THE BICYCLE MASTER PLAN

LIFE SCIENCES CENTER LOOP TRAIL

Pedestrian and Bicycle Activities in the Life Sciences Center Area

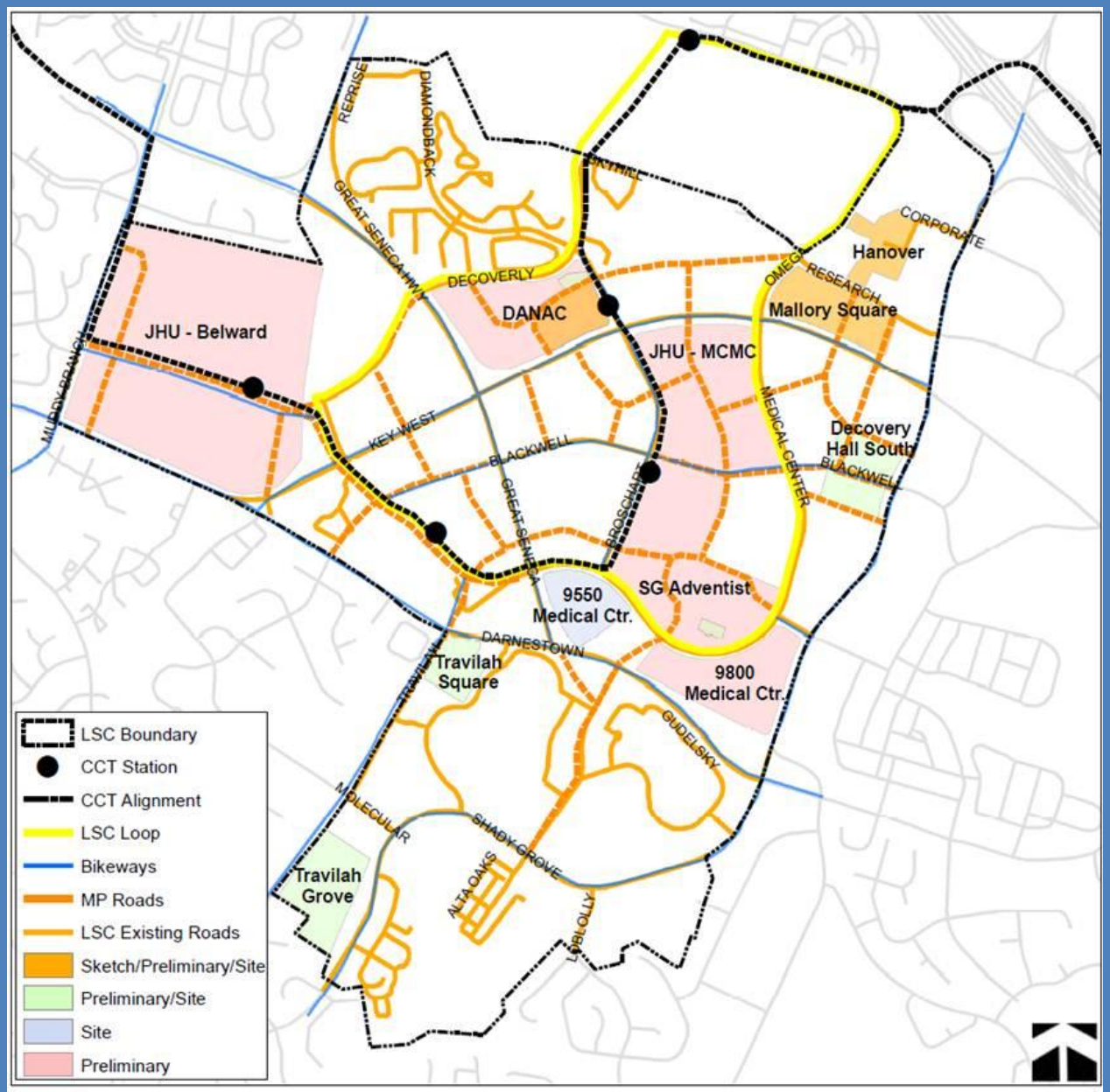
December 15, 2015

Presented By:

David Anspacher | Bicycle Master Plan Project Manager

Steve Findley | LSC Loop Trail Project Manager

Overview


REPRISE
DIAMONDBACK
GREAT SENECA HWY
DECOVERLY
DANAC
JHU - Belward
JHU - MCMC
Hanover
CORPORATE
OMEGA RESEARCH
Mallory Square
MURDOCK RANCH
KEY WEST
BLACKWELL
GREAT SENECA
PROSCHARE
MEDICAL CENTER
Decovery Hall South
BLACKWELL
9550 Medical Ctr.
SG Adventist
DARNESTOWN
Travilah Square
9800 Medical Ctr.
GUDELSKY
MOLECULAR
SHADY GROVE
Travilah Grove
ALTA OAKS
LOBLOLLY
LSC Boundary
CCT Station
CCT Alignment
LSC Loop
Bikeways
MP Roads
LSC Existing Roads
Sketch/Preliminary/Site
Preliminary/Site
Site
Preliminary

Draft LSC Bicycle Network Proposal

Topics

[1] What is the Bicycle Master Plan?

[2] What is a separated bike lane?

[3] What is secure bike parking?

[4] What are we proposing for the GSSC area?

[5] Why are we proposing this network?

[6] How will this help the GSSC area?

[7] Next Steps

[1] What is the Bicycle Master Plan?

THE BICYCLE MASTER PLAN

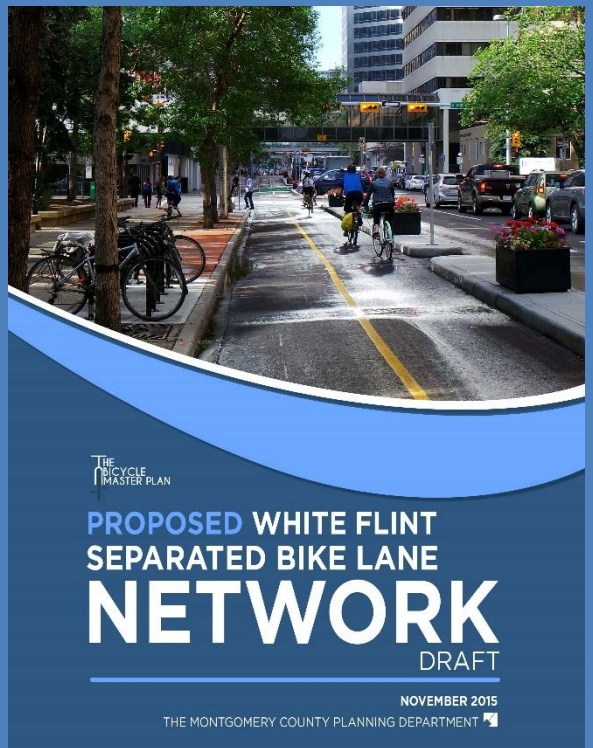
What Will This Plan Do?

- Develop a low-stress bicycling network
- Identify long-term bicycle parking locations
- Recommend policy changes
- Recommend phasing approach

Master Plan Boundaries

Focus on White Flint & Life Sciences Center

Preserve ability to create high-quality bicycle network while the Bicycle Master Plan is under development.



Focus on White Flint & Life Sciences Center

Facilitate coordination with:

- Corridor Cities Transitway
- Rapid Transit System
- LSC Loop
- Development applications

Schedule

Overall Update	
April 1, 2015	Start Work on Life Science Center Network
July 1, 2015	Start Work on Overall Bicycle Master Plan
September 10, 2015	Planning Board Approve Scope of Work
September – October 2015	Five Public Meetings
December 3, 2015	Planning Board Reviewed White Flint Network
January 28, 2016	Planning Board Reviews Life Science Center Network
Summer 2016	Methodology Report to Planning Board
February 2017	Working Draft
March – June 2017	Planning Board Worksessions
July 2017	Planning Board Draft
January 2018	Council Approval of Overall Update

[2] What is a separated bike lane?

THE BICYCLE MASTER PLAN

Separated Bike Lanes

- AKA “protected bike lane” or “cycle track”

- Characteristics
  - physically separated from motor vehicles & pedestrians
  - separation may be vertical, such as a curb; horizontal, such as a landscape panel or parking lane; or a combination
  - One-way or two-way

Woodglen Drive, White Flint

1st Street NE, Washington, DC

Hornby Street, Vancouver

Calgary, Alberta

Source: City of Calgary Bike Program

Boulder, Colorado

Source: Toole Design Group

Indianapolis Cultural Trail

[3] What is a secure bike parking?

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Union Station Metro Station

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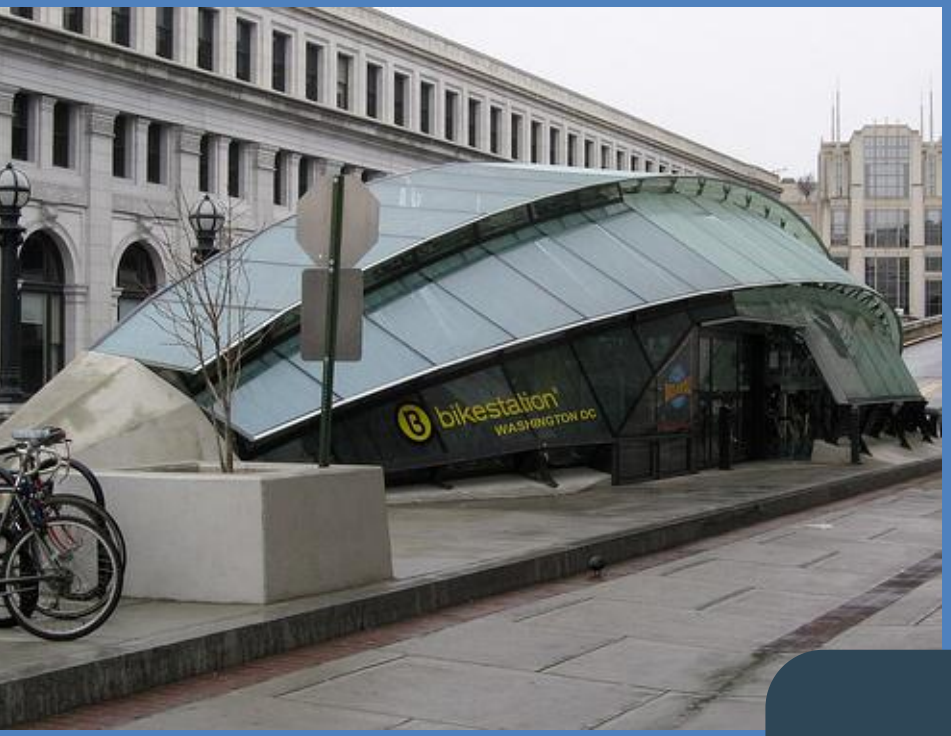
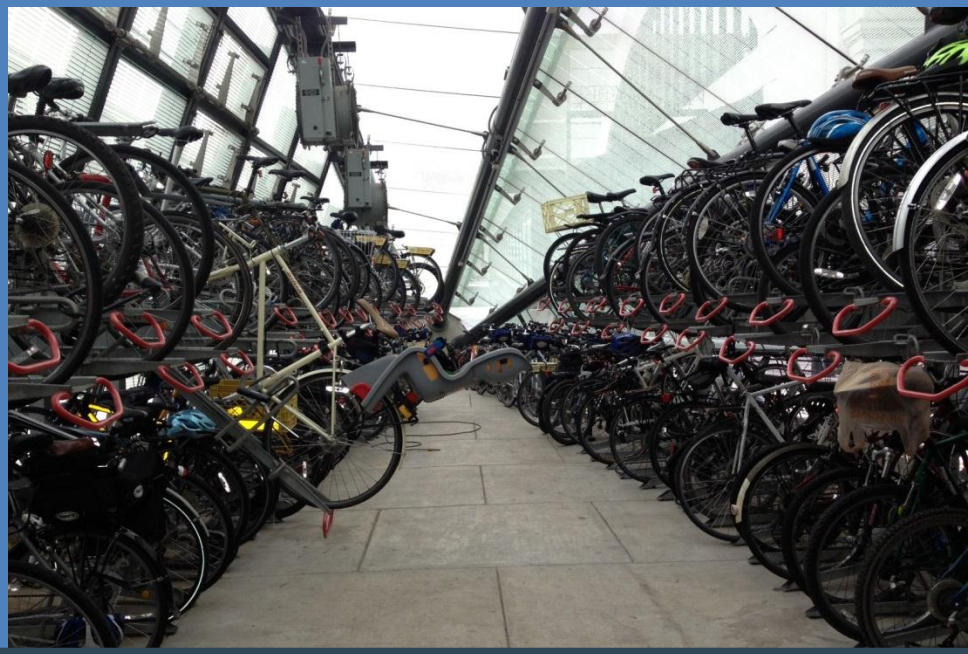
District of Columbia





Holds 100+ bicycles.
Full nearly every day.

Wiehle Reston East Metro Station

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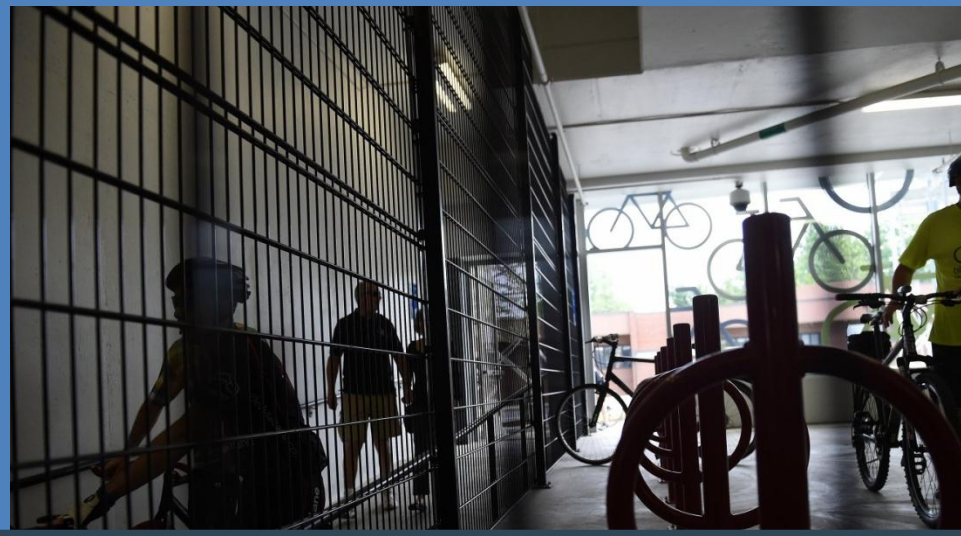
Fairfax County, Virginia



Holds 200+ bicycles.
2.5% of boardings!

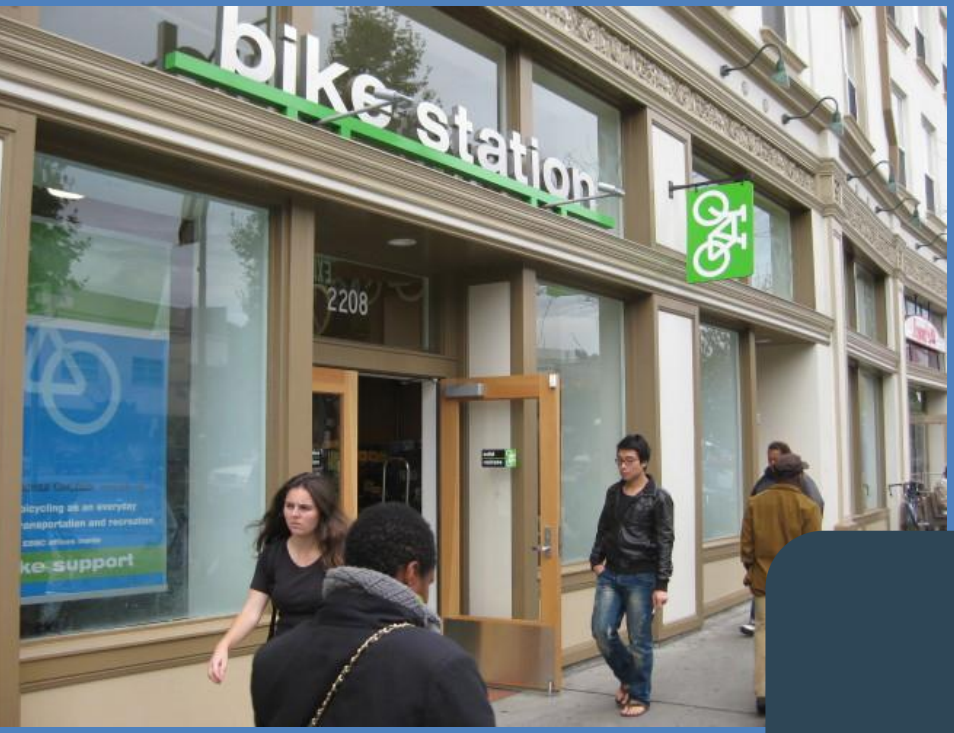
College Park Metro Station

Prince George's County, Maryland

Holds 150+ bicycles.
Use is growing.

Berkeley BART Station

Berkeley, California



Holds 268 bicycles.
Full nearly every day.

Kramer Station

Austin, Texas

Holds 24 bicycles.

[4] What are proposing for the GSSC area?

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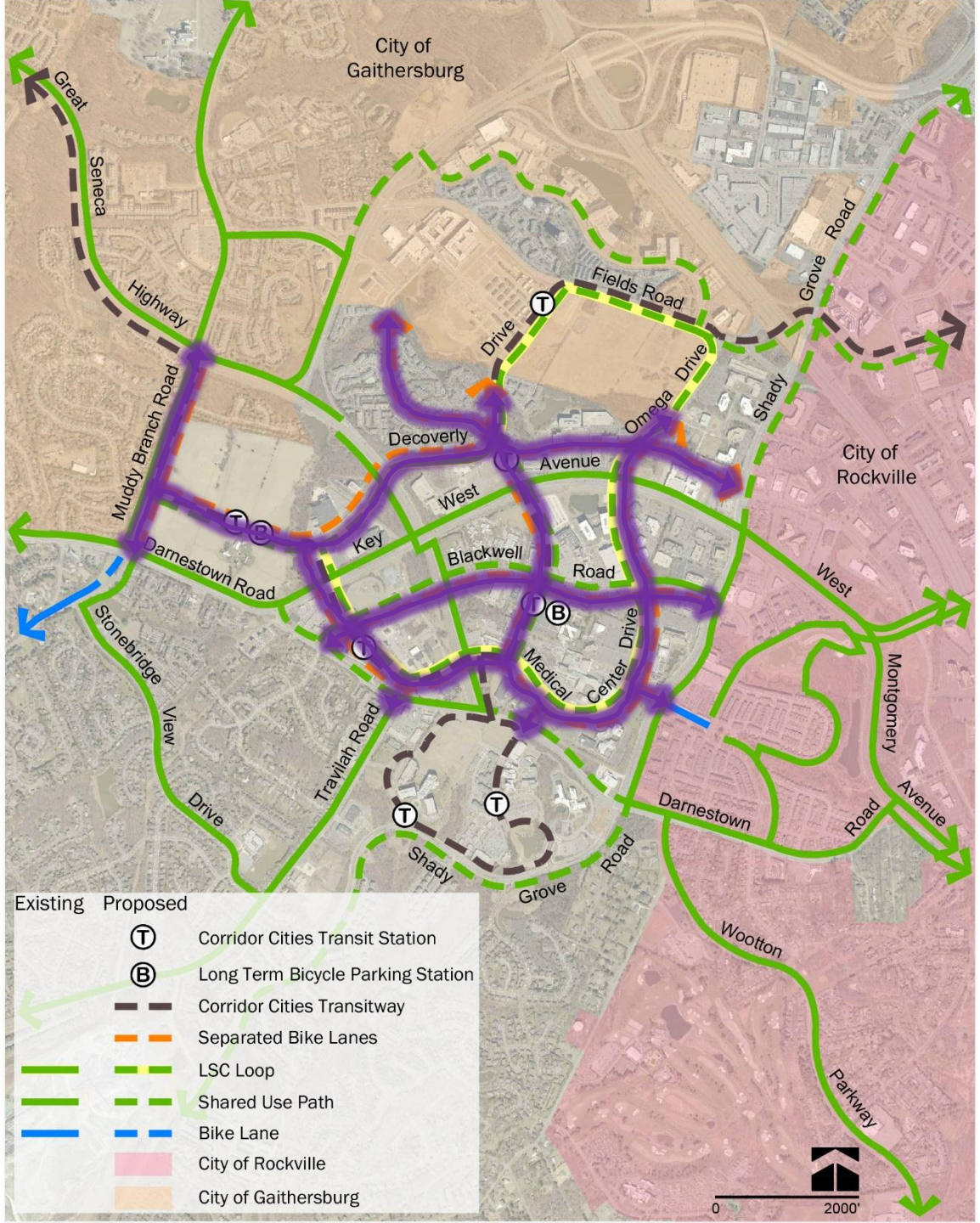
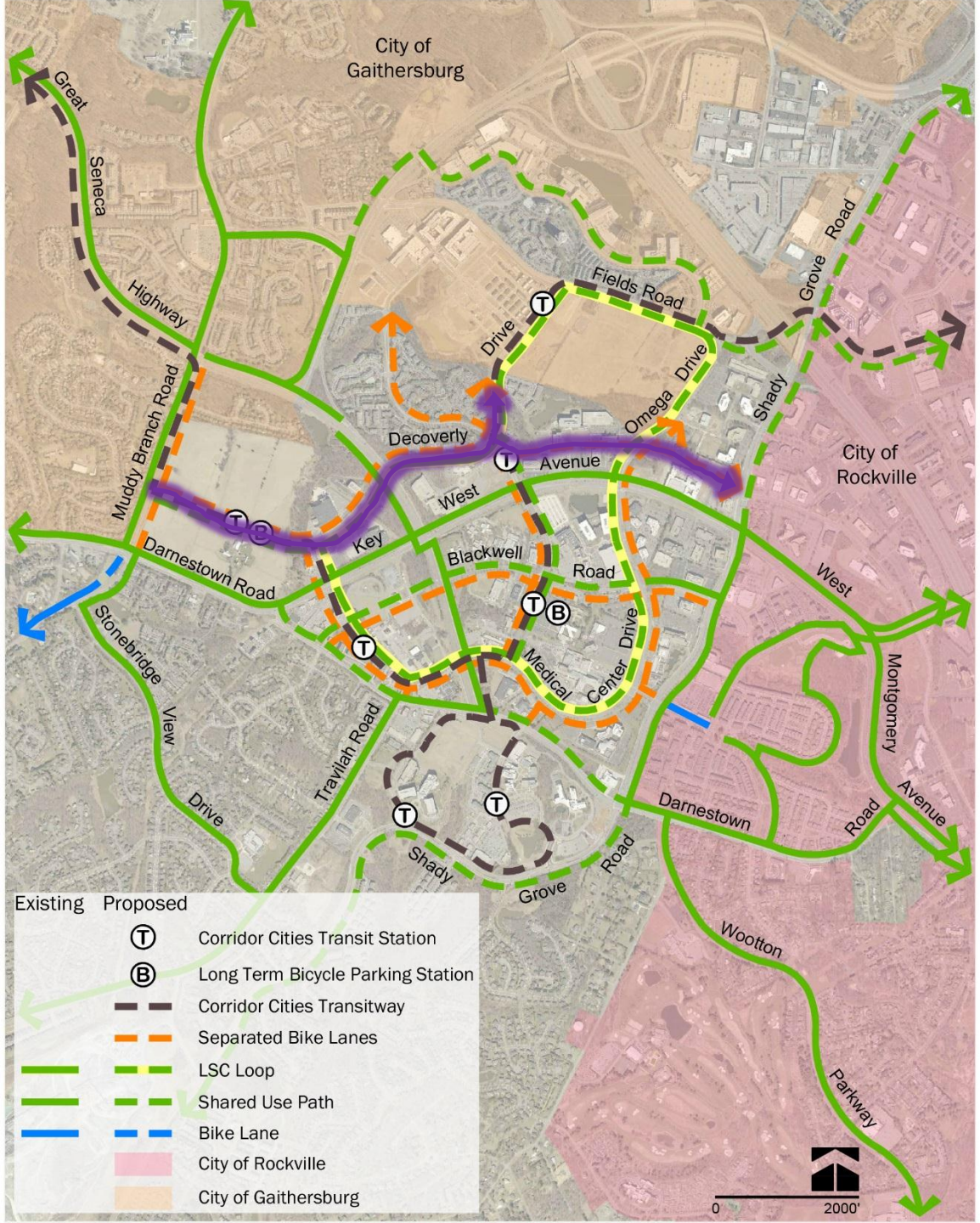
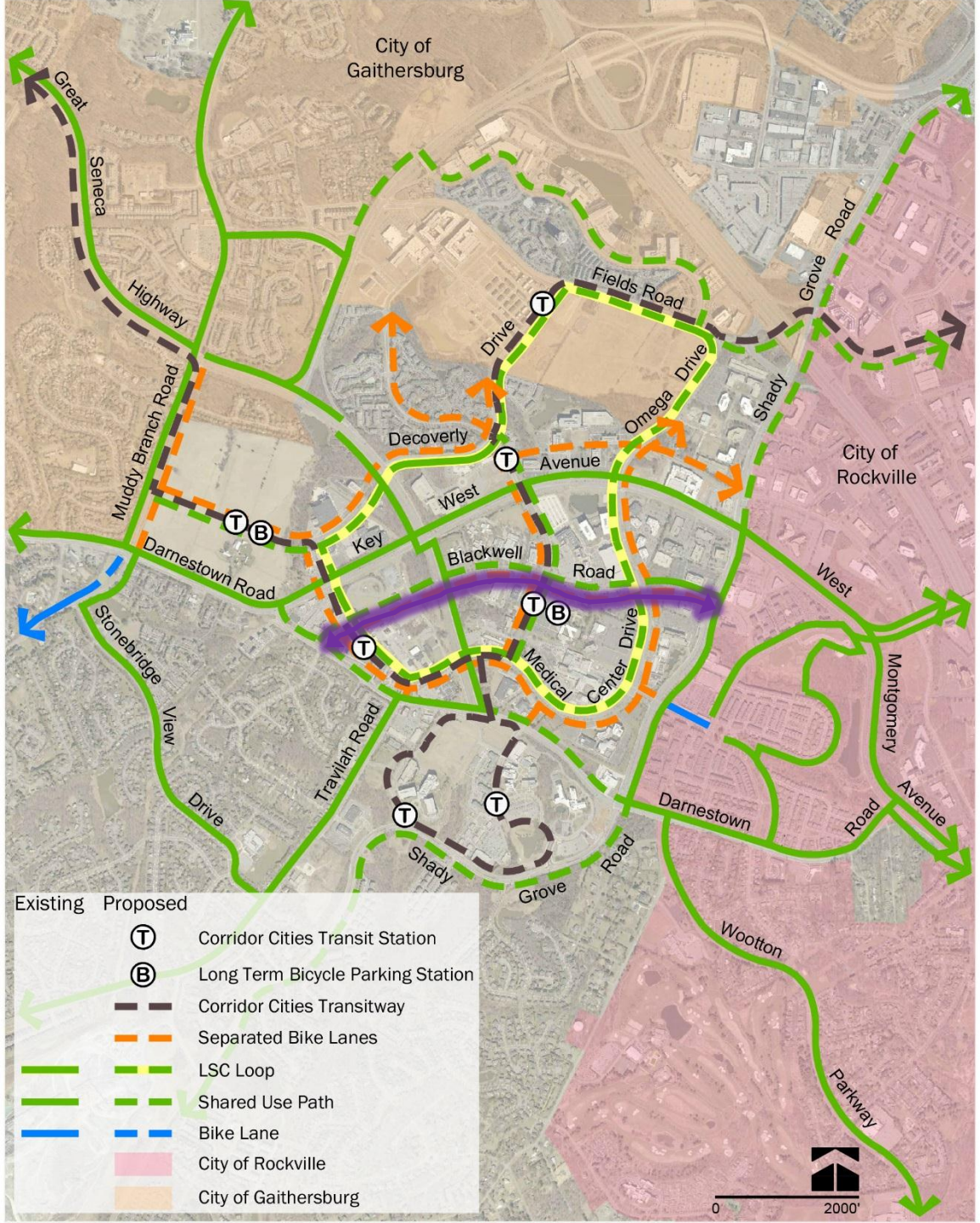
Separated Bike Lane Network



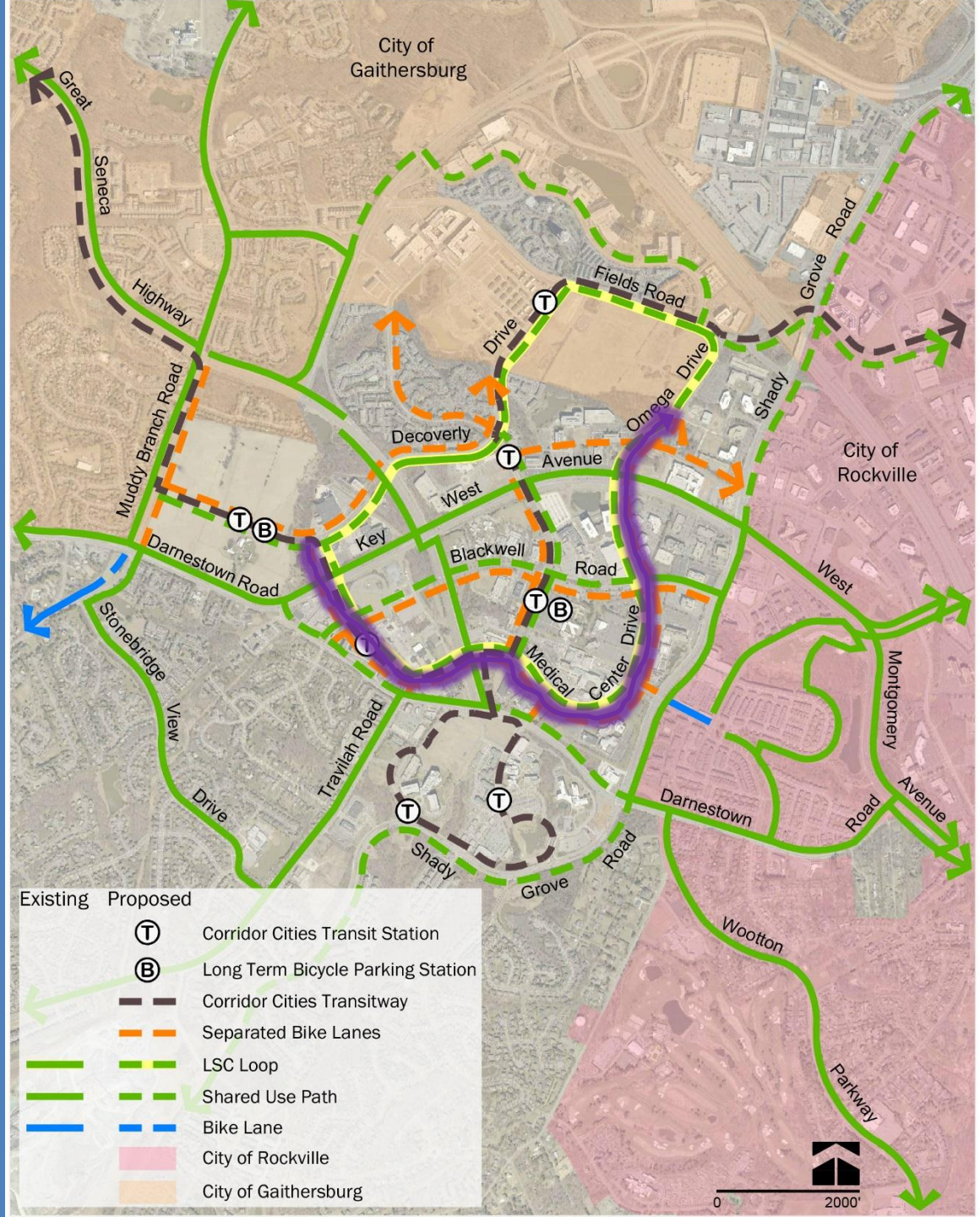
“Northway” Separated Bike Lane



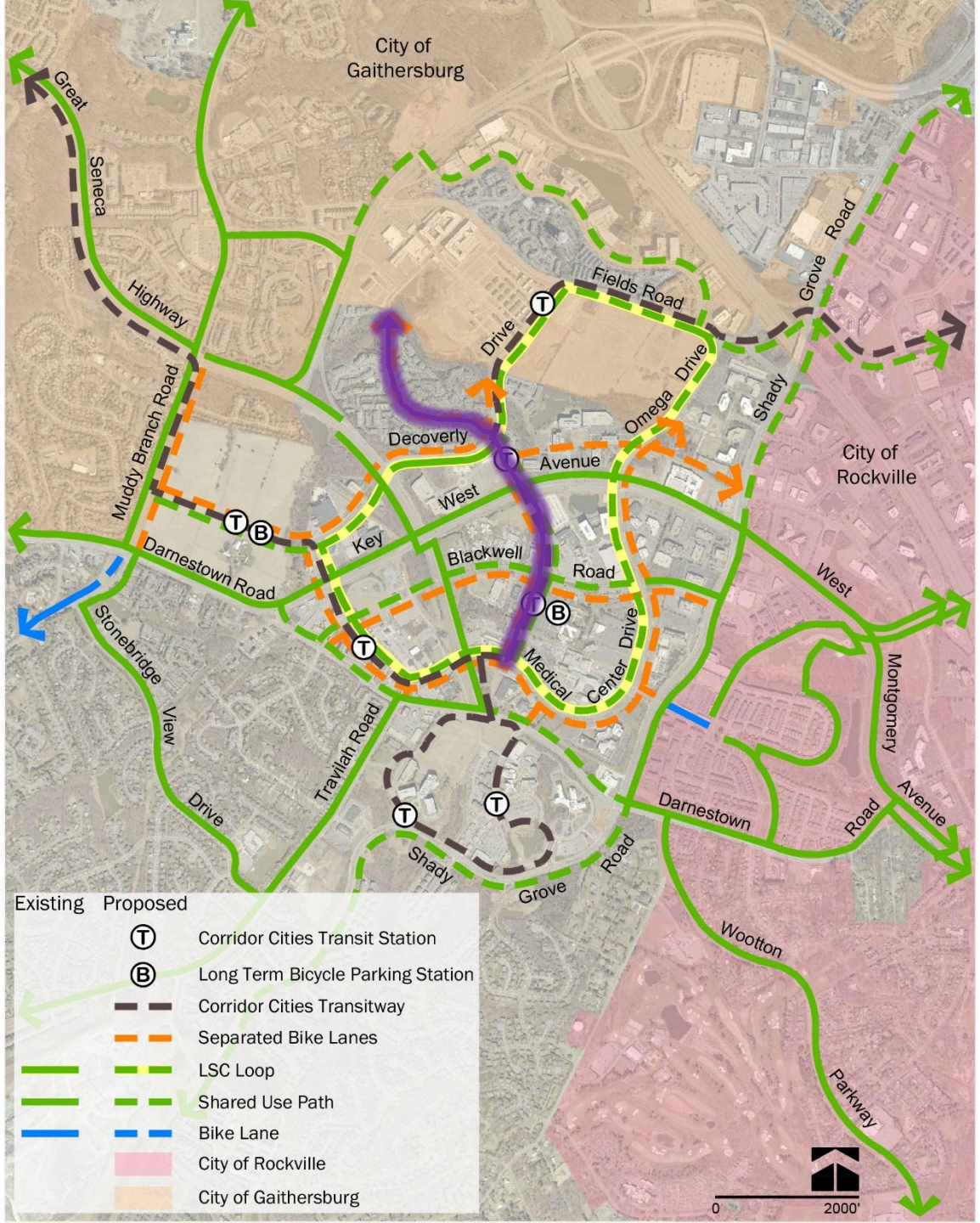
“Southway” Separated Bike Lane



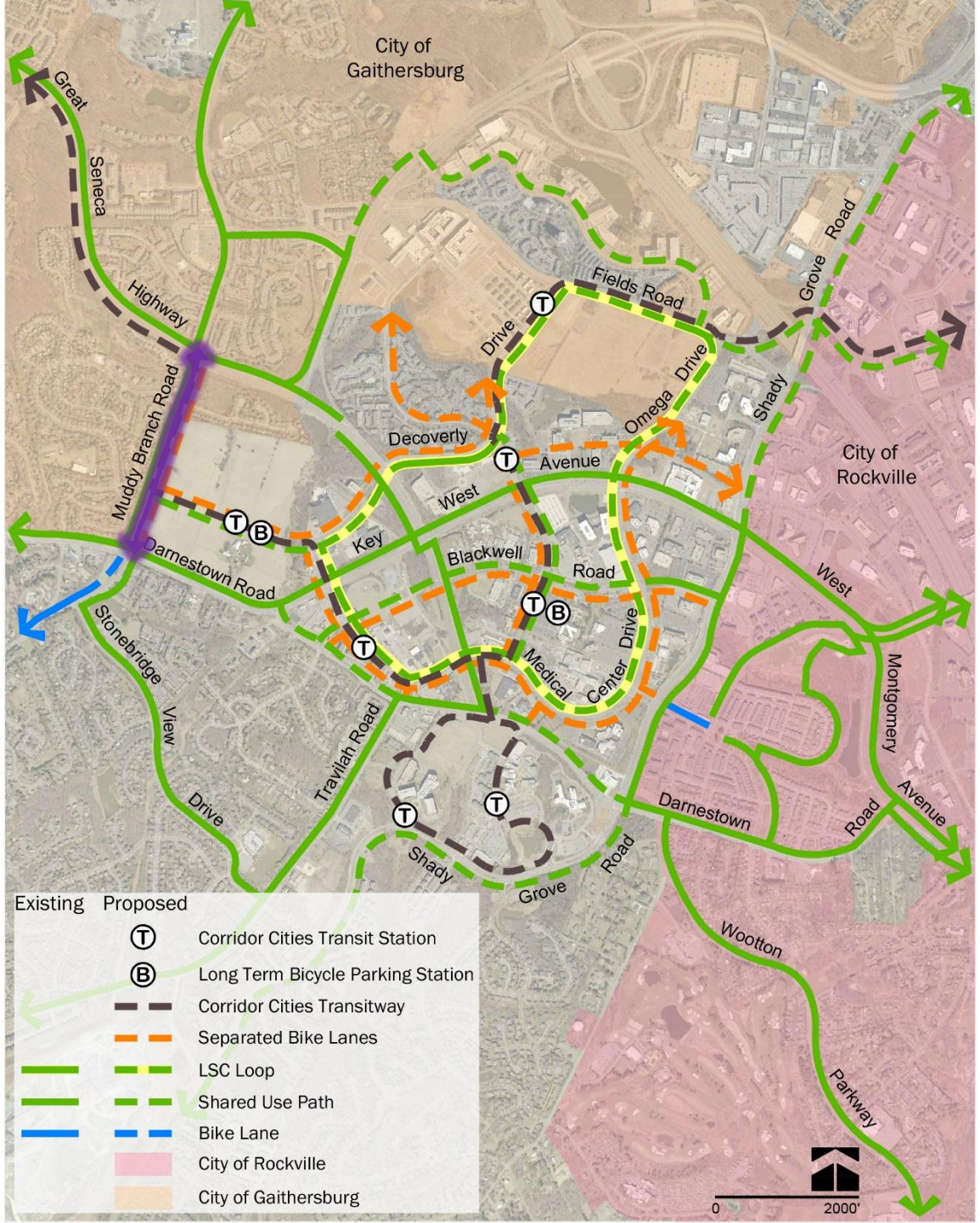
“Lower Loop” Separated Bike Lane



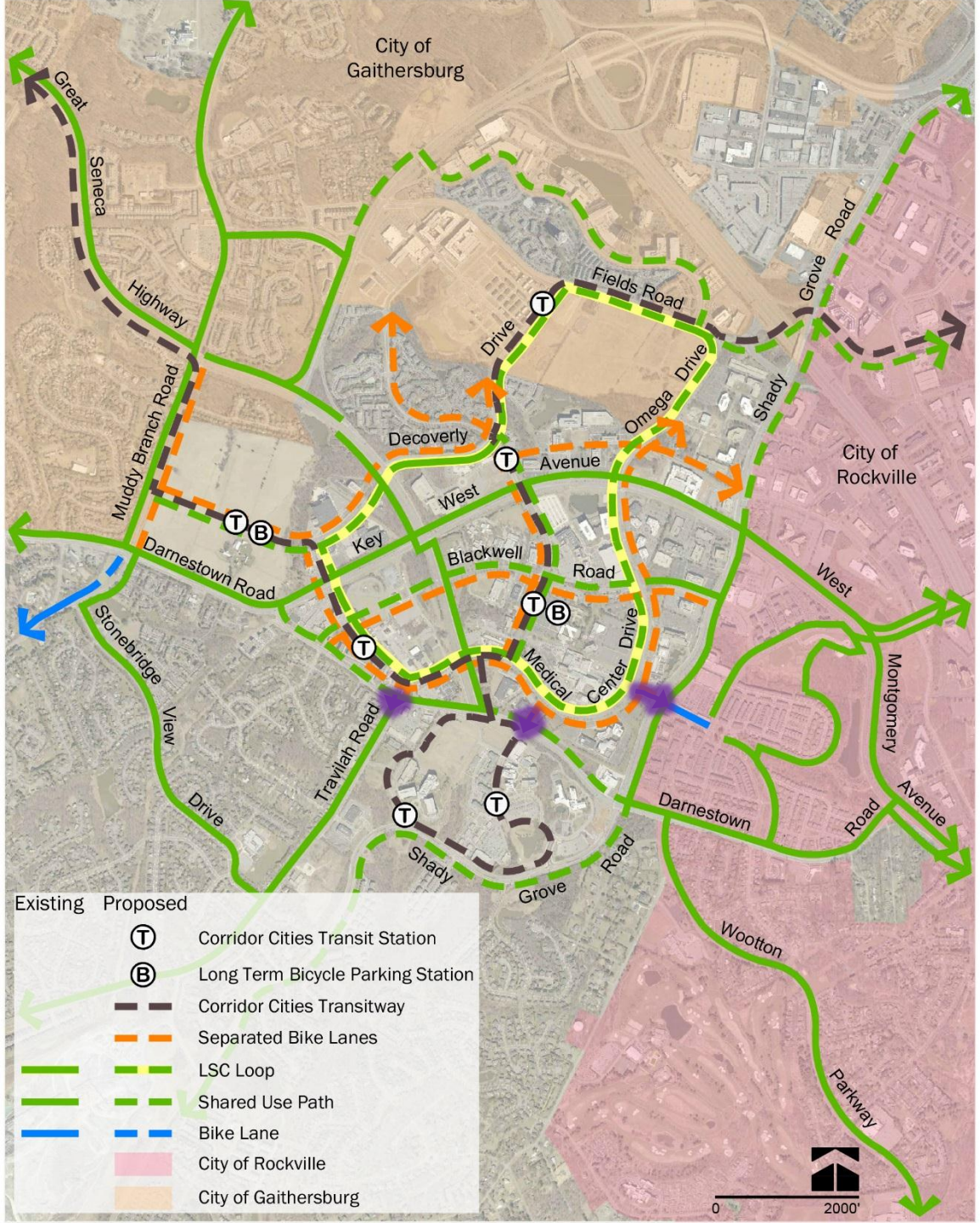
“Midway” Separated Bike Lane



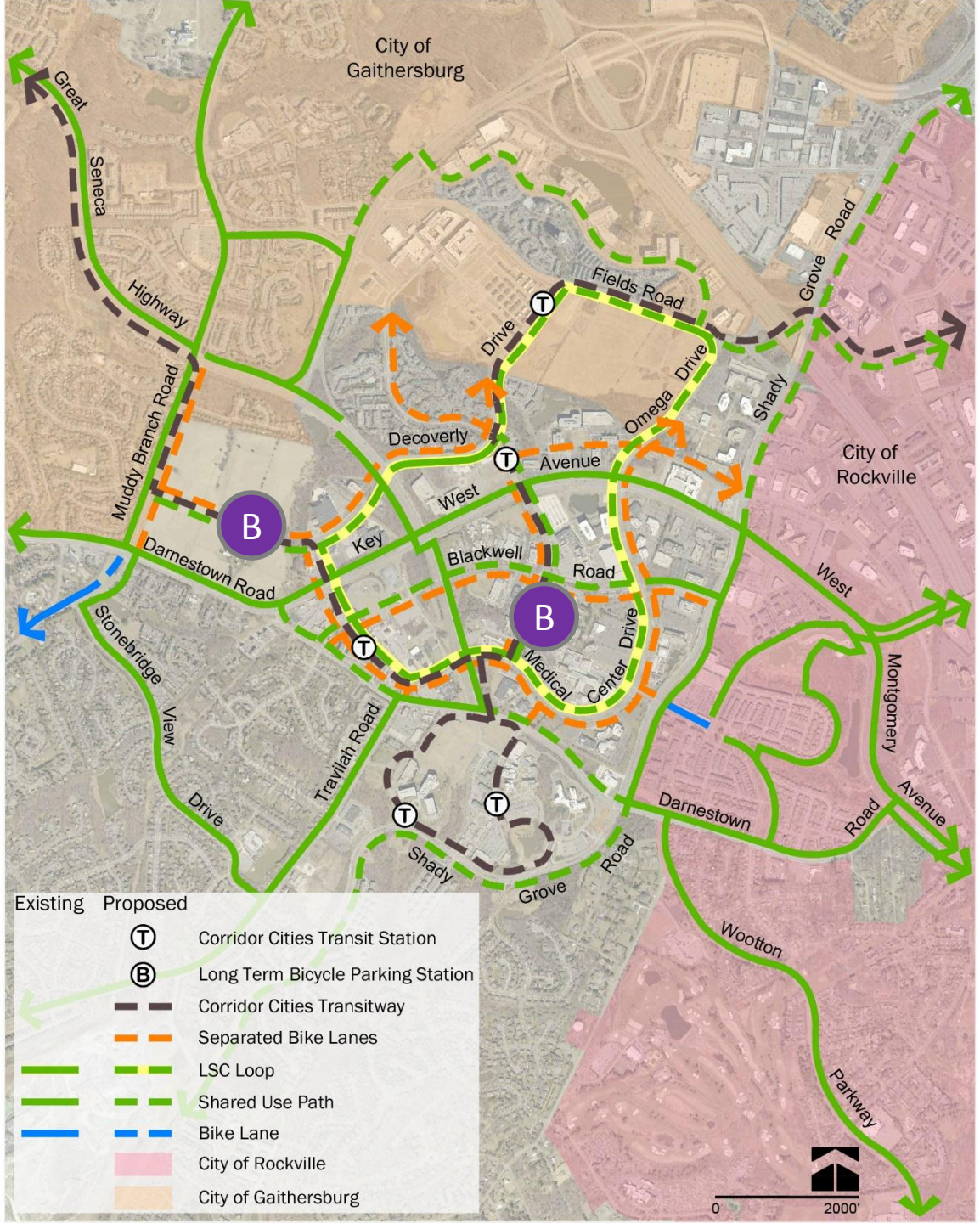
Muddy Branch Rd Separated Bike Lane



Spurs


City of Gaithersburg
City of Rockville
Great Seneca Highway
Muddy Branch Road
Darnestown Road
Stonebridge View Drive
Travilah Road
Key West Avenue
Decoverly Drive
Fields Road
Omega Drive
Shady Grove Road
Blackwell Road
Medical Center Drive
West Montgomery Avenue
Darnestown Road
Shady Grove Road
Wootton Parkway
Existing Proposed
Corridor Cities Transit Station
Long Term Bicycle Parking Station
Corridor Cities Transitway
Separated Bike Lanes
LSC Loop
Shared Use Path
Bike Lane
City of Rockville
City of Gaithersburg
0
2000'

Secure Bicycle Parking



[5] Why are we proposing this network?

Four Types of Transportation Cyclists

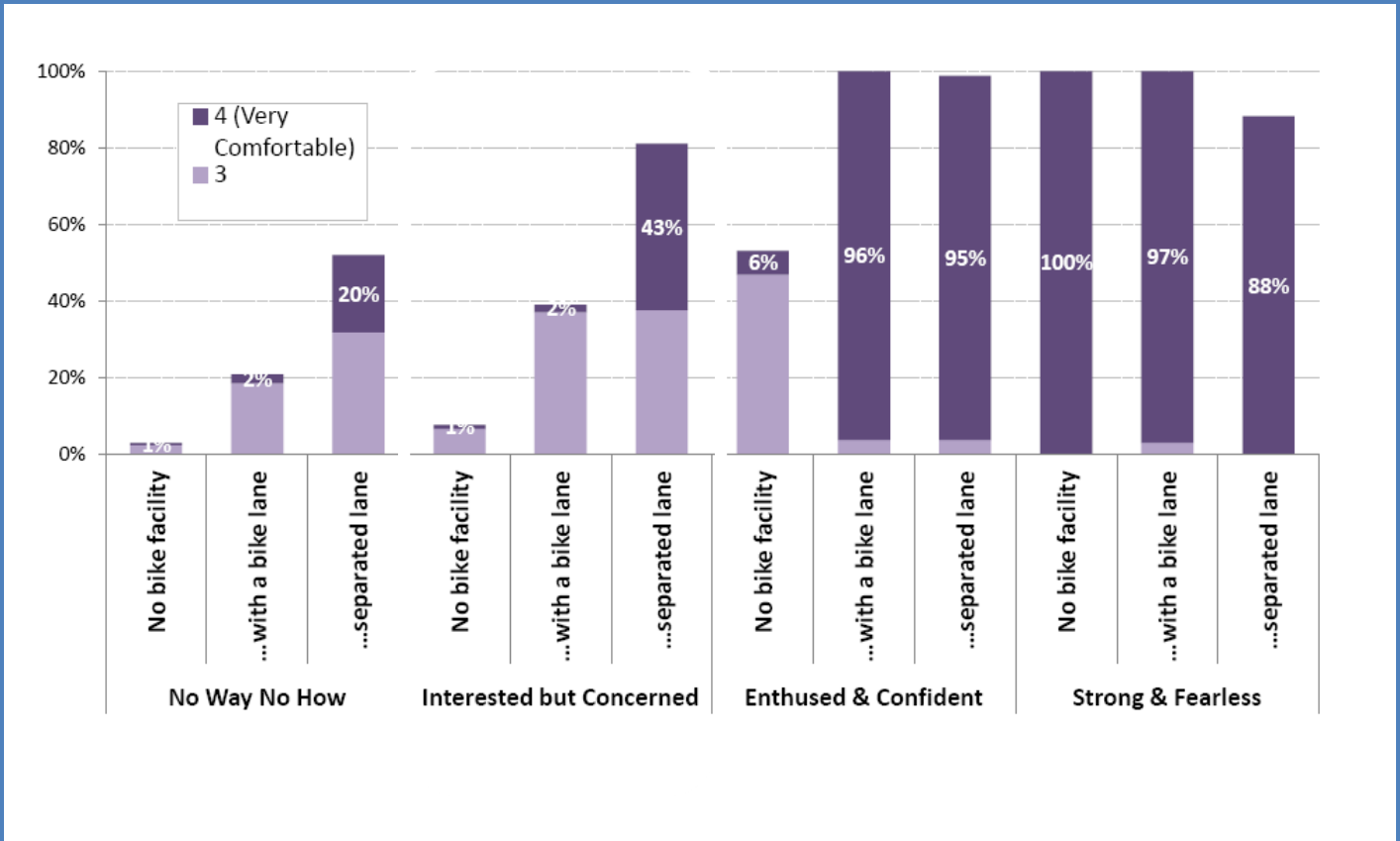
Strong and Fearless (~1%)

Enthused and Confident (~10%)

Interested but Concerned (~60%)

No Way, No How (~30%)

“I’m comfortable riding on a 4-lane Road with a 30 mph speed limit”



Source: Jennifer Dill

New User Groups

Commuting

Running Errands

Going to School

Accessing Transit

Entertainment

Recreating

[6] How will this help the GSSC area?

THE BICYCLE MASTER PLAN

Need for a High-Quality Bike Network

- People want walkable / bikeable
- Non-Auto Driver Mode Share (NADMS) goals
- A driver of economic activity
- Extend catchment area of the CCT

[7] Next Steps

THE BICYCLE MASTER PLAN

Next Steps

- Planning Board Review on 1/28/2015
- Approved as part of Bicycle Master Plan in 2017

THE BICYCLE MASTER PLAN

Questions?

Project Manager

David Anspacher

301.495.2191

david.anspacher@montgomeryplanning.org

www.montgomeryplanning.org/bikeplan

@mcbikeplan

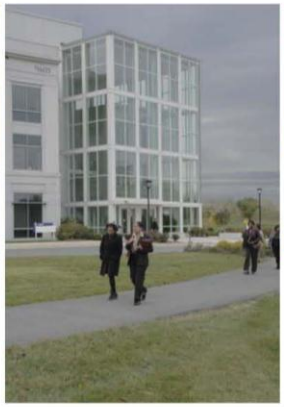
LIFE SCIENCES CENTER

LOOP TRAIL

June 2010
approved and adopted

great seneca science corridor master plan

The Life Sciences Center



Montgomery County Planning Department
The Maryland-National Capital Park and Planning Commission

MontgomeryPlanning.org

GSSC Master Plan Staging Requirements

"Before Stage 2 begins, all the following must occur:

- Fully fund construction of the CCT, including the proposed realignment through the LSC, from the Shady Grove Metro Station to Metropolitan Grove within the first six years of the County's CIP or the State CTP.
- Fully fund relocation of the Public Service Training Academy from LSC West to a new site.
- Fund the LSC Loop trail in the County's six-year CIP and/or through developer contributions as part of plan approvals.
- Attain an 18 percent non-auto driver mode share (NADMS)."

GSSC Master Plan Loop

Connectivity: The LSC Loop

3.5- mile path connecting:

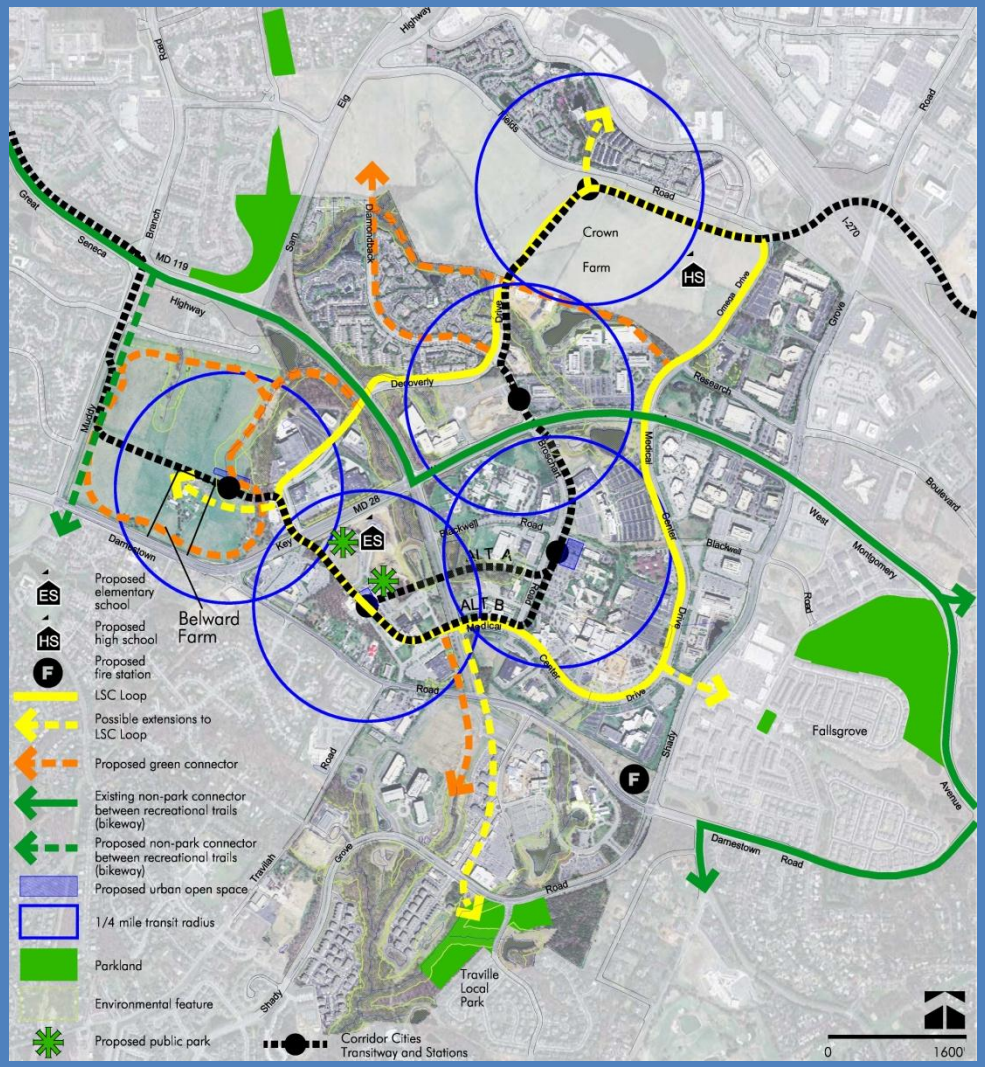
Districts

Destinations

- Belward Farm
- Schools
- Traville
- USG

Open Spaces

- Passive and Active



LSC Loop – Master Plan Recommendations

Community Connectivity and the LSC Loop

The organizing element of the LSC open space plan is a 3.5-mile multi-use path loop connecting the districts and destinations with extensions from the core loop that link to the surrounding communities, including the cities of Gaithersburg and Rockville (see Map 11 on page 33). Connectivity between the LSC Districts and adjacent neighborhoods is described more fully in the following District section. The LSC Loop will run alongside existing streets, such as Medical Center Drive and Omega Drive, and be completed on new streets in LSC West. It will incorporate the proposed multi-use path next to the CCT through LSC West and onto the Belward property.

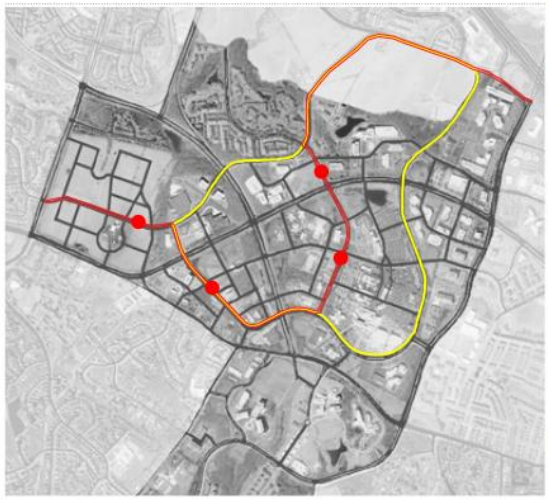
The LSC Loop will link activity centers and community facilities, including the planned high school on the Crown Farm (in the City of Gaithersburg), the historic Belward Farm, and the civic green and retail center on LSC West. Creation of the loop (including landscaping and facilities such as benches) will be the primary amenity requested of property owners. CCT stations along the Loop include the Crown Farm, Belward, and LSC West. Each CCT station in the LSC will have a public open space and property owners will also be requested to contribute to the implementation of this amenity. From the Loop, paths will connect with other destinations and activities in the area, including Fallsgrove and Traville. Traville Local Park, in LSC South, is proposed to include a small rectangular field, half-court basketball, older children's playground, and a tot lot, and should be accessible from an extension of the LSC Loop.

The LSC's existing stream buffer areas should be integrated with the Loop, offering passive outdoor experiences. The on-road hard surface portion of the Muddy Branch Trail Corridor intersects the Plan area at the southwest corner of the Belward property, and should connect to the rest of the Countywide trail system.

Not all open space can or should be publicly owned and managed. Public amenity spaces in new developments will provide recreation and open space. Public parks and publicly accessible facilities and open spaces should complement each other and be seamlessly integrated to create a cohesive pattern of open space.

GSSC Design Guidelines

The LSC Loop



The LSC Loop is a multi-use recreation and transportation path connecting all of the LSC districts and the surrounding areas. It will run along existing streets, including the CCT alignment, as well as along off road trails. The 3.5 mile LSC Loop will incorporate a path as part of the CCT as it runs through the LSC West and the LSC Belward areas. The loop should include:

- recreational features that connects the districts and destinations throughout the area
- connections from the Loop to area amenities, including the natural path system, the historic Belward Farm, and the civic spaces in each district

CCT Right-of-Way

Where they coincide, the LSC Loop will run parallel to the CCT alignment.

- If the CCT is located in the middle of the roadway, the LSC Loop should be located on the opposite side of the transit plazas to minimize pedestrian/bicycle conflicts.
- If the CCT is located on the side of the roadway, the LSC Loop should be located on the inside of the CCT, and perform similar to the on-road LSC Loop.

On-Road LSC Loop

Where the CCT is absent, the LSC Loop should be located between the sidewalk and roadway.

- Use street trees and plantings to differentiate the LSC Loop from sidewalk
- Allow approximately an additional width of two to three feet adjacent to the roadway for vehicle unloading and door opening.
- Include transition areas prior to intersections to prevent conflicts

Off-Road Trails

In certain areas, the trail will leave the roadway.

- Minimize impact of trail on existing trees.
- Include a pervious trail next to the shared use path to allow pedestrians and joggers to avoid trail traffic
- Areas not along roadways may use asphalt, blacktop, or other surface.

“In Indianapolis, a Bike Path to Progress”

Article by Andrew Simmons, New York Times, March 4, 2014

“Before the path arrived, Indianapolis didn’t have a mainstream bike scene — just streets designed to improve traffic flow. Now, children and the elderly have joined the spandex swarms of longtime cycling enthusiasts. The pathway has connected people with the places they want to go and encouraged physical activity in a state with the eighth-highest obesity rate in the country.

The public art along the trail accentuates the path’s role as a sculptor of the city’s evolving identity. For example, Donna Sink’s “Moving Forward” is a series of seven stained-glass-hued eco-friendly bus shelters covered in lines from poems by local writers. And in Sean Derry’s “Chatham Passage,” the whiff of roses wafts from an intricate steel grate concealing a “fragrance machine” — a witty nod to Mass Ave’s historic coal vaults.

The trail has also helped spark a sluggish local economy. Hundreds of millions of dollars in new commercial and residential developments surrounding the pathway have coincided with the trail’s progress, said Brian Payne, president of the Central Indiana Community Foundation, which oversaw its creation.

Fountain Square, a designated cultural district southeast of downtown, separated by freeways, has bloomed, its increasingly vibrant streets filling up with high-end dining spots as well as scrappy galleries.

“We have seen no fewer than 25 new businesses open in the last few years, all within a five-block area,” said Ed Rudisell, owner of three Indianapolis restaurants, including the popular Siam Square in Fountain Square.”

“The new Indianapolis Cultural Trail is a masterpiece of bike-friendly Design Cleveland should emulate”

Article by Steven Litt, Cleveland Plain Dealer, May 18, 2013

“The biggest lesson offered by the Cultural Trail, however, is that by building a better public realm, Indianapolis is changing its character. It’s becoming a city that would tempt any visitor to get out of a hotel room, descend from the overhead walkways and get outside and explore.

The city also sees the trail as an amenity that can help it recruit new residents. Indianapolis wants to compete with Boston, Seattle and other “hot” cities for what Payne calls “high creative, educated, entrepreneurial and community-minded individuals.” By making itself more beautiful, Indianapolis is taking a big and very credible step toward that goal.

Cleveland and other cities in the Indy orbit should absolutely take note.”

“The Remarkable Success of the Indianapolis Cultural Trail”

Streetsblog Network, November 12, 2013

In the past year, the Indianapolis Cultural Trail has received attention and support from both native Hoosiers and people across the country. **Cities such as Portland, Oregon and Cleveland, Ohio have voiced their support (and jealousy) of the eight-mile bike path that connects five of the six Indianapolis Cultural Districts.**

So, what does this type of infrastructure mean for the residents and visitors of Indianapolis? **The Cultural Trail provides a safe and spacious pathway for bicyclists and pedestrians to utilize on their daily commute or for recreation as a way to enjoy the city.** Many sections of the trail feature a split path: one side for walkers and runners and the other for bicyclists. It also features a series of public art pieces and The Glick Peace Walk that celebrates twelve historic individuals who peacefully led progressive movements.

Not only is it functional, but the trail is also environmentally and aesthetically pleasing. Made up of pavers and lined with landscaping and bioswales, the Indianapolis Cultural Trail is every environmentalist’s dream. A stretch of the path on North Street even features a canopy of solar panels.

There is seldom a day where people are not out enjoying the trail by foot or on bike. The Cultural Trail has been deemed one of Indianapolis’ greatest assets, and I hope to see it grow as a bike share program comes to the city in the Spring 2014.

Anticipated Benefits of the LSC Loop

- Reach staging trigger needed to open Master Plan Stage 2
- Help reach 18% NADMS (also needed to open Stage 2)
- Create a placemaking feature that helps put the LSC on the map, begins to define a unique character for the area
- Start to knit LSC Districts together, begin to realize vision of Master Plan

Possible Themes to Incorporate into Trail Design, Public Art:

- Biosciences, Genetic Research
- Public Health

TLC Program

TRANSPORTATION/LAND-USE CONNECTIONS PROGRAM

HOME ABOUT TLC TLC CLEARINGHOUSE TECHNICAL ASSISTANCE PROGRAM

TECHNICAL ASSISTANCE PROGRAM:

What We Do:

The TLC Program provides support to local governments in the Metropolitan Washington region as they work to improve transportation/ land use coordination. Through the program, the TPB provides communities with technical assistance to catalyze or enhance planning efforts. Any member jurisdiction of the TPB is eligible to apply.

Announcements:

Call for Projects! The FY 2016 Transportation Alternatives Program is accepting applications from agencies in Northern Virginia. Submission deadline is **November 1, 2014.**

The TPB approved nine projects to receive technical assistance as part of the FY 2015 TLC Program.

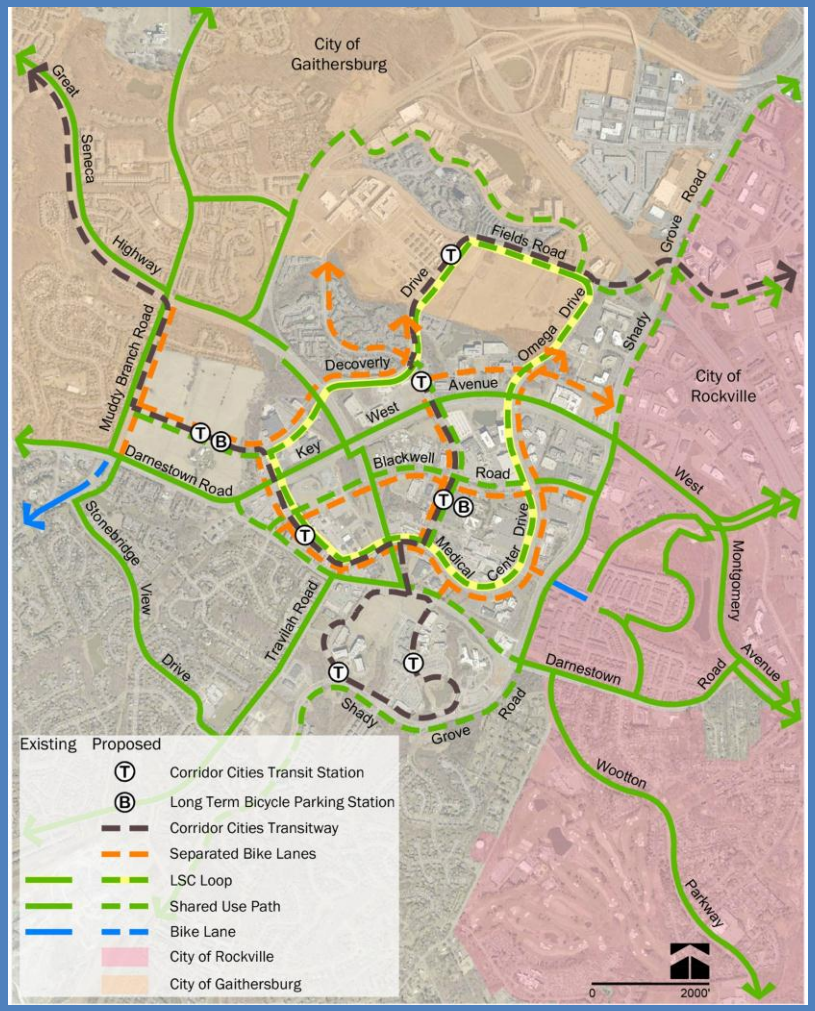
"Helping local governments plan **VIBRANT COMMUNITIES**

TLC Program

Abstract – April 4, 2014
Final Application – May 21, 2014

Although there are recommendations for design features that will be desirable in the creation of the LSC Loop, there is not currently a detailed design for the trail. The design is critical for creating a trail that is recognizable throughout its length, that provides basic transportation, recreational, environmental and community functions, and that can become the central feature that the Master Plan envisions. The design work does not have to create detailed engineering plans, but it must create a trail design that is able to respond to varying right-of-way widths and other local conditions while providing a trail that is instantly recognizable as the LSC Loop throughout its alignment. The design should enable both private developers and County planners to build their respective pieces of the LSC Loop to create a consistent facility. A basic level of design is also necessary to allow the development of cost projections so that the funding requirement in the Staging element can be fulfilled.

Relationship between Bicycle Master Plan and LSC Loop









MONTGOMERY COUNTY LIFE SCIENCES CENTER

LOOP TRAIL
DESIGN GUIDELINES

DRAFT 07/10/15

CONTENTS

INTRODUCTION

THE VISION

The Montgomery County Life Sciences Center (LSC) Loop Trail will serve as a major multi-use connector, organizing element and placemaking feature for the emerging Life Sciences Center district. Much more than a standard shared use path, the LSC Loop Trail will function as an identifiable public amenity that helps make the Life Sciences Center an attractive place to live, work and visit. The trail will incorporate distinctive design elements—special paving, furniture, landscaping, art, signage and stormwater management features—as well as public amenity/park spaces adjacent to the trail route. By connecting major employers, residences, open spaces, schools, transit stations and other destinations, the LSC Loop Trail will play an important role in reducing reliance on automobiles as a transportation mode and will help foster the healthy living philosophy of the Life Sciences Center.

LSC LOOP TRAIL DESIGN GUIDELINES

The concept for the 3.5-mile LSC Loop Trail was funded by a Transportation / Land-Use Connections (TLC) grant from the Metropolitan Washington Council of Governments to the Montgomery County Planning Department. A central feature of Great Seneca Science Corridor Master Plan, the LSC Loop Trail also constitutes a major staging requirement for advancing implementation of the Master Plan and must be fully funded prior to opening Stage 2 of Master Plan Development.

The typical LSC Loop Trail cross-section includes a 12-foot-wide shared use path with planted buffers on both sides of the trail, with a 10-foot-wide shared use path in the most constrained trail segments. The trail will function as a recognizable placemaking element through the incorporation of distinctive paving treatments, a cohesive family of furnishings and signage, street trees and other plantings, low-impact development (LID) features and public art elements. Public amenity spaces—including areas for seating and other activities—are incorporated along the trail. In addition, special design treatments are recommended for major nodes, gateways and urban activity areas. The concept envisions that a potential separated bike lane will complement the trail, per the County's ongoing Bicycle Master Plan. The LSC Loop Trail will serve as a County model for multi-modal design, as well as an important connection in the County's non-motorized transportation system.

The Loop Trail design guidelines establish a framework to guide subsequent design and engineering. It is anticipated that the next phase of design will address engineering considerations and additional design details.

EXISTING CONDITIONS

EXISTING CONDITIONS PLAN

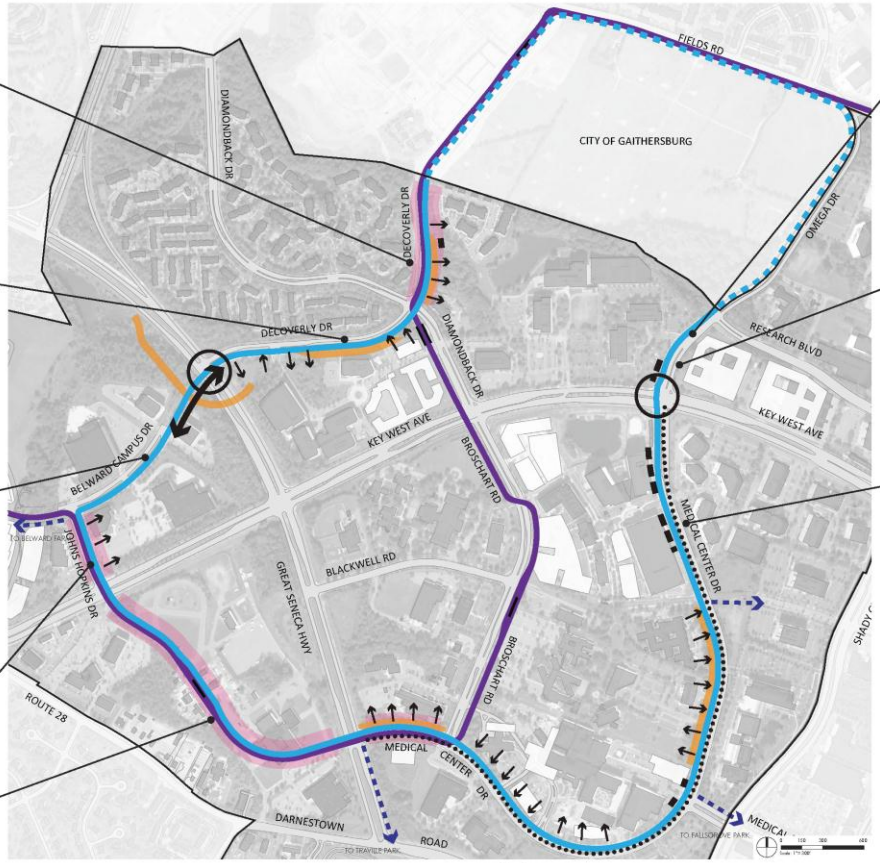
DECOVERLY DRIVE
(North of Diamondback Drive)

DECOVERLY DRIVE
(South of Diamondback Drive)

BELWARD CAMPUS DRIVE

JOHNS HOPKINS DRIVE

PSTA PROPERTY: NEW ROAD



OMEGA DRIVE
(Northern Segment)

OMEGA DRIVE
(Southern Segment)

MEDICAL CENTER DRIVE

- Potential Loop Trail
- Future CCT
- Future CCT station
- CCT/Roadway Reconstruction
- Possible Loop Extension

Existing Conditions Analysis

- Transit Easement
- Slope at Inner Edge
- Mature Trees
- Structure
- Missing Connection
- Major Road Crossing

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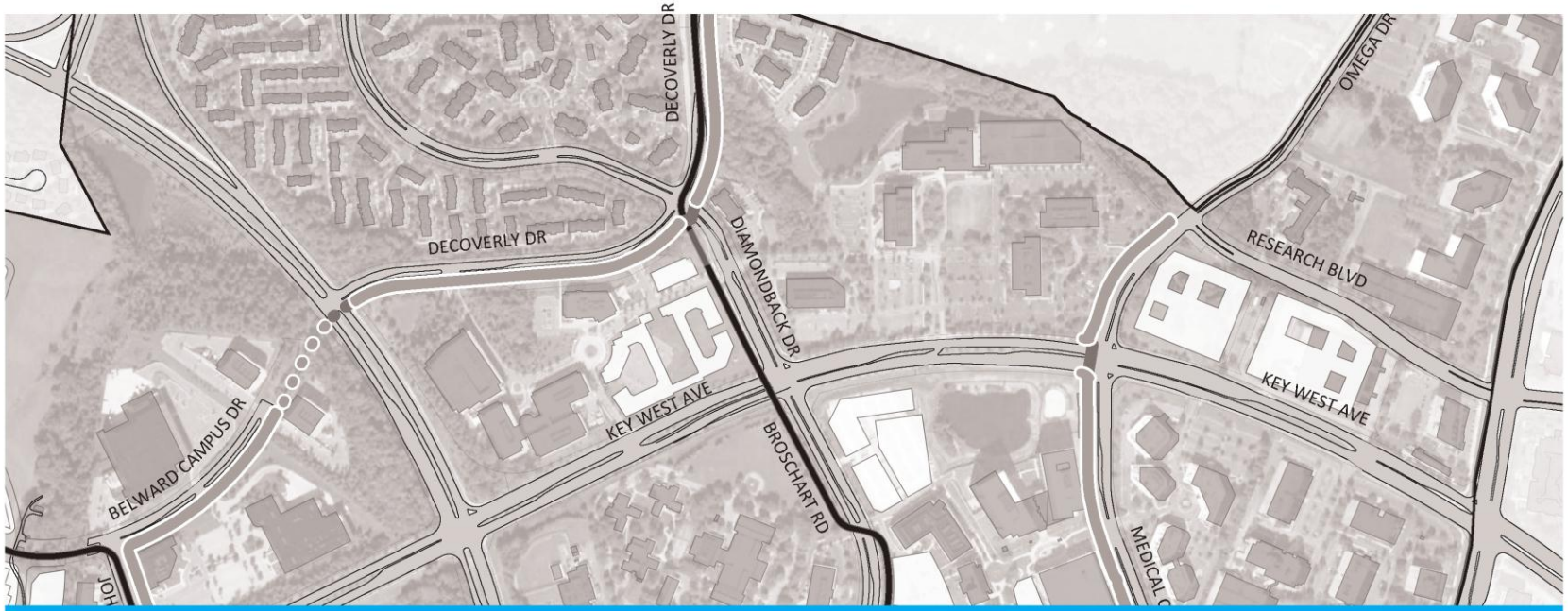
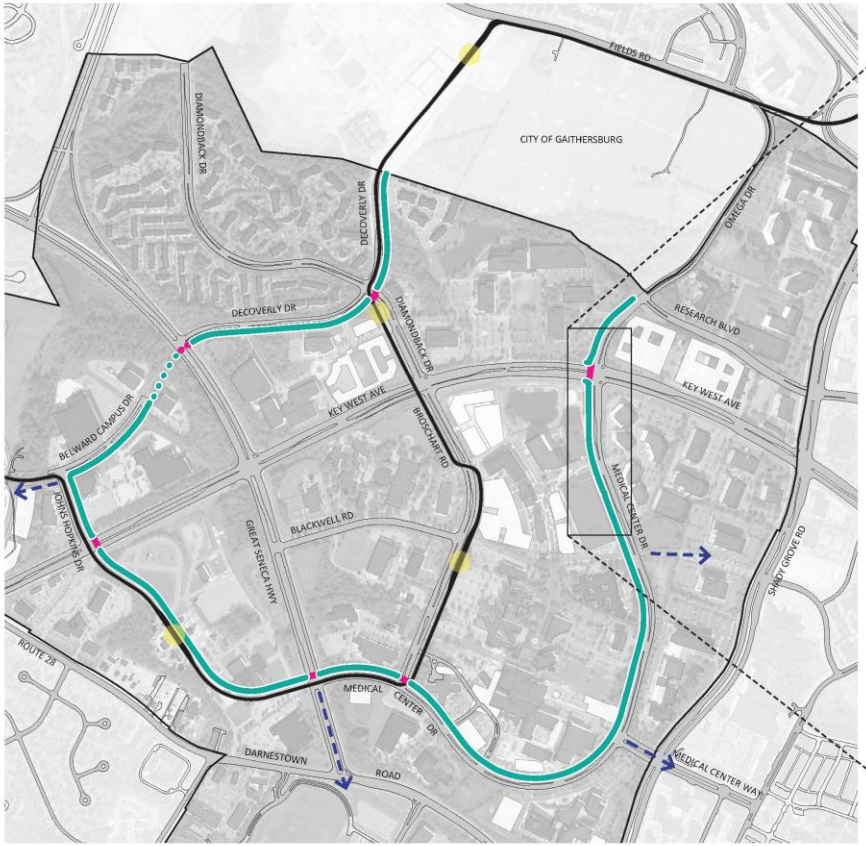
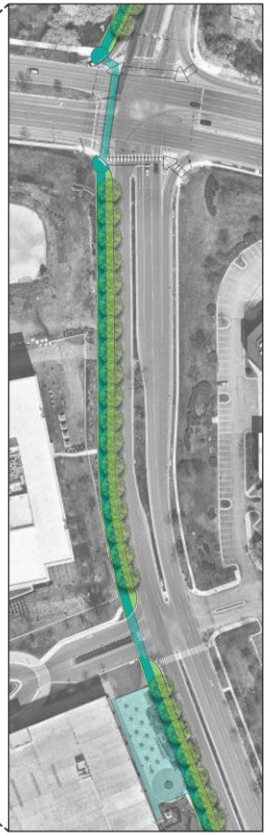


OVERALL PLAN

OVERALL PLAN

- The trail is positioned on the inside of the LSC Loop.
- Typical trail cross section includes a paved shared use path with planted buffers on each side.
- The trail is located outside of existing curblines except where the roadway is to be realigned as part of CCT construction or future development.
- Enhanced street crossings are recommended for all intersections.
- Potential trail spurs should connect to routes and destinations beyond the LSC Loop Trail.

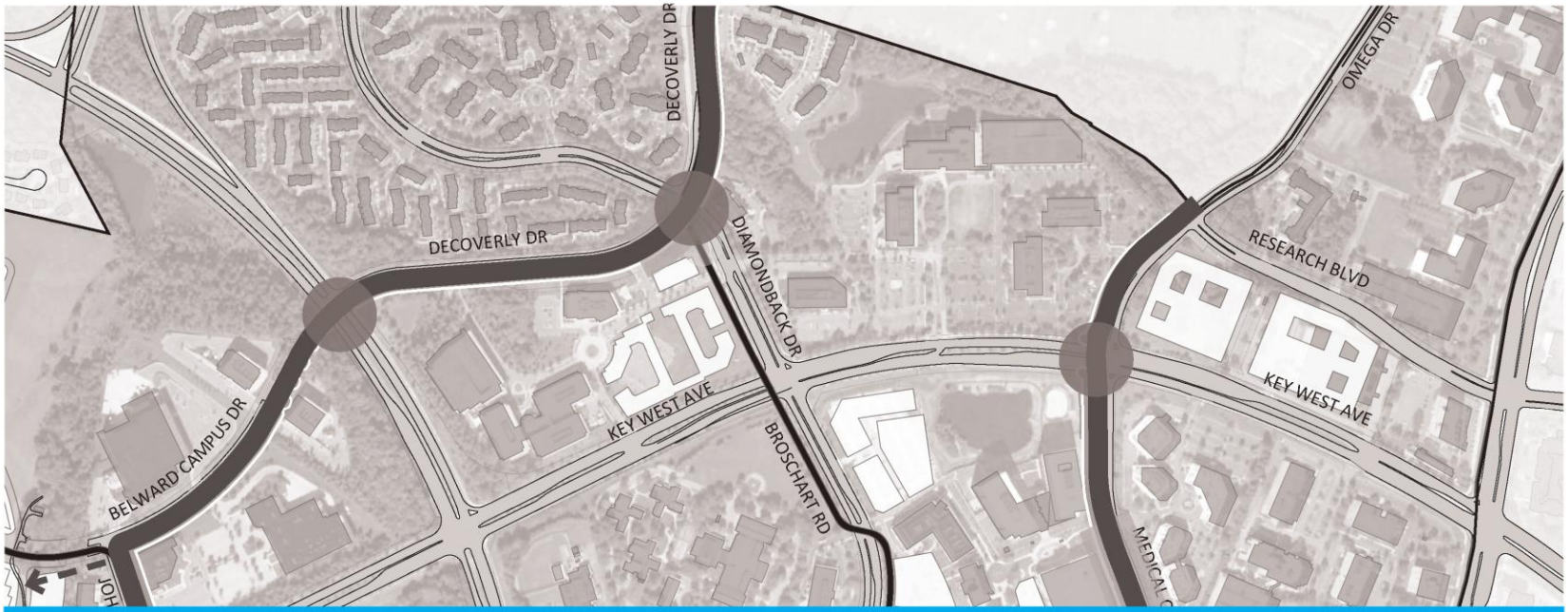




Typical Plan Enlargement

LEGEND

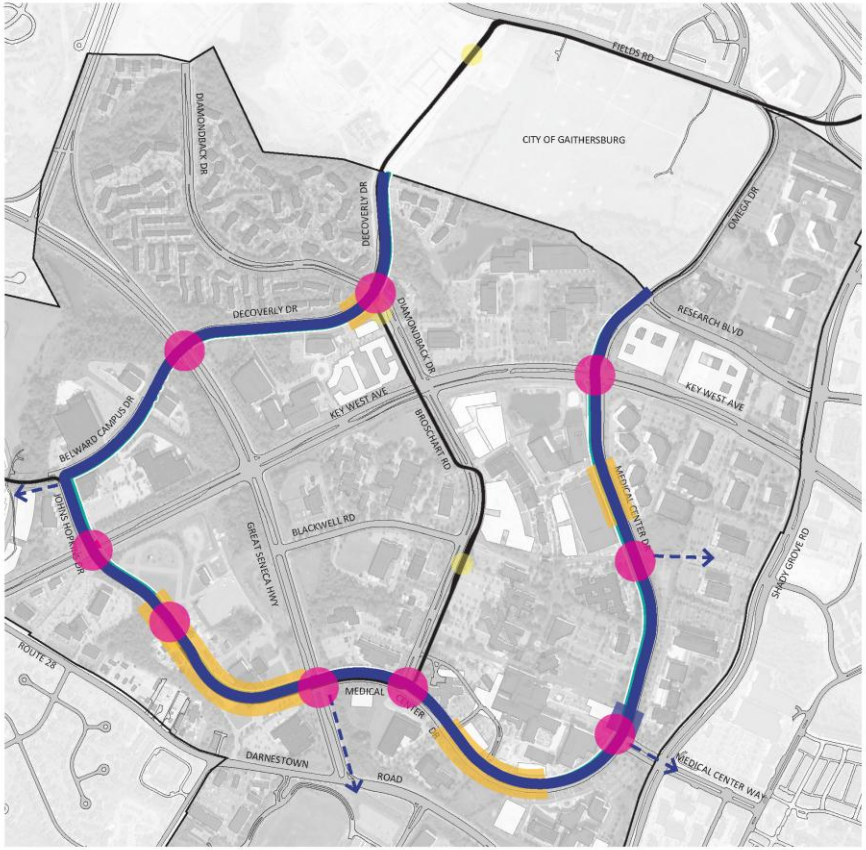
- Loop Trail
- Crossings
- Potential Trail Spurs
- Future CCT
- Future CCT Station



AMENITIES & ENHANCEMENTS

AMENITIES & ENHANCEMENTS PLAN

- Enhancements along the Loop Trail include a distinctive paving treatment; a continuous line of street trees (preserved or planted in all possible locations); seating areas along the trail; signage/wayfinding elements; and public art in select locations.
- Urban/Activity Areas should incorporate special paving and furnishings, larger gathering areas, enhanced plantings, and public art elements.
- Gateways can use art pieces and informational signage to emphasize entry into new areas and direct users to their destinations.



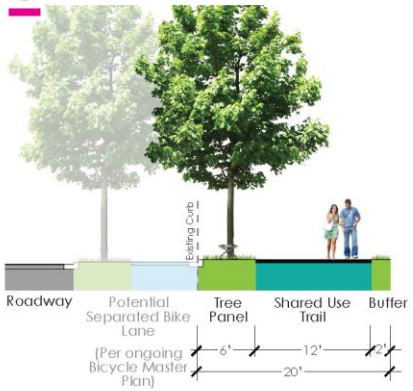
LEGEND

- Distinctive Trail Treatment
- Urban/ActivityAreas
- Gateways
- Recommended Trail Spurs
- Future CCT

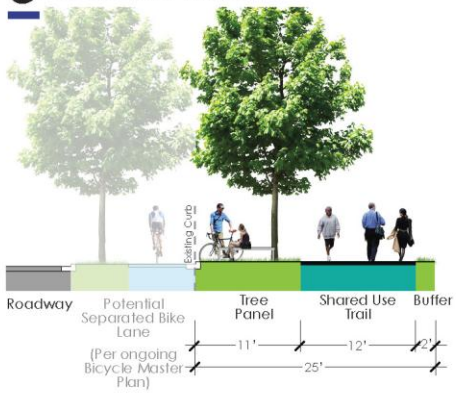
TRAIL CROSS SECTION

CROSS SECTION TYPES

1 TYPICAL CROSS SECTION



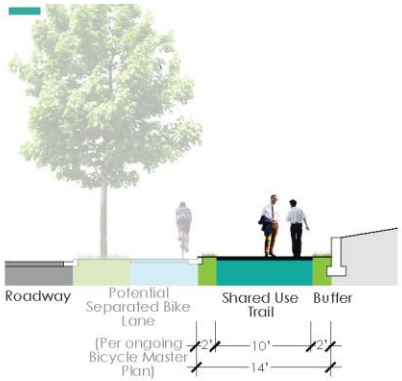
2 WIDE TREE PANEL



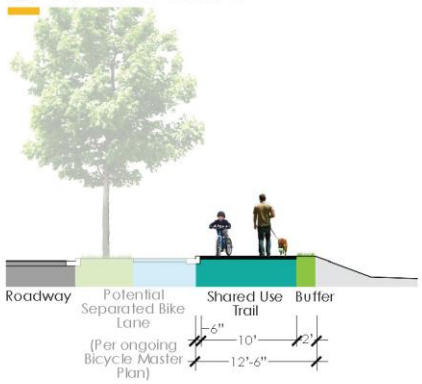
1. Typical cross section design should be used in all areas where feasible.
2. A wider tree panel is required on Medical Center Drive to preserve existing trees and create safe clear zones for path users.
3. Spatial constraints along the planned Corridor Cities Transitway (CCT) allow for a narrow planted buffer only or 4 a grade separation only between the Loop Trail and a potential separated bike lane (per ongoing Montgomery County Bicycle Master Plan).
5. Right-of-way width on the Medical Center Drive Extension (PSTA property)allows for a grade separation only between the Loop Trail and a potential separated bike lane.

- Additional tree panels may be included in the design of a potential separated bike lane.

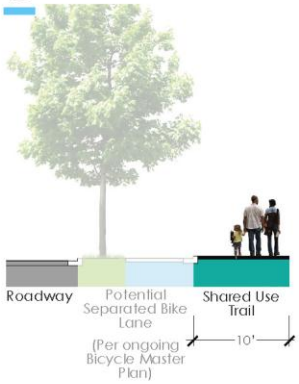
3 10′ TRAIL: TYPE A

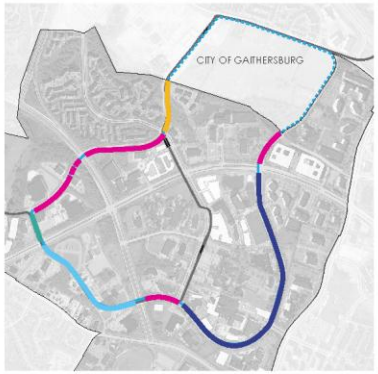


4 10′ TRAIL: TYPE B



5 10′ TRAIL: TYPE C





Key Plan

CHARACTER AREAS

URBAN/ACTIVITY AREAS

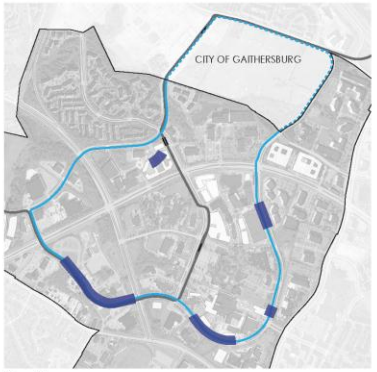
- Urban/Activity Areas include more intensive land uses near transit stops or where building entrances are located close to the trail edge.

Plazas and outdoor seating along trail (outside of right-of-way)

Furnishings and public art in tree panel

Note: Trail cross section may differ from conditions shown above.

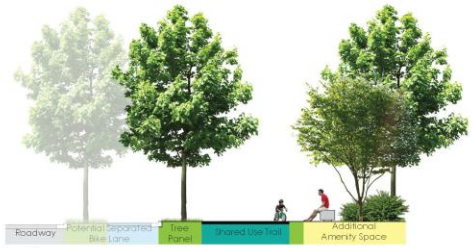
Precedent Images



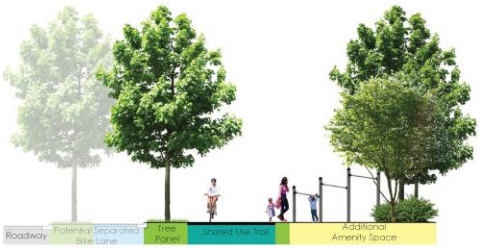
Key Plan

OPEN SPACE/NATURAL AREAS

- Open Space/Natural Areas include undeveloped vegetated zones, parks, and school yards.



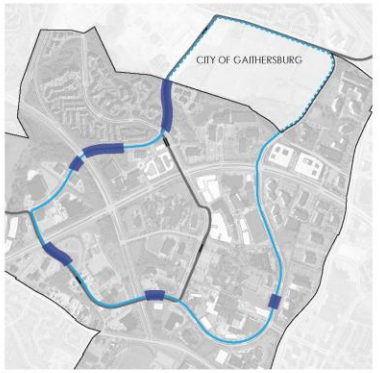
Seating areas



Play or fitness equipment

Note: Trail cross section may differ from conditions shown above.

Precedent Images

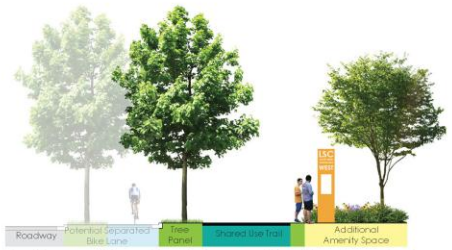


Key Plan

GATEWAYS

- Gateways refer to major intersections, transit nodes, and entrances into private campuses or office parks.

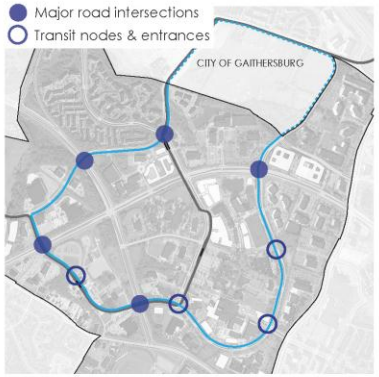
Public art, vibrant plantings, and informational signage at major intersections



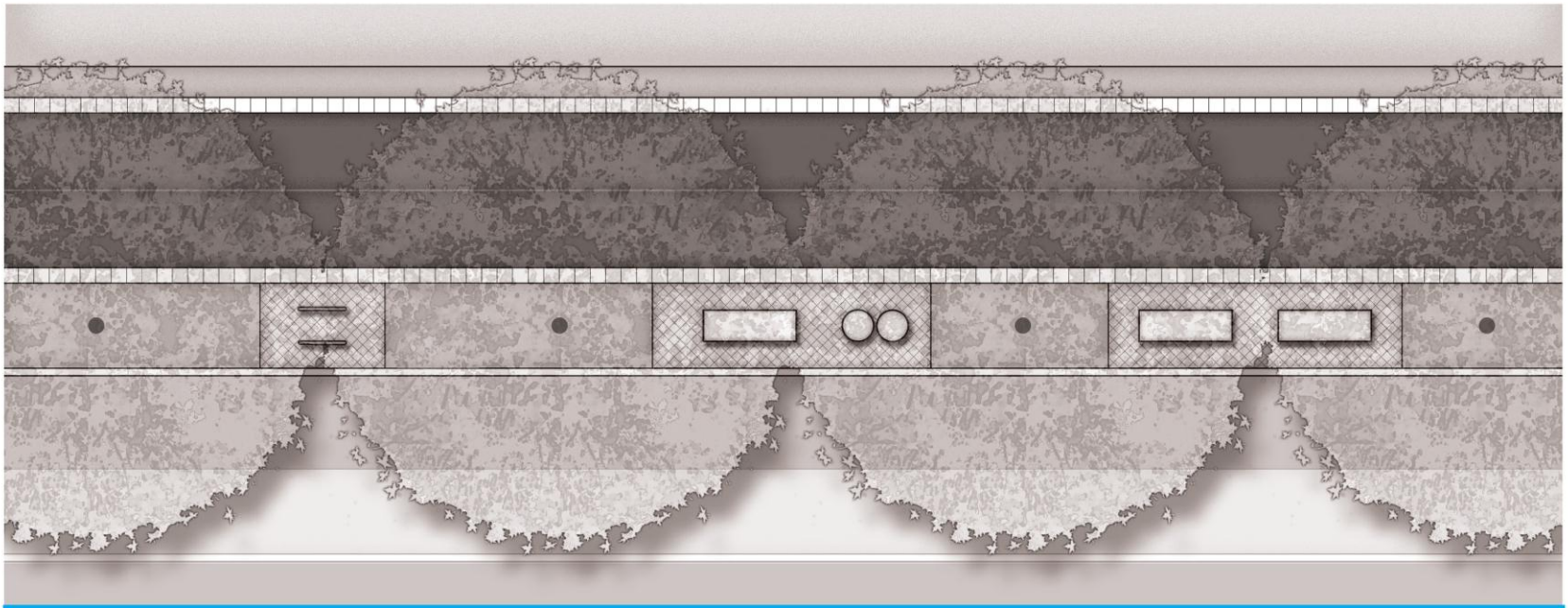
Plantings and informational signage at transit nodes and entrances

Note: Trail cross section may differ from conditions shown above.

Precedent Images

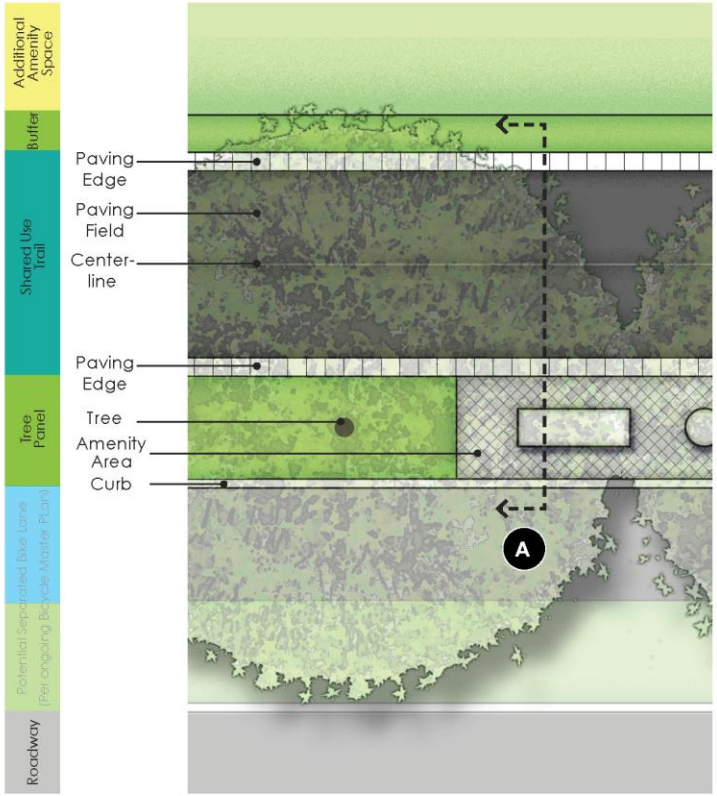


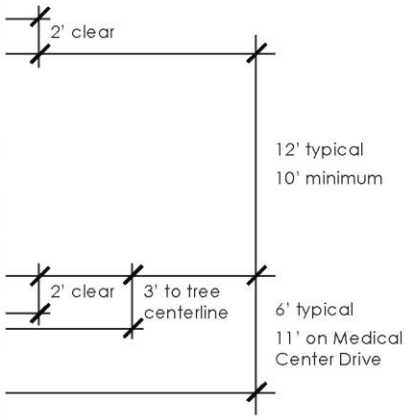
Key Plan

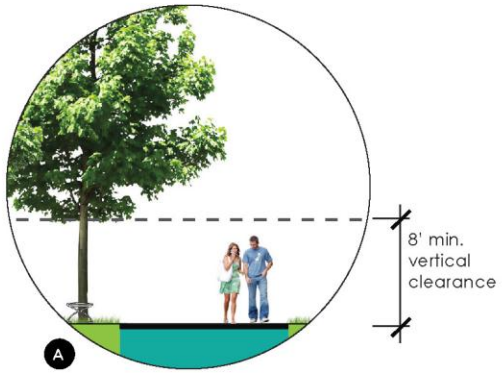


TYPICAL PLAN DETAILS

RECOMMENDED OFFSETS AND DIMENSIONS



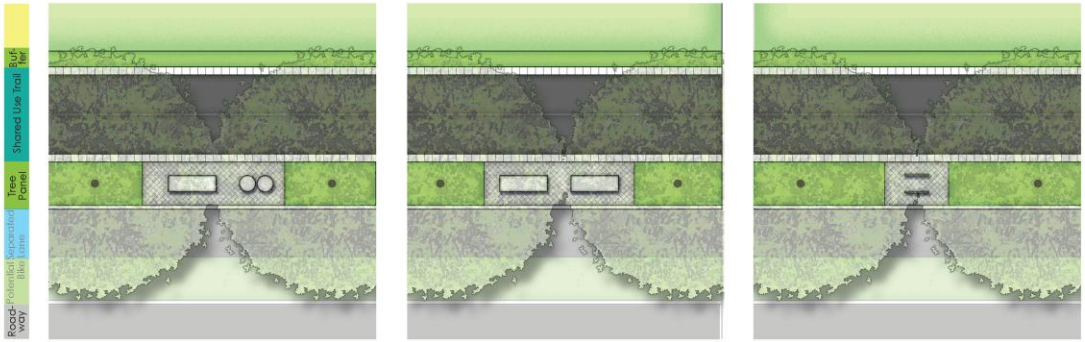




- The Loop Trail should follow County requirements and American Association of State Highway and Transportation Officials (AASHTO) guidelines for shared use path width, tree panel width, and vertical/horizontal clearances.

AMENITY AREAS IN THE TREE PANEL

TYPICAL AMENITY AREAS

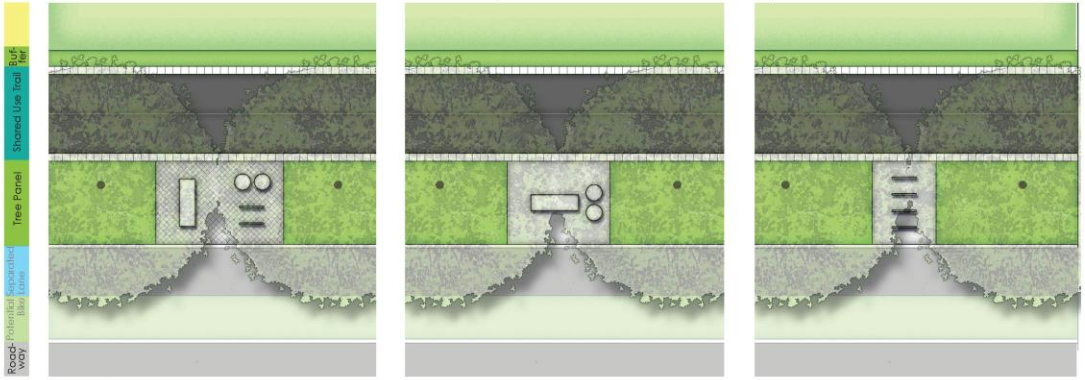


Bench and trash/recycling receptacles

Multiple benches

Bike racks

AMENITY AREAS IN WIDE TREE PANEL (MEDICAL CENTER DRIVE)



Bench, bike racks and trash/recycling receptacles

Bench and trash/recycling receptacles

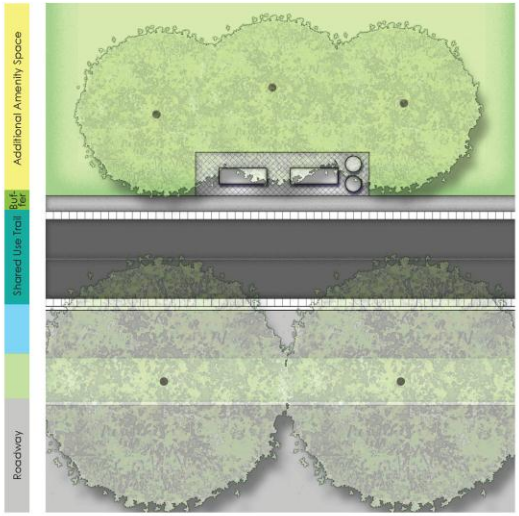
Bike racks

- Amenity areas should include seating, trash/recycling receptacles, bike racks, and pedestrian lighting.
- Furnishings should be situated to provide access from the Loop Trail or the potential separated bike lane.
- The wider tree panel on Medical Center Drive can accommodate larger amenity areas, but these must be designed to limit disturbance of existing mature trees.

Precedent Images

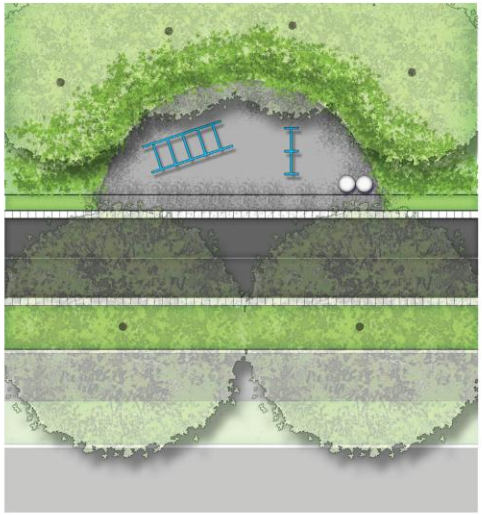
ADDITIONAL AMENITY AREAS

TYPICAL TRAIL



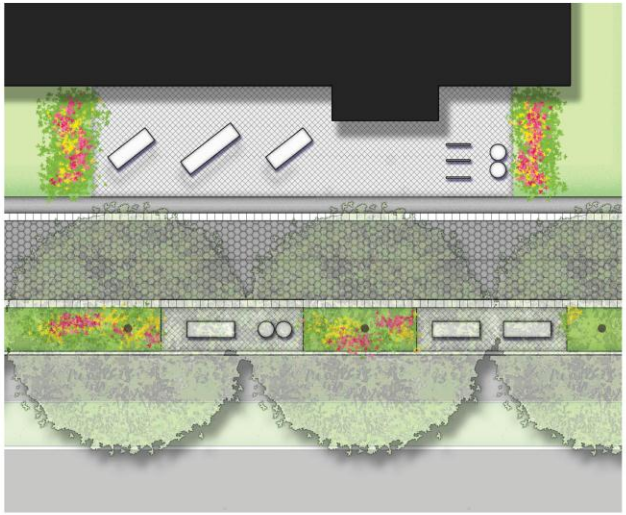
Benches and trash/recycling receptacles (may also include bike racks)

OPEN SPACE/NATURAL AREA



Benches, bike racks and trash/recycling receptacles (may also include tables and chairs, public art, play/exercise equipment, etc.) May include distinctive paving treatments.

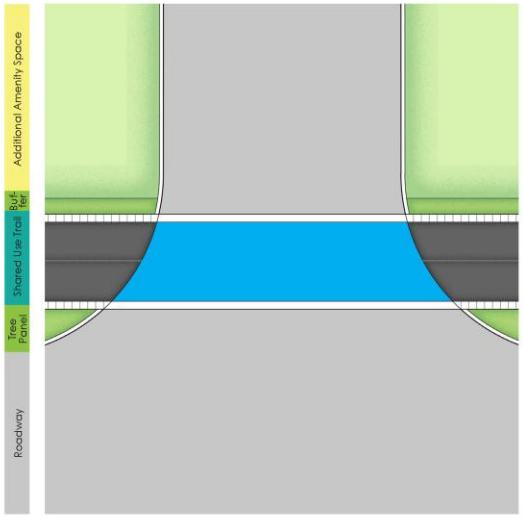
URBAN/ACTIVITY AREA



- Additional amenity areas inside the Loop Trail (within or outside of the right-of-way) can provide amenity space in locations where a tree panel in not situated immediately adjacent to the Loop Trail.
- These additional amenity areas can also provide play or exercise opportunities in Open Space/Natural Areas and larger gathering spaces or plazas in Urban/Activity Areas.

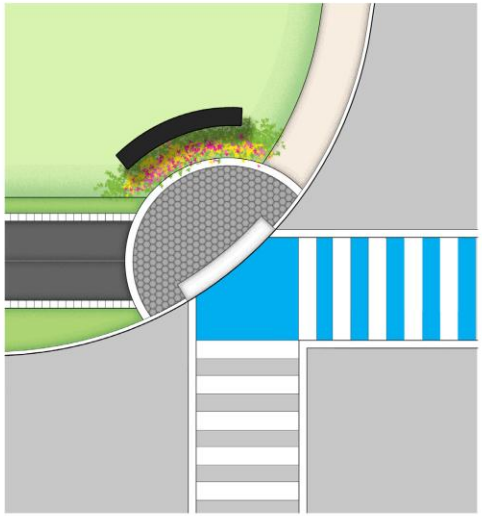
DRIVE CROSSINGS, GATEWAYS AND INTERSECTIONS

DRIVE CROSSING



Distinctive crossing treatment

GATEWAY/INTERSECTION



Gateway elements (wayfinding or public art, plantings, and distinctive paving and crossing

- At street intersections and drive crossings, distinct high-visibility crosswalk treatments should be considered to indicate continuation of the trail route and alert drivers and trail users of potential conflict points.
- Gateways may incorporate public art, vibrant plantings, informational signage, and distinct paving treatments.



DESIGN LANGUAGE

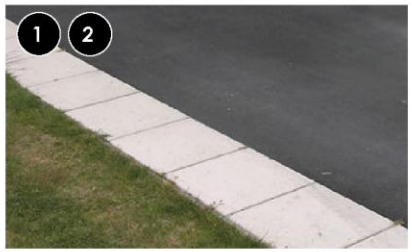
DESIGN ELEMENTS

- The following section provides an overall design language for both common design elements and areas with special treatments. The recommended design elements constitute a suggested style language to guide subsequent phases of design, rather than specific design specifications.
- Design elements most appropriate for Urban/Activity Areas (UA), Open Space/Natural Area (ON), and Gateways (G) are labeled as such, per the legend; however, if desired, these design treatments may be applied to other segments of the trail, as feasible.

LEGEND

- UA Urban/Activity Areas
- ON Open Space/Natural Area
- G Gateways

PAVING



Paver edging with asphalt path

Concrete edging with concrete path

Unit pavers

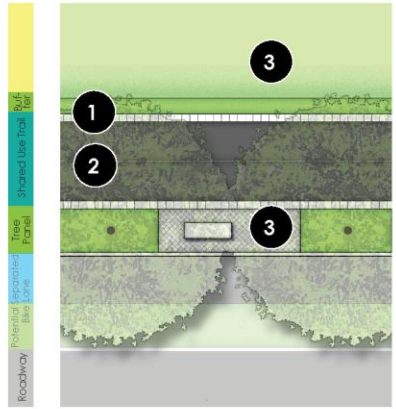
Permeable pavers

Flexible Porous Paving

Crushed stone

1. Paving band at trail edges should be uniform in material, color, and dimensions along the entire length of the Loop Trail. Unit pavers or scored concrete can be used.
2. Paving field may be comprised of tightly-jointed unit pavers and asphalt or concrete. Pavers should be used in Urban/Activity Areas to designate higher-activity zones. A dividing line at center of loop trail can be marked with contrasting pavers in paver areas or painted striping in asphalt or concrete areas.
3. Permeable pavers or flexible porous paving should be used in amenity areas along the trail. Crushed stone can be considered for amenity areas in Open Space/Natural Areas.

- Special pavement markings such as striping or texturing should be used at merge zones and intersection approaches to alert users of potential conflict points.



Paving Diagram

LEGEND

- UA Urban/Activity Areas
- ON Open Space/Natural Area
- G Gateways

PLANTINGS

Continuous line of street trees

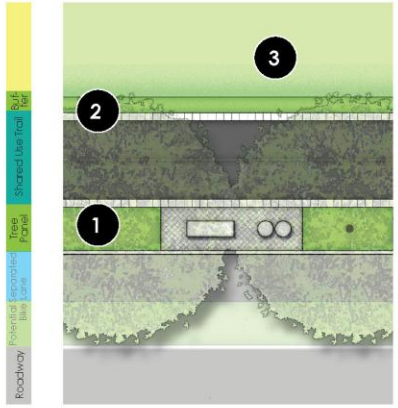
Mown turf

Tall grasses and colorful perennials

Layered shrubs, perennials, and trees

Clustered shade trees at seating/gathering areas

1. Tree panels should be planted with a continuous line of shade trees and turf grass. Shrubs and perennial plantings can be considered to enhance amenity zones, particularly within Urban/Activity Areas.
2. The 2' buffer should be planted with mown turf only so as to not impede travel along the trail and use as a pull-off shoulder.
3. Plantings can vary within additional amenity spaces along the Loop Trail (within or outside of the right-of-way). Shrubs, perennial plantings, and clustered shade trees can be considered to frame seating and activity areas and emphasize gateways. Where parking lots or secondary roadways are adjacent to the trail, wider planted buffers should be used.



LEGEND

UA Urban/Activity Areas

ON Open Space/Natural Area

FURNISHINGS AND LIGHTING

Backless benches can be accessed from both sides

Distinctive custom benches

- Furnishings along the Loop Trail should include seating, trash and recycling receptacles, pedestrian lighting, and bike racks.
- A palette of simple metal furnishings should be selected and used consistently along the trail to reinforce the loop identity.
- Custom furnishings may be used in Urban/Activity Areas, Open Space/Natural Areas, and in additional amenity spaces outside of the right-of-way.
- Furnishings can incorporate branding elements associated with the Loop Trail or with destinations along the trail.

Circular bike racks

Pedestrian lights

Distinctive lighting elements

LEGEND

UA Urban/Activity Areas

G Gateways

SIGNAGE, WAYFINDING, & BRANDING

Wayfinding signage to clearly identify trail route and brand identity

Distinctive signage system

Branding or wayfinding on trail surface

Painted or embedded mile markers

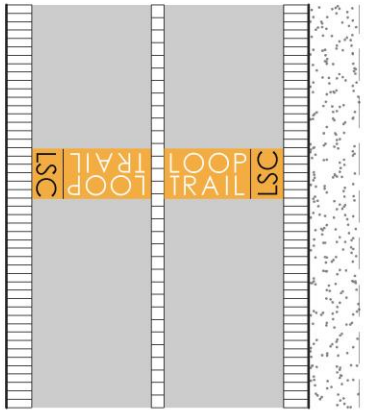
Signage to identify separate facilities

Mounted banners

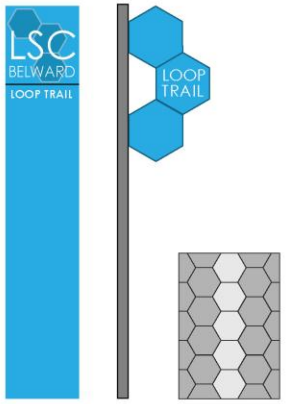
- Signage should serve a functional role and create an identifiable visual image or brand for the trail.
- Highly visible and distinctive signage should be used to alert passers-by to the presence of the trail.
- Wayfinding elements can be incorporated as signage or on-ground markings.
- Opportunities for institutional or corporate branding may be integrated.

SIGNAGE, WAYFINDING, & BRANDING, CONT.

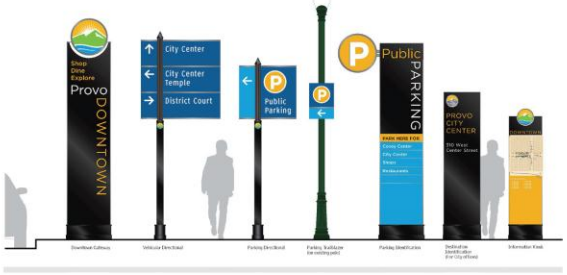
Location-specific wayfinding signage (names shown above serve as examples only and are subject to change)



Wayfinding/branding on the trail surface



Example of a motif repeated in signage and paving



Example of a family of wayfinding elements

- Signage can be used to identify different areas within the Life Sciences Center and help user orient themselves along the Loop.
- An identifiable family of wayfinding elements should incorporate a repeating motif selected to represent the Life Sciences Center.
- Loop Trail wayfinding elements may be coordinated with vehicular and bicycle signage.

LOW-IMPACT DEVELOPMENT OPPORTUNITIES

Shade trees

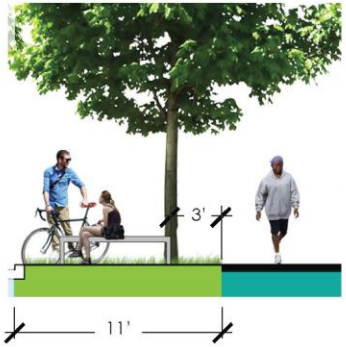
Permeable pavers and flexible porous paving

Bioretention in tree boxes

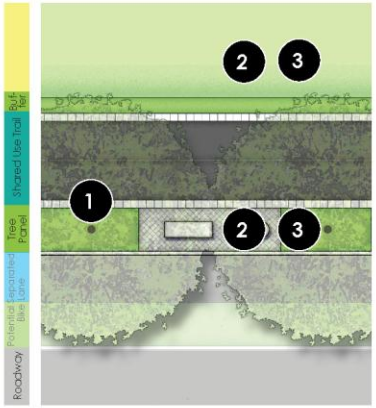
Planted bioretention areas

1. Preserve existing trees as possible and plant a continuous line of shade trees along trail.
2. Permeable pavers flexible porous paving should be used in amenity areas along the trail.
3. Bioretention may be incorporated in planting areas along the trail, including tree boxes, planting strips, and larger planted areas.

- Low impact development (LID) should serve as both a stormwater management tool and a placemaking element.



Tree panel on Medical Center Drive should be widened to allow more space between tree and adjacent paving.



PUBLIC ART

Patterns or words embedded in paving

Sculptural pieces as focal points

Art integrated into walls and other vertical elements

Interactive light or water elements

- Public art should be integrated into the loop trail to support placemaking and create a more vibrant, engaging environment.
- Art may be included anywhere along the trail but particularly at Urban/Activity Areas and Gateways
- Art elements can be incorporated into the trail in a variety of forms, including sculptural pieces as focal points, patterns or words embedded in paving, sculptural walls and other vertical elements, or interactive water features.

LEGEND

UA Urban/Activity Areas

ON Open Space/Natural Area

G Gateways

CROSSINGS

Distinctive painted crossings at driveways and entry roads

Identifiable crosswalks at road intersections

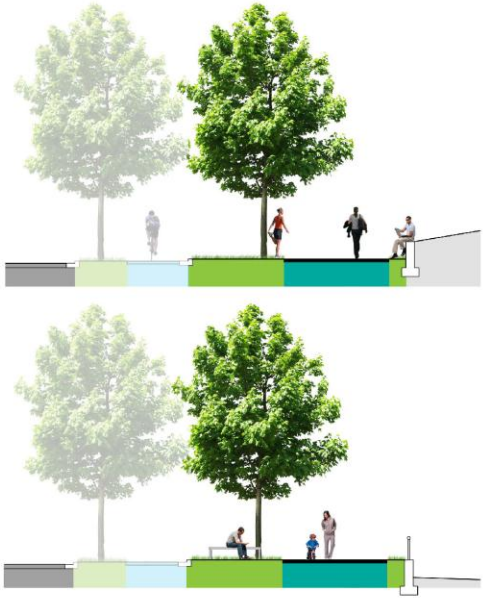
- Bright and high-visibility crossing treatments at entry drive should be used to reduce the possibility of conflicts with vehicles.
- Distinctive roadway crossings should be considered to clearly identify the Loop Trail route.
- Driveway crossings should be highlighted by distinctive paving treatments.

WALLS

Metal guard rail

Existing walls in the Life Sciences Center

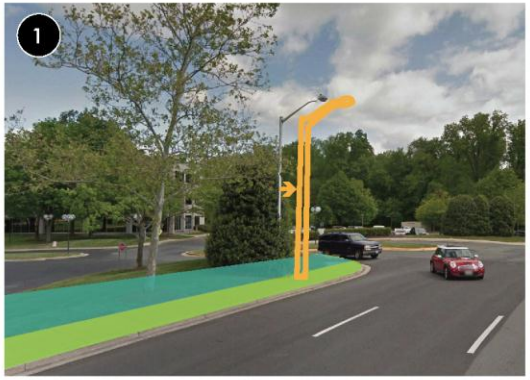
- Where needed, retaining walls on the inner edge of the Loop Trail should reference existing site walls, if present.
- If required, guard railing should be simple and unobstrusive.
- Seat walls may provide additional seating where feasible.



Potential retaining walls along the trail

UTILITY CONFLICTS

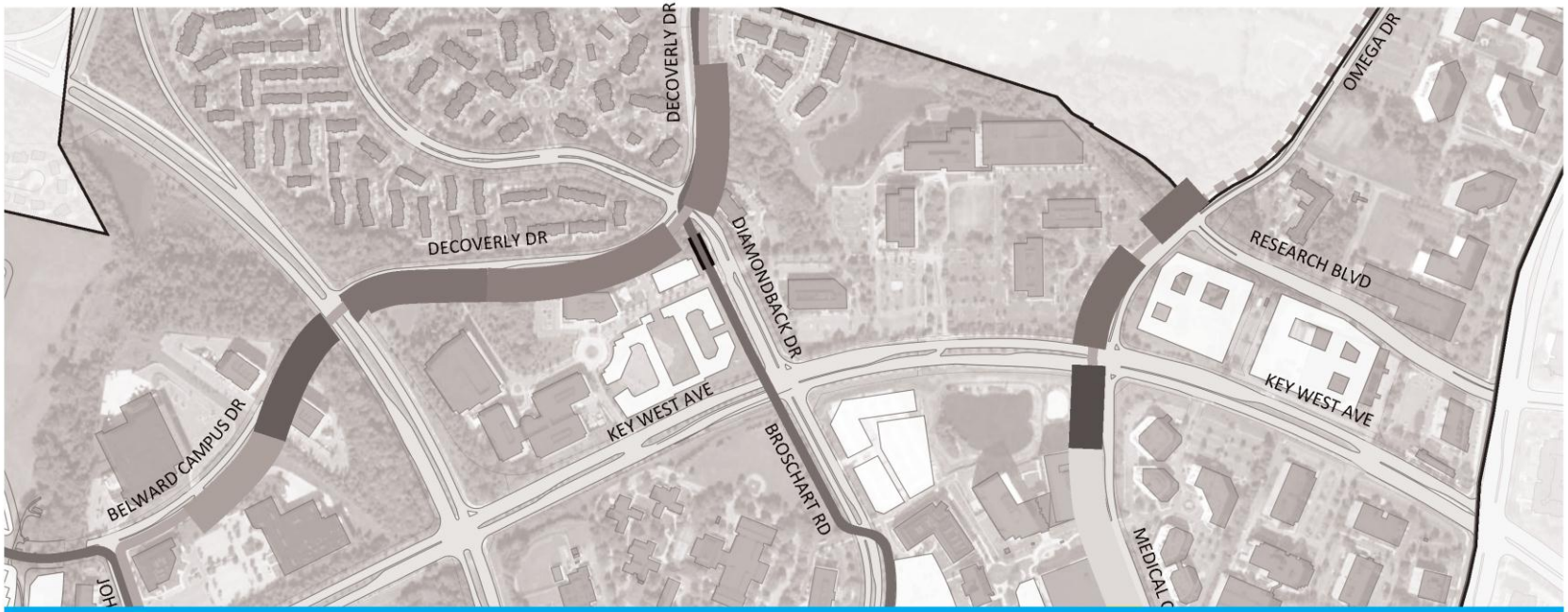
TYPICAL UTILITY CONFLICTS



OMEGA DRIVE/KEY WEST AVENUE

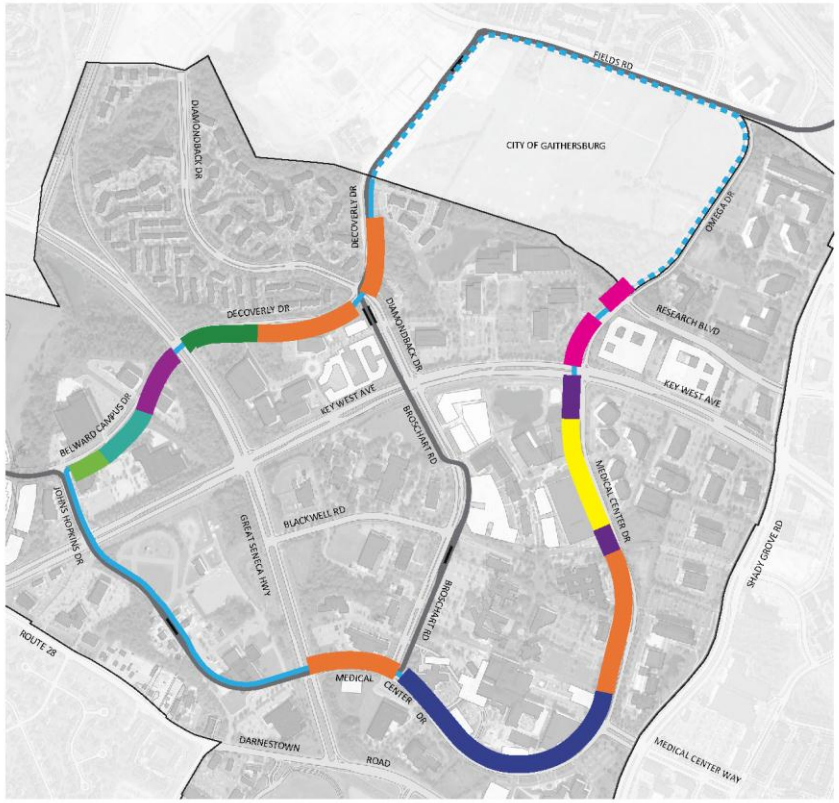
1. Where feasible, relocate utilities out of trail path or construct trail around utility covers.
2. Where utilities cannot be moved, trail may be narrowed or rerouted.

- Underground utility locations and their potential impact upon the Loop Trail requires further study.



ADDITIONAL CONSIDERATIONS

EASEMENTS REQUIRED



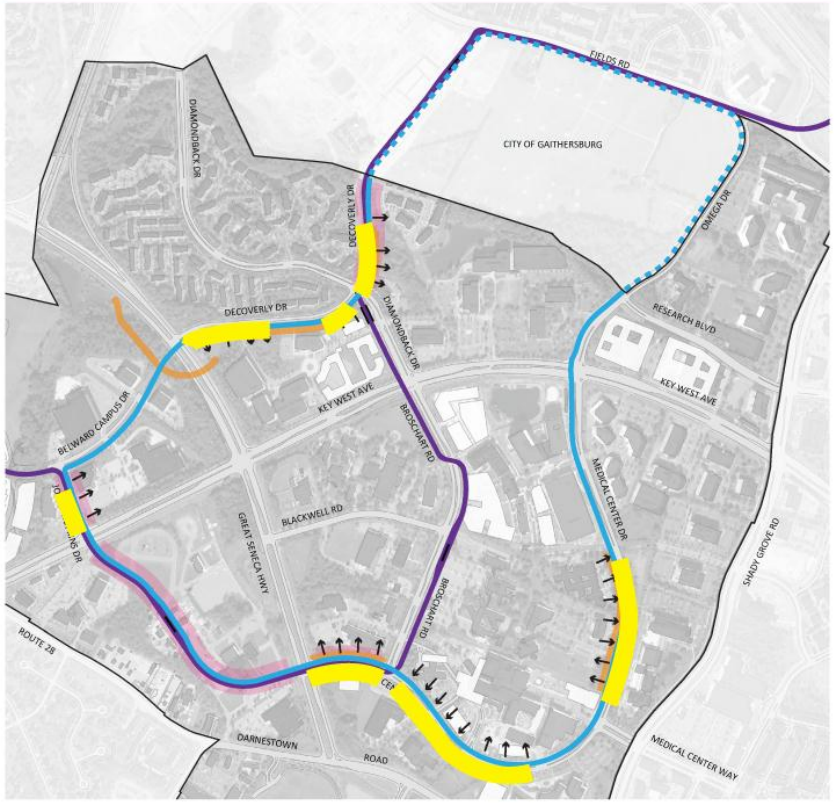
KEY	OWNER	WIDTH	AREA
	JPMCC 2005-CIBC13 Omega Drive LLC	0 - 9.5 LF	2,880 SF
	JBG/Rockville NCI Campus LLC	14.5 - 16.75 LF	4,095 SF
	Johns Hopkins University	12.25 - 15.75 LF	15,826 SF
	Adventist Healthcare, Inc.	7.5 - 17 LF	20,219 SF
	GP Rock One LLC	7.5 - 8.5 LF	1,773 SF
	Maryland Economic Development Corp.	10 - 14.75 LF	6,060 SF
	BMR-9900 Campus LLC	12.5 LF *	678 SF *
	Jaeger, John F TR	2.5 - 6.25 LF	4,804 SF

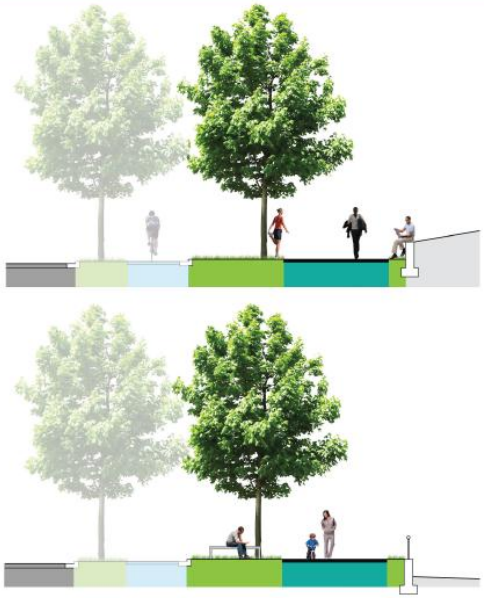
Unused transit easements

* Extension of the trail between Belward Campus Drive and Great Seneca Highway may require a larger easement area.

Note: Easement requirements associated with CCT construction are not included. Greater easements may be required where grade changes are necessary (e.g., slopes, retaining walls, etc.).

POTENTIAL RETAINING WALL LOCATIONS



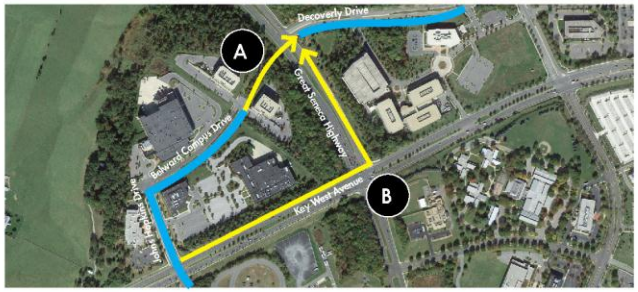


Potential retaining walls along the trail

LEGEND

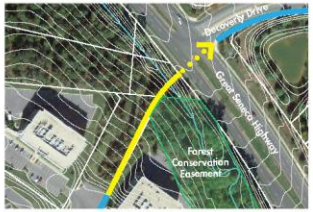
- Potential loop trail
- Future CCT
- Slope at inner edge
- Potential retaining wall location

BELWARD CAMPUS DRIVE CONNECTION

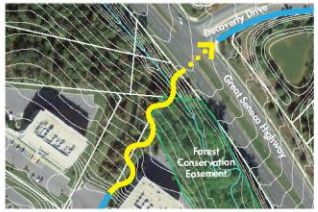


- Missing roadway connection per GSSC Master Plan between Belward Campus Drive and Great Seneca Highway/Decoverly Drive leaves a gap in the Loop Trail.
- If roadway is constructed per Master Plan recommendation, the Loop Trail should be incorporated according to the Loop Trail Design Guidelines typical alignment and cross section.
- Options A and B, below, provide alternatives to continue the trail which do not require construction of this roadway.

A LOOP CONTINUATION PER MASTER PLAN



≈ 6.5% slope



< 5% slope with switchbacks

PROS:

- Achieves Master Plan loop trail alignment
- Provides direct connection between Belward Campus Drive and Decoverly Drive

CONS:

- Requires significant regrading and removal of existing vegetation
- May require encroachment into forest conservation easement
- No existing crossing at Great Seneca Highway (would need to be coordinated with SHA)*

*Crossing of Great Seneca Highway may be (1) two-stage unsignalized crossing utilizing existing median, (2) signalized with continuous crosswalk (if area-wide development necessitates a signal at this intersection), or (3) grade separated crossing. To be determined in consultation with SHA.

B ALTERNATE OR INTERIM ROUTE

Existing conditions on Key West Ave and Great Seneca Hwy

PROS:

- Does not require significant regrading and removal of existing vegetation
- Does not require new crossing at Great Seneca Highway

CONS:

- Creates "dead end" at Belward Campus Drive
- Does not achieve Master Plan loop trail alignment
- Existing sidewalks may not be sufficient to support shared use*

*If alternate route is determined to be a permanent measure, long-term trail design should conform with typical trail cross section and design language described in this document.

IMPLEMENTATION STRATEGY

IMPLEMENTATION STRATEGY

A strategy for implementing the LSC Loop Trail will necessarily evolve with the trail design, as management and funding needs are explored and resolved and as planned development and construction projects in the area are implemented. The following section describes both immediate actions to advance the trail design and a range of longer-term implementation considerations to ensure effective management and operations, design and branding, and trail phasing and prioritization.

A. IMMEDIATE ACTIONS

Two immediate actions are necessary to ensure that the LSC Loop Trail design process advances without delay and capitalizes on current momentum and support for the trail:

1. *Allocate funds for Facility Planning in the County's CIP.* To ensure that the LSC Loop Trail is included in the CIP, it is recommended that the County project team and the GSSC Implementation Advisory Committee immediately begin introducing the project to key County decision-makers and to the public, in order to build support for the project in the near term and ensure that Facility Planning is funded under the CIP to be adopted in early 2016. Specific actions include:

    - Meet with the County Executive's Office to introduce the project and share the concept design.
    - Meet with members of the County Council to introduce the project and its current status.
    - Conduct a public roll-out of the project, including public presentations to raise awareness of and support for the LSC Loop Trail. Presentations could include a presentation to the Planning Board, relevant Council committees (i.e., Transportation, Infrastructure, Energy and Environment) and to the general public at public meetings and events.
    - Prepare a formal recommendation letter, from the GSSC Implementation Advisory Committee to the County Executive, recommending that facility planning for the LSC Loop Trail be included in the CIP.
    - Solicit additional letters of support from key stakeholders and property owners.
    - Meet with County agencies, such as the Department of Parks and MCDOT, that could potential oversee the design and construction process.

2. *Identify and/or form a Steering Committee to guide and oversee subsequent phases of design and implementation.* As the project transitions from design guidelines to the Facility Planning phases, final design and construction documents, it will be important to identify an entity to champion the project and provide the necessary oversight. As the GSSC Implementation Advisory Committee has served this role to date during the concept design phase, in collaboration with Planning Department staff, this committee (or a subgroup composed of its members) is a logical entity to continue to the champion the project. Alternatively, a newly-formed Steering Committee composed of a representative cross-section of area stakeholders or a combination of Advisory Committee representatives and other stakeholders are other options.

B. FACILITY PLANNING

In addition to advancing the LSC Loop Trail to a more detailed level of design, the Facility Planning process will need to include further study and refinement of a number of unresolved design issues. In addition, there will be a need for further coordination with other agencies, property owners and key stakeholders to coordinate the Loop Trail design process with other development and construction projects as well as with residents of the surrounding communities. Specific actions include:

1. *Conduct additional studies as needed as part of the Facility Planning process.* Issues requiring further attention at a more-detailed level of design include:

    - Land Acquisition/Dedication: Confirm and clarify the amount of additional land outside the public

right-of-way that is required to accommodate the trail alignment, associated buffers and amenity spaces, any required grading or retaining walls, and any required stormwater management facilities.

- Easements: Identify and mitigate any conflicts with utilities within public utility easements; obtain legal confirmation that unused transit easements and open space easements along the trail route may be utilized to accommodate the trail alignment and/or associated amenities; and identify any additional easements required to accommodate stormwater management facilities.
- Utilities: Identify options for mitigating conflicts with other underground and above-ground utilities along the trail route.
- Retaining Walls and Grading: Study the need for and land area affected by grading or retaining walls required to accommodate the trail alignment.
- Stormwater Management (SWM): Conduct a stormwater management study to assess how stormwater management can be accommodated within the right-of-way and whether additional land is required, based on existing state and local stormwater management requirements.
- Belward-to-Decoverly Connection: Further study options to complete the trail loop between Belward Campus Drive and Decoverly Drive, across Great Seneca Highway, based on traffic, safety, engineering and environmental considerations.

2. *Coordinate subsequent phases of design with relevant agencies, property owners, and community stakeholders,* including:

- CCT / MTA, to coordinate the design of the trail with design and construction of the CCT.
- Department of General Services, to coordinate the trail design with planning and development of the PSTA property.
- MCDOT / SHA, to coordinate crossings of Key West Avenue and Great Seneca Highway, as well as potential interim or alternative solutions to the Belward-to-Decoverly connection along Key West Avenue and Great Seneca Highway.
- Property owners along the trail route, to coordinate necessary land acquisition and developer/owner contributions.
- The surrounding community, including residents of Montgomery County, Rockville and Gaithersburg, as well as the Universities at Shady Grove.
- The Montgomery County Planning Department, to coordinate the trail design with the County's Bicycle Master Plan update and a recommended separated bike lane parallel to the trail alignment.

A critical element of consideration in selecting the County agency responsible for the Facility Planning phase of the project will be the ability of that entity to carry out the concept design as defined in this document. This will require a level of flexibility to depart from typical County facility standards in order to create a Loop Trail that sets a new amenity standard for the county, the region, and the country.

C. MANAGEMENT, MAINTENANCE, OPERATIONS AND FUNDING

As the LSC Loop Trail advances through subsequent phases of design, it will be important to identify (1) how and by whom the Loop Trail design, construction and operations will be managed, as well as which entities will be responsible for ongoing maintenance of the trail and (2) a strategy for funding the Loop Trail and the range of funding opportunities to be pursued. Potential management entity options for the LSC Loop Trail include:

- A non-profit corporation, such as those established for the Indianapolis Cultural Trail, Atlanta BeltLine, and The 606 (Chicago), as well

as numerous other "Friends of" groups around the country.

- A Business Improvement District, Benefit Assessment District or equivalent, in which property owners pay additional taxes or assessments to fund area improvements and maintenance.
- A County agency. Candidate agencies discussed during the concept design process include the Department of Parks and/or MCDOT.
- A public-private partnership, which may include one or more of the above entities.

The Facility Planning phase of design could be led by a County entity that then transfers or shares responsibilities to a private or non-profit entity (a public-private partnership).

It is anticipated that the appropriate management structure and a funding strategy will be determined as the trail design advances and once the full cost of the project can be estimated. Potential funding opportunities include:

- Funding all or a portion of the cost of the project in the county CIP
- Developer contributions
- Owner contributions
- Grant funding, including federal grants (i.e., TIGER grants), state grants (i.e., Maryland Bikeways Program, Maryland Transportation Alternatives Program) and grants from private foundations.
- Sponsorship opportunities and naming rights for locations or segments along the trail route.

D. DESIGN AND BRANDING

As individual segments or phases of the trail are constructed, it will be important to have a carefully-developed set of design guidelines in place to ensure overall design coordination, consistency and distinctiveness, in order for the trail to "read" as a single, coordinated amenity. Recommended actions include:

1. *Prepare guidelines to ensure consistent selection and incorporation of design elements throughout the trail route and ways to preserve the distinctiveness of the design within the determined project budget.* Specific design elements requiring coordination include:
   - Paving and other hardscape elements
   - Lighting / furnishings
   - Plantings/landscape
   - Signage
   - Public art

   To help control costs while still establishing an identifiable and recognizable design character, the concept design recommends concentrating higher-cost design treatments (i.e., special pavers, custom furnishings, and larger amenity spaces) in the most prominent locations—urban areas, gateways, activity nodes—and applying a less-expensive, though still distinctive and visually appealing, design treatment (i.e., asphalt or concrete with edging and standard furnishings) to other segments of the trail.
2. *Coordinate the trail with an overall image and brand identity.* Ideally, such a brand identity would extend beyond the Loop Trail and would begin with the establishment of a brand strategy for the entire Life Sciences Center district.
3. *Establish a design and marketing approach to balance the collective identity and image of the Loop Trail with the individual needs and design expressions of property owners* along the trail route (through sponsorship and naming rights, signage, art and other expressions of individual property owner identity).

E. PHASING AND PRIORITIZATION

The sequence and timing of trail implementation—as well as whether the trail is constructed all at once or in phases—is dependent, in part, on the implementation of other development and construction projects in the area, available funding for the trail, infrastructure

requirements and other strategic considerations. Nevertheless, a range of factors should be considered when determining the phases and priorities for trail development. Potential phasing criteria include:

- The timing of new development and construction, including: construction of the CCT transit system and stations, development of the PSTA property and the roadway through the property, and the implementation of other planned development on properties in the vicinity of the trail alignment.
- The relative importance of individual trail segments as a connectors to destinations and other trails in the surrounding area.
- The visibility and prominence of individual trail segments, to ensure that any early phases of the trail "advertise themselves" and begin to establish a distinctive identity for the trail and the LSC as a whole.
- Infrastructure requirements, such as the Master Plan-recommended Belward-Decoverly roadway connection, stormwater management and culvert upgrades adjacent to the trail, utilities, roadway reconstruction as part of the CCT, and any other necessary preconditions to constructing certain segments of the trail.

Potential Pilot Project

To generate excitement about the trail and "test" the design, the County and any other implementing entities may wish to consider a pilot (or demonstration) project to construct one initial segment of the trail. One candidate segment to consider for a pilot project is the segment along Medical Center Drive adjacent to the National Cancer Institute. This segment is particularly relevant as a pilot project given its high profile (National Cancer Institute as an anchor), adjacent commercial uses, lack of technical constraints to constructing the trail, existing wide tree panel (which could accommodate amenity spaces within the public right-of-way), existing mature shade trees, and its visibility from Key West Avenue.

Outreach and Coordination Meetings

- Oct. 14: MCDOT Master Plan Review Committee
- Oct. 26: City of Gaithersburg
- Nov. 2 : Presentation to County Executive Staff
- Nov. 16: Presentation to MC Office of Management and Budget
- Dec. 8 : GSSC IAC update
- Dec. 15: Joint Community Meeting, LSC Bicycle Master Plan and LSC Loop
- Jan. 2016 (date TBD): Presentation to Upcounty Citizens Advisory Bo
- Jan. 28: Montgomery County Planning Board Hearing

Press Release

montgomeryplanningboard.org/blog-news/2015/12/01/community-invited-to-attend-the-december-15-meeting-focused-on-bicycle-and-pedestrian-planning-projects-in-the-life-sciences-center-area/

TAGS

bicycle master plan, bike plan, David Anspacher, december 15, Johns Hopkins Montgomery County Campus, Life Sciences Center Bicycle Network Proposal, LSC Loop Trail, MCBikePlan, Steve Findley

Community Invited to Attend the December 15 Meeting Focused on Bicycle and Pedestrian Planning Projects in the Life Sciences Center Area

by Bridget Schwiesow on December 1st, 2015

Planners will trace the progress of the Bicycle Master Plan in the Life Sciences Center and the draft design guidelines for the Life Sciences Center Loop Trail

SILVER SPRING, MD – The **Montgomery County Planning Department**, part of **The Maryland-National Capital Park and Planning Commission**, is hosting a community meeting on Tuesday, December 15, 2015 from 7 to 9 p.m. at the Academic and Research Building (9601 Medical Center Drive, Rockville, MD, Room 106-110) on the **Johns Hopkins Montgomery County Campus** to update the community on bicycle and pedestrian planning activities in the Life Sciences Center area.

This community event will focus on efforts to create new transportation and recreational networks for people who walk and bike. The Draft Life Sciences Center Bicycle Network Proposal aims to create separated bike lanes and provide long-term bicycle parking stations in the Life Sciences Center District of the Greater Seneca Science Corridor. Separated bike lanes (or cycle tracks) create a low-stress environment for cyclists that can make bicycling a mainstream transportation option because they provide physical separation from both traffic and pedestrians.

A complementary project, called the **Life Sciences Center Loop Trail**, will provide an off-road shared use path for walking and bicycling to connect destinations within the Life Sciences Center area. At the meeting, the design guidelines for the Loop Trail will be introduced. These guidelines will assist developers who are required to implement the trail along the frontage of their buildings. RSVPs to attend the session are encouraged, but not required.

RSVP for the December 15 Community Meeting.

Review the **Draft Life Sciences Center Bicycle Network Proposal**.

Review the **Draft Life Sciences Center Loop Trail Design Guidelines**.

Contact

Montgomery Parks
montgomeryparks.org
Melissa Chotiner
Media Relations Manager
(301) 650-2866 Office
(202) 351-9063 Cell

Montgomery Planning
montgomeryplanning.org
Bridget Schwiesow
Communication Manager
(301) 495-4507 Office
(301) 641-0457 Cell

Montgomery County Park Police
parkpolice.org
Rick Pelicano
Maryland-National Capital Park Police
Montgomery County Division
(240) 876-6519

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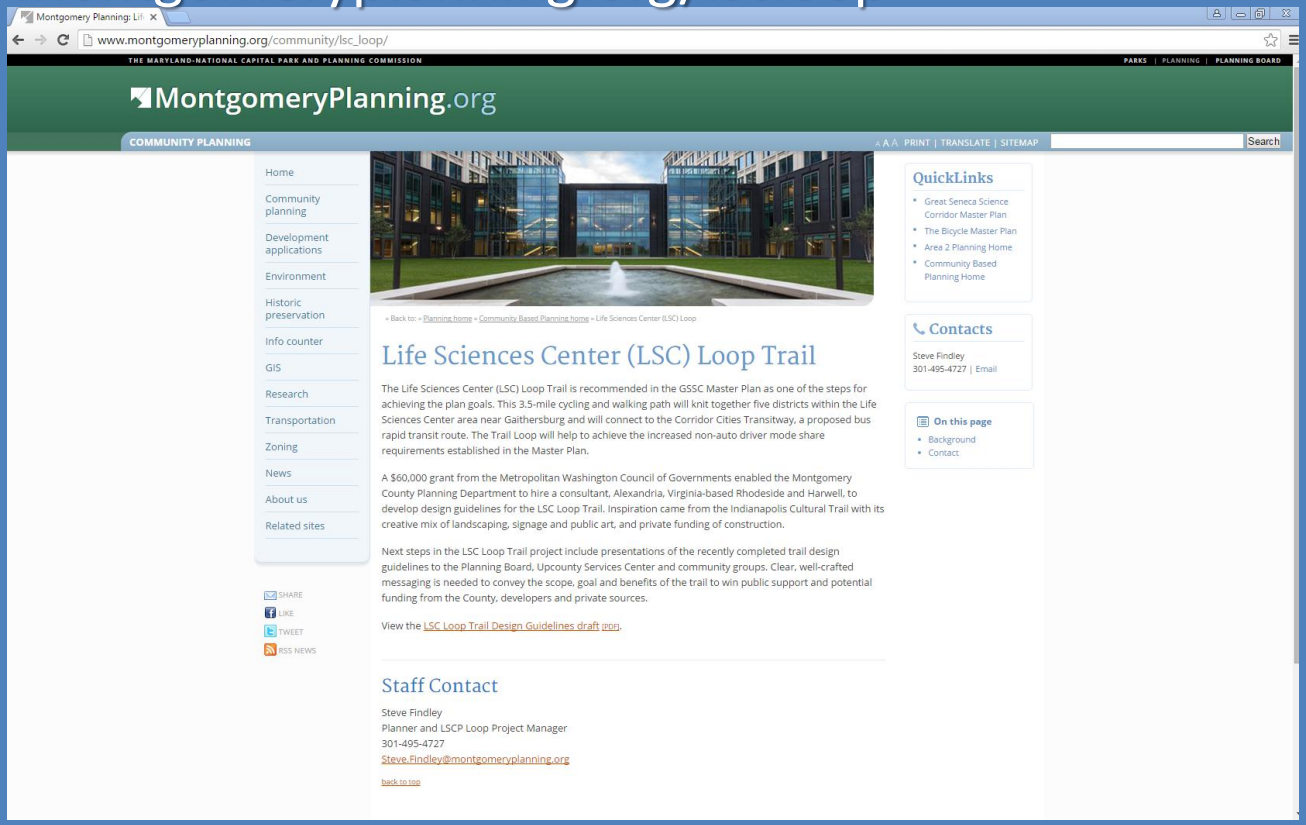

Project Manager

Steve Findley

301.495.4727

Steve.findley@montgomeryplanning.org