

# APPENDIX F

**SHORT-TERM BICYCLE PARKING SUPPLY ANALYSIS**



## INTRODUCTION

Availability of secure and convenient bicycle parking is an important factor in determining whether a person chooses to make a trip by bicycle. No matter how well connected the bikeway network, many people will forgo bicycling if there are not safe places to secure their bicycles near to their destinations. An adequate supply of bicycle parking encourages bicycling while reducing theft and improper use of trees and street furniture for bicycle parking.

As with most jurisdictions, Montgomery County requires bicycle parking for short-term and long-term use. Short-term bicycle parking is intended to provide quick access to destinations, such as shops, offices and civic facilities and, therefore, should be convenient and easy to use. It is typically located in highly visible locations, in front of building entrances and along streets and bikeways, and is available for public use. A common form of short-term bicycle parking is an inverted-u rack.



*An inverted-u rack on Ripley Street in Downtown Silver Spring*

Long-term bicycle parking is intended to provide sheltered and secure bicycle storage for residents, employees and long-term visitors who leave their bicycles in a residential or a commercial building for several hours or longer and, therefore, need their bicycles to be protected from vandalism, theft and the elements. A common form of long-term bicycle parking is a bicycle cage or a bicycle room in a commercial or multi-family residential building.



*Short-term bicycle parking on Executive Dr. in White Flint*

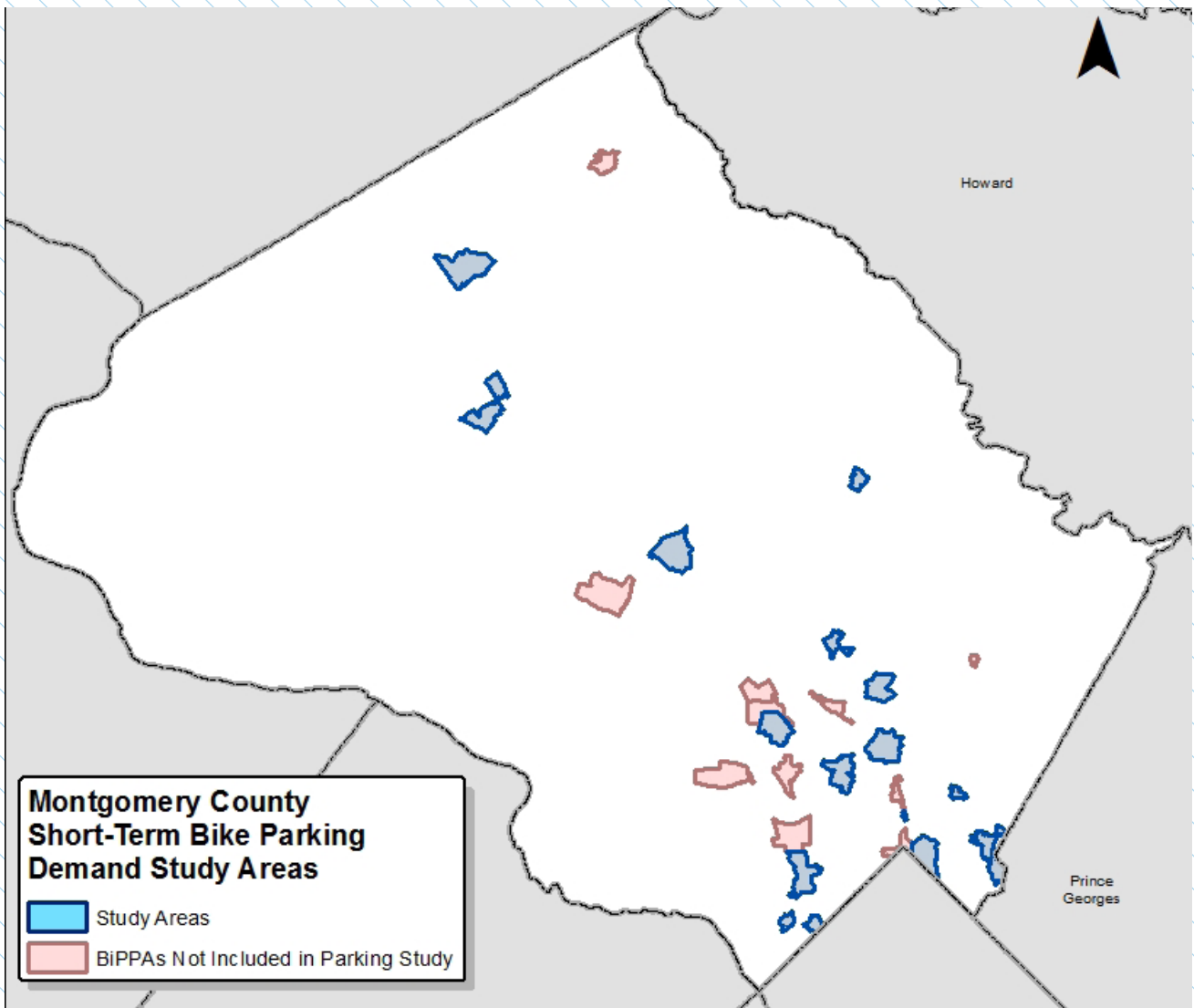
This report estimates the deficit of short-term bicycle parking within 19 of the 30 Bicycle Pedestrian Priority Areas (BiPPA)<sup>1</sup>, including:

- Aspen Hill
- Bethesda Central Business District (CBD)
- Clarksburg Town Center
- Cloverleaf
- Flower-Piney Branch-Arliss
- Four Corners
- Friendship Heights CBD

<sup>1</sup> Bicycle and Pedestrian Priority Areas are defined geographical areas in Montgomery County, where the enhancement of pedestrian and bicyclist traffic and safety is a priority. The objective of the BiPPA program is to improve safe bicyclist and pedestrian access to support cohesive neighborhoods and vibrant communities. Thirty BiPPAs have been identified in the county.

- Germantown Town Center
- Glenmont
- Kensington
- Montgomery Hills
- Olney Town Center
- Piney Branch-University
- Shady Grove
- Silver Spring CBD
- Takoma/Langley Crossroads
- Westbard
- Wheaton CBD
- White Flint

BiPPA boundaries were chosen because they define areas in which the enhancement of the bicycle (and pedestrian) network is a priority. The 19 BiPPA areas that were selected for this study include many of the County’s commercial centers (Bethesda CBD, Silver Spring CBD) and areas that have recently undergone, or are currently experiencing, an updated area master plan.



*An evaluation of short-term bicycle parking was conducted in the BiPPAs shown in blue*

## 2.1 EXISTING SUPPLY OF SHORT-TERM BICYCLE PARKING

Data on the existing supply of short-term bicycle parking in Montgomery County was collected via a crowdsourcing application developed and maintained by Arlington County located at [www.rackspotter.com](http://www.rackspotter.com). Using this application, Planning Department staff and volunteers identified more than 1,000 bicycle racks throughout the county and provided a street address, a photo, parking capacity, rack type and a brief description of each rack including its surroundings. This data was then downloaded into Excel and transferred into ArcMap for analysis.

The Rackspotter data required a substantial amount of cleaning to ensure a consistent approach to identifying the location of each rack and removing duplicate bike racks so the count was accurate. Each bicycle rack was associated with a block address and designated as being located on the even or odd side of the road. For example, bicycle racks at the Montgomery County Planning Department were assigned to the 8700 block of Georgia Avenue on the odd side of the street.

## 2.2 TARGET SUPPLY FOR SHORT-TERM BICYCLE PARKING

A target supply for short-term bicycle parking was calculated for each parcel in the 19 BiPPAs using the short-term bicycle parking requirements found in the Montgomery County Zoning Ordinance<sup>2</sup>. The ordinance includes different multipliers of bicycle parking per square foot of development for each land use category, including office, retail, institutional, government, cultural and multi-family residential. For example, one bicycle parking space is required for every 10,000 square

of retail space, with 85 percent of spaces for short-term bicycle parking and 15 percent of spaces for long-term bicycle parking. Therefore, a block with 200,000 square feet of retail spaces would require 20 bicycle parking spaces, with 17 short-term spaces and 3 long-term spaces.

The target supply for all parcels was summed for each side of a block to determine the target supply for that block face. As some buildings have entrances on more than one side of a block, the target for those buildings was split between each side of the block. As with existing supply, target supply of bicycle parking was associated with a block address and categorized according to the odd or even sides of the street.

## 2.3 DEFICIT OF SHORT-TERM BICYCLE PARKING

Development standards have not always required short-term bicycle parking, and have not required them at the current standard rates. As a result, there is a deficit of short-term bicycle parking in most areas of Montgomery County.

A comparison of existing supply and target supply was conducted for each block face. For those block faces where existing supply met or exceeded target supply, it was determined that there was a sufficient supply of short-term bicycle parking. For those block faces where target supply exceeded existing supply, the deficit of short-term bicycle parking was identified.

<sup>2</sup> See Section 6.2.4.C of the zoning code.

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## BICYCLE PEDESTRIAN PRIORITY AREA ANALYSES

This section of the report profiles the short-term bicycle parking conditions for 19 BiPPAs.

### 3.1 ASPEN HILL

The Aspen Hill Bicycle Pedestrian Priority Area (BiPPA) is centered on the commercial area at the intersections of Georgia Avenue, Connecticut Avenue, and Aspen Hill Road. The predominant land use inside the BiPPA is retail, with a traditional, suburban auto-oriented design. The surrounding area is dominated by single-family residential neighborhoods to the west and south, and a large cemetery to the east.

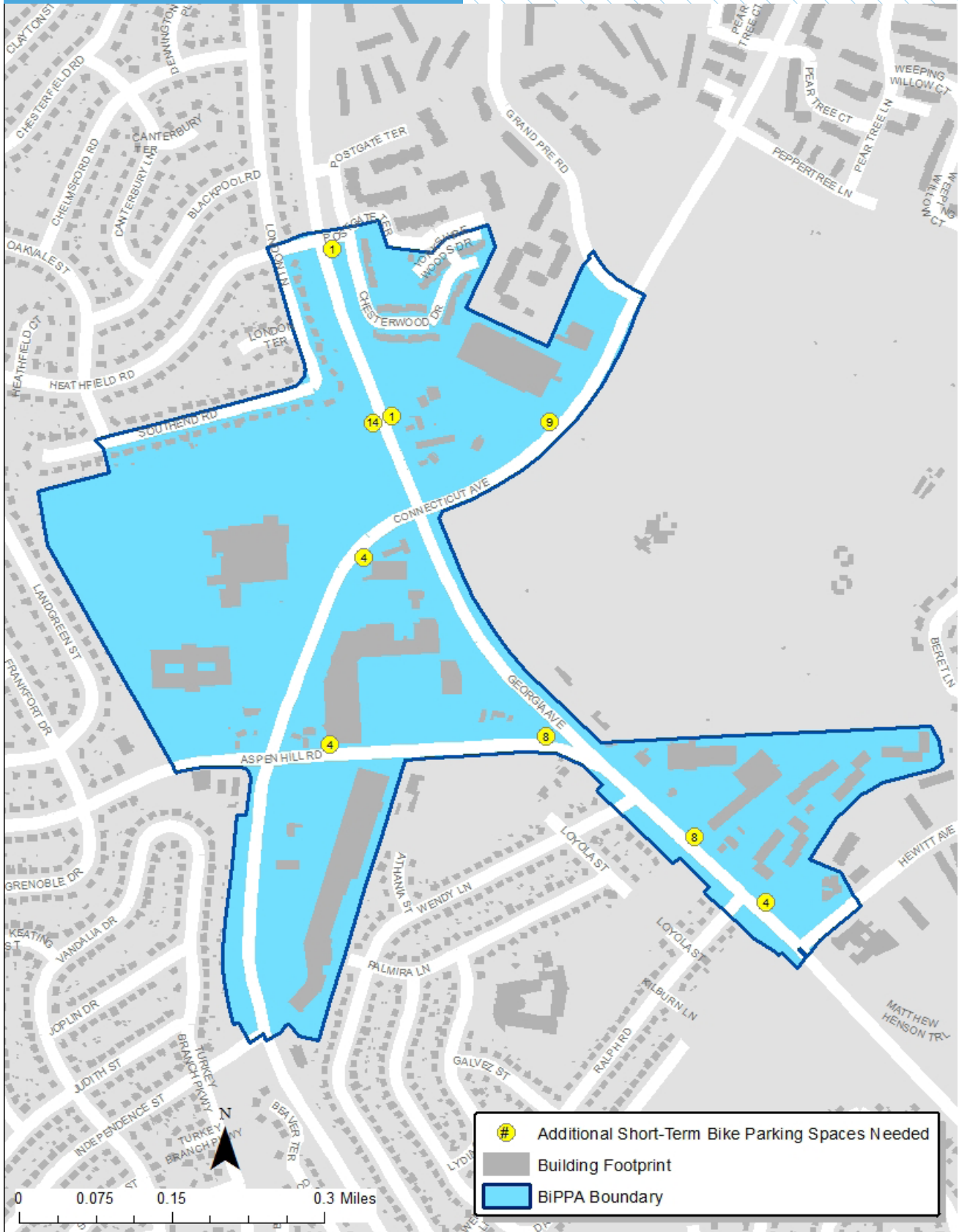
- 9 blocks (or 82 percent) have insufficient short-term bicycle parking.
- 8 blocks (or 73 percent) have no short-term bicycle parking.

Overall, there is a deficit of 53 short-term bicycle parking spaces in the Aspen Hill BiPPA.



*“Wheel-bender” bicycles rack, such as this in Aspen Hill, are substandard*

# ASPEN HILL



## 3.2 BETHESDA CENTRAL BUSINESS DISTRICT (CBD)

The Bethesda CBD BiPPA encompasses one of the largest, densest urban centers in Montgomery County and is home to thousands of residences and jobs. It is also an entertainment destination with numerous restaurants, bars, shops and galleries on its walkable streets. Centered on the intersection of Wisconsin Avenue, Old Georgetown Road and East West Highway, the Bethesda BiPPA also includes the Capital Crescent Trail and a Metrorail station, and will be the western terminus of the future Purple Line.

Of the 179 blocks in the Bethesda CBD BiPPA where there is a need for short-term bicycle parking:

- 147 blocks (or 82 percent) have insufficient short-term bicycle parking.
- 133 blocks (or 74 percent) have no short-term bicycle parking.

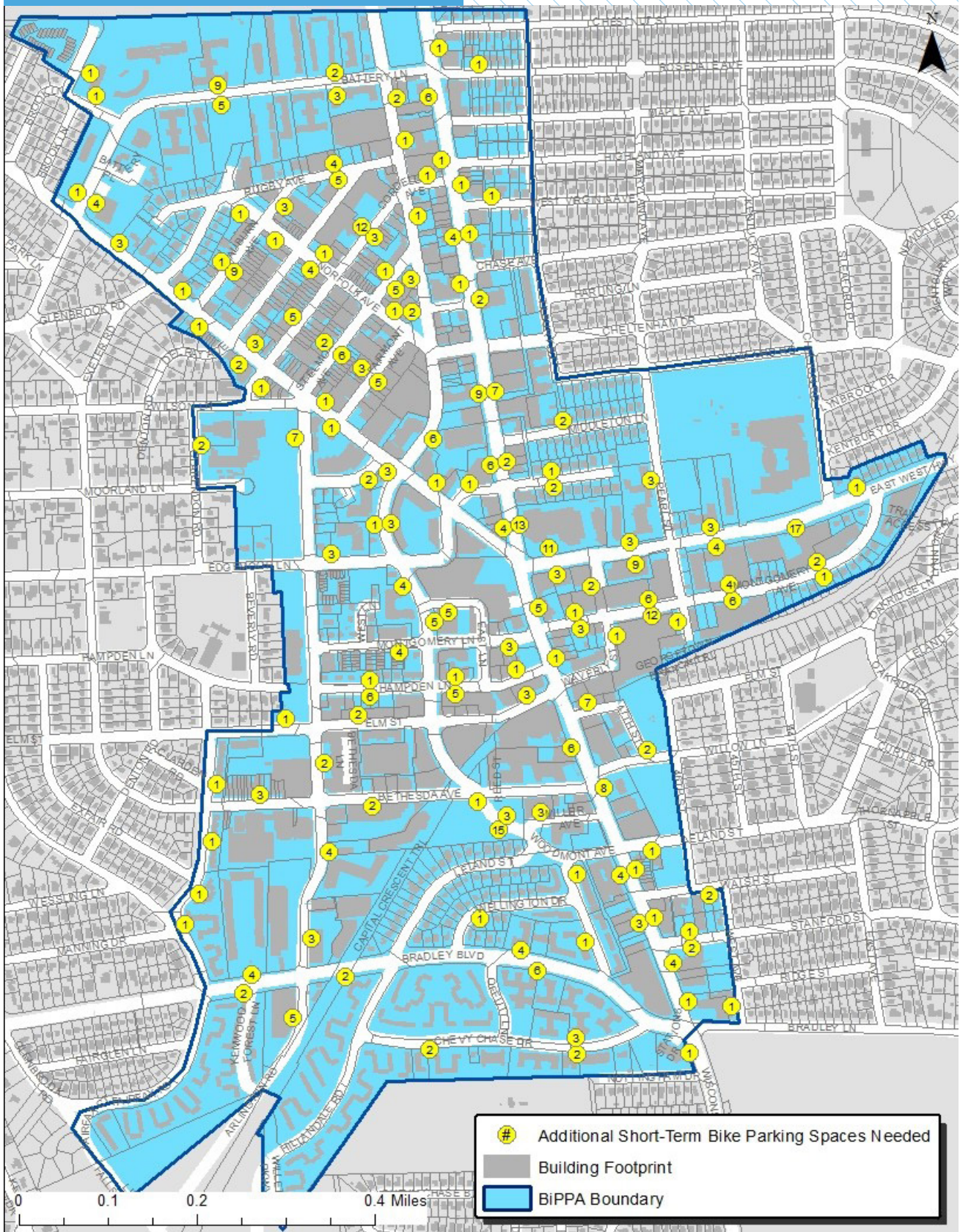
Overall, there is a deficit of 475 short-term bicycle parking spaces in the Bethesda CBD BiPPA.



*Bicycle parking on Woodmont Avenue adjacent to the Bethesda Row Shopping Area*



# BETHESDA CBD



### 3.3 CLARKSBURG TOWN CENTER

The Clarksburg Town Center BiPPA largely consists of an elementary school and single-family and multi-family residential developments. Outside of the school, there is very little demand for short-term bicycle parking in this area. This may change, however, as the Corridor Cities Transitway plan is implemented. The terminal station of the CCT will be located just to the south at the COMSAT site which is slated for redevelopment.

Of the 2 blocks in the Clarksburg Town Center BiPPA where there is a need for short-term bicycle parking:

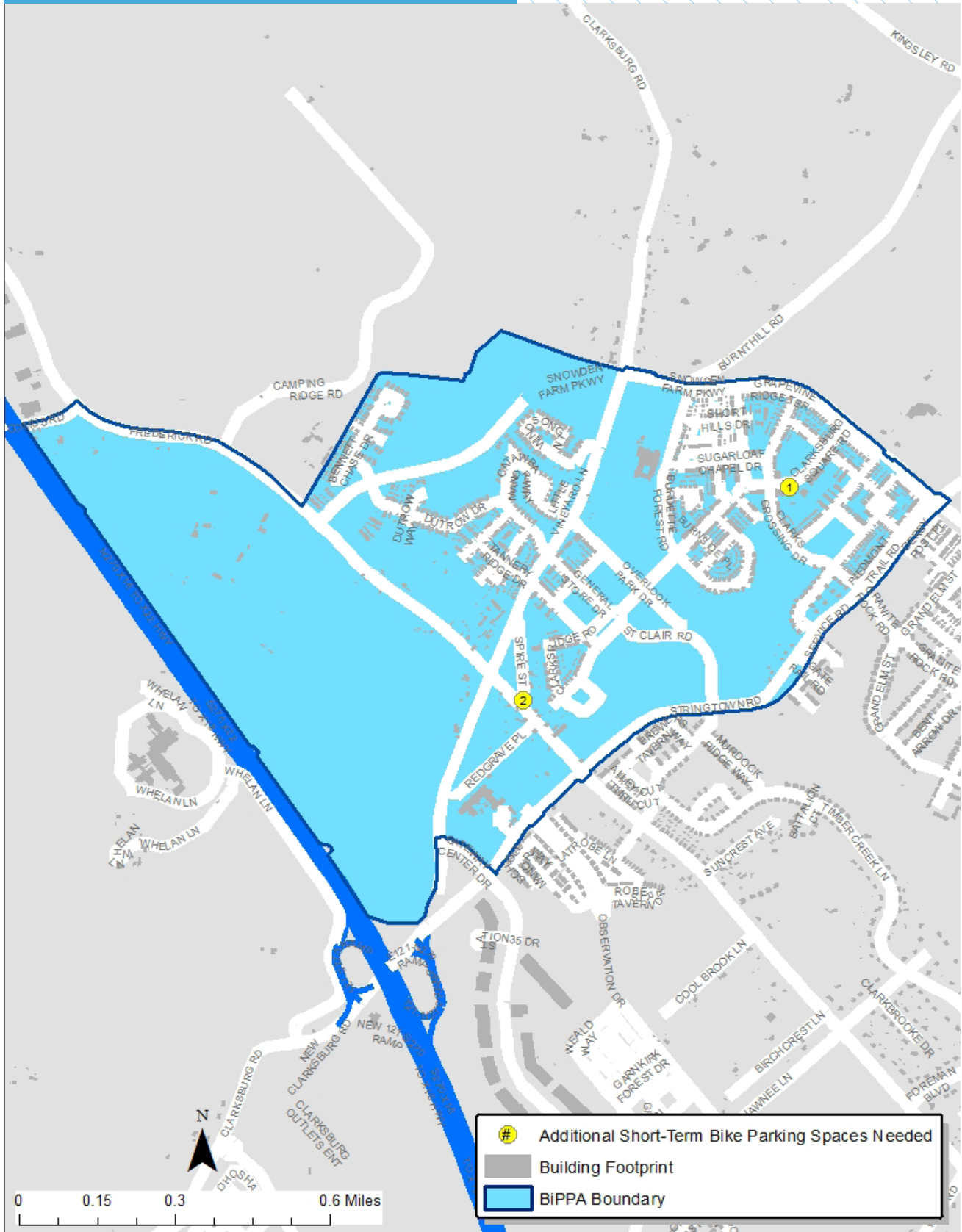
- 2 blocks (or 100 percent) have insufficient short-term bicycle parking.
- 2 blocks (or 100 percent) have no short-term bicycle parking.

Overall, there is a deficit of 3 short-term bicycle parking spaces in the Clarksburg Town Center BiPPA.



*“Wave” style bicycle racks such as this at Kings Local Park in Clarksburg are substandard*

# CLARKSBURG TOWN CENTER



### 3.4 CLOVERLEAF

The Cloverleaf BiPPA sits just north of Germantown Town Center and is bounded by Father Hurley Boulevard to the north, Interstate-270 to the east and Crystal Rock Drive to the west. The area is auto-oriented and consists of large corporate buildings surrounded by large parking lots. Phase 2 of the proposed Corridor Cities Transitway, designed to offer bus rapid transit service, will travel in the wide median on Century Boulevard, with one future station planned to be located within the BiPPA boundary. Demand for short-term bike parking is currently low with the need for 15 bike parking spaces across 6 blocks.

Of the 6 blocks in the Cloverleaf BiPPA where there is a need for short-term bicycle parking:

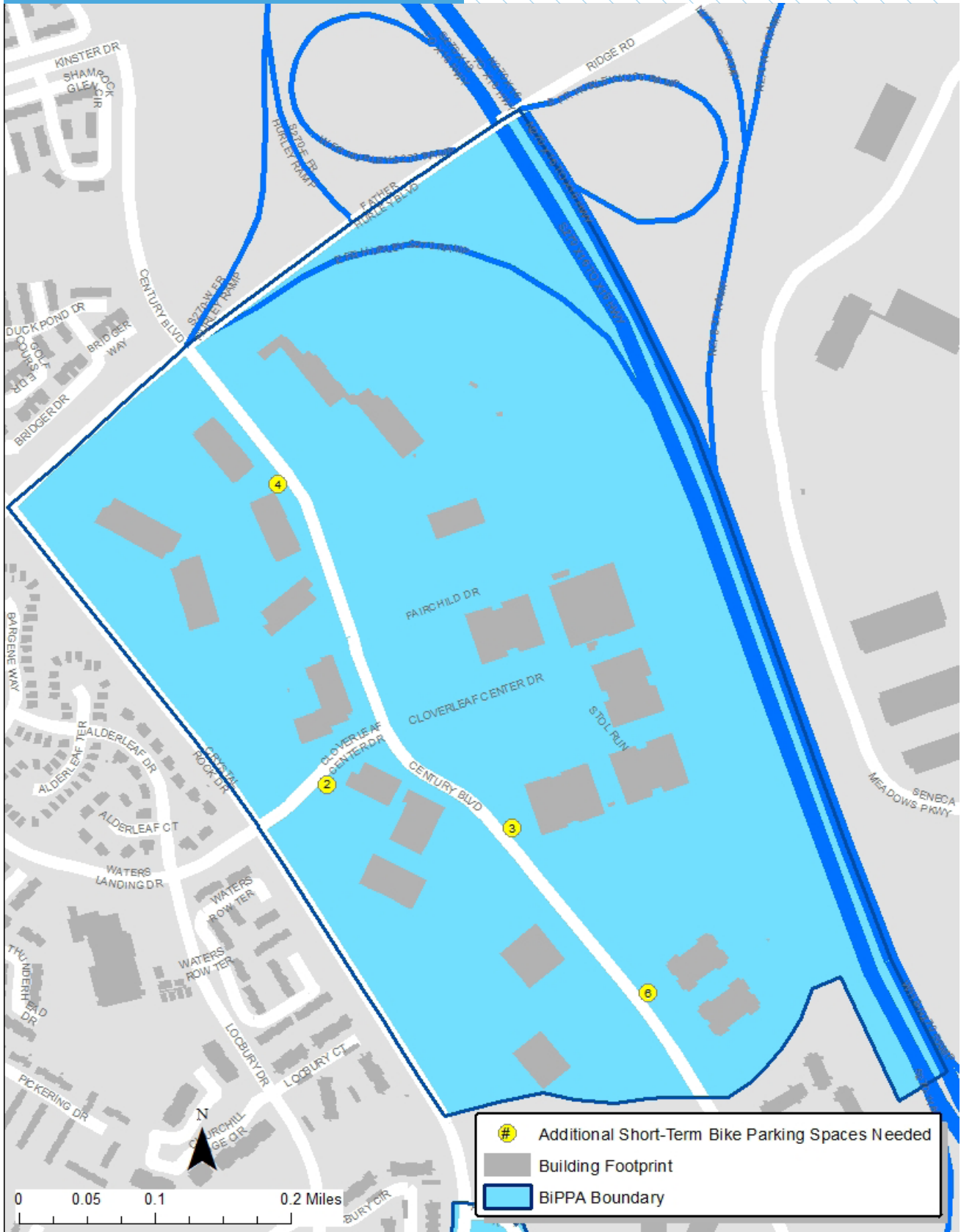
- 4 blocks (or 67 percent) have insufficient short-term bicycle parking.
- 3 blocks (or 50 percent) have no short-term bicycle parking.

Overall, there is a deficit of 15 short-term bicycle parking spaces in the Cloverleaf BiPPA.



*Proposed station for the Corridor Cities Transitway on Century Boulevard*

# CLOVERLEAF



### 3.5 FLOWER-PINEY BRANCH-ARLISS

The Flower-Piney Branch- Arliss BiPPA contains the shopping center located at the intersection of Flower Avenue and Piney Branch Road. The site is occupied by a grocery store, a gas station and a handful of restaurants and other small shops, and is surrounded by low to mid-density residential housing. A future Purple Line station is planned on Arliss Street.

Of the 7 blocks in the Flower-Piney Branch-Arliss BiPPA where there is a need for short-term bicycle parking:

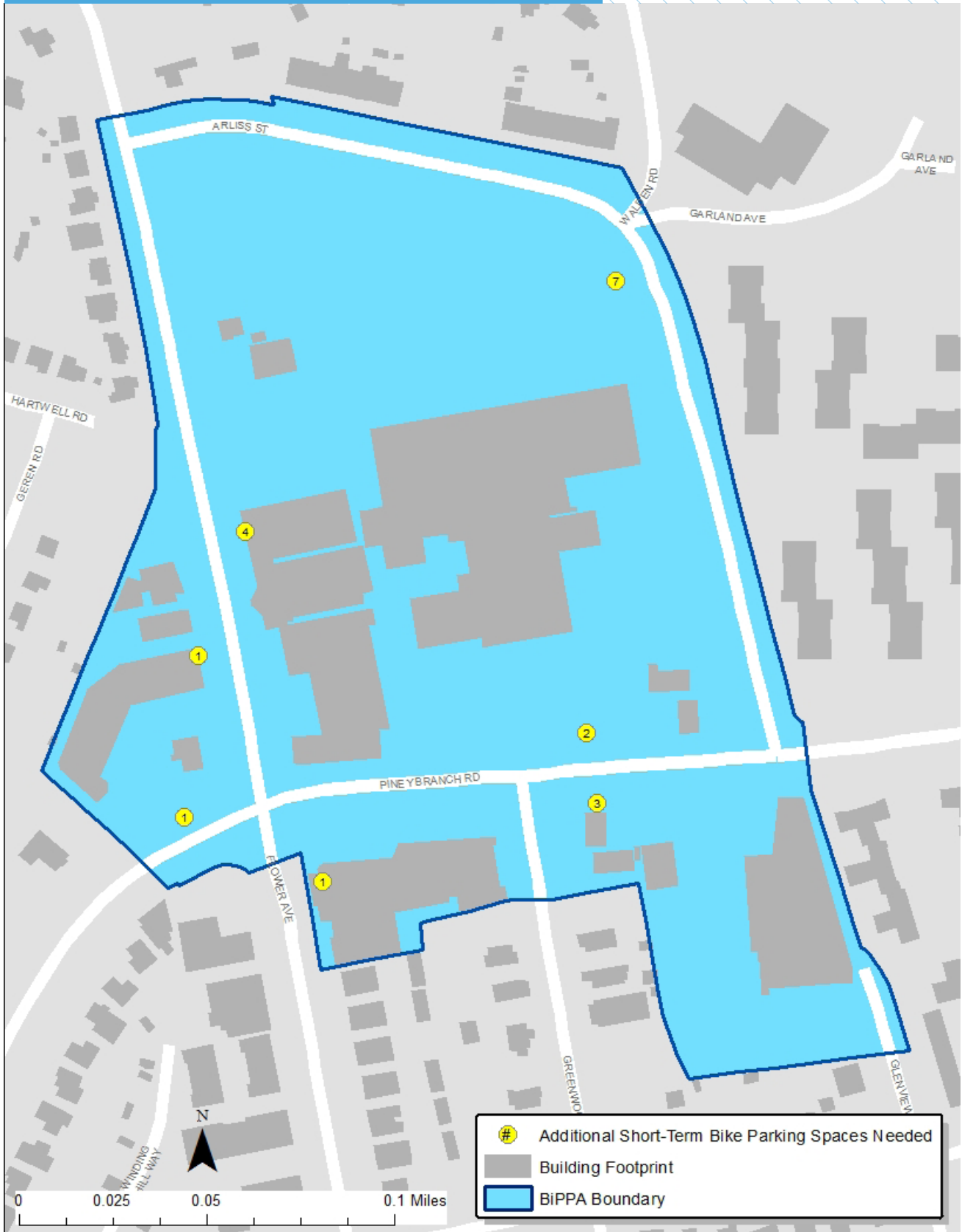
- 7 blocks (or 100 percent) have insufficient short-term bicycle parking.
- 7 blocks (or 100 percent) have no short-term bicycle parking.

Overall, there is a deficit of 19 short-term bicycle parking spaces in the Flower-Piney Branch-Arliss BiPPA.



*Improperly installed bicycle racks limit use*

# FLOWER-PINEY BRANCH-ARLISS



### 3.6 FOUR CORNERS

The Four Corners BiPPA is located at the intersection of Colesville Road (MD29) and Georgia Avenue (MD193). The major land uses in this area are retail and institutional with Montgomery Blair High School occupying most the land area of the BiPPA. Outside of the high school, there are no existing bike racks in this area.

Of the 6 blocks in the Four Corners BiPPA where there is a need for short-term bicycle parking:

- 6 blocks (or 100 percent) have insufficient short-term bicycle parking.
- 6 blocks (or 100 percent) have no short-term bicycle parking.

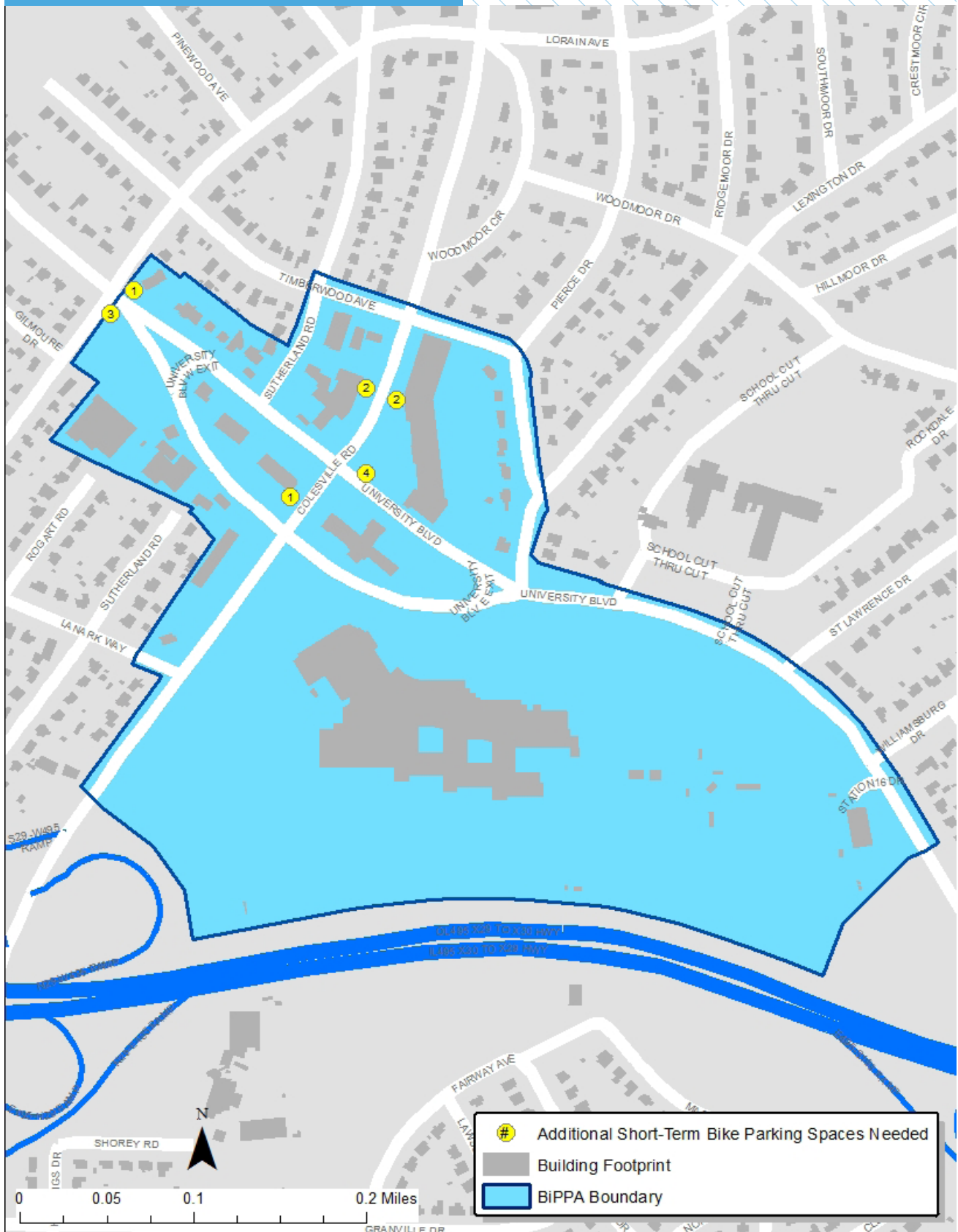
Overall, there is a deficit of 13 short-term bicycle parking spaces in the Four Corners BiPPA.



*There are no bicycle racks at the Woodmoor Shopping Center on Colesville Road in Four Corners*



# FOUR CORNERS



### 3.7 FRIENDSHIP HEIGHTS

The Friendship Heights BiPPA surrounds the major shopping district and GEICO headquarters, as well as several high-rise residential and commercial buildings. Also located in the BiPPA is a Red Line Metrorail Station.

Of the 27 blocks in the Friendship Heights BiPPA where there is a need for short-term bicycle parking:

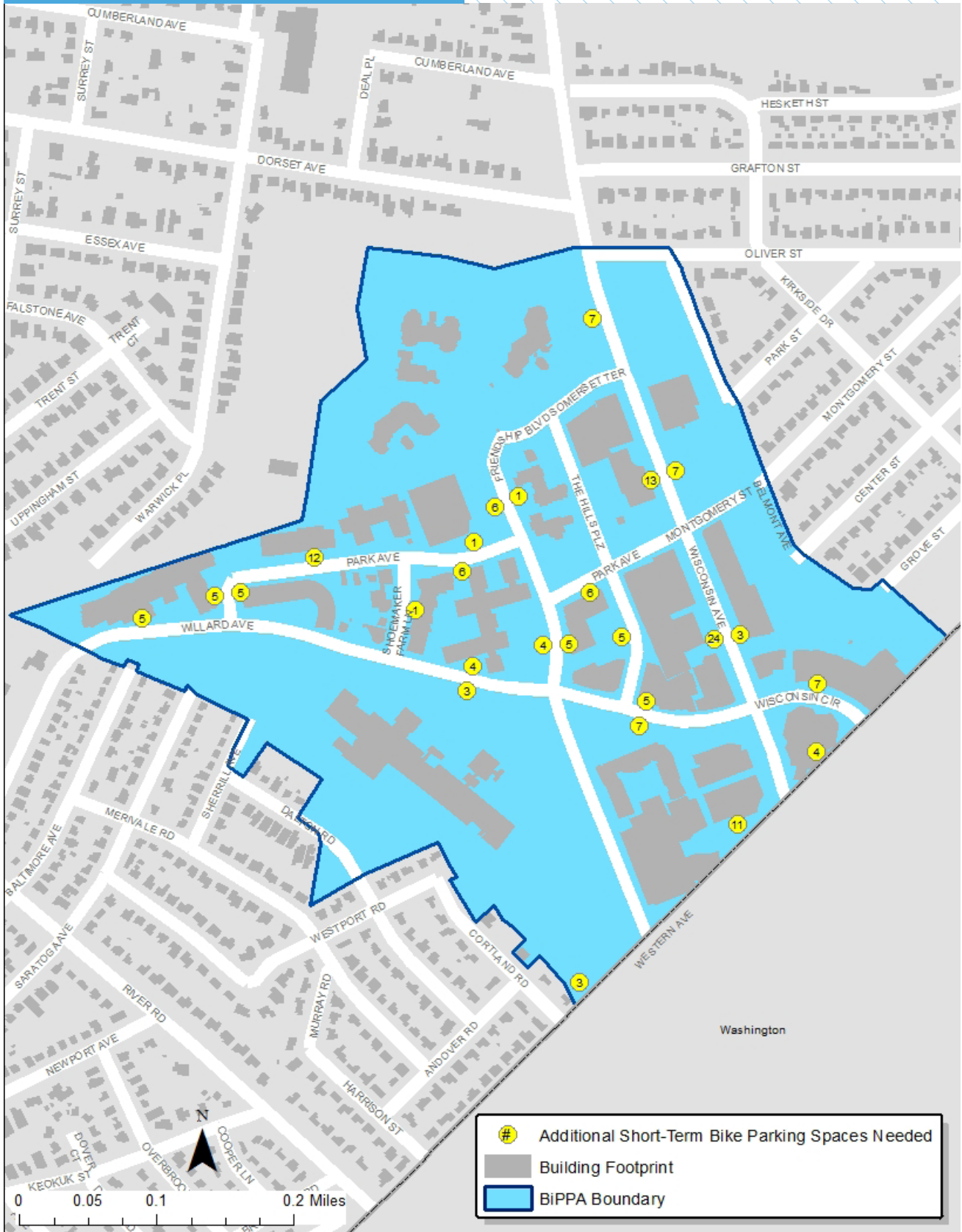
- 26 blocks (or 96 percent) have insufficient short-term bicycle parking.
- 21 blocks (or 78 percent) have no short-term bicycle parking.

Overall, there is a deficit of 160 short-term bicycle parking spaces in the Friendship Heights BiPPA.



*Custom bicycle racks on Wisconsin Circle in Friendship Heights retail area near the Metro station*

# FRIENDSHIP HEIGHTS



### 3.8 GERMANTOWN TOWN CENTER

The Germantown Town Center is auto-oriented commercial area with wide, high speed roadways. A future Corridor Cities Transitway station is planned in the town center.

Of the 34 blocks in the Germantown Town Center BiPPA where there is a need for short-term bicycle parking:

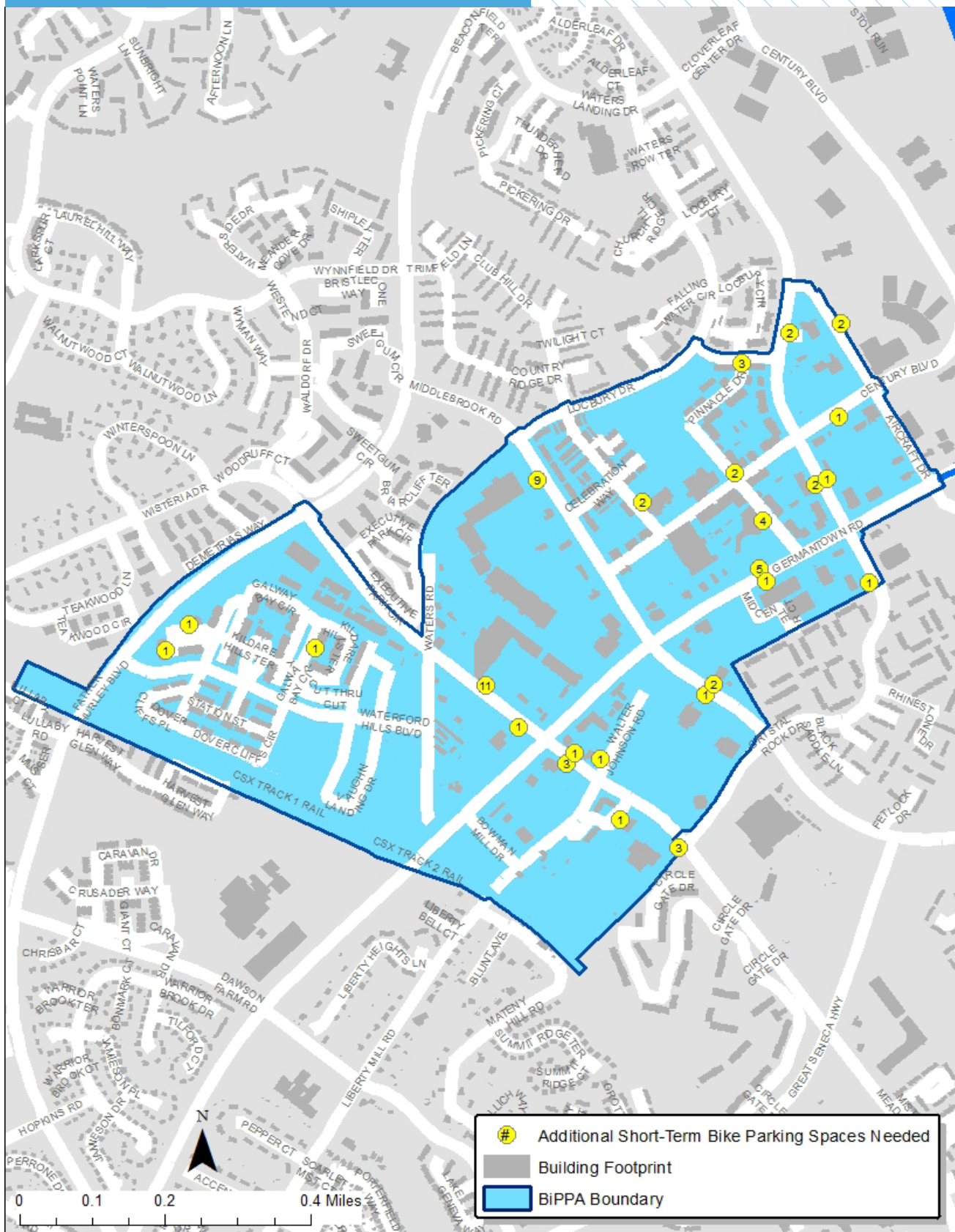
- 25 blocks (or 74 percent) have insufficient short-term bicycle parking.
- 24 blocks (or 71 percent) have no short-term bicycle parking.

Overall, there is a deficit of 62 short-term bicycle parking spaces in the Germantown Town Center BiPPA.



*Short-term bicycle parking at the Germantown Library*

# GERMANTOWN TOWN CENTER



### 3.9 GLENMONT

The Glenmont BiPPA encompasses the Glenmont Metrorail Station, the shopping area at the intersection of Georgia Avenue and Layhill Road, and an established residential neighborhood predominantly composed of single-family homes. Short-term bike parking is well supplied at the Metrorail Station but lacking in the retail areas.

Of the 11 blocks in the Glenmont BiPPA where there is a need for short-term bicycle parking:

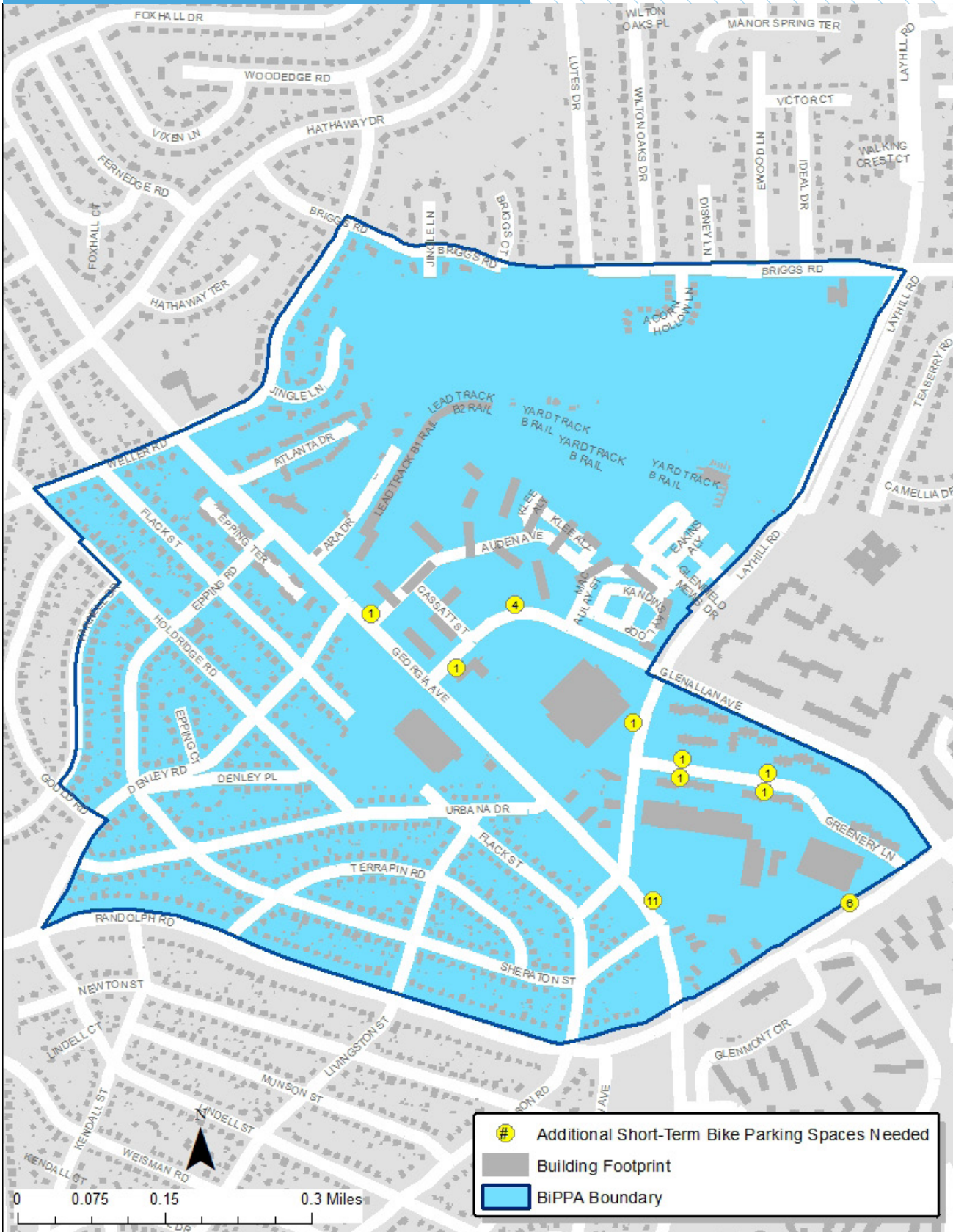
- 11 blocks (or 100 percent) have insufficient short-term bicycle parking.
- 11 blocks (or 100 percent) have no short-term bicycle parking.

Overall, there is a deficit of 28 short-term bicycle parking spaces in the Glenmont BiPPA.



*Covered short-term bicycle racks at the Glenmont Metrorail station*

# GLENMONT



### 3.10 KENSINGTON

The Kensington BiPPA is divided by the CSX railroad right-of-way. To the north, the demand for additional bike parking is focused around the intersection of Connecticut Avenue and University Boulevard. To the south of the tracks, the older retail area is the focus of unmet bike parking demand.

Of the 36 blocks in the Kensington BiPPA where there is a need for short-term bicycle parking:

- 34 blocks (or 94 percent) have insufficient short-term bicycle parking.
- 33 blocks (or 92 percent) have no short-term bicycle parking.

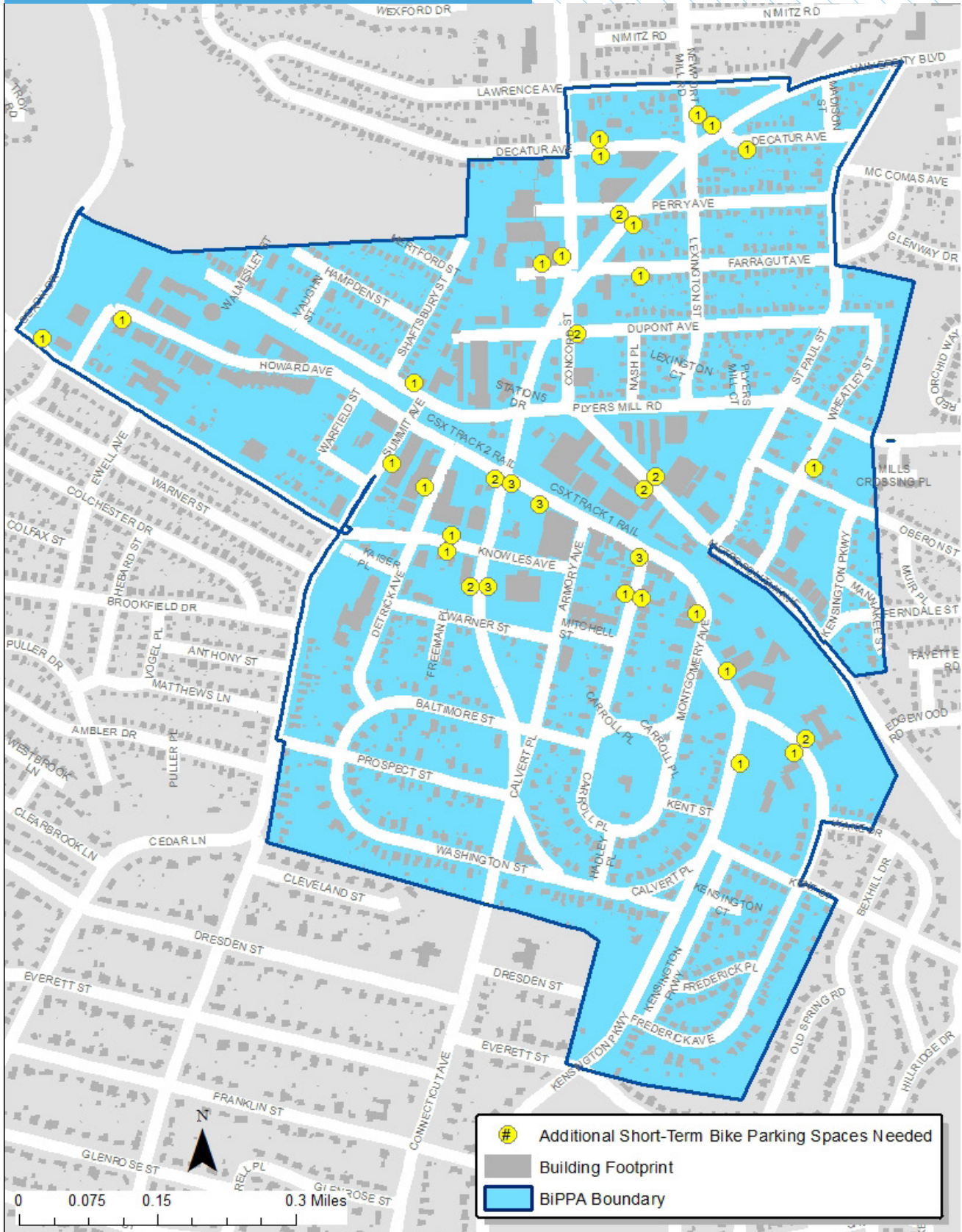
Overall, there is a deficit of 49 short-term bicycle parking spaces in the Kensington BiPPA.



*A bicycle rack in Kensington near the MARC station*



# KENSINGTON



### 3.11 MONTGOMERY HILLS

The Montgomery Hills BiPPA surrounds the strip shopping area on Georgia Avenue between Flora Lane and 16th Street. Primarily an auto-oriented shopping area, the BiPPA currently lacks short-term bicycle parking.

Of the 4 blocks in the Montgomery Hills BiPPA where there is a need for short-term bicycle parking:

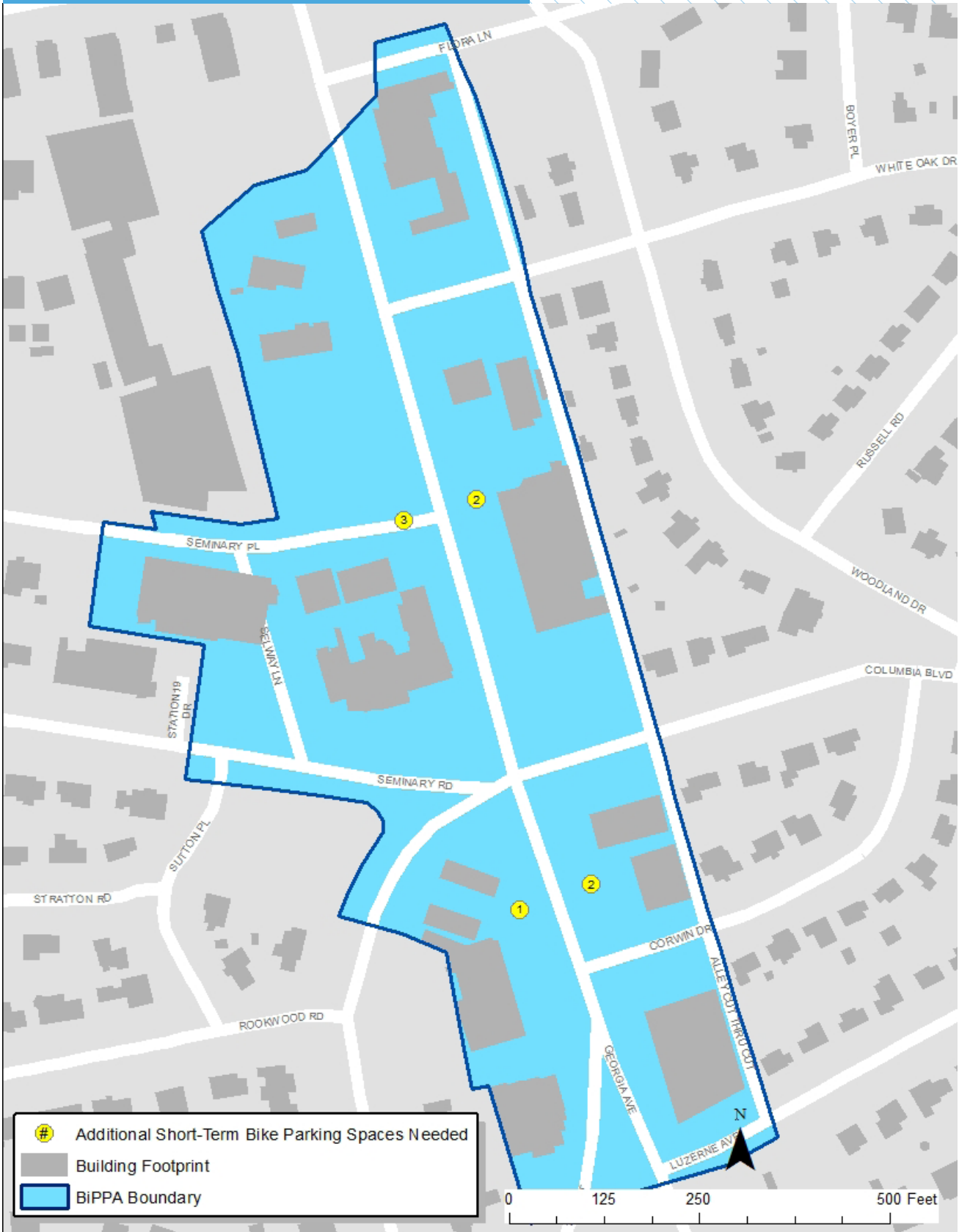
- 4 blocks (or 100 percent) have insufficient short-term bicycle parking
- 4 blocks (or 100 percent) have no short-term bicycle parking

Overall, there is a deficit of 8 short-term bicycle parking spaces in the Montgomery Hills BiPPA.



*The retail areas in Montgomery Hills lack bicycle parking*

# MONTGOMERY HILLS



## 3.12 OLNEY TOWN CENTER

The Olney Town Center BiPPA is focused around the intersection of Georgia Avenue and Olney-Sandy Spring Road. Most of the unmet bike parking demand stems from the shopping areas adjacent to Georgia Avenue. Of the 19 blocks in the Olney Town Center BiPPA where there is a need for short-term bicycle parking:

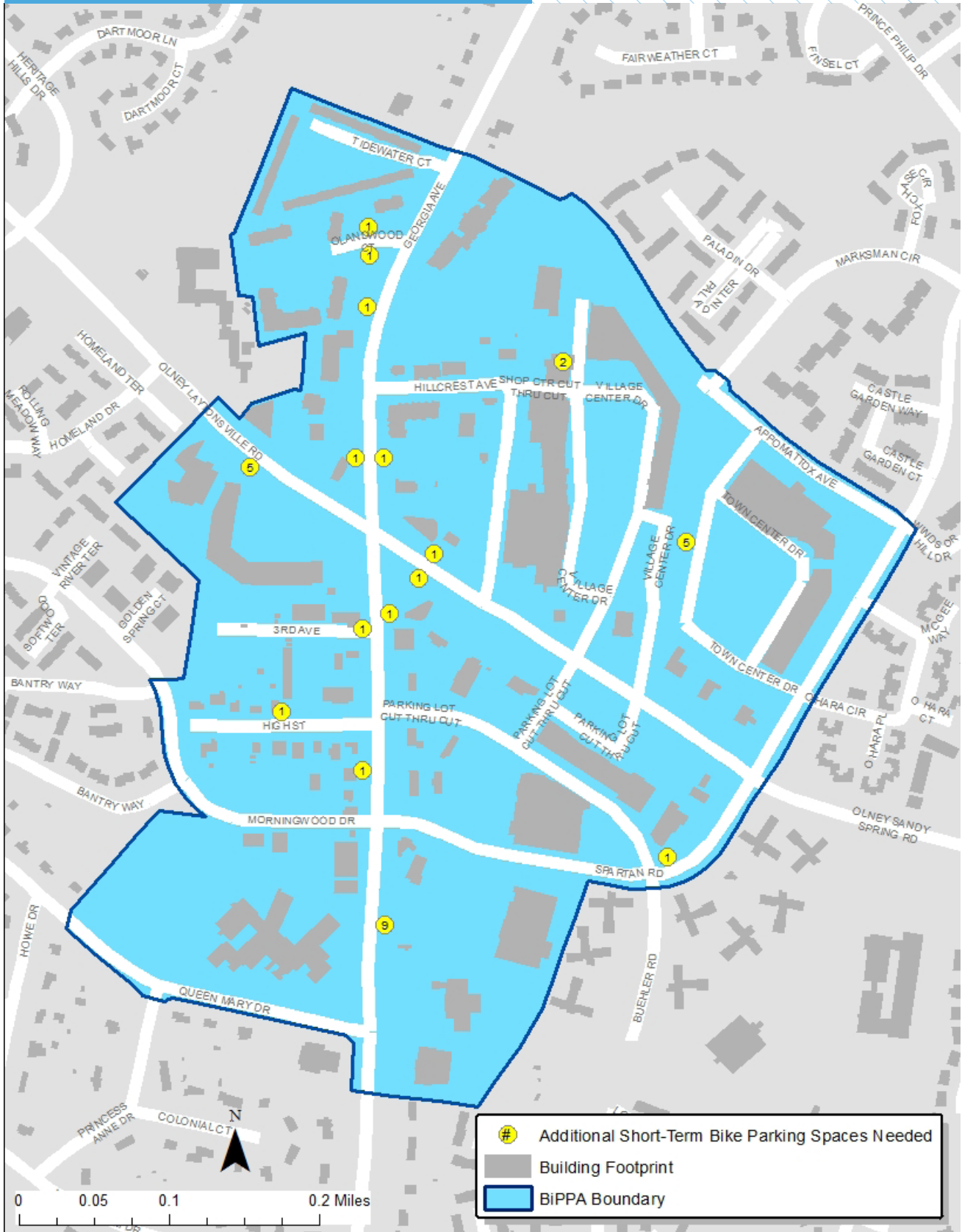
- 16 blocks (or 84 percent) have insufficient short-term bicycle parking.
- 14 blocks (or 74 percent) have no short-term bicycle parking.

Overall, there is a deficit of 33 short-term bicycle parking spaces in the Olney Town Center BiPPA.



*Short-term bicycle parking at the Olney Library*

# OLNEY TOWN CENTER



### 3.13 PINEY BRANCH-UNIVERSITY

The Piney Branch-University BiPPA is located at the intersection of Piney Branch Road and University Boulevard. It includes the Long Branch pool and recreation center to the west, the large high-rise apartment complex on Piney Branch Road to the east and many garden apartments and single-family homes. A future Purple Line is planned to be located on University Boulevard south of Piney Branch Road.

Existing bicycle parking is located only at public facilities, including the library, pool and recreation center, and Rolling Terrace Elementary School. Of the 23 blocks in the Piney Branch-University BiPPA where there is a need for short-term bicycle parking:

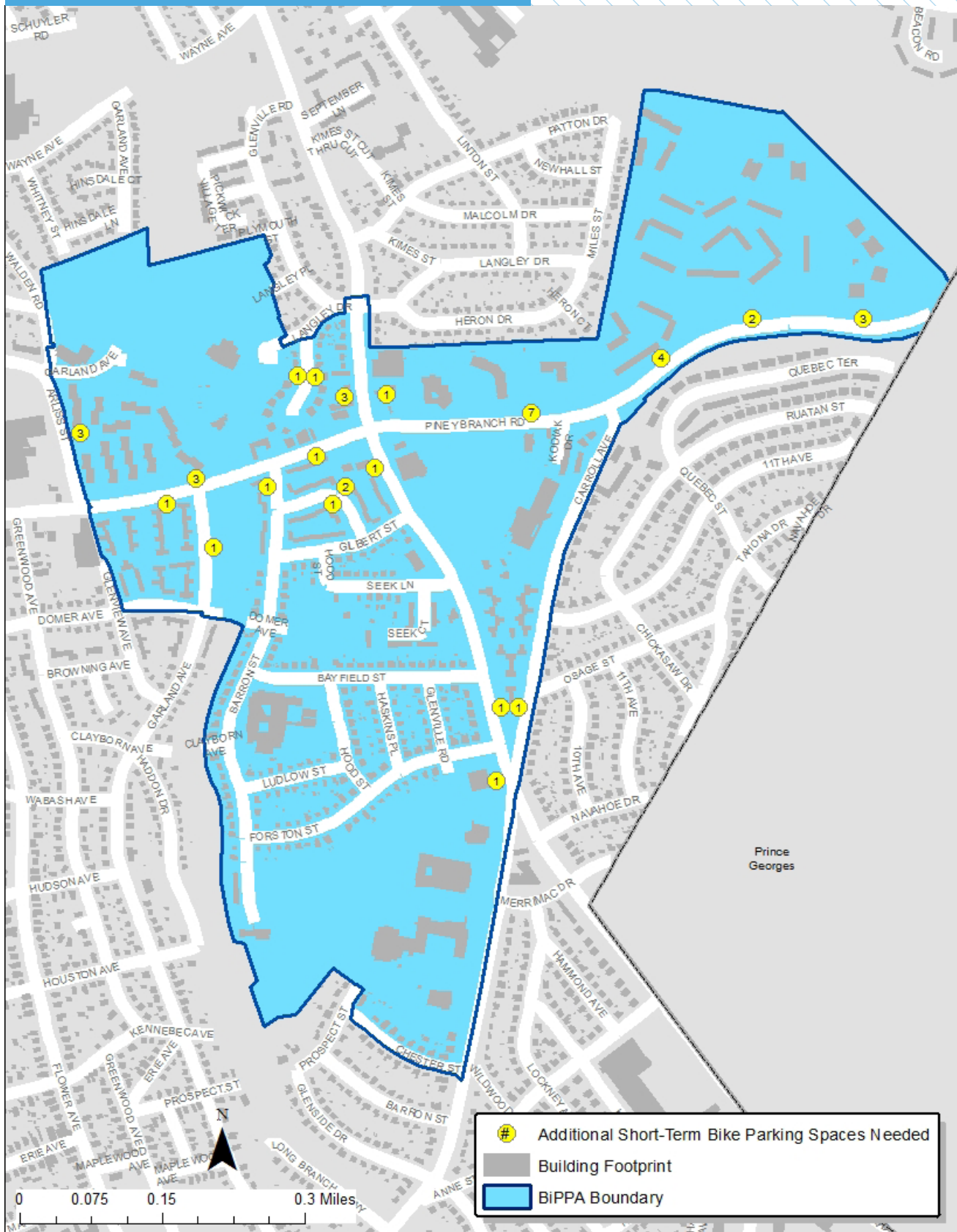
- 20 blocks (or 87 percent) have insufficient short-term bicycle parking.
- 20 blocks (or 87 percent) have no short-term bicycle parking.

Overall, there is a deficit of 39 short-term bicycle parking spaces in the Piney-Branch University BiPPA.



*The Long Branch pool, and nearby recreation center, offer short-term bicycle parking*

# PINEY BRANCH-UNIVERSITY



### 3.14 SHADY GROVE METRO STATION

The Shady Grove BiPPA contains the Shady Grove Metrorail Station and the small commercial/residential area just to the southeast. Short-term bike parking at the Metrorail station is plentiful, but the adjacent land uses are underserved.

Of the 22 blocks in the Shady Grove BiPPA where there is a need for short-term bicycle parking:

- 21 blocks (or 95 percent) have insufficient short-term bicycle parking.
- 21 blocks (or 95 percent) have no short-term bicycle parking.

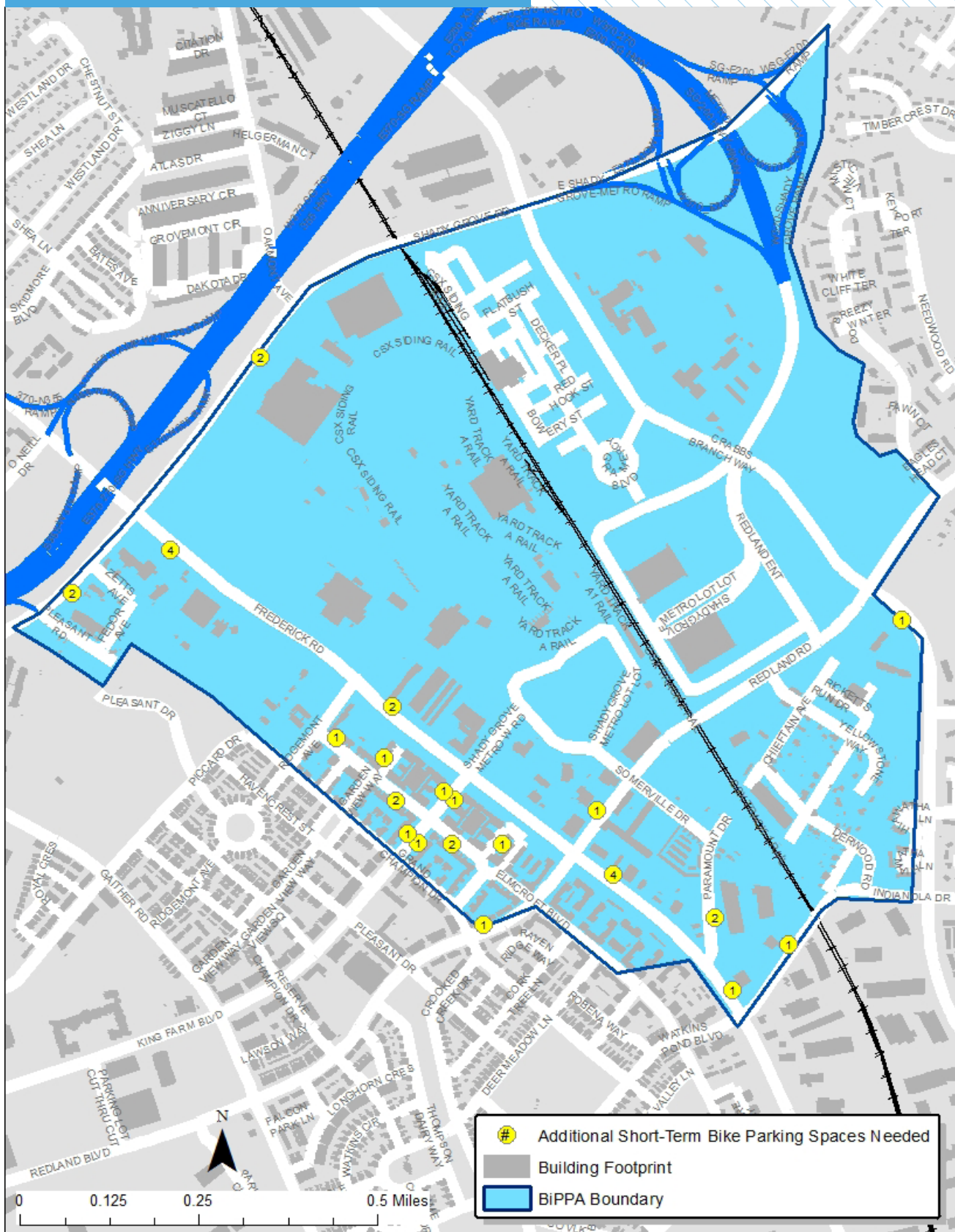
Overall, there is a deficit of 35 short-term bicycle parking spaces in the Shady Grove BiPPA.



*The Shady Grove Metro station has many short-term bicycle parking spaces*



# SHADY GROVE METRO STATION



### 3.15 SILVER SPRING CENTRAL BUSINESS DISTRICT (CBD)

Downtown Silver Spring is one of the fastest growing commercial, residential and entertainment centers in Montgomery County. The area contains a Metrorail station, MARC station, transit center and two future Purple line stations. To keep pace with the emerging network of trail and separated bike lanes, investments are needed in short-term bicycle parking.

Of the 127 blocks in the Silver Spring CBD BiPPA where there is a need for short-term bicycle parking:

- 93 blocks (or 73 percent) have insufficient short-term bicycle parking
- 80 blocks (or 63 percent) have no short-term bicycle parking

Overall, there is a deficit of 381 short-term bicycle parking spaces in the Silver Spring CBD BiPPA.



*Where sidewalk space is limited, bike corrals, such as this temporary installation in Downtown Silver Spring, can expand the overall parking supply by converting one automobile parking space to between 8 and 12 bicycle parking spaces*

# SILVER SPRING CBD



### 3.16 TAKOMA/LANGLEY CROSSROADS

The Takoma / Langley Crossroads BiPPA largely occupies the southwest quadrant at the intersection of New Hampshire Avenue and University Boulevard. While it currently encompasses an auto-oriented shopping center, this BiPPA may change with the opening of the Takoma / Langley Transit Center and future Purple Line Station.

Of the 11 blocks in the Takoma / Langley Crossroads BiPPA where there is a need for short-term bicycle parking:

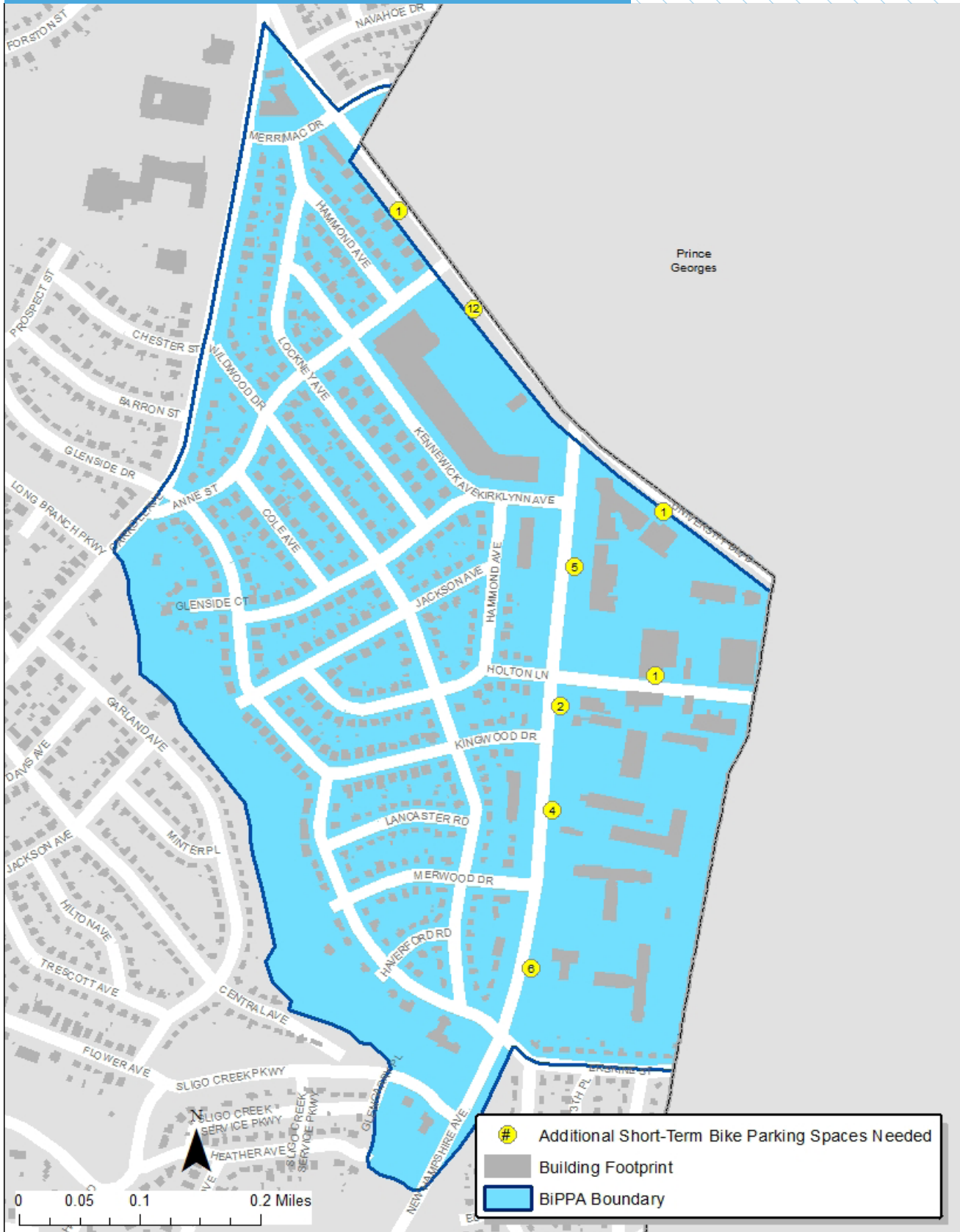
- 8 blocks (or 73 percent) have insufficient short-term bicycle parking.
- 8 blocks (or 73 percent) have no short-term bicycle parking.

Overall, there is a deficit of 32 short-term bicycle parking spaces in the Takoma / Langley Crossroads BiPPA.



*The Takoma / Langley Transit center offers 20 covered parking spaces directly adjacent to the bus bays*

# TAKOMA/LANGLEY CROSSROADS



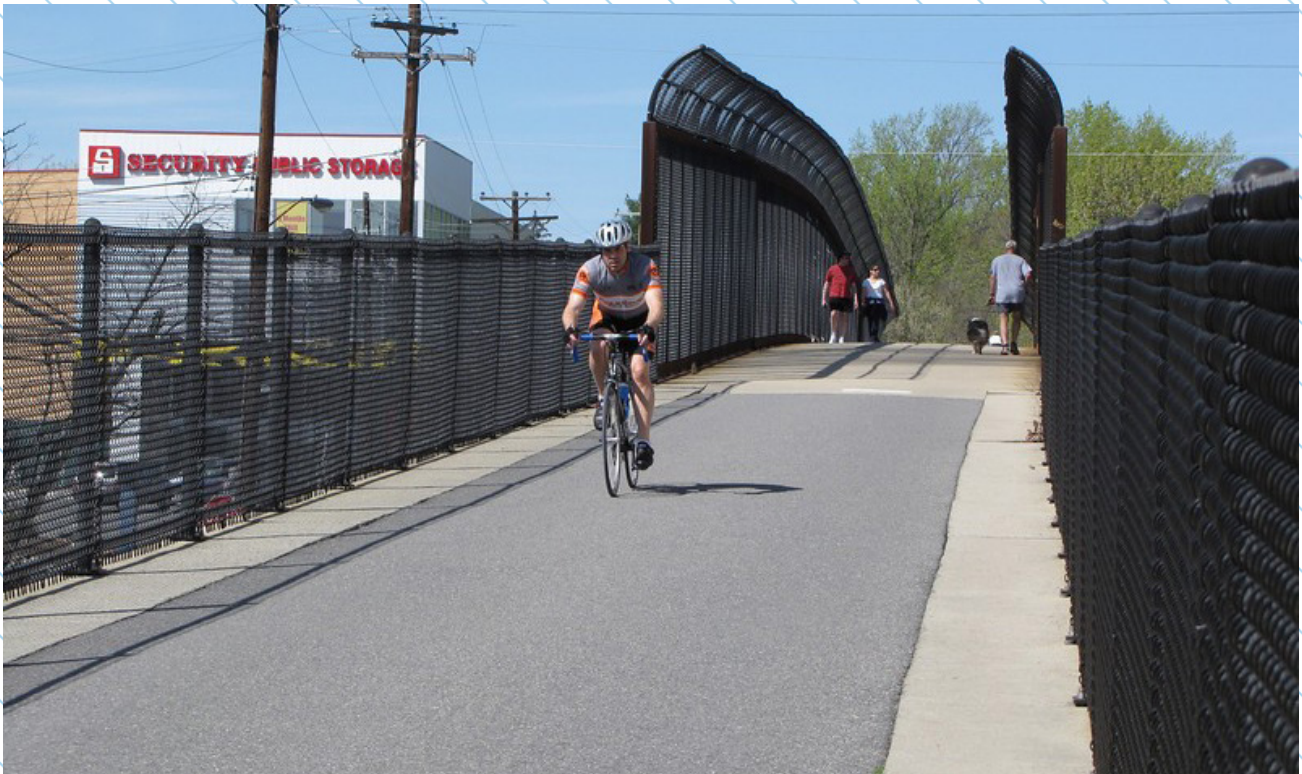
### 3.17 WESTBARD

The Westbard BiPPA is located on River Road just north of the Capital Crescent Trail.

Of the 13 blocks in the Westbard BiPPA where there is a need for short-term bicycle parking:

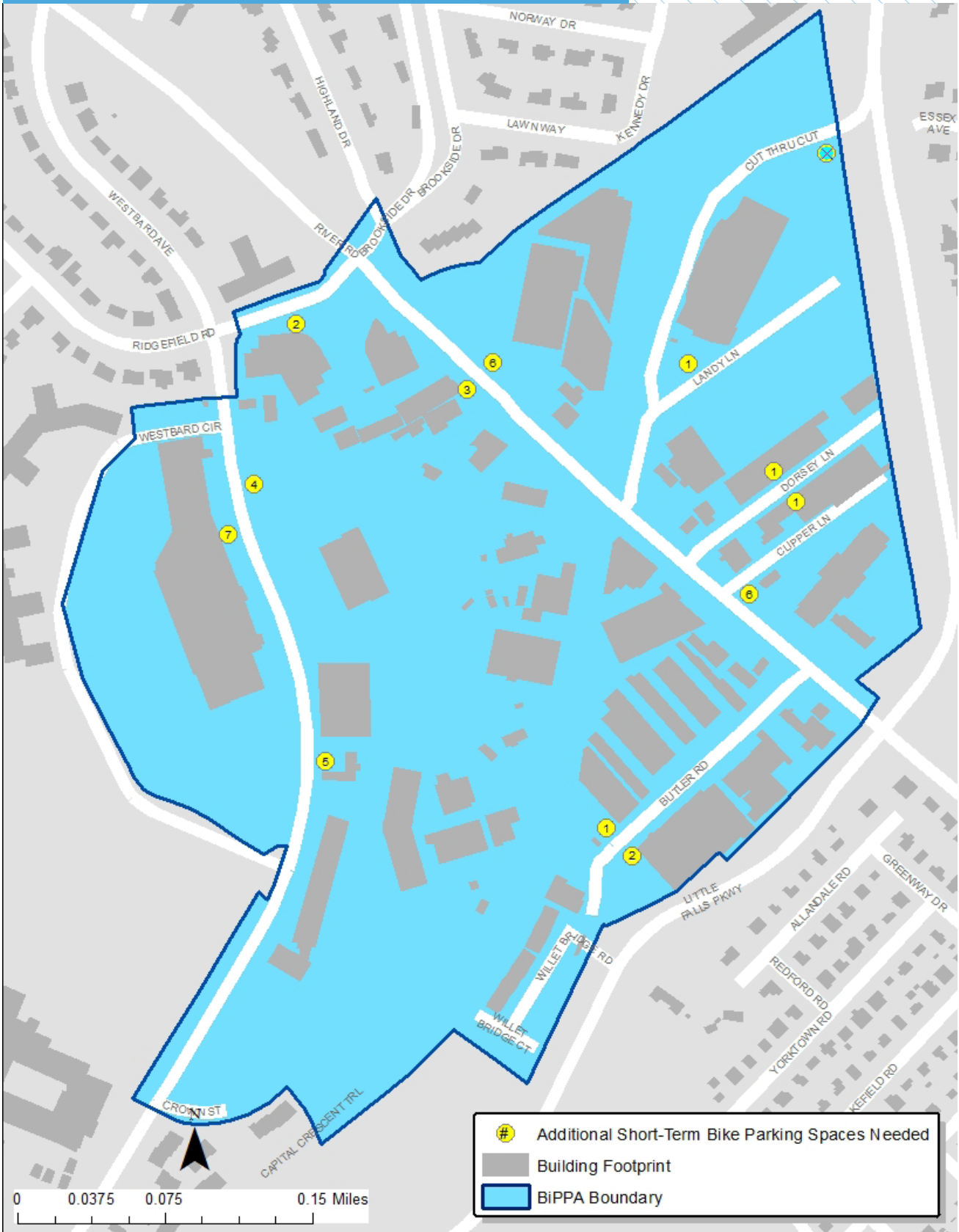
- 13 blocks (or 100 percent) have insufficient short-term bicycle parking.
- 12 blocks (or 93 percent) have no short-term bicycle parking.

Overall, there is a deficit of 40 short-term bicycle parking spaces in the Westbard BiPPA.



*The Capital Crescent Trail extends over River Road in the Westbard area*

# WESTBARD



## 3.18 WHEATON CENTRAL BUSINESS DISTRICT

The Wheaton CBD BiPPA is a commercial center that is undergoing redevelopment. Salient features of this BiPPA are the Metrorail station and bus transit center, Wheaton Mall, numerous small retail establishments and new high-rises around the transit stations. As the older, low-rise retail areas are replaced with taller, multi-use buildings, demand for secure bike parking will increase.

Of the 58 blocks in the Wheaton CBD BiPPA where there is a need for short-term bicycle parking:

- 53 blocks (or 91 percent) have insufficient short-term bicycle parking.
- 51 blocks (or 88 percent) have no short-term bicycle parking.

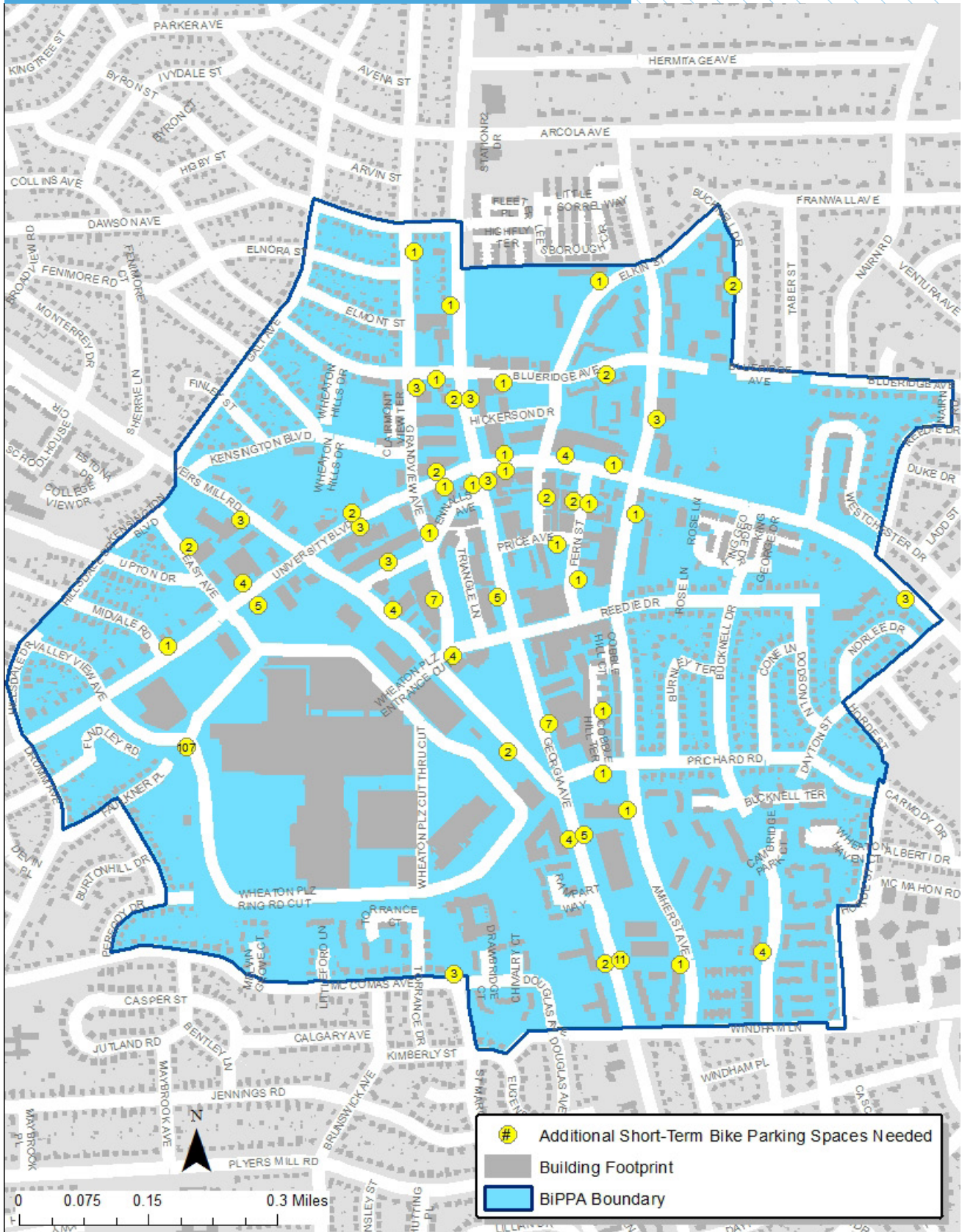
Overall, there is a deficit of 241 short-term bicycle parking spaces in the Wheaton CBD BiPPA.



*Bicycle racks in the Wheaton CBD*



# WHEATON CBD



### 3.19 WHITE FLINT

The White Flint BiPPA consists of high-rise residential buildings, offices and auto-oriented retail strips along Rockville Pike. The surrounding area is experiencing substantial redevelopment to the north in the Pike & Rose neighborhood, with additional developments planned throughout the area.

Of the 69 blocks in the White Flint BiPPA where there is a need for short-term bicycle parking:

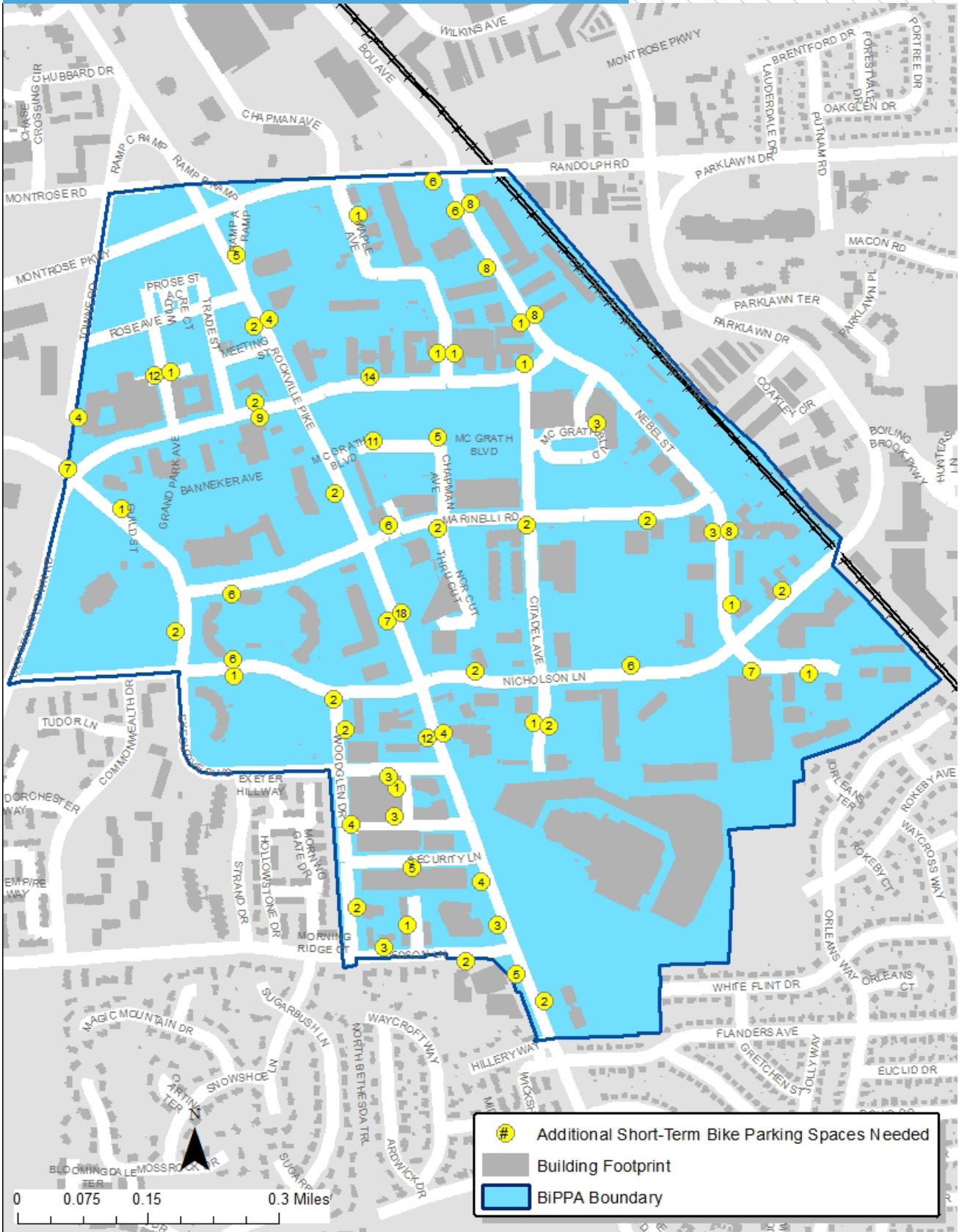
- 66 blocks (or 96 percent) have insufficient short-term bicycle parking.
- 64 blocks (or 93 percent) have no short-term bicycle parking.

Overall, there is a deficit of 279 short-term bicycle parking spaces in the White Flint BiPPA.



*This custom bike rack is located on the Bethesda Trolley Trail at Edson Lane in White Flint.*

# WHITE FLINT





**TABLE 1: SUMMARY OF SHORT-TERM BICYCLE PARKING ANALYSIS**

BICYCLE PEDESTRIAN PRIORITY AREA	BLOCKS NEEDING BIKE PARKING	BLOCKS WITH NO EXISTING SPACES		BLOCKS WITH INSUFFICIENT SPACES		DEFICIT OF PARKING SPACES
		NUM.	%	NUM.	%	
Aspen Hill	11	9	82%	8	73%	53
Bethesda CBD	179	147	82%	133	74%	475
Clarksburg Town Center	2	2	100%	2	100%	3
Cloverleaf	6	4	67%	3	50%	15
Flower - Piney Branch - Arliss	7	7	100%	7	100%	19
Four Corners	6	6	100%	6	100%	13
Friendship Heights CBD	27	26	96%	21	78%	160
Germantown	34	25	74%	24	71%	62
Glenmont	11	11	100%	11	100%	28
Kensington	36	34	94%	33	92%	49
Montgomery Hills	4	4	100%	4	100%	8
Olney Town Center	19	16	84%	14	74%	33
Piney Branch - University	23	20	87%	20	87%	39
Shady Grove	22	21	95%	21	95%	35
Silver Spring CBD	127	93	73%	80	63%	381
Takoma / Langley Crossroads	11	8	73%	8	73%	32
Westbard	13	13	100%	12	92%	40
Wheaton CBD	58	53	91%	51	88%	241
White Flint	69	66	96%	64	93%	279
<b>Total</b>	<b>665</b>	<b>565</b>	<b>85%</b>	<b>522</b>	<b>78%</b>	<b>1,965</b>

