dvrpc memo

Date: February 29, 2016

To: DVRPC member governments and planning partners

From: Cassidy Boulan, DVRPC

Subject: Distribution of Process Memo 16008: DVRPC Regional Cyclical Bicycle Count Program Summary, 2014/2015

DVRPC's cyclical bicycle count program, which began in 2014, deploys weeklong bicycle count equipment throughout the region to measure and track over time bicycle volumes in different locations and on different types of bicycle facilities (initially trails or sidepaths, bicycle lanes, sharrows, striped shoulders, and mixed traffic). Count locations reflect input from our member governments and planning partners. This process memo summarizes counts taken at almost 150 locations and serves as the base saturation count batch from which a smaller number of locations, to be determined, will be counted each year, with each location being counted every three years on a rotating schedule.

DVRPC Regional Cyclical Bicycle Count Program Summary

2014/2015

DVRPC's new cyclical bicycle count program deploys weeklong bicycle count equipment throughout the region. These count locations reflect input from our member governments, as well as our other planning partners.

Pneumatic tube bicycle counter in Philadelphia, PA
Photo Credit: Bicycle Coalition of Greater Philadelphia

Regional Bicycle Counting Program

The regional cyclical bicycle count program was started by DVRPC to measure levels of bicycling across facility and land use types on an ongoing basis. Count locations were selected based on suggestions and refinement from, and by, member counties and bicycle advocates. All or a subset of these locations will continue to be counted on a rotating three-year schedule. This program will provide longitudinal data for planning and modeling work at the regional and local level. This data will also be combined with data from DVRPC's other programs, such as the permanent bicycle and pedestrian counters on regional trails and the data collected through the CyclePhilly smart phone app, to conduct additional analysis of bicycling patterns.

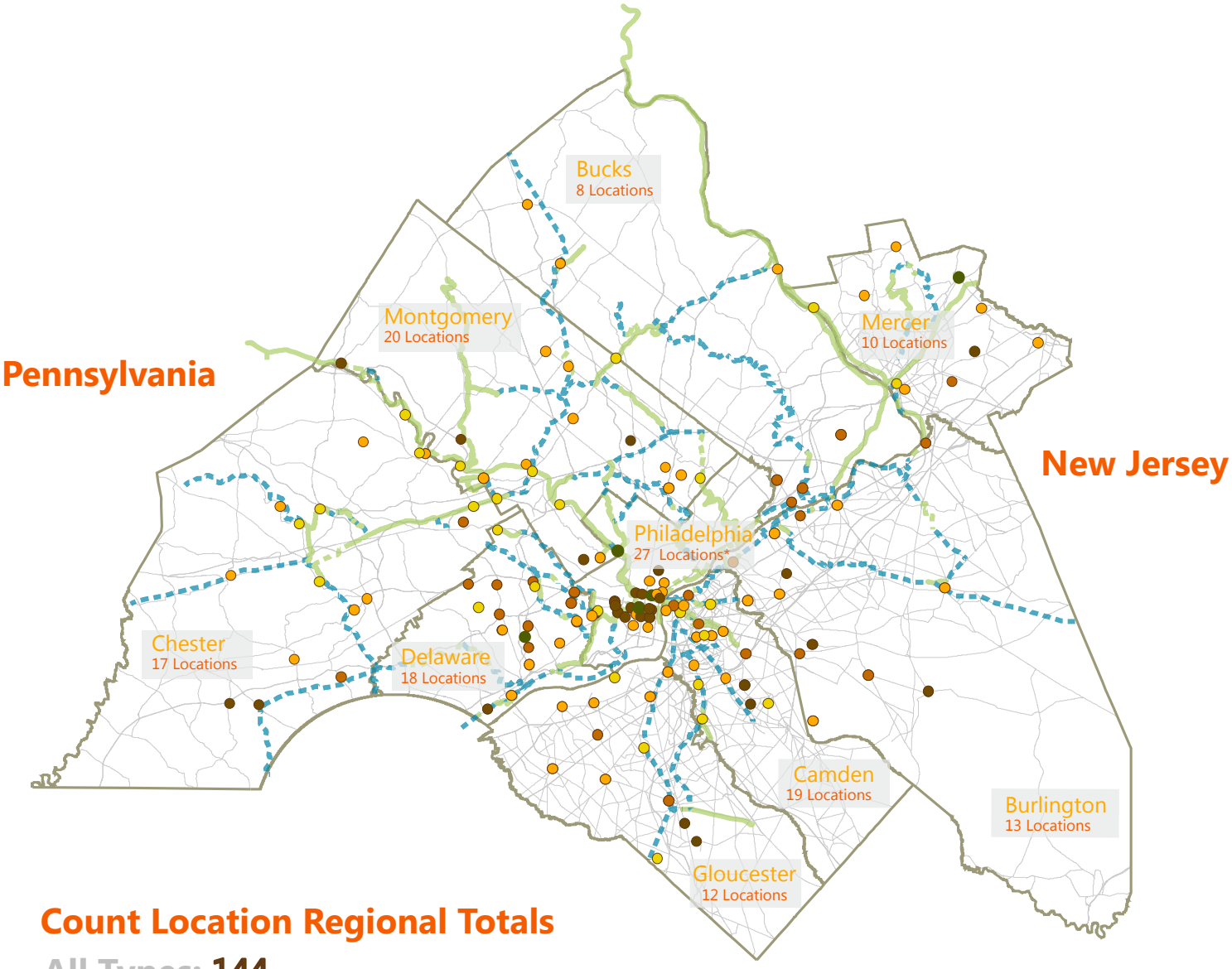
All counts were taken for a seven-day period by pneumatic tube counters, accepted practice in the 2013 edition of FHWA's Traffic Monitoring Guide. To calculate the annual average daily bicycles (AADB), an average of each full day of count data is calculated and then multiplied by the seasonal adjustment factor and the equipment factor. The seasonal adjustment factors that are used are the same as for motorized counts. These values range from .763 to 1.4. Seasonal adjustment factors are calculated for each day of the week within each month (i.e. Mondays in April). This is standard practice by state DOTs for motorized traffic. The equipment factor is either 1.02 or 1.1797, for Eco Tube and Jamar equipment respectively. These values were developed through agency validation and adjust for under counting. The formula is shown below:

$$AADB = \frac{\text{Sum of each full day of count data}}{\text{Number of days with complete data}} \times \text{Seasonal Adjustment Factor} \times \text{Equipment Factor}$$

Seasonal adjustment factors to calculate AADBs will be improved in the future using data from permanent bicycle and pedestrian counters on the regional trail system, and AADBs shown in the DVRPC web viewer will be adjusted accordingly.

The following maps display the AADB totals from the inaugural round of the program. These counts were taken between July 2014 and September 2015.

DVRPC Regional Cyclical Bicycle Count Locations



Count Location Regional Totals

All Types: 144

Trails and Sidepaths **29**
Bicycle Lanes **30**
Sharrows **5**
Striped Shoulders **24**
Mixed Traffic **56**

LEGEND

Circuit Trail Network

- Existing Trail Facility
- Proposed Trail Facility
- Planned Trail Facility

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Types of Facilities

The cyclical count locations are categorized into five different facility types: trail or sidepath, mixed traffic, bicycle lane, sharrow, and striped shoulder. The prevalence of different types of facilities varies by county.

58th Street Greenway sidepath, Philadelphia, PA
Photo Credit: PlanPhilly

Trail or Sidepath

A trail is a multi-use, off-road facility that is used by bicycles, pedestrians, and other non-motorized transportation modes. Sidepaths are similar to trails except they are typically shorter in length, located immediately adjacent to the cartway, and are commonly used to fill segments that connect other trail segments and/or the on-road network.

Chester Valley Trail, Chester County
Photo Credit: DVRPC

Mixed Traffic

Mixed traffic locations are defined as any road where there is no dedicated bicycle facility and bicycles mix with motorized vehicles.

15th Street, South Philadelphia
Photo Credit: Bicycle Coalition of Greater Philadelphia

Bicycle Lane

A bicycle lane is a portion of the roadway that has been designated by striping, optional signing, and pavement markings for the preferential and largely exclusive use of bicyclists. Bicycle lanes are usually found in denser, more urban locations.

Bicycle lane, Camden, NJ
Photo Credit: DVRPC

Sharrow

A shared-lane marking or sharrow is a street marking placed in the travel lane to indicate where people should preferably bicycle for best visibility and to avoid being doored adjacent to on-street parking. Sharrows are typically used for roadways with narrower widths and/or lower traffic volumes than those selected for bicycle lanes, and also communicate to drivers that bicyclists should be expected.

Sharrow marking, Swarthmore, PA
Photo Credit: DVRPC

Striped Shoulder

The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of the base and surface courses. The shoulder may be used for bicycle travel where allowed. It may also be used by pedestrians in the absence of a sidewalk. Bicycling in a striped shoulder is usually more common in less dense, suburban, and more rural areas.

Striped shoulder
Photo Credit: DVRPC

PENNSYLVANIA

COUNTIES

Bucks

Chester

Delaware

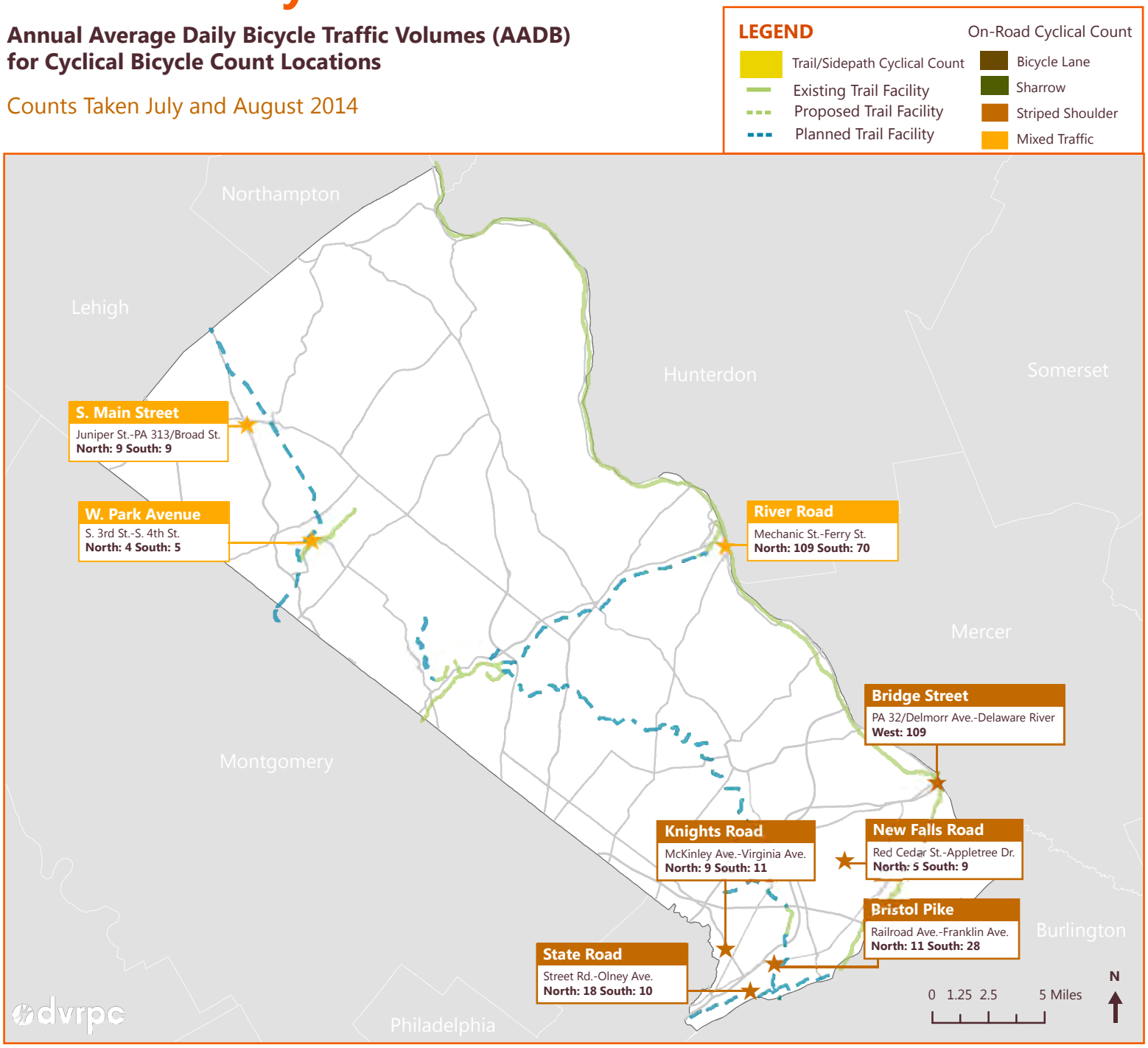
Montgomery

Philadelphia

Bucks County

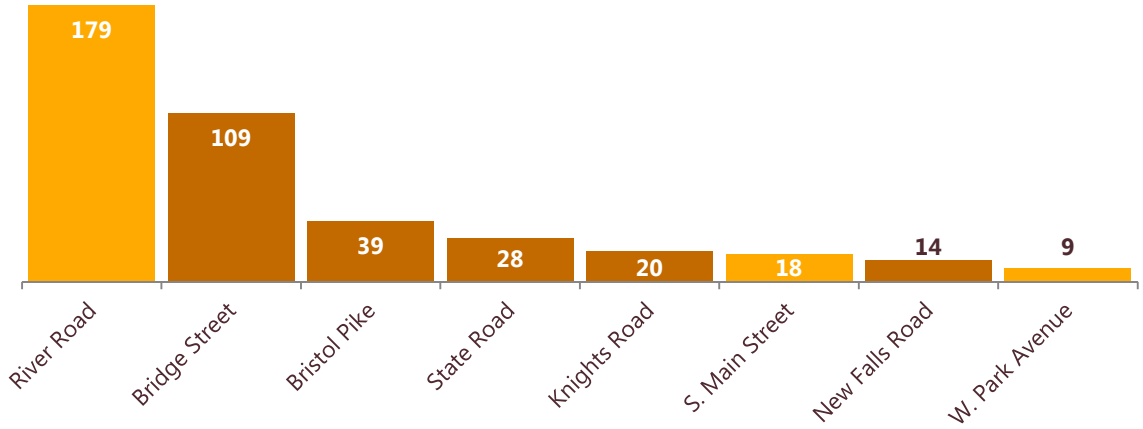
Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

Counts Taken July and August 2014



ON-ROAD FACILITIES

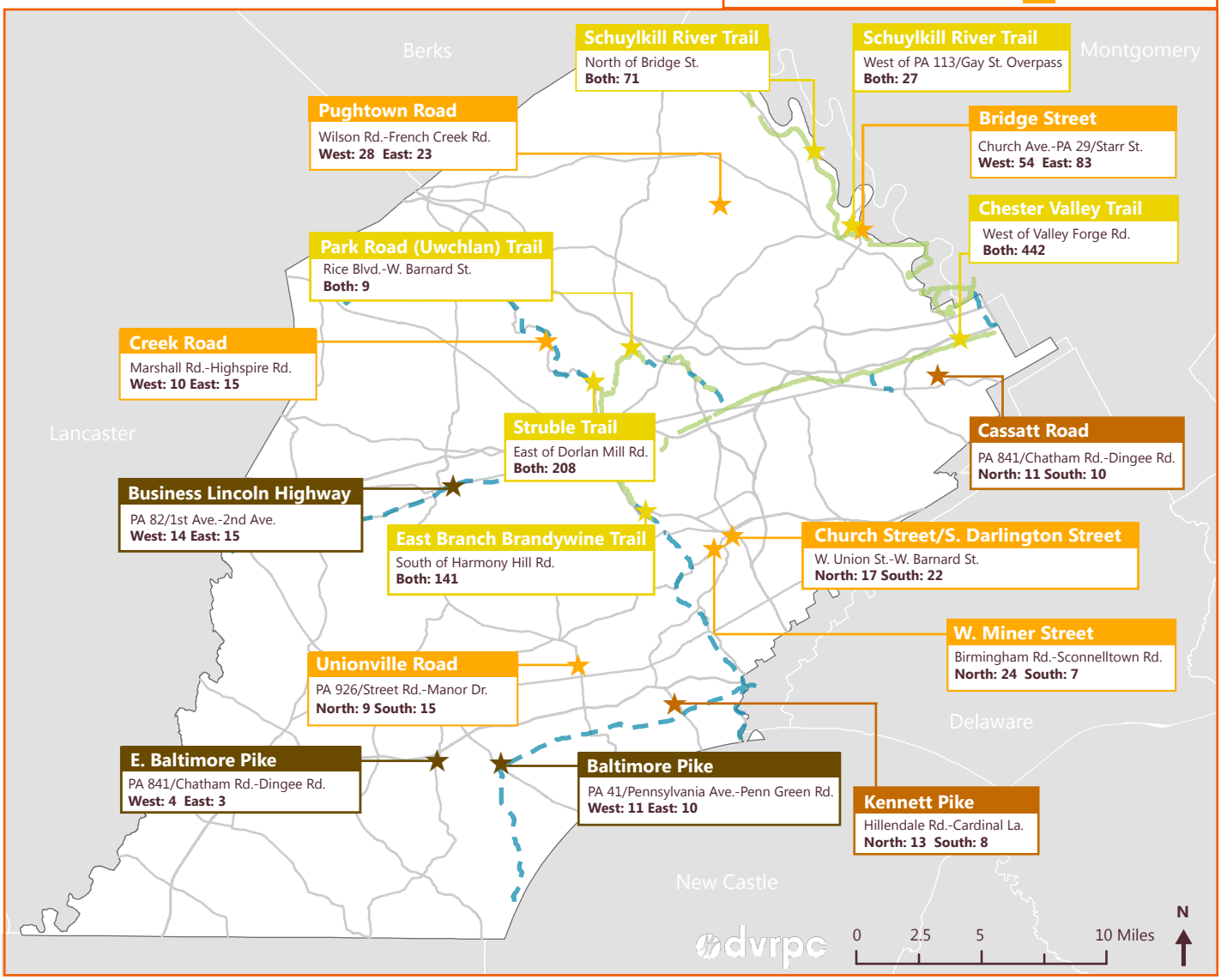
Bidirectional Total



Chester County

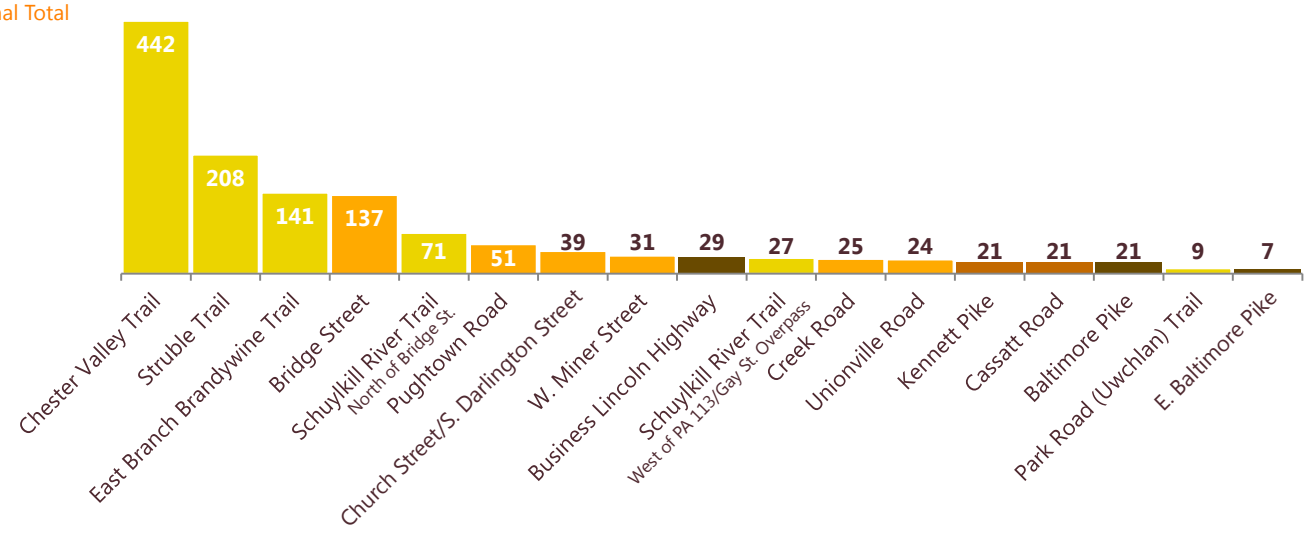
Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

Counts Taken June 2015



ON-ROAD AND TRAIL FACILITIES

Bidirectional Total



Delaware County

Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

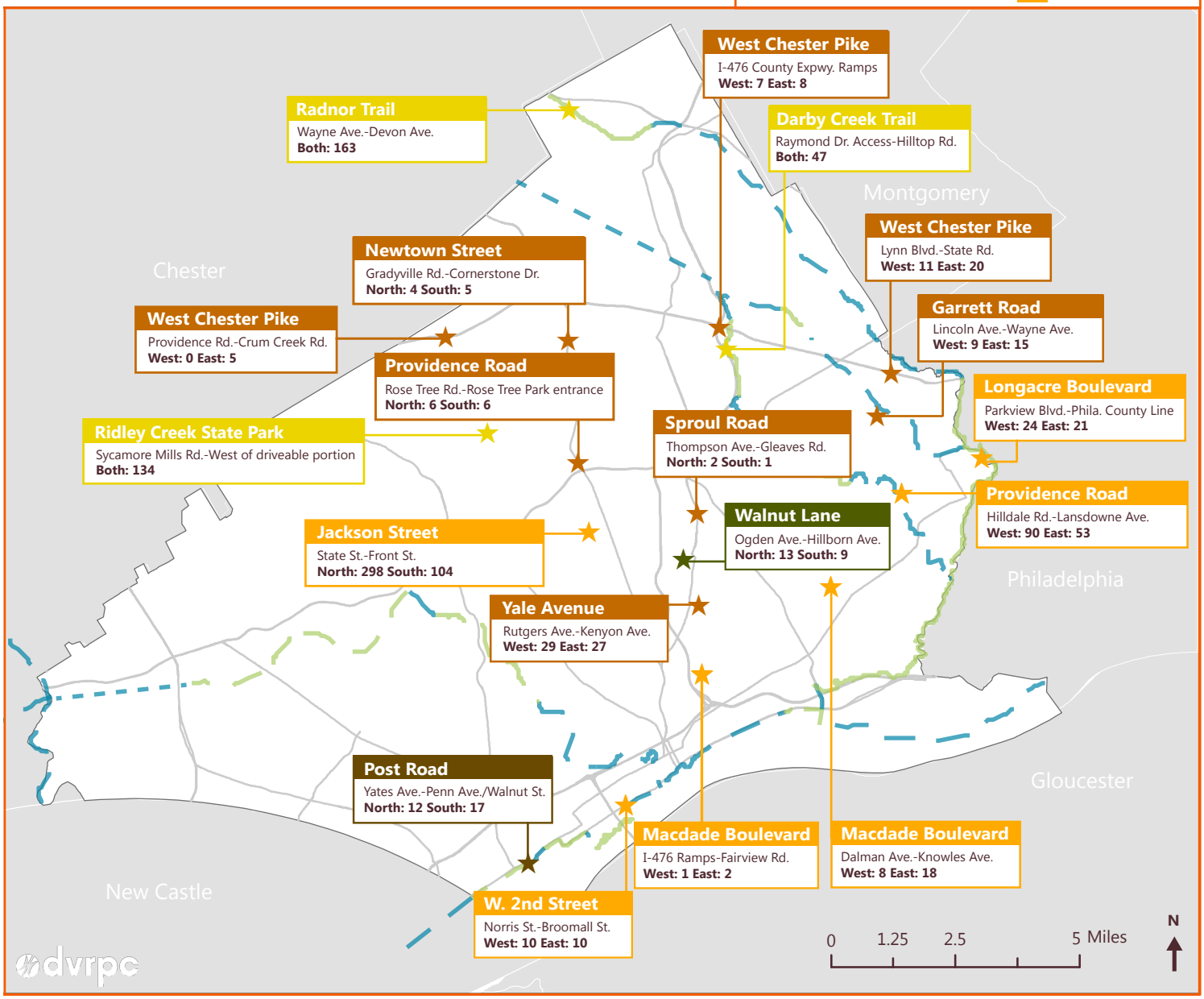
Counts Taken August and September 2015

LEGEND

- Trail/Sidepath Cyclical Count
- Existing Trail Facility
- Proposed Trail Facility
- Planned Trail Facility

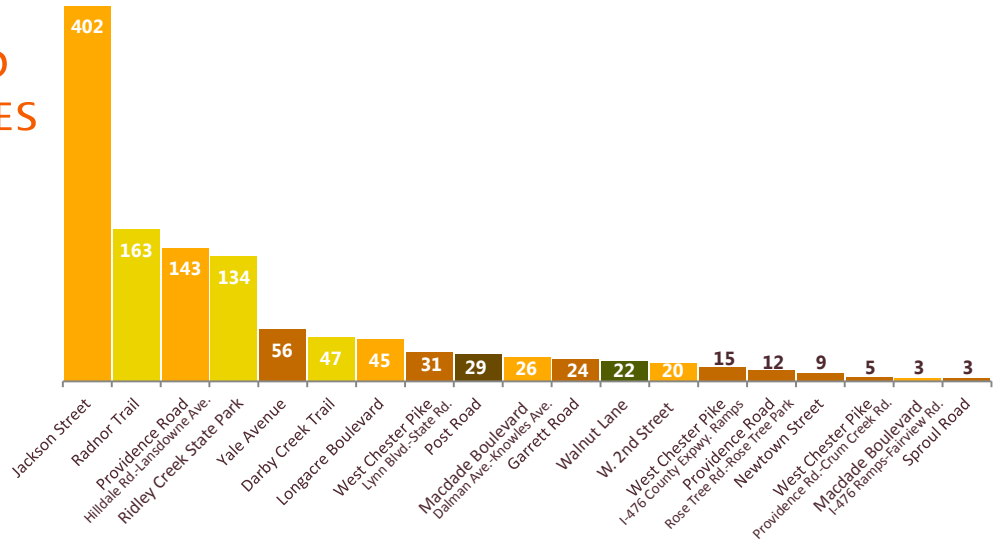
On-Road Cyclical Count

- Bicycle Lane
- Sharrow
- Striped Shoulder
- Mixed Traffic



ON-ROAD AND TRAIL FACILITIES

Bidirectional Total



Montgomery County

Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

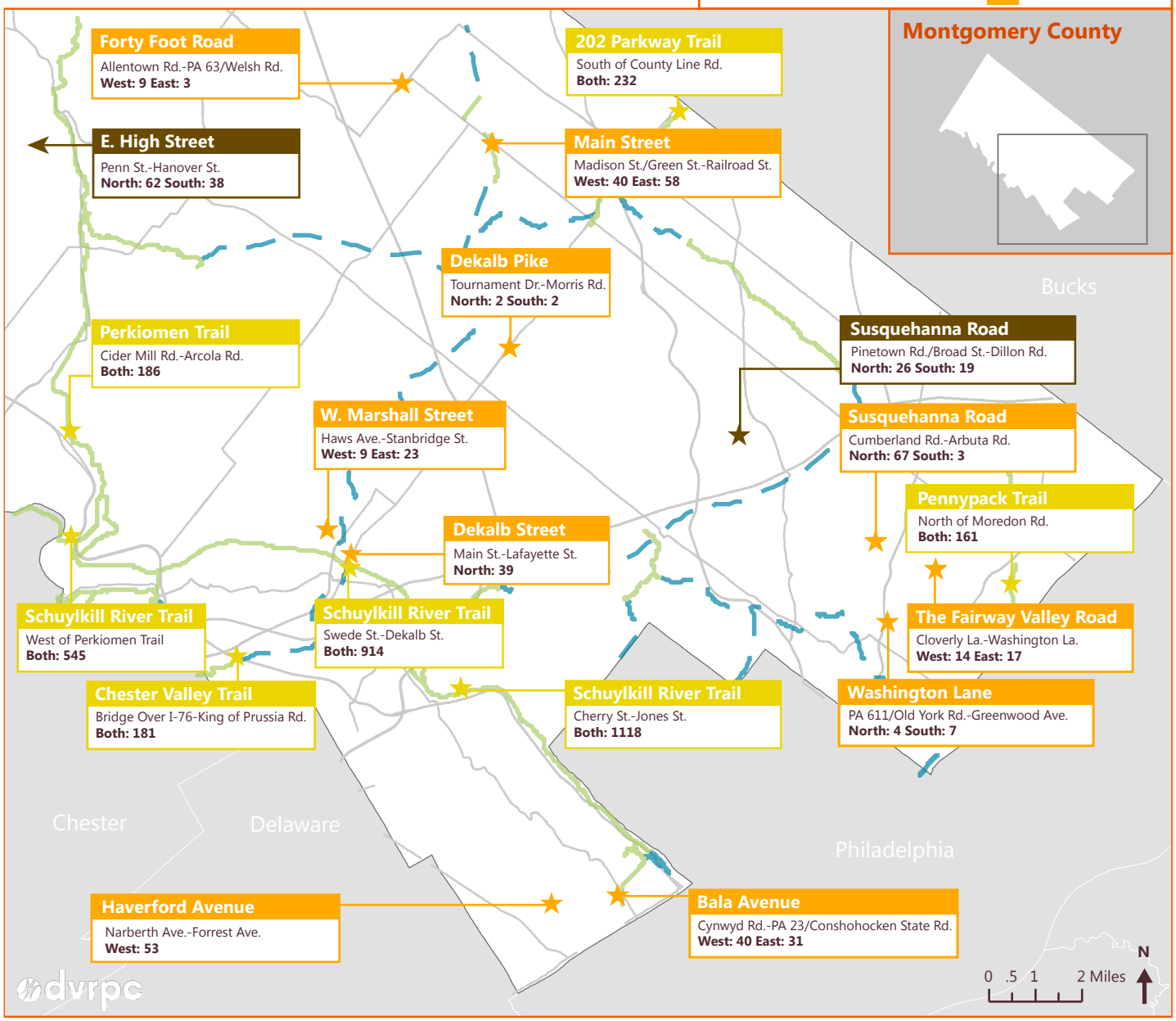
Counts Taken May and June 2015

LEGEND

- Trail/Sidepath Cyclical Count
- Existing Trail Facility
- Proposed Trail Facility
- Planned Trail Facility

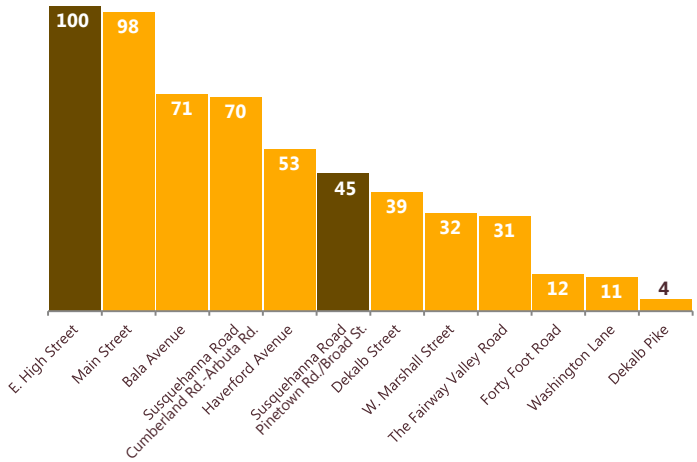
On-Road Cyclical Count

- Bicycle Lane
- Sharrow
- Striped Shoulder
- Mixed Traffic



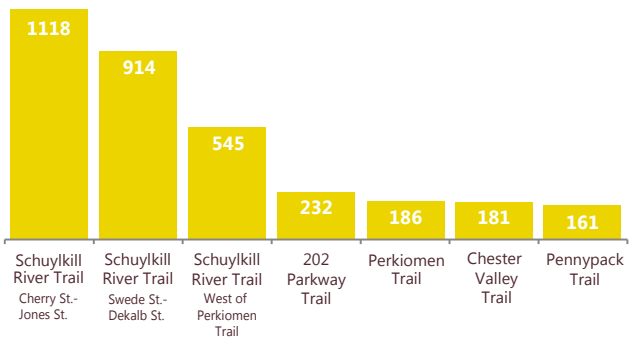
ON-ROAD FACILITIES

Bidirectional Total



TRAIL FACILITIES

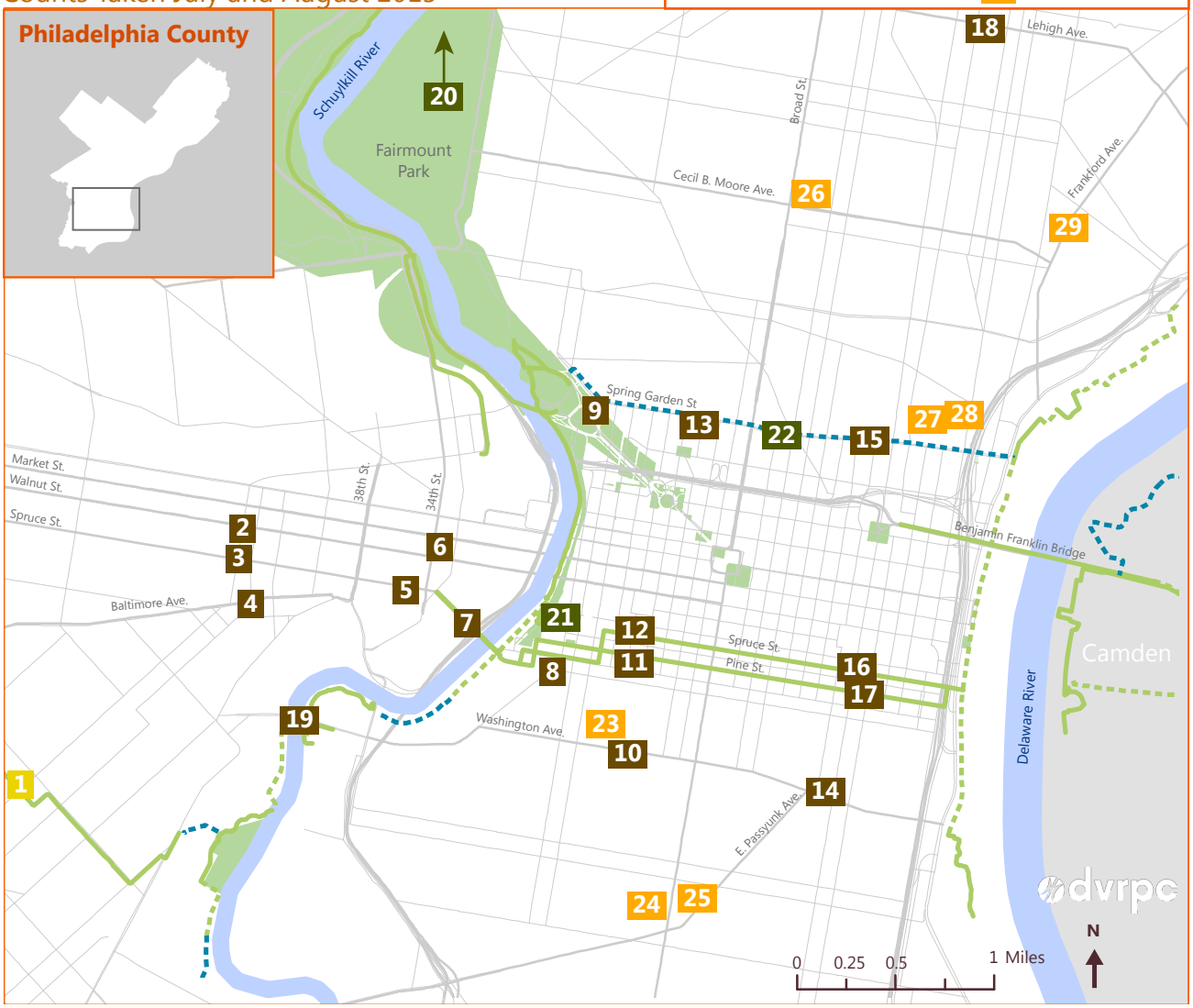
Bidirectional Total



City of Philadelphia

Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

Counts Taken July and August 2015



Trails

1 Cobbs Creek Trail Sidepath
Hadfield St.-Whitby Ave.
Both: 53

Bicycle Lanes

2 Walnut Street
44th St.-45th St.
West: 225

3 S. 44th Street
Spruce St.-Locust St.
South: 122

4 Baltimore Avenue
43rd St.-44th St.
West: 317 East: 359

5 Spruce Street
34th St.-36th St. Walk
West: 574 East: 725

6 S. 34th Street
Chestnut St.-Walnut St.
South: 263

7 South Street
Convention Blvd.-I-76 Ramps
West: 832 East: 841

8 South Street
24th St.-25th St.
West: 830

9 Spring Garden Street
Eakins Oval-Pennsylvania Ave.
West: 270

10 Washington Avenue
19th St.-20th St.
West: 269 East: 227

11 Spruce Street
18th St.-19th St.
West: 912

12 Pine Street
18th St.-19th St.
East: 1049

13 Spring Garden Street
17th St.-18th St.
West: 429 East: 436

14 Washington Avenue
6th St.-7th St.
West: 192 East: 218

15 Spring Garden Street
7th St.-8th St.
West: 522 East: 540

16 Spruce Street
6th St.-7th St.
West: 732

17 Pine Street
5th St.-6th St.
East: 544

18 Lehigh Avenue
5th St.-Orkney St.
West: 103 East: 107

19 Grays Ferry Ave Bridge
34th St.-47th St.
West: 99 East: 104

Sharrows

20 Main Street
Jamestown Ave.-Shurs La.
West: 261 East: 335

21 S. 25th Street
Spruce St.-Locust St.
North: 367

22 N. 13th Street
Spring Garden St.-Ridge Ave.
North: 161

Mixed Traffic

23 S. 20th Street
Washington Ave.-Carpenter St.
North: 197

24 S. 15th Street
Mifflin St.-Moore St.
South: 172

25 S. 13th Street
Moore St.-Morris St.
North: 244

26 N. 13th Street
Cecil B. Moore Ave.-Montgomery St.
North: 101

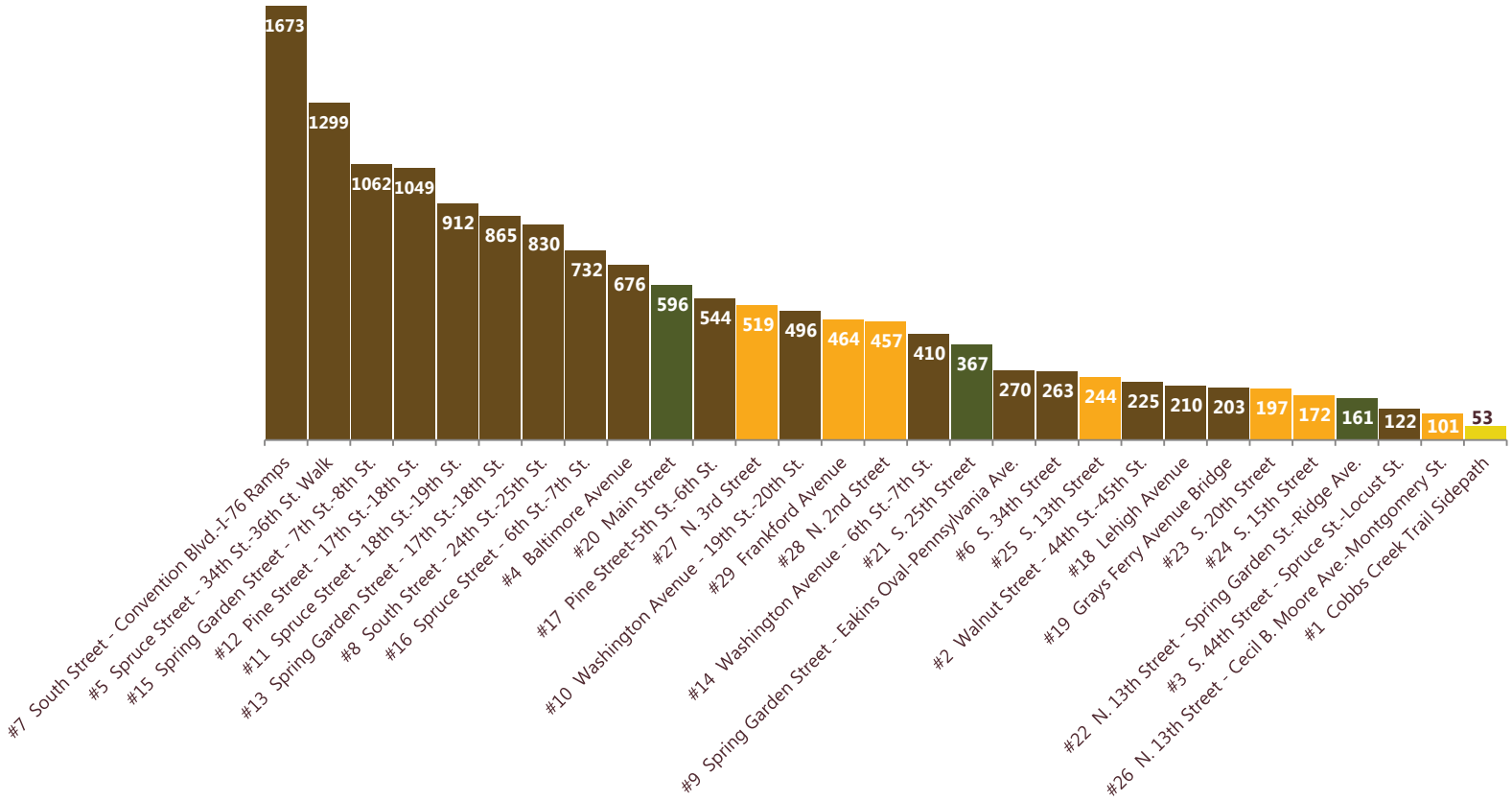
27 N. 3rd Street
Fairmount Ave.-Brown St.
North: 519

28 N. 2nd Street
Poplar St.-Brown St.
South: 457

29 Frankford Avenue
Montgomery Ave.-Berks St.
North: 212 South: 252

ON-ROAD AND TRAIL FACILITIES

Bidirectional Total



NEW JERSEY

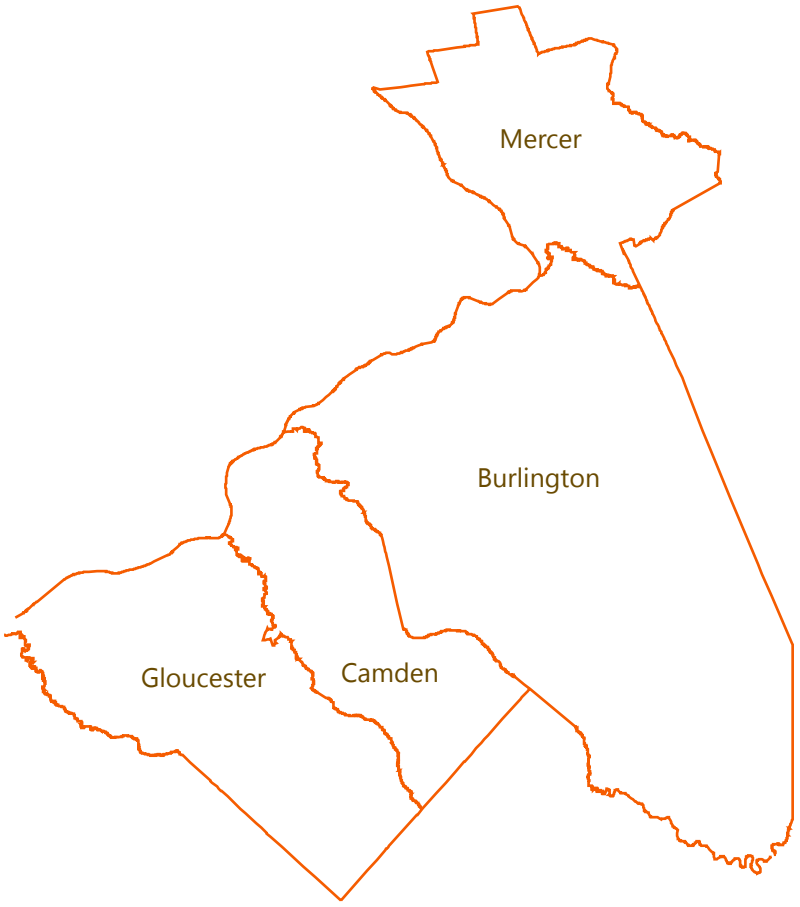
COUNTIES

Burlington

Camden

Gloucester

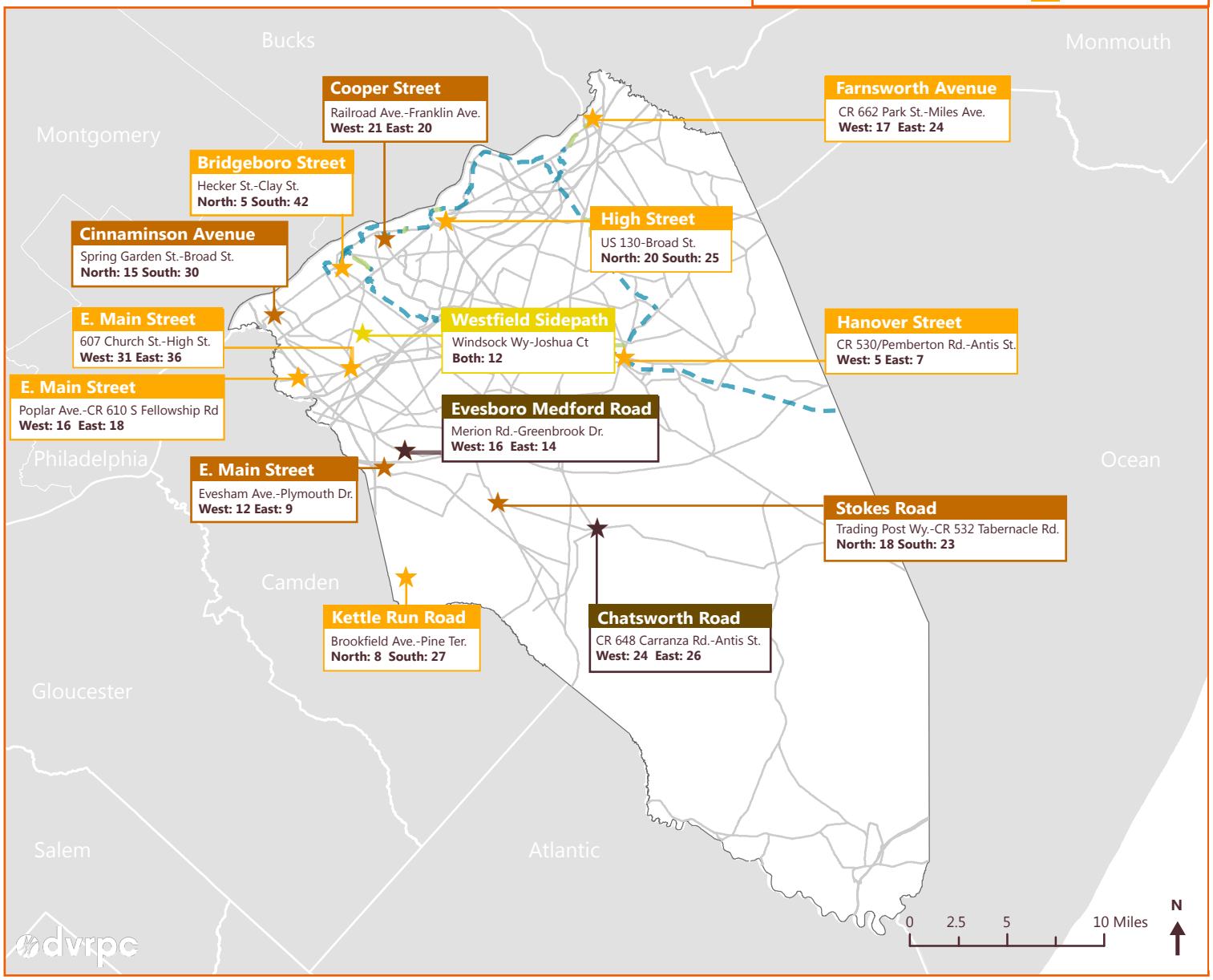
Mercer



Burlington County

Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

Counts Taken August 2014



ON-ROAD AND TRAIL FACILITIES

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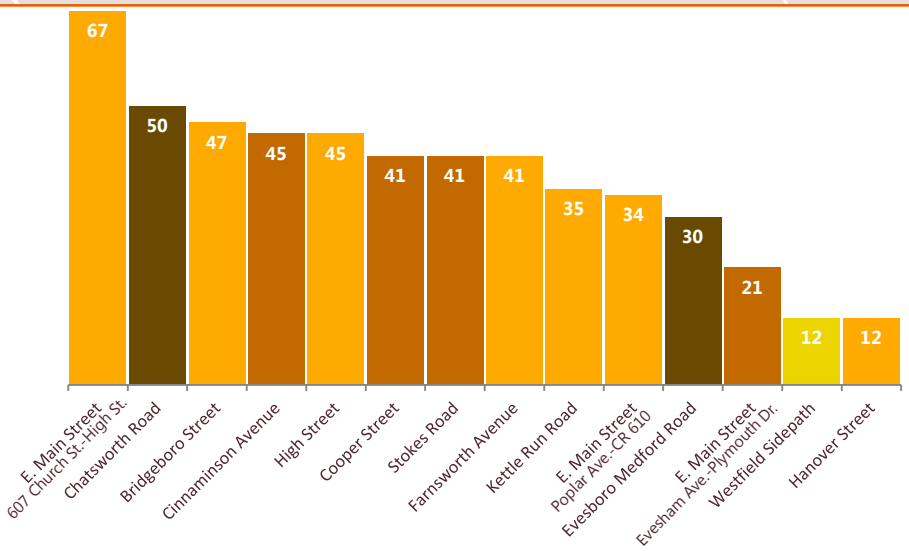
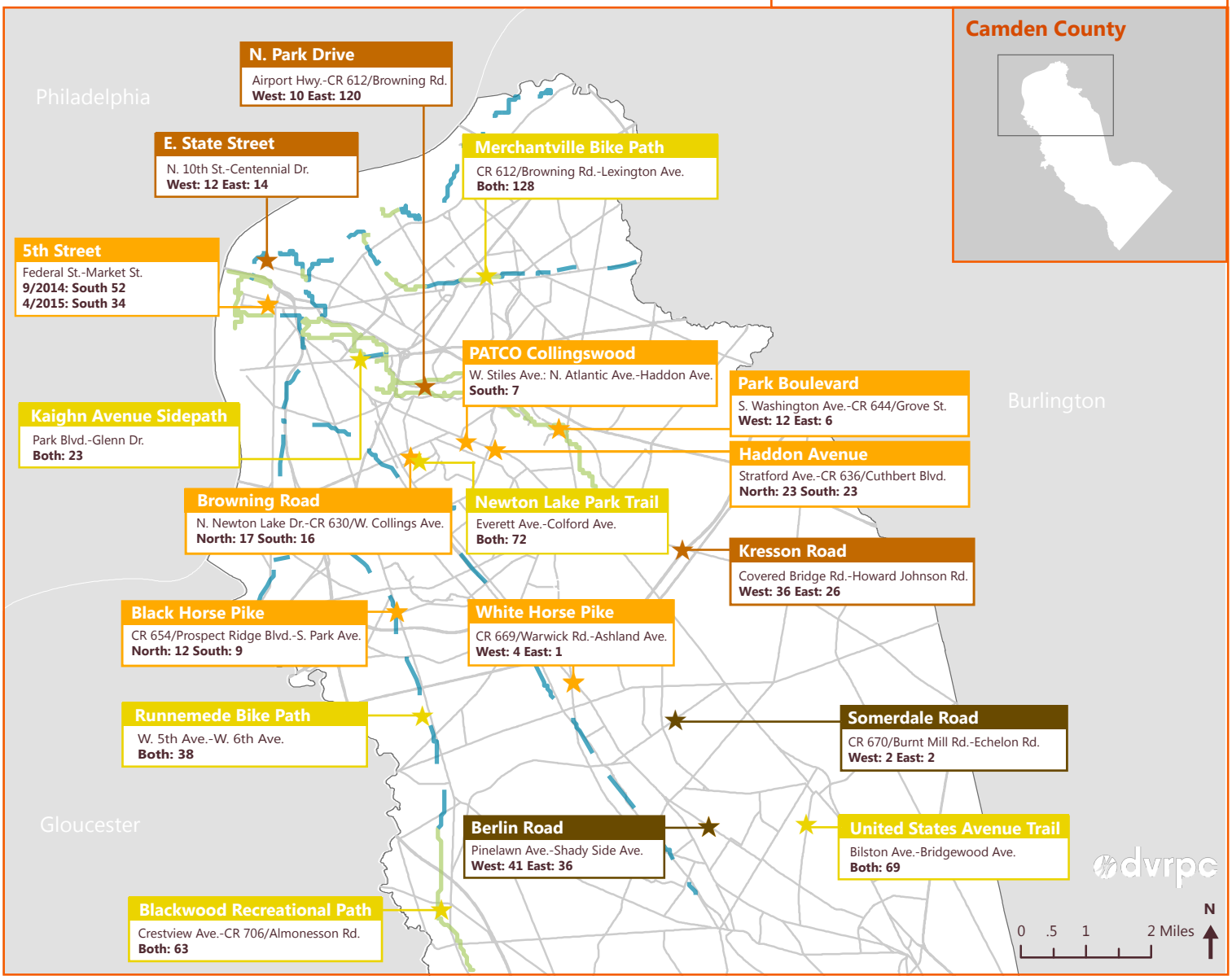


Camden County

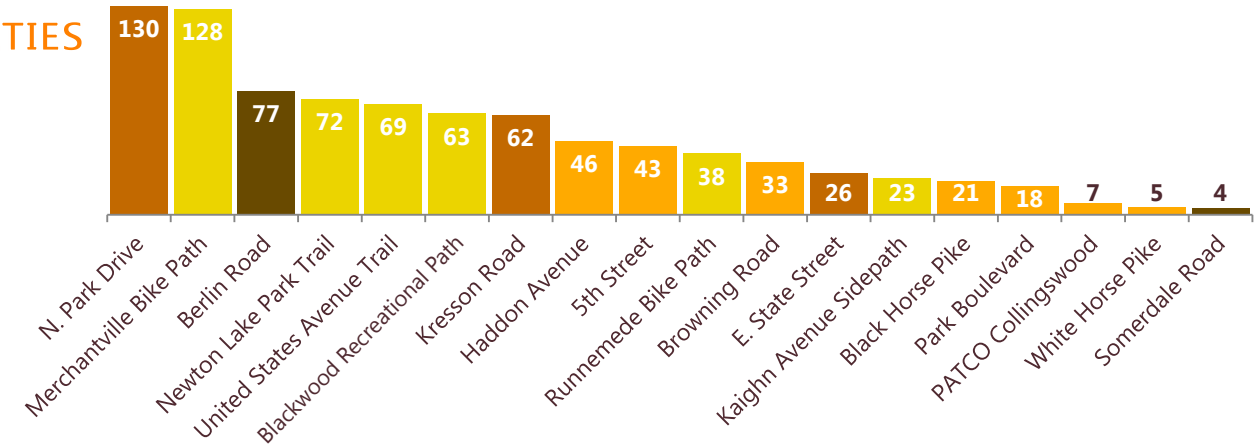
Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

Counts Taken September 2014 and April 2015



ON-ROAD AND TRAIL FACILITIES

Bidirectional Total



Gloucester County

Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

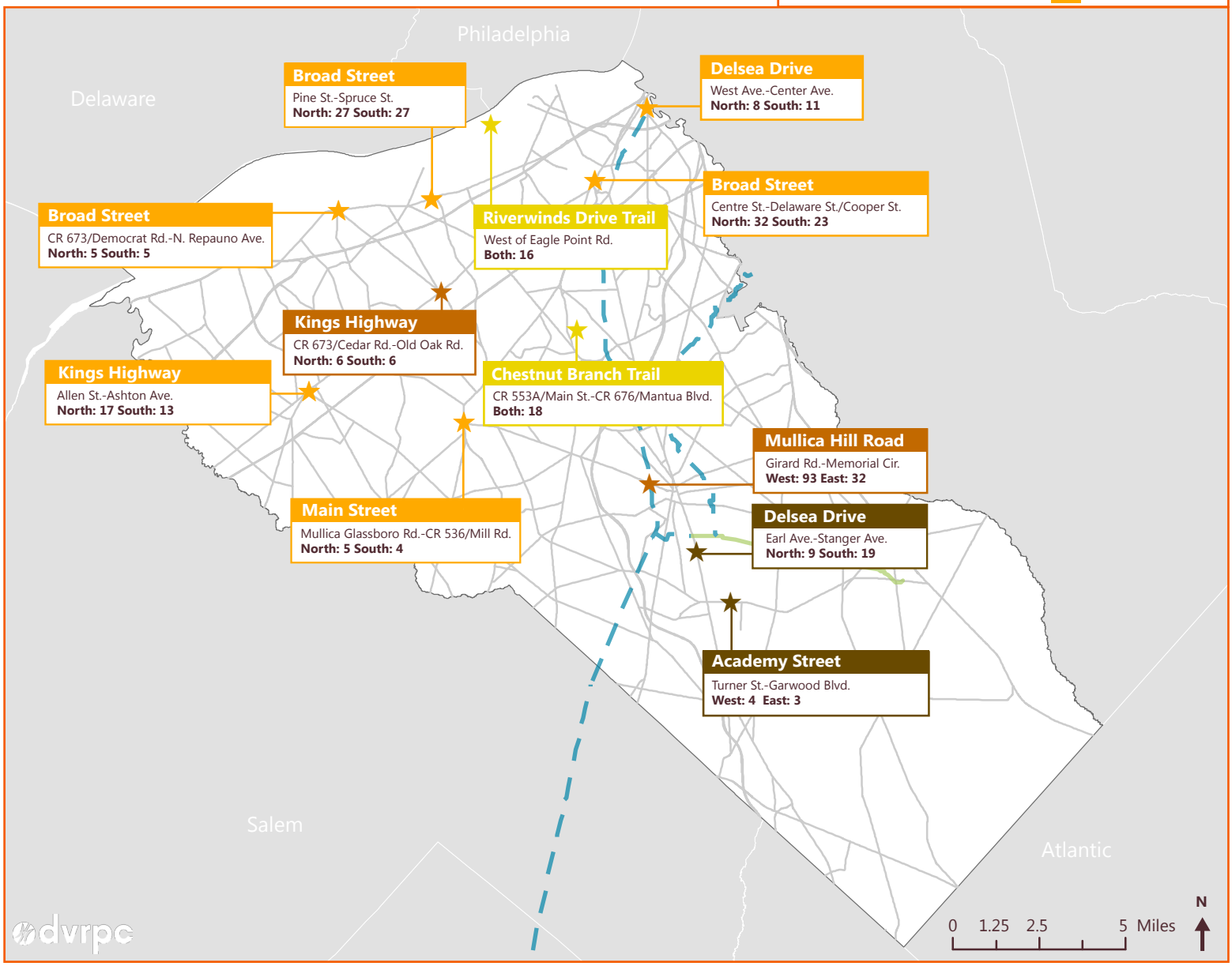
Counts Taken September 2014 and April 2015

LEGEND

- Trail/Sidepath Cyclical Count
- Existing Trail Facility
- Proposed Trail Facility
- Planned Trail Facility

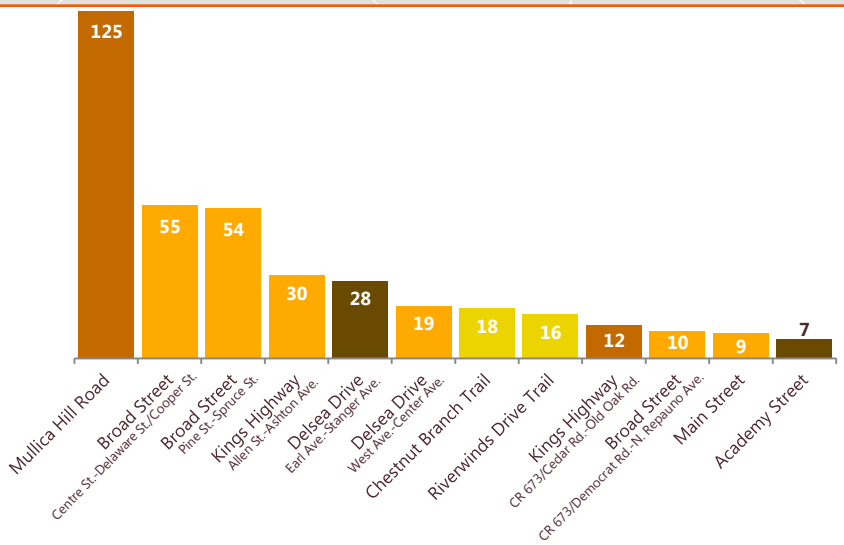
On-Road Cyclical Count

- Bicycle Lane
- Sharrow
- Striped Shoulder
- Mixed Traffic



ON-ROAD AND TRAIL FACILITIES

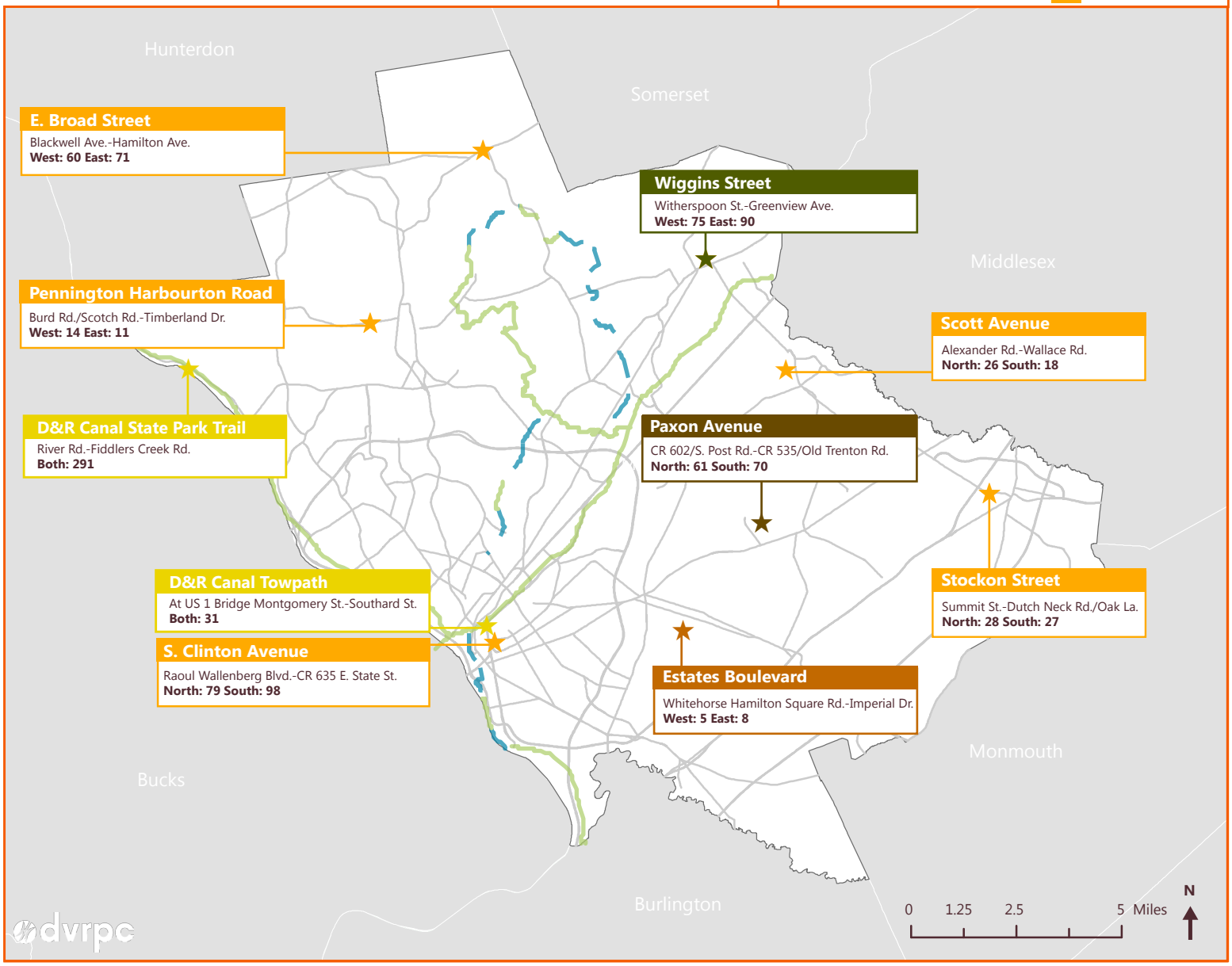
Bidirectional Total



Mercer County

Annual Average Daily Bicycle Traffic Volumes (AADB) for Cyclical Bicycle Count Locations

Counts Taken April and May 2015



ON-ROAD AND TRAIL FACILITIES

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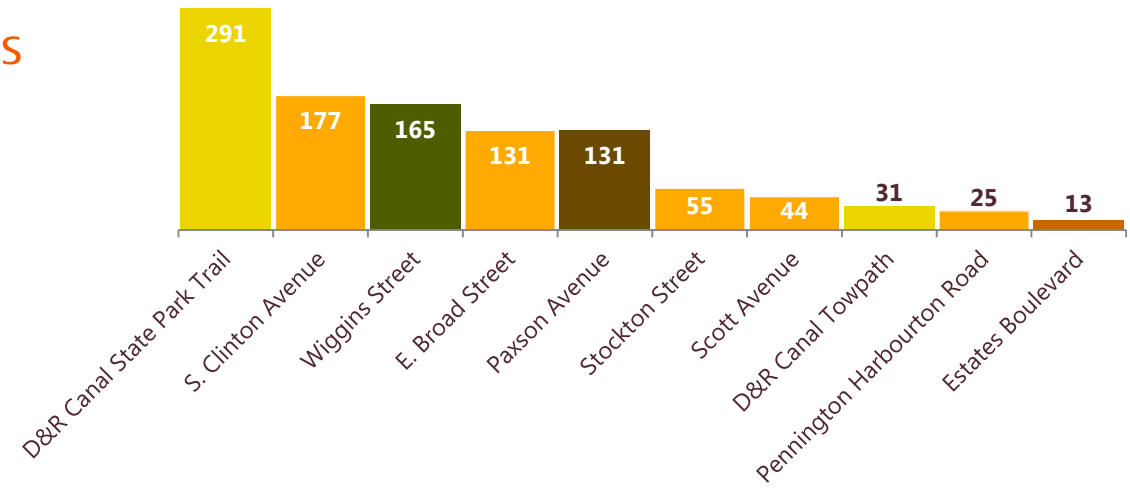

To view the most up-to-date counts, visit the bicycle and pedestrian count website at:
www.dvrpc.org/webmaps/pedbikecounts

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