



STAUNTON BICYCLE & PEDESTRIAN PLAN

City of Staunton, Virginia



RHODESIDE & HARWELL

November 2017

ACKNOWLEDGEMENTS

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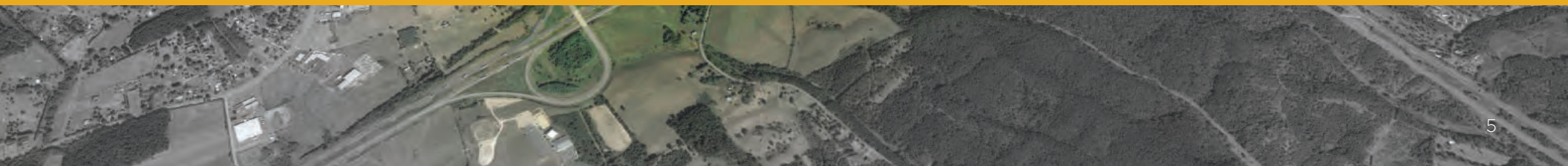
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INTRODUCTION



INTRODUCTION

The City of Staunton is a desirable place to live, work, and visit, attracting entrepreneurs and families with its quality schools, beautiful parks and recreation amenities, low cost of living, low crime rates, and high quality of life. The Staunton Comprehensive Plan and Zoning Code reflect Staunton's commitment to maintaining its unique historic setting with Traditional Neighborhood Design and Historic Overlay zoning districts.

To meet the principles of traditional neighborhood design, as well as providing safe, convenient, attractive facilities for residents and visitors is the creation of a plan for future bicycle and pedestrian connectivity in the City. At present, the City has a complete sidewalk network in its historic Downtown and adjacent residential neighborhoods, yet some pedestrian infrastructure in Downtown needs safety improvements, such as crosswalks and signalized pedestrian crossings. Further, pedestrian connectivity quickly deteriorates outside of this roughly 0.75-mile Downtown radius. Staunton has not installed any bicycle facilities yet, but has formed the Bicycle and Pedestrian Advisory Committee (BPAC), whose members are collaborating with City staff to begin this process. City staff and the BPAC have agreed that a plan should be in place before existing streetscapes are altered to add new non-motorized facilities.

The City supports the development of multimodal infrastructure generally in its Comprehensive Plan and unadopted Greenways Master Plan, but this is the City's first Pedestrian and Bicycle Plan. The City recognizes the need to integrate walking and bicycling facilities into the Comprehensive Plan to support the preservation of existing traditional neighborhoods, as well as the development of new ones. Complete streets will make Staunton even more attractive to visitors and the "creative class" that the City seeks to attract to grow its economy and workforce. This plan will also supplement the City's existing Greenways Master Plan.

Completion of this bicycle and pedestrian plan was made possible through an Urban Development Area technical assistance grant provided by the Office of Intermodal Planning and Investment. In accordance with § 15.2-2223.1 of the Code of Virginia, this Plan promotes the development of urban development areas in a way that is consistent with Traditional Neighborhood Design. In 2015, Staunton City Council voted to designate the entire City as a UDA for



Staunton's Urban Development Area encompasses the entire City limits

the purposes of coordinating land use and transportation Citywide. The City of Staunton received the grant in the form of a direct on-call consultant services contract with Rhodeside and Harwell, Inc.

PROCESS

The master planning process began with an understanding of needs and opportunities based on data analysis, observation, and public input meetings and a survey. It evolved into a set of goals, and a draft network of important corridors to facilitate walking and bicycling in the City- "the strategic corridors". A Toolkit was provided to compile a range of strategies for providing facilities, routes, and other amenities. Once the Toolkit was developed, preliminary recommendations were made to each identified corridor within the City.

THE PLAN

The overall plan is developed into the following chapters:

1. INTRODUCTION

- Project overview, goals, and benefits for improving facilities for pedestrians and bicyclists in Staunton.

2. EXISTING CONDITIONS

- Review of existing challenges and opportunities related to pedestrian and bicycle connectivity.

3. COMMUNITY VISIONING

- Overview of community outreach methods and feedback employed in this planning process, including a summary of community survey results.

4. PEDESTRIAN INFRASTRUCTURE

- Identification of corridors that address needs and/or opportunities to improve and expand the City's pedestrian network.

5. BICYCLE INFRASTRUCTURE

- Identification of corridors that address needs and/or opportunities to improve and expand the City's bicycle network.

6. IMPLEMENTATION

- Overview of considerations and strategies for implementing master plan recommendations.

BENEFITS OF FOSTERING A MORE WALKABLE, BIKEABLE STAUNTON

Between 2000 and 2013, the percentage of commutes made by bicycle in the United States increased by 62% (League of American Bicyclists, 2015). Many communities are making significant investments in infrastructure to support bicycling and walking: adding bicycle lanes, improving sidewalks, installing

PROJECT GOALS

The following goals were developed based on existing plans and policies (e.g., from the Comprehensive Plan), input from City staff and Committee members, and input received during the first community meeting. The goals that guided the overall vision for the plan include:

- 1 Ensure that key corridors are able to **accommodate** a variety of transportation modes (driving, walking, biking, transit).
- 2 **Support a range of users** by considering variations in physical abilities, perceptions of safety, trip types, and trip purposes of different users.
- 3 Explore opportunities to **connect parks, open spaces, shopping destinations, and cultural amenities**. Consider both existing and future neighborhoods and districts.
- 4 Create **safe and convenient** bicycle and pedestrian networks that connect people to neighborhoods, destinations, and transit.
- 5 Explore opportunities to **mediate steep topography** for easier bicycling and walking



Steering Committee walking tour

shared use paths, and providing related amenities. There are many benefits to fostering a multimodal City:

HEALTH BENEFITS

Increasing active transportation options can have an enormous positive impact on the physical health of a community. Regular physical activity (such as walking and biking) reduces depression, and helps prevent heart disease, obesity, diabetes, and other ailments (U.S. Department of Health and Human Services, 2015). Integrating physical activity, such as walking or riding a bicycle, into the lifestyle of a sedentary adult is three to four times less expensive than enrolling into a structured exercise program (Sevick, 2000).

ECONOMIC BENEFITS

Property Values

Investing in non-motorized infrastructure encourages economic development, improves property values, and helps create new jobs and businesses. After the City of San Francisco made a street more conducive to pedestrian and bicycle travel, nearly 40% of the local merchants reported increased sales and 60% reported more area residents shopping locally. Two-thirds of merchants believed business improved with increased levels of bicycling and walking (Drennan, 2003).

Transportation Savings

Bicycling and walking are affordable forms of transportation, which is particularly important for low-income or no-car communities. In 2015, the American Automobile Association found that the average sedan costs about \$8,698 to own and operate per year (Stepp, 2015). By comparison, the Sierra Club estimates that the average cost to operate a bicycle is about \$308 per year (Sierra Club, n.d.).

TOURISM BENEFITS

Trails don't only draw local users. Bicycle tourism has been shown to create significant positive impacts on local economies. For example, in the Central Shenandoah Valley region, bicycle tourism is estimated to have generated \$8.6 million in sales activity in 2015 (Central Shenandoah Planning District Commission, 2016). By providing connections to other regional pedestrian

and bicycle networks, the City could see more day or overnight tourists, all of whom are likely to shop, eat, and/or sleep in Staunton.

ENVIRONMENTAL BENEFITS

A City's air quality can be improved through increased bicycling and walking: according to Transportation Alternatives, if 5% of New Yorker City residents commuting by private car or taxi switched to commuting by bicycle to work, 150 million pounds of CO₂ emissions per year could be reduced. This is equivalent to the amount reduced by planting a forest 1.3 times the size of Manhattan (Transportation Alternatives, 2008).



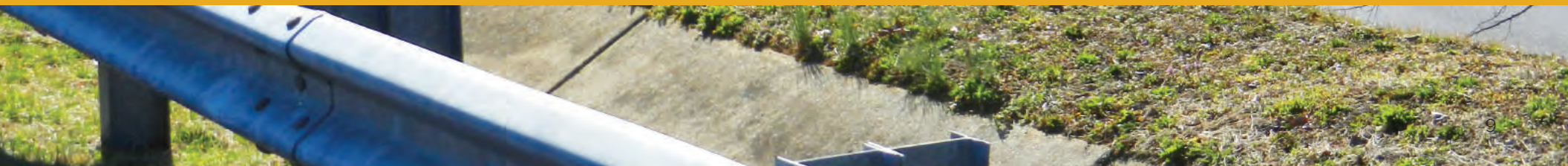
Virginia School for the Deaf and the Blind



The Historic Newtown Neighborhood



2 | EXISTING CONDITIONS



EXISTING CONDITIONS

In order to better understand existing pedestrian and bicycle infrastructure conditions within Staunton, the design team toured the City, spoke with City staff and residents to build more on-the-ground knowledge, reviewed existing plans and policies to understand the current framework for development, and

analyzed available data. This base of understanding was enhanced by a community review at the first public meeting. The following are issues and challenges identified.



HIGH TRAFFIC ROADWAYS

There are several high-capacity, high-traffic roadways throughout the City. While they provide access to key destinations for people driving vehicles, they generally present a barrier to other modes of travel, particularly if there is a lack of designated crosswalks, sidewalks, bike lanes or sidepaths.



LACK OF NETWORK

Currently, there are no bike lanes within the City and there are major gaps regarding crosswalks, signalized pedestrian crossings, and sidewalk connectivity between key destinations.



NARROW ROADS

Overall, Staunton has a good grid network of streets particularly in its historic core. However, most streets are narrow with limited rights-of-ways to safely accommodate pedestrian and bicycle infrastructure.



PHYSICAL HAZARDS

Objects such as improperly located above-ground utilities and site furnishings can create hazards and obstructions for pedestrians and bicyclists.



LACK OF ADA COMPLIANCE

Some areas of the City include pedestrian infrastructure, but it may be in disrepair, lack adequate safety features, or may not be ADA accessible.

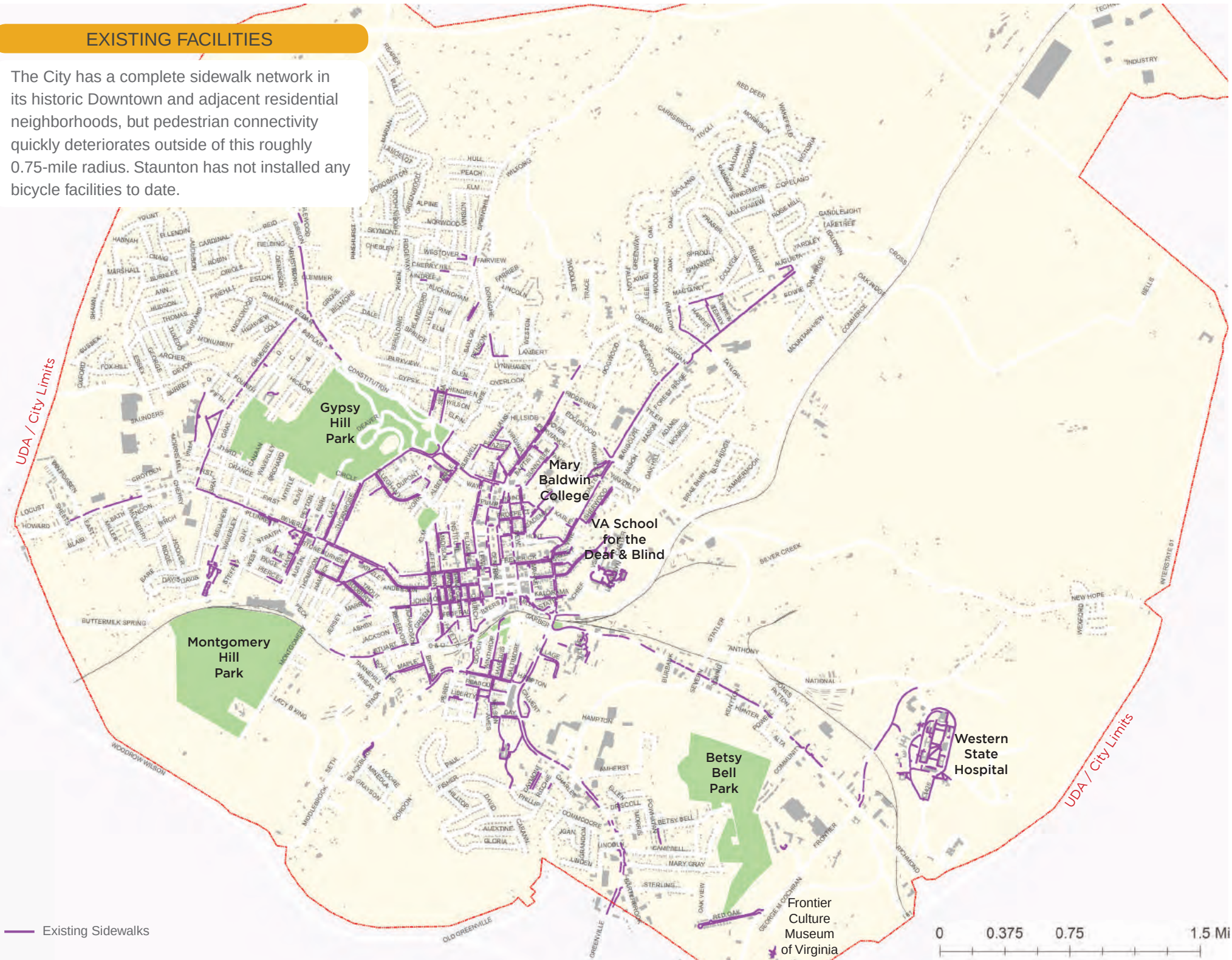


LACK OF AMENITIES

Currently, the City generally lacks bike racks, benches, wayfinding systems and street trees that could encourage the use of pedestrian and bicycle transportation options.

EXISTING FACILITIES

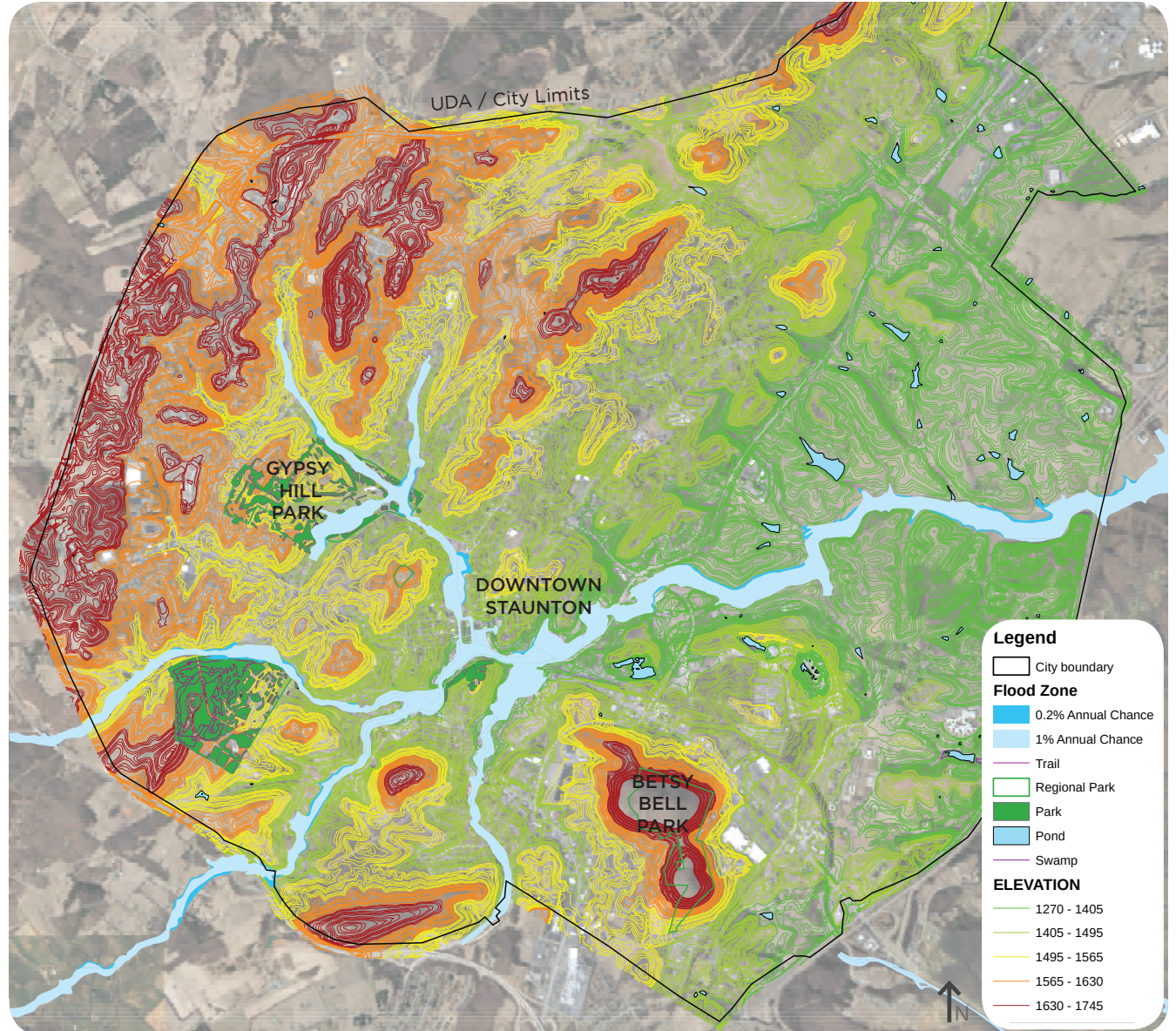
The City has a complete sidewalk network in its historic Downtown and adjacent residential neighborhoods, but pedestrian connectivity quickly deteriorates outside of this roughly 0.75-mile radius. Staunton has not installed any bicycle facilities to date.



EXISTING CONDITIONS



TOPOGRAPHY



Staunton lies within the mountainous Shenandoah Valley Region of Virginia. Due to its location, there are many areas of the City that are defined by rolling topography. Dramatic changes in topographical elevations can make it difficult

for pedestrians and bicyclists to navigate steep hills. Wintry conditions can be particularly challenging with snow and ice accumulations creating hazardous conditions.

OPPORTUNITIES

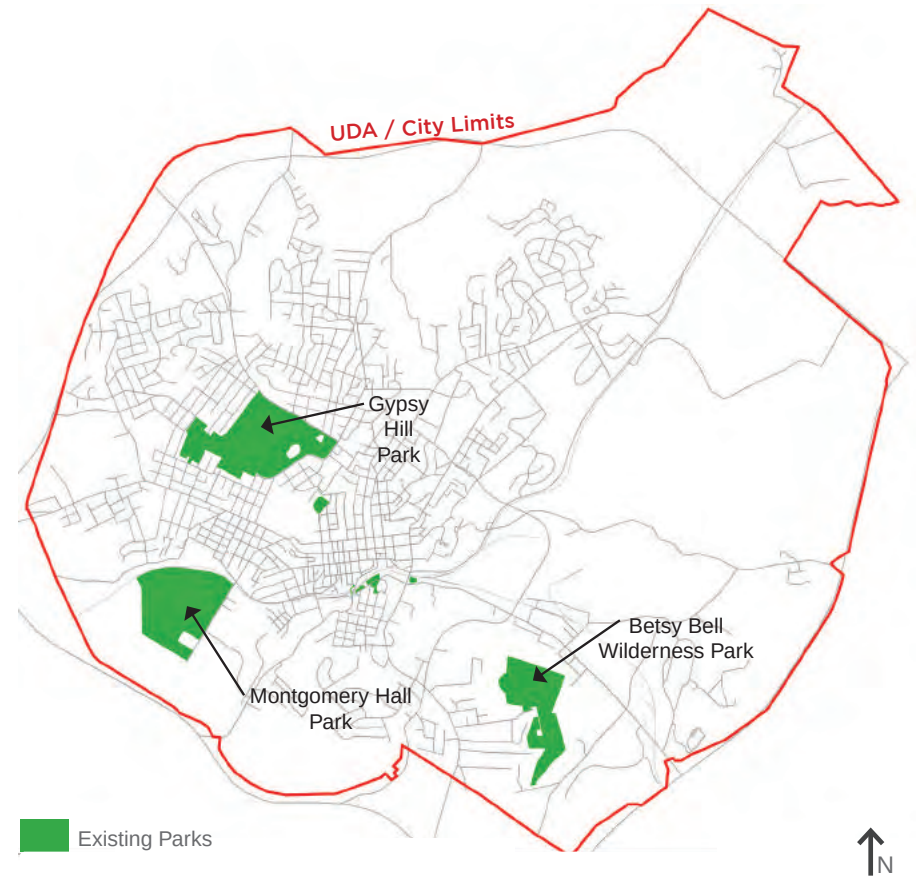
The City's master plan areas include a wide variety of cultural, recreational, natural, and economic resources. Maximizing active transportation connections to all of the City's resources will encourage visitors to explore destinations such as parks and open spaces, cultural and historic resources, and neighborhoods.



Mary Baldwin University



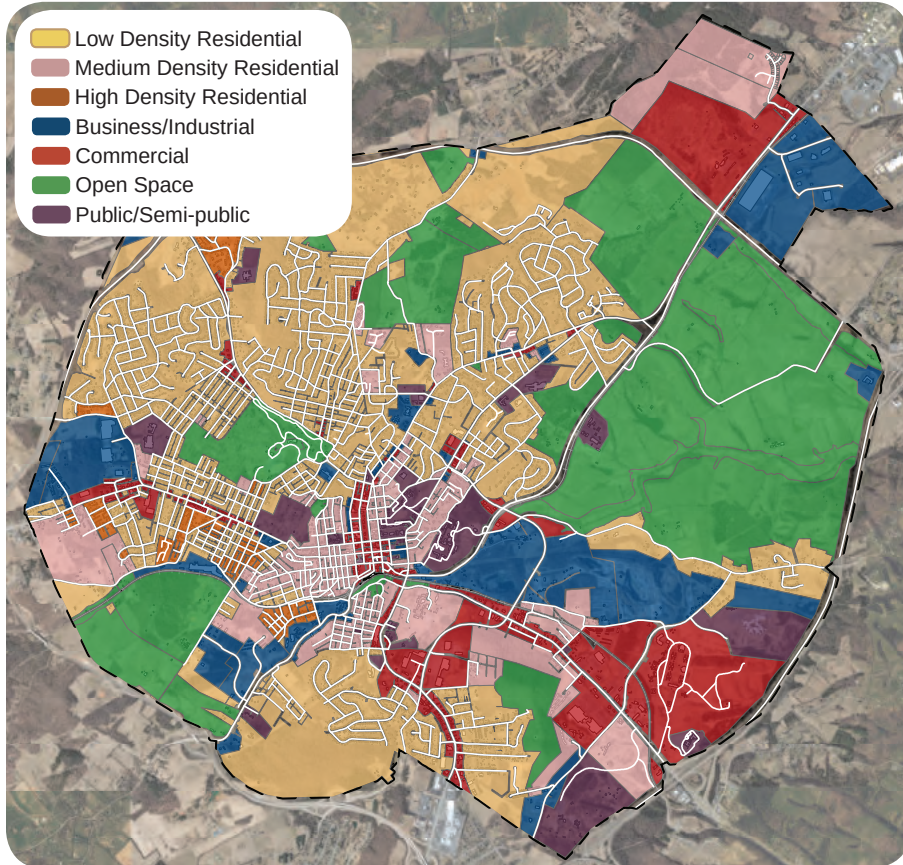
Gypsy Hill Park



PARKS & OPEN SPACE CONNECTIVITY

An essential component of any community's quality of life is the opportunity for recreation and experiencing the outdoors. Staunton has several public parks and open spaces that provide opportunities for outdoor enjoyment. These public spaces range in size from pocket parks to larger community parks such as Montgomery Hall Park, Betsy Bell Wilderness Park, and Gypsy Hill Park. Parks should be well connected to adjacent neighborhoods and community destinations through safe and continuous pedestrian and bicycle connections.

EXISTING CONDITIONS

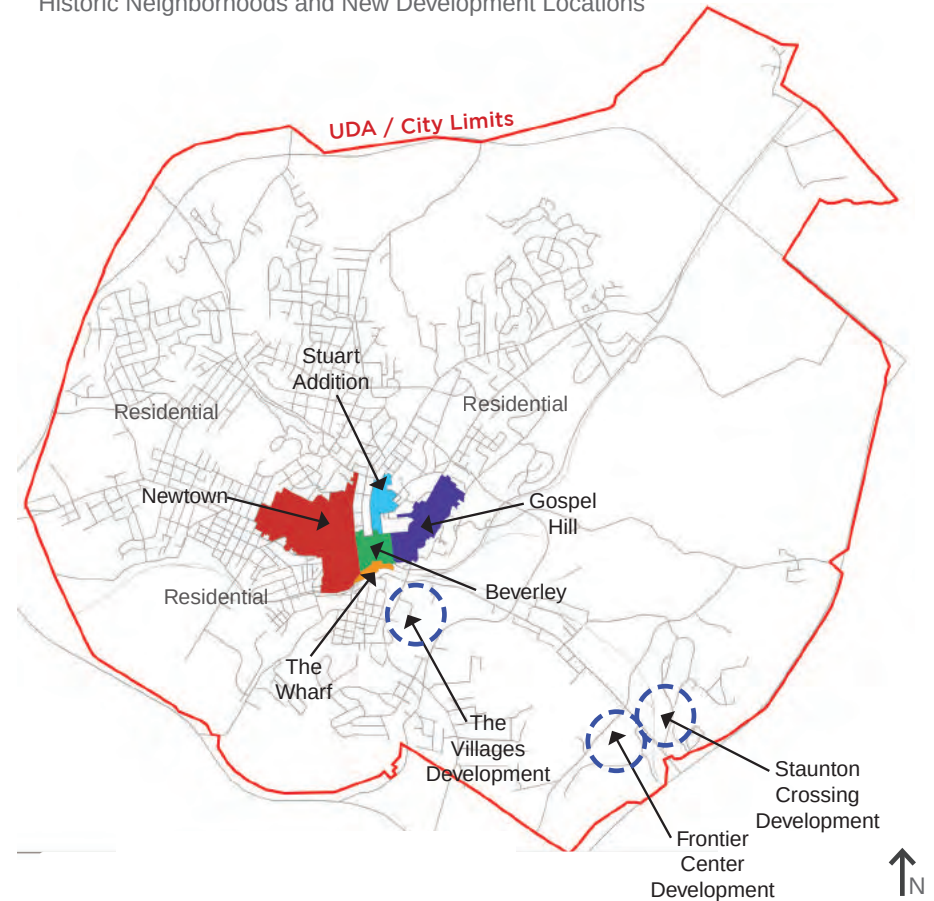


Existing land uses

LAND USE CONNECTIVITY

Land use patterns are a key factor in determining where to recommend bike and pedestrian facilities to best serve the community. The strategic corridors defined in Sections 4 & 5 of this plan aim to link mixed-use and commercial activity areas, residential neighborhoods, historic/cultural resources, employment centers, schools and other community assets.

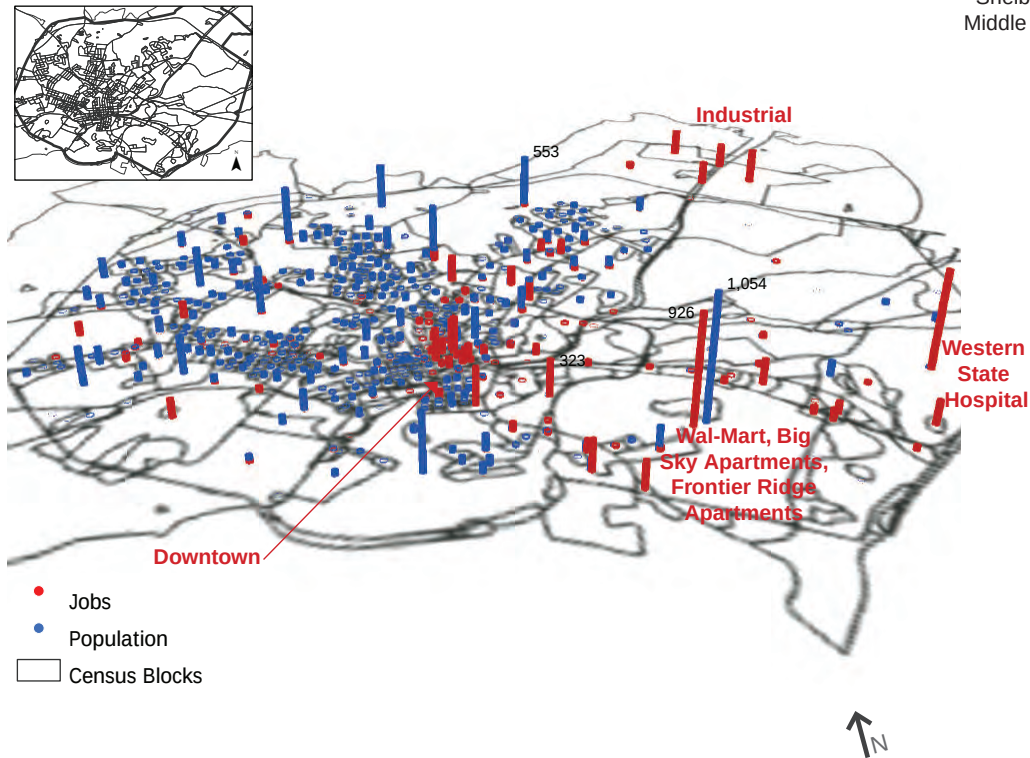
Historic Neighborhoods and New Development Locations



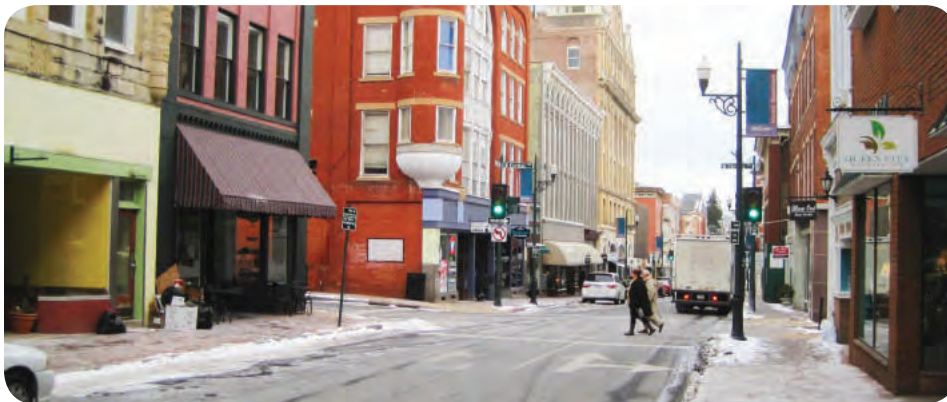
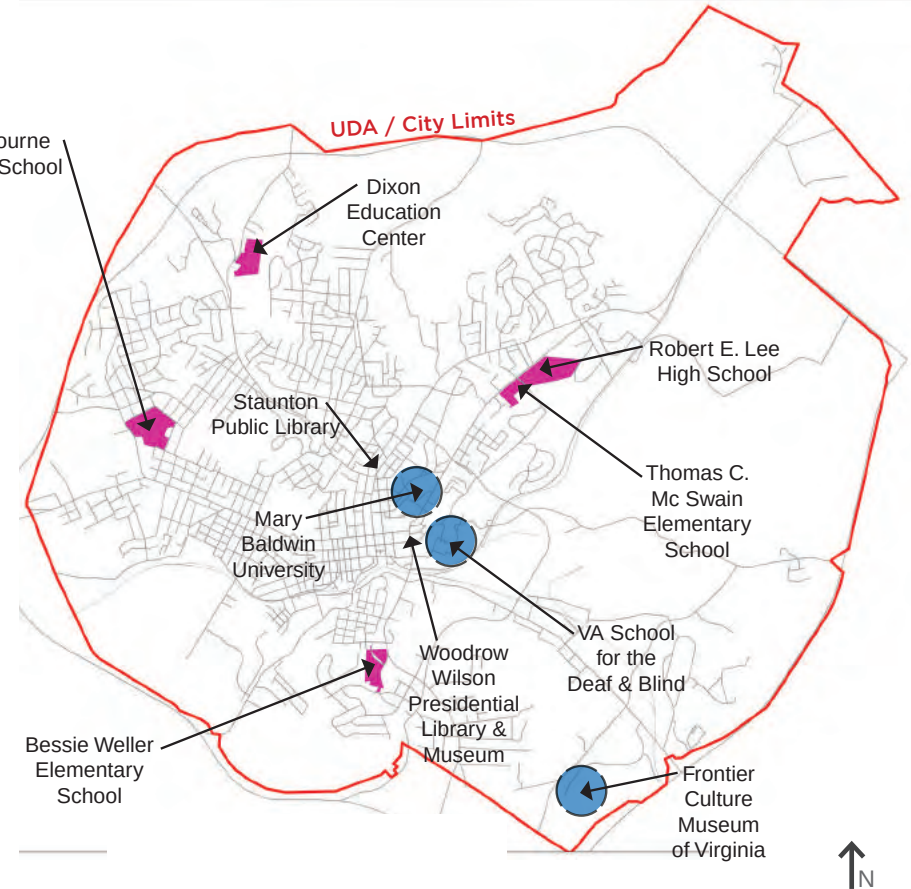
Gospel Hill

EXISTING CONDITIONS

Major employment centers & populated areas



Education facilities



Downtown Staunton



Staunton Public Library

EXISTING CONDITIONS



Street network

STREET NETWORK

Many roadways that provide direct access to destinations within Staunton are often vehicle-oriented, have limited right-of-way and are unsafe for pedestrian and bicycle uses. Improving bicycle and pedestrian infrastructure along major corridors, or providing accessible alternative routes along neighborhood-scale streets, will increase and encourage non-vehicular transportation options.

Higher capacity roadways such as Interstate 81 and Woodrow Wilson Parkway, together form a 'loop' around Staunton that creates physical and visual barriers between the City and the surrounding Augusta County.



Existing transit routes

TRANSIT

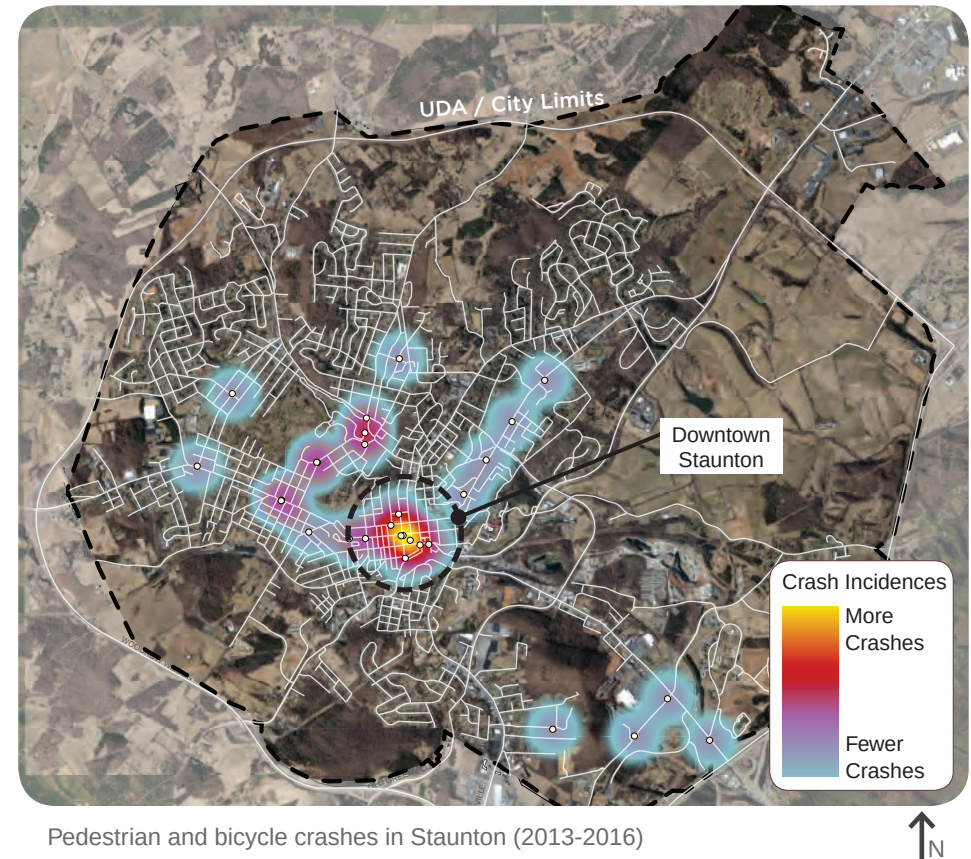
There are several bus routes in Staunton, including a central transfer point in Downtown, where people can switch between local and regional routes. Currently, safe crosswalks are missing near most bus stops. People who use public transportation need to get to and from transit access points. Sidewalks and bike facilities provide a way for passengers to get from origin points to the stops at the beginning of their trip, and from bus stops to destinations at the end. Safe and convenient connections make the overall transit system more usable.



Central Shenandoah Valley Bicycle Plan for Augusta County

REGIONAL CONNECTIVITY

The Central Shenandoah Valley Bicycle Plan provides a coordinated and strategic approach to the development of a regional transportation system that accommodates and encourages bicycling throughout the Central Shenandoah Valley. The Plan meets the goals of the region to create a comprehensive network of cycling facilities connecting neighborhoods, communities, and key destination points. Staunton has an opportunity to connect residents and draw in visitors from other areas, by providing extensions or links to the future regional network.



Pedestrian and bicycle crashes in Staunton (2013-2016)

SAFETY

Available crash data (2013-2016) was analyzed to determine trends in bicycle and pedestrian-related crashes. Crashes were mapped to evaluate geographic trends and concentrations. The highest concentration of crashes has occurred in Downtown, near major thoroughfares and in higher traffic areas of the City.

Bicycle, pedestrian and driver awareness programs should be considered to reduce conflicts between these transportation modes. Along with programs, the provision of adequate facilities such as intersection enhancements, driveway improvements, and marked/ designated facilities should be implemented.

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3 | COMMUNITY VISIONING

COMMUNITY VISIONING

Public engagement was essential in the development of this Master Plan. To ensure that the voices of City residents were heard, the following community engagement strategies were employed:

- **Formation of a project Steering Committee.** Four Steering Committee meetings were held throughout the master planning process.
- **Initiation of public meetings**, including two public open houses held at critical thresholds as the plan was developed.
- **An online community survey** was available through the City's **project website** to provide a convenient method for all residents to provide input to the plan.

PROJECT STEERING COMMITTEE

A Steering Committee comprised of Staunton citizens and representatives of its institutions and civic groups met four times throughout the planning process. The purpose of the Committee was to identify project goals and framework, discuss existing conditions, identify potential bicycle corridors and destinations, review recommendations, and identify project priorities. The Steering Committee was comprised of representatives from the following stakeholder groups:

- Planning Commission
- Recreation Advisory Commission
- Bicycle and Pedestrian Advisory Commission
- City of Staunton Planning, Engineering, Public Works, and Recreation Departments
- Central Shenandoah Planning District Commission

PUBLIC MEETINGS

PUBLIC MEETING #1

The first Public Open House was held on March 22, 2017, at the Staunton

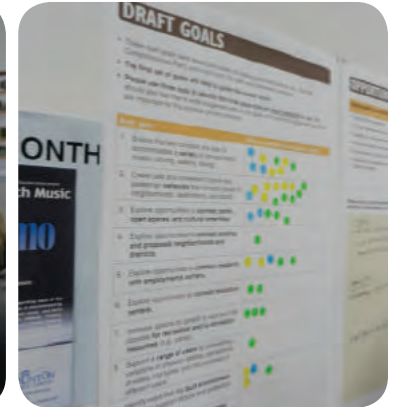
Public Library. During the first open house, participants were provided the opportunity to review existing conditions, identify project goals and to express needs and concerns that could be addressed through the Plan. This meeting allowed participants to identify cycling and walking destinations, as well as challenging areas, and to share local knowledge about routes.

PUBLIC MEETING #2

A second Public Open House was held on August 9, 2017, at the Staunton Public Library. During the second Open House, participants reviewed draft project recommendations to engage the project team and provide additional project ideas.



Public Meeting #1



Public Meeting #2

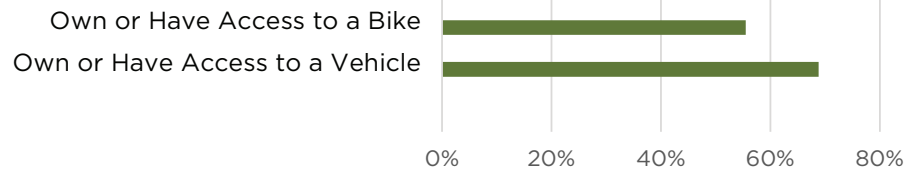
COMMUNITY SURVEY

A survey was open on the City of Staunton website from May 17, 2017 through June 17, 2017. The goal of the survey was to:

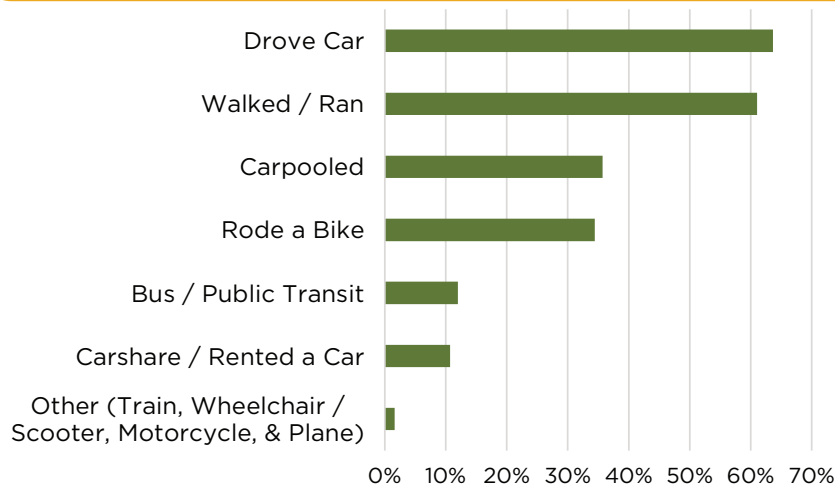
1. Gain insight into current bicycle and pedestrian **conditions**
2. Understand current **perceptions** of bicycle and pedestrian access for users
3. Understand what **improvements** can help facilitate more biking and walking

There were 307 responses to the survey. The following graphs illustrate the key findings:

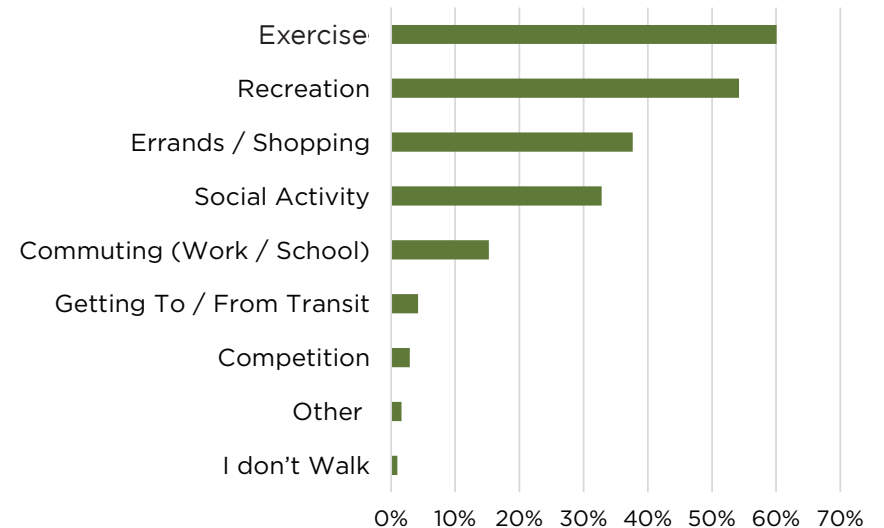
ACCESS TO TRANSPORTATION



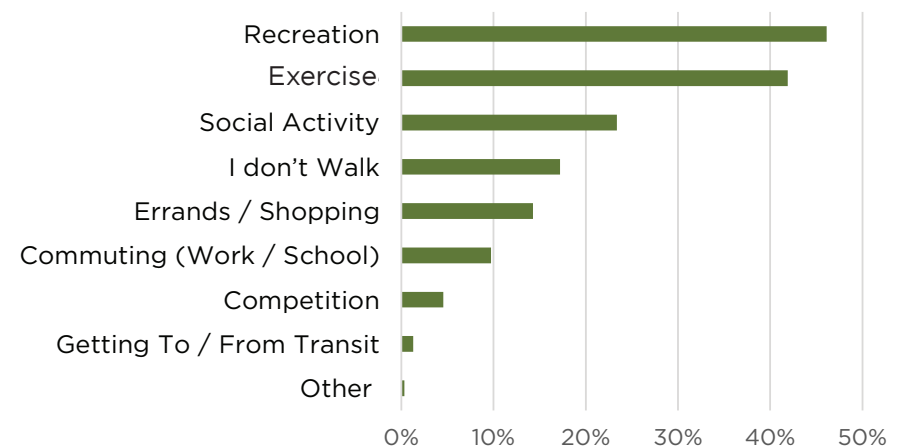
WHAT TRANSPORTATION MODES HAVE YOU USED IN THE PAST YEAR?



WHY DO YOU WALK?



WHY DO YOU RIDE A BIKE?

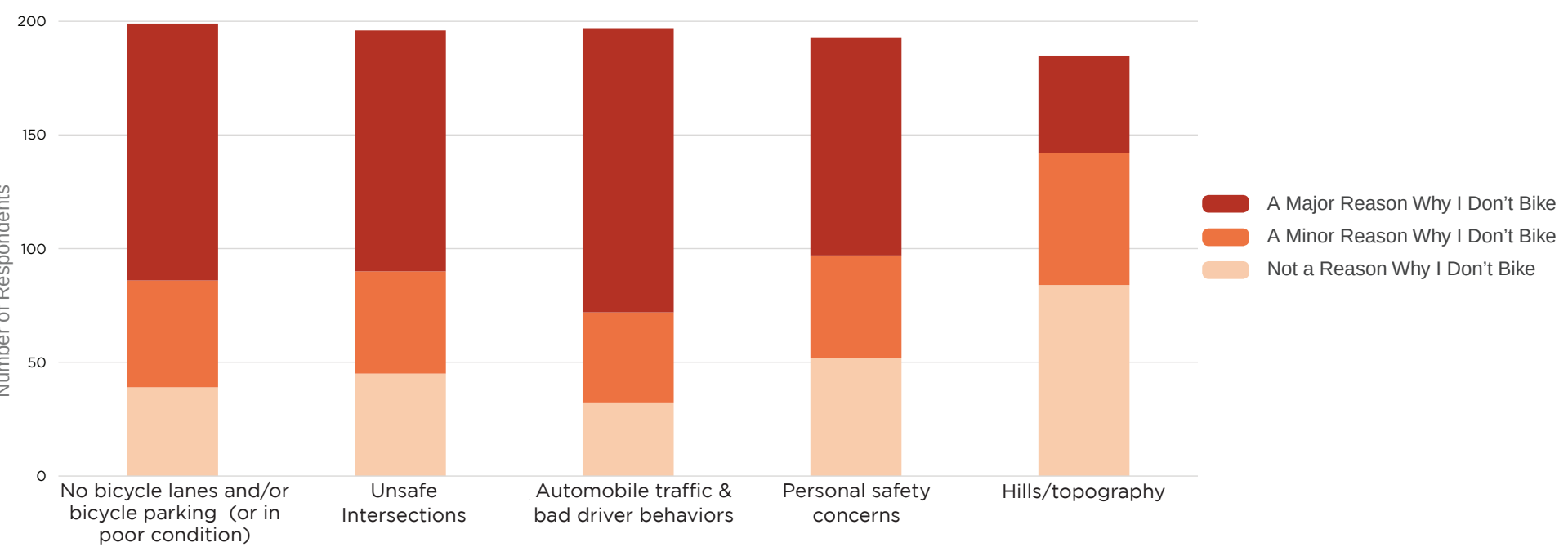


COMMUNITY VISIONING

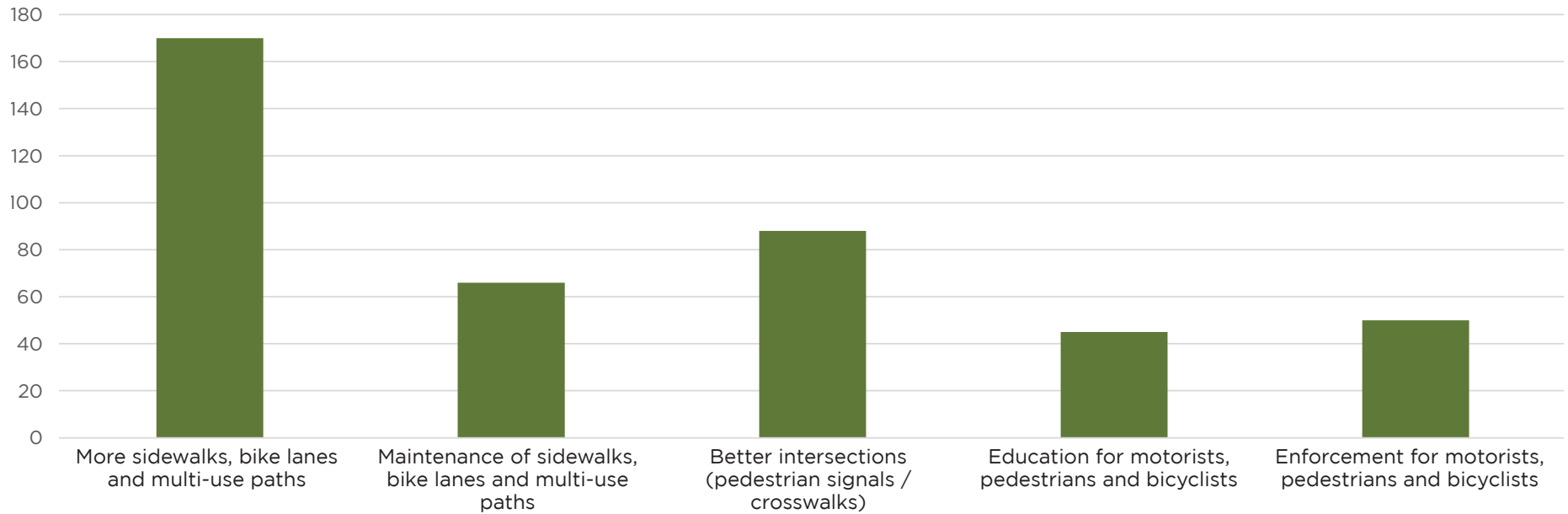
TOP 5 FACTORS THAT MOST DISCOURAGE CITIZENS FROM WALKING:



TOP 5 FACTORS THAT MOST DISCOURAGE CITIZENS FROM BIKING:



TOP 5 IMPROVEMENTS SUPPORTIVE TO IMPROVING BICYCLING AND WALKING IN STAUNTON:



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4 | PEDESTRIAN INFRASTRUCTURE

WALKING IN STAUNTON

PEDESTRIAN INFRASTRUCTURE OPPORTUNITIES

The City of Staunton Bicycle and Pedestrian Plan creates a framework for the future of non-motorized travel. The Plan guides the City toward a multimodal future and begins the process of creating a network of paths that provide community members and visitors alike with better reasons and opportunities to walk for pleasure and purpose within the City.

IMPROVING WALKING OPPORTUNITIES IN STAUNTON

Unlike the bicycle network in Staunton, the City has a well-established network of pedestrian sidewalks. However, the quality and effectiveness of the existing sidewalk infrastructure is not ideal. Based on results from an existing conditions analysis and detailed input from City staff, the project Steering Committee and community members, this plan recommends focusing on pedestrian projects that promote sidewalk network improvement, infill, repair and maintenance.

INFILL THE SIDEWALK NETWORK

Staunton's sidewalk network should be continuous, well maintained, and wide enough for anticipated users. All sidewalks should meet the Americans With Disabilities Act (ADA) standards of width, slope, and



REPAIR & MAINTAIN EXISTING SIDEWALKS

Existing pedestrian facilities should be inventoried further in order to assess current conditions. Inventory information should be utilized to prioritize repairs to existing pedestrian facilities, as well as to define locations for new sidewalks, crosswalks, signalized crossings and shared use paths.



PEDESTRIAN TOOLKIT INTRODUCTION

TOOLKIT OVERVIEW

This “Toolkit” provides **examples of pedestrian best practices** that can be used to create a multimodal network in Staunton and to address the goals of this plan. The Toolkit takes into account the Virginia Department of Transportation (VDOT) Road Design Manual, as well as design guidelines developed by the American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), the National Cooperative Highway Research Program (NCHRP), and the Federal Highway Administration (FHWA), to suggest potential facilities.

APPLYING THE TOOLKIT TO STAUNTON

The Toolkit provides a suite of options for addressing needs and opportunities. When planning for pedestrian infrastructure in Staunton, the tools in this section should be considered for implementation. These

toolkit facilities are considered to supplement the existing pedestrian circulation network and showcase some of the primary routes that could benefit from enhanced pedestrian and infrastructure in Staunton. Other routes may also emerge over time. This plan's routes define where facilities should be located, roadway conditions, and usage levels. These factors help to generally determine which type of facility is most appropriate along each route. Right-of-way and/or easement availability are key. Pedestrian-focused or shared facilities should be ADA compliant.

The table of **Design Considerations** in this section contains information about the factors that need to be taken into account when planning for pedestrian facilities. These are high-level, summarized design guidelines. Actual facility placement and design depend on the context and conditions of the street or available space, including available right-of-way.

TOOL TYPE	POSTED SPEED LIMITS*	ANNUAL AVERAGE DAILY TRAFFIC (AADT)*	FACILITY WIDTH
OFF-ROAD FACILITIES - PEDESTRIAN			
Sidewalk	Any	Any	8' minimum for VDOT roads (5' sidewalk and 3' buffer or 8' sidewalk)
OFF-ROAD FACILITIES - SHARED BICYCLE AND PEDESTRIAN			
Shared-use Path <i>Shared bicycle/pedestrian path <u>not</u> adjacent to a roadway.</i>	High (45 mph+) or where on-road facilities are not feasible	Any	14' minimum (10' path, with 2' buffer on both sides). 8' minimum path for constrained corridors.
Sidepath <i>Shared bicycle/pedestrian path adjacent to a roadway.</i>	High (45 mph+) or where on-road facilities are not feasible	Any	15-18' (10' path with 3-6' buffer on street side and 2' buffer on inside). 8' minimum for constrained corridors.
OTHER MARKINGS OR DESIGNATIONS (NOT FACILITIES)			
Yield Roadway / Shared Street	Low (≤ 25 mph)	Low ($\leq 2,000$)	12'-20' of total travel width

PEDESTRIAN TOOLKIT | DESIGN CONSIDERATIONS

TOOL TYPE	POSTED SPEED LIMITS*	ANNUAL AVERAGE DAILY TRAFFIC (AADT)*	FACILITY WIDTH	USERS WHO MAY PREFER THIS FACILITY (BICYCLE CLASSIFICATION ON PREV. PAGE)
OFF-ROAD FACILITIES - SHARED BICYCLE AND PEDESTRIAN				
Shared-use Path <i>Shared bicycle/pedestrian path <u>not</u> adjacent to a roadway.</i>	High (45 mph+) or where on-road facilities are not feasible	Any	14' minimum (10' path, with 2' buffer on both sides). 8' minimum path for constrained corridors.	Pedestrians A / B / C Bicyclists
Sidepath <i>Shared bicycle/pedestrian path adjacent to a roadway.</i>	High (45 mph+) or where on-road facilities are not feasible	Any	15-18' (10' path with 3-6' buffer on street side and 2' buffer on inside). 8' minimum for constrained corridors.	Pedestrians A / B / C Bicyclists

PEDESTRIAN TOOLKIT | DESIGN CONSIDERATIONS

TOOL TYPE	POSTED SPEED LIMITS*	ANNUAL AVERAGE DAILY TRAFFIC (AADT)*	FACILITY WIDTH	USERS WHO MAY PREFER THIS FACILITY (BICYCLE CLASSIFICATION ON PREV. PAGE)
OTHER MARKINGS OR DESIGNATIONS (NOT FACILITIES)				
Paved Shoulders	Medium-high (30-45 mph)	Moderate-high (>2,000)	6.5' minimum each side of the road (5' lane with 1.5' buffer); more space where speeds or AADT are higher	All users
Yield Roadway / Shared Street	Low ($\leq$ 25 mph)	Low ($\leq$ 2,000)	12'-20' of total travel width	All can use; likely most comfortable for A / B Bicyclists

PEDESTRIAN TOOLKIT | PATHS & CROSSINGS

CONTINUOUS SIDEWALKS



- > Sidewalks should be well-maintained and wide enough for anticipated use
- > Should meet American Disability Act standards of width, slope, and surface condition



Sidewalk

Roadway

- > Include street trees between sidewalk and roadway where possible

MARKED CROSSWALKS



- > Include High-visibility striped or textured crosswalks to increase visibility for motorists
- > Enhance existing brick sidewalks with high-visibility markings



SIDEPATHS



- > Road-adjacent path shared by people walking and riding bicycles
- > Path is separated from the road by a curb and ideally includes a planted buffer strip between the path and the roadway
- > Center line may be used to divide users by their direction of travel
- > Signage should be used to warn users of constrained conditions, obstacles, or other conflict zones



Sidewalk

Roadway

Sidepath

Buffer

ACCESSIBLE PEDESTRIAN SIGNALS AND SIGNALIZED CROSSINGS



- > Include non-visual components (tactile and audible signals) to provide access for visually impaired users in key areas such as downtown & along high traffic thoroughfares.
- > Signalized crossings should be prioritized at high traffic roadway intersections in Downtown, near parks and around new development projects.
- > New signage and lighting needs to be designed and scaled for pedestrians.

PEDESTRIAN TOOLKIT | PATHS & CROSSINGS

MEDIAN REFUGES



- > Provide waiting areas in medians to reduce crossing distances for pedestrians
- > Appropriate for multi-lane roadways with higher traffic volumes

CURB BUMP-OUTS



- > Extend sidewalks at intersections to reduce crossing distances and to make pedestrians more visible to drivers
- > Appropriate for higher-density, lower-speed areas with on-street parking lanes

CURB RAMPS



- > Place at driveway and roadway crossings to allow for safe and convenient wheelchair access
- > Curb ramps should be placed along all sidewalk segments

CROSSING SIGNAGE AND/OR RAPID-FLASHING BEACONS



- > The Code of Virginia states that people driving vehicles must stop for any pedestrian at a crosswalk, regular crossing (including ends of sidewalks), or intersection where the legal maximum speed doesn't exceed 35 mph
- > Pedestrian crossing warning signs alert drivers to the potential presence of people walking (and riding bicycles) at crossings
- > Rapid-flashing beacons may be used for increased visibility

ADVANCED STOP OR YIELD MARKINGS



- > Advanced yield or stop lines (places 20-50 feet ahead of a crossing) increase pedestrian visibility and reduce the likelihood of pedestrian/vehicle crashes at unsignalized mid-block crossings
- > Crossings for trails/shared-use paths may warrant higher-visibility treatments - for example, VDOT has piloted programs that use zigzag striping to give advanced warning to motorists

PEDESTRIAN TOOLKIT | FURNISHINGS

Furnishings along pathways can encourage use by a wide range of travellers. By providing amenities such as trash bins and pet stations, users are also encouraged to share in the task of keeping the paths clean.

SEATING



- > Furnishings such as benches and/or picnic tables may be appropriate for higher-use areas, and/or longer stretches of pathways

WATER FOUNTAINS



- > Drinking fountains keep people - and pets - hydrated

TRAIL HEADS



- > Amenities such as parking, route maps, and rest rooms are all valued at trailheads

SHADE TREES



- > Trees can provide shade along sidewalks, paths, and bicycle lanes, but care needs to be taken to ensure that they do not impede sight lines

PET STATIONS AND TRASH BINS



- > These amenities encourage pet walkers to keep the pedestrian ways clean.

PEDESTRIAN TOOLKIT | LIGHTING AND WAYFINDING

Lighting improves visibility and should be considered in the design of all facilities. Where facilities are on-road or road-adjacent, pedestrian-scale lighting could be considered to supplement vehicle-scale lighting. As appropriate, off-road facilities may also be lit for safety and visibility. Signs help to clarify pedestrian and bicycle movements, and can serve important cultural/historic education and economic development functions.

PATH LIGHTING



- > In areas where lighting is appropriate and desired, human-scale, directed lighting should be used to illuminate bicycle facilities, shared use paths, and sidewalks

UNDERPASS LIGHTING



- > Lighting at underpass routes should be used to ensure safety and visibility

TRAIL SIGNAGE



WAYFINDING



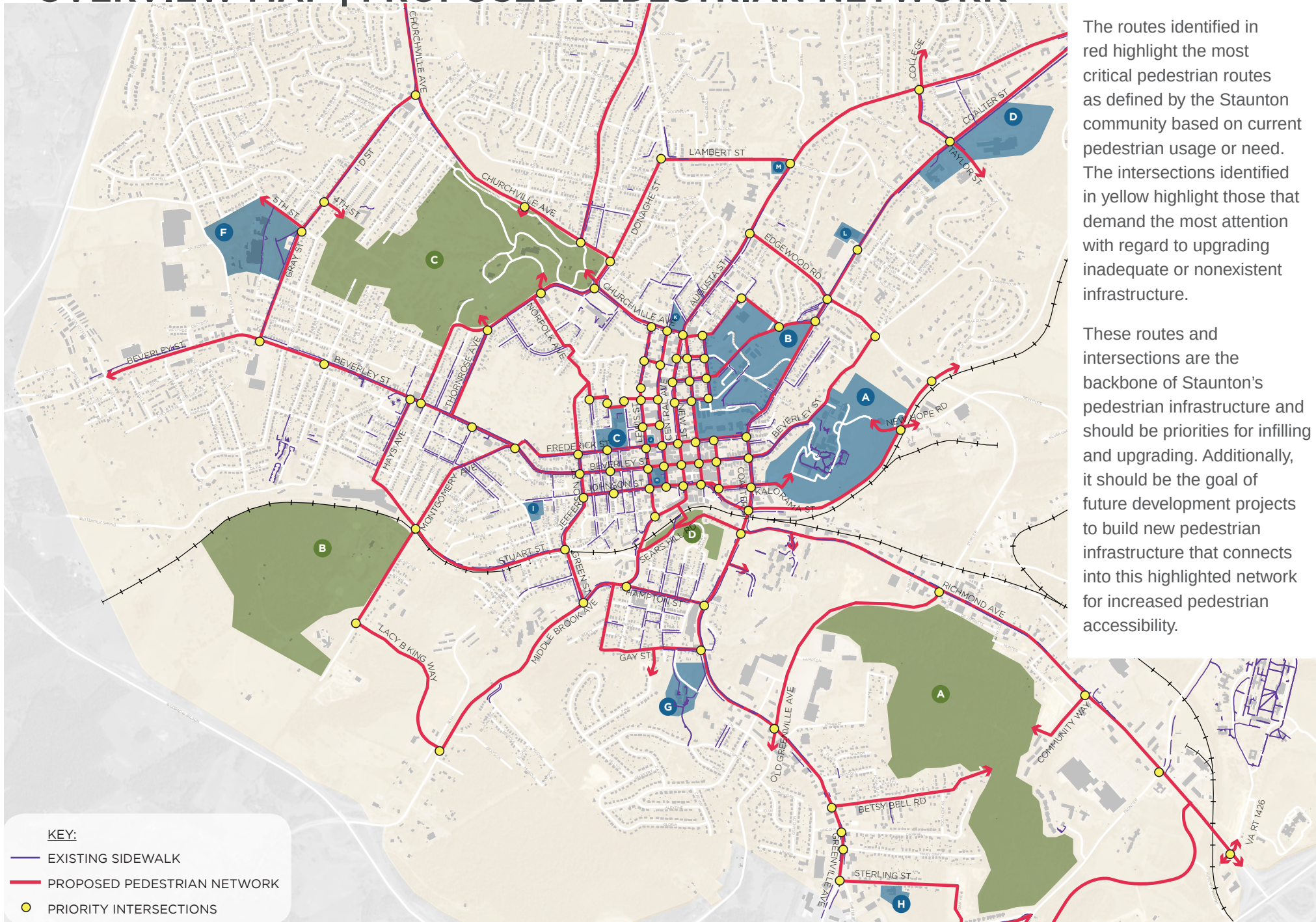
- > Wayfinding signage can direct both non-motorized and motorized travelers
- > Displaying distance information may encourage people to leave their car parked and walk to selected destinations



- > Signs can clarify when and how paths are meant to be shared, and provide information about path obstacles, opening hours, etc.



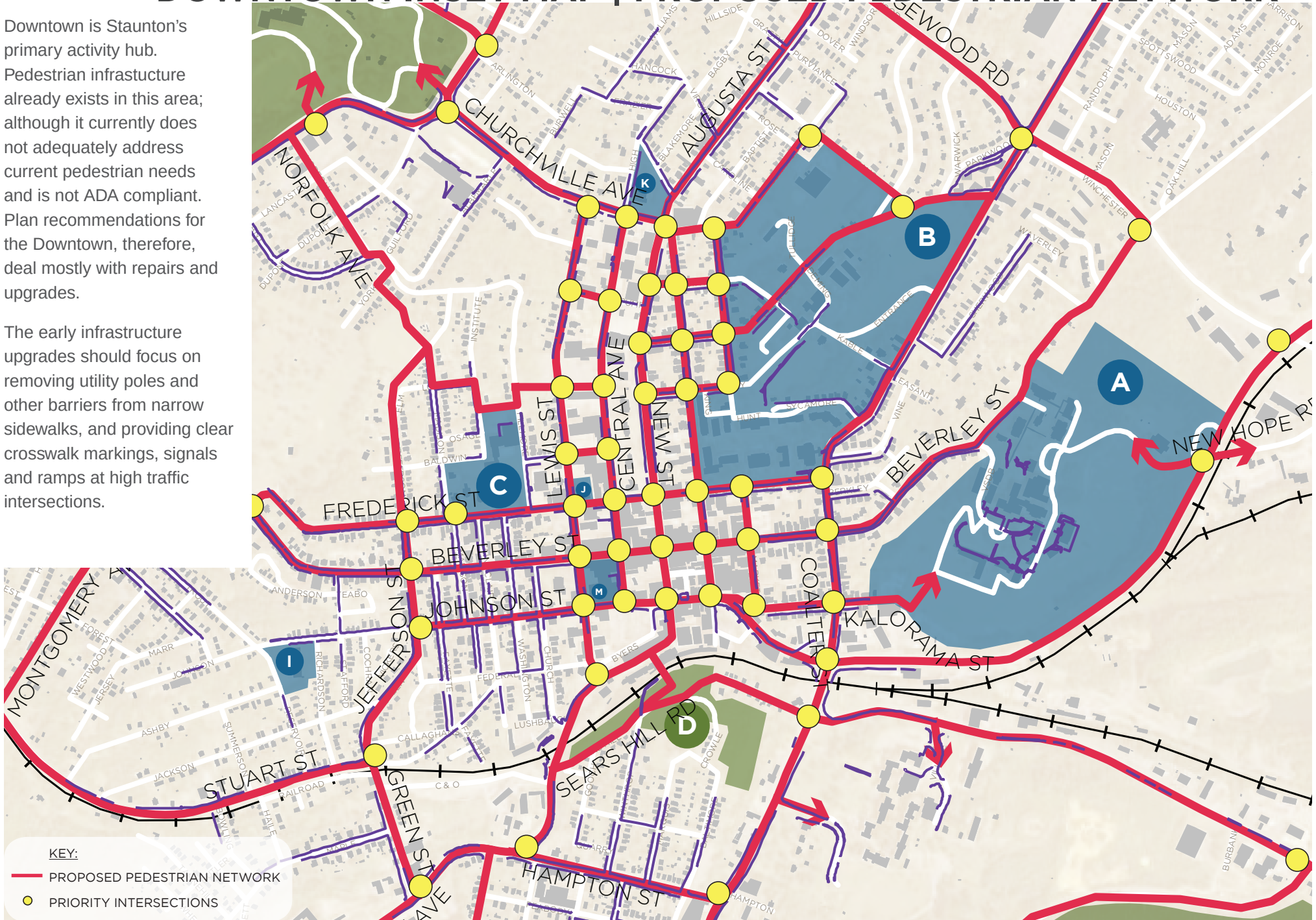
OVERVIEW MAP | PROPOSED PEDESTRIAN NETWORK



DOWNTOWN INSET MAP | PROPOSED PEDESTRIAN NETWORK

Downtown is Staunton's primary activity hub. Pedestrian infrastructure already exists in this area; although it currently does not adequately address current pedestrian needs and is not ADA compliant. Plan recommendations for the Downtown, therefore, deal mostly with repairs and upgrades.

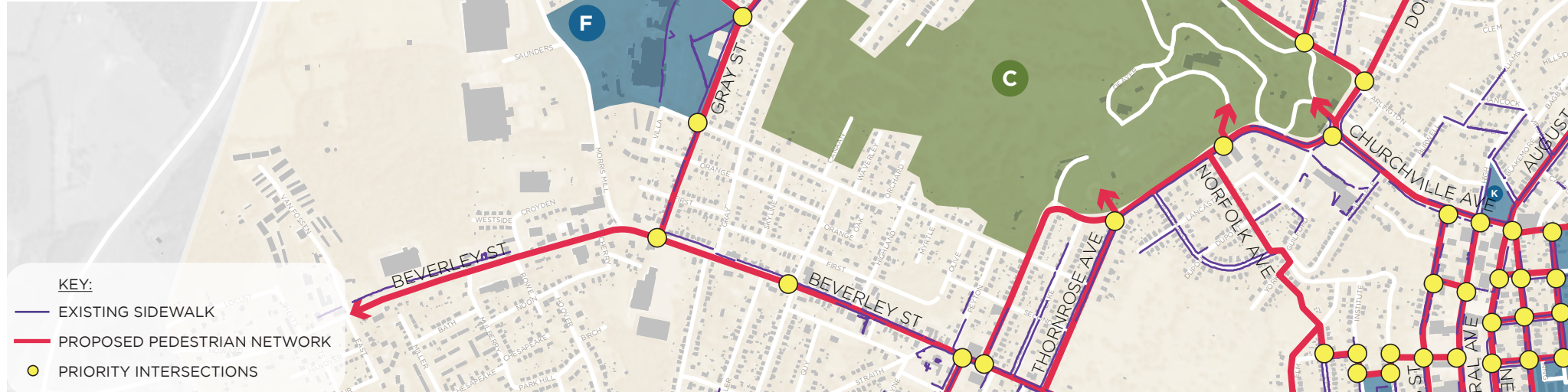
The early infrastructure upgrades should focus on removing utility poles and other barriers from narrow sidewalks, and providing clear crosswalk markings, signals and ramps at high traffic intersections.



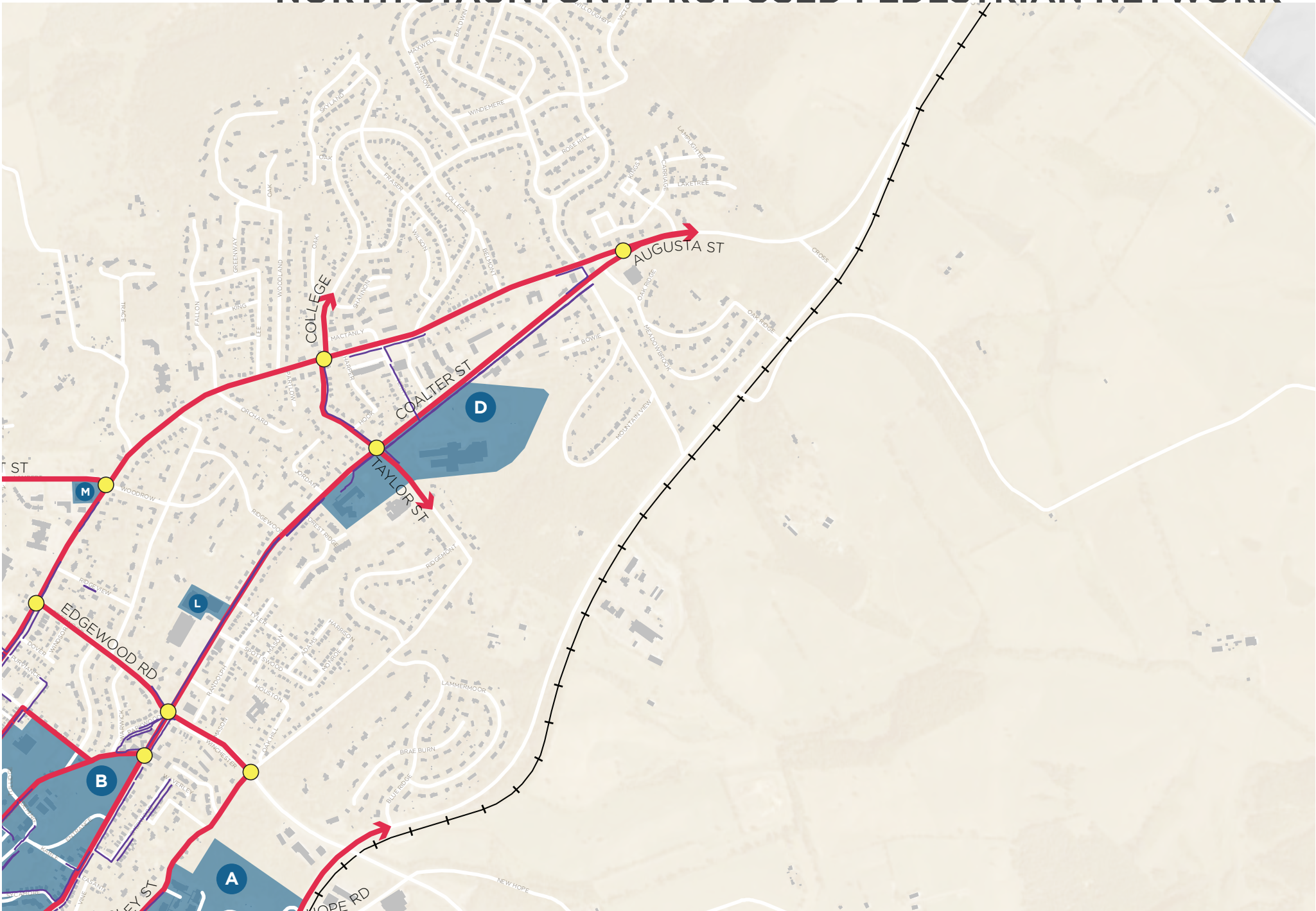
NORTH STAUNTON | PROPOSED PEDESTRIAN NETWORK

Northern Staunton's pedestrian network and prioritized intersections cater appropriately to providing safe and convenient pedestrian connections between residential neighborhoods, parks and schools. Some additional key routes that this plan identifies as priority routes are:

- Churchville Avenue (near Gypsy Hill Park)
- Coalter Street (near Robert Lee High School)
- Edgewood Road (at Coalter and Augusta Streets)
- Englewood Drive
- Beverley Street (west of Hays Avenue)



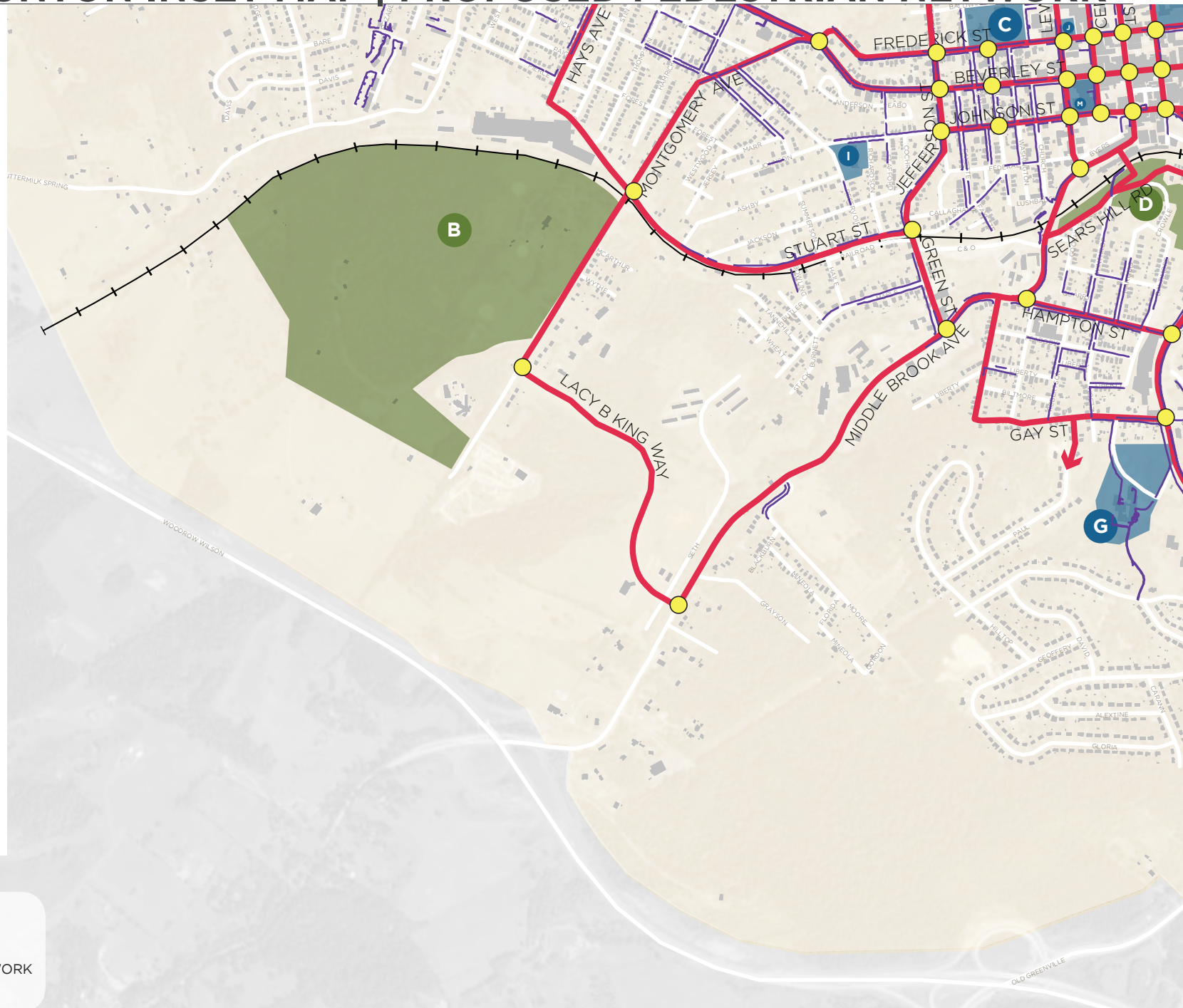
NORTH STAUNTON | PROPOSED PEDESTRIAN NETWORK



SOUTH STAUNTON INSET MAP | PROPOSED PEDESTRIAN NETWORK

South Staunton's pedestrian network and prioritized intersections also cater to providing safe and convenient pedestrian connections between residential neighborhoods, parks and schools. However, this part of Staunton is also home to large retail centers and large vehicular roadways. Enhancing pedestrian infrastructure here is key to providing safer routes for existing and new walkers. Some key routes that this plan identifies as priorities are:

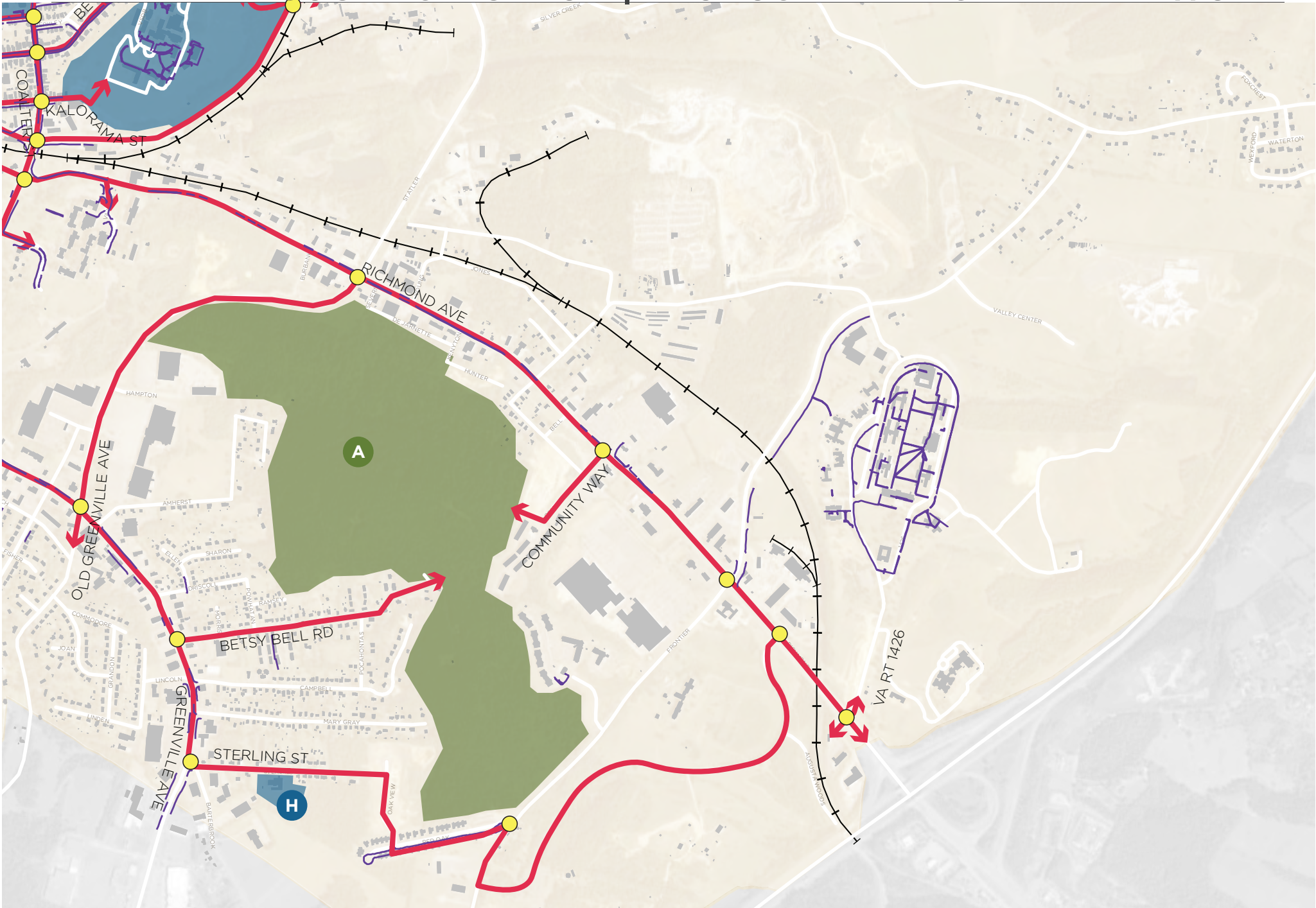
- Richmond Avenue (from Greenville Avenue to Frontier Drive)
- Greenville Avenue (from Richmond Avenue to Sterling Street)
- Middlebrook Avenue (from Hampton Street to Lacy B King Way)
- Montgomery Avenue (from Beverley Street to Montgomery Hall Park)



KEY:

- EXISTING SIDEWALK
- PROPOSED PEDESTRIAN NETWORK
- PRIORITY INTERSECTIONS

SOUTH STAUNTON | PROPOSED PEDESTRIAN NETWORK



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5 | BICYCLE INFRASTRUCTURE

CYCLING IN STAUNTON

BICYCLE USERS

People ride bicycles for a variety of reasons, including recreational and transportation needs. A connected network of bicycle infrastructure will facilitate movement for all purposes. Different types of cyclists have different levels of experience and comfort when riding. One way of looking at different types of bicycle users is to separate them into four categories based on experience, interest, and level of comfort with riding bicycles. By better understanding these user groups, and their presence in Staunton, facilities can be designed to meet their needs and allow riders to feel safe and comfortable across a range of road conditions.

Unlike Staunton's existing pedestrian network of sidewalks and trails, the City has yet to develop any dedicated bicycle infrastructure. This forces all cyclists, regardless of experience, to ride exclusively within vehicular lanes and rights of way. While much of the pedestrian

infrastructure recommendations in the Plan focus on infilling and upgrading, the recommendations for bicycle infrastructure is more extensive in order to encourage the development of a bicycle network that can begin to match its pedestrian equivalent.



TRANSPORTATION

- > Alternate Mode of Transportation
- > Primary Mode of Transportation
- > Environmental Stewardship



RECREATION

- > Enjoyment
- > Health

BICYCLE USER CLASSIFICATION



A. Strong & Fearless (Advanced experience)

- > Willing to ride a bicycle in most conditions, whether or not a bicycle facility is present



B. Enthused & Confident (Moderately experienced)

- > Confident riding on streets with vehicular traffic but prefers riding in dedicated bicycle lanes



C. Interested but Concerned / Children (Beginner)

- > Curious but concerned about riding near vehicular traffic
- > Prefers riding on trails separated from the roadway



D. No Way, No How! (Not at all interested in riding a bicycle)

- > Not interested, not able to ride a bicycle, or not comfortable riding a bicycle in any condition

BICYCLE TOOLKIT | DESIGN CONSIDERATIONS

TOOL TYPE	POSTED SPEED LIMITS*	AADT*	FACILITY WIDTH	USERS WHO MAY PREFER THIS FACILITY
OFF-ROAD FACILITIES - SHARED BICYCLE AND PEDESTRIAN				
Shared-use Path <i>Shared bicycle/pedestrian path <u>not</u> adjacent to a roadway.</i>	High (45 mph+) or where on-road facilities are not feasible	Any	14' minimum (10' path, with 2' buffer on both sides). 8' minimum path for constrained corridors.	Pedestrians A / B / C Bicyclists
Sidepath <i>Shared bicycle/pedestrian path adjacent to a roadway.</i>	High (45 mph+) or where on-road facilities are not feasible	Any	15-18' (10' path with 3-6' buffer on street side and 2' buffer on inside). 8' minimum for constrained corridors.	Pedestrians A / B / C Bicyclists
ON-ROAD FACILITIES - BICYCLE				
Separated Bicycle Lane <i>Bicycle lane with vertical, physical buffer between bicycle and motor vehicles.</i>	High (35+ mph)	Moderate-high (>2,000)	One-way: 7' minimum each side of the road (5' lane with 2' buffer) Two-way: 15' (two 6' lanes with 3' buffer)	A / B / C Bicyclists
Buffered Bicycle Lane <i>Bicycle lane with buffer between bicycle and motor vehicles.</i>	Medium-high (30-45 mph)	High (>10,000)	7' minimum each side (5' lane with 2' buffer)	A / B / C Bicyclists
OTHER MARKINGS OR DESIGNATIONS (NOT FACILITIES)				
Shared Lane Marking (Sharrows)	Low (≤25 mph)	Low (≤2,000)	0' additional	A / B Bicyclists
Signed Bicycle Route <i>Designated by bicycle route signs, and sometimes including a paved shoulder. Serve either to provide continuity to other bicycle facilities or designate preferred routes through high-demand corridors.</i>	Wide range depending on roadway characteristics	Low (≤2,000)	4' paved shoulder where space allows	A / B Bicyclists
Paved Shoulders	Medium-high (30-45 mph)	Moderate-high (>2,000)	6.5' minimum each side of the road (5' lane with 1.5' buffer); more space where speeds or AADT are higher	All users
Yield Roadway / Shared Street	Low (≤25 mph)	Low (≤2,000)	12'-20' of total travel width	All can use; likely most comfortable for A / B Bicyclists
Bicycle Lane <i>Intended to delineate the right of way assigned to bicyclists and motorists and to provide for more predictable movements by each.</i>	Low-medium (25-35 mph)	Low-moderate (≤10,000)	5' minimum each side	A / B Bicyclists

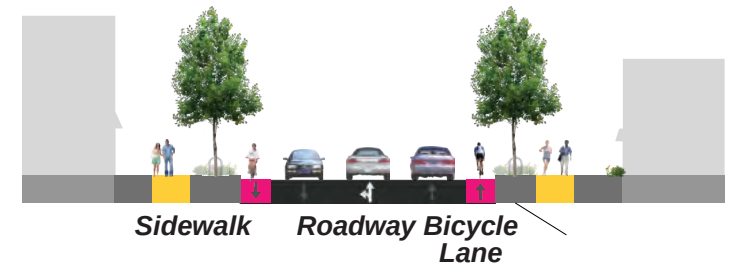
BICYCLE TOOLKIT | ON-ROAD FACILITIES

On-road facilities provide varying levels of separation between bicycles and vehicles. The faster the traffic is moving, and the higher the volume, the more separation that should be considered.

BICYCLE LANES



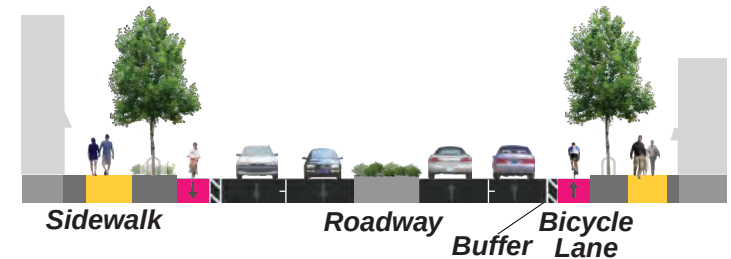
- > Striping separates marked bicycle lane from vehicular traffic
- > Appropriate for streets with posted traffic speeds of 25-35 mph



BUFFERED BICYCLE LANES



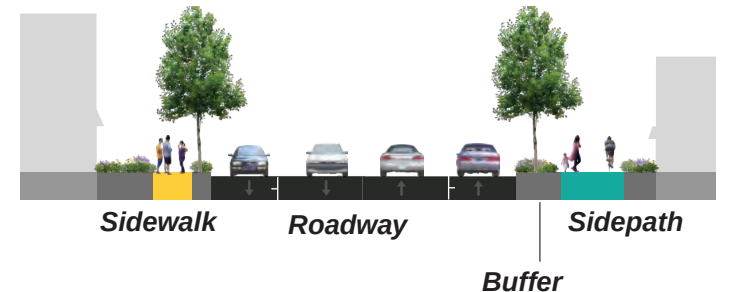
- > Striped buffer zone separates bicycle lane from vehicular traffic
- > Appropriate for streets with high-speed or high-volume traffic



SIDEPATHS



- > Road-adjacent path shared by people walking and riding bicycles
- > Path is separated from the road by a curb and ideally includes a planted buffer strip between the path and the roadway
- > Center line may be used to divide users by their direction of travel
- > Signage should be used to warn users of constrained conditions, obstacles, or other conflict zones



BICYCLE TOOLKIT | SHARED FACILITIES

PAVED SHOULDERS



- > On-road markings designate that the roadway is shared by people riding bicycles and driving
- > Appropriate for streets with low-speed and low-volume traffic
- > Can be used where limited road width cannot accommodate other bicycle facilities



YIELD ROADWAYS / SHARED STREETS



- > Serves people driving, walking, and riding bicycles in the same area
- > There are no lane markings
- > There may be signage indicating that the space is shared
- > Appropriate for streets with very low-speed and low-volume traffic
- > Used for local residential streets, not for areas with through traffic



SHARED LANE MARKINGS (“SHARROWS”)



- > On-road markings reinforce that the roadway is shared by people riding bicycles and driving
- > Can be used to advise people riding bicycles on the best place to ride in the road (e.g., central for more narrow roads, or further to the outside on wider roads)
- > Appropriate for streets with low-speed and low-volume traffic
- > Utilizing a bicycle boulevard or greenway concept with sharrows creates a more pleasant riding experience

SIGNED BICYCLE ROUTES



- > Serve either to provide continuity between bicycle facilities or to designate preferred routes through high-demand corridors
- > Can be used with bike lanes, sharrows, or with no on-road bicycle markings
- > Bike route signs can be used to caution drivers that bikes are “sharing the road” particularly along routes with blind spots

BICYCLE TOOLKIT | INTERSECTIONS

COLORED/FILLED BICYCLE LANES



- > Bicycle lanes can be painted for higher visibility at potential conflict points (such as driveways and intersections)
- > Solid paint indicates bicycle-only spaces, while hatched paint indicates shared bicycle/vehicle spaces
- > On-ramps, turn lanes, and driveways are a few example of high-conflict points
- > Combined bicycle/turn lanes can also be used

INTERSECTION FACILITIES FOR RAISED BICYCLE LANES



- > Where a raised bicycle lane crosses an intersection, one way to make the bicyclist more visible is to move the bike lane toward the travel lanes just before the intersection
- > Protected intersection designs provide an extra barrier for bicyclists and pedestrians at intersections

BIKE BOXES



- > Bicycle boxes provide safe areas for riders to stop and make turns at intersections

SIGNAL TIMING / PEDESTRIAN AND BICYCLE SIGNAL HEADS



- > Signal timing may be adjusted to allow all users to safely cross roadways
- > Pedestrian countdown signals help to ensure that people know when they have enough time to cross before the light changes
- > Bicycle signals are timed to prevent conflicts with vehicles at road intersections - for example, a bicycle may have the signal before a vehicle is given a turn signal, rather than giving both vehicle and bicycle a green light simultaneously

BICYCLE TOOLKIT | STORAGE

BICYCLE RACKS



- > Bicycle racks may be simple or decorative, but should accommodate a range of bicycle designs and sizes. The City standard bike rack should be an inverted 'U' with flat top.
- > Should be provided at recreation areas and near building entrances in retail zones and medium- and high-density residential buildings
- > Users should be able to intuitively secure their frame and one wheel using a U-lock.

SHELTERS



- > Sheltered bicycle racks protect parked bicycles in inclement weather
- > Should be placed near areas with high bicycle traffic

BICYCLE CORRALS



- > If sidewalk space is limited, a bicycle corral (which takes the place of one vehicle street parking space) could be used to hold up to 12 bicycles

BICYCLE SHARING STATIONS



- > Stations can be located strategically at transit points or key destinations
- > Programs can be large or small, and are often completed as public-private partnerships
- > Some cities have provided reduced cost memberships for low income populations, enhancing access

ROUTE MAPS & BRANDING

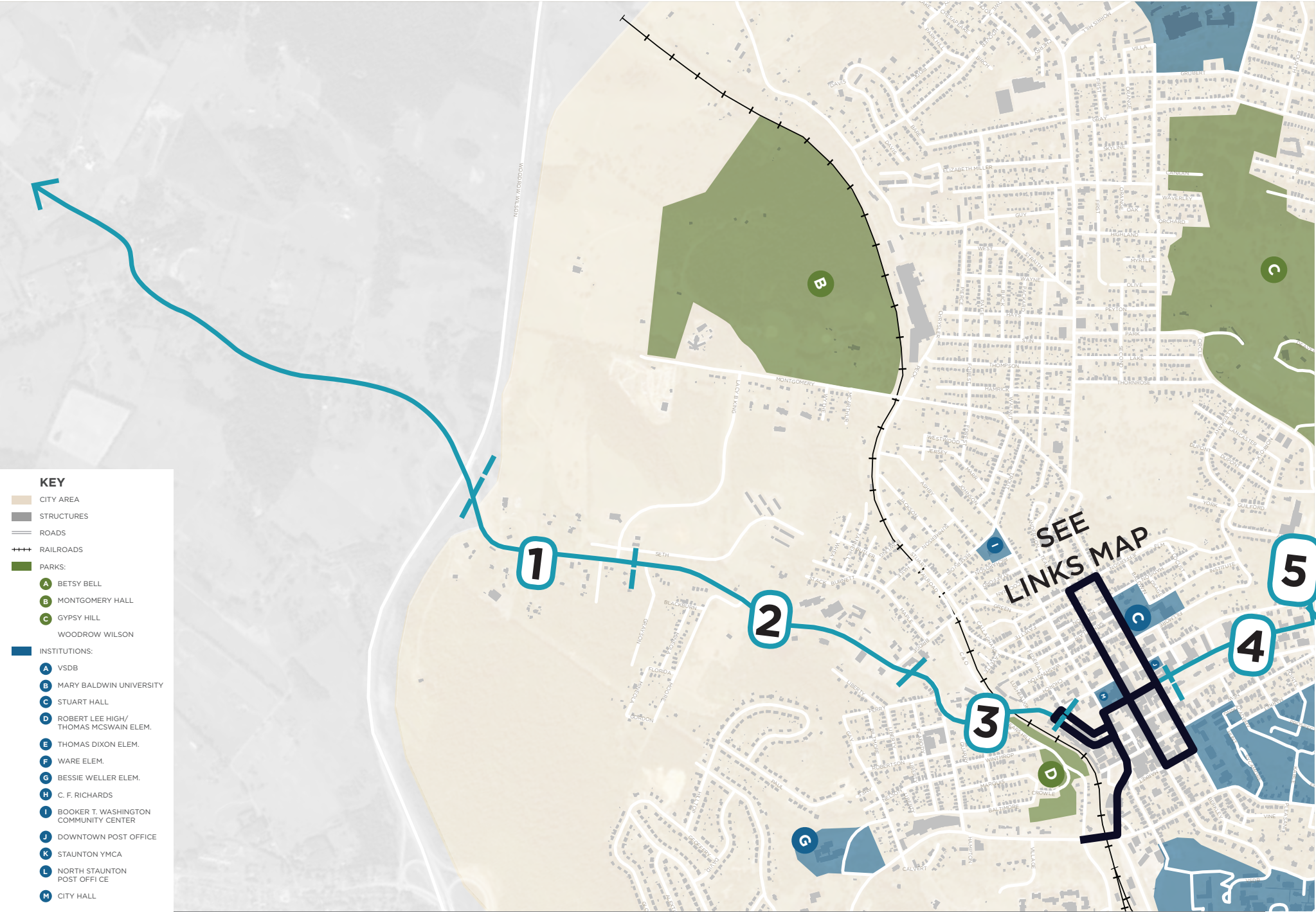


- > The bicycle network identified in this plan is color-coded for legibility and as a method to establish a hierarchy of routes through the City. These color-coded routes can be used to develop supplemental bike route maps which can be available via hardcopy or integrate technology that will allow interactive features.

BUS BICYCLE RACKS



BLUE ROUTE RECOMMENDATIONS



BLUE ROUTE RECOMMENDATIONS

ROUTE SIGNAGE



SHARROWS



BIKE LANES



BUFFERED BIKE LANES



CLIMBING LANES



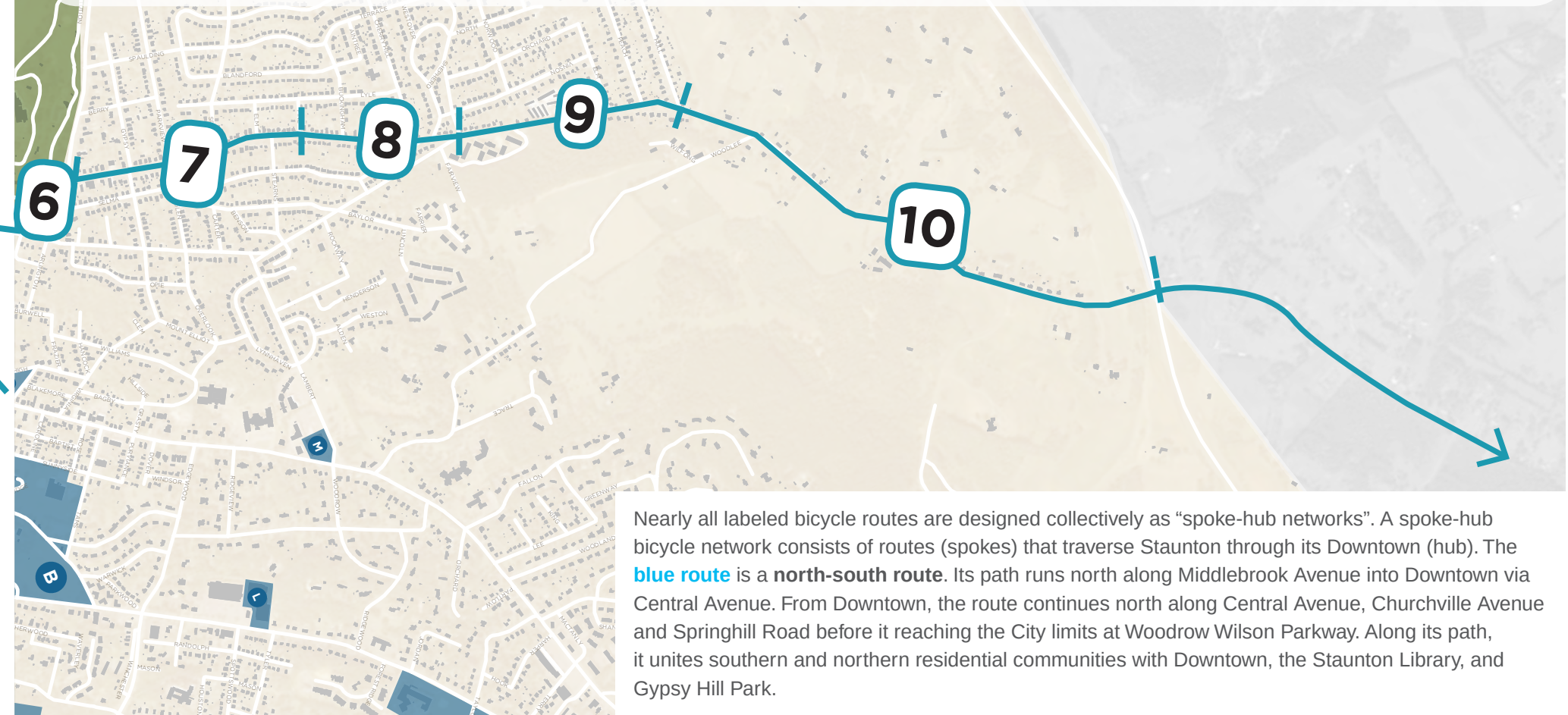
SEGMENTS: 9, 10

4, 5, 7

2, 3, 6

3

8



Nearly all labeled bicycle routes are designed collectively as “spoke-hub networks”. A spoke-hub bicycle network consists of routes (spokes) that traverse Staunton through its Downtown (hub). The **blue route** is a **north-south route**. Its path runs north along Middlebrook Avenue into Downtown via Central Avenue. From Downtown, the route continues north along Central Avenue, Churchville Avenue and Springhill Road before it reaching the City limits at Woodrow Wilson Parkway. Along its path, it unites southern and northern residential communities with Downtown, the Staunton Library, and Gypsy Hill Park.

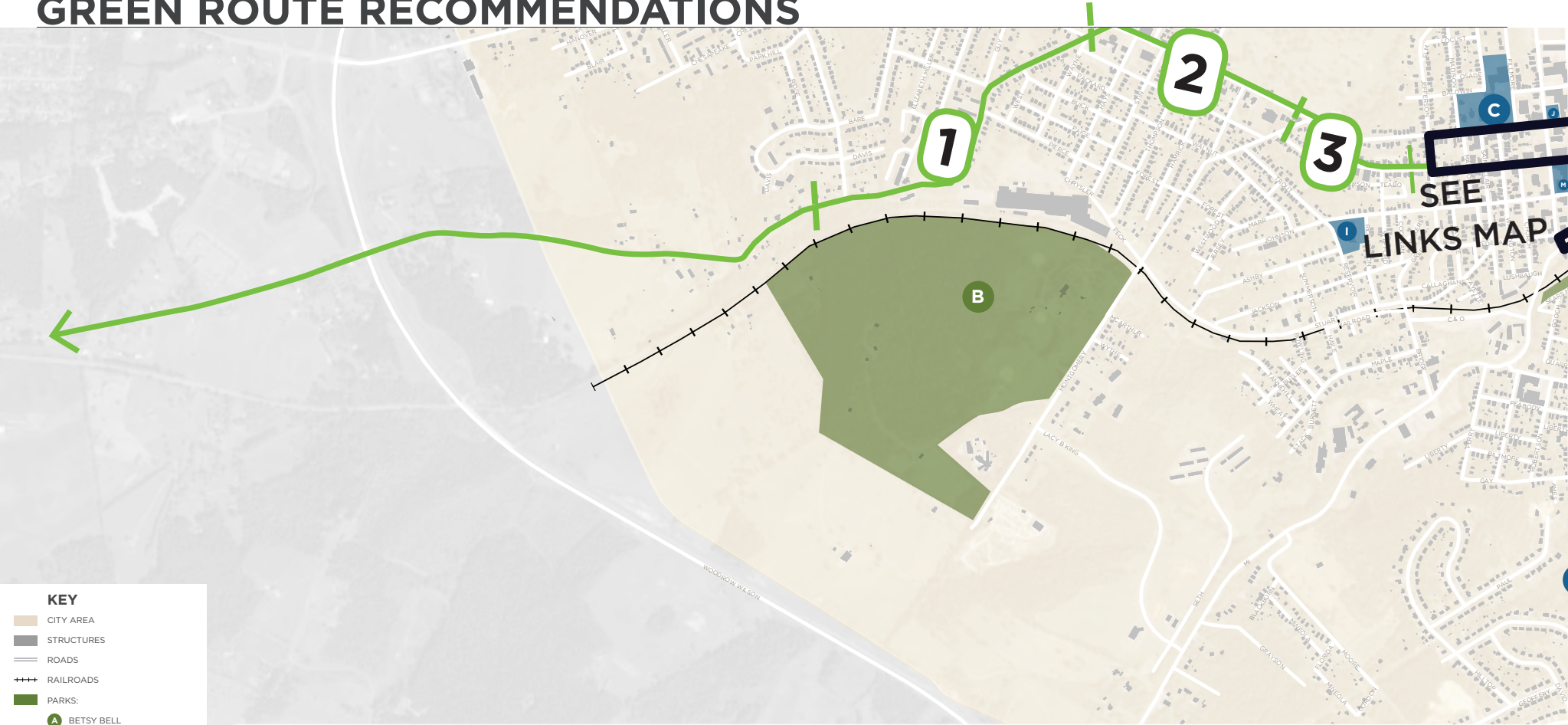
BLUE ROUTE RECOMMENDATIONS

STREET	ROUTE SEGMENT	CURB TO CURB WIDTH	ROADWAY WIDTH & LANE CONFIGURATION	SPEED LIMIT
1 Middlebrook Ave.	Woodrow Wilson Pkwy. to Lacy B. King Wy.	30' - 84'	- 30' min - three 11'-6" travel lanes + 7' shoulder - 84' max - six 11'-6" travel lanes + 14-15' median	35 - 45 mph
2 Middlebrook Ave.	Lacy B. King Wy. to Bridge St.	30' - 50'	- 30' min - two 11'-6" travel lanes + 7' shoulder - 50' max - four 12'-6" travel lanes	35 mph
3 Middlebrook Ave	Bridge St. to Lewis St.	30' - 50'	- 25' min - two 12'-6" travel lanes - 50' max - four 12'-6" travel lanes	25 - 35 mph
4 Central Ave.	Frederick St. to Churchville Ave.	30' - 35'	- See streetscape project dimensions	25 mph
5 Churchville Ave.	Central Ave. to Albemarle Ave.	38' - 46'	- 38' min - three 12'-6" travel lanes - 46' max - four 11'-6" travel lanes	25 mph
6 Churchville Ave.	Albemarle Ave. to Springhill Rd.	32' - 52'	- 32' min - two 16' travel lanes - 38' - three 12'-6" travel lanes - 52' max - three 17' travel lanes	25 mph
7 Springhill Rd.	Churchville Ave. to Pine St.	32' - 40'	- 32' min - two 16' travel lanes - 46' max - two 16' travel lanes + on street parking on both sides of the street	25 mph
8 Springhill Rd.	Pine st. to Donaghe St.	25' - 30'	- 25' min - two 12'-6" travel lanes - 30' max - two 12'-6" travel lanes + parking on west side of the street	25 mph
9 Springhill Rd.	Donaghe St. to Hull St.	20' - 30'	- 20' - two 10' travel lanes + parking on west side of the street	25 mph
10 Springhill Rd.	Hull St. to City limits	20'	- 20' - two 10' travel lanes	35 mph

BLUE ROUTE RECOMMENDATIONS

AVERAGE DAILY TRAFFIC	CURRENT BIKE FACILITIES	PLANNED BIKE FACILITIES	MAJOR CHALLENGES	RECOMMENDATIONS
3,000 vpd	None	None	- Higher speeds - Highway interchange	- Widen roadway and reduce median width to accommodate bike lanes
3,000 vpd	None	None	- Blind hills - Intersection at Bridge St.	- Widen shoulder to accommodate bike lanes - A road diet to reduce the number of travel lanes to accommodate buffered bike lanes (at 4 lane cross section)
2,600 vpd	None	None	- Roadway overpass	- A road diet to reduce the number of travel lanes to accommodate buffered bike lanes (at 4 lane cross section) - Sharrows (at two lane cross section)
2,600 vpd	Streetscape underway	None	- On street parking / limited row - Multiple commercial driveway curb cuts	- Sharrows
9,800 vpd	None	None	- Blind spots / curved roadway - Lane configuration changes - Turn lanes	- Sharrows
8,300 vpd	None	None	- Retaining walls along street - Sequential intersections - Unclear paving markings - Blind turns / obstructed sight lines	- A road diet to accommodate bike lanes
2,300 vpd	None	None	- Hilly - Multiple residential driveways - Several residential parcels do not have driveway street access	- Sharrows on both sides of the street - Narrow travel lanes and add bike lanes at uphill slopes (climbing lanes) & sharrows downhill in constrained areas
2,300 vpd	None	None	- Hilly - Narrow roadway - Retaining walls along roadway	- Sharrows on both sides
2,400 vpd	None	None	- Narrow roadway - Multiple curb cuts - Increasing vehicle travel speeds	- Narrow travel lanes to accommodate bike lanes uphill
2,400 vpd	None	None	- Narrow roadway - Hilly topography adjacent roadway - Increasing vehicle speed limits	- Bike route signage

GREEN ROUTE RECOMMENDATIONS



- KEY**
- CITY AREA
 - STRUCTURES
 - ROADS
 - RAILROADS
 - PARKS:
 - A BETSY BELL
 - B MONTGOMERY HALL
 - C GYPSY HILL
 - WOODROW WILSON
 - INSTITUTIONS:
 - A VSDB
 - B MARY BALDWIN UNIVERSITY
 - C STUART HALL
 - D ROBERT LEE HIGH/ THOMAS MCSWAIN ELEM.
 - E THOMAS DIXON ELEM.
 - F WARE ELEM.
 - G BESSIE WELLER ELEM.
 - H C. F. RICHARDS
 - I BOOKER T. WASHINGTON COMMUNITY CENTER
 - J DOWNTOWN POST OFFICE
 - K STAUNTON YMCA
 - L NORTH STAUNTON POST OFFICE
 - M CITY HALL

ADVISORY SHOULDER



6

SHARROWS



4, 5

BUFFERED BIKE LANES



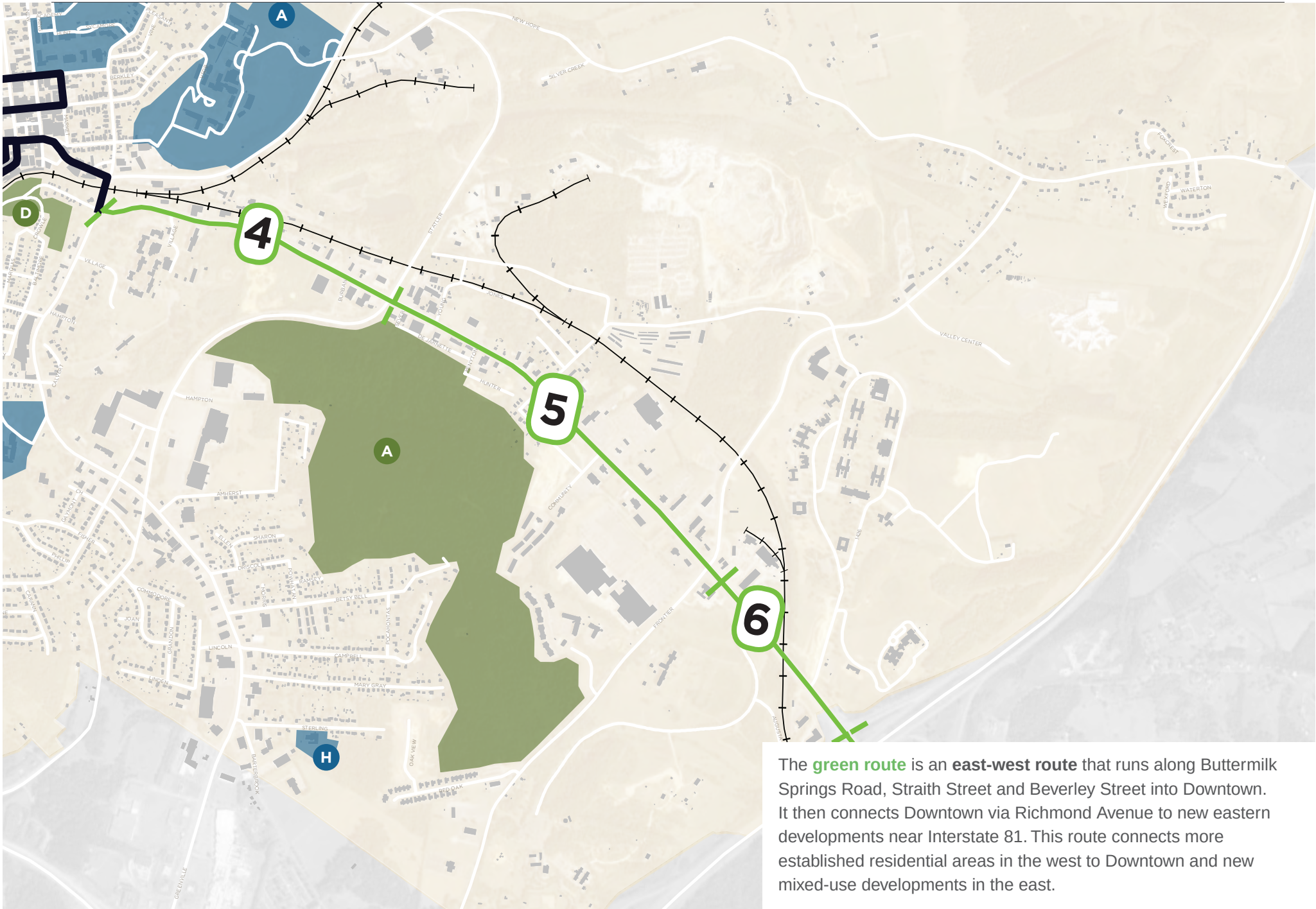
5

SIDE PATH



1, 2, 3

GREEN ROUTE RECOMMENDATIONS



The **green route** is an **east-west route** that runs along Buttermilk Springs Road, Straith Street and Beverley Street into Downtown. It then connects Downtown via Richmond Avenue to new eastern developments near Interstate 81. This route connects more established residential areas in the west to Downtown and new mixed-use developments in the east.

GREEN ROUTE RECOMMENDATIONS

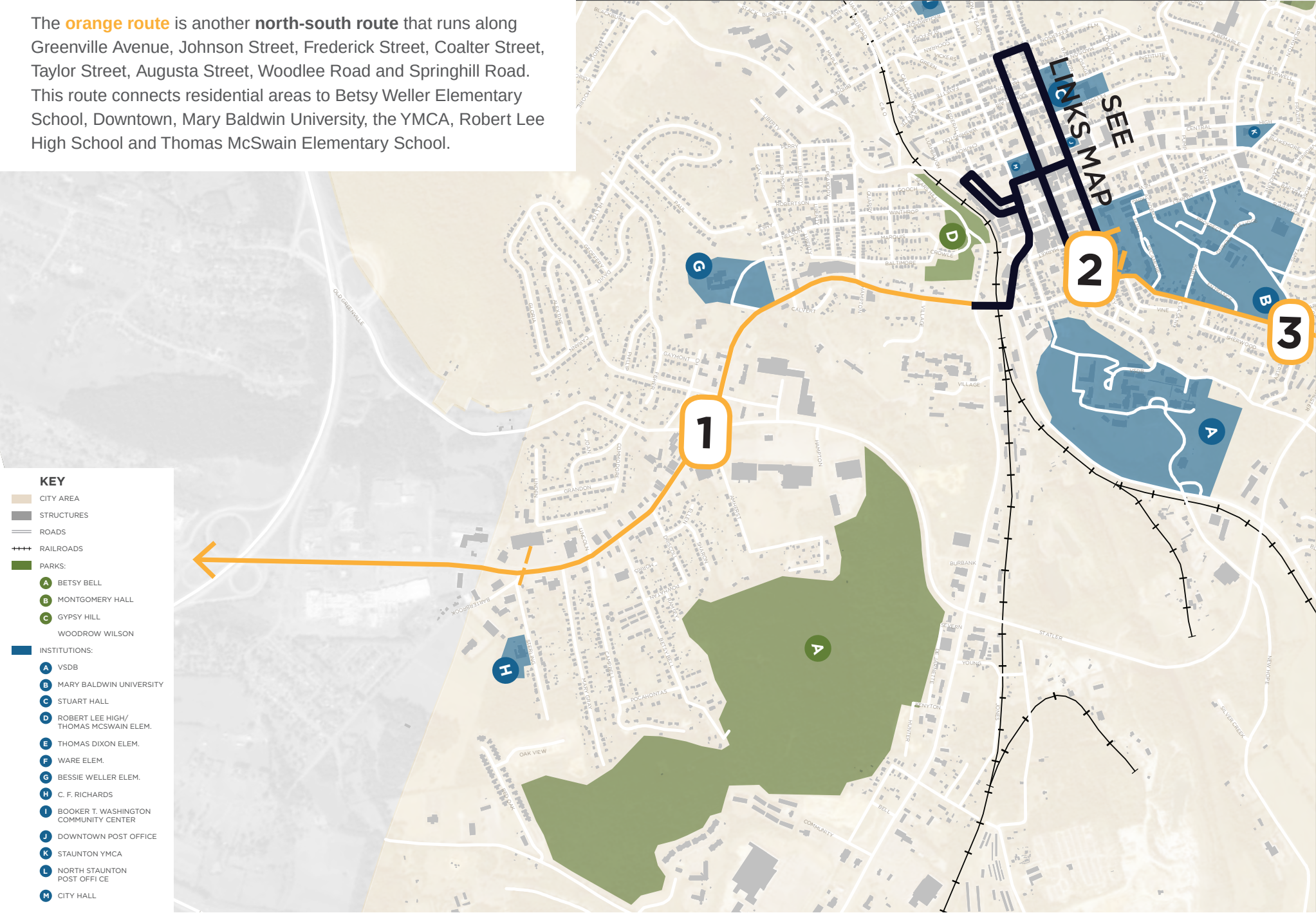
STREET	ROUTE SEGMENT	CURB TO CURB WIDTH	ROADWAY WIDTH & LANE CONFIGURATION	SPEED LIMIT
1 Straith St.	Hoover St. to Beverley St.	25' - 30'	- 25' min - two 12'-6" travel lanes - 30' max - two 15' travel lanes	25 mph
2 Beverley St.	Straith St. to Montgomery Ave.	28' - 40'	- 28' min - two 9' travel lanes & one 9' turn lane - 40' max - four 10' travel lanes	25 mph
3 Beverley St.	Montgomery Ave. to Jefferson St.	30' - 40'	- 30' min - two 11' travel lanes + one parking lane - 40' max - two 16' travel lanes + one parking lane	25 mph
4 Richmond Ave.	Greenville Ave. Statler Blvd.	56' - 67'	- 56' min - four 11' travel lanes + 12' median /turn lane	25 - 35 mph
5 Richmond Ave.	Statler Blvd. to Frontier Dr.	65' - 105'	- 65' min - four 12' travel lanes; one 12' turn lane + 4' median - 105' max - four 13'-6" travel lanes, two 13'-6" turn lanes + 24' median	35 mph
6 Richmond Ave.	Frontier Dr. to I-81	105' - 130'	- 105' min - four 12'-6" travel lanes; two 12'6 turn lanes + 30' median - 130' max - four 12'6 travel lanes; two 12'6 turn lanes; 4' median + paved shoulders	45 mph

GREEN ROUTE RECOMMENDATIONS

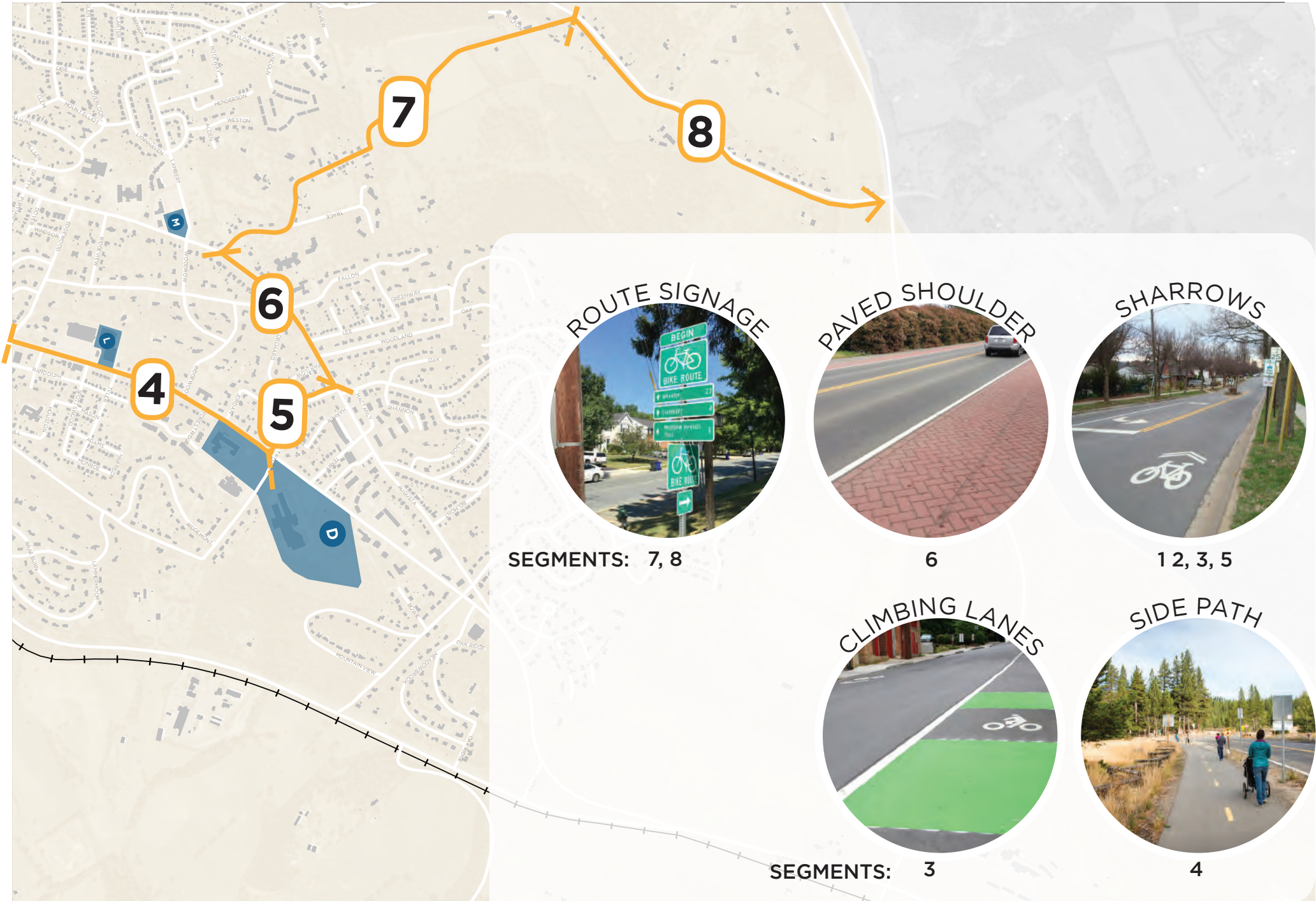
AVERAGE DAILY TRAFFIC	CURRENT BIKE FACILITIES	PLANNED BIKE FACILITIES	MAJOR CHALLENGES	RECOMMENDATIONS
830 vpd	None	None	- Narrow travel lane	- Advisory shoulder
5,400 - 7,900 vpd	None	None	- Narrow travel lanes - Steep slopes adjacent to roadway	- Buffered bike lanes (Montgomery Ave. to Thornrose Ave.) - sharrows (Thornrose Ave. to Straith St.)
4,900 vpd	None	None	- Narrow travel lanes in areas - Buildings close to street - Utility poles at edge of right-of-way - Retaining walls along the roadway - Intersections (Montgomery Ave.)	- Sharrows
10,000 vpd	None	A road diet & roundabout is planned at the Richmond Rd. + Greenville Ave. intersection along with a shared use path on the north side of Richmond Rd.	- Steep topography adjacent to roadway - Narrow travel lanes - Intersections - Utility poles close to roadway	- Sidepath on the north side of the street
24,000 vpd	None	None	- Narrow lanes - Curb cuts - Utility poles close to roadway	- Sidepath on the north side of the street
27,000 - 35,000 vpd	None	None	- Higher vehicle speeds - Interstate interchange - Higher traffic volumes - Multiple curb cuts	- Connect future side path side paths at Frontier Crossing & Staunton Crossing - Consider future regional connection with bike route signage & widened shoulder along Richmond Rd.

ORANGE ROUTE RECOMMENDATIONS

The **orange route** is another **north-south route** that runs along Greenville Avenue, Johnson Street, Frederick Street, Coalter Street, Taylor Street, Augusta Street, Woodlee Road and Springhill Road. This route connects residential areas to Betsy Weller Elementary School, Downtown, Mary Baldwin University, the YMCA, Robert Lee High School and Thomas McSwain Elementary School.



ORANGE ROUTE RECOMMENDATIONS



ORANGE ROUTE RECOMMENDATIONS

STREET	ROUTE SEGMENT	CURB TO CURB WIDTH	ROADWAY WIDTH & LANE CONFIGURATION	SPEED LIMIT
1 Greenville Ave.	Barterbrook Rd. to Statler Blvd.	65'	- 65' - four 13' travel lanes + one 13' turn lane	35 mph
2 Frederick St.	Market St. to Coalter St.	30'	- 30' - two 11' travel lanes + parking on one side of the street	25 mph
3 Coalter St.	Frederick St. to Statler Blvd.	30' - 40'	- 30' min - two 11' travel lanes with intermittent on-street parking - 40' max - two 13' travel lanes + one 13' turn lane	25 mph
4 Coalter St.	Statler Blvd. to Taylor St.	35' - 50'	- 35' min - 2 lanes, 1 turn lanes - 50' max - two 12'-6" travel lanes + two 12'-6" turn lanes	25 mph
5 Taylor St.	Coalter St. to Augusta St.	24'	- 24' - two 12' travel lanes	25 mph
6 Augusta St.	Taylor St. to Woodlee Rd.	35'	- 35' - two 11'-6" travel lanes + one 11'-6" turn lanes - 35' - two 11' travel lanes + two 6'-6" (+/-) shoulders on each side of the street (shoulder width fluctuates)	35 mph
7 Woodlee Rd.	Augusta St. to Springhill Rd.	20' - 25'	- 20' min - two 10' travel lanes - 25' max - two 12'-6" travel lanes	25 mph
8 Springhill Rd.	Bike route signage; refer to blue route- segment 10			

ORANGE ROUTE RECOMMENDATIONS

AVERAGE DAILY TRAFFIC	CURRENT BIKE FACILITIES	PLANNED BIKE FACILITIES	MAJOR CHALLENGES	RECOMMENDATIONS
11,000 - 16,000 vpd	None	None	- Frequent curb cuts - Few signalized intersections - Several unsignalized intersections	- A road diet to reduce travel lanes widths. add bike lanes.
2,700 vpd	None	None	- Hilly - Utility poles close to roadway	- Sharrows
3,700 vpd	None	None	- Hilly	- Sharrows
3,400 vpd	None	None	- Limited right-of-way - Commercial area (higher traffic) - Vehicular turning movements	- Side path: west side from Statler Blvd. to Jordan/Mason St.; east side from Jordan/Mason St.
n/a	None	None	- Topography adjacent to roadway - Blind spots / curving roadway	- Sharrows
5,000 vpd	None	None	- Higher vehicle speeds - Utilities close to the road - Narrow shoulder in areas - Narrow travel lanes - Challenging topography - Blind spots	- Paved shoulder (widen) - Study signalization of the Augusta Rd. & Woodlee Rd. intersection - Study reducing speed limit to 25 mph.
n/a	None	None	- Blind spots / tight turns	- bike route signage + traffic calming

RED ROUTE RECOMMENDATIONS

The **red route** runs **west to northeast** along Beverley Street, Taylor Street and Augusta Street. Along its path, the route connects residential communities to Downtown, the Virginia School for the Deaf and the Blind, Robert Lee High School, Thomas McSwain Elementary School and employment areas to the north in Verona.



RED ROUTE RECOMMENDATIONS



RED ROUTE RECOMMENDATIONS

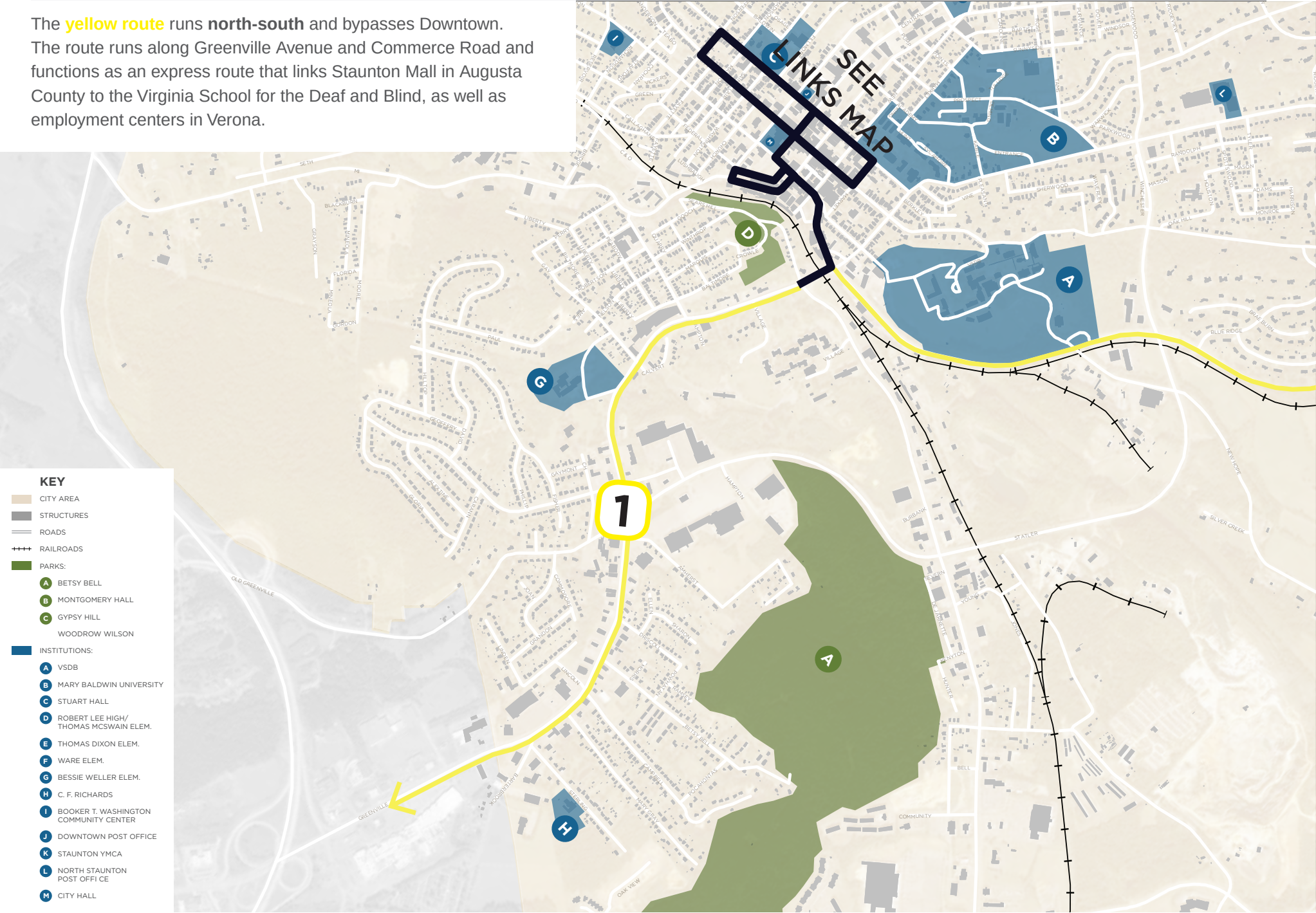
STREET	ROUTE SEGMENT	CURB TO CURB WIDTH	ROADWAY WIDTH & LANE CONFIGURATION	SPEED LIMIT
1 Beverley St.	Sheets St. to Straith St.	32' - 40'	- 32' min. - two 16' travel lanes - 40' max. - three 13' travel lanes	25 mph
2 Beverley St.	Sharrows & buffered bike lanes; refer to green route segments 4 & 5			
3 Frederick St.	Sharrows; refer to orange route segment 2			
4 Coalter St.	Side path; refer to orange route segment 6			
5 Taylor St.	Sharrows; refer to orange route segment 5			
6 Augusta St.	Taylor St. Coalter St.	25' - 45'	- 25' min. - two 12'-6" travel lanes - 45' max. - four 11' travel lanes	35 mph
7 Commerce St./Augusta St.	Coalter St. to Woodrow Wilson Pkwy.	30' - 87'	- 30' min - two 11' travel lanes + shoulder - 45' - four 11' travel lanes - 87' max. - four 14'-6" travel lanes + two 14'-6" turn lanes	35 mph
8 Commerce St.	Woodrow Wilson Pkwy. to Green Hills Dr.	45' - 87'	- 45' min. - four 11' travel lanes - 87' max - four 14'-6" travel lanes + two 14'-6" turn lanes	35 mph

RED ROUTE RECOMMENDATIONS

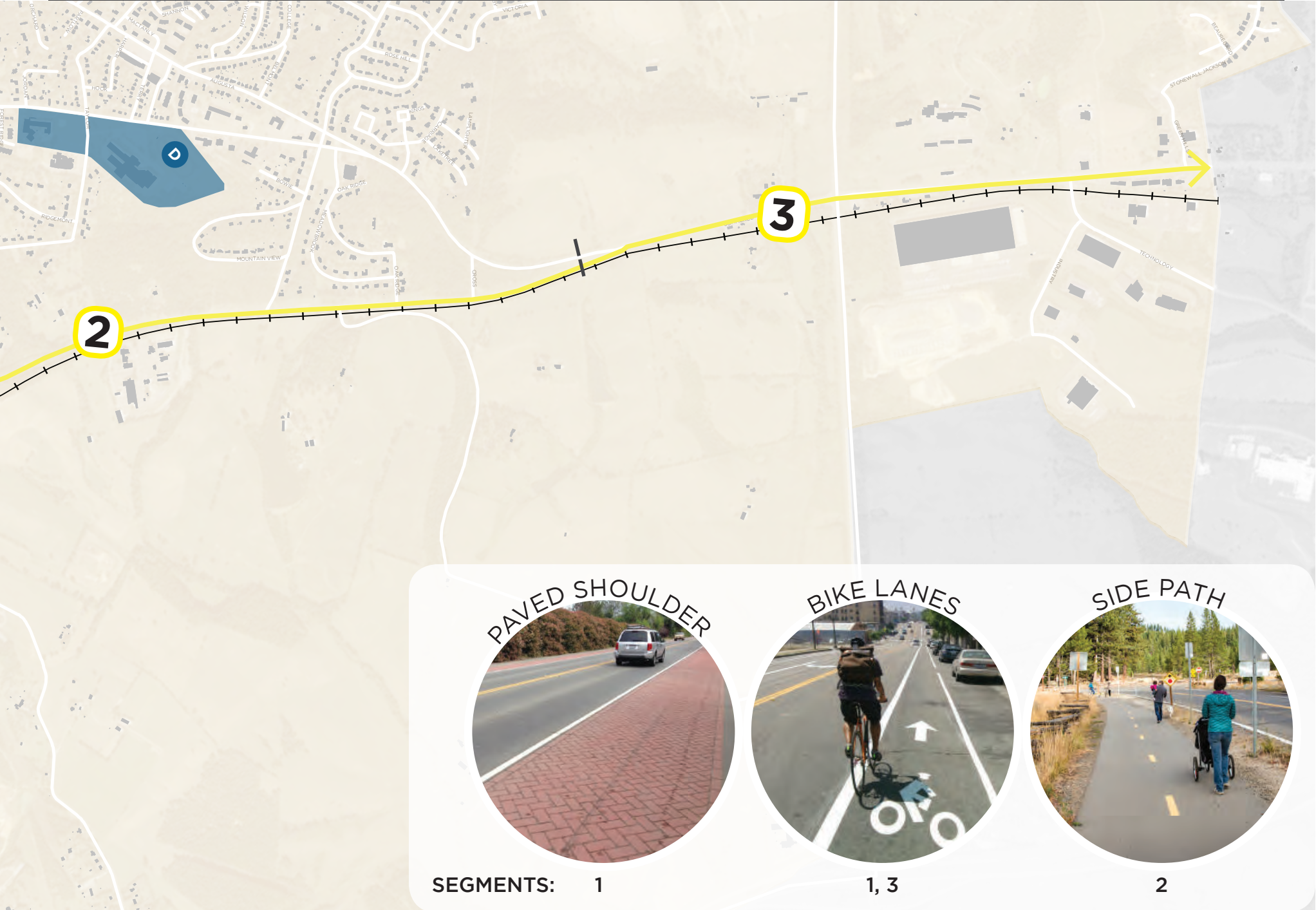
AVERAGE DAILY TRAFFIC	CURRENT BIKE FACILITIES	PLANNED BIKE FACILITIES	MAJOR CHALLENGES	RECOMMENDATIONS
7,900 - 8000 vpd	None	None	- Multiple curb cuts - Speed limit signs needed - Not many signalized intersections - Utilities close to the right-of-way - Lane configuration changes often - Interchange at woodrow wilson parkway	- Bike lanes - Paved shoulder at narrow cross section
5,000 - 7,200 vpd	None	None	- Narrow road - Narrow vehicle lanes	- A road diet to reduce the number of travel lanes to accommodate bike lanes - Widen paved shoulder at two-lane cross section
2,600 - 12,000 vpd	None	None	- Intersection at Augusta St.	- Paved shoulder
14,000 vpd	None	None	- Primarily industrial land uses - Major intersection at woodrow wilson pkwy. - Narrow travel lanes - Frequent curb cuts	- A road diet to reduce the number of travel lanes to Accommodate bike lanes - Widen paved shoulder at two-lane cross section

YELLOW ROUTE RECOMMENDATIONS

The **yellow route** runs **north-south** and bypasses Downtown. The route runs along Greenville Avenue and Commerce Road and functions as an express route that links Staunton Mall in Augusta County to the Virginia School for the Deaf and Blind, as well as employment centers in Verona.



YELLOW ROUTE RECOMMENDATIONS

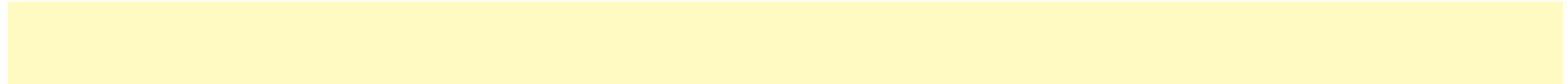


YELLOW ROUTE RECOMMENDATIONS

STREET	ROUTE SEGMENT	CURB TO CURB WIDTH	ROADWAY WIDTH & LANE CONFIGURATION	SPEED LIMIT
1	Add bike lanes; refer to orange route- segment 1			
2	Add sidepath along east side of roadway; refer to pink route- segment 2			
3	Widen paved shoulder and add bike lanes; refer to red route- segments 1 & 2			

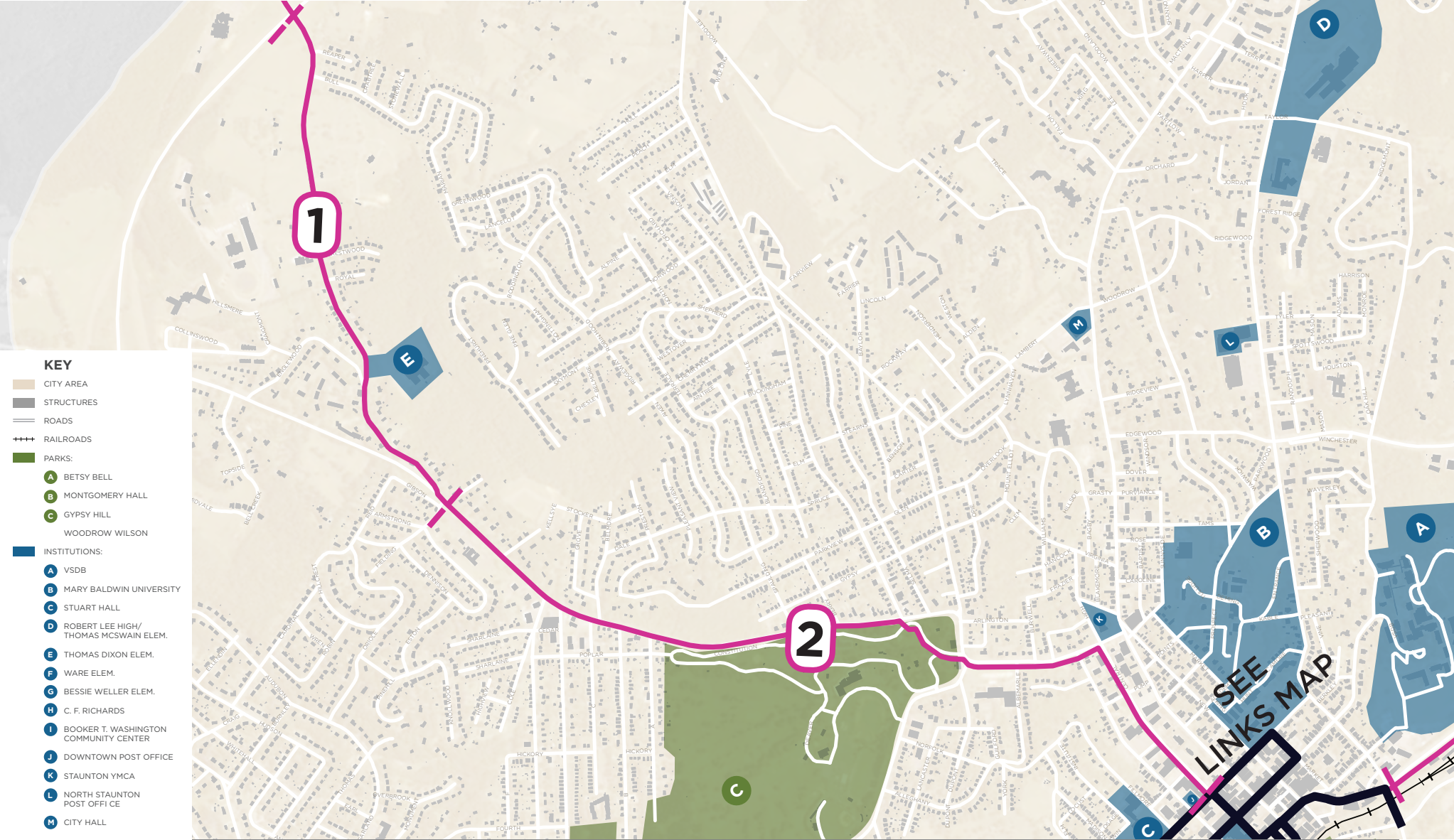
YELLOW ROUTE RECOMMENDATIONS

AVERAGE DAILY TRAFFIC	CURRENT BIKE FACILI- TIES	PLANNED BIKE FACILITIES	MAJOR CHALLENGES	RECOMMENDATIONS
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PINK ROUTE RECOMMENDATIONS

The **pink route** runs **northwest to east** and functions primarily as a recreation route outside of Downtown. The route runs along Shutterlee Mill Road, Englewood Drive, Churchville Avenue, Central Avenue, Commerce Road and New Hope Road. This route connects Downtown to Gypsy Hill Park, Thomas Dixon Elementary School, the Virginia School for the Deaf and Blind, and preserved natural areas near National Avenue.



PINK ROUTE RECOMMENDATIONS

SEGMENTS: 1



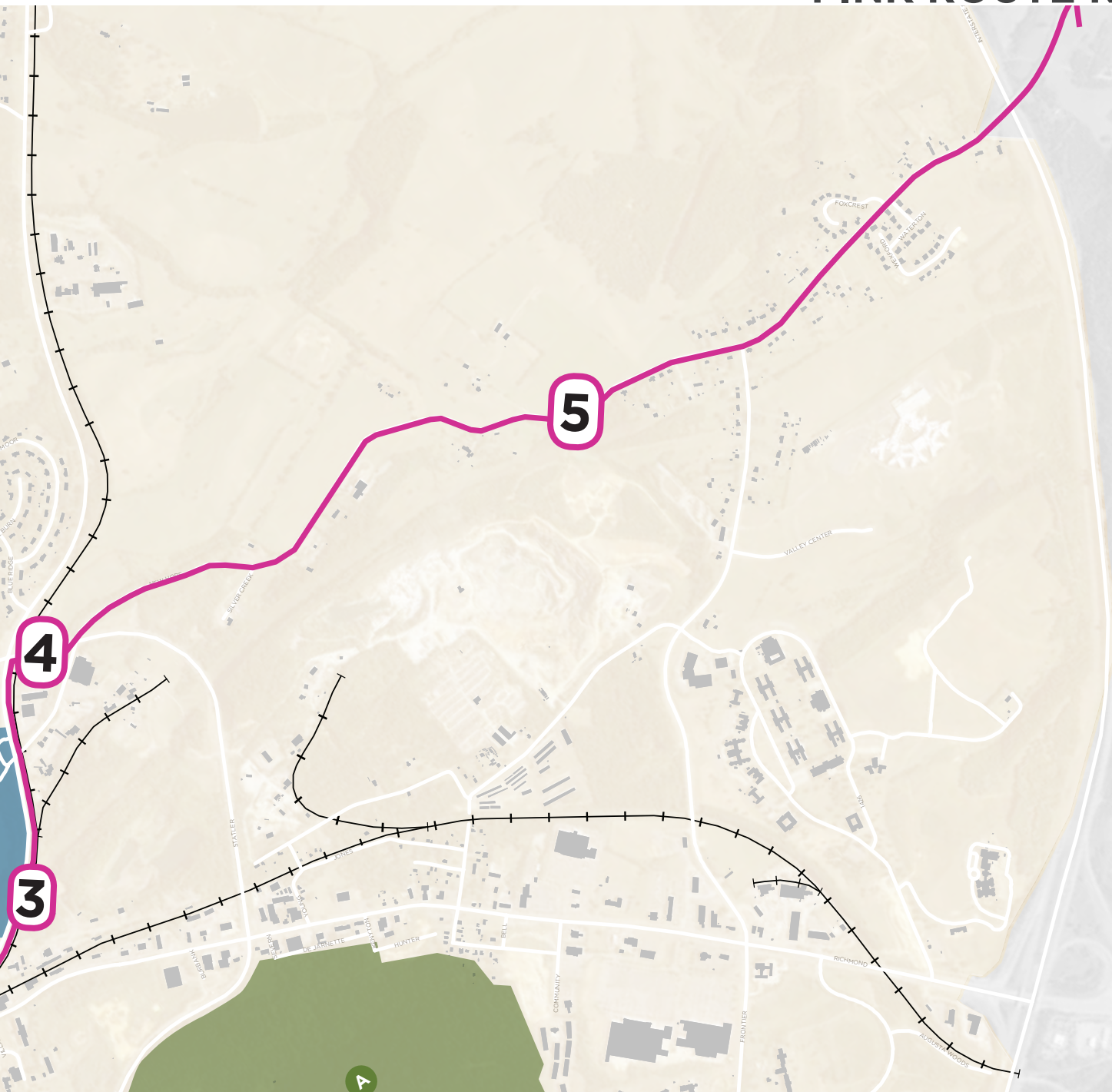
4



2, 3



5



PINK ROUTE RECOMMENDATIONS

STREET	ROUTE SEGMENT	CURB TO CURB WIDTH	ROADWAY WIDTH & LANE CONFIGURATION	SPEED LIMIT
1 Englewood Dr. to Shutterlee Mill Rd.	City limits to Churchville Ave.	25'	- 25' - two 12'-6" travel lanes	25 mph
2 Churchville Ave.	Englewood Dr. to Springhill Rd.	40' - 50'	- 40' min - four 10' travel lanes + one - 10' turn lane - 50' max - two 10' travel lanes + median / one-two 10' turn lanes	35 mph (25 at Gypsy Hill Park)
3 Commerce Rd.	Greenville Ave. to Slater Blvd.	55'	- 55' - four 13'-6" travel lanes	35 mph
4 Statler Blvd.	New Hope Rd. to Commerce Rd.	72'	- 72' - four 15' travel lanes + median/turn lane	35 mph
5 New Hope Rd.	Slater Blvd.. to City limits	23'	- 23' - two 11'-6" travel lanes	35 mph

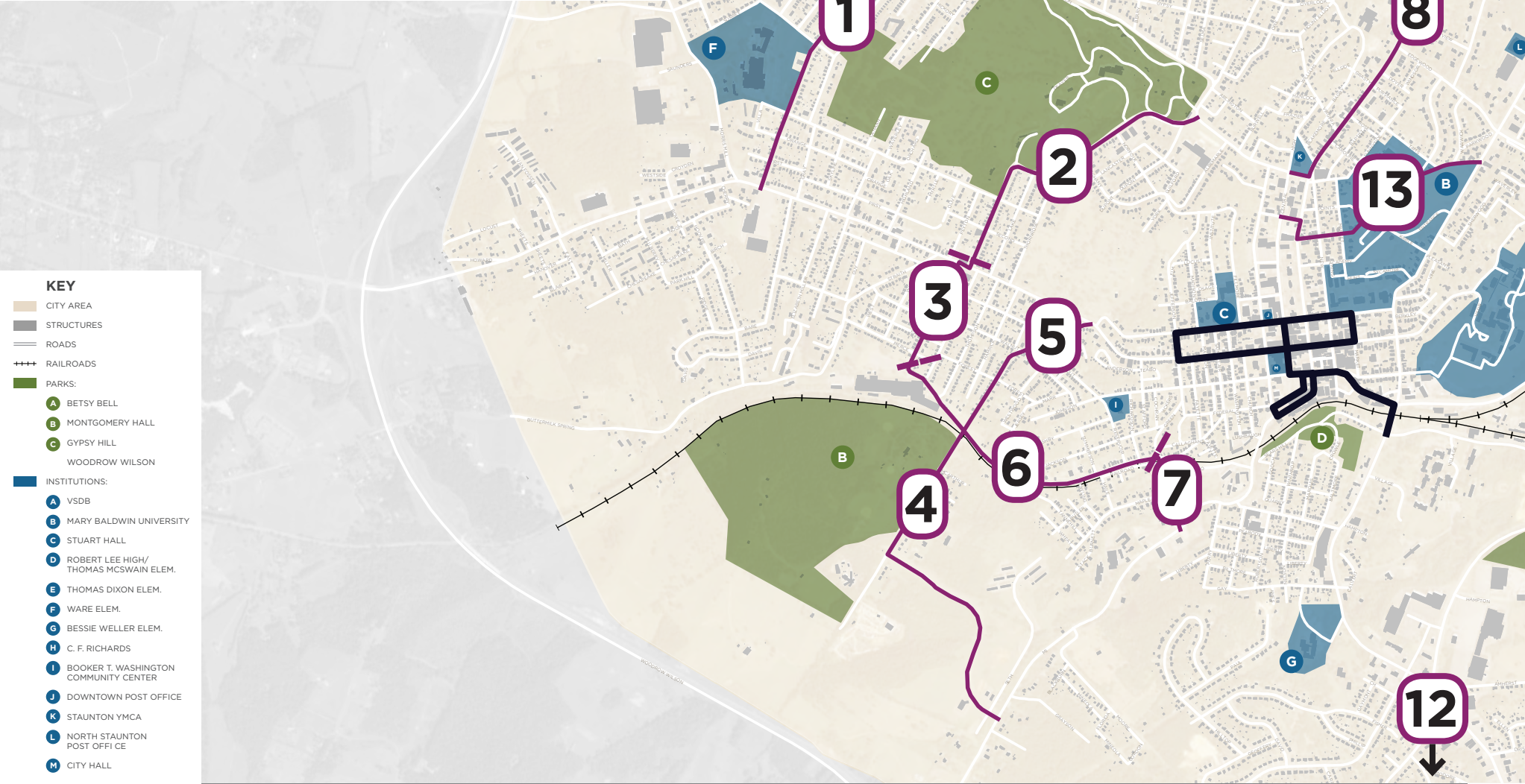
PINK ROUTE RECOMMENDATIONS

AVERAGE DAILY TRAFFIC	CURRENT BIKE FACILITIES	PLANNED BIKE FACILITIES	MAJOR CHALLENGES	RECOMMENDATIONS
1,400 vpd	None	None	- Narrow - Topography adjacent to roadway	- Sharrows
8,300 vpd	None	None	- Englewood dr. intersection - Retaining walls & significant topography adjacent to roadway	- A road diet along Churchville Rd. to reduce travel lanes. Add buffered bike lanes
2,600 vpd	None	None	- Wide thoroughfare - Blind spots - Topography adjacent to the roadway	- Sidepath along east side of Commerce Rd.
13,000 vpd	None	None	- Higher capacity / higher traffic thoroughfare	- Sidepath along south side of Statler Rd.
1,200 vpd	None	None	- Hilly - Blind spots - Speeding vehicles - Numerous driveway entrances	- Study speed reduction from 35 to 25 mph - Bike route signage

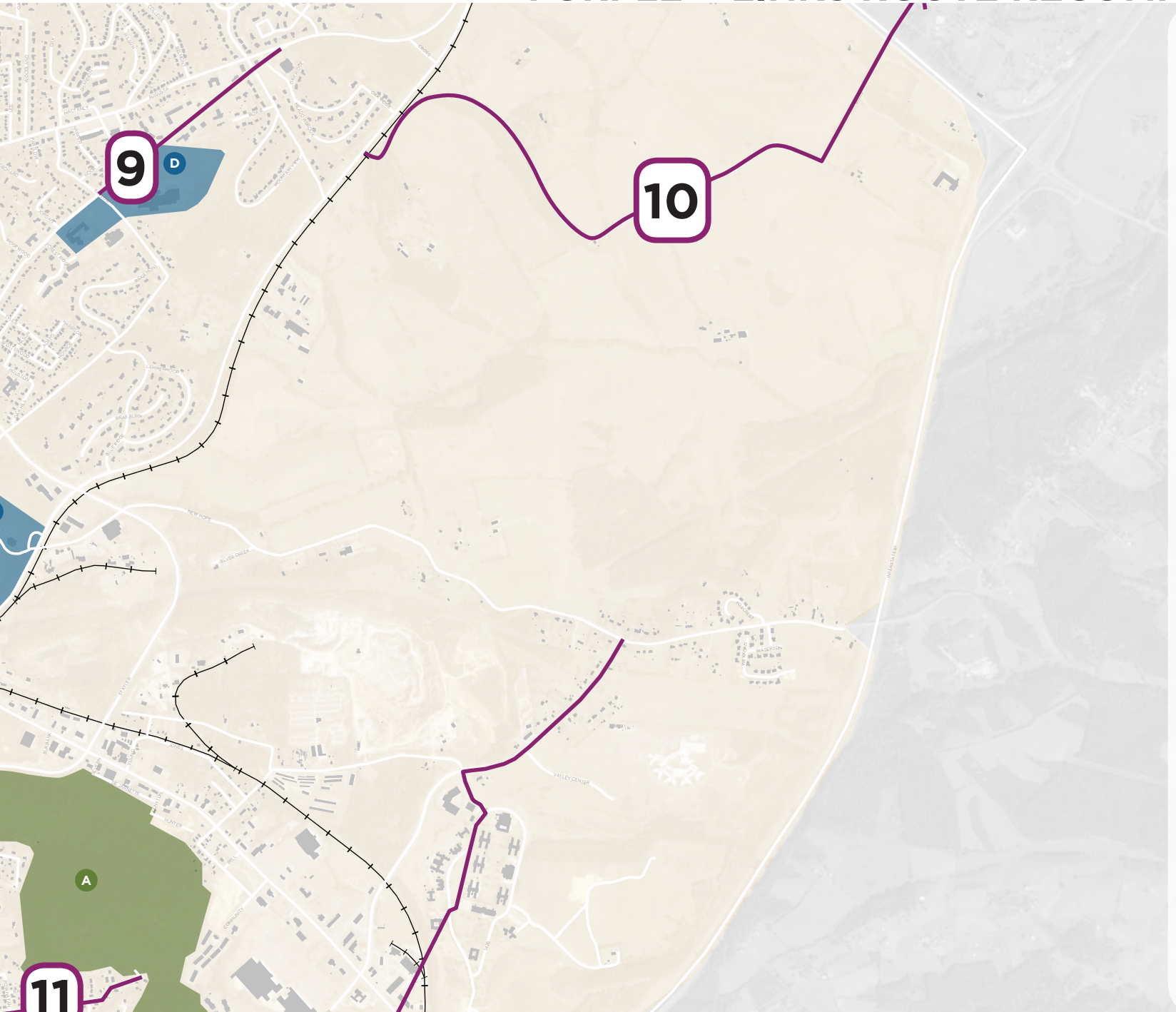
PURPLE + LINK ROUTE RECOMMENDATIONS

The **purple route** functions primarily as a recreational bicycle access route from Commerce Road into preserved areas north of New Hope Road.

Complimenting the spoke-hub bicycle route network discussed above are numerous link routes that provide critical cross-town connections throughout Staunton. These link routes provide direct connections to parks, institutions and other destinations, while also providing many local inter-neighborhood connections.



PURPLE + LINKS ROUTE RECOMMENDATIONS



SEGMENTS: 4



SHARROWS

1, 7



BIKE LANES

3



CLIMBING LANES

6, 8



PURPLE + LINKS ROUTE RECOMMENDATIONS

STREET	ROUTE SEGMENT	CURB TO CURB WIDTH	ROADWAY WIDTH & LANE CONFIGURATION	SPEED LIMIT
1 Grubert St.	Churchville Ave. to Beverley St.	40'	- 40' - two 13' travel lanes + one 13' turn lane - 40' - two 12' travel lanes + two parking lanes	25 mph
2 Thornrose Ave / Park Blvd. / Circle Dr.	Churchville Ave. to Beverley St.	30' 35' 42'	- 30' - two 15' travel lanes - 35' - two 13'-6" travel lanes + on-street parking (one side of street) - 42' - two 13' travel lanes + on street parking (both sides of street)	25 mph
3 Hays Ave.	Beverley St. to Stuart St.	35' 38'	- 35' - two 11'-6" travel lanes + one 11'-6" turn lanes - 38' - two 11' travel lanes + on-street parking (both sides of street)	25 mph
4 Montgomery Ave.	Stuart St. to Lacy B. King Wy.	30'	- 30' - two 11' travel lanes + on-street parking	25 mph
5 Montgomery Ave.	Stuart St. to Beverley St.	20' - 30'	- 20' - two 10' travel lanes - 30' - two 11' travel lanes + on-street parking	n/a
6 Stuart St.	Montgomery Ave. to Bridge St.	32'	- 30' - two 15' travel lanes	25 mph
7 Bridge St.	Middlebrook Ave. to Stuart St.	32'	- 32' - two 16' travel lanes	25 mph
8 Augusta St.	Edgewood St. to Churchville Ave.	32' - 48'	- 32' - two 12' travel lanes + on-street parking (one side of the street) - 48' - four 12' travel lanes	25-35 mph
9 Coalter St.	Taylor St. to Oakridge Cir.	30'-38'	- two 12' travel lanes + shoulder	35 mph
10 Bells Ln.	Commerce Rd. to City limits	20'	- two 10' travel lanes	25 mph
11 Betsy Bell Rd.	Greenville Ave. to Betsy Bell Park	23'	- two 11'-6" travel lanes	25 mph
12 Barterbrook Rd.	Greenville Ave. to Frontier Dr.	20'	- two 10' travel lanes	35 mph
13 Prospect St./ Tams St.	Augusta St., to Coalter St.	25'	- two 12'-6" travel lanes	25 mph

PURPLE + LINKS ROUTE RECOMMENDATIONS

AVERAGE DAILY TRAFFIC	CURRENT BIKE FACILITIES	PLANNED BIKE FACILITIES	MAJOR CHALLENGES	RECOMMENDATIONS
4,600 vpd	None	Safe routes to school	- Hilly	- Sharrows
1,300-4,400 vpd (Thornrose ave)	None	None	- Residential street, multiple driveway curb cuts - On-street parking / blind spots	- Bike lanes + parking on one side of the street (Thornrose Ave. / Circle Dr.) - Sharrows (Park Blvd.) - Study removing parking beside Thornrose Cemetery
3,200 vpd	None	None	- Residential street, multiple driveway curb cuts	- Bike lane (uphill) + sharrows (downhill)
n/a	None	None	- On-street parking - Narrow travel lanes	- Study removal of on-street parking - Add bike lanes
n/a	None	None	- Multiple residential Driveway curb cuts	- Sharrows
4,000 vpd	None	None	- Curved roadway / blind spots	- Sharrows + traffic calming
5,400 vpd	None	None	- Railroad overpass - Multiple commercial/ Residential driveways	- Narrow travel lanes - Sharrows
8,100 vpd	None	None	- Higher traffic / speed thoroughfare - Multiple unsignalized street intersections	- Study a road diet to reduce travel lanes - Sharrows downhill and climbing lane uphill
3,400 vpd	None	None	- Open road / speeding vehicles - Hilly	- Widen shoulder - Add bike lanes
n/a	None	None	- Curved roadway / blind spots - Potential vehicular speeding	- Bike route signage - Traffic calming
n/a	None	None	- Multiple residential driveways	- Sharrows
3,200 - 3,400 vpd	None	None	- Open roadway / potential speeding traffic	- Bike route signage - Greenway connection from frontier museum to frontier crossing
740 vpd	None	None	- Narrow - Hilly - Blind spots	- Sharrows + traffic calming

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6 | IMPLEMENTATION

IMPLEMENTATION & “THE 5 E’S”

Implementing a successful bicycle and pedestrian plan will help Staunton become a more equitable and accessible City for both its residents and visitors. The majority of this plan's recommendations for new and improved facilities are bold and are not expected to be constructed all at once. That being the case, the City must continue to work internally with the Department of Public Works and externally with community stakeholders like the Staunton Bicycle Pedestrian Advisory Committee (BPAC) to determine an appropriate phasing approach.

THE 5 E’S

This plan does not recommend which facility installations should be implemented first. However, best practices advise that a work plan for project phasing and selection should be coordinated based on the League of American Bicyclists’ “5 E’s Program”:

1. ENGINEERING

- The City should focus on developing a well-connected bicycle and pedestrian network that creates a physical environment whose design facilitates walking and biking as an easy and safe alternative to driving an automobile. Working with stakeholders, the City should implement the projects that maximize this outcome while remaining financially viable.
- The City should adopt a ‘Complete Streets’ policy as part of its Comprehensive Plan. Complete Streets policies are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work.

2. EDUCATION

- As mentioned in previous sections of this plan, a wide range of bikers and walkers have varying comfort and ability levels in terms of the ways they utilize the City's bike/ped infrastructure. Additionally, there are many people whose transportation preference will continue to be driving. Optimizing a safe environment for Staunton's transportation network and its varying users requires holistic education to inform all users of local and national driving laws and best practices.

- > Educational programs can increase safety for all travelers - people driving, walking, running, riding bicycles, using mobility devices, etc.
- > They can also provide education about proper use of facilities
- > The City of Staunton could adopt police-led, bicycle-focused education programs in schools
- > Other programs could focus on adult bicycle user awareness, driver awareness, pedestrian safety, or other issues



- Complimenting locally developed and managed education programs are state and federal education programs:
 - > Safe Routes to School (SRTS) is a federal program that is administered at the state-level
 - > Its purpose is to ensure that children have safe, non-motorized routes to schools
 - > VDOT provides several types of grants to help communities develop programs and infrastructure related to SRTS



IMPLEMENTATION & “THE 5 E’S”

3. ENCOURAGEMENT

- Staunton is home to a wide array of small businesses and institutions that help emphasize the City’s unique character and essence. Additionally, these businesses and institutions play a critical role in encourage more biking and walking among Staunton’s residents and visitors. Continuing to promote events like National Bike Month, Bike to Work Day, and local events such as weekly farmers markets located near high quality bicycle and pedestrian facilities or incentive programs for employees who bike and walk, can help to increase biking and walking in Staunton.

4. ENFORCEMENT

- Developing high quality bicycle and pedestrian facilities, educating the public about best practices, and encouraging people to bike and walk rather than drive are fundamental to creating true Bicycle Friendly Communities. However, the safety and equitable treatment of all travelers in Staunton can only be secured by enforcing strong laws and regulations. The City must commit to working in tandem with local police and other related agencies to enforce new laws and regulations once new bicycle and pedestrian infrastructure is constructed.

5. EVALUATION & PLANNING

- Understanding that implementing new bicycle and pedestrian infrastructure will occur incrementally, the City and its stakeholders must be dedicated to utilizing metrics and providing adequate funding to programs in the development of effective and well-maintained infrastructure. Additionally, some new projects might work best as pilot projects that can be evaluated and assessed over time. The BPAC and the community play a critical role in working with the City to realize the goals of this plan, and we encourage their continued commitment to the long-term program

FUNDING & PRIORITIZATION

- This Plan represents a comprehensive vision for Staunton’s pedestrian and bicycle network that includes several recommended projects that range in scale and cost. As a result, first phase projects should be prioritized to maximize available funding resources. As BPAC begin to take steps toward project implementation, the following criteria should be considered-
- **Cost and available funding-** identify other planned projects in the City (such as streetscapes, roadway repaving/reconstruction, utility projects, and private development/redevelopment projects) that can incorporate bicycle and pedestrian facilities. Identify opportunities to supplement the City’s Capital Improvement Projects (CIP) budget budget by seeking other funding resources such as-
 - > SMART Scales- a VDOT/Federally funded program that utilizes enhanced, region-specific criteria to rank projects against one another across the state for funding
 - > Revenue Sharing - a Virginia program that provides additional funding for use by a county, City, or town to construct or improve highway systems. As part of this program, locality funds are matched with state funds for qualifying projects.
 - > Transportation Alternatives Program (TAP)- a federal funding resource that includes the former Safe Routes to School program.
 - > Community Development Block Grant (CDBG)- can provide funding to the City through the Department of Housing and Urban Development
- **Safety-** consider improvements to corridors that are unsafe for pedestrians and bicyclists particularly those that have higher crash rates.
- **Connecting existing facilities-** currently, Staunton has no bicycle lanes or paths within the City. However, it does have a network of sidewalks that can be infilled, extended and enhanced.
- **Connect destinations-** provide pedestrian and bicycle facilities that link critical destinations such as transit stops, schools, parks and commercial destinations.

