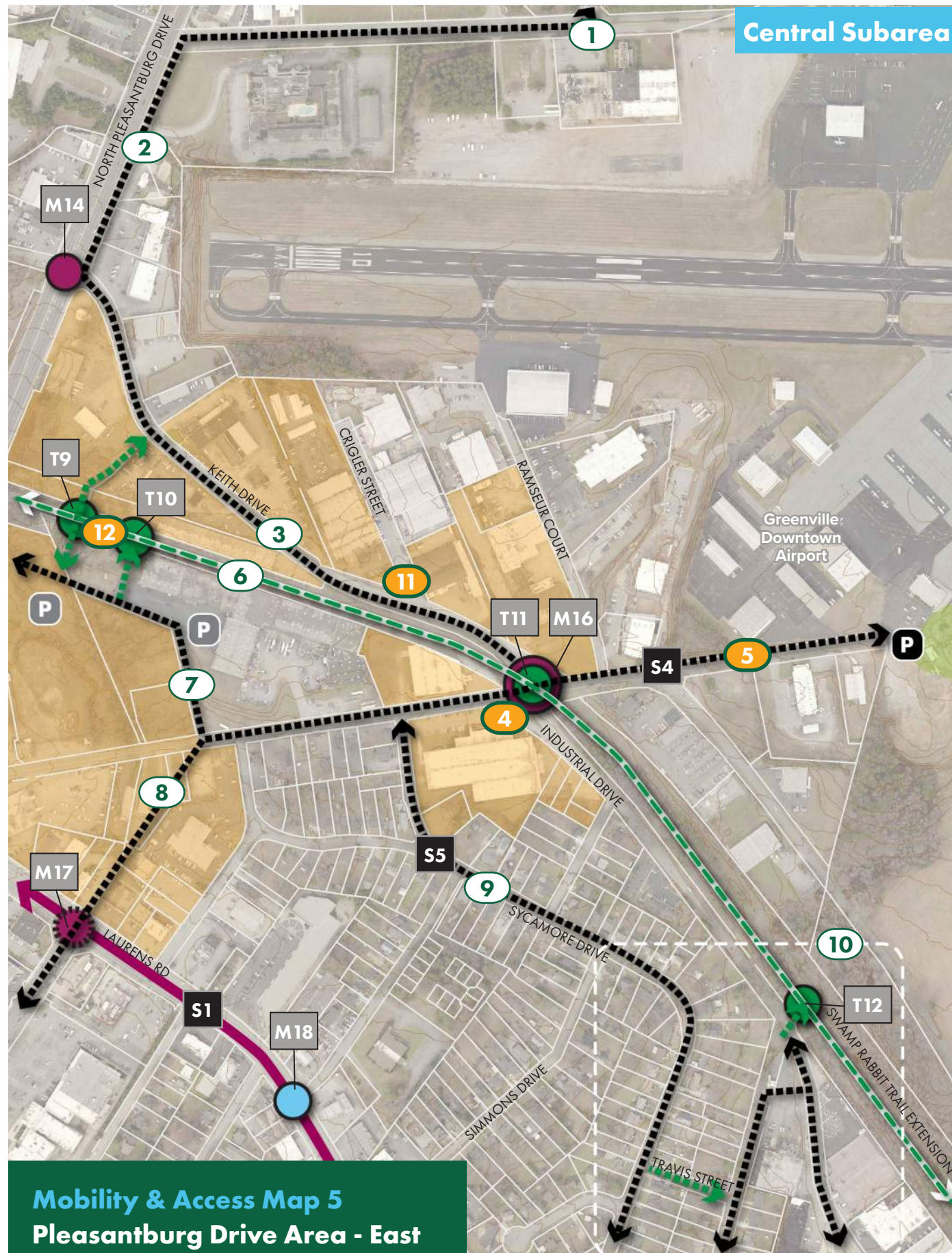
Strategies Legend

- Laurens Road
- New Ped/Bike Connections In Street Right of Way
- SRT Extension
- SRT Access Connections



- Tunnel
- Redevelopment Opportunity (see Chapter 5: Development and Redevelopment Strategies)
- Open Space Opportunity
- SRT Extension Public Trailheads

- High Quality Intersections (existing and vital to trail access)
- High Quality Intersections (non-essential for trail connectivity but important as Laurens Road enhances)



Mobility & Access Map 5
Pleasantburg Drive Area - East

Mobility & Access Map 5 - Pleasantburg Drive Area, East

- 1 Narrow travel lanes and re-stripe roadway with bike lanes to connect to convention center
- 2 Install short segment of sidepath on east side of Pleasantburg Drive from Keith Drive to Tower Drive to connect trail to convention center
- 3 Adding dedicated walking and biking infrastructure along Keith Drive is challenging as existing roadway is roughly 24 ft wide, with a 30 mph speed limits and no sidewalks with utility poles along both sides—consider innovative treatments such as advisory shoulders to fill the gap in the network
- 4 Trail construction to include diagonal, green-painted bicyclist and pedestrian crossing. As the only at-grade intersection along the trail extension, this is a very important access point (**High Quality Intersection M16 and Trailhead T11**)
- 5 Construct shared use path along Airport Road to connect the trail to Runway Park and planned shared parking at Greenville Downtown Airport (**Priority Streetscape Improvement S4**)
- 6 This is a unique section of the trail because it is one of the few places where the existing buildings are oriented toward the railroad.
- 7 New street proposed as part of redevelopment plan should include dedicated walking and biking facilities
- 8 Re-align Airport Road to connect directly to E. Antrim Drive, creating a more direct, logical street grid. This recommendation is time sensitive due to pending development, however, the developer has the ability to adapt the plan. This project is also more likely to be longer term due to funding and property acquisition.
- 9 Construct sidewalks on Sycamore Drive to improve access for neighborhood residents (**Priority Streetscape Improvement S5**)
- 10 See Trail Access Diagram 6 for more details on these connections and streets
- 11 Use low-cost, semi-permanent materials such as paint and planters to narrow crossing distances at skewed, low volume intersections, such as Crigler Street, in this area
- 12 Negotiate with private property owners of potential development sites and the County to ensure public trail access points in the near-term for this area. (**Trailheads 9 and 10**)

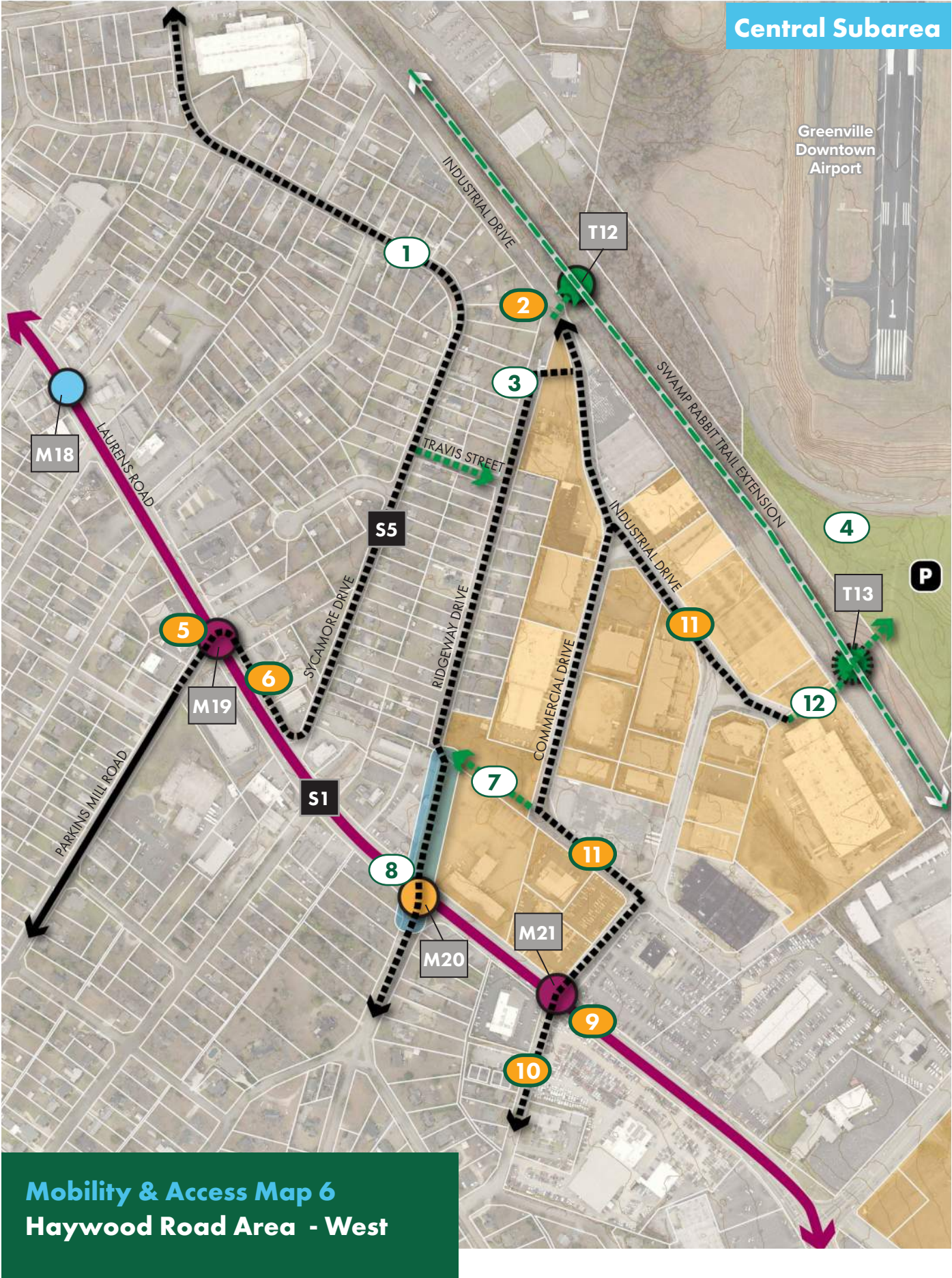


- 5 Construct shared use path along Airport Road to connect the trail to Runway Park and planned shared parking at Greenville Downtown Airport (**Priority Streetscape Improvement S4**)
- 6 This is a unique section of the trail because it is one of the few places where the existing buildings are oriented toward the railroad.
- 7 New street proposed as part of redevelopment plan should include dedicated walking and biking facilities
- 8 Re-align Airport Road to connect directly to E. Antrim Drive, creating a more direct, logical street grid. This recommendation is time sensitive due to pending development, however, the developer has the ability to adapt the plan. This project is also more likely to be longer term due to funding and property acquisition.
- 9 Construct sidewalks on Sycamore Drive to improve access for neighborhood residents (**Priority Streetscape Improvement S5**)
- 10 See Trail Access Diagram 6 for more details on these connections and streets
- 11 Use low-cost, semi-permanent materials such as paint and planters to narrow crossing distances at skewed, low volume intersections, such as Crigler Street, in this area
- 12 Negotiate with private property owners of potential development sites and the County to ensure public trail access points in the near-term for this area. (**Trailheads 9 and 10**)

HIGH PRIORITY ITEM

Strategies Legend

- Laurens Road
- New Ped/Bike Connections In Street Right of Way
- SRT Extension
- SRT Access Connections
- Redevelopment Opportunity (see Chapter 5: Development and Redevelopment Strategies)
- Existing Open Space
- SRT Extension Public Trailheads
- SRT Extension Private Trailheads
- High Quality Intersections (existing and vital to trail access)
- High Quality Intersections (existing with signal and vital to trail access - signal dependent on development, proposed traffic signal, proposed new street, or re-aligned street)
- High Quality Intersections (non-essential for trail connectivity but important as Laurens Road enhances)
- Shared Parking Opportunities (public entities)
- Shared Parking Opportunities (private entities)



Central Subarea

Mobility & Access Map 6
Haywood Road Area - West

Mobility & Access Map 6 - Haywood Road Area, West

- 1 Construct sidewalks on Sycamore Drive to improve access for neighborhood residents (**Priority Streetscape Improvement S5**)
- 2 Construct new trail access point with Rectangular Rapid Flashing Beacon (RRFB) to increase safety for trail users crossing Industrial Drive (**Trailhead T12**)
- 3 Connect Ridgeway Drive to Industrial Drive near new crossing
- 4 New park opportunity on Greenville Downtown Airport property—floodplain poses development challenges, so airport is interested in turning this area into a public park
- 5 Improve existing intersection at Parkins Mill Road and Laurens Road to a high-quality intersection in the near-term—add high visibility crosswalk markings and pedestrian signals—continue bike lanes to Laurens Road (**High Quality Intersection M19**)
- 6 In order to create continuous connection from Parkins Mill Road, streetscape improvements along Laurens Road is a priority along this segment (**Priority Streetscape Improvement S1**)
- 7 In the short-term, connect the improvements along Commercial Drive to Ridgeway Drive through the city-owned property
- 8 In the long term, implement a Pedestrian-Hybrid Beacon to cross Laurens Road at Wembley Road—build new path connection through city-owned parcel to continue connection through to the trail (**High Quality Intersection M20**)
- 9 Improve existing intersection at Waite Street/Industrial Drive and Laurens Road to a high-quality intersection in the near-term—add high visibility crosswalk markings and pedestrian signals at the intersection of Laurens Road and Waite Street/Industrial Drive (**High Quality Intersection M21**)
- 10 In the short-term, fill sidewalk gaps and add shared lane markings, signage, and traffic calming on Waite Street to connect across Laurens Road at existing signalized intersection
- 11 Work with the City during their Laurens Road drainage project to integrate bike lanes into the future re-striping of streets impacted by the drainage project—include warning signage so heavy vehicle operators know to look for bicyclists
- 12 Work with the City and private land owner to construct a new trail access point during the drainage project (**Trailhead T13**)



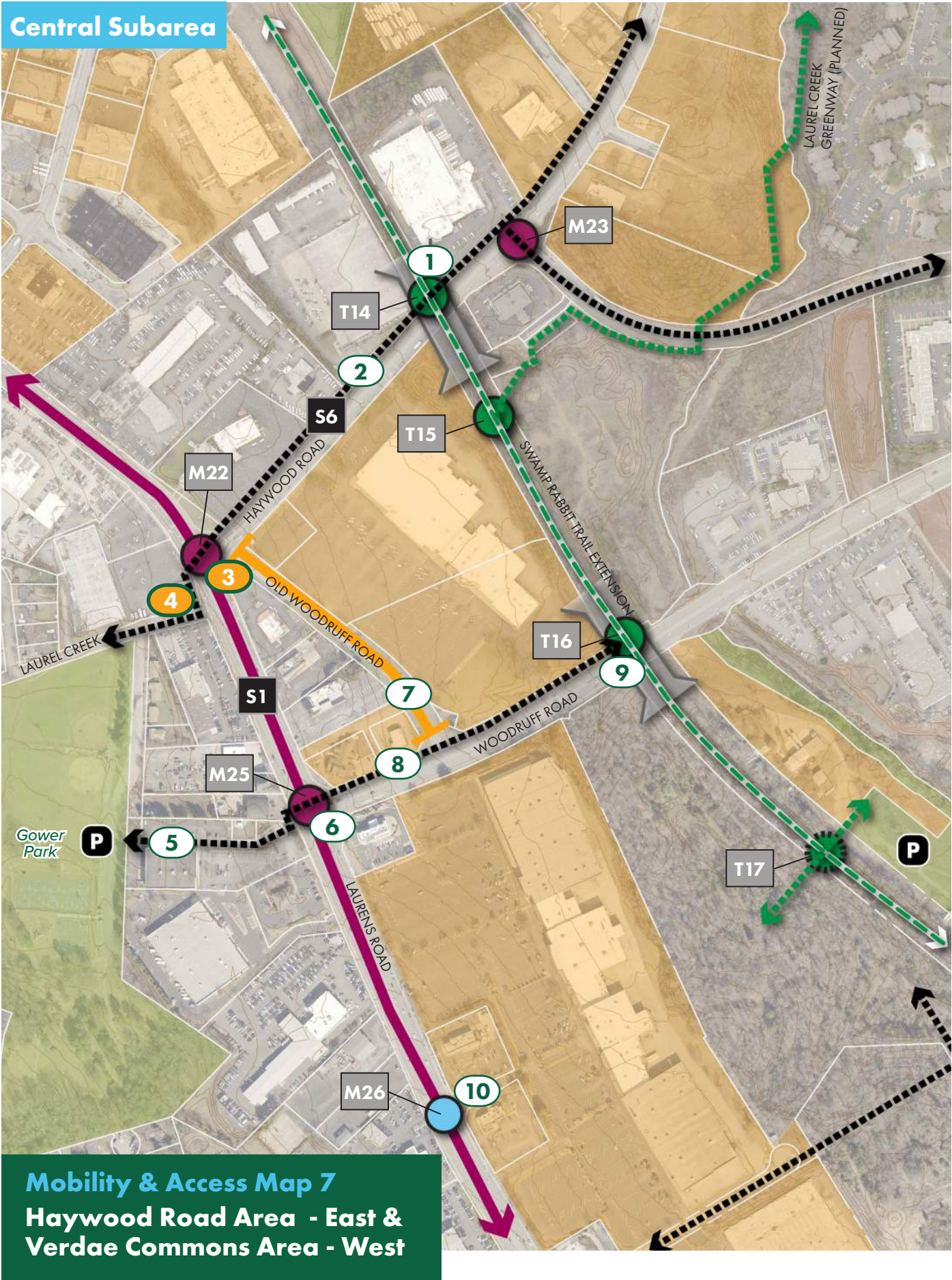
HIGH PRIORITY ITEM

Strategies Legend

- Laurens Road
- Existing Road Connections vital for ped/bike access to trail
- New Ped/Bike Connections In Street Right of Way
- SRT Extension
- SRT Access Connections

- Redevelopment Opportunity (see Chapter 5: Development and Redevelopment Strategies)
- Open Space Opportunity
- SRT Extension Public Trailheads
- SRT Extension Private Trailheads
- High Quality Intersections (existing and vital to trail access)

- High Quality Intersections (mid-block crossings that are vital to trail access)
- High Quality Intersections (non-essential for trail connectivity but important as Laurens Road enhances)
- Shared Parking Opportunities (public entities)



Mobility & Access Map 7 - Haywood Road Area, East & Verdae Commons Area, West

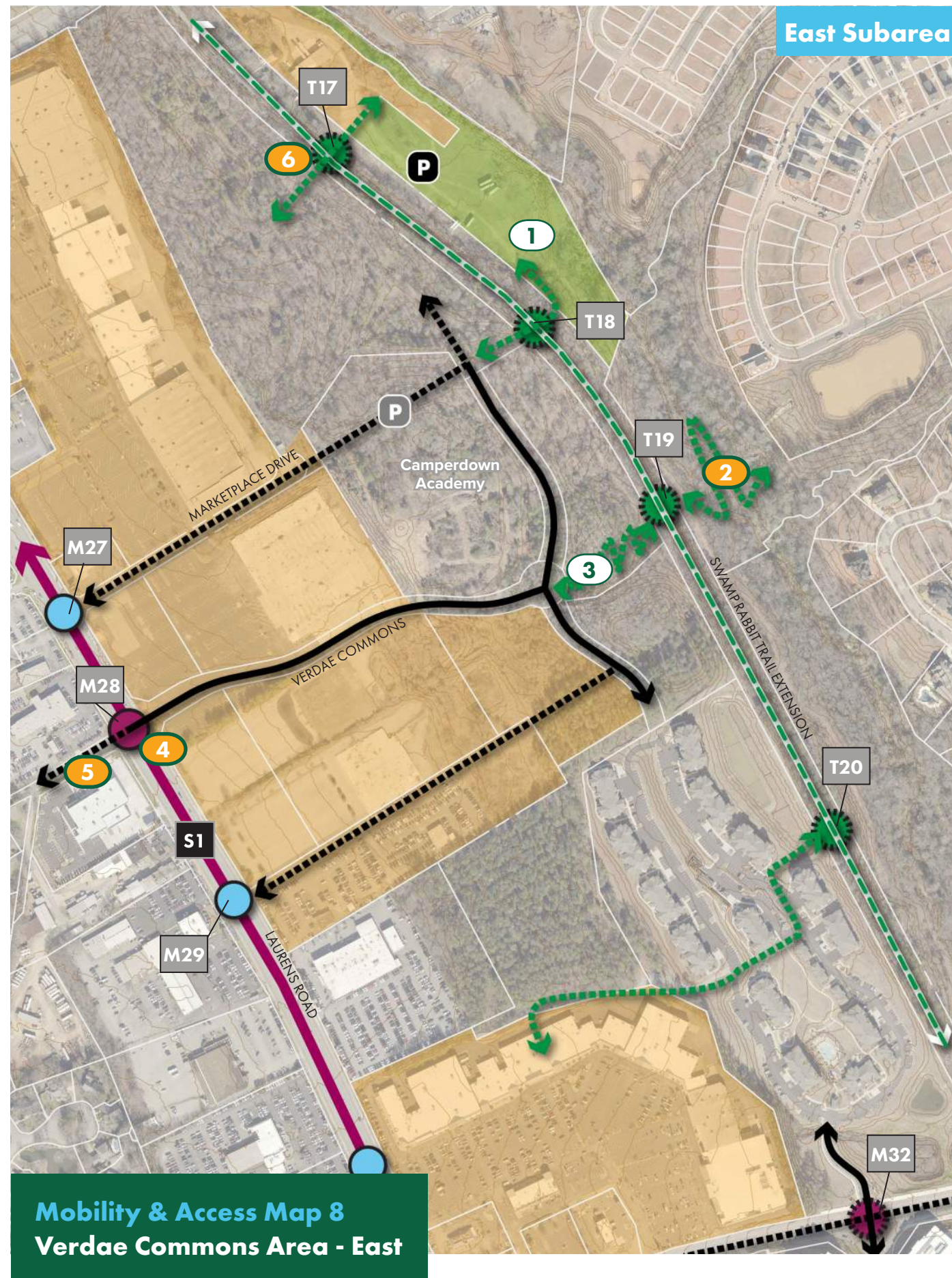
- Trail construction will include access points to bridge from sidewalk on northwest side of Haywood Road (**Trailhead T14**)
 - Widening sidewalk to 10 ft to accommodate bicyclists requires right-of-way acquisition from three parcels, but is important for connecting the trail to Laurel Creek Lane and Gower Park. (**Priority Streetscape Improvement S6**)
 - Install high visibility crosswalks and pedestrian signal heads at all legs of the existing traffic signal at Laurens Road, Haywood Road, and Laurel Creek Lane. Consider further study of the intersection's functionality (**High Quality Intersection M22**)
 - Construct short segment of shared use path along Laurens Road, from Haywood Road to Laurel Creek Lane, to connect the Gower Estates neighborhood to trail ((**Priority Streetscape Improvement S1**)
 - Work with property owner (currently Pep Boys Auto Parts and Service) to negotiate bicycle and pedestrian access through their parking lot and construct direct bicycle and pedestrian connection to Gower Park
 - At the Laurens Road and Woodruff Road intersection, install high visibility crosswalks and pedestrian signal heads at all legs of existing traffic signal (**High Quality Intersection M25**)
 - Close Old Woodruff Road to vehicles, if possible, providing an alternative route from Haywood Road to Gower Park
 - Sufficient right of way exists to widen sidewalk on northwest side of Woodruff Road to 10 ft to accommodate bicyclists from Laurens Road to the trail
 - Trail construction will include access points to bridge from sidewalk on both sides of Woodruff Road (**Trailhead T16**)
 - This is an existing intersection and could be improved to a higher quality in the long-term; however, after further traffic analysis is conducted on Laurens Road and this intersection's traffic signal is deemed unnecessary for vehicular, pedestrian, and bicyclist safety, then it should be kept at the same quality or removed. (**High Quality Intersection M26**)
- # HIGH PRIORITY ITEM**

Strategies Legend

- Laurens Road
- New Ped/Bike Connections In Street Right of Way
- SRT Extension
- SRT Access Connections
- Bridge

- Redevelopment Opportunity (see Chapter 5: Development and Redevelopment Strategies)
- Existing Open Space
- SRT Extension Public Trailheads
- SRT Extension Private Trailheads

- High Quality Intersections (existing and vital to trail access)
- High Quality Intersections (mid-block crossings that are vital to trail access)
- Shared Parking Opportunities (public entities)



Mobility & Access Map 8 - Verdae Commons Area, East

- 1 Recently cleared area (Ice House site) is an opportunity for open space with shared parking for the trail—connect to Marketplace Drive or future redevelopment's street network (**Trailhead T18**)
- 2 Construct new trail access point to connect the Verdae neighborhood and Legacy Park (**Trailhead T19**)
- 3 As a part of future development, construct new trail access point from existing bike lanes on Verdae Commons Boulevard (**Trailhead T19**)
- 4 Improve existing intersection at Henderson Road/Verdae Commons Boulevard and Laurens Road to a high-quality intersection in the near-term—Add high-visibility crosswalks and accessible curb ramps at all legs of intersection (**High Quality Intersection M28**)
- 5 Extend southwest-bound bike lane through intersection and create mixing zone to transition to shared lane on Henderson Road
- 6 Since construction is already underway for the Arlington Apartments, work with developers to provide a trail access point (**Trailhead T17**)

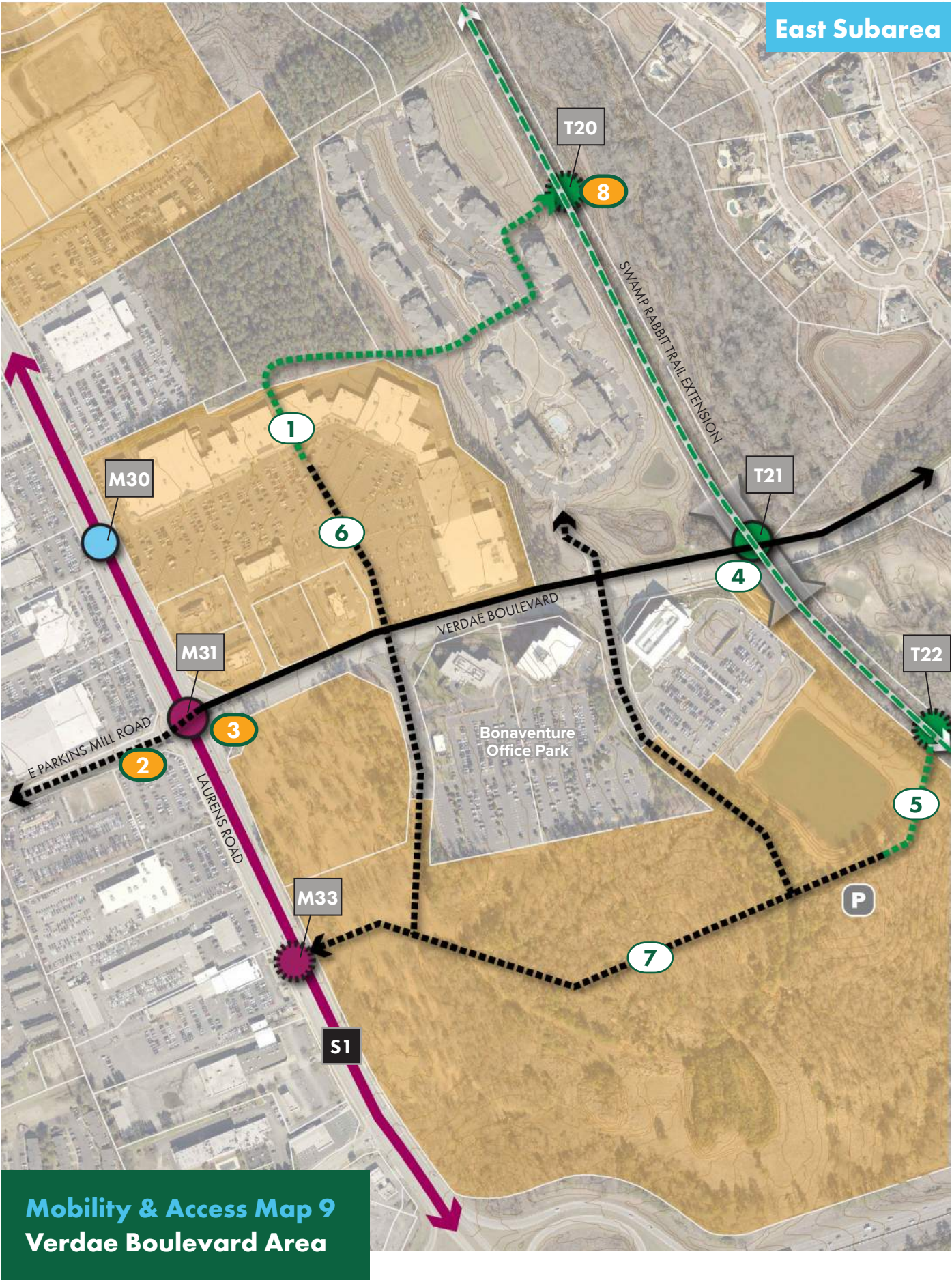


- 2 Construct new trail access point to connect the Verdae neighborhood and Legacy Park (**Trailhead T19**)
- 3 As a part of future development, construct new trail access point from existing bike lanes on Verdae Commons Boulevard (**Trailhead T19**)
- 4 Improve existing intersection at Henderson Road/Verdae Commons Boulevard and Laurens Road to a high-quality intersection in the near-term—Add high-visibility crosswalks and accessible curb ramps at all legs of intersection (**High Quality Intersection M28**)

HIGH PRIORITY ITEM

Strategies Legend

- Laurens Road
- Existing Road Connections vital for ped/bike access to trail
- New Ped/Bike Connections In Street Right of Way
- SRT Extension
- SRT Access Connections
- Redevelopment Opportunity (see Chapter 5: Development and Redevelopment Strategies)
- Open Space Opportunity
- SRT Extension Private Trailheads
- High Quality Intersections (existing and vital to trail access)
- High Quality Intersections (mid-block crossings that are vital to trail access)
- Shared Parking Opportunities (public entities)
- Shared Parking Opportunities (private entities)

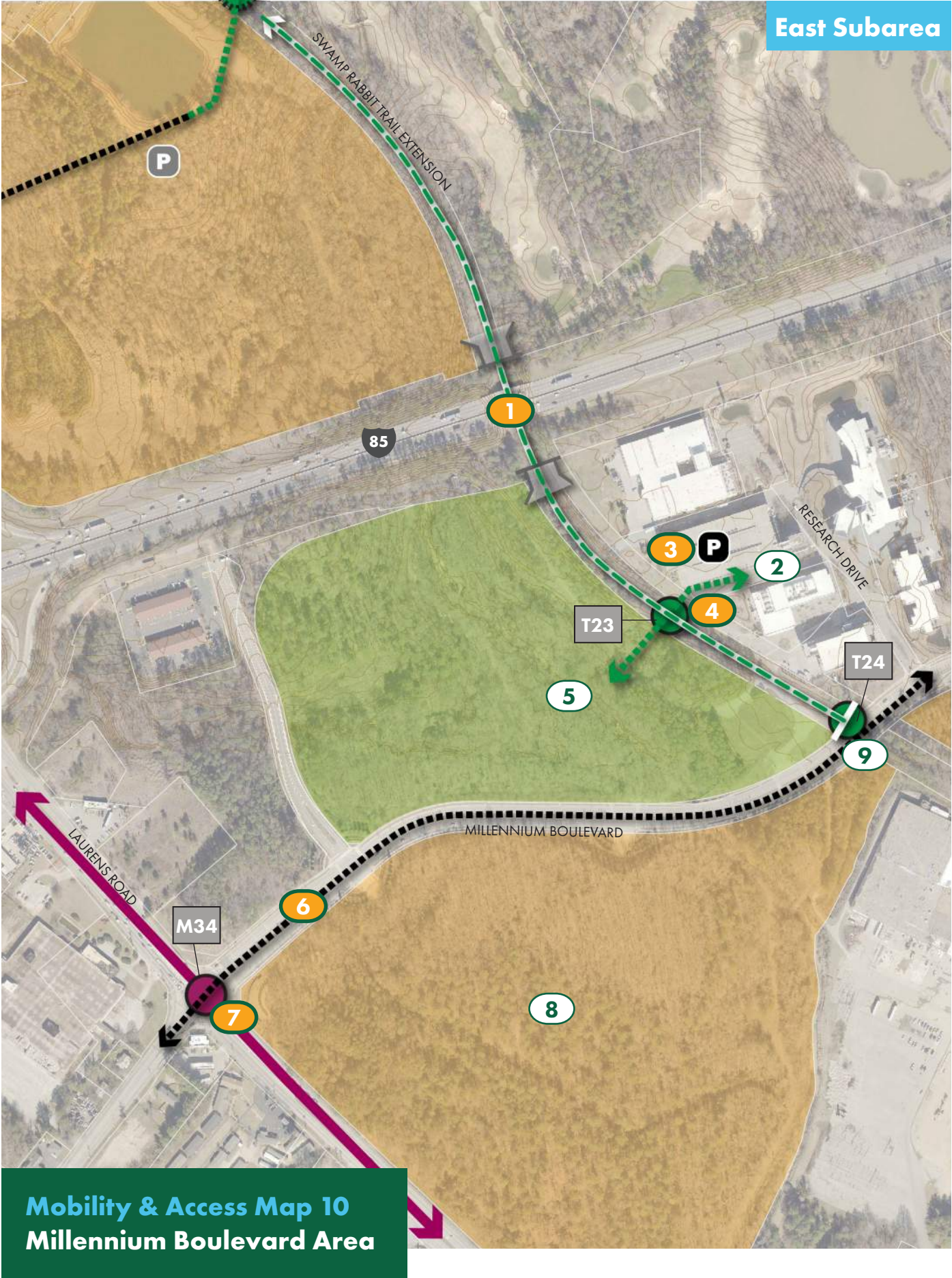


Mobility & Access Map 9 - Verdae Boulevard Area

- 1 New trail spur with future development, which will connect redevelopment to trail through existing apartments (**Trailhead T20**)
- 2 E. Parkins Mill Road plays an important role in the street network because the intersection density is significantly lower in this section of the corridor and it connects directly to the existing shared use path on Verdae Boulevard. There is sufficient right of way to add buffered bike lanes and sidewalks, but this project will require roadway expansion.
- 3 Improve existing intersection at E. Parkins Mill Road/Verdae Boulevard and Laurens Road to a high-quality intersection in the near-term—Add high-visibility crosswalks at all legs of intersection and study the functionality of the intersection traffic movements to potentially redesign and eliminate dedicated right-turn lanes for increased pedestrian and bicyclists safety (**High Quality Intersection M31**)
- 4 Trail construction will include access to existing shared use path on Verdae Boulevard (**Trailhead T21**)
- 5 Proposed trail access point should be added when redevelopment occurs (**Trailhead T22**)
- 6 New road with shared lane marking and traffic calming through this redevelopment site
- 7 Any new road within this potential future development site should include dedicated walking and biking facilities and include direct access to Laurens Road with a high-quality intersection (**High Quality Intersections M33**) and connect to the existing traffic circle on Verdae Boulevard
- 8 Work with Verdae/Hollingsworth, owner of the Velo Verdae Apartments, and the County to ensure a trail access point to the apartment complex for residents



HIGH PRIORITY ITEM



Mobility & Access Map 10 - Millennium Boulevard Area

- 1** Greenville County is interested in finding ways to activate this long tunnel underneath I-85 with features like games and lighting
- 2** Given CU-ICAR's existing bus service, park-and-ride garage, and first- and last-mile support infrastructure, this area is already operating as a mobility hub. Mobility hubs are places designed to facilitate seamless travel mode transitions, for example, transferring from a bike ride to a bus ride. The coming trail terminus will further emphasize CU-ICAR's role in the multimodal network additionally, because of CU-ICAR's focus on automotive research, it also presents an opportunity for automated vehicle pilot programs which could open new possibilities for transit service and vehicle types—features like online purchase pick-up lockers can be added to reduce the need for additional trips.
- 3** CU-ICAR's parking garage is free, and is a logical parking location for trail users arriving by vehicle—the garage includes short term bike parking. Long-term bike parking could be added for users seeking a more secure bike storage option.
- 4** Formalize CU-ICAR as a major trailhead with additional connections to the trail with spurs and concentration of end-of-trip facilities, such as bike parking and water fountains. **(Trailhead T23)**
- 5** Topography presents challenges to developing this land, therefore it presents an opportunity for open space—include trail access **(Trailhead T23)**
- 6** Narrow existing travel lanes and re-stripe road with dedicated bike lanes
- 7** Improve existing intersection at Millennium Boulevard and Laurens Road to a high-quality intersection in the near-term—install high visibility crosswalks at all legs of existing traffic signal—continue bike lanes through intersection **(High Quality Intersection M34)**
- 8** CU-ICAR future development, planned to include automotive research facilities.
- 9** Trail extension ends at Millennium Boulevard—future phases to continue toward Mauldin **(Trailhead T24)**



HIGH PRIORITY ITEM



Shared Parking Strategies

One key topic of discussion during stakeholder and focus group meetings involved the identification of shared parking opportunities for trail access. Several designated public access parking areas were identified, as well as a need to share space in privately-owned lots (e.g., Hollingsworth/Verdae) and publicly-owned lots (e.g., County-owned properties, Greenville Downtown Airport, University Center, CU-ICAR).

There is also an identified need to create block or district-level parking strategies to support larger scale redevelopment projects across multiple properties, the conversion of low-parking-need industrial property to other active uses, and small lot redevelopment directly fronting on Laurens Road.

The following major shared parking locations were identified during the master planning process at:

- P1

Cleveland Park
- P2

Redevelopment of East Park Baptist Church
- P3

Redevelopment of Washington Heights
- P4

Infill/re-use of shallow lots - Washington Street ocus area
- P5

Holland Park
- P6

Infill/re-use of shallow lots - Ackley Road focus area
- P7

Greenville Apartments
- P8

Laurens @ Ackley redevelopment
- P9

Pleasantburg @ Laurens redevelopment
- P10

University City
- P11

Public Safety Department redevelopment site
- P12

Think Tank
- P13

Adaptive re-use/infill - Pleasantburg Drive focus area
- P14

Runway Park
- P15

Adaptive re-use/infill - County Industrial focus area
- P16

Open space on Downtown Greenville Airport's property
- P17

Gower Park
- P18

Market Place on-street parking
- P19

Open space on old Flying Rabbit site
- P20

Legacy Park
- P21

Verdae Village Shopping Center redevelopment site
- P22

CU-ICAR parking garage

Shared Parking for Trail Access

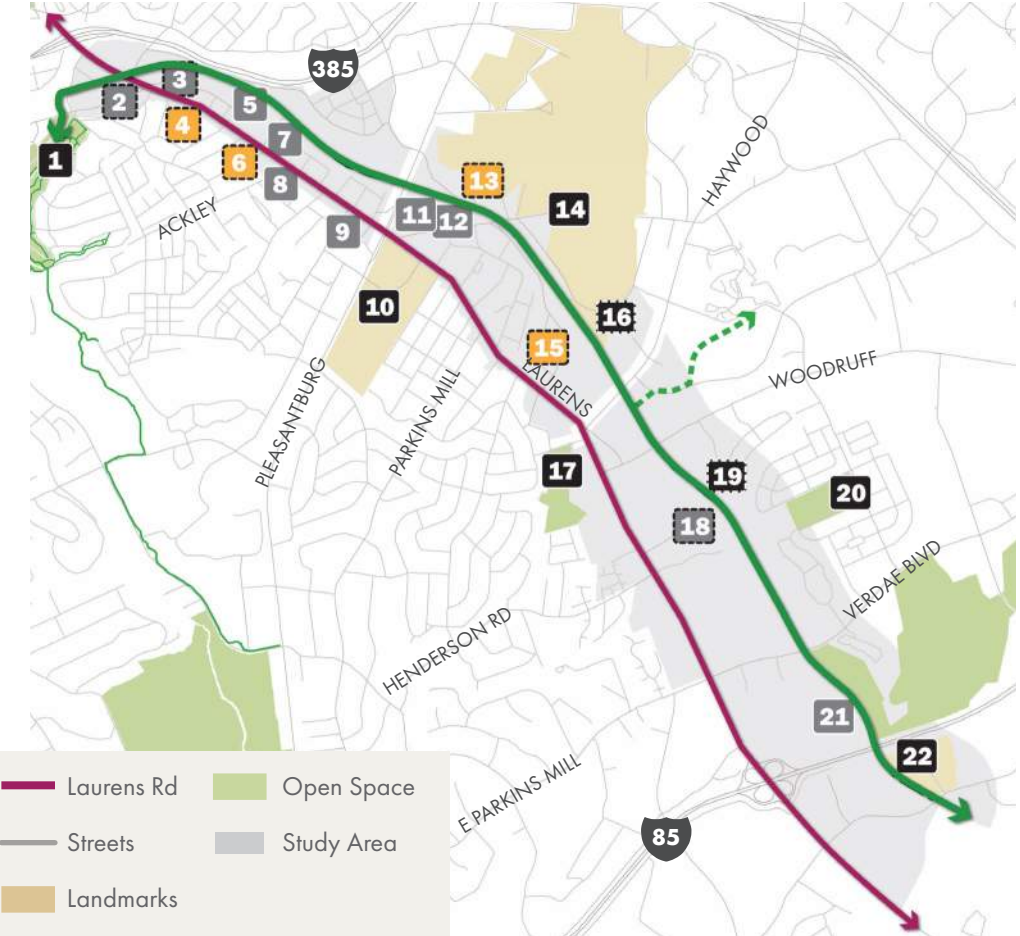
- Private Parking (Existing)
- Private Parking (Proposed)
- Public Parking (Existing)
- Public Parking (Proposed)

Other Shared Parking Strategies

- District-wide Parking (for individual properties with limited parking opportunities)

Base Map Layers

- SRT Extension
- Laurens Rd
- Open Space
- Streets
- Study Area
- Landmarks
- Laurel Creek Proposed Greenway



Mobility Strategies - Laurens Road at Pleasantburg Drive Intersection

Explore alternative solutions for the intersection at Laurens Road and Pleasantburg Drive. The grade-separated intersection is dangerous for all mode users. Drivers have limited sight lines, causing a high level of crashes, and separated intersections create a highway effect that can encourage speeding. The series of traffic signals in close proximity to one another and presence of exit ramps cause confusion for visitors not acclimated to the current conditions. Also, pedestrians and bicyclists have limited facilities. Altogether the current configuration causes access, safety, and efficiency issues that could be remedied in a phased approach.

The City of Greenville should hire a planning firm to fully vet a re-design of the intersections in this area.

Phase One Solution: Re-configuration

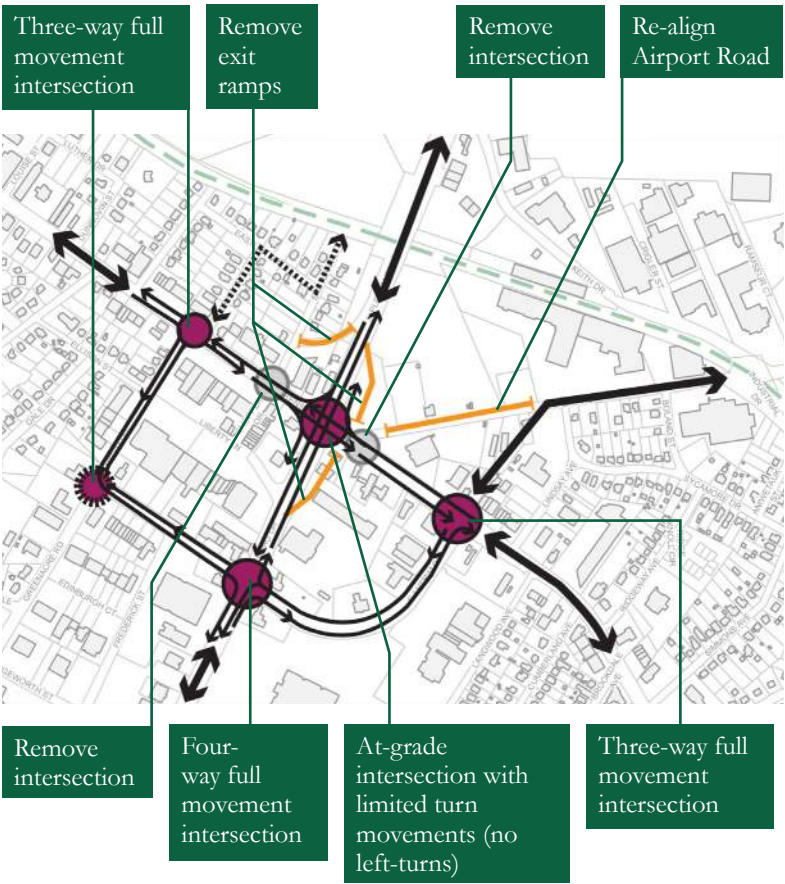
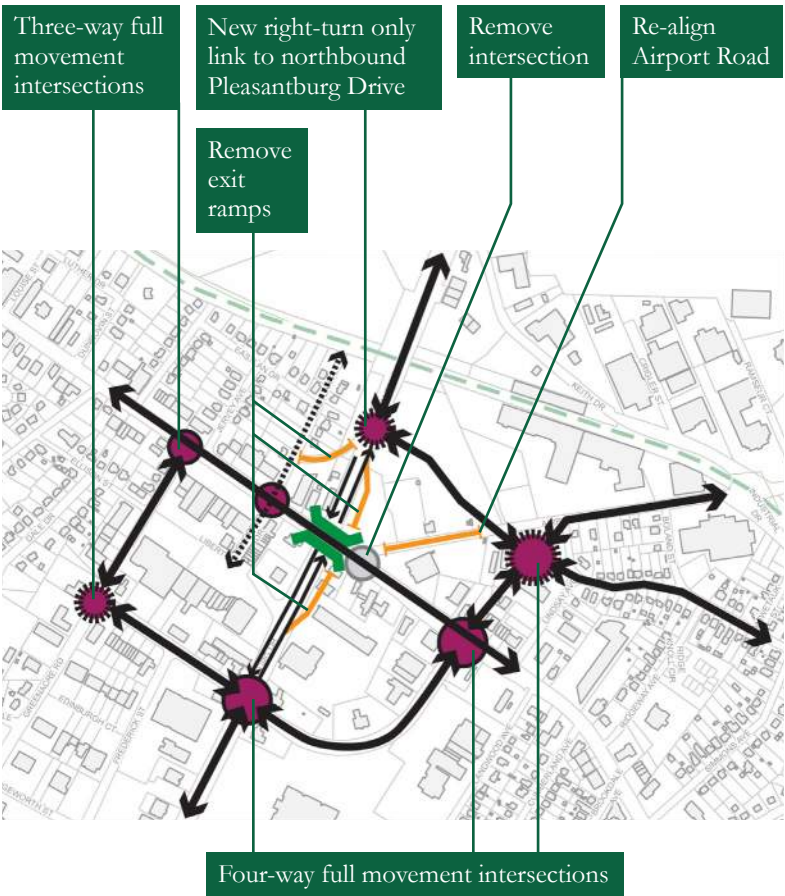
Short-to-mid-term concept:

- Remove the exit ramps between Laurens Road and Pleasantburg Drive, including the exit through Eastlan Drive.
- Re-design the Laurens Road intersections from W. Antrim Drive to E. Antrim Drive to better work together to benefit drivers, pedestrians, and bicyclists alike.
- Re-align Airport Road to connect directly to E. Antrim Drive, creating a more direct, logical street grid. Explore high-quality, four-way intersections further along Airport Road into the neighborhood for increased connectivity.
- Create multiple, high-quality intersections, re-configure intersections with modified movement patterns or re-aligned streets, and remove intersections, as needed.

Phase Two Solution: At-grade Intersection

This long-term concept would include the steps above, in addition to the following:

- Re-design Laurens Road at Pleasantburg Drive as an at-grade intersection to improve connectivity and create a more logical street grid. This would make the Airport Road connection to Pleasantburg Drive unnecessary, but should still be analyzed further.
- Remove the intersection at Eastlan/Shoppers Drive and Laurens Road, but re-configure the pedestrian/bicyclist route to safe maintain access from the south side of Laurens Road to the trail.

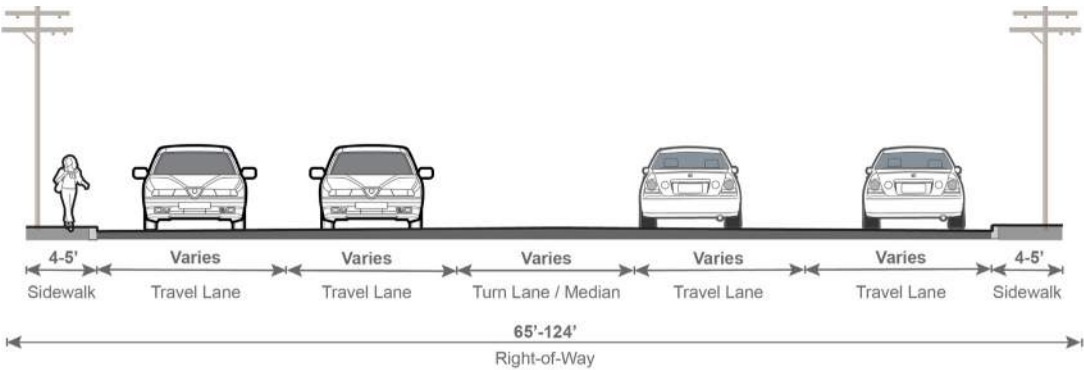


Mobility Strategies - Laurens Road

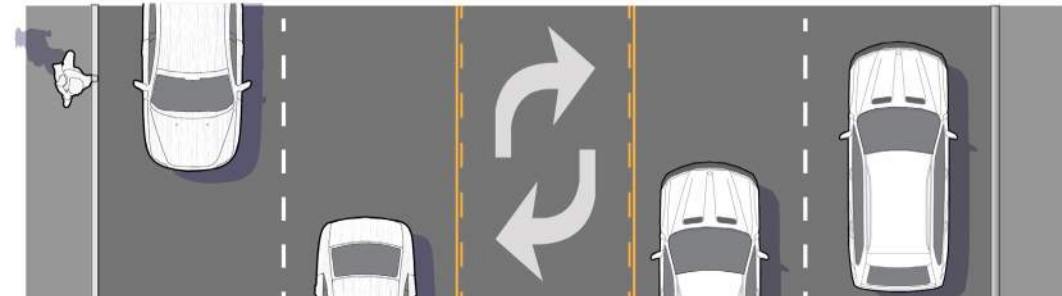
Laurens Road is the major corridor in the study area and is in need of substantial improvement to support the planned redevelopment that is not only conceptualized in this plan but is already in the development pipeline.

Existing Conditions

Laurens Road is a 5-lane, SCDOT facility and serves as an urban arterial into downtown Greenville. The speed limit is 35 miles per hour and daily traffic volumes are approximately 25,000 north of Woodruff Road. Both the speed and volumes increase south of Woodruff Road to 45 miles per hour and 30,000 vehicles per day. The land use along the corridor is largely commercial and parking/service (e.g., car dealerships). A Greenlink bus route runs along Laurens Road with 14 pairs of bus stops on both sides of the corridor within the study area. According to crash data, Laurens Road is the most dangerous road in the study area with eight crashes involving pedestrians or cyclists in the last five years. In its current state, the conditions are not comfortable for walking or biking.



Existing conditions along Laurens Road with utility poles, signs, and vegetation impeding on the narrow sidewalk, as well as sidewalks that dead end



The existing cross section of Laurens Road includes a narrow back-of-curb sidewalk, poorly placed utility poles and signage, and frequent driveways to create a hazardous pedestrian and cycling experience.

S1 Proposed Improvements

To better serve the existing community and the added growth anticipated by the Swamp Rabbit Trail Extension, Laurens Road must be transformed into a safe, vibrant, and highly walkable main street.

All existing intersections should be improved to include crosswalks, and proposed high quality intersections should be constructed at walkable intervals as noted in the framework diagram. Install intermittent medians with landscaping and/or pedestrian refuge islands where traffic allows. Enhance existing bus stops with benches, covered shelters, and wayfinding signage to connect users with the Swamp Rabbit Trail. Add new bus stops, as appropriate, to serve new areas of high-density development.

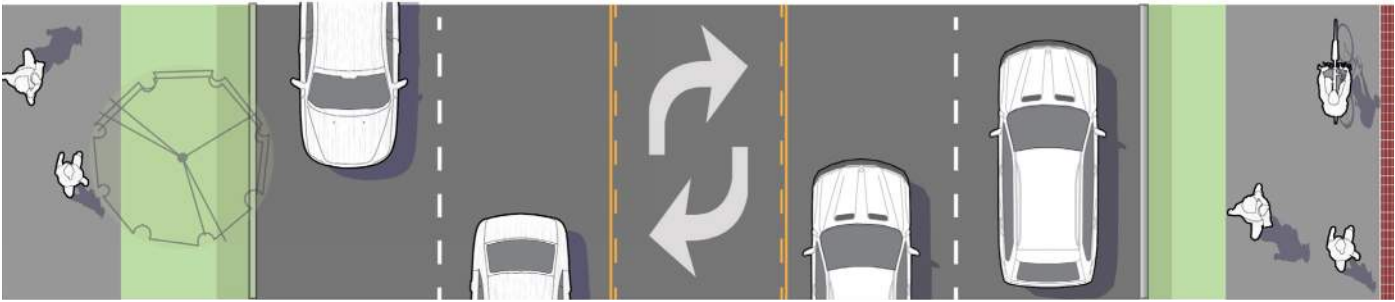
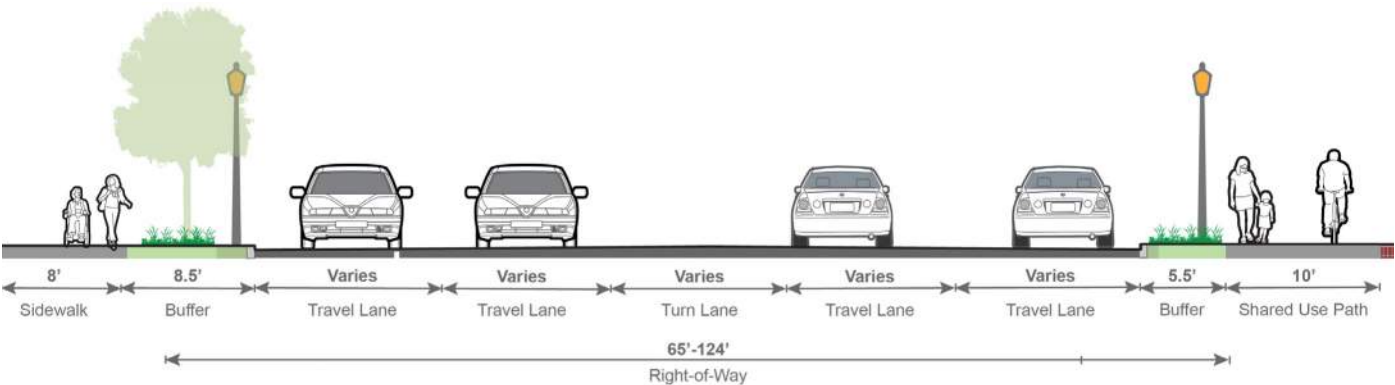
As redevelopment occurs along the corridor, developers should be required to provide a sidewalk and accommodate cyclists (and scooters) with a minimum 8-foot sidewalk or 10-foot shared use path. Other streetscape improvements should include pedestrian-scaled lighting, vegetation, and street trees in planting strips or tree wells depending on the context in which they are implemented. Ideally, the street trees planted will be canopy trees to provide shade, however, understory trees are a good alternative where larger, canopy trees are not possible in a narrow buffer.

Ultimately, the improvements should include relocating overhead utilities below ground or at the back of the properties along Laurens Road. All improvements proposed can be made without disrupting the existing curb line, thereby preserving the function and capacity of the corridor.

The City should conduct further analysis and devise a plan to transform Laurens Road using legislative and planning tools. Improvements should be implemented in three phases, with phases one and two identified as top public priorities:

- Washington Street to W. Antrim Drive
- W. Antrim Drive to Waite Street
- Waite Street to I-85.

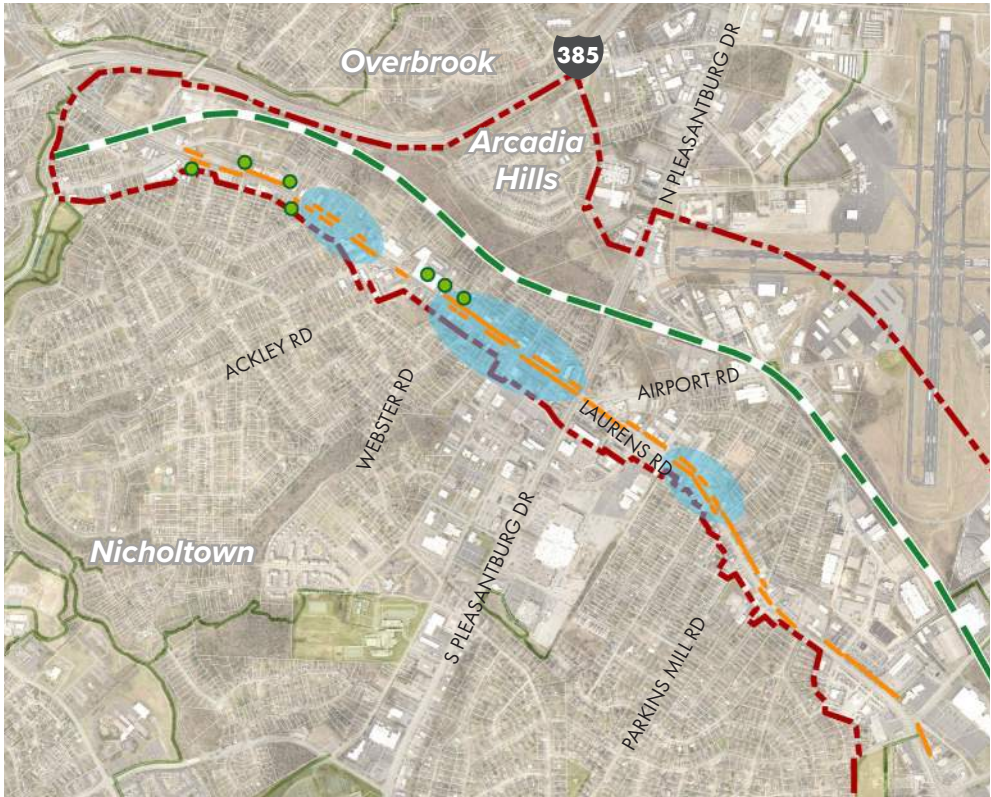
The transformation of Laurens Road should also be implemented as redevelopment occurs, regardless of which phase the redevelopment property is located. Public and private entities will work together to ensure the financial responsibility is shared and fair. The typical requirement threshold for private property owners to pay for the improvements themselves is when a building permit value exceeds 50% of current building value. The cost of improvements would be paid into escrow.



A proposed cross section of Laurens Road with streetscape improvements. The improvements, located behind the existing curb line, include a wide sidewalk or shared-use path and a planted buffer with street trees, vegetation, and pedestrian-scaled lighting.

Impacts Analysis

- Parking Lots Impacted
- Buildings Impacted
- Problem Areas
- SRT Extension
- Study Area



Impact to Existing Building and Parking Lots by Proposed Streetscape Improvements

The ideal streetscape improvements for Laurens Road would include space to accommodate a wide sidewalk or shared-use path and a vegetated buffer, requiring a minimum area behind the curb of 16 feet. While these improvements will not impact the functionality of the street as it exists today, it may impact some parking areas and some encroaching buildings as the existing right-of-way is substandard.

The buffer analysis depicted above suggests that only seven buildings and approximately 30% of the parking frontages would be impacted if all 16 feet of improvements were implemented. It is expected that the full scope of these impacts will be surveyed as part of the preliminary engineering and that a palette of options will be considered including, but not limited to right-of-way acquisition, building/parking area demolition, and reduction in proposed width for improvements. Many of the parking areas impacted are single-sided and the ideal section could be implemented on the side least impacted.

Three problem areas were also identified where streetscape improvements would be difficult to maintain on either side of the street without impacting existing parking lots:

- Between Brunson Street and Blair Street
- Between Louise Street and Pleasantburg Drive
- Between Landwood Ave and Simmons Ave.

All three of these problems areas are likely resolved in time through redevelopment. However, if improvements are planned in these areas in the near-term, the best way to resolve a conflict is to maintain the sidewalk width at 8 feet and reduce the buffer accordingly. If the width between the curb and an existing building or parking lot is less than 8 feet, reduce the sidewalk width to no less than the existing conditions along Laurens Road. In the event that no additional sidewalk space is available for improvements, analyze the site for opportunities to improve the existing conditions in other ways (e.g., redirect pathways through private property, reconfigure parking layouts, demolish portions of buildings, etc.).

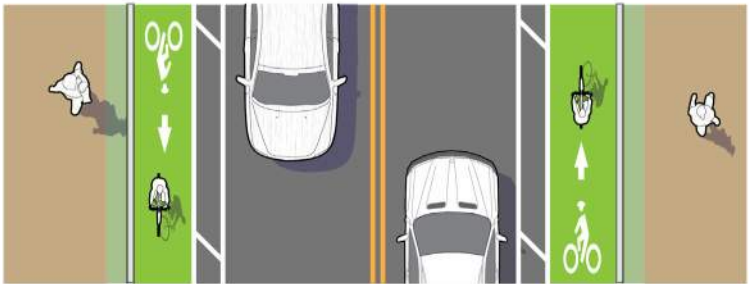
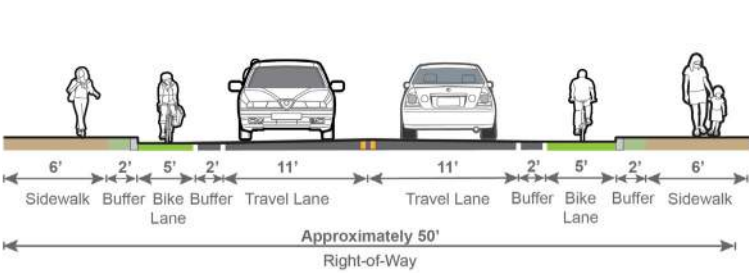
Mobility Strategies - Secondary Roads

In addition to Laurens Road, there are several secondary roads in the study area that should be improved.

S2

Lowndes Hill Road

Lowndes Hill Road is the main street through the Overbrook neighborhood and is characterized as a Trail Connector street typology. The road connects directly to the trail when paired with Hillside Drive, which has seen recent improvements across I-385. Lowndes Hill Road is currently a two-lane neighborhood street with no shoulders, curb-and-gutter, or sidewalks and a pavement width of 20 feet, but with a right-of-way ranging from 40-58 feet. Utilizing the most common right-of-way of 50 feet, the road should be improved to include 7-foot buffered bike lanes and 6-foot sidewalks with 2-foot buffers on both sides of the street. Where the road narrows, exclude the buffers and include 5-foot sidewalks and bike lanes on both sides of the street. Where the road expands, include wider buffers between the curb and sidewalk.

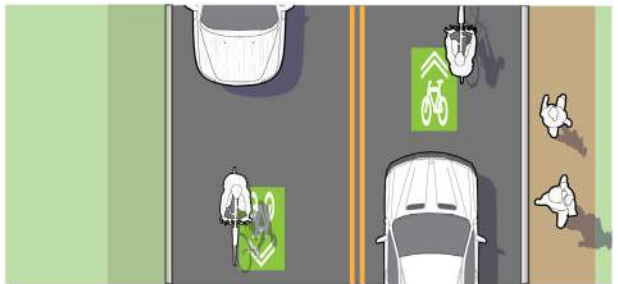
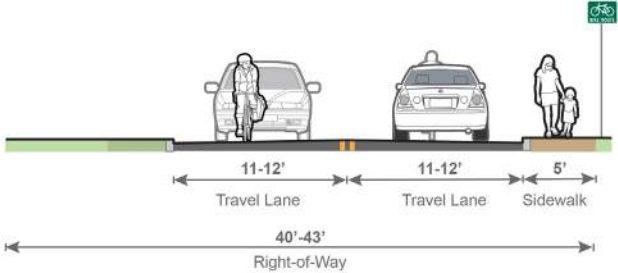


Proposed cross section for Lowndes Down Road with bike lanes and sidewalks on both sides

S3

Ackley Road

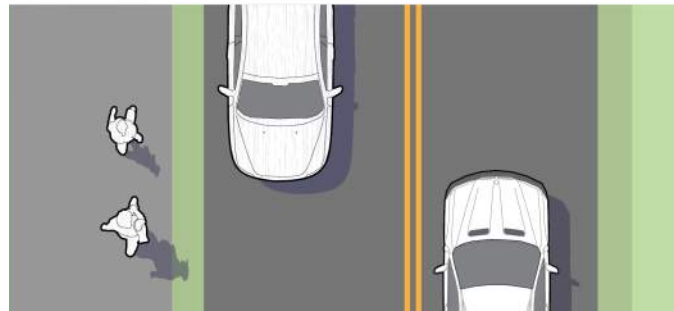
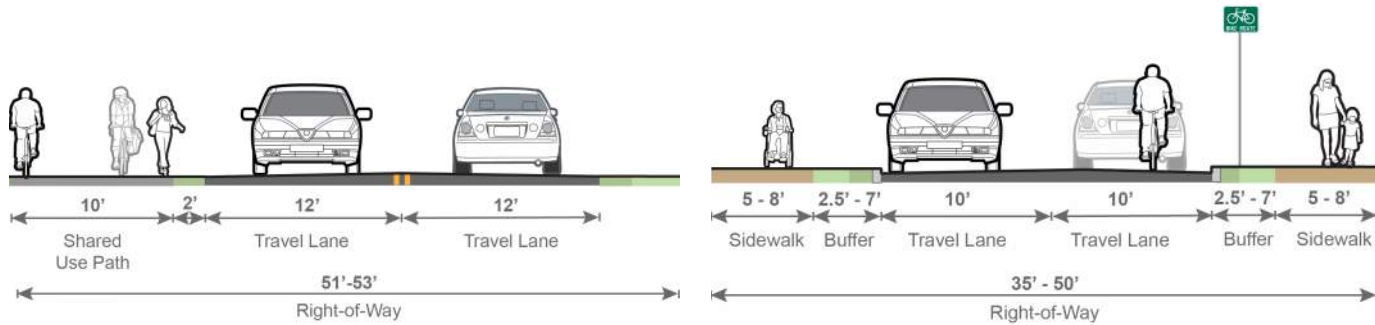
Ackley Road is an important Trail Connector street for the Nicholtown neighborhood. While other improvements will be required to provide a complete access route to the trail extension, Ackley Road will need improvements as well. It is currently a two-lane neighborhood street with curb-and-gutter and limited sidewalks on the east side of the street and a pavement width of approximately 23 feet with a 40-45-foot right-of-way. Utilizing only a portion of the right-of-way, the road should be improved to include a bike boulevard—a shared street where vehicle speeds and volumes are low enough to create a space where users feel comfortable sharing space with drivers—and a continuous 5-foot sidewalk on the east side of the street.



Proposed cross section for Ackley Road with a bike boulevard and sidewalk on the east side of the street

S4 Airport Road/Airport Road Extension

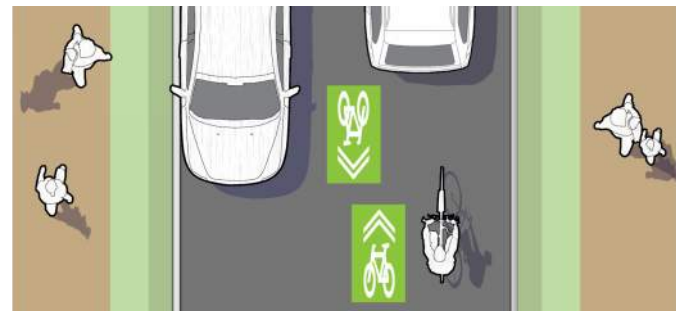
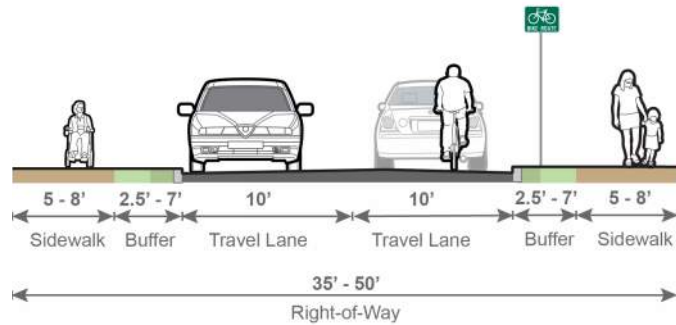
Airport Road/Airport Road Extension is a key Trail Connector road leading from Runway Park to the only at-grade public trailhead at Keith Drive. Airport Road/Airport Road Extension is currently a two-lane road. It has no shoulders, curb-and-gutter, or sidewalks and the pavement width is only 24 feet wide but with approximately a 52-foot right-of-way. Utilizing only a portion of the right-of-way, the road should be improved to include a 10-foot-wide shared-use path with a 2-foot grass strip on the west side of the street. Narrow travel lanes to 10' to increase effective buffer space between the sidepath and travel lane. Since adding curb-and-gutter is not recommended at this time, safe separation could be enhanced with vegetation or other tactics such as planters or pavement striping.



▲ Proposed cross section for Airport Road/Airport Road Extension with a shared-use path and buffer on the north side of the street

S5 Sycamore Drive

Sycamore Drive is characterized as a Neighborhood street typology, and serves as a key connection to the trail from the Gower Estates neighborhood. It is currently a two-lane road with no shoulders, curb-and-gutter, or sidewalks with 20 feet of pavement and an inconsistent right-of-way ranging from 35-50 feet. Utilizing the most narrow right-of-way of 35 feet at a minimum, the road should be improved to include a minimum 5-foot wide sidewalk and 2.5-foot wide buffer on both sides of the street. Since the right-of-way varies, when it widens to 50 feet, the sidewalks can be 8 feet with a 7-foot buffer. The street should also transform into a bike boulevard identified with pavement markings and signage.

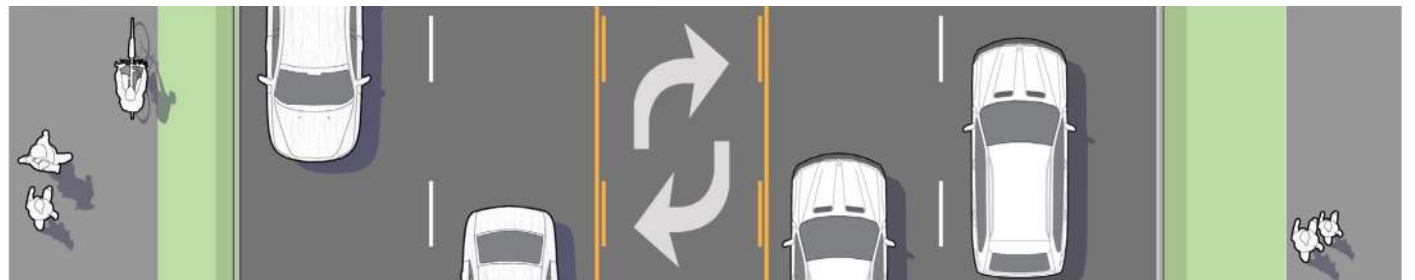
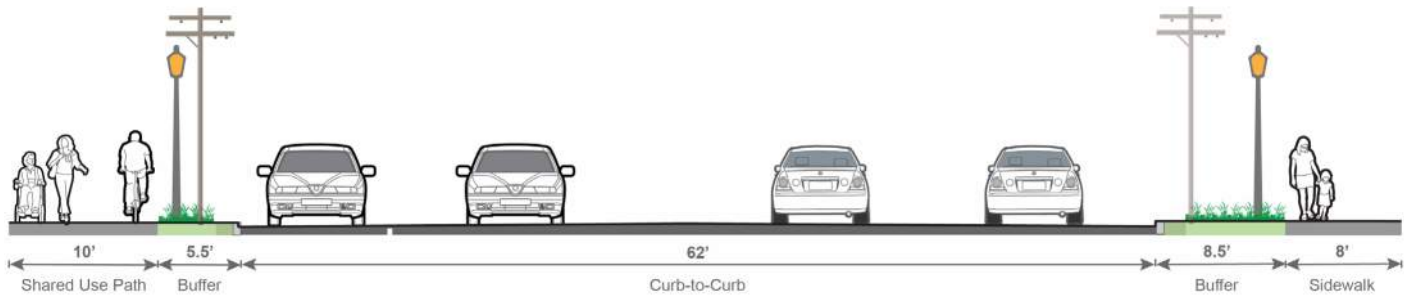


▲ Proposed cross section of Sycamore Drive with a bike boulevard and buffered sidewalks on both sides of the street

S6 Haywood Road

Haywood Road is the main connection to the trail extension for many of the new and expanding multi-family developments in the area. Similar to Laurens Road, it is also an Urban Arterial and an SCDOT road. It is currently a 5-lane street with a center turn lane.

The road should be improved to include a wide sidewalk with ample buffers on the east side of the street, as well as a shared-use path (or a minimum of a 5-foot wide sidewalk) with a buffer on the west side of the street, totaling approximately 16 feet of improvements. Buffers should be enhanced with vegetation and pedestrian-scaled lighting. Long term, it is recommended to relocate the overhead utility poles. Install intermittent medians with landscaping and/or pedestrian refuge islands where traffic allows.



▲ Proposed cross section of Haywood Road with improvements on both sides of the street including a buffered shared-use path on the west and buffered sidewalk on the east side of the street

Smart Mobility

Smart mobility operated by accessible, automated, connected, electric, and shared (A2CES) systems can transform communities. Communities—such as the City of Greenville—can take advantage of these rapidly evolving technologies to future-proof their investments and gain the equity, environmental, and economic benefits that A2CES mobility systems can offer.

Accessibility

A mobility system's 'accessibility' refers to its effectiveness in serving people of different abilities including disabled persons, senior citizens, children, or even parents with strollers. Accessibility features can be built into all manner of vehicle systems and services from mobile applications to on-board human-machine interfaces to wheelchair ramps. An accessible system will likely take queues from Universal Design principles. These principles are internationally recognized as the accessible standards in which all built environments

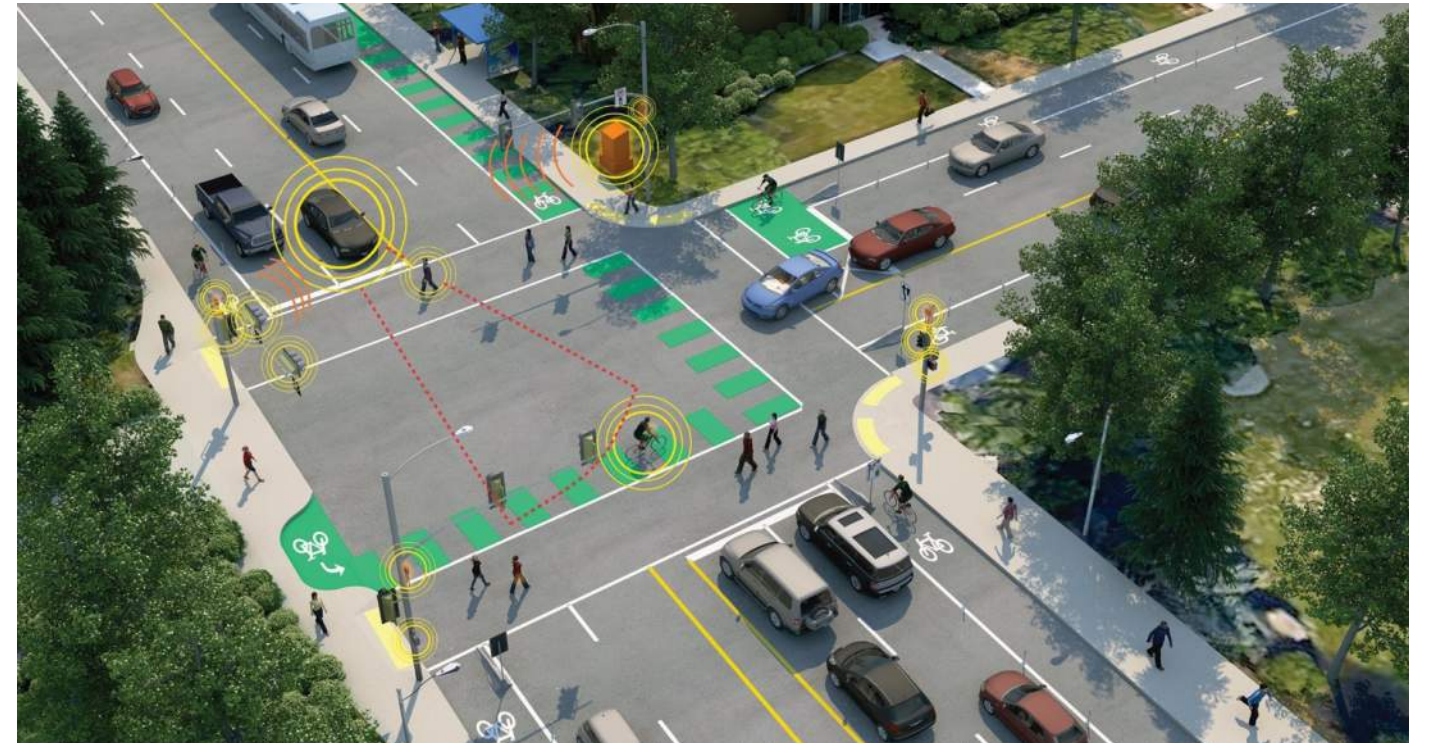
should inspire to follow. The organization and principles seek to promote equity, flexibility, simplicity, and ease of use. An accessible design should improve the experience for all users. Find out more about Universal Design here: <http://universaldesign.ie/What-is-Universal-Design/>

Automated

Automated vehicles are those that operate independent of the world around them and do not need a driver. Such vehicles depend on a sophisticated set of sensors and computing to construct a digital map of the world around them in real time and move accordingly. Trials and pilots of automated vehicles have been occurring around the world for a number of years with millions of miles of successfully logged trips. Manufacturers include legacy automobile manufacturers (e.g., General Motors, Ford, Volkswagen), as well as other technology-based firms (e.g., Google/Waymo, Uber, Lyft, Apple) are developing fleets of cars, trucks, and even delivery vehicles to operate without a driver.



▲ Conceptual rendering for a smart route and station for an accessible, automated, connected, electric, and shared transit opportunity



Connected

The ability for a vehicle to speak to other vehicles (Vehicle to Vehicle - V2V), the surrounding infrastructure (Vehicle to Infrastructure - V2I), and to every other potential device (Vehicle to Everything - V2X) is made possible through a series of external devices and communications protocols. Connections provide additional information to the vehicle such as the location of potential accidents ahead, ride hailing by a passenger, and location/availability of parking spaces or charging stations. At its most basic level, today's mapping applications on our phones are examples of how information is communicated through a connected system that pools information from other drivers to improve the experience for everyone. The infrastructure that permits this type of communication travels across the current 4G mobile networks, across local Wi-Fi, and with Digital Short-Range Communications (DSRC) devices mounted in the car and along the roadside. In the future, 5G mobile networks are expected to deliver similar if not faster communication speeds than today's options.

Electric

The electric car has long been a technology that transportation planners have embraced as a mean to reduce the negative impacts of air and noise pollution emanated by the internal combustion engine. Over the past few years electric vehicles have become more accepted as advances in battery storage have drastically increased the range potential. Further, production technologies are reducing costs such that industry

experts recently estimate that the cost of delivering an automobile with an electric engine will be cheaper than a similar model with an internal combustion engine by 2023. The limiting factor in widespread adoption of electric vehicles will be the charging network. Tesla and some regional power companies, are leading the way with the construction of a network of super-charging stations across North America, but a more fine-grained network of local charging stations will need to be constructed.

Shared

Shared mobility has historically taken the form of public transit – buses and trains – where many people share a vehicle to travel in similar directions. The great recession gave rise to a sharing economy that leveraged the power of social networking and mapping to rent out a variety of assets including available car seats (Uber/Lyft). For these trips, drivers share trips with a passenger through the use of a user-friendly app that rates both driver and passenger and simplifies the payment system.

This network has now extended to the shared use of other mobility services including bicycles (both docked and dockless) and electric scooters. Additionally, manufacturers and service providers have been developing new vehicle technologies known as micro-transit or automated shuttles to provide short distance connectivity – typically less than 3 miles in length – in business districts, office and college campuses, and in high tourist areas.

▲ Conceptual rendering of a connected intersection where the vehicles, can communicate with the infrastructure as well as with other devices in the area



DEVELOPMENT &
REDEVELOPMENT
STRATEGIES

05

05 Development & Redevelopment Strategies

One of the key goals for this master plan was to identify development and redevelopment opportunities within the trail corridor and direct their designs to leverage the trail investment and complement its use.

The following focus areas illustrate the possibilities for high-quality development and should serve as inspiration for future projects in the study area.

In this Chapter:

- 1. Overall Development Strategies
- 2. Open Space Opportunities
- 3. Washington Street Focus Area
- 4. Ackley Road Focus Area
- 5. Pleasantburg Drive Focus Area
- 6. County Industrial & Haywood Road Focus Area
- 7. Verdae Commons Focus Area
- 8. Verdae Boulevard Focus Area

Overall Development Strategies

The following development strategies relate to the entire study area and influenced many of the detailed designs in the focus areas:

- Address the topographic and grading challenges
- Engage with major landowners to explore redevelopment opportunities
- Develop a public/private partnership to ensure below market-rate housing is incorporated as redevelopment occurs
- Explore open space opportunities for parks of various sizes and typologies
- Adaptively re-use/infill properties wherever possible, with a focus on industrial sites

The focus areas are conceptual designs that illustrate the possibilities of high-quality development and design in the study area. The following plans and illustrations will guide future development to ensure high-quality design, but are not adopted buildings or site layouts set for construction. Many of the development projects will require public and private investment so collaborative partnerships will be key to the success of these focus areas.



▲ Existing photos of areas ripe for redevelopment and/or trail adjacent development at an underutilized shopping center (top) and vacant parcels (bottom)

Washington Street

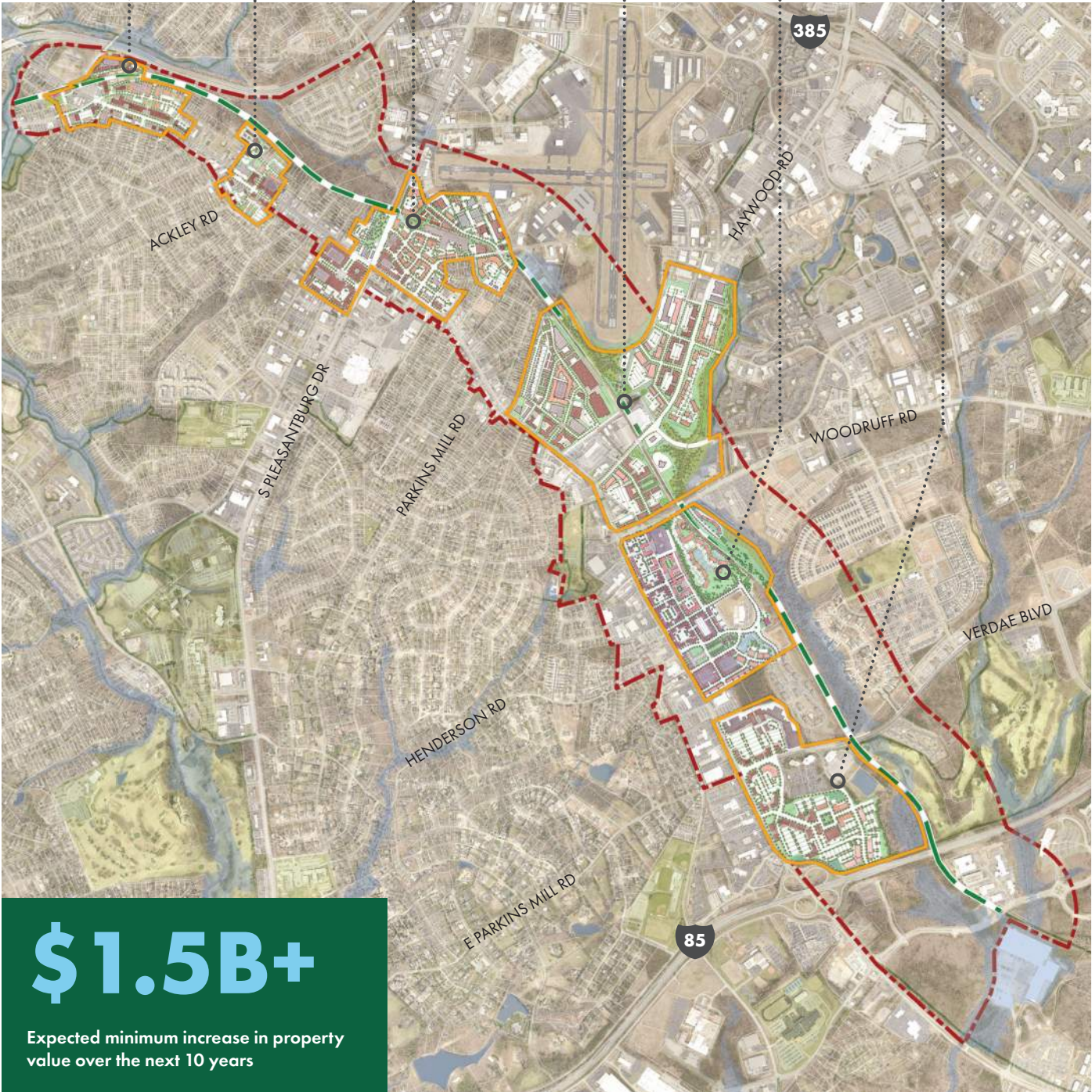
Ackley Road

Pleasantburg Drive

County Industrial & Haywood Road

Verdae Commons

Verdae Boulevard

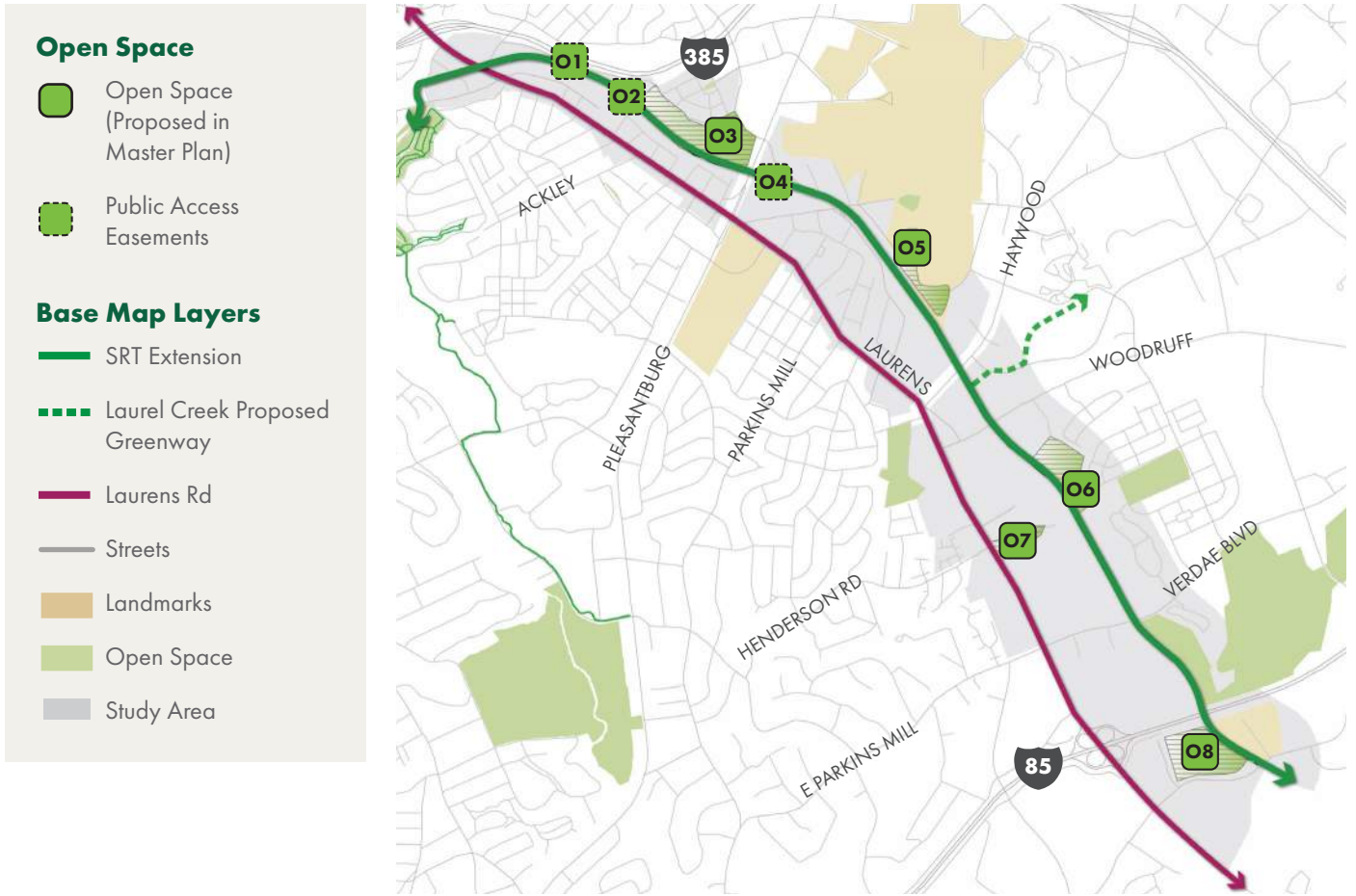


Open Space Opportunities

One way to encourage use of the trail as a “Main Street” is to explore the creation of public open space along the trail corridor. Public acquisition or public access easements related to open space opportunities can fulfill current needs that include preservation and conservation of important ecological resources, protection of floodplains for storage capacity, and passive and active public parks. Several sites within the study area are prime candidates for public acquisition or public access easements and should be considered in the immediate future before land prices accelerate or incorporated at the beginning of development/ redevelopment projects. Several sites are forested, providing valuable urban tree canopy for the area which currently lacks any substantial vegetation. A few waterways in the study area may be eligible for Clean Water Act funding sources including wetlands mitigation banks. Potential partners for these acquisitions could include the city, county, state and/or non-profit organizations (e.g., Upstate Forever).

The key open space and access easement opportunities below were identified during the master planning process:

- 01** Public access easement with Washington Heights redevelopment
- 02** Public access easement with Holland Park development
- 03** Area behind Arcadia Hills – multiple parcels to potentially consolidate; extreme topography challenges makes it difficult to develop
- 04** Public access easement with pending redevelopment site
- 05** Greenville Downtown Airport – property in the airport’s flight path and the flood plain
- 06** Ice House site – flat and clear cut for larger (community or neighborhood) park opportunity; portions in the flood plain
- 07** Verdae – reservation/dedication/development of a portion of redeveloped commercial strip as a village center with public open space
- 08** CU-ICAR property – nature preserve; difficult to develop due to topography challenges and in the floodplain



▲ Precedent imagery for open space opportunities: 1) Cleveland Park in Greenville, SC (community park), 2) Skyland Park in Greenville, SC (neighborhood park), 3) a pocket park in Chicago, IL, 4 and 5) Campus Martius Park in Detroit, MI (two images of urban plaza and urban square), 6) Camp North End in Charlotte, NC (tactical urbanism), 7) Madison Avenue tactical streetscape improvements and urban plazas in Memphis, TN, and 8) the existing Swamp Rabbit Trail in Greenville, SC (greenway)

Washington Street Focus Area

Existing Conditions

As the northwest end of the study area, the Washington Street Focus Area is bounded by Hillside Drive to the west and Darwin Drive to the east. It includes one signalized intersection at Washington Street and Laurens Road and one planned, public trailhead north of Laurens Road. Key commercial developments include: Willy Taco (existing) and Rocky's Hot Chicken (planning phase). The major landowners in the area include the Spinx Corporation and a consortium representing Washington Heights.

The area faces development challenges due to topography. For example, some buildings along Laurens Road are approximately 20 feet below buildings along Washington Street creating some limited sight lines, particularly at Darwin Avenue. The offset streets create unsafe and unpredictable traffic movements when accessing Laurens Road compared to those traditional four-way intersections. Additionally, the area is characterized by shallow that make redevelopment and new parking more challenging.

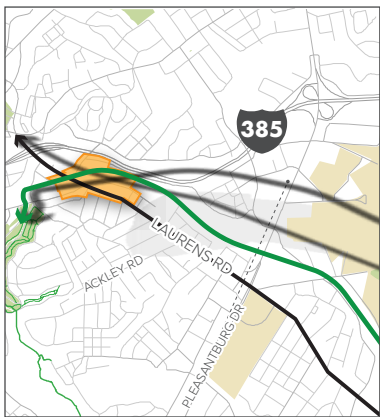
Private Development Opportunities

- 1 The highest priority for redevelopment in the focus area is Washington Heights. Any new development on the north side of Laurens Road will catalyze the area's transformation and create safer connections to the Nicholtown neighborhood. All redevelopment discussions should encourage or incentivize the inclusion of below market-rate housing to ensure socio-economic diversity
- 2 Another important redevelopment opportunity in the focus area is the Spinx campus at the corner of Washington Street and Laurens Road, including the East Park Baptist Church along Ebaugh Avenue. Few properties are on-grade with the Swamp Rabbit Trail extension in the entire study area; therefore, any redevelopment on the church property should take advantage of the at-grade trail relationship and provide a "main street" frontage along the trail
- 3 The redevelopment of Hilton Signs could provide additional at-grade trail access while also providing trail connectivity to the Overbrook neighborhood. The site's proximity to I-385 makes it an ideal location for office or a hotel with high levels of access and visibility
- 4 Infill and renovation along the south side of Laurens Road present small-scale development opportunities for offices, shopping and dining



Key Public Recommendations

- Coordinate the redevelopment of Washington Heights in conjunction with vacant properties along Laurens Road, exploring innovative ways to tackle topography challenges and providing below market-rate housing
- Encourage shared parking for developments along Laurens Road
- Partner with local businesses and entrepreneurs to renovate existing commercial buildings through grant improvement programs
- Integrate the Nicholtown Neighborhood branding across Laurens Road for any future development



Key map for Washington Street Focus Area

Focus Area

- Private Development Opportunities
- Conceptual Imagery Viewpoints

Land Uses

- Mixed-use
- Community/Civic
- Office
- Multi-family
- Existing Buildings
- Green Space
- Plaza

Base Map Layers

- SRT Extension & Connections
- Existing Buildings
- Parcels
- Topography (4 foot)
- Waterbodies
- Flood Zones
- Study Area

The popular restaurant, Willy Taco (top); renovated homes in the Nicholtown neighborhood (bottom)



415

Total Housing Units

72k

Total Square Feet of Office

60k

Total Square Feet of Retail

Conceptual Development Opportunity



Existing

View looking down the trail right-of-way near Washington Heights and Hilton Displays

Conceptual Vision (Image 5.1)

The proposed trail with fronting development along this 'main street' including ground floor retail and restaurants, hotel balconies overlooking the scenery, and open space in the form of pocket parks, patios, and deep setbacks

Skyland Park in Nicholtown off of Ackley Road (top) and homes in the Arcadia Hills neighborhood (bottom)



Ackley Road Focus Area

Existing Conditions

The Ackley Road Focus Area is bounded by Lenox Avenue and Louise Street along Laurens Road. It includes one signalized intersection at Ackley Road and Laurens Road and no planned, public trailheads. The key commercial developments include: Holland Park (under construction) and multi-family development at the end of Lenox Avenue (planning phase).

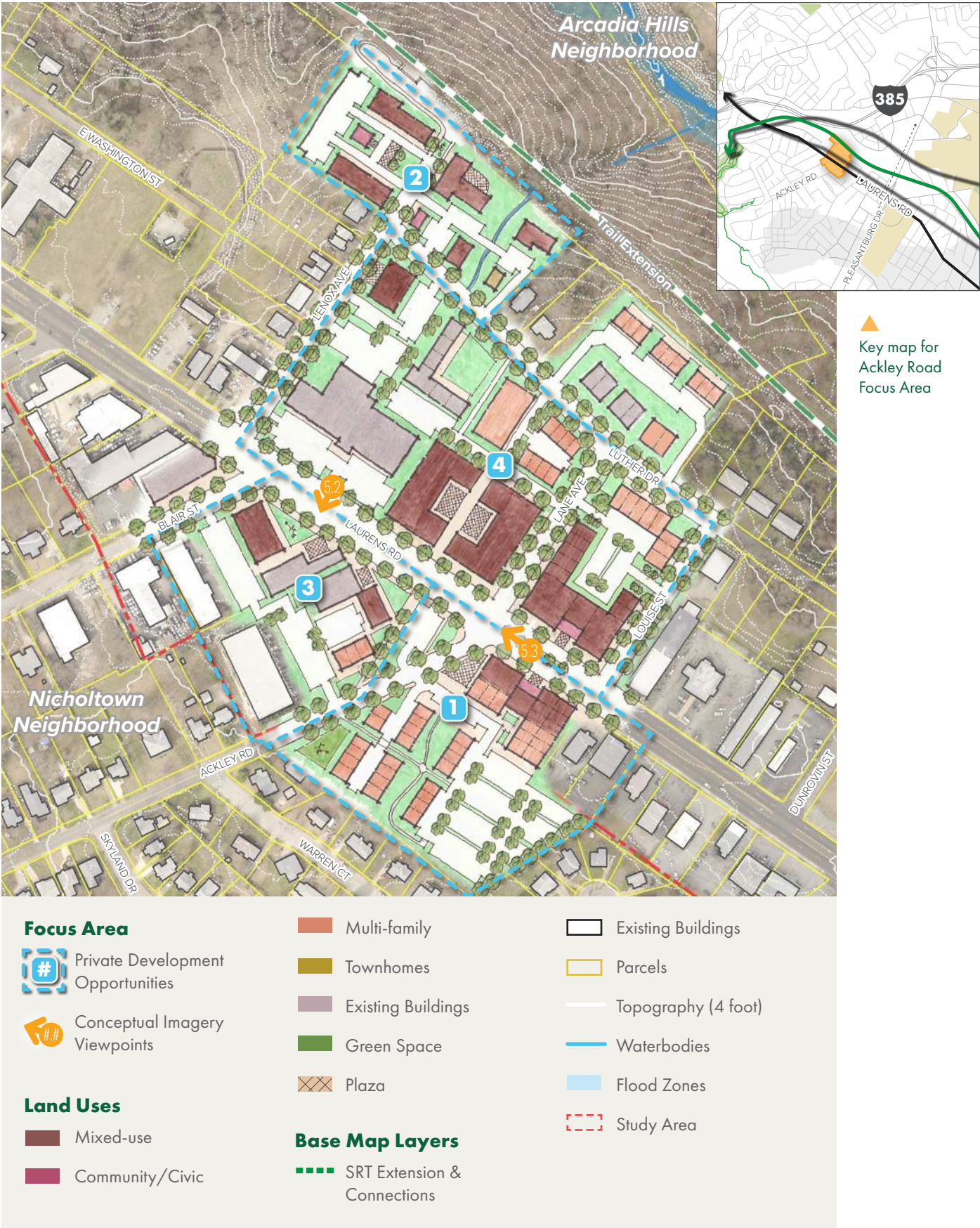
This focus area is challenged by extreme topography around the trail, which limits trail-adjacent development and creates difficulty in connecting across the wooded trail area to Arcadia Hills to the north. The offset streets create unsafe and unpredictable traffic movements when accessing Laurens Road compared to those at stop-controlled intersections. There are many shallow lots along Laurens Road in this focus area, resulting in parking issues for existing tenants as well as with redevelopment. The size, proximity to the street, and use of the existing self-storage building limits improvements to Laurens Road and redevelopment of a cohesive neighborhood.

Private Development Opportunities

- 1 Future development opportunities should provide a full “main street” frontage along Laurens Road and be designed to accommodate roadway re-alignments and other improvements for trail access and overall safety
- 2 This location at the termination of Lenox Road is identified as a major trailhead with housing, workplaces, and small dining and drinking establishments. Consider trail access and trailhead improvements in the long-term as development may occur in this area and Lenox Avenue could extend to Arcadia Hills.
- 3 Small-scale infill and adaptive re-use opportunities along Laurens Road
- 4 The redevelopment of the existing self-storage facility provides an opportunity to extend Ackley Road by re-aligning Lane Avenue and create a neighborhood center with ground-floor shops and upper story offices and housing

Key Public Recommendations

- Create a high-quality intersection at Ackley Road and Laurens Road, as well as extend Ackley Road across Laurens Road to Lane Avenue (re-aligned) to create a neighborhood center intersection
- Facilitate the redevelopment of the self-storage site for road improvements and improved value for the owner and the neighborhood
- Devise a shared parking strategy for shallow-lot properties along Laurens Road to improve the streetscape along Laurens Road in the short-term and ensure quality site planning as the area redevelops in the long-term



Key map for Ackley Road Focus Area

360
Total Housing Units

55k
Total Square Feet of Office

60k
Total Square Feet of Retail

Conceptual Development Opportunity



Existing

Prime building for adaptive re-use along Laurens Road



Existing

View looking north along Laurens Road at Ackley Road



Conceptual Vision (Image 5.2)

Image of a building along Laurens Road adaptively re-use for neighborhood dining with outdoor seating and streetscape improvements along Laurens Road



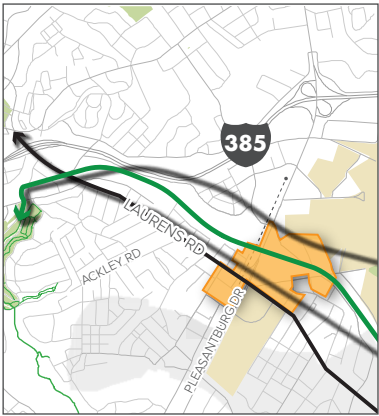
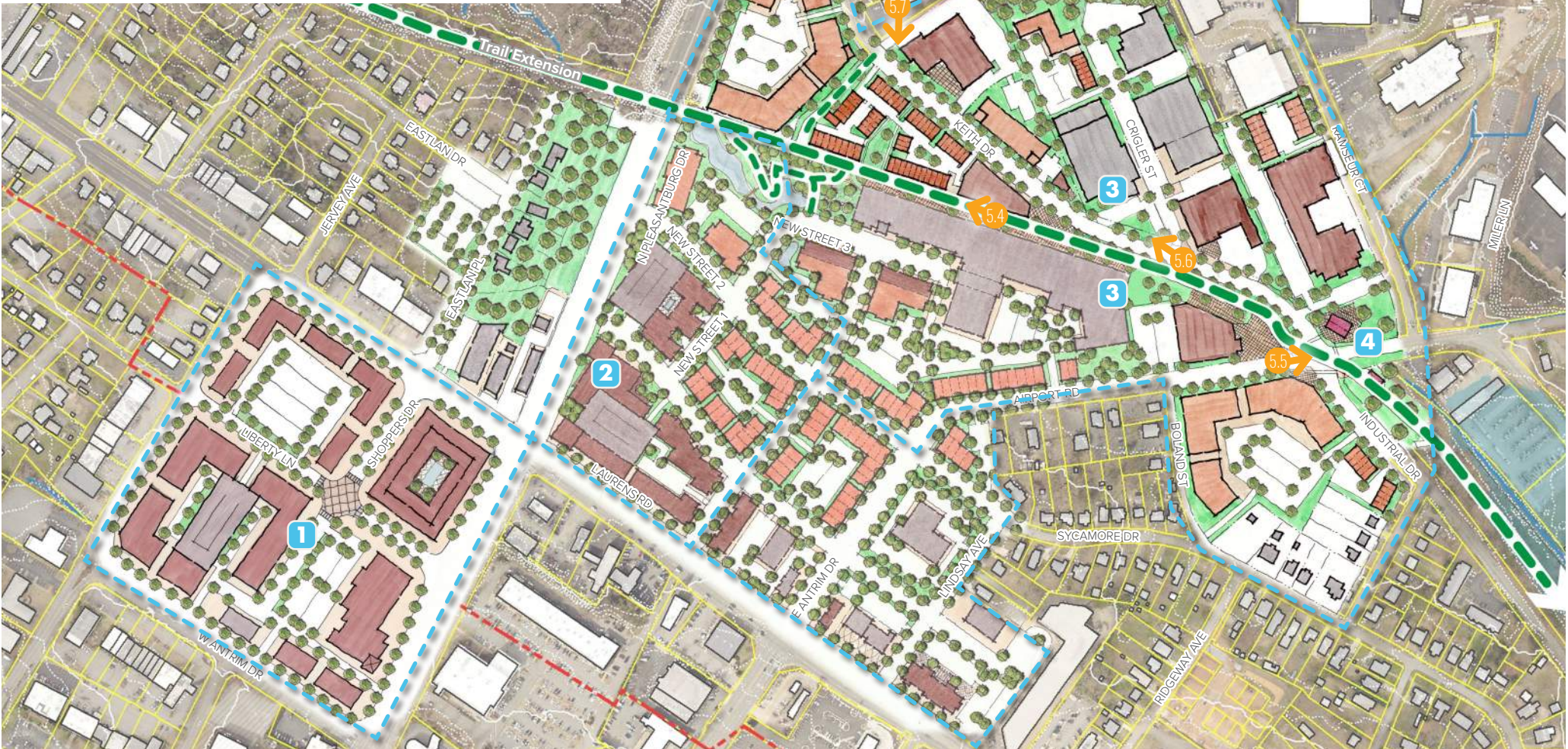
Conceptual Vision (Image 5.3)

Conceptual redevelopment and adaptive re-use/infill along Laurens Road at Ackley Road (re-aligned with Lane Avenue) intersection with mixed-use storefronts, wider sidewalks, street trees, and relocated overhead utilities. The intersection can be improved in the near-term, while the fourth leg of the intersection can wait on redevelopment and the re-alignment of Lane Avenue in the long-term.

Pleasantburg Drive

Focus Area

Shoppers Drive (top) and The Junction (bottom)



Key map for Pleasantburg Drive Focus Area

Focus Area

- Private Development Opportunities
- Conceptual Imagery Viewpoints

Land Uses

- Mixed-Use
- Community/Civic
- Office
- Multi-family
- Townhomes
- Existing Buildings
- Green Space
- Plaza

Base Map Layers

- SRT Extension & Connections
- Existing Buildings
- Parcels
- Topography (4 foot)
- Waterbodies
- Flood Zones
- Study Area

Existing Conditions

The Pleasantburg Drive Focus Area is generally bounded by West Antrim Drive to the west and south, Lindsay Avenue and Airport Road to the east and the Greenville Downtown Airport to the north. It contains five signalized intersections along Laurens Road at West Antrim Drive, Eastland Drive/Shoppers Drive, Pleasantburg Road (grade-separated), Airport Road, and East Antrim Drive and one planned trailhead at Keith Drive and Airport Road. Key commercial amenities include The Junction and Think Tank.

Potential new development projects at Pleasantburg and Laurens Roads are in the planning phases. Large tracts of property are under single-ownership at the west, south and east corners of the intersection of Pleasantburg and Laurens Roads and along the north side of Airport Road. Challenges include the clustering of traffic signals along Laurens Road at Pleasantburg Road. High numbers of accidents occur at Pleasantburg and West/East Antrim and the awkward alignment of Airport and Laurens Roads adds to the unsafe conditions in the area.

Private Development Opportunities

- Mixed-use redevelopment of the Shoppers Drive area including the improvement of West Antrim Drive at its intersection with Laurens Road
- Implement pending redevelopment opportunity with some minor changes to accommodate an Airport Road relocation with East Antrim Drive and an improved Laurens Road frontage when combined with the redevelopment of the Post Office site
- Strategic adaptive re-use, redevelopment, and mixed-use infill that leverages its proximity to the trail and to the village center at Pleasantburg and Laurens
- Create a public space in the northern quadrant of Airport Road and Industrial Drive

Key Public Strategies

- Realign Airport Road with East Antrim Drive
- Improve the streetscape along Keith Drive
- Create a brand for this area to identify it as a destination district
- Construct a public space in the northern quadrant of Airport Road and Industrial Drive

1160

Total Housing Units

152k

Total Square Feet of Office

110k

Total Square Feet of Retail

Conceptual Development Opportunity



Existing

Along the Swamp Rabbit Trail Extension behind existing industrial building



Conceptual Vision (Image 5.4)

Proposed trail extension with enhanced amenities and conceptual adaptive re-use of the industrial building as a food hall concept with outdoor seating and amenities, and nearby townhomes

Existing

View looking east along Airport Road at its intersection with Keith Drive/Industrial Drive



Conceptual Vision (Image 5.5)

Proposed at-grade crossing of the Swamp Rabbit Trail with improved streetscapes and a new public park



Conceptual Vision (Image 5.6)

Proposed tactical improvements of the intersection including painted bulb-outs, planters, crosswalks, and murals and the flexible use of Crigler Street as a shared street for vehicular access and street festivals



Existing

View looking west along Keith Drive at Crigler Street



A conceptual illustration (Image 5.7) of the Pleasantburg Drive Focus Area showing new development, a cohesive street network, adaptively re-used/infill buildings, and trail connections



Haywood Road

Focus Area

Future trail crossing on Haywood Road (top) and existing pedestrian facilities on Haywood Road (bottom)



Existing Conditions

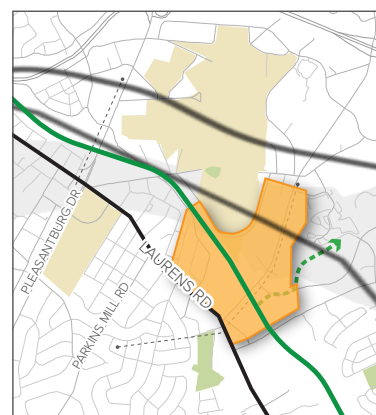
The County Industrial and Haywood Road Focus Area is located southeast of focus area C and is generally bounded by Ridgeway Drive and Laurens Road on the west, Woodruff Road on the south, Laurel Creek on the east and Old Airport Road and Airport Road on the north. It includes three signalized intersections along Laurens Road at Waite Street/Industrial Drive, Haywood Road, and Woodruff Road, two along Haywood Road at Halton Road and Transit Drive and two planned trailheads at Haywood Road and Woodruff Road. Key developments nearby include Green Cloud Technologies (under construction) and Haywood Apartments (in planning). Development opportunity sites include one large, underutilized shopping center under single-ownership at Haywood and Woodruff Roads and several large industrial/commercial properties some of which are located in an unincorporated “donut hole”. There are also poor pedestrian facilities along Haywood Road, a floodplain area near the trail, and height and land use restrictions around the airport that pose unique challenges.

Private Development Opportunities

- 1 Conceptual redevelopment of the County Industrial area for adaptive re-use, redevelopment, and strategic housing infill
- 2 Compact, mixed-use development along Haywood Road adjacent to the trail and along the proposed Laurel Creek Greenway
- 3 Conceptual redevelopment of the Burlington/Michael’s shopping center with a mix of office, hotel, residential and retail development as well as public open space to capitalize on its proximity to the trail extension, the airport and major thoroughfares

Key Public Strategies

- Improve the streetscape of Haywood Road and install new pedestrian crosswalks
- Expand and enhance the floodplain around the end of the runway as a nature preserve
- Encourage site redevelopment through the reduction of on-site parking requirements
- Construct the Laurel Creek Greenway, potentially as a partnership with the adjacent landowners/developers



Key map for County Industrial Road & Haywood Road Focus Area

1252

Total Housing Units

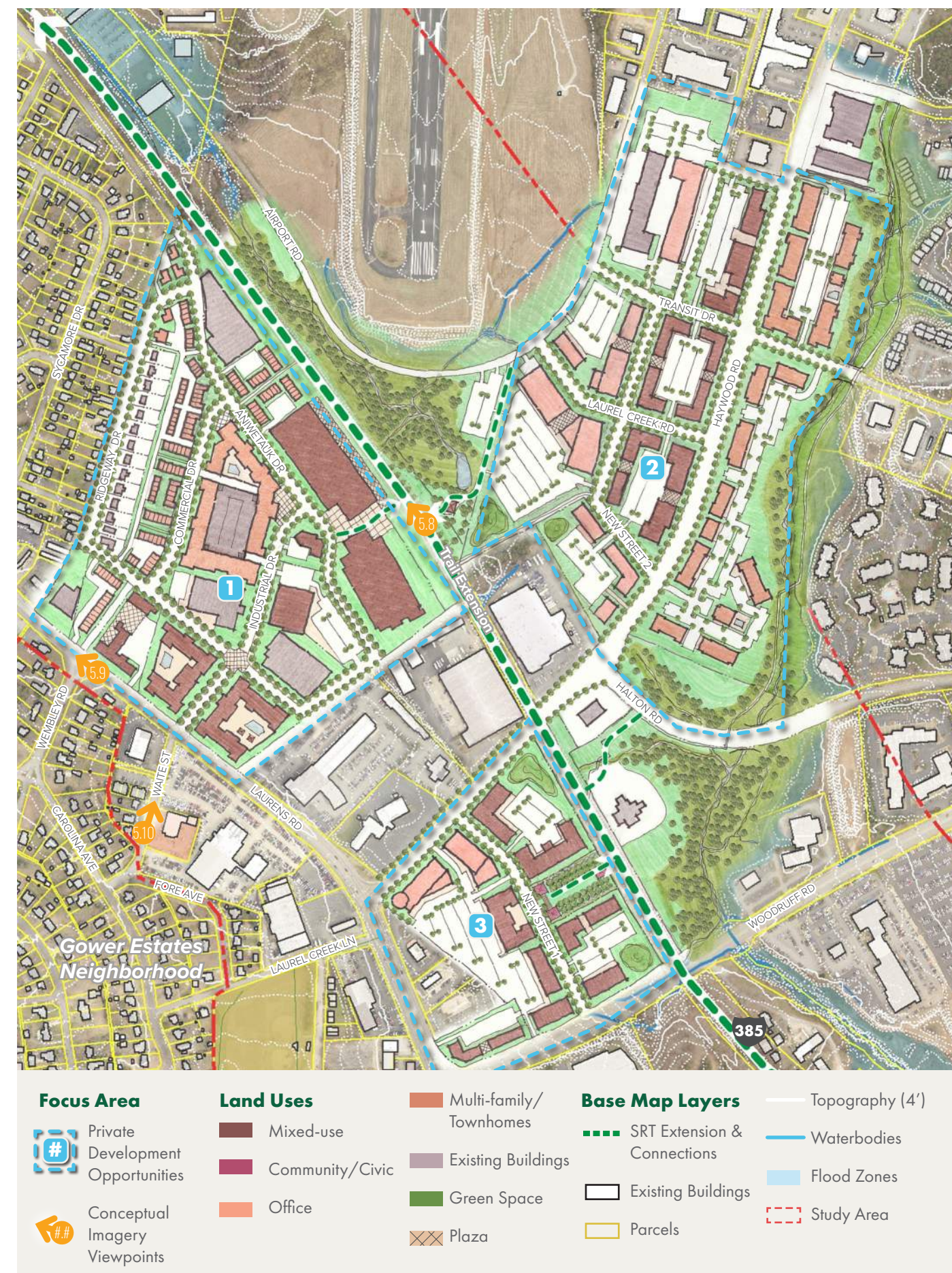
757k

Total Square Feet of Office

232k

Total Square Feet of Retail

Conceptual Development Opportunity





Existing

View looking north along the trail behind an existing Aniwetauk Drive industrial building near the airport



Conceptual Vision (Image 5.8)

Adaptive re-use of the industrial building with a trail access to open fields on airport property and new signage and public art opportunities

Existing

View looking north on Laurens Road at Wembley Road



Conceptual Vision (Image 5.9)

Proposed street improvements to provide safe, pedestrian access to the city-owned facility across the street (including a possible trail access point) with a Pedestrian Hybrid Beacon, crosswalks, and a short median to prevent left turns into Wembley from Laurens



Existing

View looking south along Waite Street near Laurens Road



Conceptual Vision (Image 5.10)

Proposed bicycle boulevard improvements to reinforce the shared-street environment for trail users to safely connect from Gower Estates to the trail



The existing shopping center at Woodruff and Laurens Roads (top) and the recent streetscape along Verdae Commons Boulevard (bottom)



Verdae Commons

Focus Area

Existing Conditions

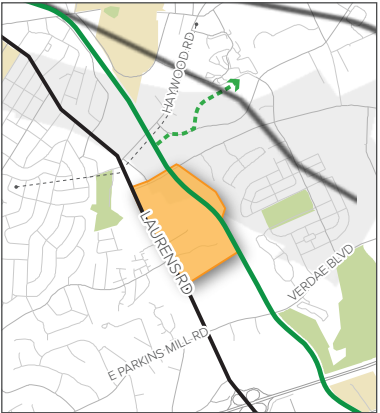
The Verdae Commons Focus Area is located southeast of the County Industrial & Haywood Road Focus Area and is generally bounded by Woodruff Road on the north, Laurens Road on the west, Verdae Commons Drive on the south and the trail extension on the east. It includes three signalized intersections along Laurens Road at Woodruff Road, the entrance to an unnamed shopping center just south of Woodruff Road, and Henderson Road/Verdae Commons and one planned trailhead at Woodruff Road. Key recent developments include Camperdown Academy, and Arlington Apartments (under construction), with much of the land controlled by the Hollingsworth Funds. The existing floodplain, topography, underutilized shopping centers and auto-oriented uses along Laurens Road all pose challenges to redevelopment.

Private Development Opportunities

- 1 The long-term vision for this area transforms it into a mixed-use village with a wide variety of uses and a density of activity that provides a sustainable retail environment that is supportive of the adjacent trail
- 2 Conceptual plan for a grand lawn that visually and physically connects Laurens Road to the Swamp Rabbit Trail and to Verdae beyond
- 3 Proposed park and nature preserve adjacent to the trail

Key Public Strategies

- Coordinate a network of streets to encourage a walkable framework of urban block with frequent connections to the trail
- Acquire land for a park and nature preserve adjacent to the trail



Key map for the Verdae Commons Focus Area



A conceptual illustration (Image 5.11) of the Verdae Commons focus area with new development including a variety of building typologies, active ground floors, and a linear urban park from Laurens Road to Legacy Park



The shopping center along Verdae Boulevard with recent facade improvements



Verdae Boulevard

Focus Area

Existing Conditions

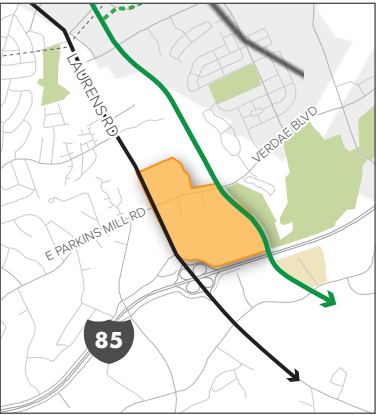
The Verdae Boulevard Focus Area, located at the southernmost point of the study area, is generally bound by Verdae Boulevard on the north, Laurens Road on the west, I-85 on the south and the trail extension on the east. It includes two signalized intersections along Laurens Road at Verdae Boulevard and Duvall Drive and one planned trailhead at Verdae Boulevard. Key developments nearby are the Verdae neighborhood, the CU-ICAR campus, and recent multifamily communities. Hollingsworth/Verdae own a significant amount of land in the area. Challenges include topography, utility and high-tension power line easements and auto-oriented uses across Laurens Road.

Private Development Opportunities

- 1 Proposed regional employment center with elements of mixed-use providing amenities to the office environment
- 2 Strategic retrofit of the existing Verdae Village shopping center that increases density to better leverage the available on-site parking

Key Public Strategies

- Consider a tunnel under I-85 to connect Bonaventure Circle to Vision Court
- Identify public open space opportunities with new development



Key map for the Verdae Boulevard Focus Area



Focus Area

- Private Development Opportunities
- Conceptual Imagery Viewpoints

Land Uses

- Mixed-use
- Office
- Multi-family

- Existing Buildings
- Green Space
- Plaza

Base Map Layers

- SRT Extension & Connections
- Existing Buildings
- Parcels
- Topography (4')
- Waterbodies
- Flood Zones
- Study Area

Existing

View of the existing Verdae Village shopping center



Conceptual Vision (Image 5.12)

Strategic mixed-use infill providing more diversity of use and activity with a trail connection as the focal-point



06 Policy Strategies

In addition to the infrastructure and development strategies, there are a series of policy-based strategies that are useful and necessary in achieving the vision in this plan. Regulatory tools have low costs for the city but higher costs for developers as the burden for implementing a policy is placed on their individual project. Other policies, programs, and initiatives have costs borne by either the City or non-profits and other private organizations.

For the Swamp Rabbit Trail Extension area, these policies, programs, and initiatives fall into four major categories – affordable housing; land acquisition; parking requirements; and general zoning.

In this Chapter:

- 1. Parking Reduction Strategies
- 2. Overlay Using Form-Based Standards
- 3. Affordable Housing Strategies

Parking Reduction Strategies

The Swamp Rabbit Trail provides both community recreation and mobility choices for those commuting to work as well as accessing shopping and amenities along or near the trail. This urbanized section of the trail includes 25% of the population within a one-mile buffer. As a result, the number of retail and restaurant patrons who could arrive by bicycle is potentially substantial, reducing the need for on-site parking. There are several potential parking reduction strategies that should be considered:

Reduce or eliminate parking requirements for adaptive re-use/ infill

Several older structures were constructed under previous parking standards (or no parking standards) or for different uses. In terms of corridor activation, the pace of change will accelerate if existing structures are reactivated instead of waiting for complete site redevelopment. Additionally, the re-use of existing buildings provides a lower cost of entry for smaller, local tenants, adding to the diversity of commercial offerings in the area. Because the entire corridor is envisioned to be mixed-use and many buildings are adaptable for a variety of occupancies, parking provisions must be much more flexible than in the past. To encourage the adaptive re-use of structures, the strict application of use-based parking standards should be reduced by 25-40% of its current standard to permit greater adaptation without loss of adjacent buildings to provide a surface lot that may or may not be fully utilized at all times during the day. The higher end of this range should be considered in areas where a larger district-wide parking strategy can be developed.

Lower requirements for new construction

The current parking requirements assume that 100% of those visiting or working at a site will arrive by car. While car storage will not be completely eliminated by access to the trail, there is a percentage of trips to and from a site that will happen on foot or by bike. To encourage higher density near the trail, which in turn lowers car dependency, the current standards should be reduced by 20% for those within the study area.

Develop shared parking strategies where parking solutions for individual properties is limited (e.g., shallow lots, adaptively re-use industrial sites, infill development)

There are a number of shallow lots along Laurens Road that are difficult to redevelop, especially if a portion of the frontage parking gives way to a necessary improvement of the streetscape. To address these issues, shared parking strategies within individual blocks should be developed along with the streetscape improvements for Laurens Road. Small area plans that include shared parking strategies should also be developed for the Airport/ Industrial/Keith industrial area and the unincorporated Haywood Road industrial area.

Identify and create public- private partnerships to provide shared parking opportunities within developments for trail users

Trailhead parking beyond the dedicated public locations along the 4.5 mile corridor will be necessary. Most trailhead needs will be off-peak (nights and weekends); therefore, the impact to private property owners will be minimal if they agree to a shared parking arrangement. However, a standard public access parking agreement to cover liabilities will be a necessary document to provide to landowners.

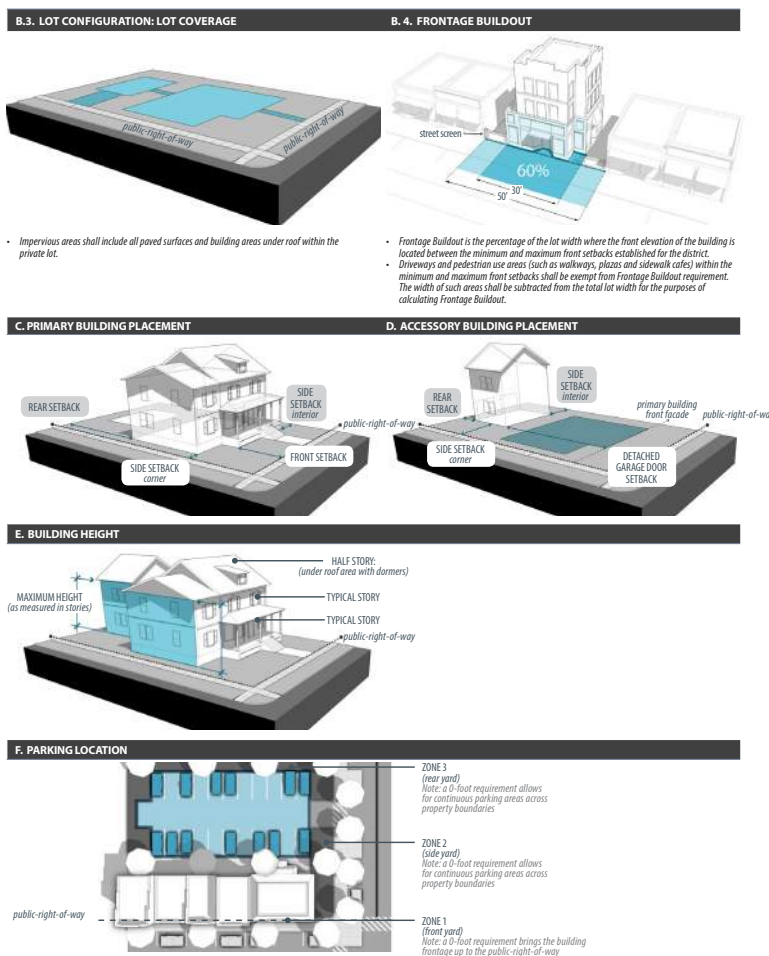
Implement on-street parking requirements for new streets and include those spaces in parking counts

For many sites, the shared use environment provided by on-street parking provides a valuable and flexible resource for short-term parking needs. In more walkable, urban environments, on-street parking also serves as a traffic calming measure by providing “visual texture” to the driver’s experience. For these reasons, it is important that on-street parking be provided as part of the urban infrastructure within the study area.

Overlay Using Form-Based Standards

Current zoning for most of the area focuses principally on use, setbacks, and minimum parking standards. Several regulatory tools are available that facilitate more walkable, urban environments. Overlays using form-based standards provide guidance for integrating the public realm of the street (or trail) with the private realm of the developments. Because it is this interface that comprises most of the human experience, an overlay that focuses principally on these details, and less so on tenant occupancy and number of parking spaces, should be considered for the study area. The City has used overlays in other areas following the development of a vision plan that encourages walkable urbanism, most recently in the Unity Park area. The key elements to a successful overlay using form-based standards for the study area include:

- Street design standards that include wide sidewalks, street trees, street lighting, on-street parking, and narrow (10-11 ft) travel lanes.
- A flexible use table that expands housing types and commercial occupancies
- Standards that promote higher density within walking distance of the trail
- Dimensional standards that reduce or eliminate setbacks in favor of maximum setbacks/build-to lines that better connect the public sidewalk to each building visually and physically
- Architectural standards that set expectations for good design as perceived by pedestrians with quality facade materials; a high percentage of ground-floor transparency (windows and doors); and pedestrian-focused frontage elements including entrance elements (e.g., stoops and porches), and open patios and decks along the trail
- Proactive rezoning of parcels adjacent to the trail to streamline approvals



Example of form-based code standards from Summerville, SC

4.5: BUILDING TYPES	SKETCH	PLAN	PERMITTED ZONING DISTRICT(S)
A. Carriage House: This is an accessory structure that provides small, flexible living spaces adjacent to a main house (a.k.a. Accessory Dwelling Unit (ADU), Granny Flat). It is often used for rental housing, and may be free standing, or located above a garage or parking area.			T3, T4, T5, RMX, IC
B. Single-Family Detached House: This is the predominant residential building type in Beaufort. This house sits on a private lot and can vary in size from a small cottage to a large mansion. Setbacks and frontage types vary by transect zone.			T3, T4
C. 2-3 Unit House: This is a house-form that seamlessly fits into a predominantly single-family neighborhood, but contains multiple dwelling units. The units may be side-by-side, or stacked. They typically have separate entrances off of the street, but may share a common entrance. They are located under one roof and do not have parapets dividing the units.			T3,T4, T5, IC
D. Rowhome: This is an attached residential building type that is part of a series of other rowhomes with more than 3 units in a row. The combination of 3 or fewer units is considered a 2-3 unit building. Rowhomes may have parapet walls dividing the units, or be combined under one roof form. They are elevated above the street a minimum of 3 feet for privacy, and are typically accessed by stoops. They may also utilize the forecourt and porch frontage types.			T4-N, T5, RMX, IC
E. Apartment House: This is a larger-scale building (a.k.a. Multi-Family Building) that contains 4 or more dwelling units. They often occupy corner lots, or are located in combination to create their own blocks. The ground floor is raised a minimum of 18 inches for privacy.			T4, T5, RMX, IC
F. Livework/Mixed-Use: This is a building that buildings contains commercial space, typically at grade, with office or residential living, typically located on the upper level(s). They are typically attached, but may be freestanding structures. The ground floor has a substantial amount of glazing, and often utilizes the shopfront frontage type.			T4, T5, RMX, LI, IC
G. Liner Building: This is a shallow structure, typically 25-30 feet deep, which is placed close to the street frontage. It is typically used in conjunction with other Liner Buildings to conceal surface or structured parking, or large-scale commercial buildings. These buildings may contain a variety of uses, including ground floor commercial, and upper-level offices or residential.			T4, T5, RMX, IC

Example of form-based code standards from Beaufort, SC



Signage is a critical component to shared parking success

See shared parking strategies map on page 48

Affordable Housing Strategies

The preservation of the existing below-market-rate housing in the study area is an important signal that the trail is an amenity open to everyone, regardless of economic status. The City of Greenville has been successfully proactive in investing in their neighborhoods for decades to help stabilize fragile areas and maintain a diverse housing mix for their residents. All affordable housing strategies should be considered in conjunction with existing efforts and plans.

Preserve existing below market-rate housing

The City has invested in housing and community support facilities in the Nicholtown neighborhood for years, but its proximity to downtown and the limited number of other moderately-priced neighborhoods in the area has made it an attractive location for market-rate investment. With the center of the neighborhood approximately 1.5 miles from Main Street, it is both a short drive and very bikeable to downtown. Continued intervention in Nicholtown will be necessary, particularly as investment marches down the Laurens Road corridor, but a mixed-income neighborhood will be much more sustainable over the long-term than exclusive dependence on public investment.

A high number of naturally occurring affordable housing units (NOAH) are found at the East Washington Village Apartments. These were once managed by the Greenville Housing Authority (GHA), but the ownership and management has passed back to the underlying private property owners. Their adjacency to the trail corridor makes this area a prime candidate for redevelopment. Given the current state of the units, little can be done to sustainably retrofit them, so redevelopment is expected. But it will be vital to preserve a percentage of below-market-rate units as the area is redeveloped, particularly given the high number of service-sector jobs within walking distance along the Laurens Road corridor.

Purchase land for future mixed-income/ below-market-rate projects

The time to purchase land to preserve opportunities for below-market-rate housing is now. Once the trail is completed, the land values will be substantially higher, thus, less viable for more moderately priced housing. In identifying future projects, it will be critical to scatter sites up and down the study area. While many units will be attached multi-family, others may utilize a lower density product type for larger households, encouraging the acquisition and/or construction of scattered site units.

Advocate for housing diversity with every project

At present, there is not clear statutory authority for inclusionary housing in South Carolina (pending adoption of S. 488 – South Carolina Inclusionary Zoning Act). Inclusionary housing is a requirement that mandates a minimum number of below-market-rate units in certain projects. However, the city has been able to achieve concessions from certain projects that receive some type of local government subsidy (e.g., tax abatement, public improvements, provision of parking). For rezonings, the legislative process may also be able to exact a mixed-income condition, particularly if there is an increase in density requested as a part of the application. For projects that are within walking distance of the trail corridor, it would be ideal to require 10-15% of all multi-family units be priced below market-rate to encourage mixed-income populations.



IMPLEMENTATION

07

07 Implementation

While policy strategies are key to fulfilling the vision, they are low in cost but sometimes high in the political capital necessary to achieve them. However, the public and private investments illustrated will require a great deal of funding, but may be easier to implement particularly when constructed with non-City dollars. The key to implementation is leveraging public funding mechanisms with private investment in a way that creates a mutually beneficial development environment. The ultimate result should be an improvement of quality of life for Greenville's residents.

Often, municipalities must tap into multiple pots of funding to make district-level visions come to life. Local, state, and federal opportunities used in combination yield significant investments in the public realm. Key investments in multimodal facilities, intersections, and parks/greenways directly contribute to the area's future economic success. These improvements spur development interest from private investors and property owners.

The plan presents a variety of opportunities, but the focus of implementation is on an identified Top 10 list created through professional expertise and prioritized based on public input. The implementation of the vision will require policy changes, partnerships, marketing, public investments, private investments, and leadership.

In this Chapter:

1. Top Public Priorities & Matrix
2. Financing & Incentives
3. COVID-19 Impact

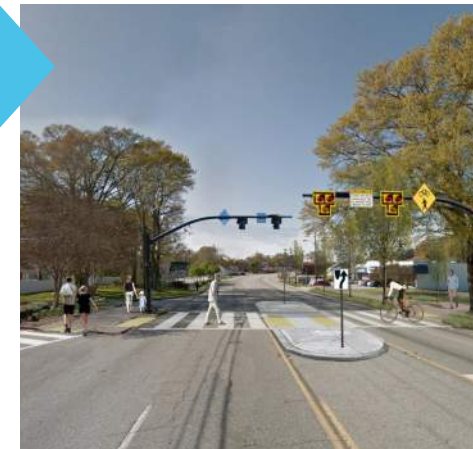
Top Public Priorities

These public priority projects were identified in conjunction with the City of Greenville, the stakeholders, through public input, the design process, and implementation analysis. Please review the implementation chapter for detailed information on the timing of these individual projects, as not all will occur at once, in the short-term or in the order as presented on these pages. Many of these projects will take time and unfortunately, may be impacted by the COVID-19 pandemic. Not all of these projects are publicly funded by the City of Greenville. The City will work with other public entities, including federal, county, and regional governments, as well as private entities to share costs or pursue alternative funding resources such as grants.

Laurens Road streetscape improvements (Washington to W. Antrim)



Laurens Road streetscape improvements (W. Antrim to Waite)



Land acquisition for below affordable housing



Elimination or reduction of parking standards for adaptive re-use/infill

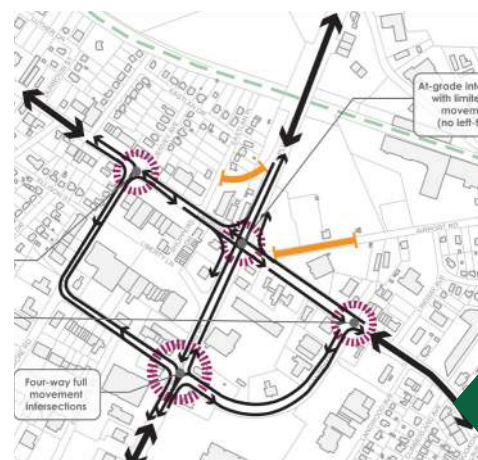


Land acquisition or easements for green/open space



Airport Road realignment

Implement design guidelines in ordinance or overlay district



Laurens Road at Pleasantburg Drive intersection plan



Top Public Priorities Matrix

Top Public Priorities	Key Goals					
	Fill the trail with people	Connect every nearby neighborhood to the trail	Transform Laurens Road	Build walkable density in the study area	Respect the trail as a “Main Street”	Preserve housing and economic diversity in the study area
Enhance priority crosswalks		✓	✓			
Laurens Road streetscape improvements (Washington Street to W. Antrim Drive)		✓	✓			
Laurens Road streetscape improvements (W. Antrim Drive to Waite Street)		✓	✓			
Land acquisition for affordable housing				✓		✓
Elimination or reduction of parking standards for adaptive re-use/infill	✓				✓	
Land acquisition or easements for green/ open space	✓				✓	
Implement design guidelines in ordinance or overlay district	✓	✓	✓	✓	✓	
Laurens Road at Pleasantburg Drive intersection plan		✓	✓	✓		
Airport Road realignment		✓	✓	✓		

Investment Level			Priority			Grant Eligible	Program/ Study/Policy
Low Investment	Medium Investment	High Investment	High	Medium	Low		
	✓		✓			✓	
		✓	✓			✓	
		✓		✓		✓	
	✓		✓			✓	✓
✓			✓				✓
	✓		✓			✓	✓
✓			✓				✓
✓			✓			✓	✓
		✓		✓		✓	

Financing and Incentives

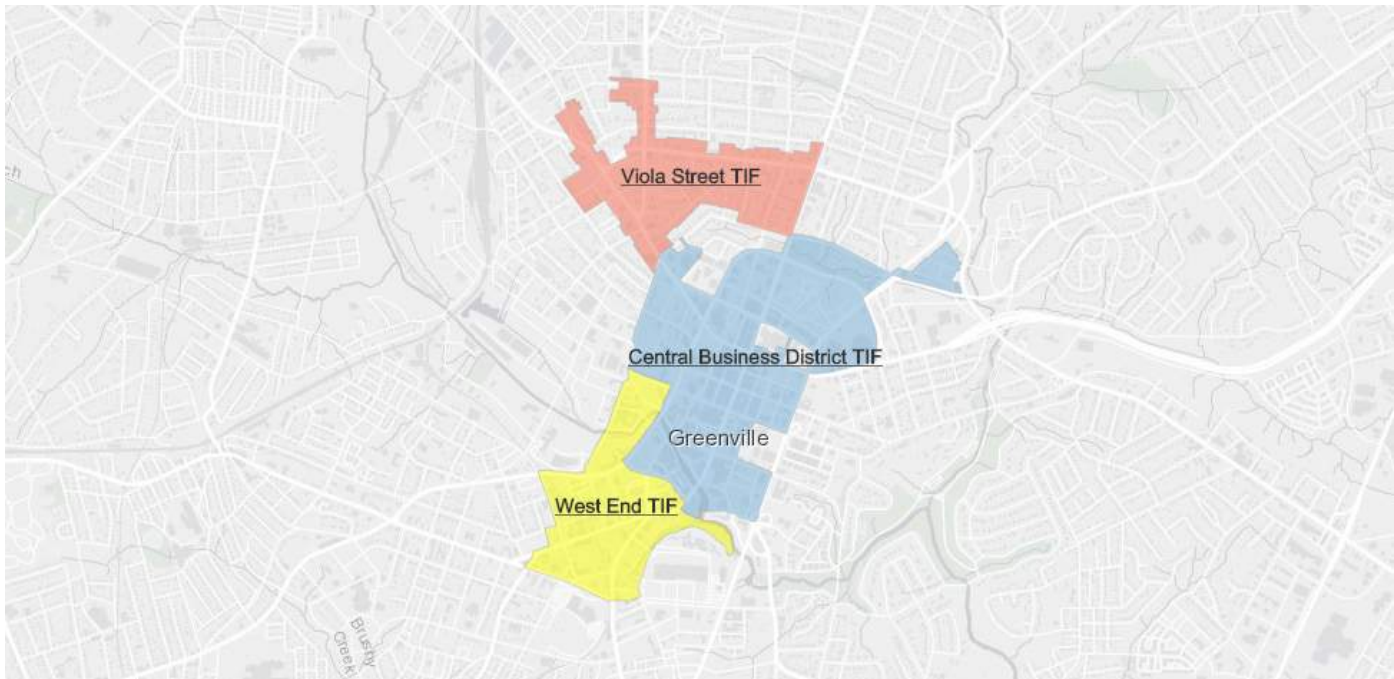
Public-Private Partnerships

The City has a long and successful history of engaging in **public private partnerships** as a means to create and enhance public infrastructure and amenities. These partnerships, which **leverage public investment with private investment**, will continue to be important as a catalyst for implementing the key improvements outlined in this plan within the study area. With reinvestment and redevelopment already beginning, the City is actively seeking opportunities to further the including bicycle and pedestrian enhancements, streetscape improvements, intersection improvements, and affordable housing as outlined in this plan in conjunction with these private sector investments.

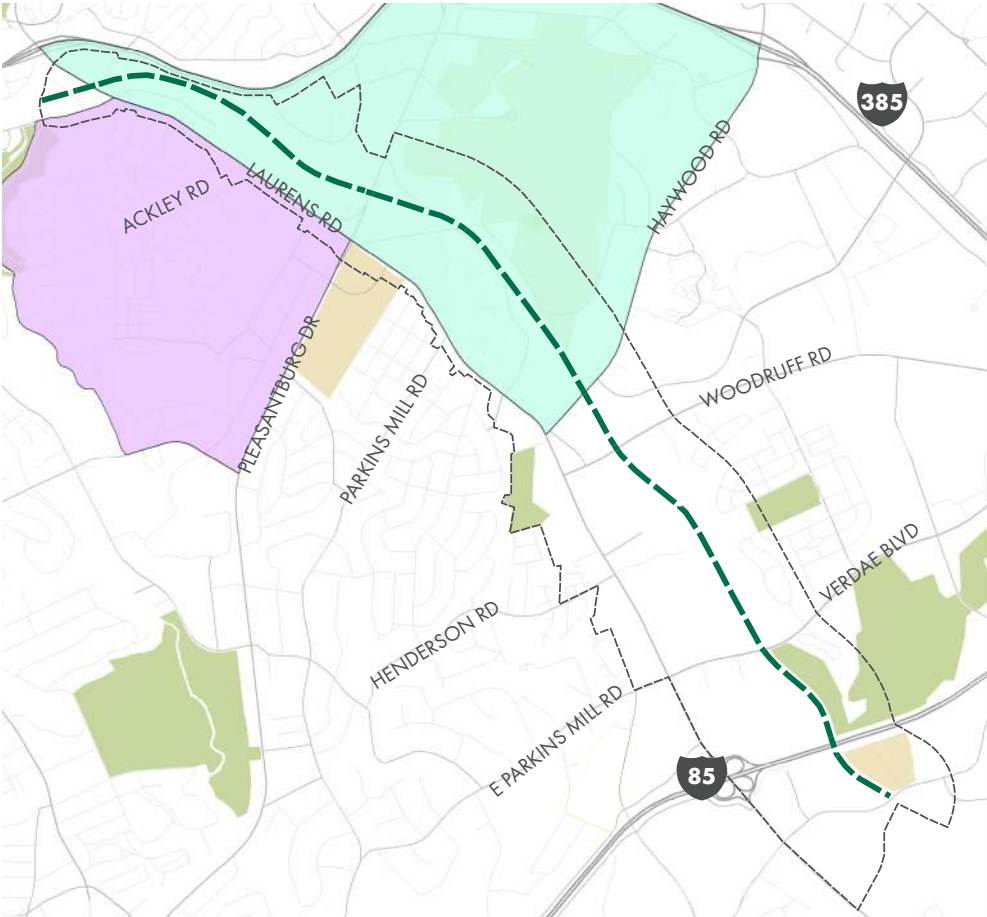
Local Value Capture District

The City of Greenville is no stranger to the use of TIF, or Tax Increment Financing. Three districts within the city have found great success including Viola Street, the Central Business District, and the West End.

The Laurens Road/Swamp Rabbit Trail Extension study area is currently challenged with a lack of investment and inadequate infrastructure making it a prime candidate for a TIF designation. As a value capture tool, the TIF is utilized with the intent of funding public improvements that enhance the value of the area’s properties. The revitalization of the designated district is based on the City of Greenville incurring debt related to infrastructure and/or facilities that is then paid off with future property tax revenues. An increase or “increment” in this future property tax revenue is used to repay the financed bonds. Since the change in state enabling legislation around TIFs allowed Counties and School Districts to “opt-out” is much more politically challenging to implement them. Some examples of projects in the study area that could be paid for using TIF funds or similar funding that leveraged future revenues against current public investments include the realignment of Airport Road, public park space along the Swamp Rabbit Trail extension, and streetscape improvements for Laurens Road.



▲ Existing City of Greenville TIF districts



Federal Tax Incentives

As mentioned in Chapter 2, two census tracts in the study area qualify for **New Markets Tax Credits** and **Opportunity Zone Funding**. These designations allow investors to leverage federal tax credits for qualifying developments. Opportunity Zones are geographic areas where investments may be eligible for preferential tax treatment. Investors defer capital gains tax and may, depending on how long they stay invested, be eligible for a capital gains reduction. If investors remain in the Opportunity Fund for 10 years, all gains made on the initial investment are exempt from capital gains taxes. While administered through local Community Development Entities (CDEs), New Market Tax Credits are a federal incentive that creates a total 39% tax credit for qualified investors over a seven-year period. The CDE collects investor capital to invest in low-income communities such as Nicholtown.

Federal tax incentives are also available for assessment and clean-up costs of contaminated properties known as **brownfields**. The City of Greenville has an assessment grant through 2021 for \$300,000. Federal brownfield dollars are a key way to leverage local economic development dollars and the creation of jobs.

Local Resources

Nicholtown and Arcadia Hills are part of the **City’s Special Emphasis Neighborhood Program** that provides assistance on an individualized basis to both renter and owner occupied residential structures. The program includes financial and technical repair assistance plus home buyer mortgage education and assistance.

The City also provides assistance with **land assembly and infrastructure improvements** for qualified private developers in addition to the facilitation of **small business loans** through state and local agencies.

Federal, State, and Local Grants for Transportation Improvements

The Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program is offering \$1 billion in grant funding through the US Department of Transportation in FY 2020. The program enforces a \$25 million maximum reward with the individual state limit being \$100 million in total. Key selection criteria include projects that improve an area's economic competitiveness and quality of life—both tenants apply directly to the transformation of Laurens Road into a multimodal corridor. Visit <https://www.transportation.gov/BUILDgrants> for more detailed information including technical assistance webinars provided by USDOT.

The South Carolina Transportation Alternative Program (TAP) utilizes federal dollars for community based projects that include pedestrian and cycling facilities as well as streetscape projects. The program offers up to 80% of eligible project costs with a local match of 20% on a reimbursement basis and is administered by the Greenville-Pickens Area Transportation Study (GPATS). Their target allocation is approximately \$640,000 annually. Visit <https://www.scdot.org/projects/community-transportation-alternatives.aspx> for more detailed application

GPATS also receives an apportionment they place in a Guidehshare Program which is just over \$18 million annually. Laurens Road does not currently appear on the GPATS Transportation Map for planned or future improvements eligible for this funding. The recommendations found in this plan may warrant the addition of Laurens Road to this funding pool related to sidewalk construction and other safety improvements at key intersections.

Greenville County also has access to the South Carolina “C” Program with a 2019-2020 year apportionment of \$5.5 million. The County Transportation Committee (CTC) manages the selection and approval of projects to be funded. Again, Laurens Road improvements should be considered for this funding pool. The funds extend to city streets as well, so other key connecting roadways within the study area may also qualify for funding.

The City of Greenville is also eligible to apply for Recreational Trails Grants administered by the South Carolina Parks Recreation and Tourism Department with funds approved by the Federal Highway Administration. The City has to provide a 20% match and is then eligible for reimbursement of 80% of the project cost. The implementation of the Swamp Rabbit Trail and certain associated amenities would qualify for this program funding.



Ongoing Capital Improvement Funding

The City's Capital Improvement Program (CIP) is found in the Annual Operating Budget and is utilized to plan for future public projects and facilities. The FY 2020-21 budget may include potential capital funding allocation for several projects identified through this planning effort. Areas within the CIP to potentially target funding include:

Roads and Bridges

- Intersection Safety Improvements - funding for identified safety improvements at various intersections within the City.
- NSTEP - New Sidewalk Targeted Expansion Program - funding to construct sidewalks on one side of every street, as well as fund the City's Sidewalk Gap program.
- Street Resurfacing - matching funds in conjunction with the Greenville County Transportation Committee's resurfacing match program, complete other resurfacing and restriping projects, and address curb ramp ADA compliance.

Affordable Housing

- Affordable Housing Plan - invests in affordable housing development and land purchase for affordable housing development.

Parks and Recreation

- Greenways and Trails - funding for the design and construction of additional neighborhood and connector pedestrian/bike trails.

Economic Development

- Commercial Corridors - funding for streetscaping, landscaping, and other public infrastructure improvements to revitalize the City's streets and commercial corridors.
- Economic Development Project Account (funded with the City's net proceeds from the TIF districts) - funding for targeted investment in major economic development projects within the city.

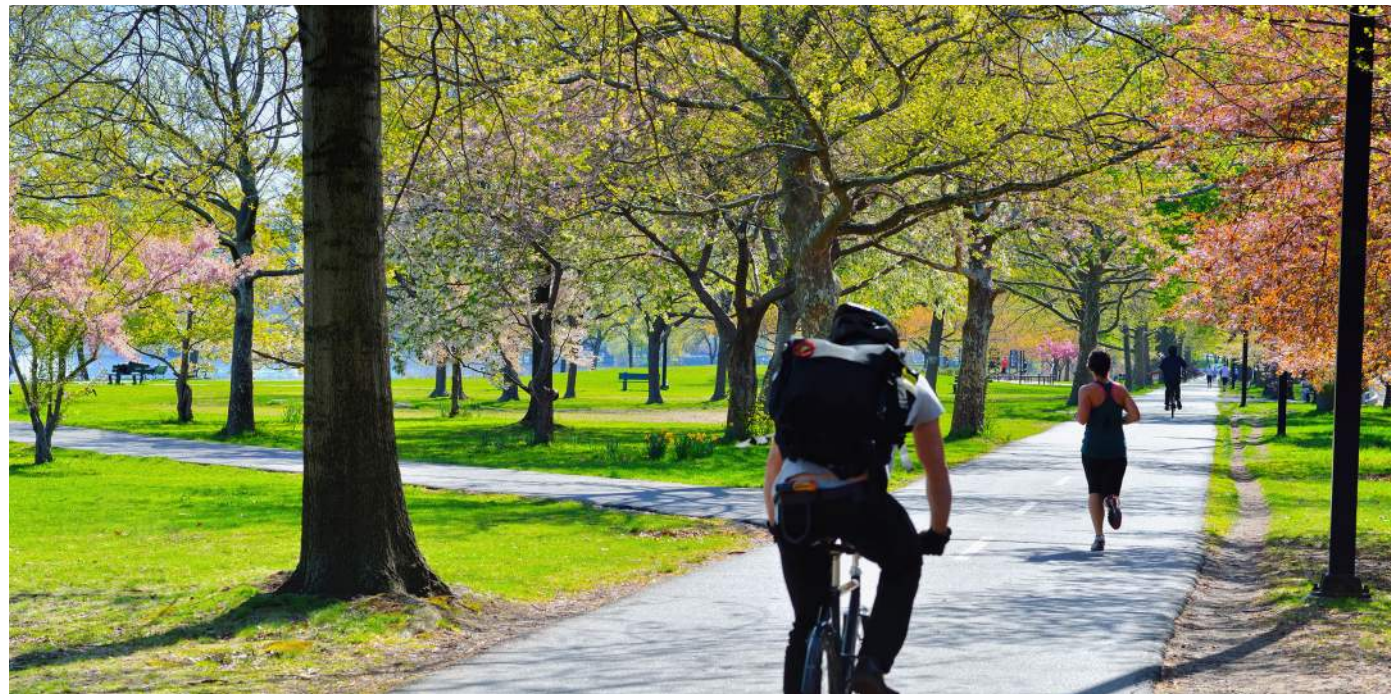
COVID-19 Impacts

During the completion of the Swamp Rabbit Trail Extension Master Plan, our world, our nation, and our community were struck with an unprecedented global pandemic known as COVID-19. The coronavirus brought our routine daily life to a sudden halt. Stay-at-home orders, shuttered businesses, closed public schools, and working from home became the new reality for our entire global community. The social impacts of illness and death were felt with tremendous weight by people worldwide and social distancing became a norm by which we all lived to protect ourselves and others.

The economic impacts of this virus remain to be seen. We do know that there will be a percentage of businesses that do not survive this time, with small

businesses likely hit most directly. We also don't know yet the total economic impacts on the City of Greenville's funds, ability, or timing in order to execute some of the projects outlined in this plan. Depending on the ultimate economic state of the U.S. after the pandemic crisis is over, the government may choose to provide stimulus money focused on infrastructure projects. Cities will be need to be posed with shovel-ready projects that can help their communities recover from the economic down-turn caused by the COVID-19 virus.

The bright light in this crisis has been an increase in outdoor physical activity where social distancing can be preserved - particularly pedestrians, runners, and cyclists who have been able to take advantage of lower traffic on the streets and improved air quality.



▲ During the COVID-19 pandemic, outdoor activity that maintained social distancing soared



APPENDIX A

Subarea	Map Key	Intersection Name	Existing Signal?	Distance between Intersections (in feet)	Priority	Priority Laurens Road Improvements
High Quality Intersections along Laurens Road						
West	M2	Hillside Drive	N	550 (H to W)	1	
	M4	Washington Street	Y	875 (W to U)	1	
	M5	Underwood Avenue (mid-block)	N	460 (U to D)	3	
	M6	Darwin Avenue (re-aligned with Coolidge Avenue and in conjunction with redevelopment of Washington Heights)	N	910 (D to G)	2	
	M7	Glenn Street (see Holland Park site plan for main entrance alignment)	N	402 (G to L)	3	
	M8 (Short-term)	Blair Street	N	550 (L to A)	1	
	M8 (Long-term)	Blair Street (re-alignment with Lenox Avenue)	--	--	3	
	M9 (Short-term)	Ackley Road	Y	990 (A to W)	1	See Trail Access Diagram 3: Ackley Road Area, Strategy 9
	M9 (Long-term)	Lane Avenue (re-alignment with Ackley Road)	--	--	2	
	M10	Webster Road	N	565 (W to WA)	3	
	M11	W. Antrim Drive	Y	530 (WA to E/S)	3	
	M12	Eastlan/Shoppers Drive	Y	345 (E/S to P)	1	
Central	M13	Pleasantburg Drive bridge and exit ramps	Y	180 (P to A)	2	
	M15	Airport Road	Y	700 (A to EA)	2	
	M17 (Short-term)	E. Antrim Drive	Y	950 (EA to R)	2	
	M17 (Long-term)	E. Antrim Drive (re-aligned with Airport Road)	--	--	--	
	M18	Ridgeway Avenue	N	950 (R to PM)	3	
	M19	Parkins Mill Road	Y		1	See Trail Access Diagram 6: Haywood Road Area - Part A, Strategy 6
	M20	Wembley Road (mid-block to Ridgeway Drive)	N	550 (W to W/I)	2	
	M21	Waite Street/Industrial Drive	Y	1155 (W/I to H)	1	
	M22	Haywood Road	Y	940 (H to W)	1	See Trail Access Diagram 7: Haywood Road Area - Part B and Verdae Commons Area - Part A, Strategy 4

Subarea	Map Key	Intersection Name	Existing Signal?	Distance between Intersections (in feet)	Priority	Priority Laurens Road Improvements
East	M25	Woodruff Road (in conjunction with connection to Gower Park)	Y	1,300 (W to E)	2	
	M26	Existing signal (remove or improve to high-quality)	Y	965 (E to M)	3	
	M27	Marketplace Drive	N	435 (M to H)	3	
	M28	Henderson Road/Verdae Commons	Y	675 (H to N)	1	
	M29	New Street #9 (see Verdae Commons focus area)	N	1000 (N to N/E)	3	
	M30	New Street #1 (see Verdae Blvd focus area)	N	680 (N/E to EP/V)	3	
	M31	E. Parkins Mill Road/Verdae Boulevard	Y	850 (EP/V to N)	1	
	M33	New Street #2 (see Verdae Blvd focus area)	N	3,190 (N to F/M)	3	
	M34	Fairforest Way/Millennium Boulevard	Y	--	1	

Subarea	Map Key	Intersection Name	Existing Signal?	Priority
High Quality Intersections Other than on Laurens Road				
West	M1	Traxler Street & Ebaugh Avenue	N	1
	M3	Hillside Drive & Lowndes Hill Road	N (4-way stop)	1
Central	M14	Pleasantburg Drive & Keith Drive	Y	2
	M16	Airport Road & Keith Drive	Y	County
	M23	Haywood Road & Halton Road	Y	2
East	M24	Haywood Road & Transit Drive	Y	2
	M32	Verdae Boulevard & Welling Circle/Azalea Hill Drive (if golf course redevelops)	N	3

Subarea	Map Key	Trailhead Name	Public or Private?	Distance between Trailheads (in feet)	Priority
Swamp Rabbit Trail Extension Trailheads and Access Points					
West	T1	Richland Way & Traxler Street	Public	680 (RT to TE)	City
	T2	Traxler Street & Ebaugh Avenue	Public	720 (TE to L)	1
	T3	Laurens Road	Public	1300 (L to WH)	County
	T4	Washington Heights development	Private	630 (WH to D)	2
	T5	Darwin Avenue	Public	1350 (D to L)	2
	T6	Lenox Avenue	Public	1375 (L to A/D)	1
	T7	Dunrovin Street (from Ackley Road)	Private	1150 (A/D to E/S)	2
	T8	Eastlan/Shoppers Drive	Public	325 (E/S to M)	1
Central	T9	County-owned land (see Pleasantburg Drive focus area)	Public	250 (M to TT)	1
	T10	New Street #3 (see Pleasantburg Drive focus area)	Public	1440 (TT to A/K)	1
	T11	Airpor Roadt/Keith Drive	Public	1410 (A/K to R/I)	County
	T12	Ridgeway Drive/Industrial Drive	Public	1550 (R/I to PPS)	1
	T13	ProSource Plumbing Supply (proposed adaptive re-use)	Private	1235 (PPS to H)	2
	T14	Haywood Road	Public	375 (H to FLCG)	County
East	T15	Future Laurel Creek Greenway connection	Public	1050 (FLCG to W)	2
	T16	Woodruff Road	Public	575 (W to AA)	County
	T17	Arlington Apartments (currently under construction)	Private	1175 (AA to MPE)	1
	T18	Marketplace Dr extension (same parcel as Camperdown, owned by Verdae)	Private	850 (MPE to VC)	3
	T19	Verdae Commons (owned by Verdae)	Private	1185 (VC to VVA)	1
	T20	Velo Verdae Apartments	Private	1325 (VVA to V)	1
	T21	Verdae Boulevard	Public	1215 (V to NS)	County
	T22	New Street #2 (see Verdae Blvd focus area)	Private	1750 (NS to ICAR)	2
	T23	CU-ICAR campus	Public	975 (ICAR to M)	1
	T24	Millennium Boulevard	Public		County

This page intentionally left blank.

