

THE BICYCLE MASTER PLAN

September 2015

The State of Bicycling in Montgomery County



The State of Bicycling in Montgomery County



Abstract:

This report documents the state of bicycling in Montgomery County as of September 2015. It presents recent data on bicycling in Montgomery County and the length of existing and master-planned bicycle facilities.

Source of Copies:

Montgomeryplanning.org/bikeplan



INTRODUCTION

OVERVIEW

Bicycling is gaining popularity as a mode of transportation throughout the United States, especially in urbanized areas. Driven by changing travel patterns, investments in low-stress bicycling infrastructure and increasing popularity of bikeshare programs, the share of trips by bicycle has grown steadily over the past 15 years. Montgomery County continues to make substantial investments in bicycling infrastructure and is well-positioned to emerge as a leader in bicycling among suburban jurisdictions.



Woodglen Drive Cycle Track



North Bethesda Trail



Georgetown Branch Trail



Takoma Park

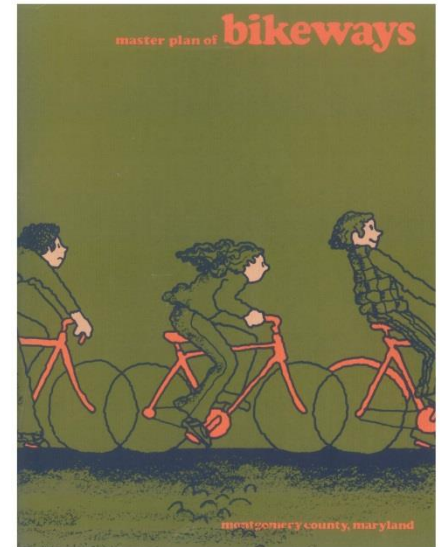


Silver Spring Metro Station

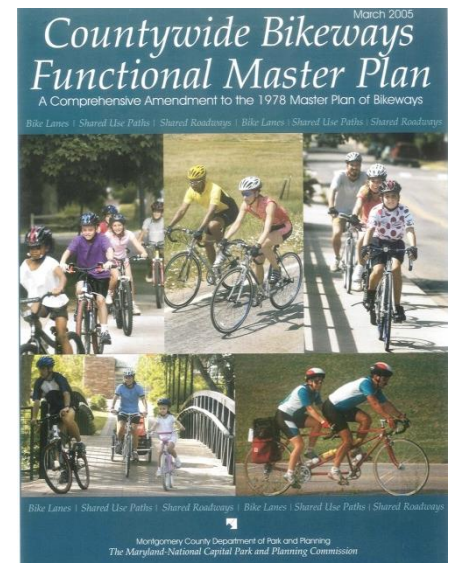
PLANNING CONTEXT

The 1978 Master Plan of Bikeways was Montgomery County's first countywide functional master plan that focused solely on creating a bicycle network. Numerous master plans, sector plans, functional plans and park trail plans have amended the County's bicycle network over the past 35 years. The first major change to the 1978 plan came in the mid-1990s when the Planning Board requested that staff separate bikeways from park trails. This differentiation led to the 1998 Countywide Park Trails Plan and the 2005 Countywide Bikeways Functional Master Plan.

Major innovations of the 2005 plan were the creation of "dual bikeways" to address different user groups through on-road and off-road bikeways along the same roadway, and categorizing each bikeway as a countywide or a local bikeway. The 2005 plan is now ripe for revision due to bicycling's resurgence, emphasis placed on bicycle travel as a means of transportation and new approaches to multi-modal transportation analysis.



1978 Master Plan of Bikeways



2005 Countywide Bikeways Functional Master Plan

STUDY AREA

The plan will develop a network of bikeways and bicycle parking facilities for all of Montgomery County except the City of Rockville and streets owned by the City of Gaithersburg.



PURPOSE

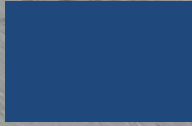
This plan will develop a low-stress bicycle network that can make cycling a mainstream choice for the majority of the County's residents and employees. It will bring bicycle recommendations in line with industry best practices and consolidate all non-trail bicycle recommendations into a single plan for the first time since 1978. An emphasis will be placed on evaluating facilities that are new to Montgomery County, such as separated bike lanes, buffered bike lanes and bicycle boulevards, as well as secure, long-term bicycle storage facilities. The plan will be developed using the best practices in data analysis and performance measures. It will reflect existing and anticipated future bicycle travel patterns, especially with respect to emerging activity centers and transit facilities, such as the planned Purple Line, Corridor Cities Transitway, Bus Rapid Transit system and other elements of the County's transit network.



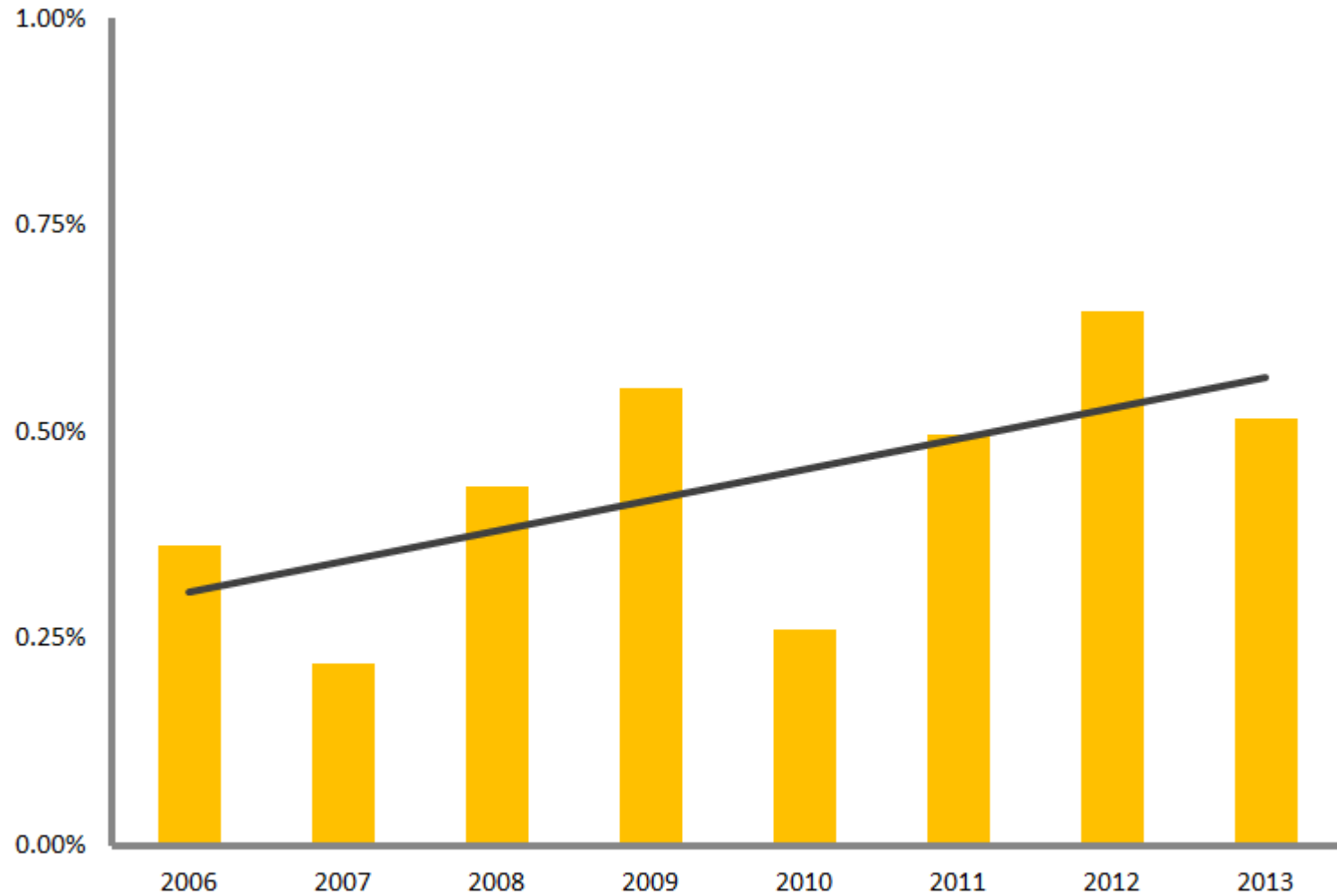
The Metropolitan Branch Trail



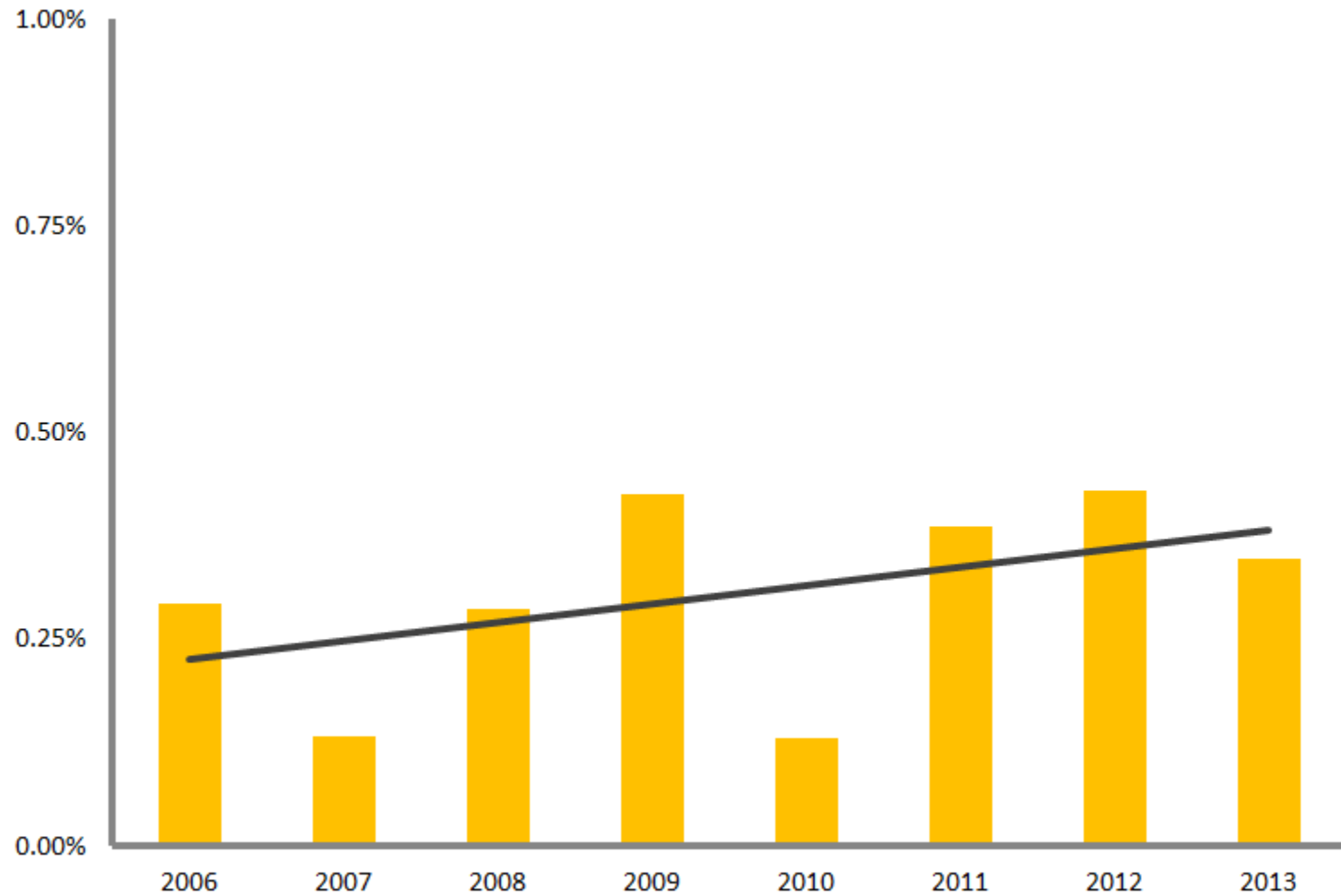
RIDERSHIP



PERCENT OF RESIDENTS THAT COMMUTE BY BICYCLE



PERCENT OF EMPLOYEES THAT COMMUTE BY BICYCLE



Source: American Community Survey, 1-Year Samples

FUTURE

**CAPITAL CRESCENT
TRAIL**

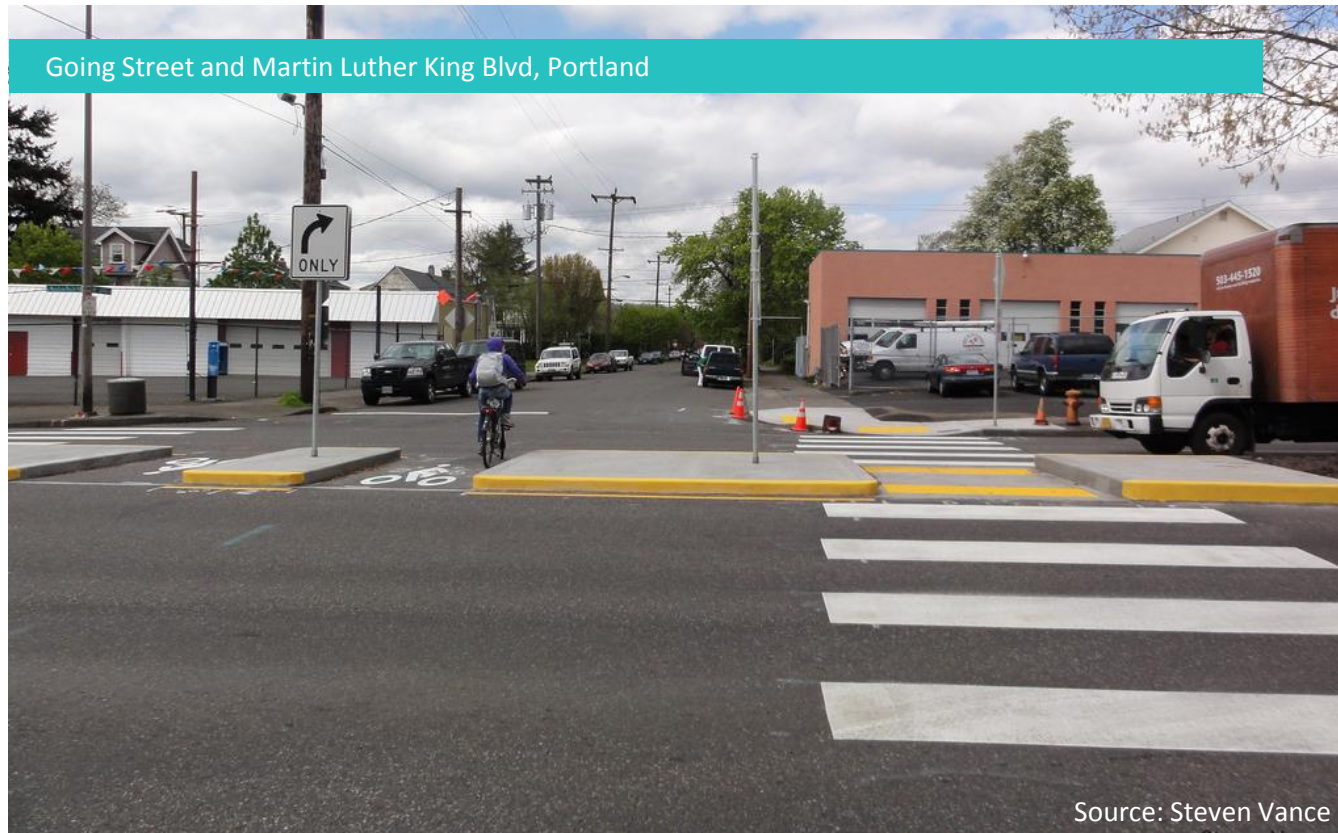
MILE

2

EXISTING AND PLANNED BIKEWAYS

BIKE BOULEVARD

A low speed street that prioritizes through bicycles by assigning the right-of-way to cyclists, discouraging cut through traffic by motor vehicles, and through branding that identifies the bikeway as a priority route for cyclists.



UNDER CONSIDERATION

ADVISORY BIKE LANE

Bike lanes that can be used by motor vehicles to pass oncoming traffic when they are not occupied by bicyclists, while encouraging motorists to travel slower and move to the left when passing a bicyclist.



UNDER CONSIDERATION

STANDARD BIKE LANE

A portion of a roadway designated by striping, signing, and pavement markings for the preferential or exclusive use of bicycles, and on which through-travel by motor vehicles is not allowed.



47 MILES

Existing

* Does not include: 1) existing bike facilities that are not recommended in previous master plans, and 2) some bikeways recommended in Rockville and Gaithersburg master plans

166 MILES

Master-Planned*

BUFFERED BIKE LANE

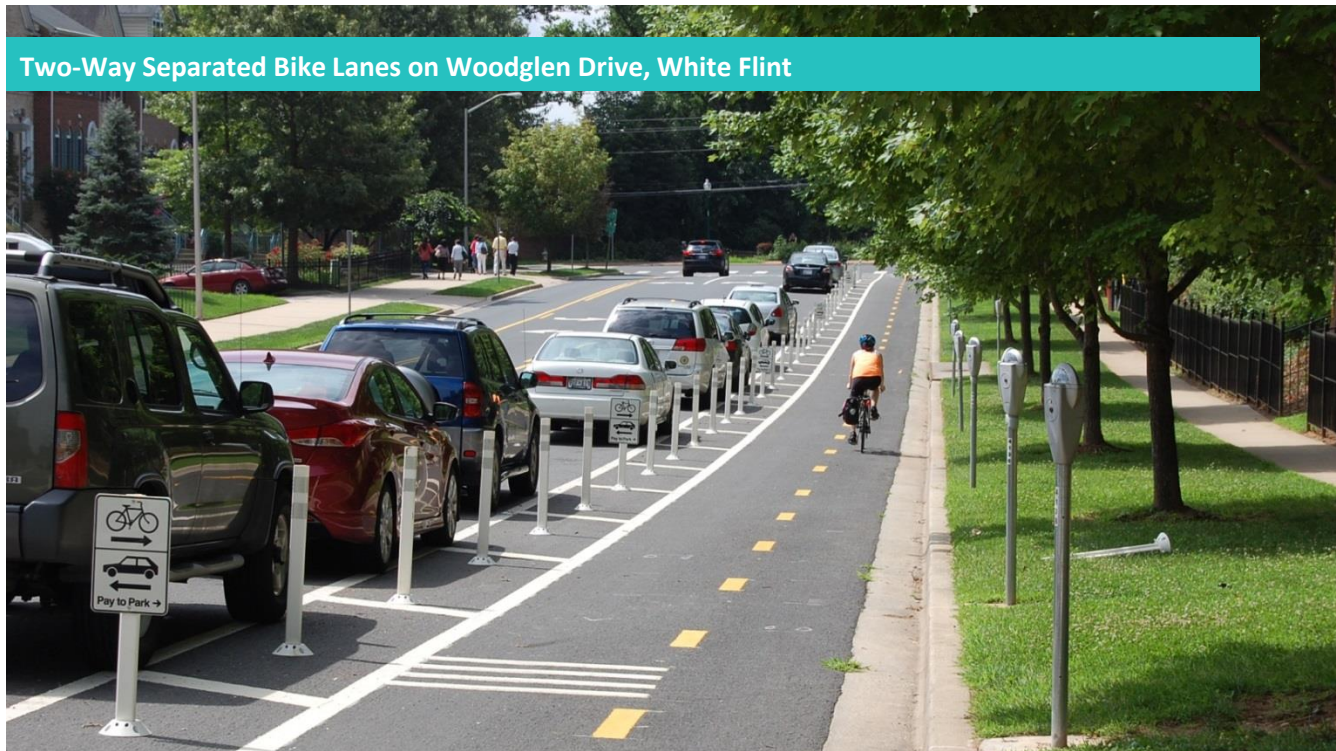
A bikeway separated from a motor vehicle travel lane with an area of striped pavement.



UNDER CONSIDERATION

SEPARATED BIKE LANE

A bikeway that is physically separated from motor vehicles and pedestrian facilities. The separation may be vertical, such as a curb; horizontal, such as a landscape panel or parking lane; or a combination. A separated bike lane may be in a one-way or two-way configuration.



Two-Way Separated Bike Lanes on Woodglen Drive, White Flint

0.3 MILES Existing

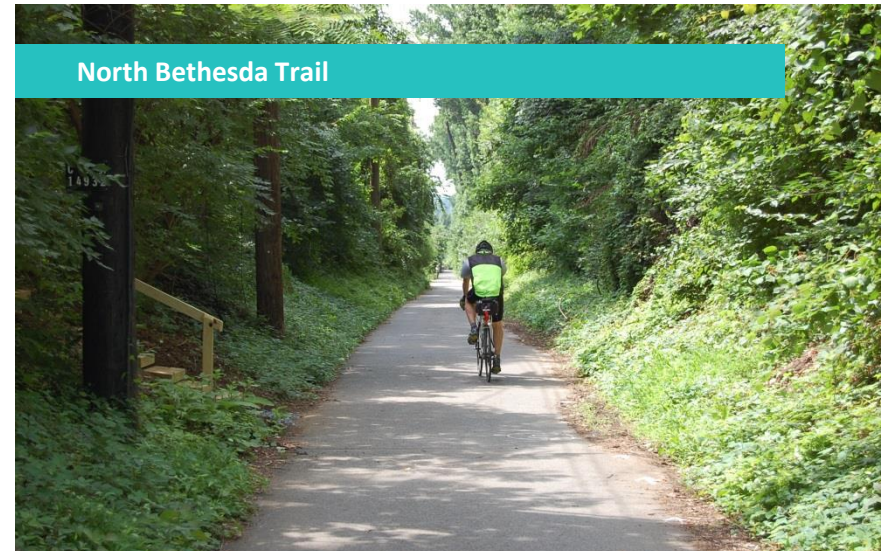
7.7 MILES

Master-Planned*

SHARED USE PATH

A paved path that is typically 10 feet wide but can vary between 8 feet and 14 feet wide, designated for bicycles and pedestrians, that is separated from motorized traffic by a curb, barrier, or landscape panel. They can be constructed as:

- Sidepaths when they are within the road right-of-way, such as along MacArthur Blvd
- Trails when they are in an independent right-of-way, such as the North Bethesda Trail



* Does not include: 1) existing bike facilities that are not recommended in previous master plans, and 2) some bikeways recommended in Rockville and Gaithersburg master plans

177 MILES

Existing

401 MILES

Master-Planned*



INTERSECTIONS

BIKE BOX

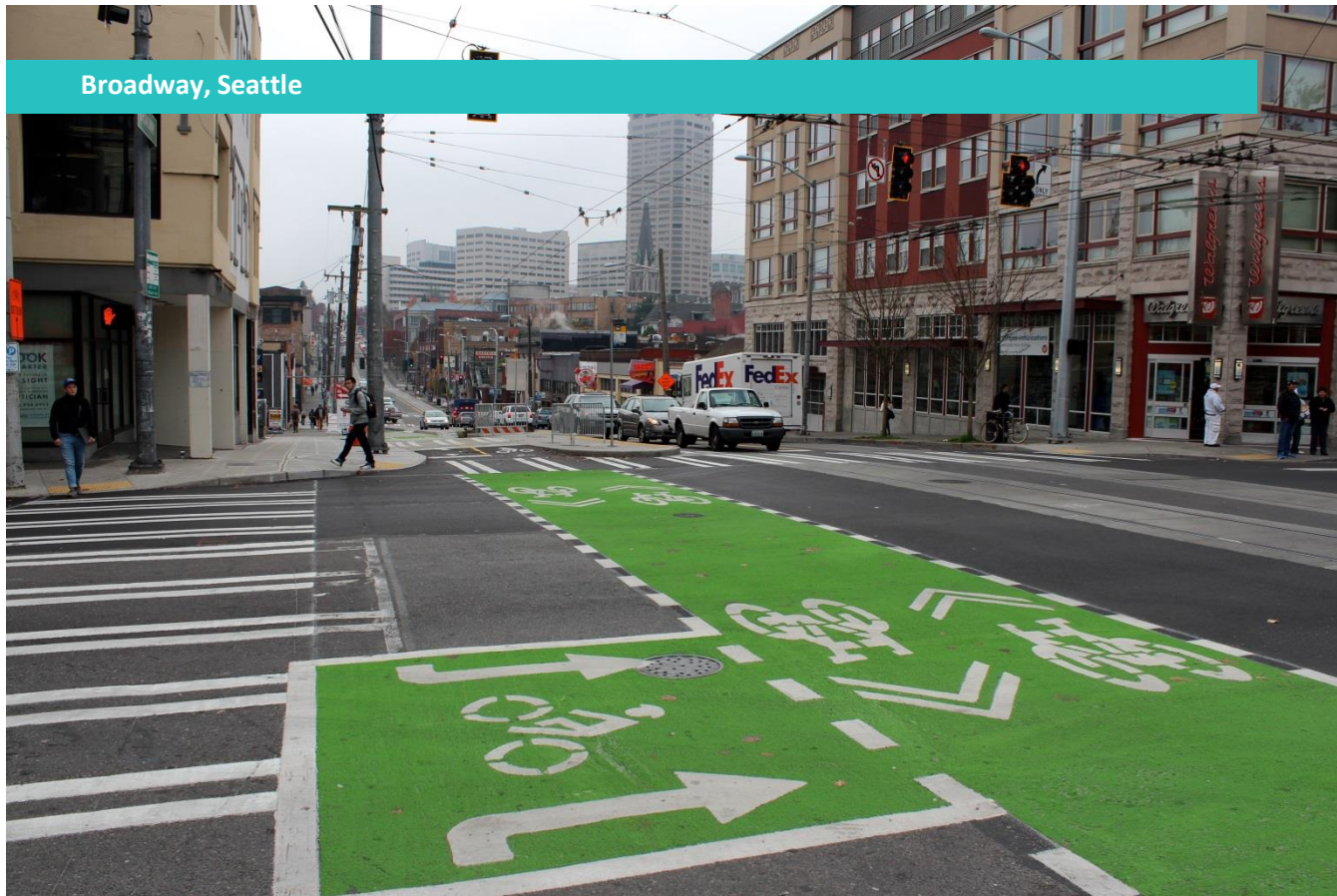
A designated area at the head of a traffic lane at a signalized intersection that provides bicyclists a safe and visible way to get ahead of queuing traffic during the red signal phase.



1 EXISTING

TWO-STAGE QUEUE BOX

An intersection treatment that facilitates left turns at multi-lane intersections from a standard bike lane or separated bike lane on the right side of the road.



UNDER CONSIDERATION



WAYFINDING AND MARKINGS

DIRECTIONAL SIGNAGE

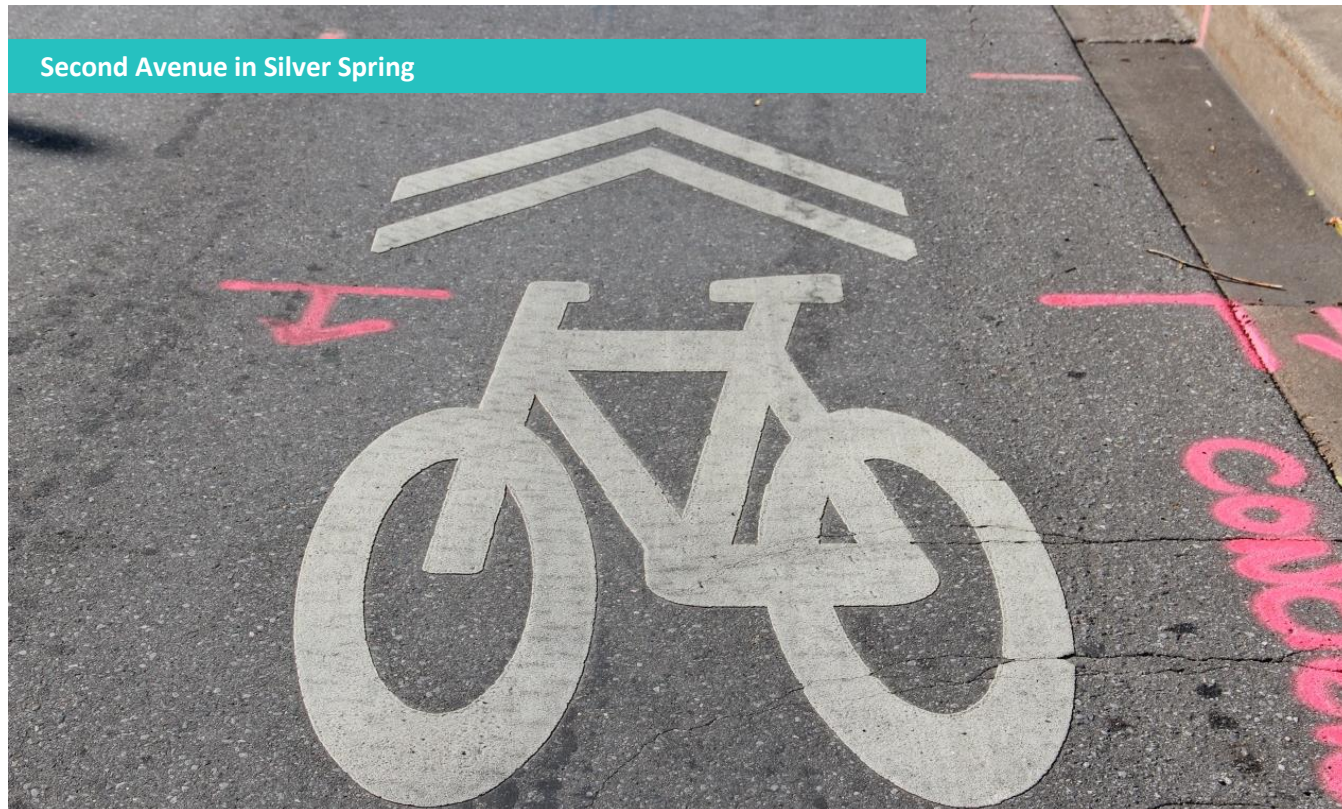
Signs that provide wayfinding for cyclists.



NUMEROUS EXISTING

SHARED ROADWAY MARKINGS

A road markings used to indicate a shared lane environment for bicycles and automobiles. Among other benefits shared lane markings reinforce the legitimacy of bicycle traffic on the street, recommend proper bicyclist positioning, and may be configured to offer directional and wayfinding guidance. Also known as “sharrows”.



NUMEROUS EXISTING



BIKE PARKING

SHORT-TERM BICYCLE PARKING

Bicycle parking that is generally intended for patrons and visitors. These spaces are generally associated with retail and civic uses, which have higher turnover rates than residential and employment uses.



A branded bike rack along the North Bethesda Trail



A standard bike rack in Silver Spring

SHORT-TERM BIKE PARKING REQUIREMENTS FOR SITE PLANS

- Chapter 59, Section 6.2.6.B of the Montgomery County Code
- Intended for patrons and visitors.
- Each short-term bicycle parking space must be:
 - available to the public;
 - located in a convenient, well-lit area that is clearly visible to both a visitor to the building and a person who is on the sidewalk that accesses the building’s main entrance; and
 - within 90 feet from:
 - the main entrance of any building; or
 - at least one main entrance of a building with more than one main entrance;
 - unless the applicable deciding body approves an alternative location during the site plan or conditional use process.



LONG-TERM BICYCLE PARKING

Bicycle parking that is generally intended for residents and employees. These spaces are generally associated with residential and employment uses. Examples are bike cages, bike rooms, and bike lockers.



Bike Lockers at the Silver Spring Metrorail Station



Residential Bike Room at Fenwick Station Apartments, Silver Spring



- Chapter 59, Section 6.2.6.A of the Montgomery County Code
- Intended for residents and employees.
- Must be provided within a building, covered parking garage, or bicycle locker located near the building or structure and the street or other bicycle right-of-way.
- Must be accessible for all building tenants during the building's hours of operations.
- A long-term bicycle parking space in a garage:
 - must be located no lower than the first complete parking level below grade, and no higher than the first complete parking level above grade
 - must be in a well-lit, visible location near the main entrance or elevators
- If a long-term bicycle parking space is in an enclosed area, the facility must not be accessible to anyone without authorized access.

Showers & Changing Facilities

Any individual tenant space with more than 50,000 square feet of nonresidential gross floor area (excluding retail or uses with less than 50 employees during the largest shift), must have one shower changing facility for each gender, unless the development has shower and changing facilities in a common area that is available to all tenants. One additional shower and changing facility per gender must be installed for every additional 50,000 square feet of nonresidential gross floor area (excluding retail), up to a maximum of 3 for each gender.

Lockers

If a long-term bicycle storage facility is required for a nonresidential use, the facility must have a minimum of 0.3 clothing lockers for each required long-term storage space for each gender.

BICYCLE TRANSIT CENTERS / BIKE STATIONS

A secure and covered bicycle parking facility that can include amenities such as showers, changing rooms, lockers, bicycle repair, and bicycle rental. Bicycle stations are often located at transit stations.



Union Station Bike Station, Washington, DC

TWO FUTURE STATIONS PLANNED

METRO STATIONS WITH THE MOST/FEWEST BIKES PARKED



	Most Bikes Parked		Fewest Bikes Parked	
2011	1	Bethesda	1	Wheaton
	2	Medical Center	2	White Flint
	3	Friendship Heights	3	Forest Glen
	4	Twinbrook	4	Glenmont
	5	Silver Spring	5	Rockville
2012	1	Bethesda	1	White Flint
	2	Grosvenor	2	Glenmont
	3	Twinbrook	3	Forest Glen
	4	Silver Spring	4	Wheaton
	5 (t)	Friendship Heights & Shady Grove	5	Rockville
2013	1	Silver Spring	1	Wheaton
	2 (t)	Bethesda	2	White Flint
	2 (t)	Shady Grove	3	Glenmont
	4	Grosvenor	4	Forest Glen
	5 (t)	Medical Center & Rockville	5	Friendship Heights
2014	1	Twinbrook	1	Wheaton
	2	Grosvenor	2	White Flint
	3 (t)	Bethesda	3	Friendship Heights
	3 (t)	Silver Spring	4	Glenmont
	5	Rockville	5	Shady Grove



CAPITAL BIKESHARE

BIKESHARE

A service in which bicycles are made available for shared use, allowing people to borrow a bike from one location and return it to another.



51 EXISTING

BIKESHARE OVERVIEW

Montgomery County launched in Sept 2013

51 Stations in Montgomery County

Montgomery County Service Areas

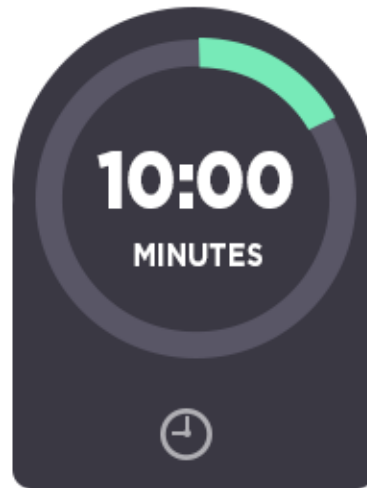
- Takoma Park
- Silver Spring
- Friendship Heights
- Bethesda
- Rockville
- Shady Grove



BIKESHARE STATISTICS



3 of 5 Montgomery County bikeshare trips both start and end in the County.



Just over half of Montgomery County bikeshare trips are less than **10 minutes**.

MOST USED COUNTY BIKESHARE STATIONS: 2014 TRIP ORIGINS

Rank	Station	Service Area	Average Trips per Day
1	Bethesda Metro Station	Bethesda	11.3
2	Friendship Heights Metro Station	Friendship Heights	6.5
3	Bethesda Avenue & Arlington Road	Bethesda	6.0
4	Carroll Avenue & Ethan Allen Avenue	Takoma Park	5.5
5	River Road & Landy Lane	Westbard	5.3
6	Shady Grove Metro Station	Shady Grove	4.3
7	Battery Lane & Trolley Trail	Bethesda	4.1
8	Carroll Avenue & Westmoreland Avenue	Takoma Park	4.1
9	Montgomery Lane & East Lane	Bethesda	4.0
10	Cordell Avenue & Norfolk Avenue	Bethesda	3.6

MOST USED COUNTY BIKESHARE STATIONS: 2014 TRIP DESTINATIONS

Rank	Station	Service Area	Average Trips per Day
1	Bethesda Metro Station	Bethesda	7.1
2	Bethesda Avenue & Arlington Road	Bethesda	6.7
3	Friendship Heights Metro Station	Friendship Heights	6.5
4	Carroll Avenue & Ethan Allen Avenue	Takoma Park	5.4
5	River Road & Landy Lane	Westbard	5.2
6	Maple Avenue & Ritchie Avenue	Takoma Park	4.4
7	Philadelphia Avenue & Maple Avenue	Takoma Park	4.3
8	Cordell Avenue & Norfolk Avenue	Bethesda	4.0
9	Battery Lane & Trolley Trail	Bethesda	3.8
10	Offutt Lane & Chevy Chase Drive	Bethesda	3.4

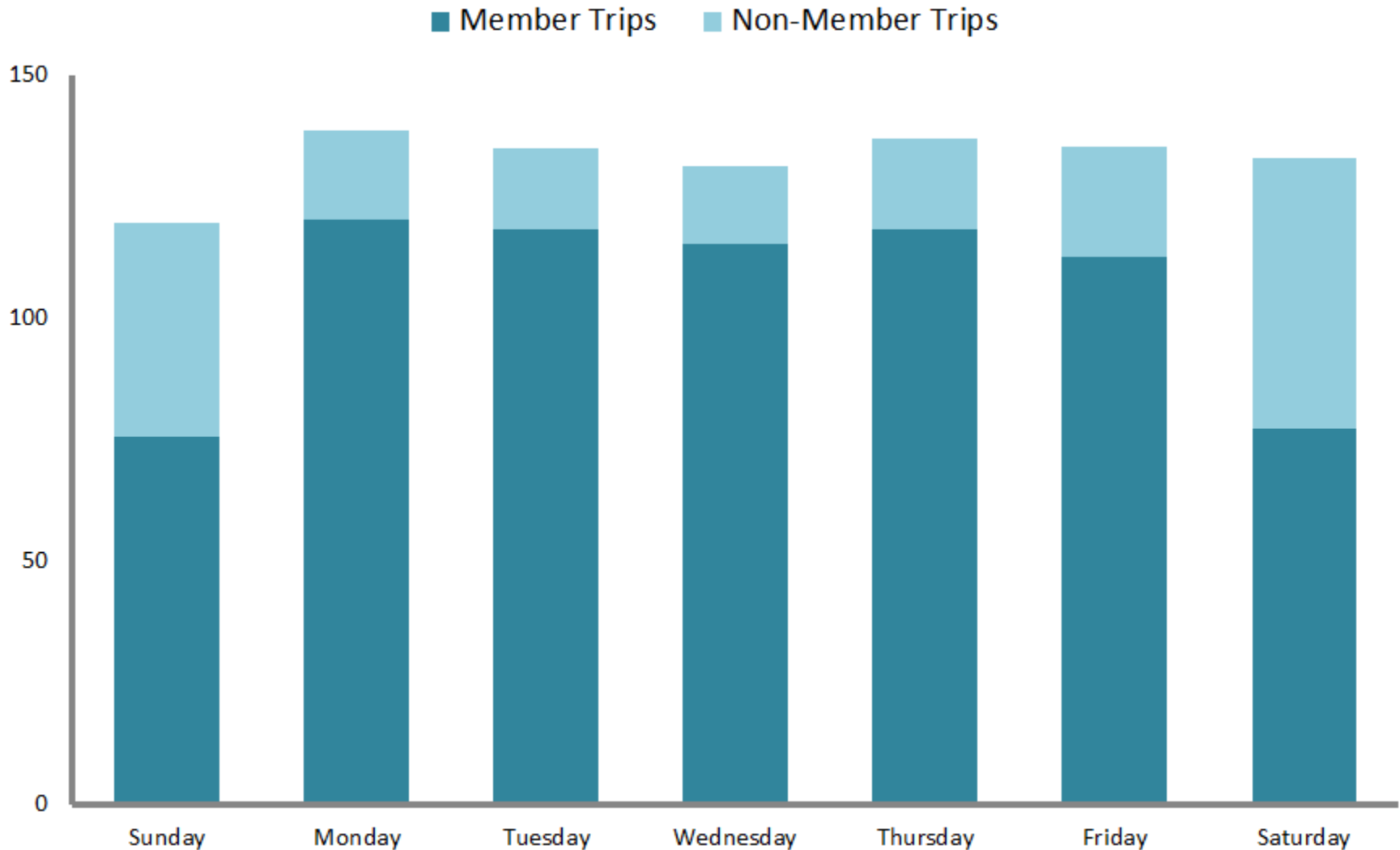
MOST POPULAR MONTGOMERY COUNTY BIKESHARE 2014 TRIP PAIRS



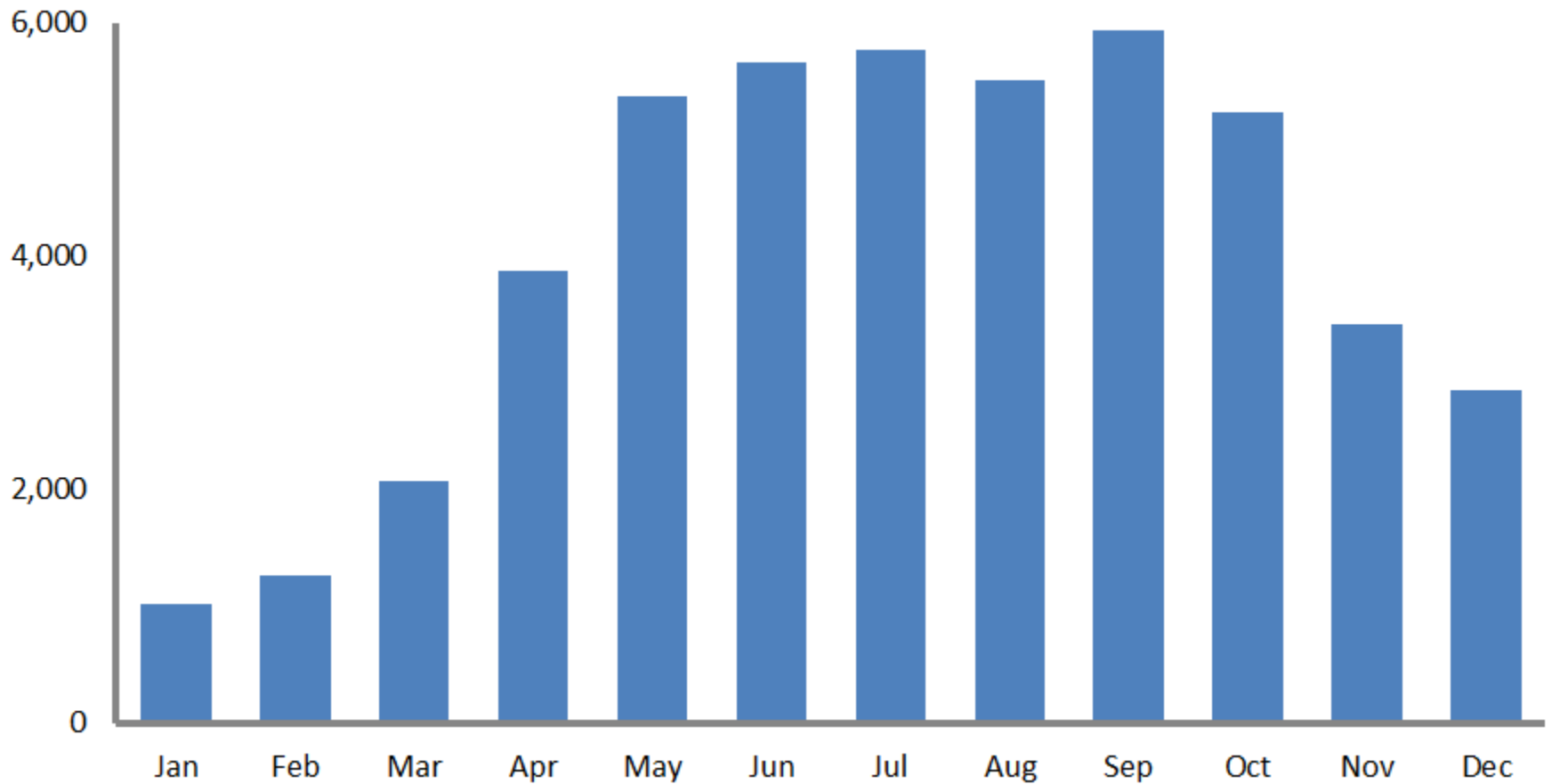
Rank	Station One	Station Two	# of Trips	% of County Trips in 2014
1	Takoma Metro Station	Carroll Avenue & Ethan Allen Avenue	2,455	6.0%
2	Takoma Metro Station	Maple Avenue & Ritchie Avenue	1,444	3.5%
3	Takoma Metro Station	Philadelphia Avenue & Maple Avenue	1,416	3.5%
4	Takoma Metro Station	Fenton Street & New York Avenue	1,029	2.5%
5	Carroll Avenue & Ethan Allen Avenue	Carroll Avenue & Westmoreland Avenue	797	2.0%
6	Bethesda Metro Station	Cordell Avenue & Norfolk Avenue	763	1.9%
7	Takoma Metro Station	Carroll Avenue & Westmoreland Avenue	665	1.6%
8	Battery Lane & Trolley Trail	Norfolk Avenue & Fairmont Street	664	1.6%
9	Shady Grove Metro Station	King Farm Boulevard & Pleasant Drive	660	1.6%
10	Bethesda Avenue & Arlington Road	Bethesda Avenue & Arlington Road	650	1.6%

Source: Capital Bikeshare

AVERAGE DAILY COUNTY BIKESHARE TRIPS IN 2014



MONTHLY COUNTY BIKESHARE TRIPS IN 2014

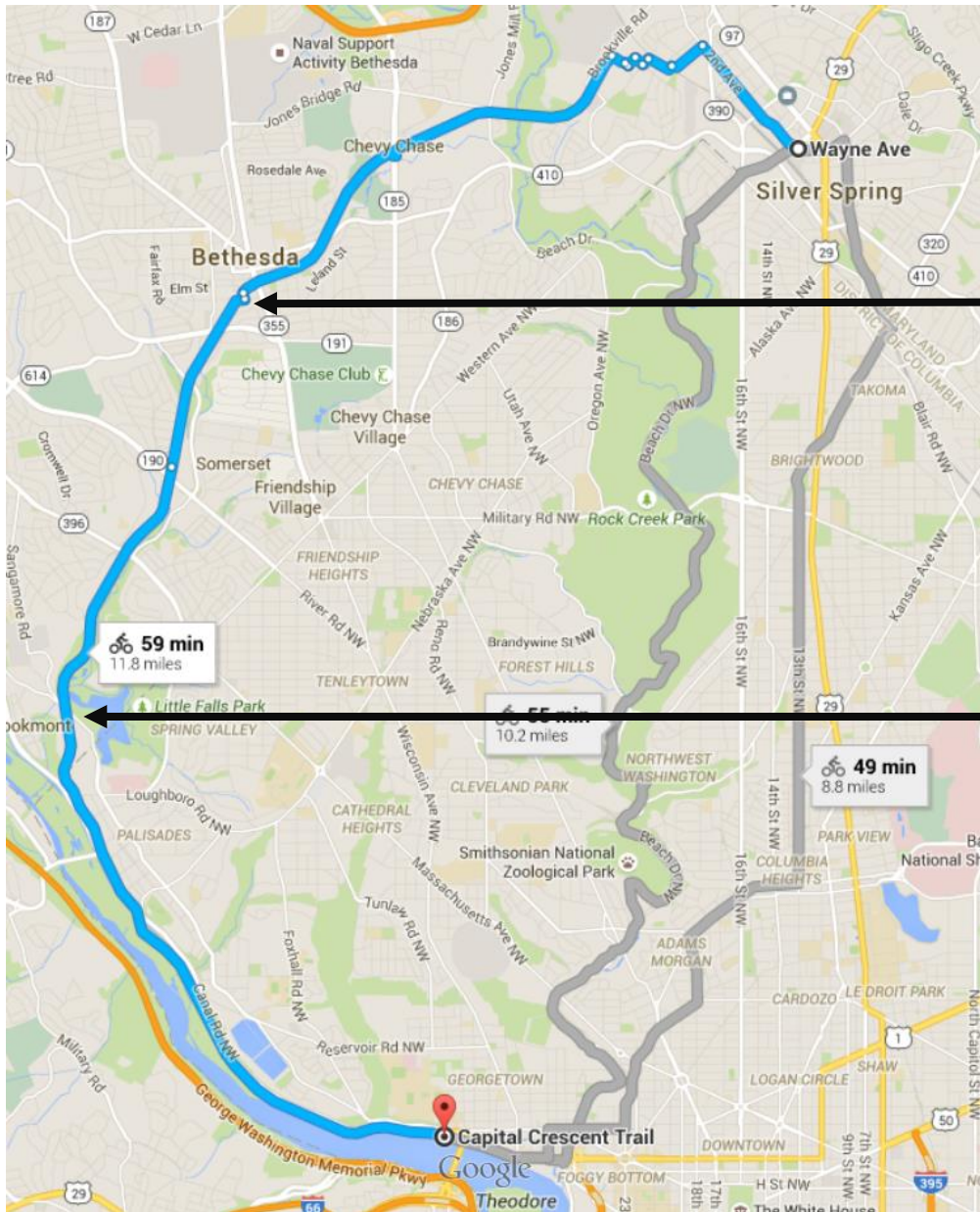


Source: Capital Bikeshare



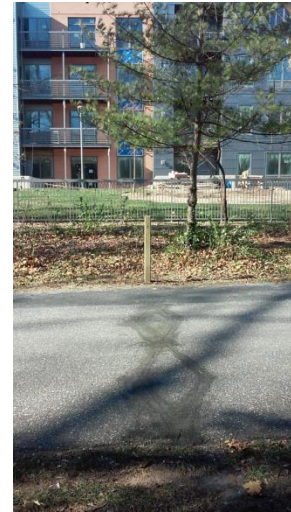
CAPITAL CRESCENT TRAIL

COUNT LOCATIONS



Bethesda Ave

Opened 11/13/2014
200 yards south of
Bethesda Avenue

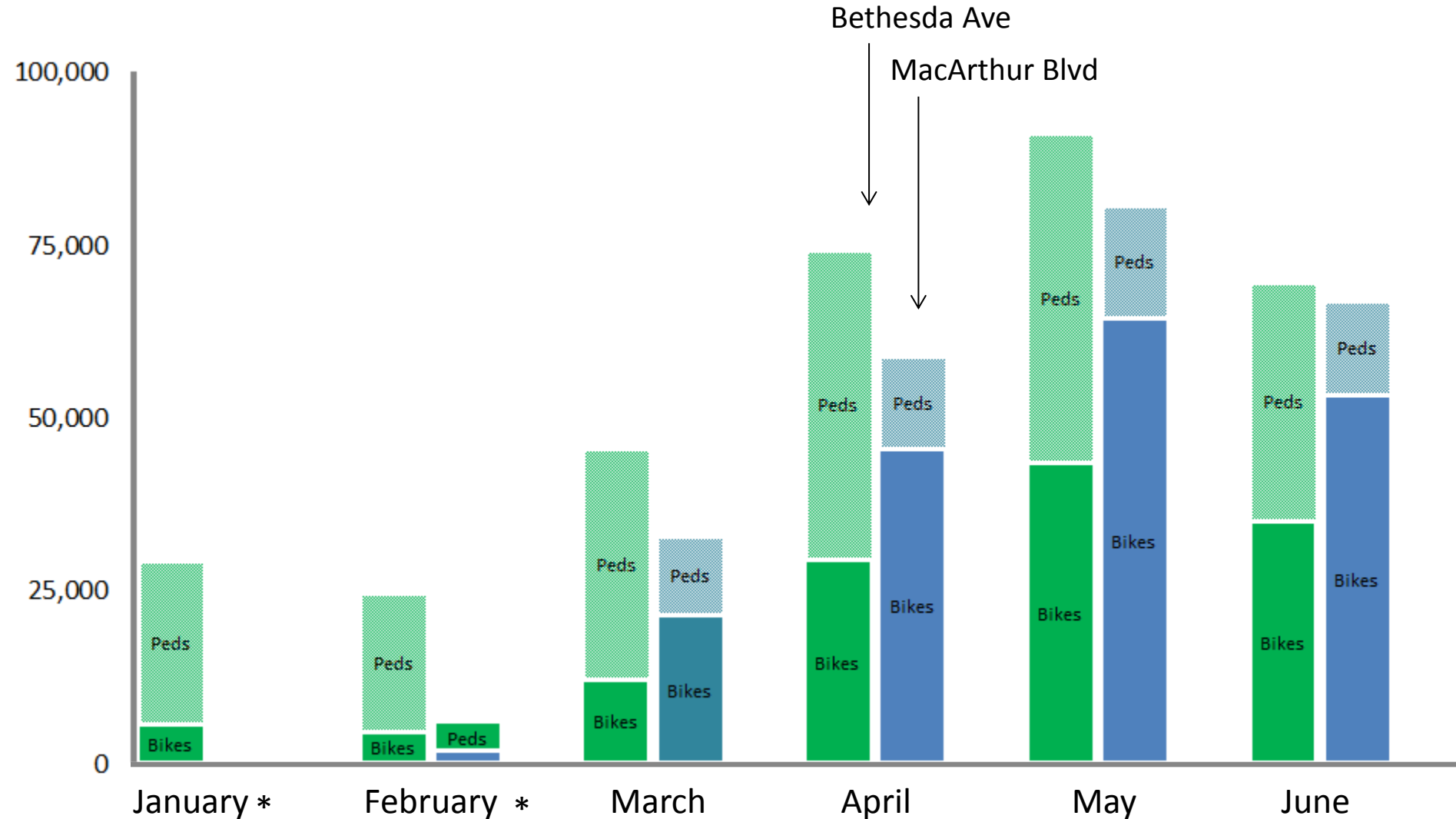


MacArthur Blvd

Opened 2/11/2015
100 yards south of
Dalecarlia Tunnel

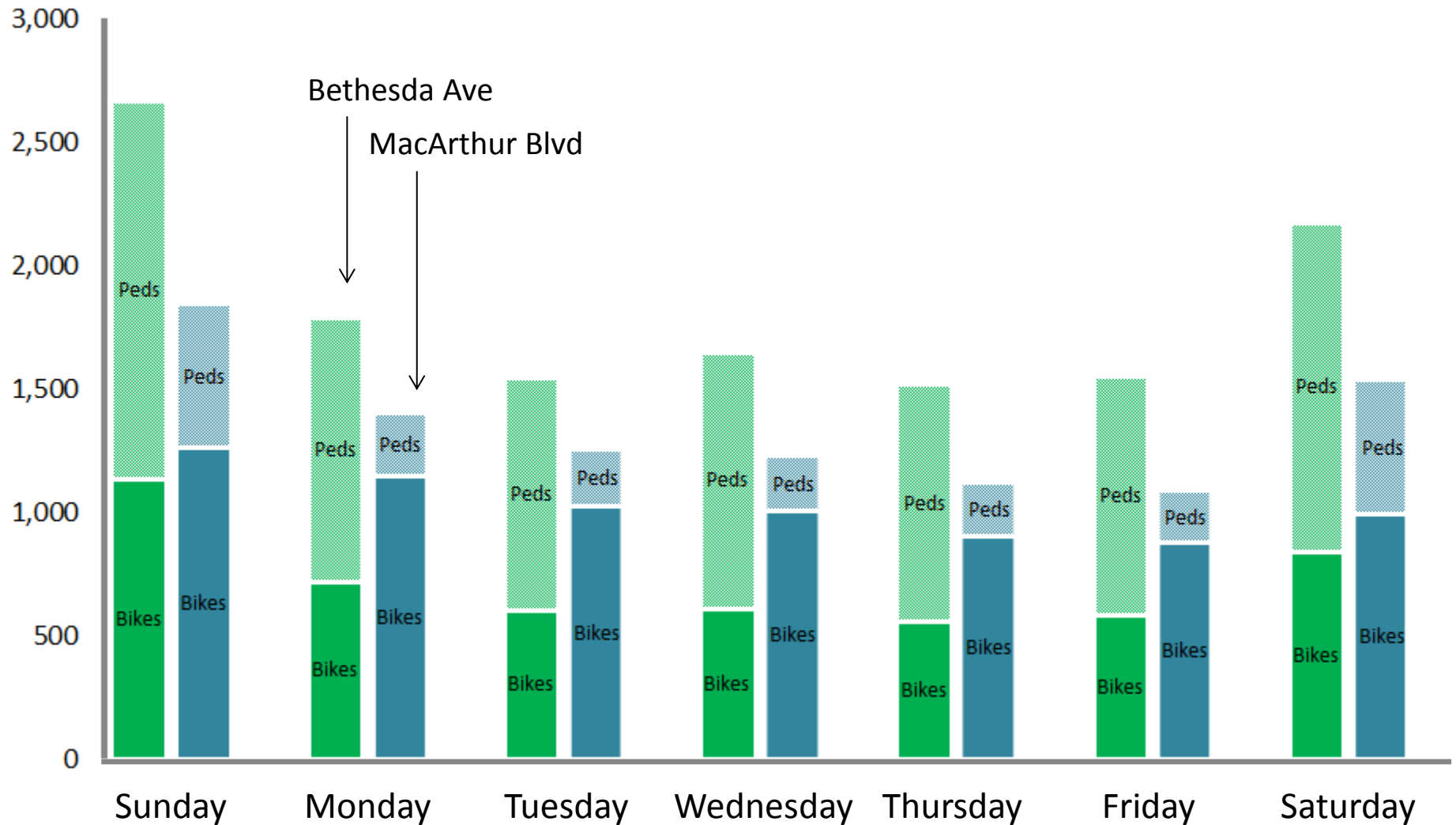


TOTAL CCT USERS PER MONTH



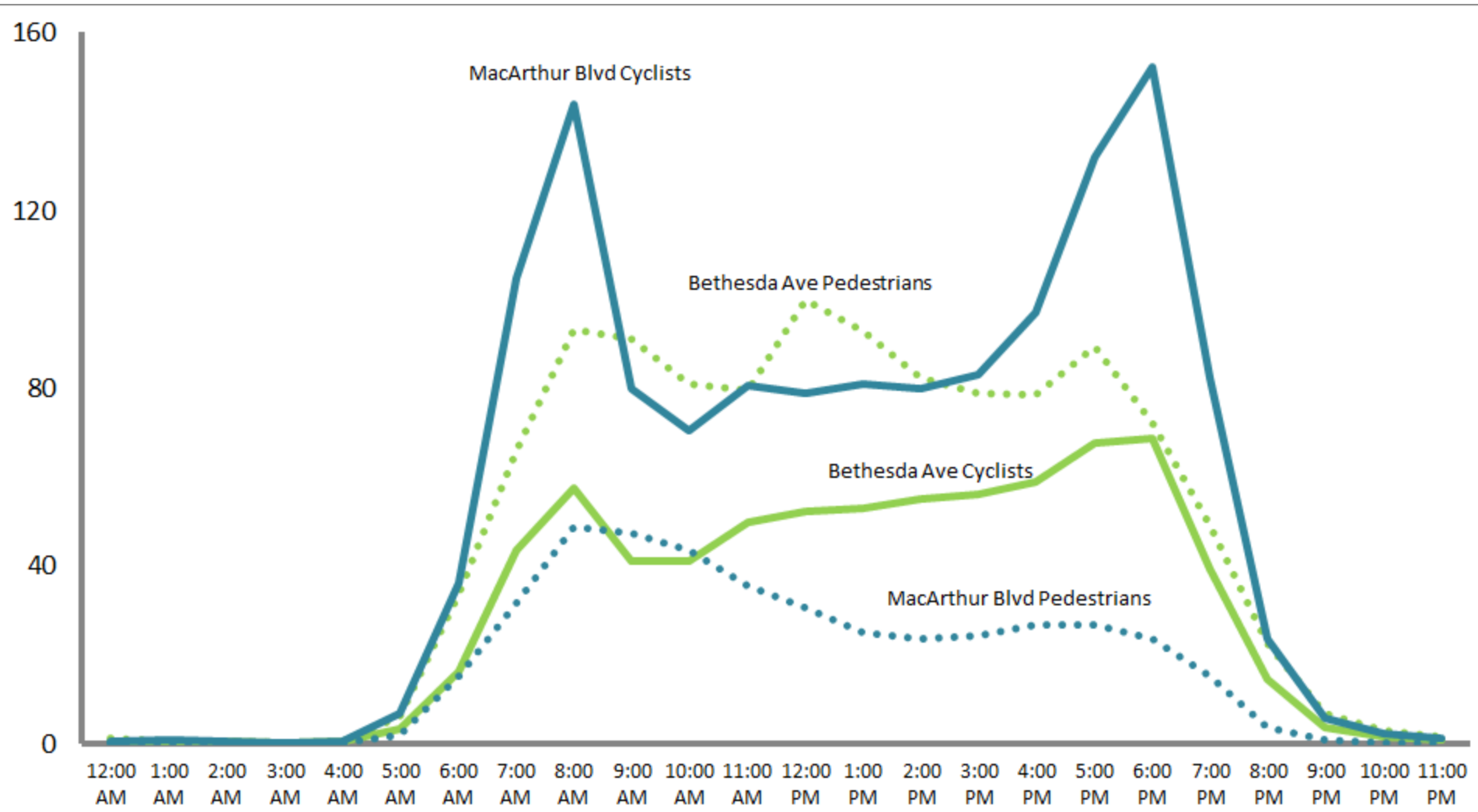
* MacArthur Blvd counter began operating on Feb 11, 2015

AVERAGE CCT USERS PER DAY



* MacArthur Blvd counter began operating on Feb 11, 2015

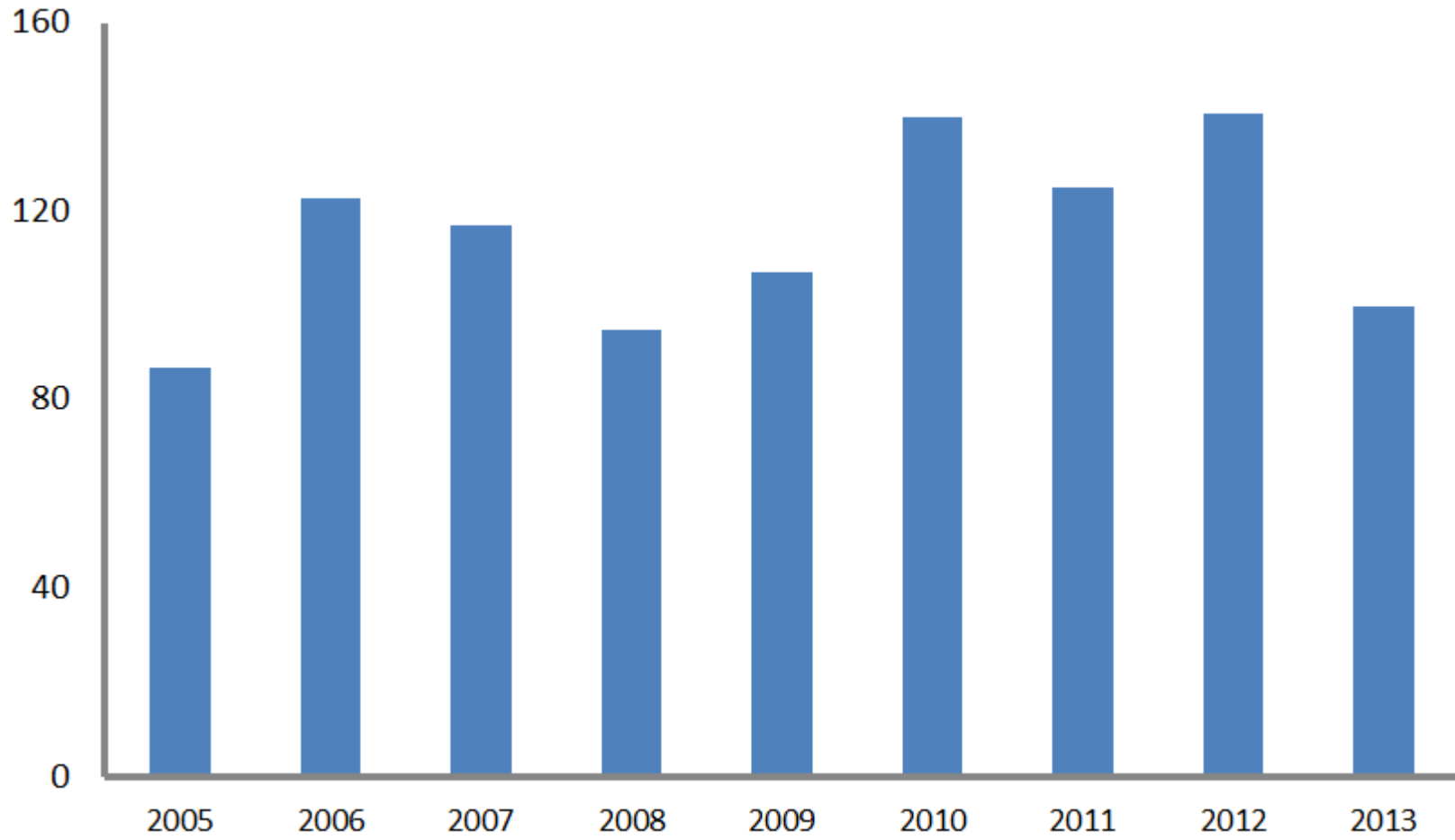
AVERAGE CCT USERS PER HOUR



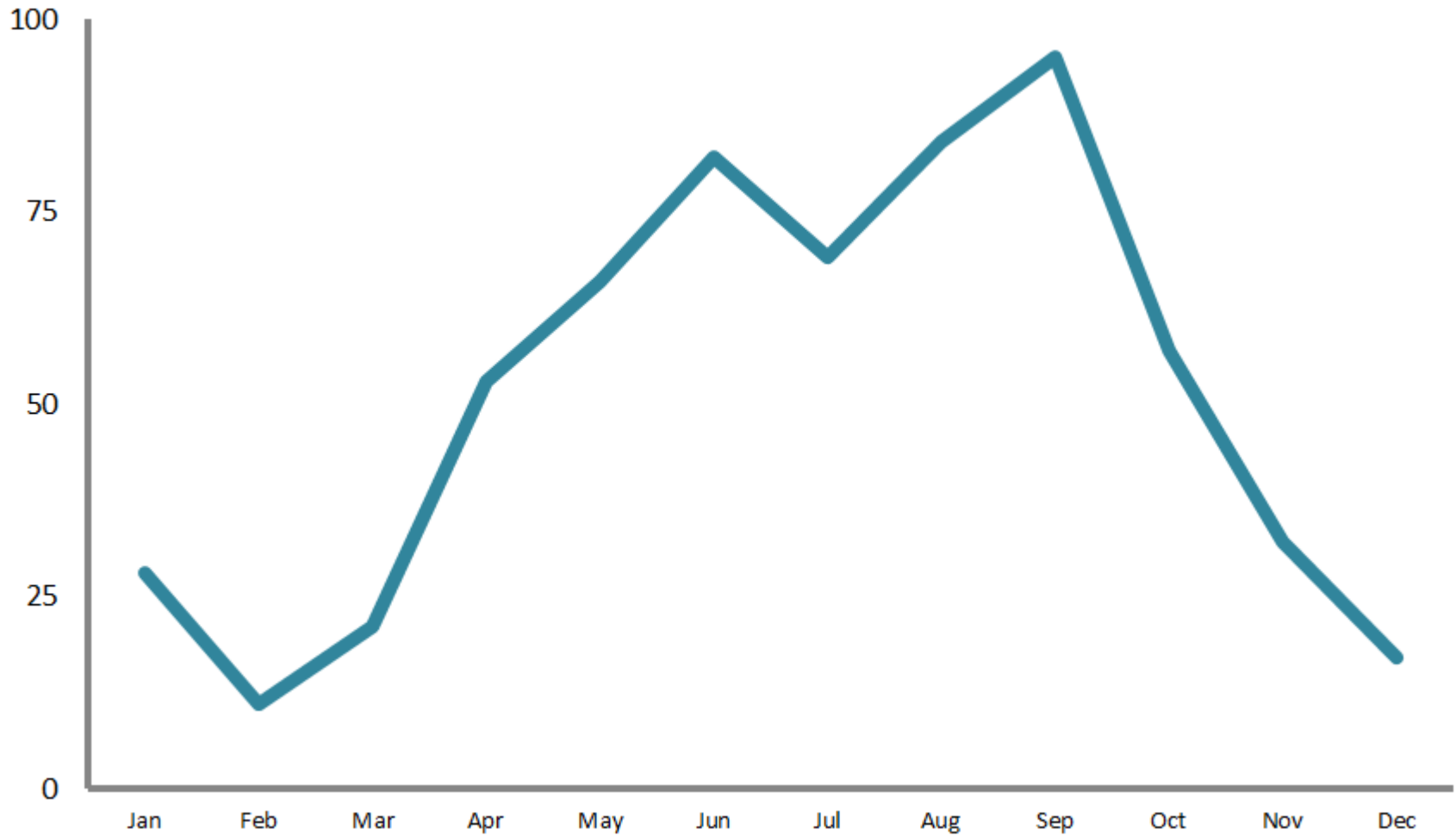


SAFETY

REPORTED BICYCLE COLLISIONS BY YEAR



REPORTED BICYCLE COLLISIONS BY MONTH



Sources: Montgomery County Police Department, Montgomery County CountyStat

BICYCLE COLLISIONS BY TIME OF DAY

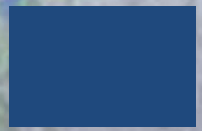


5%
DUSK & DAWN

15%
AFTER DARK



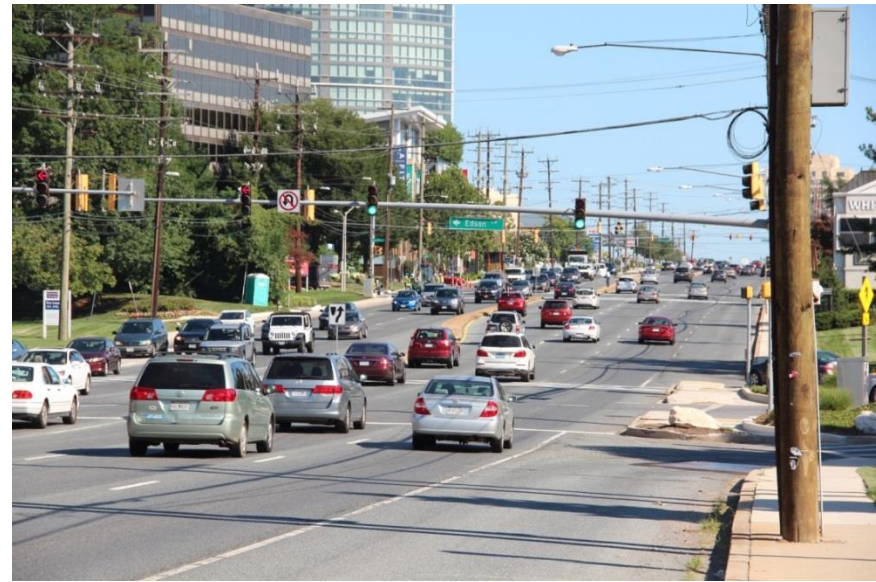
PLANNING TOOLS



WHAT IS TRAFFIC STRESS?

When cyclists travel along roadways, they face varying levels of stress from traffic. A quiet residential street with a 25-mile-per-hour speed limit presents a low-stress setting for cyclists, but a six-lane highway with a 40-mile-per-hour speed limit creates a high-stress environment for cyclists who must share the roadway with traffic. Stress from traffic is affected by variables such as traffic speed, traffic volume, number of lanes, frequency of parking turnover and ease of crossing intersection, among other things. People are more likely to bicycle in low-stress environments, so improving bicycling in Montgomery County requires developing low-stress connections between activity centers, transit facilities and neighborhoods.

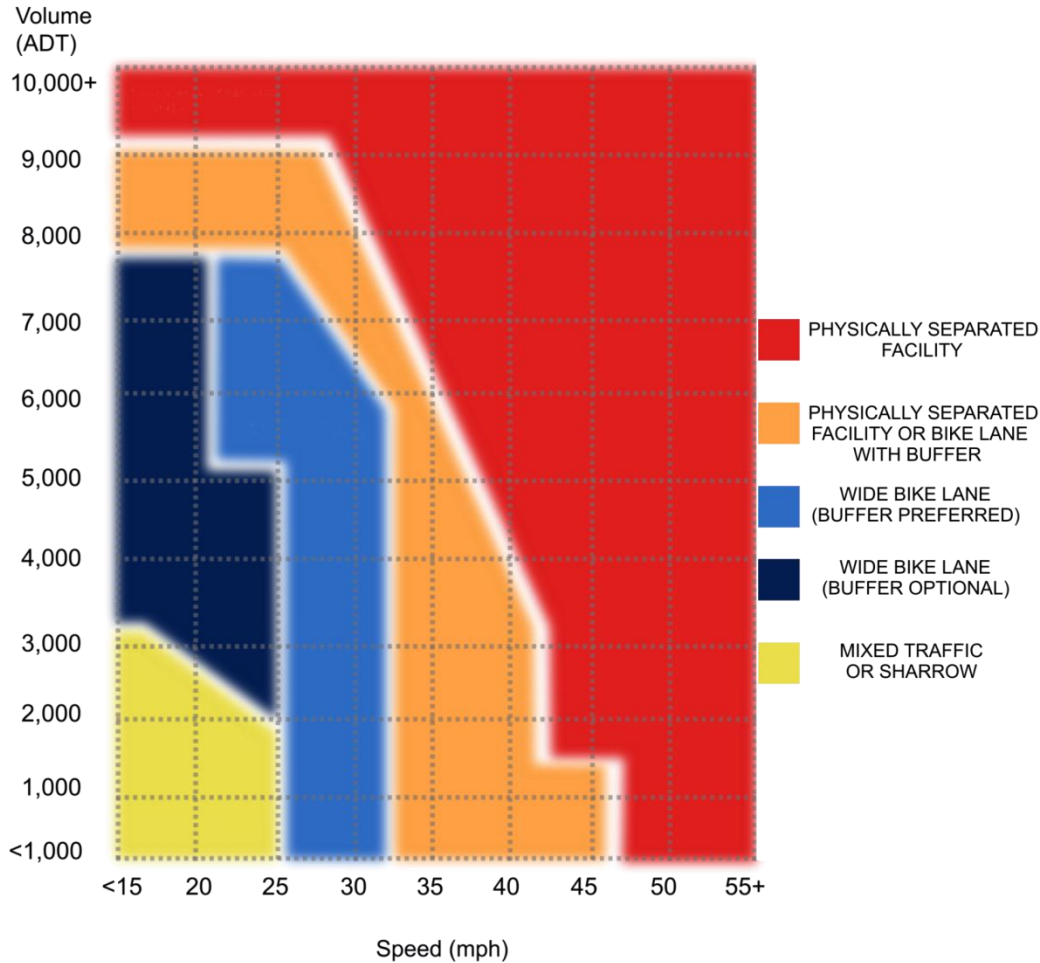
The Bicycle Master Plan will use a modified version of the Level of Traffic Stress developed by Peter Furth at Northeastern University.



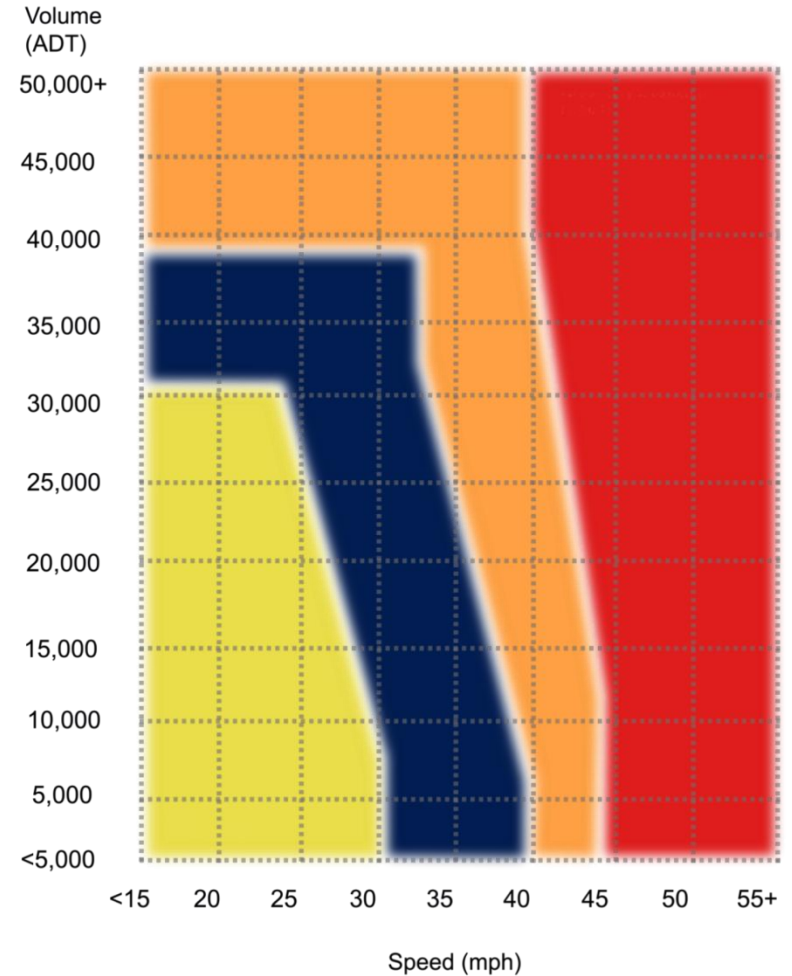
Rockville Pike is a high stress bicycling environment

NOMOGRAPHS: SPEED AND VOLUME CHARTS

INTERESTED BUT CONCERNED



CONFIDENT CYCLISTS





Website

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

Twitter

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THE
BICYCLE
MASTER PLAN

