

## TONIGHT'S AGENDA:

1. SIGN IN
2. OPEN HOUSE
3. PRESENTATION AT 7:20 P.M.

[montgomeryplanning.org/bikeplan](https://montgomeryplanning.org/bikeplan)

[montgomeryplanning.org/lscloop](https://montgomeryplanning.org/lscloop)



EXHIBIT 4N: ELEMENTS OF PROTECTED INTERSECTIONS

- ① Corner Refuge Island
- ② Forward Bicycle Queuing Area
- ③ Motorist Yield Zone
- ④ Pedestrian Crossing Island
- ⑤ Pedestrian Crossing of Separated Bike Lane
- ⑥ Pedestrian Curb Ramp

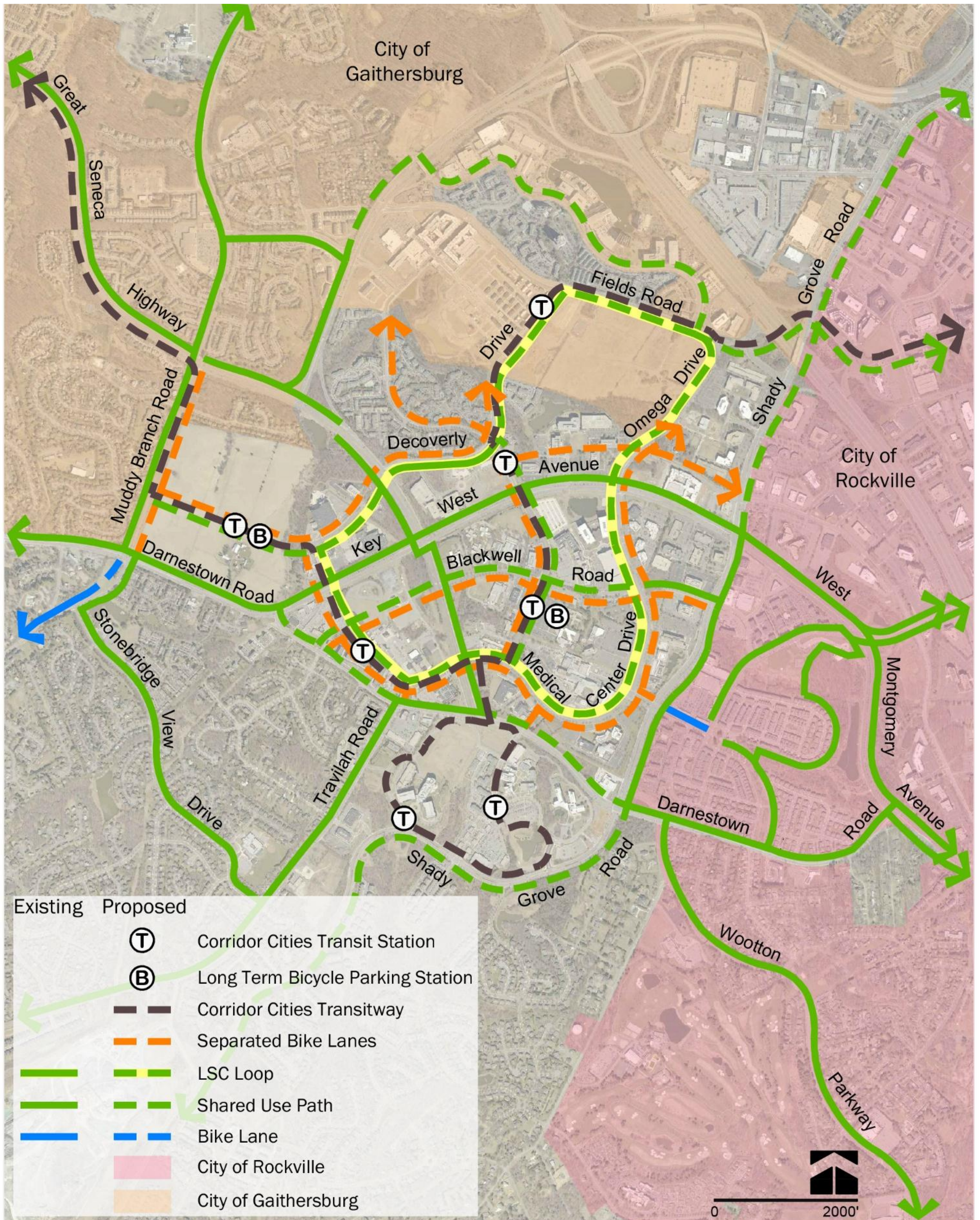
Conceptual Rendering of a Protected Intersection (source: MassDOT)

## Protected Intersections

Protected intersections are an emerging innovation that extends the protection of a separated bike lane to the intersection. The first protected intersection in the United States opened in Davis, California, in August 2015. The benefit of protected intersections is that they physically separate bicyclists as they make right turns, simplify bicycle-through movements and left turns, increase the visibility of cyclists, provide a refuge for cyclists waiting to cross the street and provide cyclists with a head start as they cross the street.



# Proposed Bicycle Network





BIKEWAY	STREET NAME	FROM	TO	PROPOSAL	STATUS	DISTANCE (mi)	
						CCT PROJECT <sup>1</sup>	TOTAL
NORTHWAY	Belward Campus Road	Muddy Branch Road	Johns Hopkins Drive	One-Way, both sides of street	County will pursue with JHU development	0.9	0.9
	Belward Campus Road	Johns Hopkins Drive	Great Seneca Highway	One-Way, both sides of street			0.5
	Decoverly Drive	Great Seneca Highway	Diamondback Drive	One-Way, both sides of street			0.6
	Decoverly Drive	Diamondback Drive	City of Gaithersburg	One-Way, both sides of street	NB lane reflected in CCT 30% plans	0.2	0.3
SOUTHWAY	Blackwell Road	Darnestown Road	Medical Center Drive Extended	One-Way, both sides of street			0.4
	Blackwell Road	Medical Center Drive Extended	Great Seneca Highway	One-Way, both sides of street			0.4
	Blackwell Road	Great Seneca Highway	Broschart Road	One-Way, both sides of street			0.6
	Blackwell Road	Broschart Road	Medical Center Drive	One-Way, both sides of street			0.5
	Blackwell Road	Medical Center Drive	Shady Grove Road	One-Way, both sides of street			0.4
MIDWAY	Broschart Road	Medical Center Drive	Blackwell Road	One-Way, both sides of street			0.5
	Broschart Road	Blackwell Road	Key West Avenue	One-Way, both sides of street			0.5
	Diamondback Drive	Key West Avenue	Decoverly Drive	One-Way, both sides of street	SB lane reflected in CCT 30% plans	0.2	0.3
	Diamondback Drive	Decoverly Drive	City of Gaithersburg	One-Way, both sides of street			1.1
LOWER LOOP	Johns Hopkins Drive	Belward Campus Drive	Key West Avenue	One-Way, both sides of street	SB lane reflected in CCT 30% plans	0.2	0.4
	Medical Center Drive Extended	Key West Avenue	Great Seneca Highway	One-Way, both sides of street	County will pursue with PSTA redevelopment	0.8	0.8
	Medical Center Drive	Great Seneca Highway	Broschart Road	One-Way, both sides of street	EB lane reflected in CCT 30% plans	0.2	0.4
	Medical Center Drive	Broschart Road	Blackwell Road	One-Way, both sides of street			0.3
	Medical Center Drive	Blackwell Road	Key West Avenue	One-Way, both sides of street			1.4
	Omega Drive	Key West Avenue	City of Gaithersburg	One-Way, both sides of street			0.6
MUDDY BRANCH ROAD	Muddy Branch Road	Darnestown Road	Great Seneca Highway	Two-Way, east side of street	Space provided in CCT 30% plans	1.1	1.1
TOTAL						3.6	12.0

<sup>1</sup> This column reflects those segments of the proposed 12 lane-mile network that have been agreed to as part of the Corridor Cities Transitway.



Woodglen Drive, White Flint



1st Street NE, Washington, DC



Hornby Street, Vancouver



Calgary, Alberta

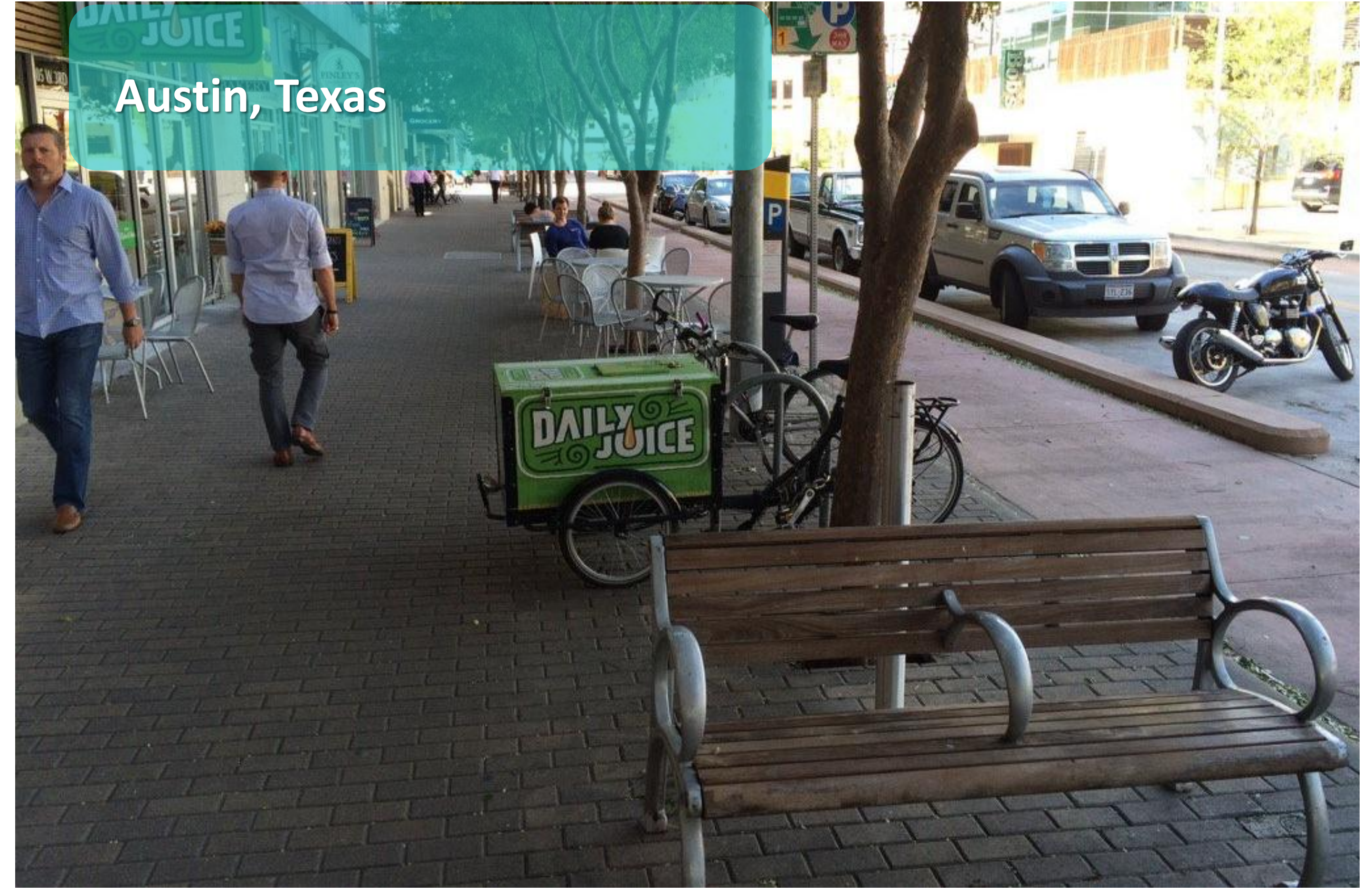


Source: City of Calgary  
Bike Program

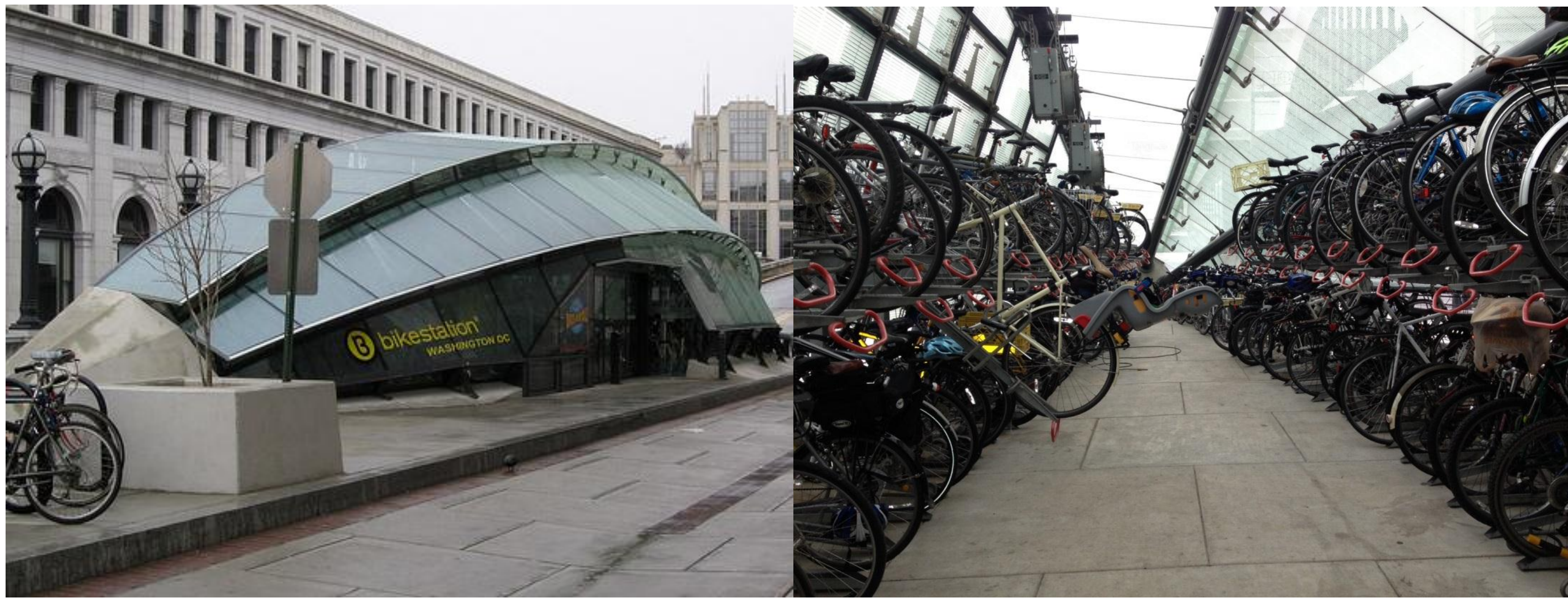
Boulder, Colorado



Austin, Texas





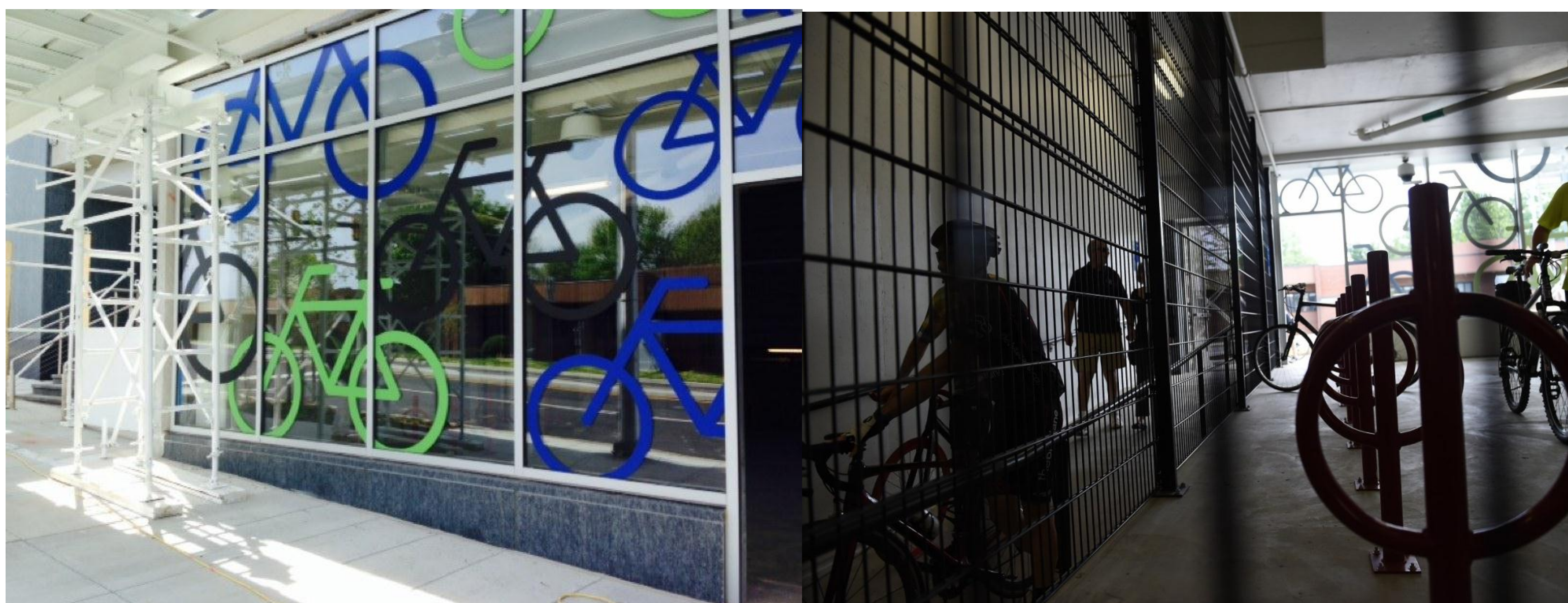


**Union Station  
District of Columbia**

HOLDS 100 BIKES

**Kramer Station  
Austin, Texas**

HOLDS 24 BIKES

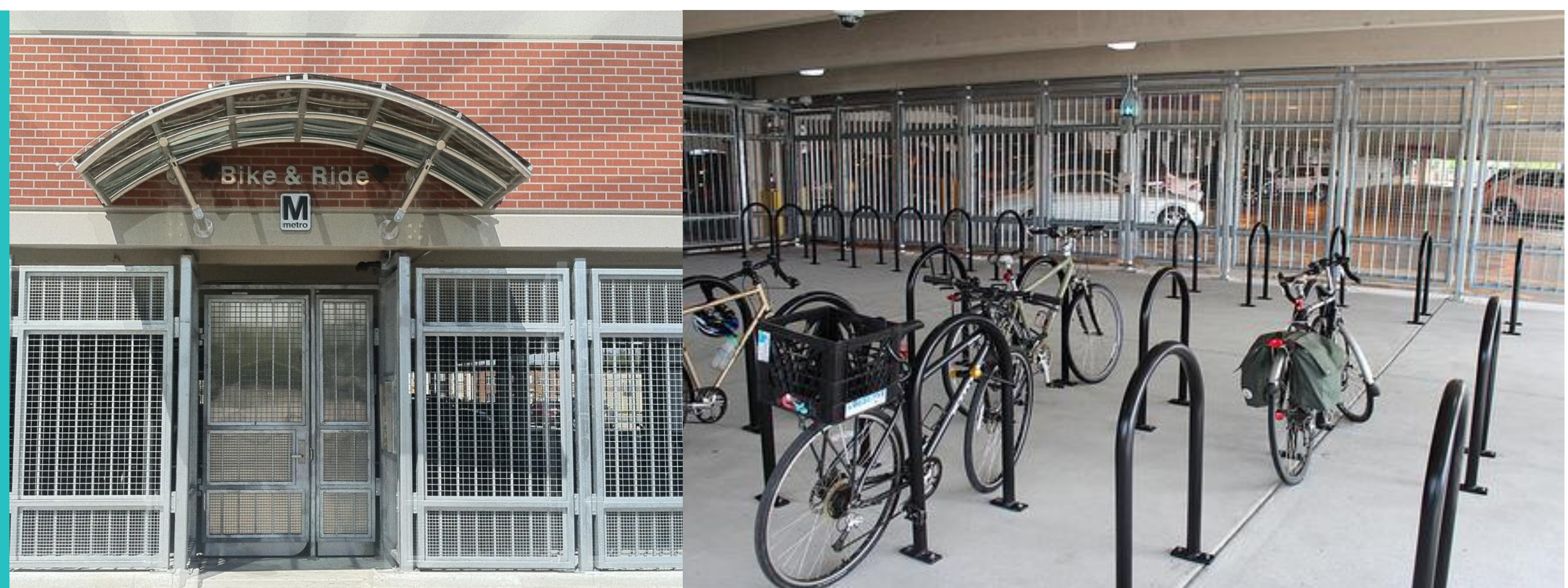


**Wiehle Reston  
East Metro Station  
Fairfax County,  
Virginia**

HOLDS 200+ BIKES

**College Park Metro  
Station  
Prince George's  
County, Maryland**

HOLDS 150+ BIKES



**Berkeley BART  
Station  
Berkeley, California**

HOLDS 268 BIKES



The 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. 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.

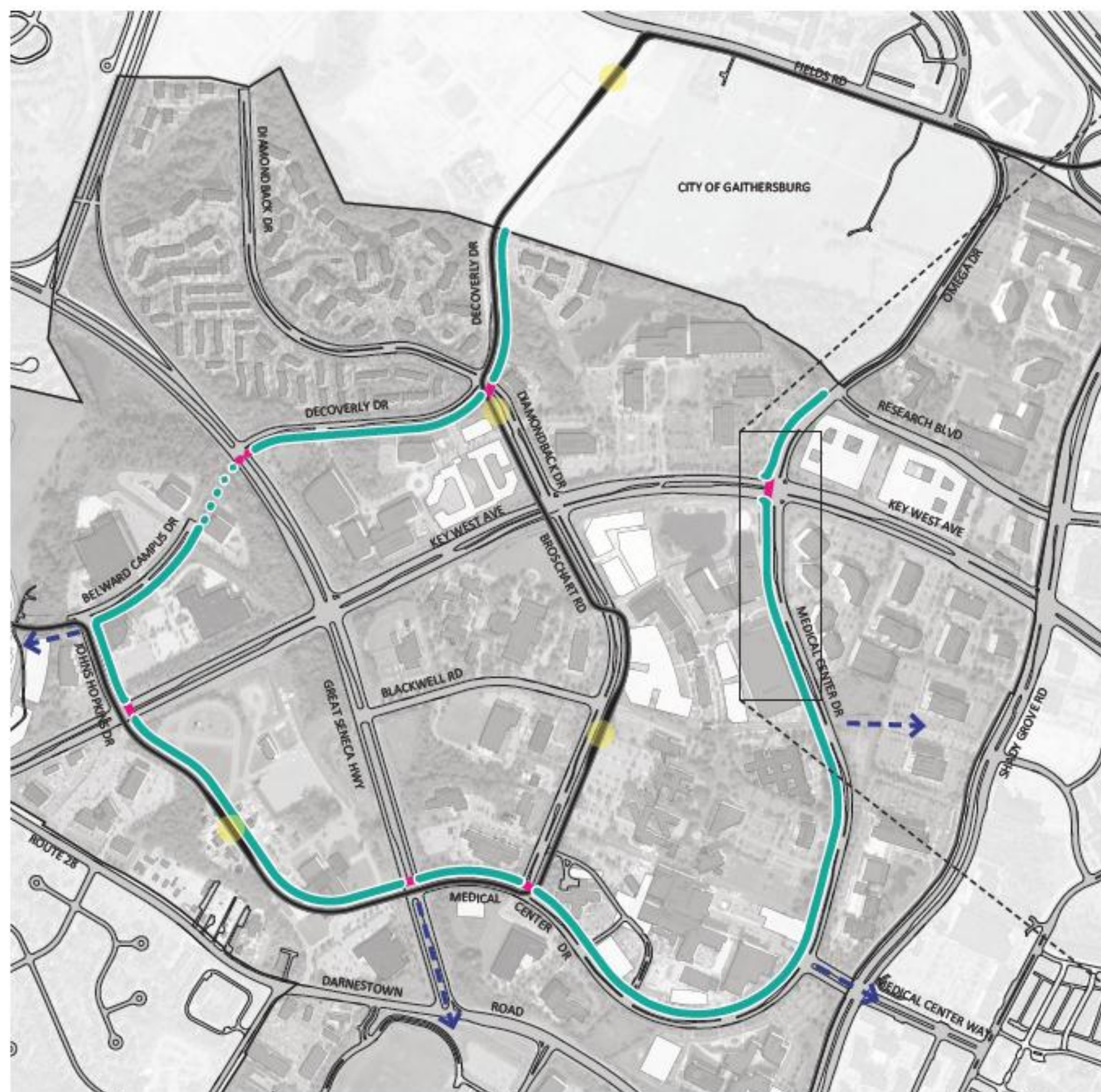
## OVERALL PLAN

- 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.

### LEGEND

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

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Typical Plan Enlargement

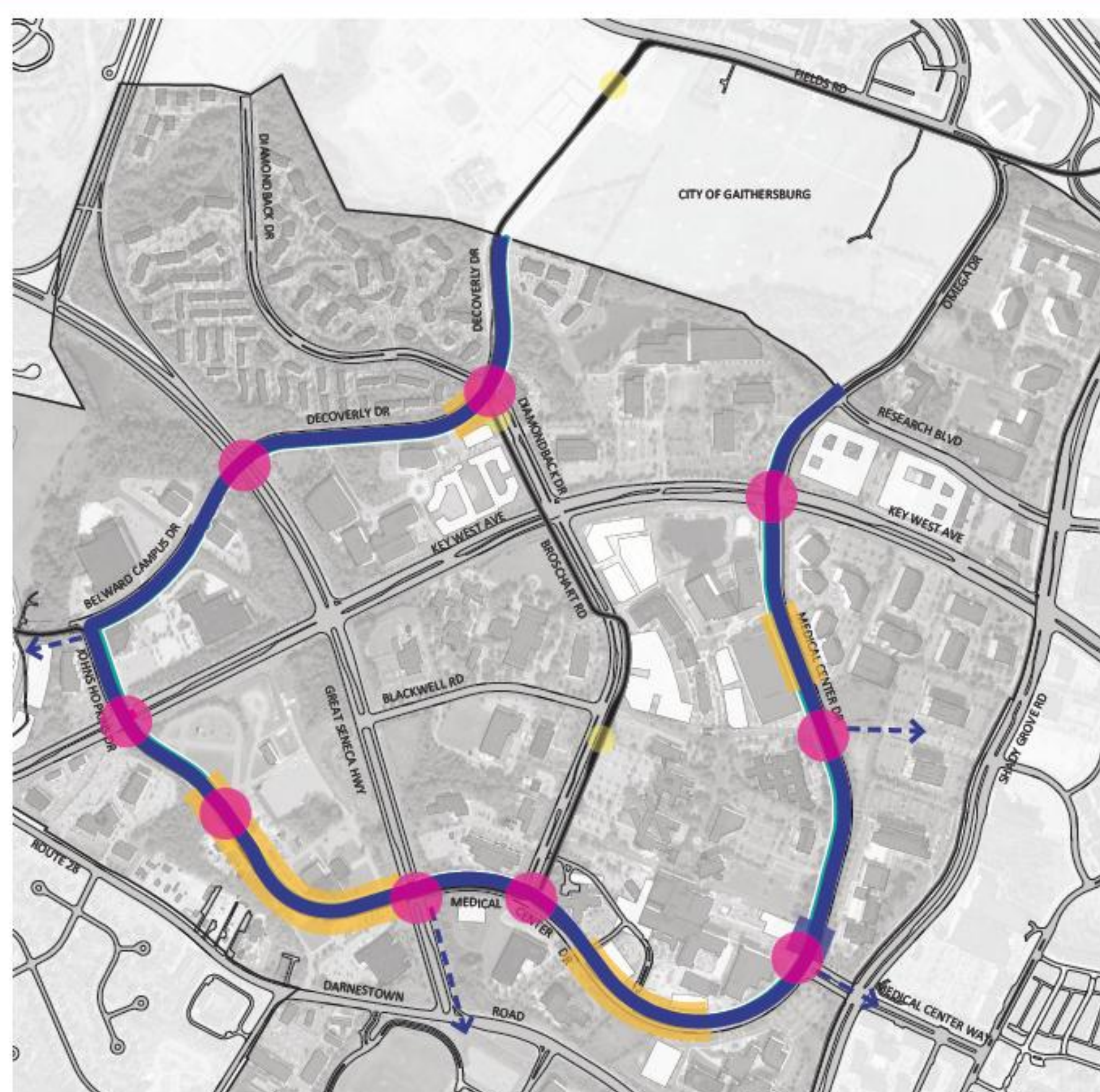
## AMENITIES & ENHANCEMENTS PLAN

- 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/Activity Areas
- Gateways
- Recommended Trail Spurs
- Future CCT

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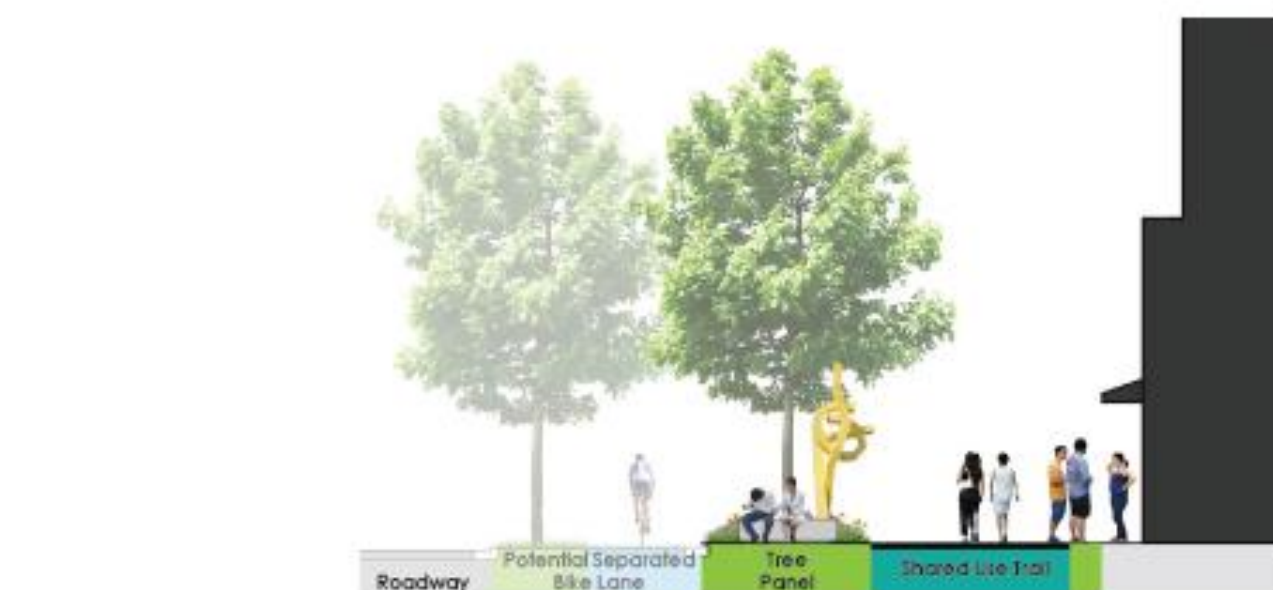


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### URBAN/ACTIVITY AREAS

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



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

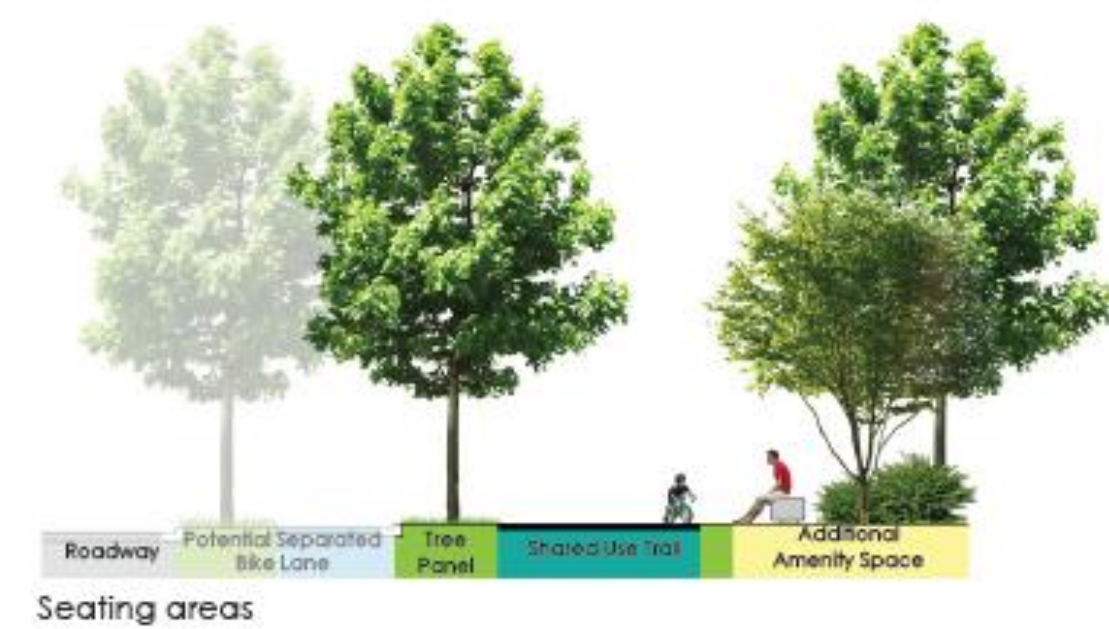


Key Plan

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### OPEN SPACE/NATURAL AREAS

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



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



Precedent Images



Key Plan

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### GATEWAYS

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

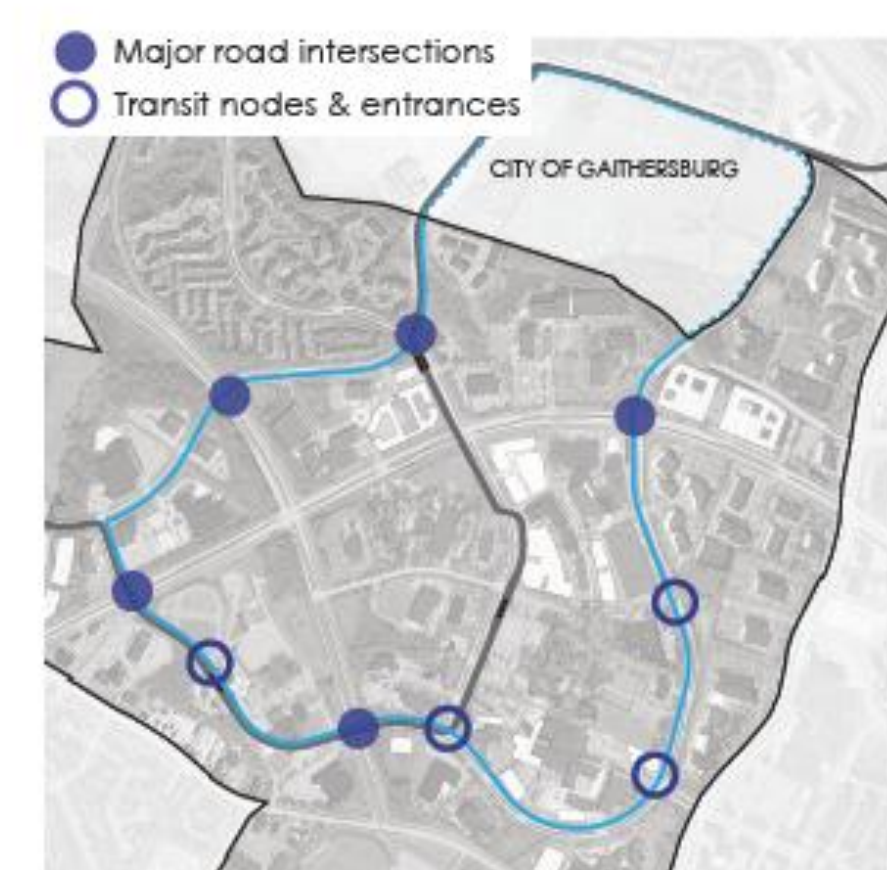


Note: Trail cross section may differ from conditions shown above.

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Precedent Images



Key Plan

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## PAVING



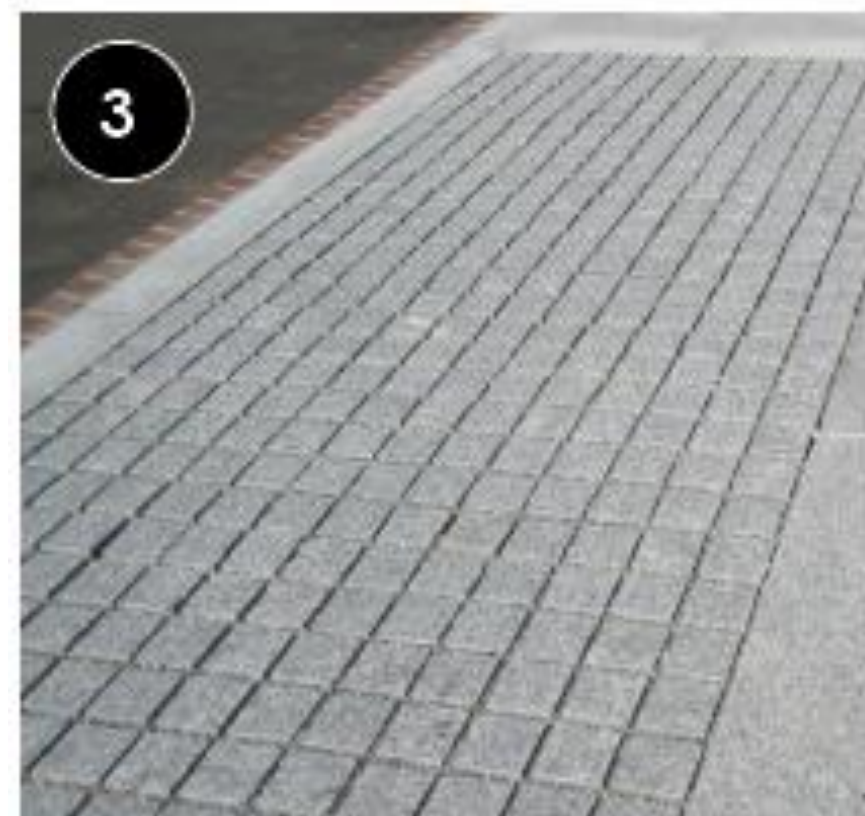
Paver edging with asphalt path



Concrete edging with concrete path



Unit pavers



Permeable pavers

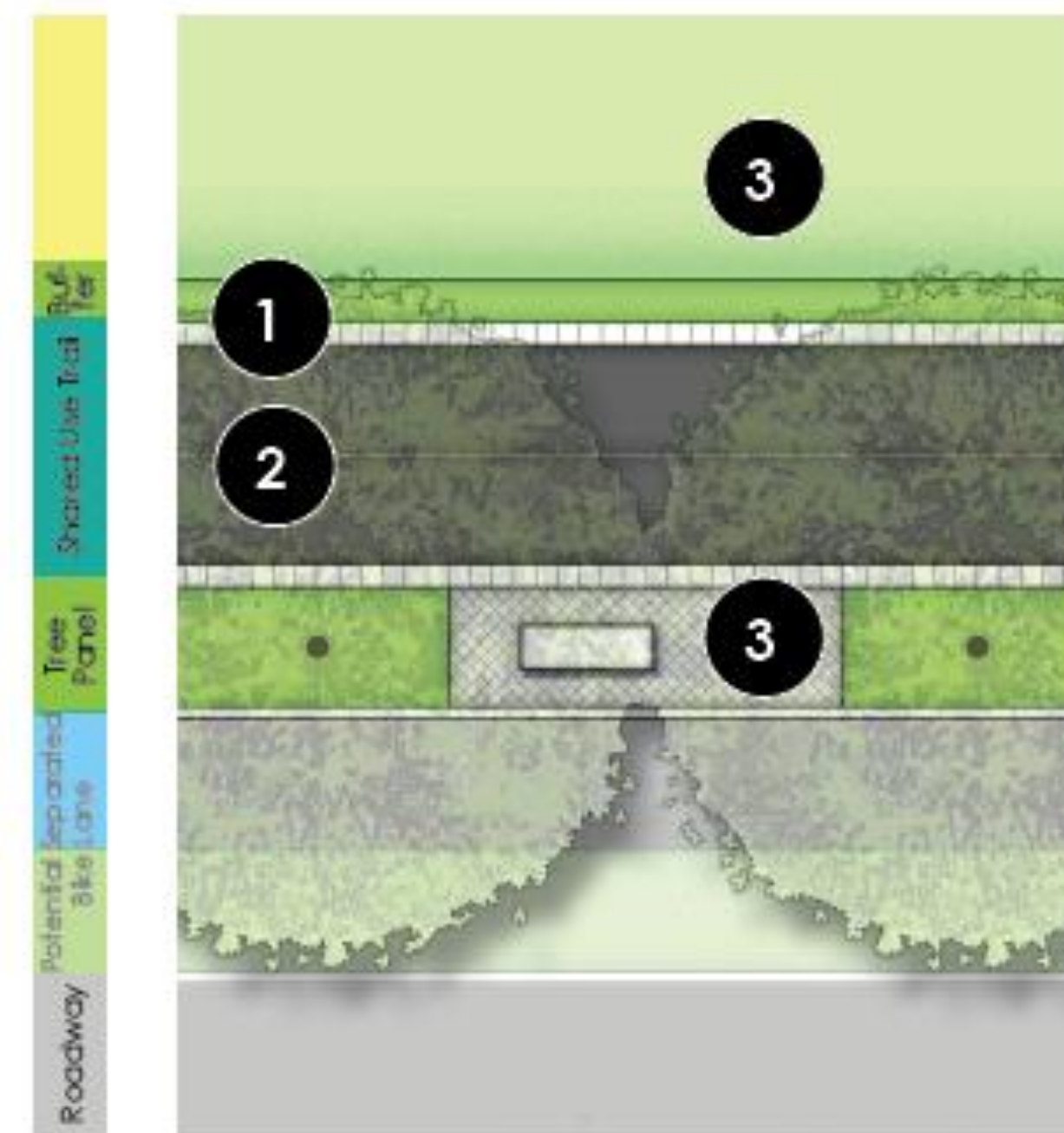


Flexible Porous Paving



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

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## PLANTINGS



Continuous line of street trees



Mown turf



Tall grasses and colorful perennials



Clustered shade trees at seating/gathering areas

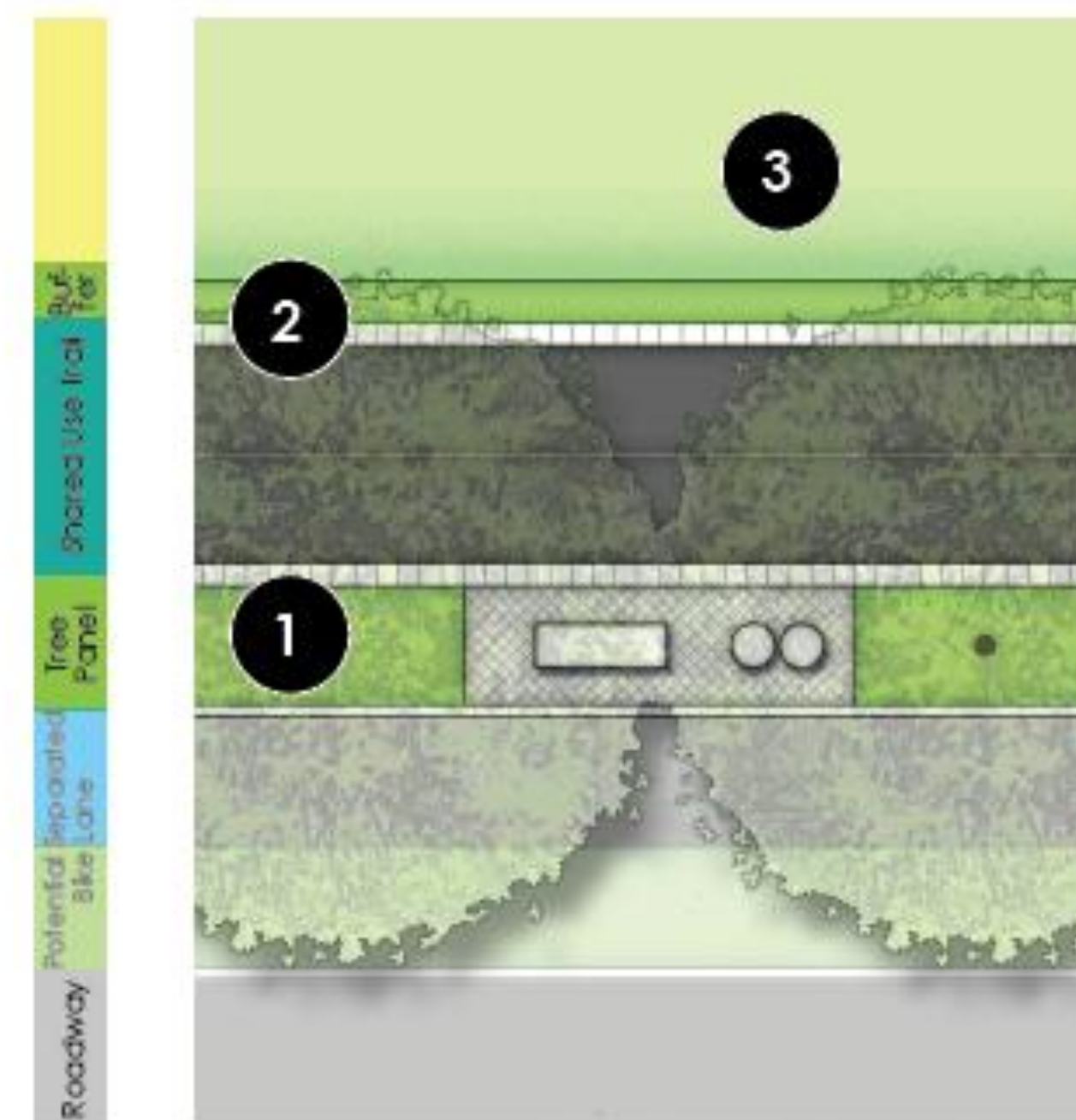


Layered shrubs, perennials, and trees



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

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## 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

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## SIGNAGE, WAYFINDING, & BRANDING



Wayfinding signage to clearly identify trail route and brand identity



Branding or wayfinding on trail surface



- 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.



Painted or embedded mile markers



Distinctive signage system  
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Signage to identify separate facilities



Mounted banners

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## LOW-IMPACT DEVELOPMENT OPPORTUNITIES



Shade trees



Permeable pavers and flexible porous paving



Planted bioretention areas

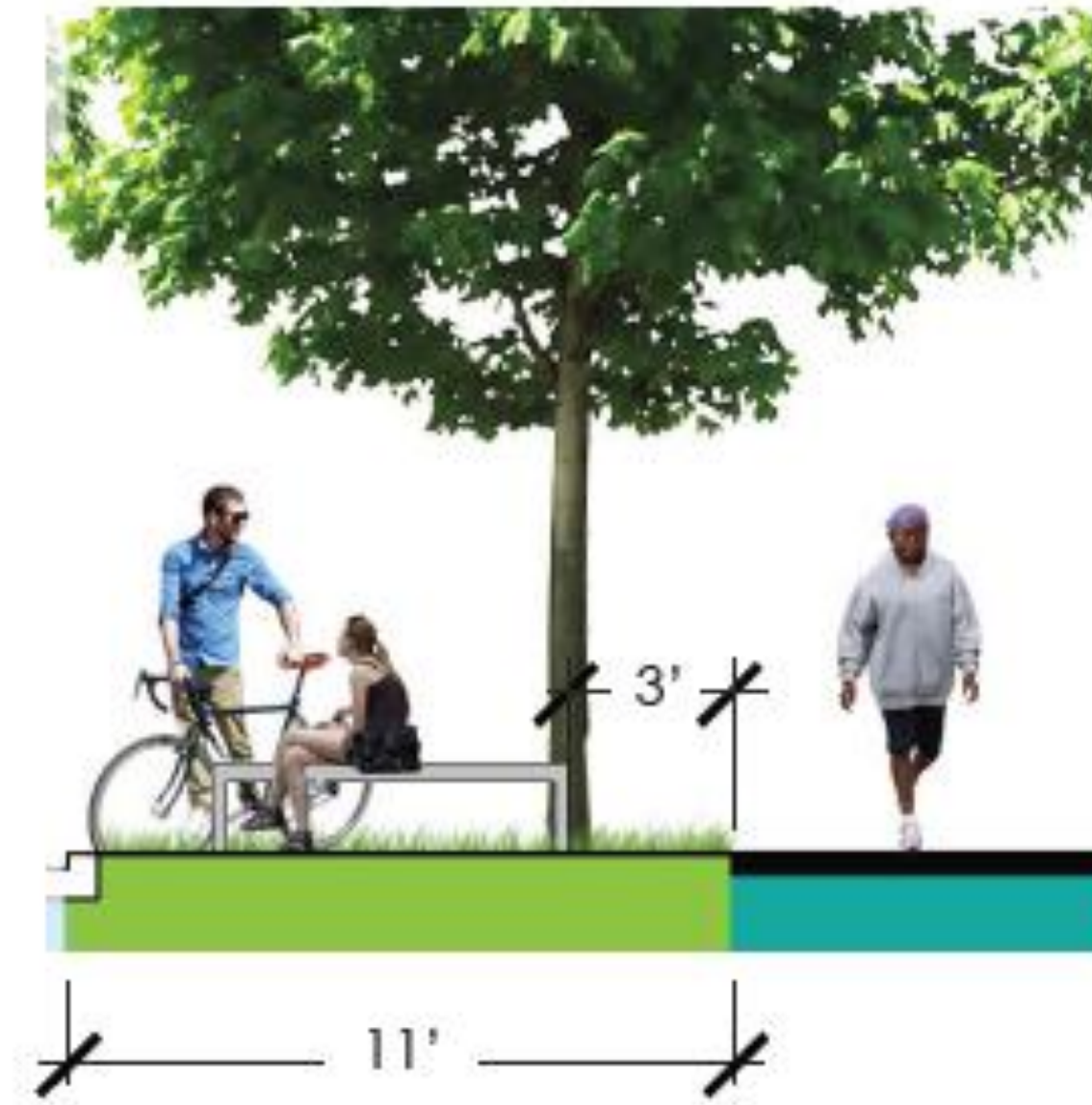


Bioretention in tree boxes

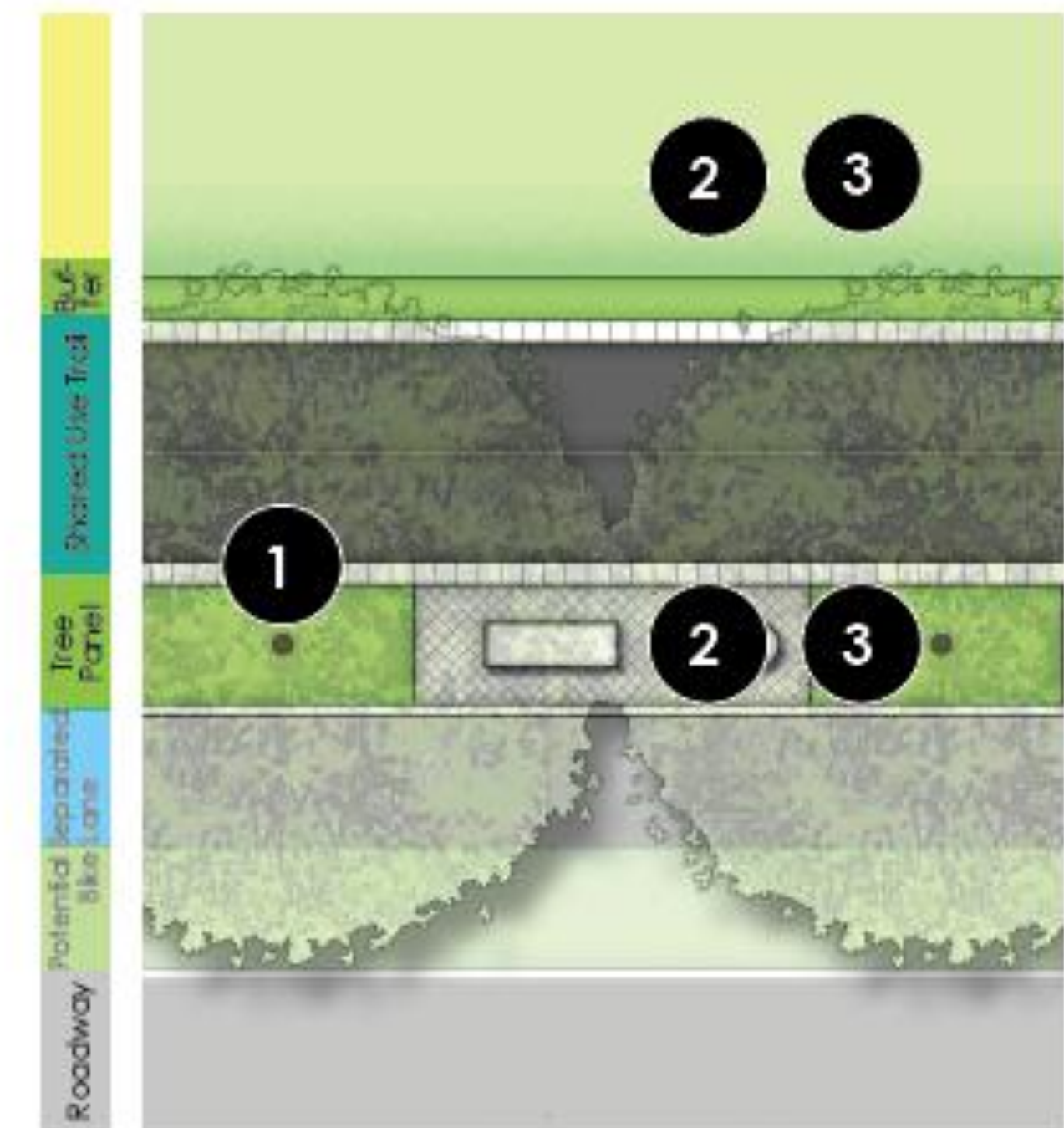


Planted bioretention areas

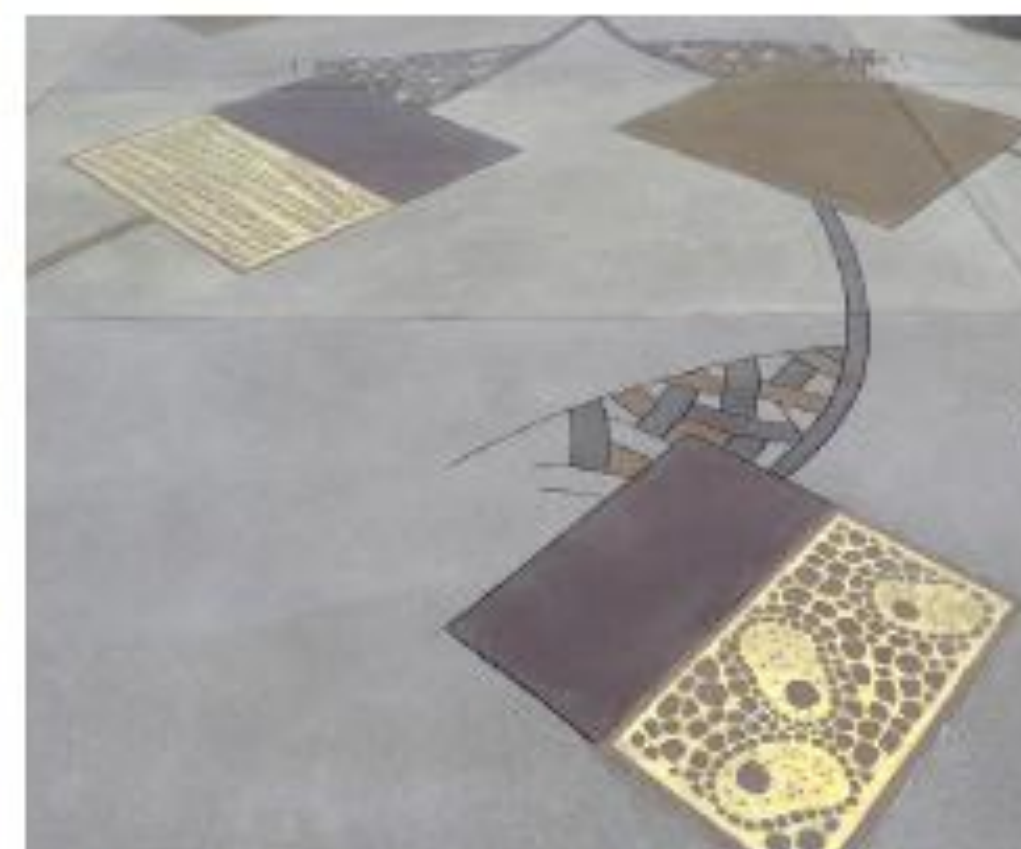
- 1 Preserve existing trees as possible and plant a continuous line of shade trees along trail.
  - 2 Permeable pavers flexible porous paving should be used in amenity areas along the trail.
  - 3 Bioretention may be incorporated in planting areas along the trail, including tree boxes, planting strips,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

- 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.



Sculptural pieces as focal points



Art integrated into walls and other vertical elements



Interactive light or water elements



### LEGEND

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



# Which pictures appeal to you?

Use the dots to mark your selection (Please space out dots)

## LOW-IMPACT DEVELOPMENT OPPORTUNITIES



Shade trees



Permeable pavers and flexible porous paving



Bioretention in tree boxes



Planted bioretention areas



## LOW-IMPACT DEVELOPMENT OPPORTUNITIES



Shade trees



Permeable pavers and flexible porous paving



Bioretention in tree boxes



Planted bioretention areas



## 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



Patterns or words embedded in paving



Sculptural pieces as focal points



Art integrated into walls and other vertical elements



Interactive light or water elements



### LEGEND

- UA Urban/Activity Areas
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### LEGEND

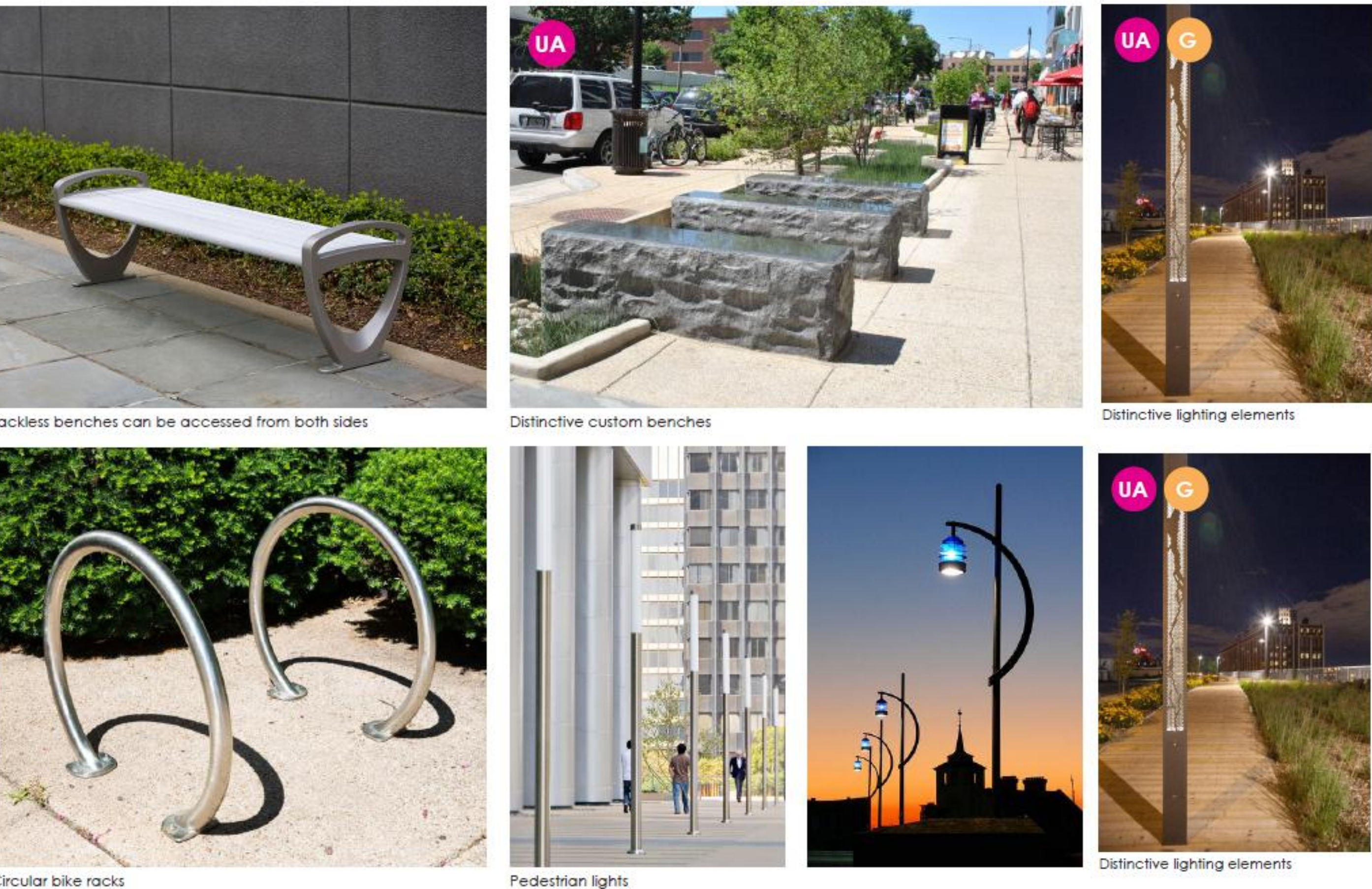
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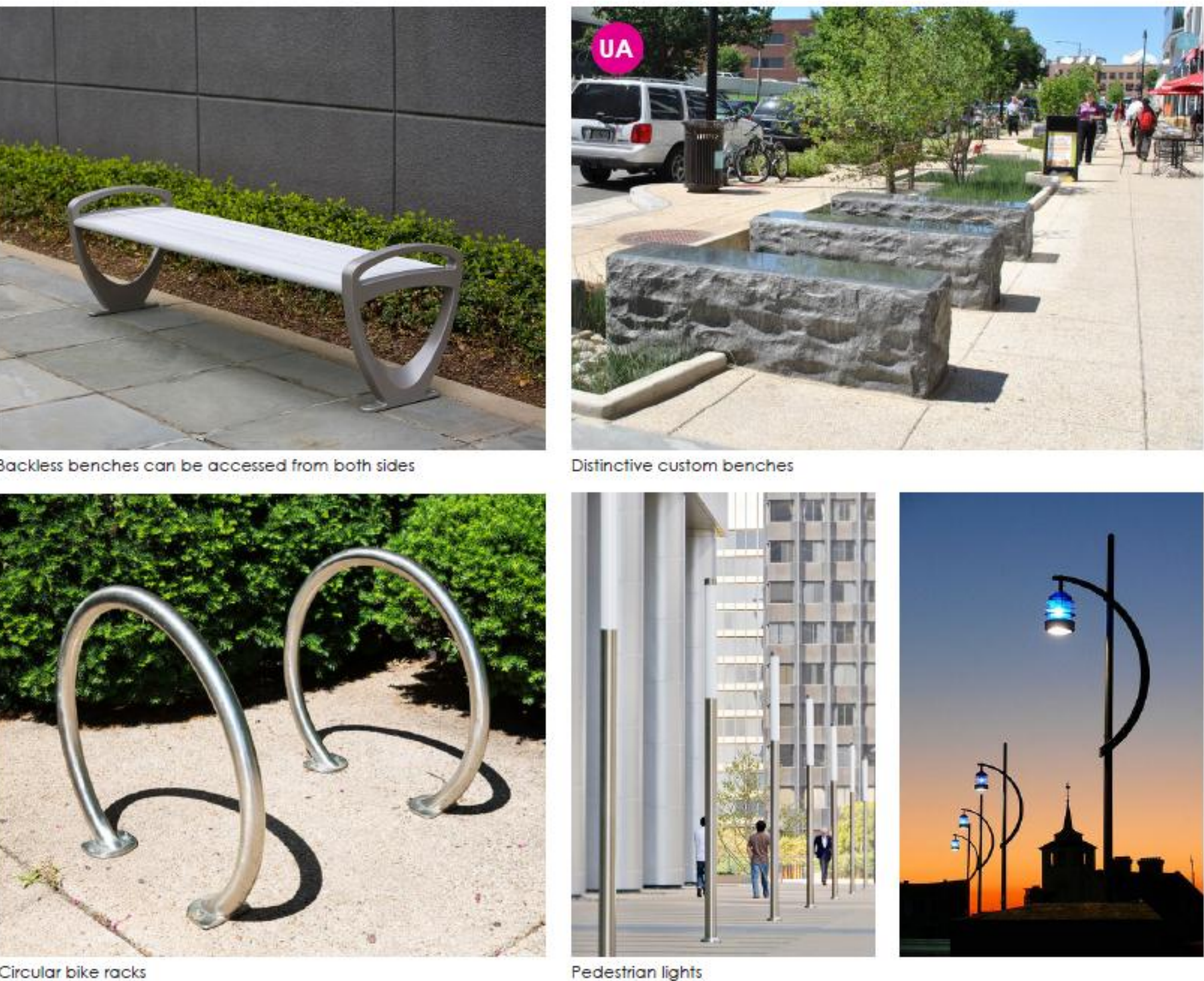
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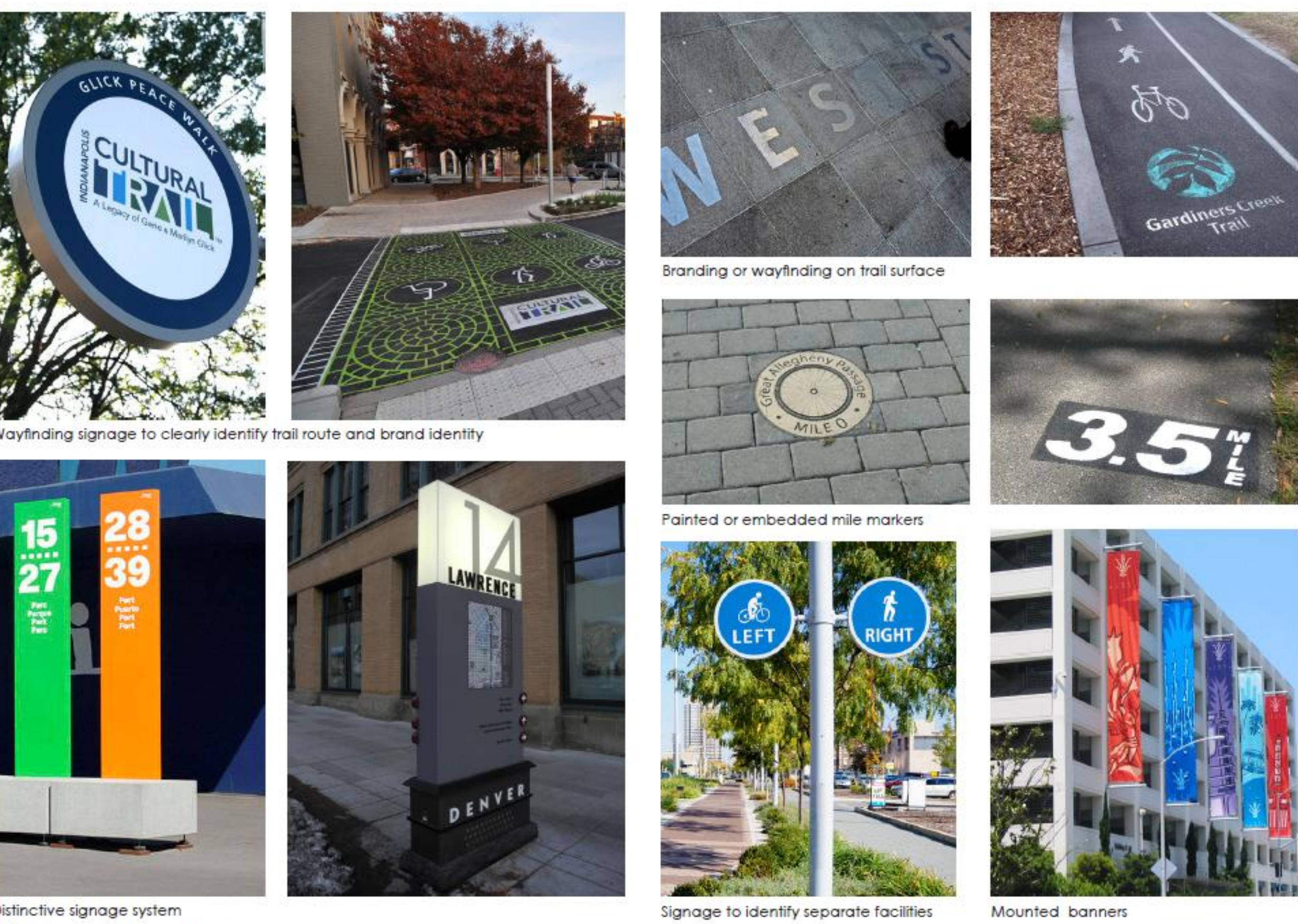
## FURNISHINGS AND LIGHTING



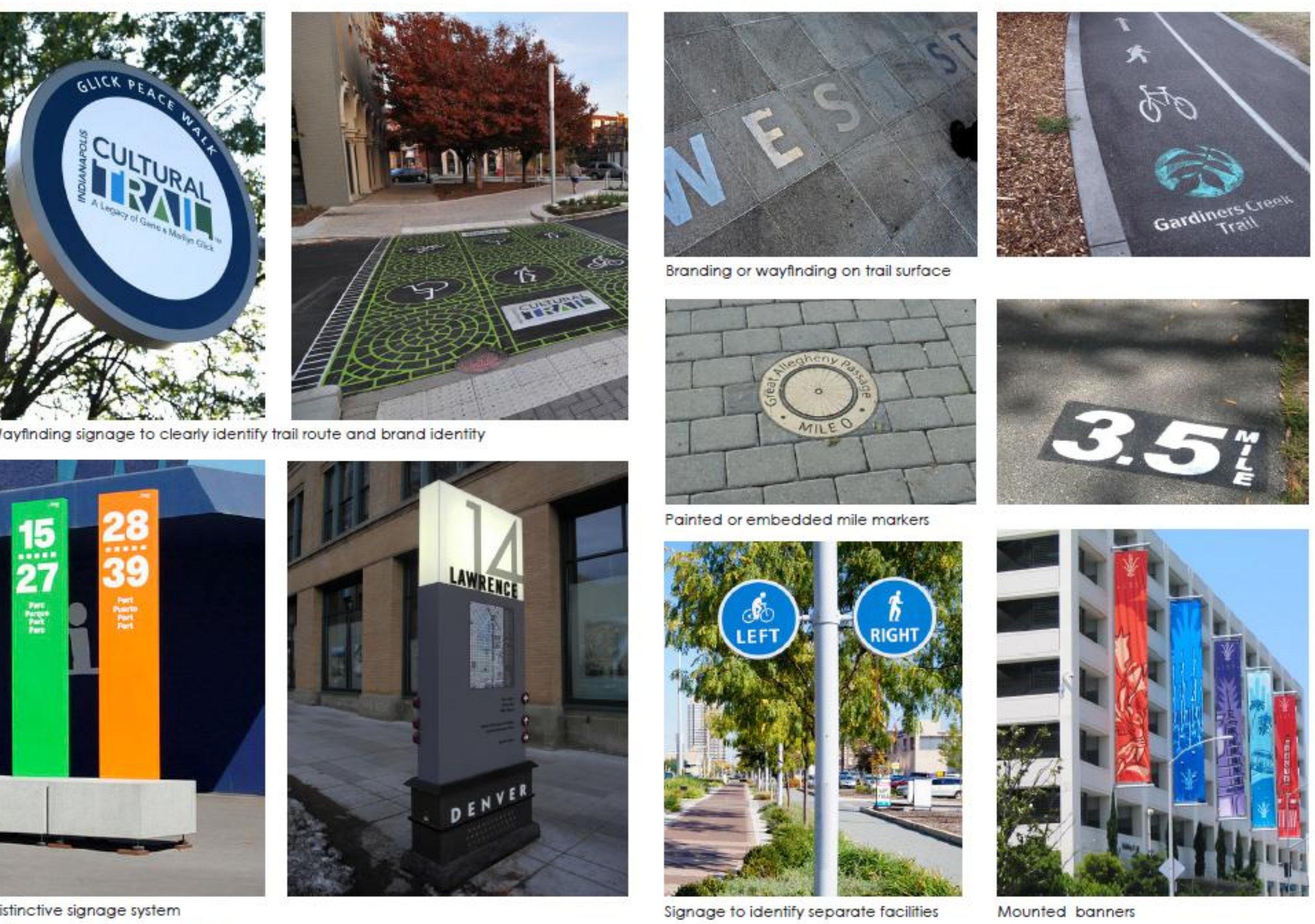
## FURNISHINGS AND LIGHTING



## SIGNAGE, WAYFINDING, & BRANDING



## SIGNAGE, WAYFINDING, & BRANDING

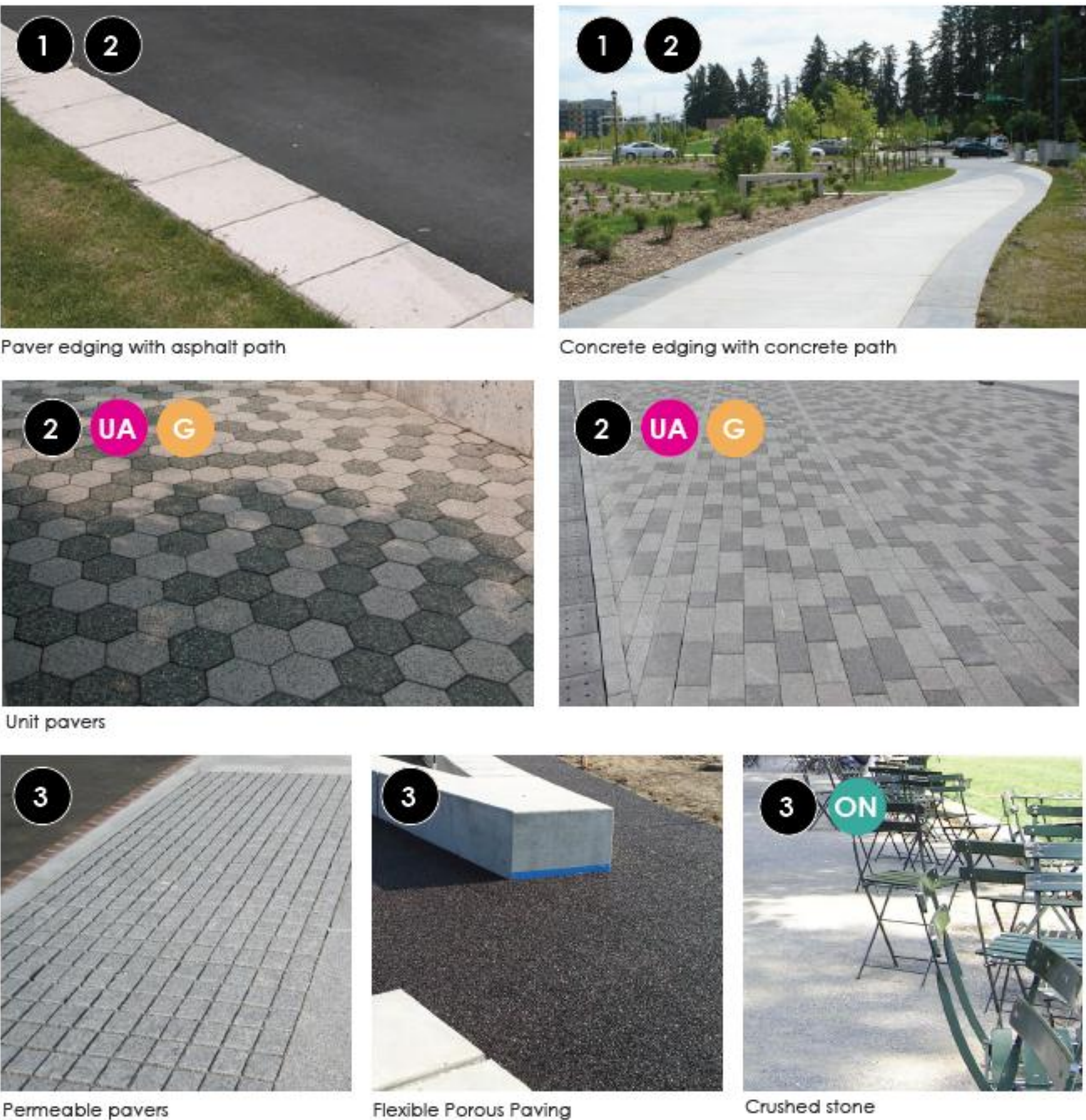




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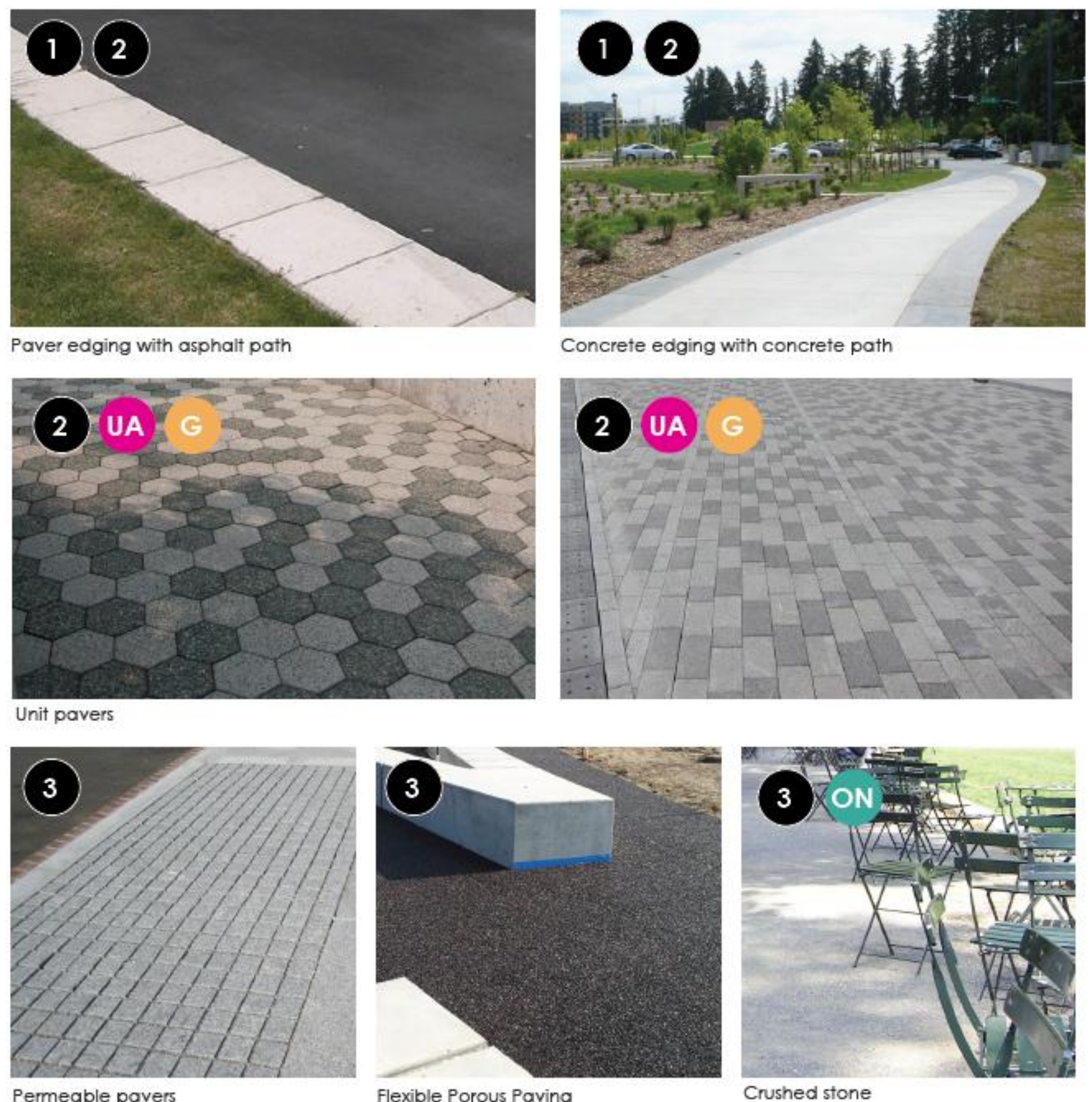
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## PAVING



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

## PAVING



LEGEND  
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G Gateways

## PLANTINGS



LEGEND  
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