

# **National Capital Region (NCR) Trail Monitoring and Analysis Program**

## **Annual Report**

**Report No. 4**

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**In response to:**

National Capital Region National Park Service

## Introduction

The National Park Service (NPS) needs to understand trail travel patterns and usage to better serve visitors. This includes those visiting on foot and by bicycle. Other local agencies around the Capital Region seek to quantify pedestrian and bicyclist travel in the region too. This project addresses these needs by providing a centralized database and dashboard to house and manage existing and future trail count data from various jurisdictions, where all can access it in a standard format. The project not only manages and maintains the data but also encourages collaboration between agencies through quarterly meetings between NPS and local and regional agencies. In addition, the project produces quarterly and annual reports on travel patterns and monitoring system expansion, validation and maintenance and engages university partners in research activities including network volume estimation using emerging datasets.

This report is the fourth of our annual reports. It follows the template developed in previous years, and we continue to seek input from NPS and project partners on the type of summaries provided and the way the information is presented, to guide our future reports and efforts to automate reporting.

The report contains two sections a summary of work done during the past year by task, and an appendix with a

- data summary
- inventory of counters

The data summary lists counters and their volumes for 2018-2024 for six main trail corridors: C&O Canal Trail, Capital Crescent Trail (Georgetown), Anacostia River Trail, Mount Vernon Trail, Rock Creek Trail, and Washington & Old Dominion Trail as well as bridge counters. Summary tables include an inventory of all counters in the region as of August 2025, including name and status of whether they have been uploaded to BikePed Portal yet. Summary graphs of volume per month by trail corridor are provided for 2024 as well as a summary table of peak hours by count location. Maps of count sites by mode show 2024 pedestrian and bicycle traffic volumes relative to other sites on the trail corridors.

## Work Done in Year 4 (Aug. 2024 to Aug. 2025)

Below is a summary of work done by Task Area:

1. Jurisdiction Coordination
2. Maintenance of Automated Counters and Siting New Counters
3. Enhancements to Shared Regional Database and Public Dashboard and Data Monitoring
4. Analysis and Reporting
5. Exploration of Big Data Procurement and Analysis
6. Install Counters

### Task Area 1. Jurisdiction Coordination

Quarterly Meetings. The team hosted four quarterly meetings (October 22, 2024, January 24, 2025, April 24, 2025, August 6, 2025). Notes and presentations from the meetings are posted in the “Quarterly Meetings” folder on the “NCA Trail Count Program” Teams account or if that was not possible, they were emailed to NPS.

Monthly Meetings. The team held monthly meetings with the National Park Service (NPS) and DDOT and other special meetings as necessary. Notes from these meetings are now posted in the “Monthly Progress Meetings” folder on the “NCA Trail Count Program” Teams account or if that was not possible, they were emailed to NPS.

In addition, HSRC staff responded to emails from NPS staff throughout the year and met with regional partners. Graduate students also presented their work at the January 2025 Transportation Research Board, Bicycle and Pedestrian Data Joint Subcommittee Annual Meeting.

### Task Area 2. Maintenance of Automated Counters and Siting New Counters

From August 2024 to August 2025, the Virginia Tech team collected video recordings of 11 counter locations for validation purposes. In addition, the VT team re-validated 9 counter locations that did not go through any significant change to observe the change of correction factor over time, which included counters validated after one and two-year intervals. Counter locations were also validated across the year to understand the impact of seasons on correction factors.

From August 2024 to August 2025, the VT team pre-validated 17 counters, of which 7 did not pass the pre-validation procedure. The reasons for counters failing the pre-validation procedure included sensitivity issues (e.g., counting bicyclists as pedestrians), damaged bicycle loops, and undercounting bicyclists. Based on the recent study on the application of correction factor to reduce error, the VT team adopted a new criterium to identify if a counter passes the pre-validation process or not. According to the new determination, a counter passes the pre-validation step if the overcounting or undercounting percentage error is within 50% based on the aggregated on-site count.

Table 1 - Summary of validation results

Number	Counter Name	Total Validated Hours	Mode	Average Hourly Count <sup>a</sup>	MAPE (Error) <sup>ab</sup>	Adjustment Factor-Rater	Adjustment Factor countCLOUD	Passed/ Failed <sup>c</sup>	Comments
1	River Terrace	35	Bicycle	12	13.9%	1.03	0.95	Passed	
			Pedestrian	12	20.9%	1.11	1.00	Failed	Low R <sup>2</sup> Value
2	Kenilworth	43	Bicycle	23	21.9%	0.91	1.06	Passed	
			Pedestrian	7	61.6%	0.46	0.47	Failed	High error rate
3	Deane Avenue	35	Bicycle	25	11.1%	1.09	1.06	Passed	
			Pedestrian	6	58%	0.72	0.61	Failed	High error rate
4	Theodore Roosevelt Island Bridge	37	Bicycle	6	15%	1.00	1.05	Passed	
			Pedestrian	10	22.5%	1.16	1.20	Passed	
5	Theodore Roosevelt Island	43	Bicycle	63	9.4%	1.06	1.10	Passed	
			Pedestrian	71	9.4%	1.04	1.08	Passed	
6	Waynewood Blvd (old)	30	Bicycle	6	44.5%	0.84	0.97	Failed	Counter unavailable
			Pedestrian	17	38.7%	0.71	0.84	Failed	
7	P- Street	44	Bicycle	16	10.5%	0.94	1.06	Passed	
8	Pierce Mill	30	Bicycle	21	21.9%	0.91	0.96	Passed	
			Pedestrian	51	10.7%	0.95	1.01	Passed	
9	Shoreham Drive	30	Bicycle	65	16.5%	0.88	1.06	Failed	High number of bypass events
			Pedestrian	101	11.2%	1.06	1.26	Failed	
10	Piney Branch	36	Bicycle	2	35.5%	0.78	1.03	Failed	Less than 100 bike
			Pedestrian	11	6.4%	1.01	0.99	Passed	
11	Lock 5	27	Both	18	38.4%	0.74	-	Failed	Low R <sup>2</sup> value
12	Lock 8	40	Both	30	22.5%	1.32	1.30	Passed	
13	Mulebridge Counter	30	Both	95	11.6%	0.93	-	Passed	
14	Key Bridge East	39	Bicycle	26	32.5%	0.77	0.96	Failed	High error
			Pedestrian	123	12.5%	1.17	1.13	Passed	
15	Key Bridge West	38	Bicycle	18	40.8%	0.71	0.85	Failed	High error
			Pedestrian	52	14.5%	1.15	1.22	Passed	
16	Rosslyn Bikeometer	39	Bicycle	14	6.2%	0.98	1.03	Passed	
17	110 Trail	41	Bicycle	35	14%	0.90	0.97	Passed	
18	Memorial Bridge South	37	Bicycle	56	8.3%	0.96	0.92	Passed	Low R <sup>2</sup> but close to the accepted value
			Pedestrian	65	14%	0.99	1.04	Passed	
19	CCC	38	Bicycle	50	4.5%	1.01	1.06	Passed	
			Pedestrian	29	30.0%	0.79	0.99	Passed	High error rate but reliable correction factor

Number	Counter Name	Total Validated Hours	Mode	Average Hourly Count <sup>a</sup>	MAPE (Error) <sup>ab</sup>	Adjustment Factor-Rater	Adjustment Factor countCLOUD	Passed/ Failed <sup>c</sup>	Comments
20	Bluemont Trail	51	Bicycle	16	7.5%	1.03	0.97	Passed	
			Pedestrian	64	8.1%	1.08	1.09	Passed	
21	Custis Bon Air	40	Bicycle	38	7.8%	0.97	0.97	Passed	
			Pedestrian	33	30.4%	0.96	0.97	Passed	
22	Custis Rosslyn	48	Bicycle	67	3.8%	1.00	1.04	Passed	
			Pedestrian	39	14.7%	1.20	1.18	Passed	
23	Columbia Pike	47	Bicycle	61	5.8%	1.03	1.06	Passed	
			Pedestrian	41	19.1%	1.03	1.05	Passed	
24	14 <sup>th</sup> St Bridge	44	Bicycle	101	5.8%	-	0.96		
			Pedestrian	13	48.1%	-	0.75		
25	Memorial Bridge North	38	Bicycle	31	20.2%	-	0.87		
			Pedestrian	42	14.8%	-	1.05		
26	Washington Blvd	34	Bicycle	8	19.4%	-	1.06		
			Pedestrian	20	26.9%	-	0.95		
27	110 Trail Combo	39	Bicycle	31	7.2%	-	0.96		
			Pedestrian	46	17.7%	-	1.13		
28	Four Mile Run	44	Bicycle	29	33.8%	-	1.38		
			Pedestrian	15	57.9%	-	0.62		
29	Waynewood Blvd (new)	39	Bicycle	8	2.6%	-	1.07		
			Pedestrian	8	9.0%	-	0.94		
30	Zoo Loop	43	Bicycle	40	3.8%	-	1.02		
			Pedestrian	62	4.6%	-	1.03		
31	MVT Airport	44	Bicycle	140	3.6%	-	1.00		
			Pedestrian	41	18.1%	-	1.02		
32	Oxon Run West	43	Bicycle	2	14.2%	0.97	1.16	Failed	Less than 100 bike
			Pedestrian	9	16.0%	0.99	0.73	Passed	
33	RCT Wildwood	28	Bicycle	9	10.2%	-	0.84		
			Pedestrian	35	10.4%	-	1.14		
34	11 St NW	31	Bicycle	13	36.7%	-	1.42		
35	14 <sup>th</sup> St NW	37	Bicycle	5	284.9%	-	0.31		
36	Clarendon	32	Bicycle	23	32.72	-	1.48		
37	Eads NB	36	Bicycle	5	39.0%	-	1.33		
38	Eads SB	32	Bicycle	6	24.7%	-	1.30		
39	East Capitol St	42	Bicycle	26	35.8%	-	1.56		
40	Fairfax EB	36	Bicycle	9	31.8%	-	1.24		
41	Fairfax WB	37	Bicycle	14	37.8%	-	1.48		
42	Quincy SB	37	Bicycle	3	26.7%	-	1.09		
43	Wharf- Maine Avenue	38	Bicycle	24	40.2%	-	1.48		
44	Wilson Blvd	36	Bicycle	21	28.0%	-	1.38		

Number	Counter Name	Total Validated Hours	Mode	Average Hourly Count <sup>a</sup>	MAPE (Error) <sup>ab</sup>	Adjustment Factor-Rater	Adjustment Factor countCLOUD	Passed/Failed <sup>c</sup>	Comments
45	Anglers Bridge	46	Both	125	32.0%	-	1.30		
46	Berma Road	52	Both	28	35.1%	-	1.69		
47	Lock 6	51	Both	14	15.7%	-	0.97		
48	Lock 7	48	Both	9	17.6%	-	0.98		
49	Lock 10	45	Both	23	22.4	-	1.26		
50	Clarendon (after counter update)	15	Bicycle	24	25.38%	-	1.29		
51	Potomac St	37	Both	19	33.53%	-	1.30		
52	Bon Air East	15	Bicycle	75	4.33%	-	1.03		
			Pedestrian	98	13.48%	-	1.13		
53	Metropolitan Branch Trail	15	Bicycle	131	18.49%	-	1.21		
			Pedestrian	149	13.25%	-	0.94		
54	Quincy NB	28	Bicycle	3.75	33.22%	1.49	-		
55	P-Street	30	Bicycle	19	24.90%	0.78	0.99	Failed	
			Pedestrian	130	73.28%	0.48	0.52	Failed	
56	Falls Church	49	Bicycle	86	7.16%	1.07	1.08	Passed	
			Pedestrian	50	19.92%	0.90	0.88	Passed	
57	Tulane Drive	15	Bicycle	26	20.64%	1.14	-	Passed	
			Pedestrian	53	13.86%	1.23	-	Passed	
58	Arlington Mill	15	Bicycle	24	13.04%	-	0.90		
			Pedestrian	27	27.54%	-	1.30		
59	Alethia Tanner Park	15	Bicycle	189	11.70%	-	1.13		
			Pedestrian	213	20.42%	-	1.12		
60	ART at 11 <sup>th</sup> St	15	Bicycle	19	13.11%	-	1.13		
			Pedestrian	35	16.34%	-	1.16		
61	Theodore Roosevelt Islnad Bridge		Bicycle	30	9.48%		1.10		
			Pedestrian	9	72.77%		0.62		
62	Ballston	15	Bicycle	24	29.34%		1.38		
			Pedestrian	46	6.34%		1.02		
63	OXON COVE 2	35	Bicycle	0	8.57%		0.47		
			Pedestrian	2	1,230.26%		0.03		

<sup>a</sup> Calculated based on the rater count when rater count was available. Otherwise, based on the countCLOUD count

<sup>b</sup> MAPE: Mean Absolute Percentage Error

<sup>c</sup> We used the following criteria for validation when rater counts were available: (1) an  $R^2$  of greater than 0.975 and (i) an  $R^2$  value is also greater than 0.975 after censusing unusual events (at least 20 data points), (ii) an automated to manual count ratio between 0.7 to 1.3 for Eco-counters and .5 to 1.5 for TRAFx counters or, (2) The error based on automated to manual count ratio should be between 0.85 to 1.15.

Highlighted are counters validated during August 2024- August 2025

## CITIX AI Installation and Validation

During this reporting period, the Virginia Tech team installed and validated a CITIX AI video counter and a tube counter at the 9th Street NW and G Street NW intersection in front of the Martin Luther King Jr. Memorial Library and the National Portrait Gallery/Chinatown Metro Station. CITIX AI was configured with four virtual lines: one along the bike lane (to count bicyclists, pedestrians, and e-scooters), two across adjacent crosswalks, and one for motor vehicle traffic. The team conducted both aggregated and line-specific validations of the CITIX AI and compared the results with the tube counter. Overall, CITIX AI tended to overcount bicyclists and slightly undercount pedestrians in the aggregate. The largest errors occurred on the crosswalk lines, especially the line furthest from the CITIX AI, which was roughly 110 feet from the camera, where bicycle volumes were substantially overcounted and pedestrian counts showed higher error. In contrast, bicyclists on the bike lane were slightly undercounted, and the tube counter slightly overcounted bicycles (about 3%) but exhibited higher overall accuracy than the AI system.

After the initial validation, Eco-Counter updated the CITIX AI algorithm, and the Virginia Tech team repeated the validation to assess performance changes. Following the update, accuracy for bicycle counts in the bike lane declined compared to the first validation, while pedestrian accuracy in the mixed crosswalk environment showed little improvement. However, the magnitude of bicycle errors in the crosswalks decreased relative to the earlier results. The shift in correction factors before and after the software update highlights two key lessons: first, AI-based systems such as CITIX AI should be re-validated after each algorithm update; and second, sensor placement and distance to the counted lines are critical design considerations, particularly in complex, mixed-use urban environments. Table 2 shows the performance comparison of CITIX AI before and after the algorithm updates. Also, Figure 1 shows counter view with the mentioned counting lines.

Table 2 - CITIX AI validation results before and after the update

Location	Mode	Correction Factor		Percentage Error		R <sup>2</sup> value	
		Before	After	Before	After	Before	After
Bicycle Lane	Bicycle	1.06	1.18	-7%	-14%	0.99	0.99
G-street West crosswalk	Bicycle	0.10	0.33	795%	227%	0.63	0.71
	Pedestrian	1.01	0.99	-1%	1%	0.99	0.99
9 <sup>th</sup> St NW South crosswalk	Bicycle	0.14	0.80	560%	20%	0.64	0.58
	Pedestrian	1.20	1.28	-15%	-22%	0.93	0.98

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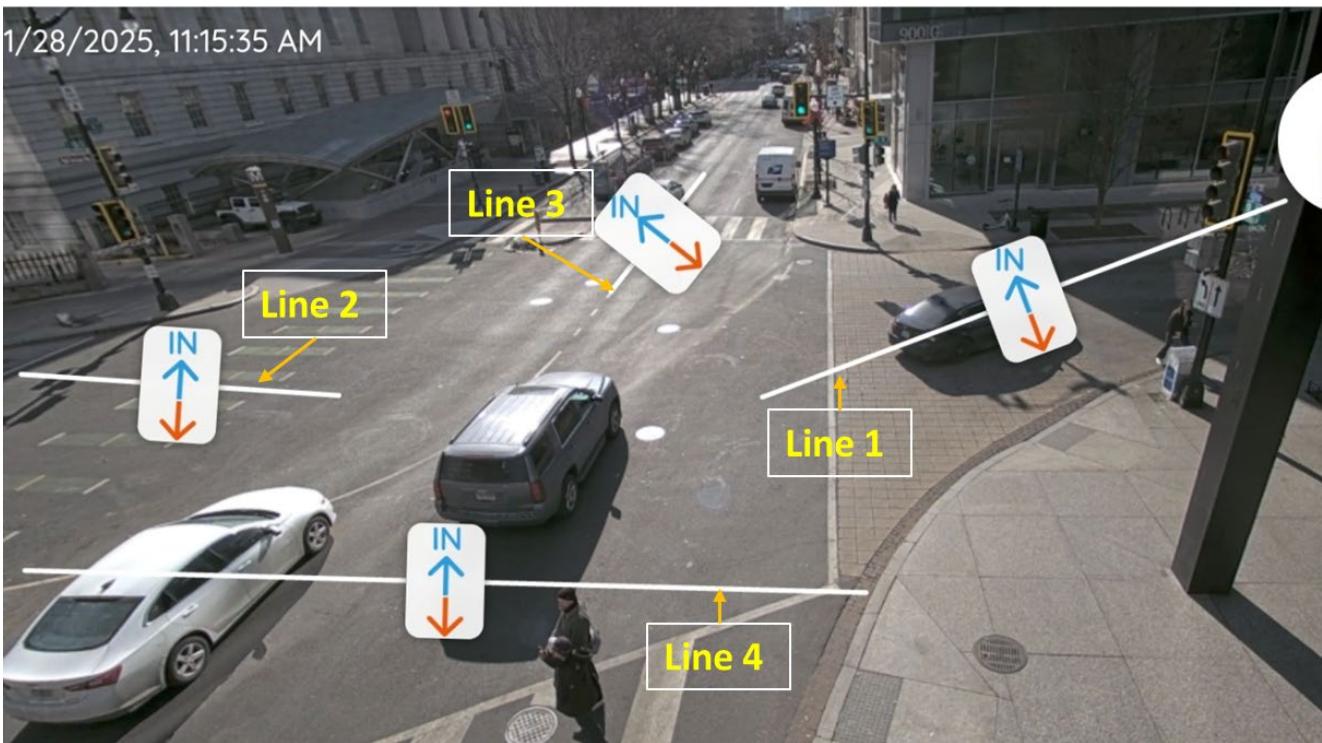


Figure 1: CITIX AI counter view and the lines to count bicyclists, pedestrians, E-scooter users, and vehicles

### **Analytical studies on validation and manual count efforts**

Virginia Tech used the multi-year validation dataset to identify the minimum number of manual count hours and the most efficient times for data collection, providing guidance on when and how long to collect ground-truth data for automated counters. This work is documented in the article *“Scalable validation of automated bicycle and pedestrian counters: evidence from Washington, DC,”* published in *Transportation Research Interdisciplinary Perspectives (TRIP)*.

### **Ongoing work: A Data Driven Approach to Identify the Criteria for Applying the Developed Correction Factors to Increase Higher Accuracy**

Building on the validation framework, the Virginia Tech team is analyzing when and where correction factors should be applied to maximize accuracy of automated count data. Preliminary findings indicate that:

- Applying the correction factor substantially reduces error: for bicycle counters, the maximum error decreased from about 170% to about 15%, and 34 of 41 counters had errors below 5% after correction. For pedestrian counters, maximum error declined from about 63% to about 16%.
- The largest reductions in error occurred at counters with strong overcounting or undercounting issues.

When pre-correction error was already below 5%, changes after applying the correction factor were minimal and occasionally negative. As a result, applying correction factors is recommended primarily for counters with more than 5% error prior to correction.

### Task Area 3. Creation of Shared Regional Database and Public Dashboard and Data Monitoring

Portland State University's Transportation Research and Education Center (PSU TREC) now has 102 count sites and their associated data in the BikePed Portal (<https://bikaped.trec.pdx.edu/>) database:

- 29 TRAFx counters on C&O and Capital Crescent Trails managed by NPS
- 6 Eco-Counters on Rock Creek Park Trail and MVT
- 20 DDOT Eco-Counters
- 2 Alexandria MVT Eco-Counters
- 39 Arlington County Eco-Counters
- 6 Montgomery County Eco-Counters

Of these sites, at least 16 have been retired, but are still kept in BikePed Portal as important historical records of past bicycle and pedestrian volumes.

While the BikePed Portal publicly provides basic online data (counter location, summary graphs and statistics), additional information and features are available to those with accounts. Such accounts were provided to partner agencies. There are four levels of authorization for partner accounts: organization owner, organization user, research, and public. The features available to partners in the BikePed Portal accounts include review and editing quality checks and improved data download functionality.

The TREC team also investigated what announcement categories should be added to the BikePed Portal database to flag data for known events or issues such as construction on the trail, extreme weather events, races, or other organized events, or known maintenance issues, such as battery failure or insect infestation. The team hosted meetings with data users from DDOT and Arlington to identify the categories. This feature has been deployed and is available to data owners and partners who have been given permission to use this feature.

BikePed Portal also includes automated checks for over 48 hours of zero volumes and for over a given number of same value non-zero volumes in a row. Data were also checked manually by HSRC staff. Comparing volumes shows similar AADT values from BikePed Portal and manual calculations. Data owners can accept or reject the automated checks in the BikePed Portal User Interface.

BikePed Portal provides basic information about the count sites including AADT values, graphs of average and AADT volumes overall years for which data are available, over any given year, over any given month, and over any given day of the year by mode and direction of travel.

Current updates to the regional dashboard are available through the public dashboard interface; and through the user login site users have more options and can select data based on either the organizations or regions. Data can also be viewed on the Explore page based on the predetermined geographical location or by state. Additional functionalities to the dashboard are under development, including a user interface to make it easier to add and edit metadata. This feature was originally developed by a capstone computer science class at Portland State University and is being improved and de-bugged by the project team.

This year, BikePed Portal implemented the Explore+ page and MADT calculations that can

be downloaded through the Downloads page. The Explore+ page allows users to visualize total and average daily volumes with several filters (e.g. days of the week, directionality, and travel mode), compare data across multiple segment areas, compare data across multiple years, and visualize data availability. Documentation of the Explore+ page is available on the [BikePed Portal Documentation Page](#).

Additional work this year has been focused on transition to the new Eco-Counter API. Due to substantial changes between the two API versions, changes to BikePed Portal's data architecture have been identified and a new script is under development to pull data using the new version.

#### **Task Area 4. Analysis and Reporting**

Annually and quarterly reports were provided, as well as an annual infographic.

The HSRC team has explored different ways of presenting the count data by count site, trail, and travel type (walk, bike, or both). The results of these analyses were shared informally in presentations to NPS and the larger group of partners. Annualized volume data for 2018-2024 are summarized in this document (see Table 4) and 2024 data are summarized in the maps and graphs in the Appendix.

Note that as stated above, BikePed Portal can plot data on volumes and AADT for a given site using the “Explore” feature across years, by month for any given year, by day for any given month, and by hour for any given day of the year. Such graphs can supplement the summary graphs provided in this report if detailed information on the counter is desired. For those with BikePed Portal accounts, detailed data can also be readily downloaded for further analysis and the Explore+ page provides additional graphs, counter health, and data analysis functionality. For those without accounts, graphs and summary data are available in the Explore page.

#### **Task Area 5. Explore Big Data Procurement and Analysis**

Between August 2024 and August 2025, Virginia Tech advanced from foundational big-data-enabled models to a more operational prediction pipeline for bicycle and pedestrian demand across the Washington, D.C. region. Building on the established AADT-based framework and network-wide estimation map that integrated permanent count data, bikeshare, STRAVA, and census inputs, the team expanded the effort to include Daily Bicycle Traffic (DBT) and Daily Pedestrian Traffic (DPT), with a particular emphasis on developing models that can be applied consistently across the regional trail and on-street facility network.

Over the past year, work focused on enriching and integrating key data sources and features needed for robust demand estimation. The team extracted detailed spatial and census-based variables across multiple buffer sizes around count locations to better capture how proximity and neighborhood context influence nonmotorized volumes. In parallel, processed Google Street View (GSV) imagery was incorporated into the analysis, adding over a hundred micro-scale built environment features grouped into several categories (e.g., land use mix, streetscape elements, greenery, and traffic-related characteristics). These enriched spatial and imagery-based inputs were combined with crowdsourced activity data (primarily STRAVA), bikeshare information, and weather variables, and used to rebuild and refine the modeling framework first explored with Poisson and Negative Binomial approaches.

A major step forward this year was the transition from primarily interpretive, regression-based models to prediction-focused machine learning models for both bicycle and pedestrian daily volumes. The team implemented and tested a unified modeling pipeline that fuses permanent count data with census, weather, GSV, and crowdsourced inputs, and then trained and evaluated multiple models using a consistent set of performance metrics. Results demonstrated that machine learning approaches, particularly XGBoost and Random Forest, provide strong predictive performance for DBT and DPT. Feature-importance analyses and supporting visualizations highlighted the role of emerging data and built-environment indicators (including GSV-derived measures) in improving accuracy. Together, these advances move the big data task from preliminary model development toward a deployable, region-wide estimation tool that can support future D.C. demand estimation and scenario analysis.

## Task Area 6. Install Counters

In preparation for installing seven new counters, repairing the posts and other equipment at three additional existing count sites, and redoing the loops at four sites where bike lanes were moved or paved over, the following actions were taken.

### Preparation for installation of new counters

- Equipment was inventoried and labeled according to counter locations.
- NCSU ITRE was selected as the contractor.
- Replacement pieces were ordered for recently damaged sites
  - P St rainbird and logger
  - Piney Branch post and SmartConnect
- A change order for contractors to redo loops at 4 sites was issued.
- ITRE applied for permits for installation of counters on NPS property.

### Installation

- Installed one new combined infrared and inductive loop counter on Met Branch Trail (MBT) at Alethia Tanner Park in June, 2025. This counter also records bicycle and e-scooter speed and records e-scooter counts as well as bicycles and pedestrians.
- Partially installed a bicycle and e-scooter counter at Virginia Ave in June, 2025. The cuts for the inductive loops were made but wires and loggers will need to be installed later after the utility company has completely cleared the site for digging.
- If NPS permits are received, additional installations will be conducted in September and October.

The map below indicates new installation and repair sites (Figure 2).

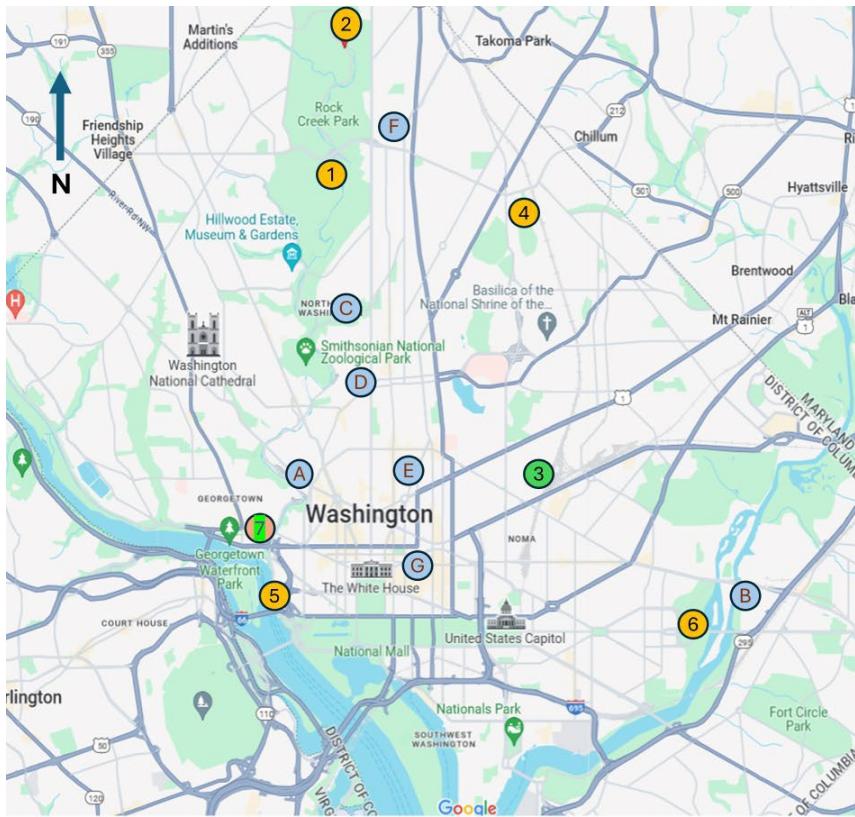


Figure 2: Map of Counters to be Installed or Repaired

Key:

- Green circle – Done
- Green number – Partially done
- Yellow circle – New Counter
- Blue circle – Counter to repair or relocate loops

### Aug 2024 – Aug 2025 Highlights

- Used count data combined with census, weather, Google Street View, and crowdsourced inputs to create a model of bicycle and pedestrian travel around the National Capital Region with statistical and machine learning modeling.
- Installed one new combined infrared and inductive loop counter on Met Branch Trail (MBT) at Alethia Tanner Park
- Investigated bicycle and e-scooter speeds at different times of day and found that bicycle speeds were highest on weekday mornings in the downhill direction into downtown at the MBT Alethia Tanner Park site
- Validated 11 counters and created bias correction factors based on this validation
- Tested artificial intelligence (AI) enabled video camera for pedestrian and bicycle counting at an intersection in Washington, DC. Bicyclists were significantly overcounted in some crosswalks but counted with acceptable accuracy in the protected bike lane. Pedestrian counts had reasonable accuracy.
- Performed troubleshooting to revive and improve the accuracy of multiple count sites and catch problems in time to prevent loss of data
- Added bias correction factors computed from validation to our BikePed Portal Database for sites where validation had been conducted. This included determining the time

### Approximate Locations of New Multi Counters

- 1 ROCR-Beach Drive: US Park Police
- 2 ROCR-Beach Drive: Picnic Grove 10
- 3 MBT: Alethia Tanner Park – Done 6/25
- 4 MBT: Fort Totten
- 5 ROCR: Tunnel under Theodore Roosevelt Bridge
- 6 Anacostia River Trail: West Bank

**Zelt only counter:**

- 7 Virginia Ave NW Cycle Track (bikes only) - Loops measured and cut

### Approximate Locations of Counters to Repair

- A P Street NW @ Rose Park
- B ART – River Terrace
- C Piney Branch Parkway
- D Columbia Road NW
- E R Street NW
- F 14<sup>th</sup> Street NW
- G 11<sup>th</sup> Street NW

periods applicable based on when the validation was conducted. For example, if a counter's settings were changed after validation, we corrected only the period before the change.

- Created a new Explore+ page in BikePed Portal that allows users with logins to look at data availability (Counter health) and better view data by data quality levels, mode, direction, total or averaged, for different metrics on different days of the week.
- Used the new BikePed Portal annotations feature to add known events to counter data in the online database.
- Manually checked 2022 through 2024 count data and some other years using BikePed Portal's manual quality checking feature.
- Computed Weekend Weekday Index (WWI) and peak hour volumes at trail count sites where data were available.
- Worked with 4 Virginia Tech students (2 graduate students and 2 undergraduate students) and 14 Portland State University students (12 undergraduate students from two different computer science capstone classes and 2 graduate students).

## APPENDIX

## Data Summary

In this report, we use several standard metrics:

- Monthly traffic, which is more specifically Monthly Average Daily Traffic (MADT).
- Annual Average Daily Traffic (AADT)
- Adjusted AADT which is AADT adjusted using the correction factor computed by Virginia Tech students from their validation study.
- Monthly percent of AADT, which is MADT/AADT or where it is available (adjusted MADT)/(adjusted AADT)
- Weekend/Weekday Index (WWI)
- Peak hour based on the American Association of State Highway and Transportation Officials (AASHTO) Comprehensive Bike Guide, 5<sup>th</sup> Edition (AASHTO 2024)

### Summary Metrics

MADT, AADT, and WWI as defined below.

Monthly Average Daily Traffic (MADT): For each day of the week for each month in each year for each segment area for each mode, compute MADT (from FHWA-PL-015-008, 2011)

$$MADT_{m,y} = \frac{1}{7} \sum_{j=1}^7 \left[ \frac{1}{n} \sum_{i=1}^n V_{ijm} y \right]$$

where  $V$  = total traffic volume for  $i^{\text{th}}$  occurrence of the  $j^{\text{th}}$  day of the week within the  $m^{\text{th}}$  month, for year  $y$ .

$n$  = the count of the  $j^{\text{th}}$  day of the week during the  $m^{\text{th}}$  month for which traffic volume is available (a number between 1 and 5)

Annual Average Daily Traffic (AADT):

$$AADT_y = \frac{1}{12} \sum_{m=1}^{12} MADT_{m,y}$$

Where  $m$  is the month of the year,  $y$

The Weekend/Weekday Index was calculated by average the total weekend volume and the total weekday volume and dividing the Weekend average by the weekday average.

Weekend-Weekday Index (WWI) (*Miranda-Moreno et al. 2013*)

$$WWI = V_{we}/V_{wd}$$

where:

WWI = Weekend/Weekday Index

$V_{we}$ =average weekend daily traffic  
 $V_{wd}$ =average weekday daily traffic

Peak hour is simply the highest volume hour in the available data or that year (AASHTO 2024). This metric can be used in bicycle facility design (e.g., for path width guidance).

## Trail Volumes

Table 4 summarizes pedestrian and bicycle volumes by trail as monthly percent of AADT, which is computed as MADT divided by AADT or, where available, adjusted MADT divided by adjusted AADT. This is followed by three maps showing the trail volumes for 2024 by mode: pedestrian-only, bicycle-only, and combined pedestrian-bicycle traffic, which includes sites where pedestrians are not distinguished from bicyclists and those where pedestrians and bicyclists are counted separately but are added together for inclusion in the map.

The blanks in the AADT columns in Table 4 demonstrate the need for more consistent data collection in order to track change over time. It also shows that all trail sites have higher weekend traffic than weekday traffic ( $WWI > 1$ ) which is associated with recreational travel as expected on these trails. WWI is calculated for 2024.

The trail with the highest volume (bike and pedestrians combined) in 2024 on Table 4 is the Theodore Roosevelt Island Site on the Mount Vernon Trail with a combined AADT of 1,623. However, the table does not include the area bridges across major rivers like the Potomac and the Anacostia. The Key Bridge still appears to be the facility that carries the highest bicycle and pedestrian traffic in the region.

Table 4 includes adjusted volumes, indicated by blue font. This value is calculated by multiplying the AADT raw data by the adjustment factor listed in Table 1, as computed from the validation conducted by Virginia Tech where available. Not all counters have been validated yet, so not all counters show the adjusted values. We aim to eventually only use adjusted values in order to account for known bias of particular counters.

Data shown in the maps and graphs and the 2022-2024 columns of Table 4 has been manually inspected and suspicious data removed from AADT and MADT metrics. Data from 2021 and before were manually checked by looking at data and graphs in Excel.

Table 4: Summary of traffic volume for trail

Trail	Count Site	Mode	2018 AADT	2019 AADT	2020 AADT	2021 AADT	2022 AADT	2023 AADT	2024 AADT	2024 WWI
C&O Canal Trail	Dickerson Conservation Park	Both			128	76	34		53	2.3
	Marsden Tract Foot Bridge	Both			290	213		175		
	Lock 10	Both				215		225	230	2.0
	Lock 8	Both				342	275	256	264	1.6
	Glen Echo	Both			297	202				
	Lock 7	Both				123			277	4.2
	Lock 6	Both	151	150	289			257	187	1.8
	Lock 5	Both			188		152	128		
	Chain Bridge Access	Both			786	297				
Capital Crescent Trail	Capital Crescent	Both	432	320		729	569			
	Georgetown Mule Bridge	Both			1,758	1,612	1,395			
	Georgetown VC (Level 3 Access)	Both				343	482	363		
Anacostia River Trail	Benning	Bike		255						
	Benning	Ped		87						
	Benning	Both		342						
	Deane Ave	Bike		194		346	249	254	236	2.4
	Deane Ave	Ped		45		61	55	144	107	1.4
	Deane Ave	Both		239		407	304	398	343	2.1
	Kenilworth Park	Bike		223		382			286	2.0
	River Terrace	Bike		167		306	234			
	River Terrace	Ped		82		172				
	River Terrace	Both		249		478				
Mount Vernon Trail	MVT Airport	Bike	1,459	1,872	1,737	1,238		1,223	1,201	1.3
	MVT Airport	Ped		332	508	387		362	390	2.0
	MVT Airport	Both		2,204	2,245	1,625		1,585	1,591	1.5
	CC Connector	Bike	510	512	451	388	375	410	396	1.1
	CC Connector	Ped	493	476	416	336		345	381	1.3
	CC Connector	Both	918	972	867	724		755	777	1.2
	14th Street Bridge	Bike		1,487	1,133	956	1,042	1,114		
	14th Street Bridge	Ped		339	249	245	213	216		
	14th Street Bridge	Both		1,826	1,382	1,201	1,255	1,330		
	Theodore Roosevelt Bridge	Bike					218		252	0.8
	Rosslyn Bridge (was TRI Br)	Bike	862				677	682	654	1.2
	Rosslyn Bridge (was TRI Br)	Ped		799			873	931	1,012	1.7
	Rosslyn Bridge (was TRI Br)	Both					1,550	1,613	1,666	1.5
Potomac River Bridges	Arlington Memorial Bridge	Bike						1,037	1,065	1.1
	Arlington Memorial Bridge	Ped					1,421		1,379	1.4
	Arlington Memorial Bridge	Both						2,736		1.3
	Key Bridge	Bike					885	939	997	1.0

Trail	Count Site	Mode	2018 AADT	2019 AADT	2020 AADT	2021 AADT	2022 AADT	2023 AADT	2024 AADT	2024 WWI																																	
	Key Bridge	Ped					2,635	2,905	3,060	1.4																																	
	Key Bridge	Both					3,529	3,844	4,057	1.3																																	
Rock Creek Trail and Vicinity	Peirce Mill	Bike					327	478	518	1.7																																	
	Peirce Mill	Ped					817	885	966	1.9																																	
	Peirce Mill	Both					1,144	1,363	1,484	1.8																																	
	Piney Branch Trail	Bike						101	133	1.0																																	
	Piney Branch Trail	Ped						260	286	1.3																																	
	Piney Branch Trail	Both						361	419	1.2																																	
	Rose Park @ P Street	Bike					246	217	258	1.0																																	
	Shoreham Drive	Bike						509	550	1.3																																	
	Shoreham Drive	Ped						882	989	1.9																																	
	Shoreham Drive	Both						1,391	1,539	1.7																																	
Washington & Old Dominion Trail	Bon Air Park East	Bike	693	689	717	620	575																																				
	Bon Air Park East	Ped					504																																				
	Bon Air Park East	Both					1,079																																				
	Columbia Pike	Bike					706	727	674	1.5																																	
	Columbia Pike	Ped					646	639	553	1.4																																	
	Columbia Pike	Both					1,352	1,366	1,227	1.5																																	
	East Falls Church Park	Bike						836	785	1.2																																	
	East Falls Church Park	Ped							768	1.1																																	
	East Falls Church Park	Both							1,553	1.1																																	
<table border="1"> <tr> <td style="background-color: #f2e0e0;">&lt;200 AADT</td> <td colspan="10"></td> </tr> <tr> <td style="background-color: #ffcc99;">200-600 AADT</td> <td colspan="10"></td> </tr> <tr> <td style="background-color: #ff8c00;">&gt;600 AADT</td> <td colspan="10"></td> </tr> </table>											<200 AADT											200-600 AADT											>600 AADT										
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**Blue** numbers are adjusted figures, taking into account validated data comparisons with recorded data

**Black** numbers are as recorded by the equipment

Blank cells indicate no AADT is available because the counter was not functioning for one or more months.

# Pedestrian Counter Map

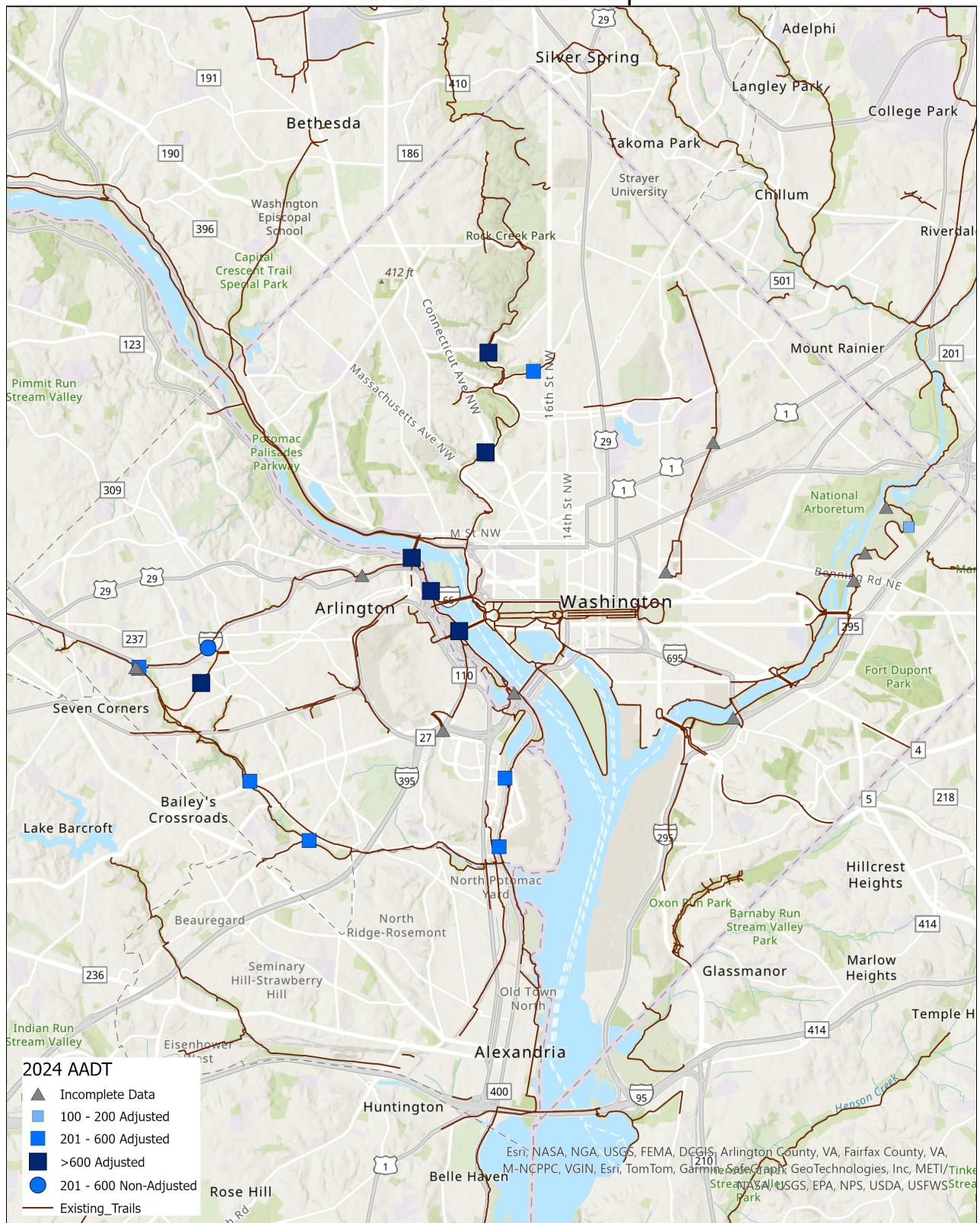


Figure 3: Pedestrian 2024 trail counter volumes

## Bike Counter Map

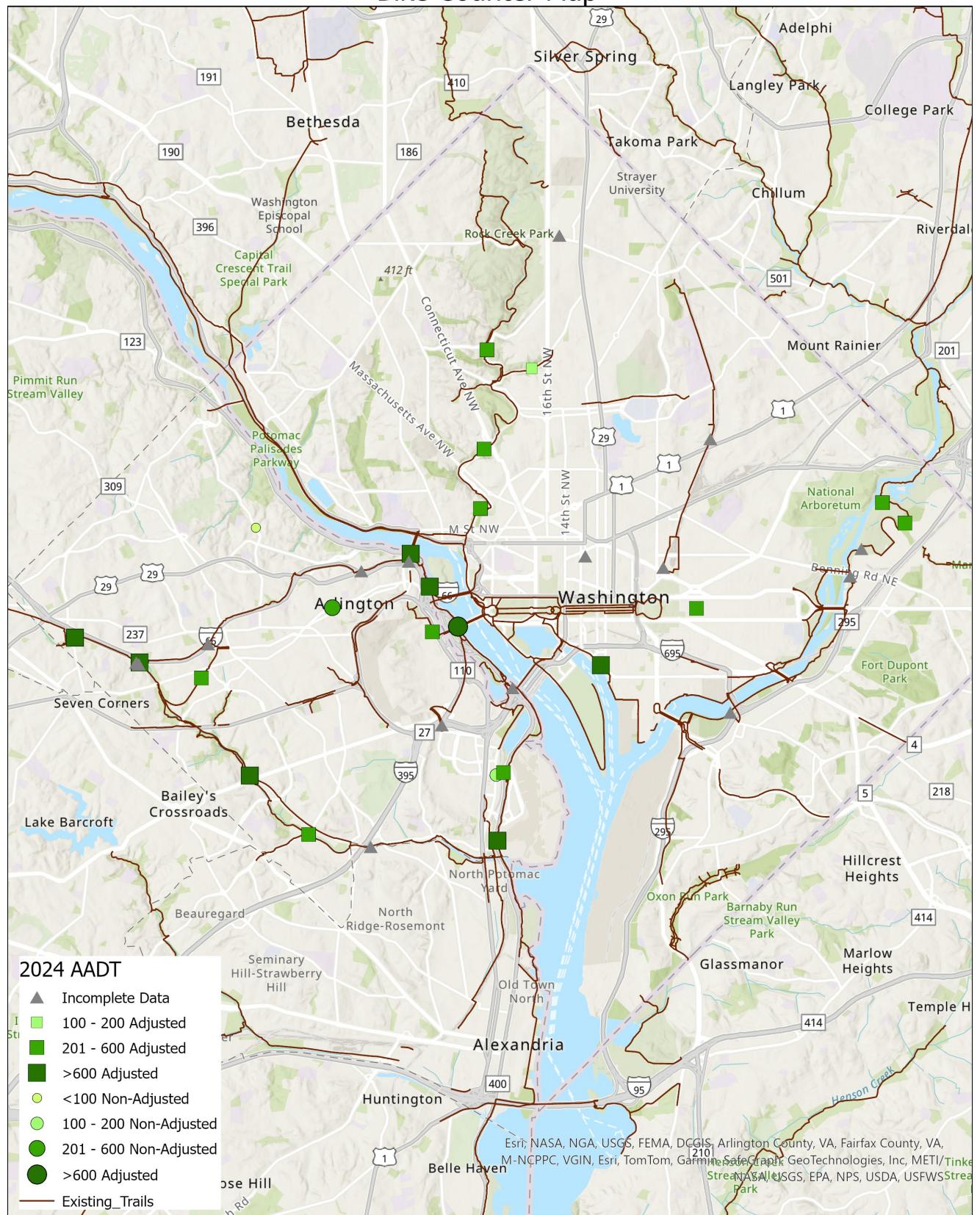


Figure 4: Bicycle 2024 trail counter volumes

## Bike/Pedestrian Counter Map

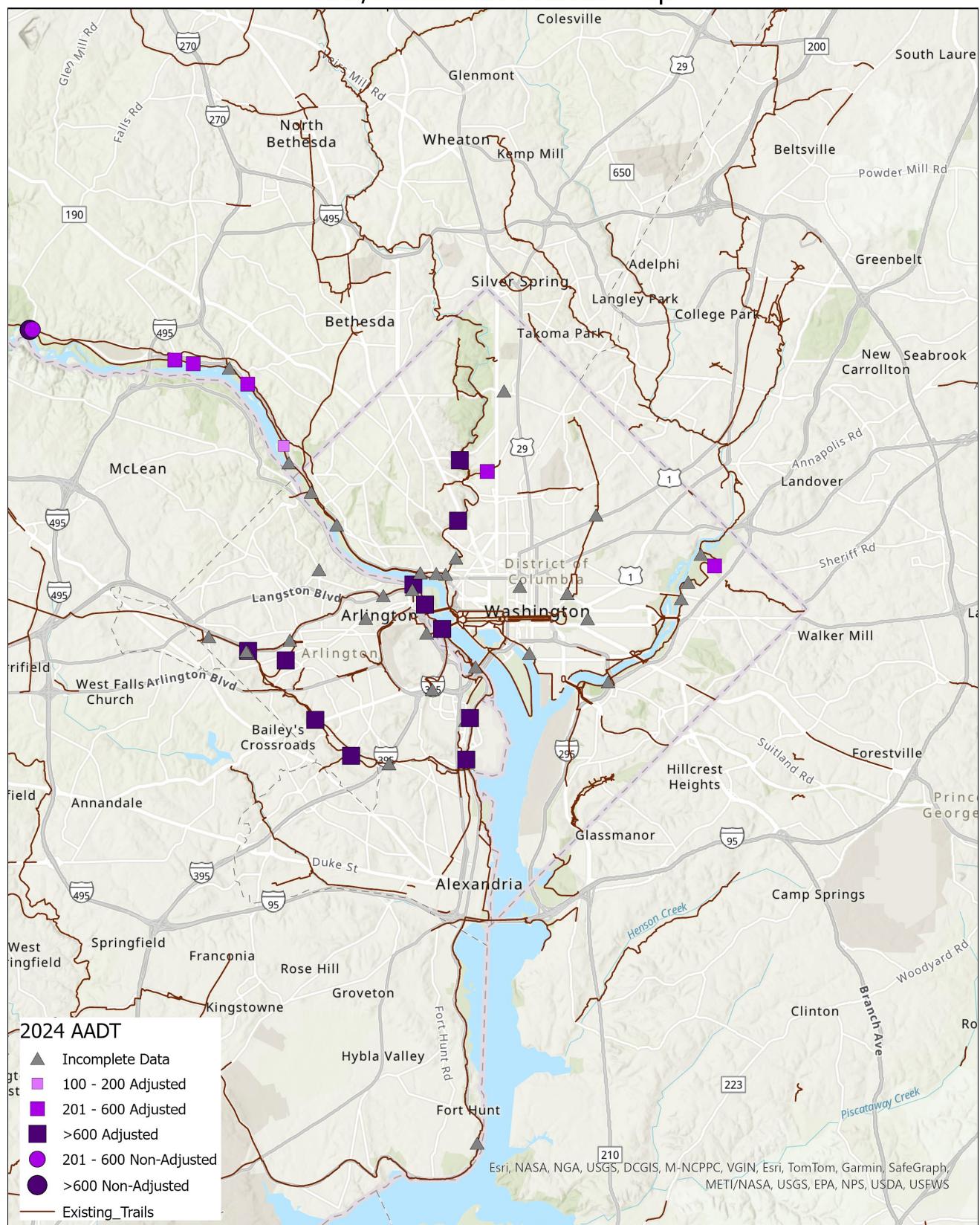
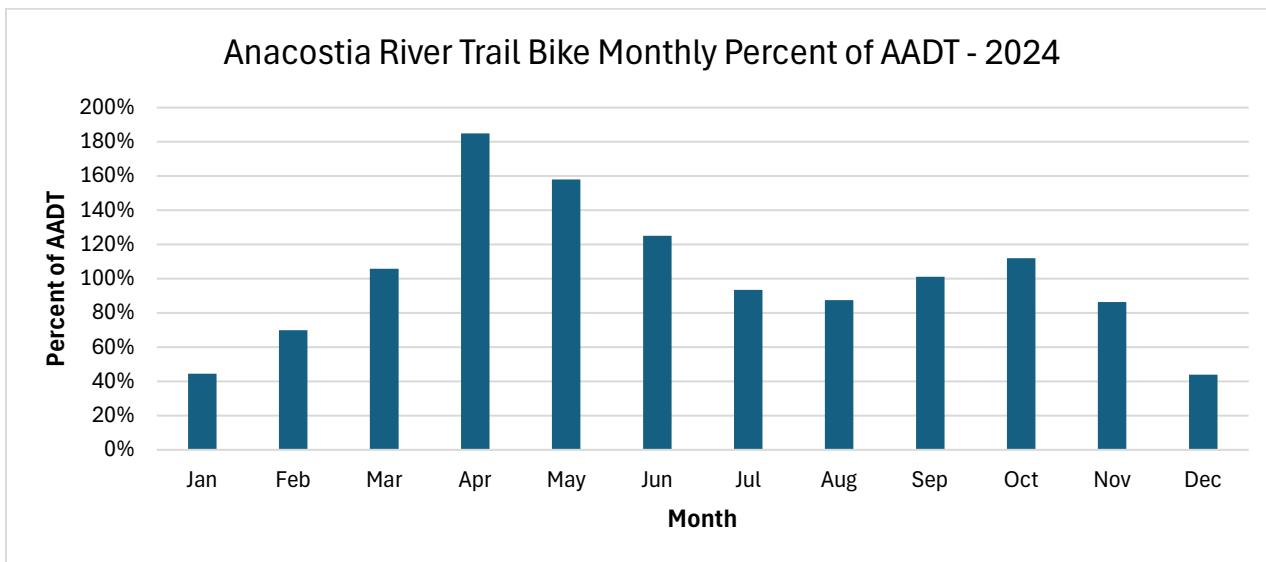


Figure 5: Combined pedestrian and bicycle 2024 trail counter volumes

## Volume Graphs by Month by Trail by Travel Mode

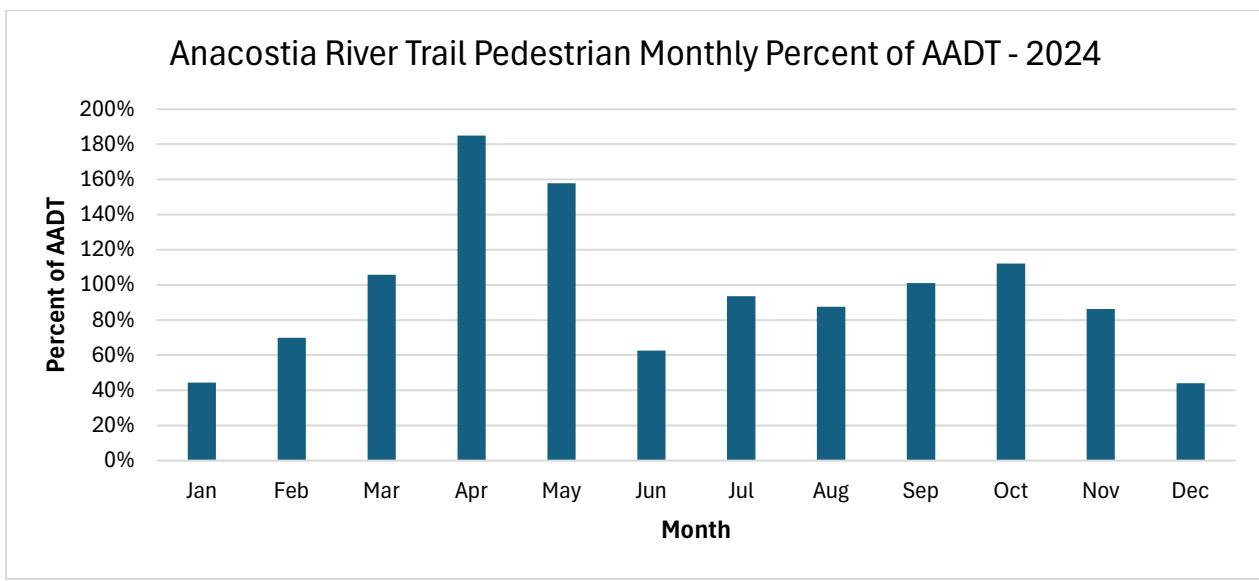
In this section we provide graphs of average trail traffic for 2024 by trail and mode by month as a percent of AADT, which is computed as MADT divided by AADT or, where available, adjusted MADT divided by adjusted AADT. The purpose of these graphs was to determine the seasonality of the travel. They show that traffic is generally highest in summer, but relatively high throughout the non-winter months (March through October). Generally pedestrian travel tends to be less seasonal (more equal throughout the year) than bicycle travel. Data in these graphs include sites where we have at least 11 months of MADT and may include sites not included in Table 4.

### Anacostia River Trail – Bike



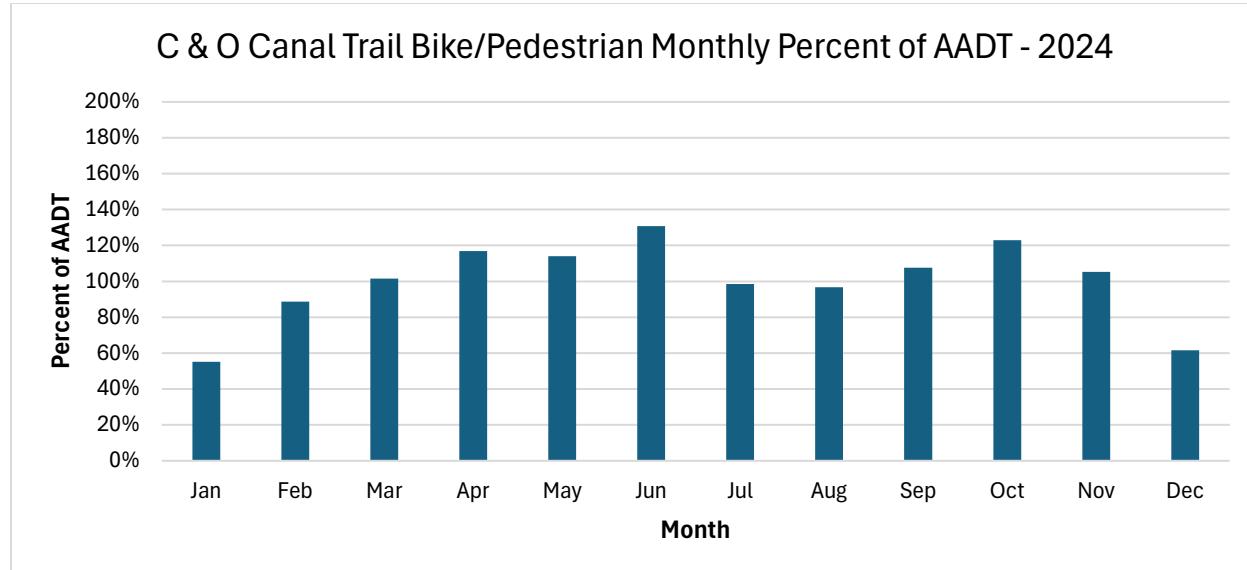
*Data are from Deanne Ave and Kenilworth Park averaged.*

### Anacostia River Trail – Pedestrian



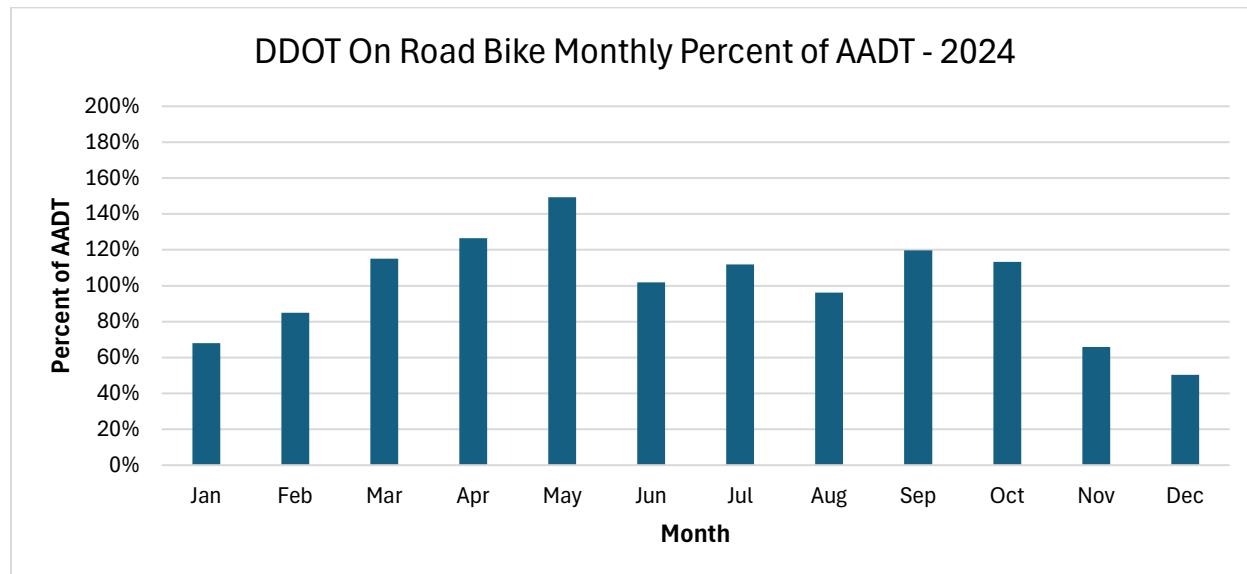
*Data are from Deanne Ave and Kenilworth Park averaged.*

## C & O Canal Trail – Bike/Pedestrian



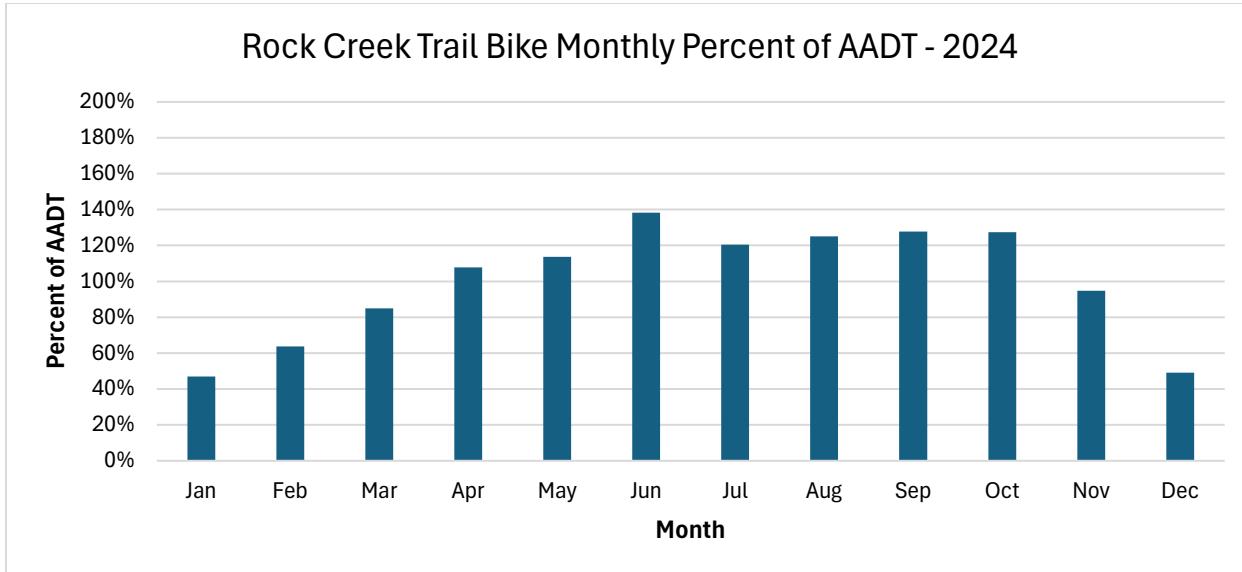
Data are from Dickerson Conservation Park, Violettes Lock, Pennyfield Lock, Berma Road, Anglers, Lock 6, Lock 8, Lock 10, and Whites Ferry averaged.

## DDOT On-Road – Bike



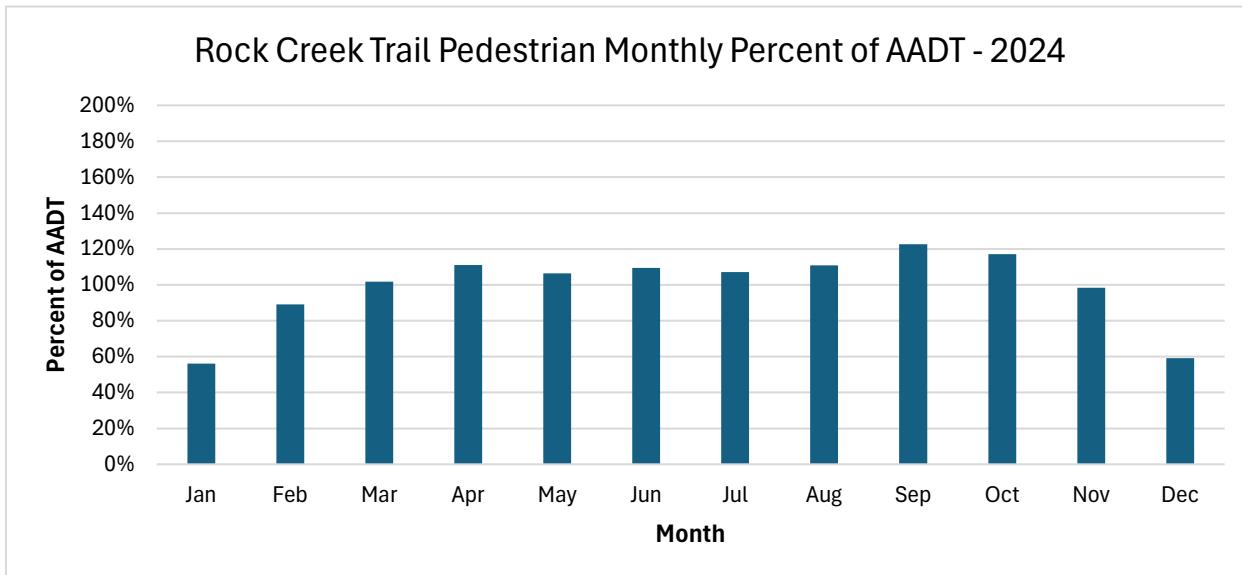
Data are from 11<sup>th</sup> St NW, 14<sup>th</sup> St NW, East Capitol St, and Maine Ave Cycle Track averaged.

## Rock Creek Trail – Bike



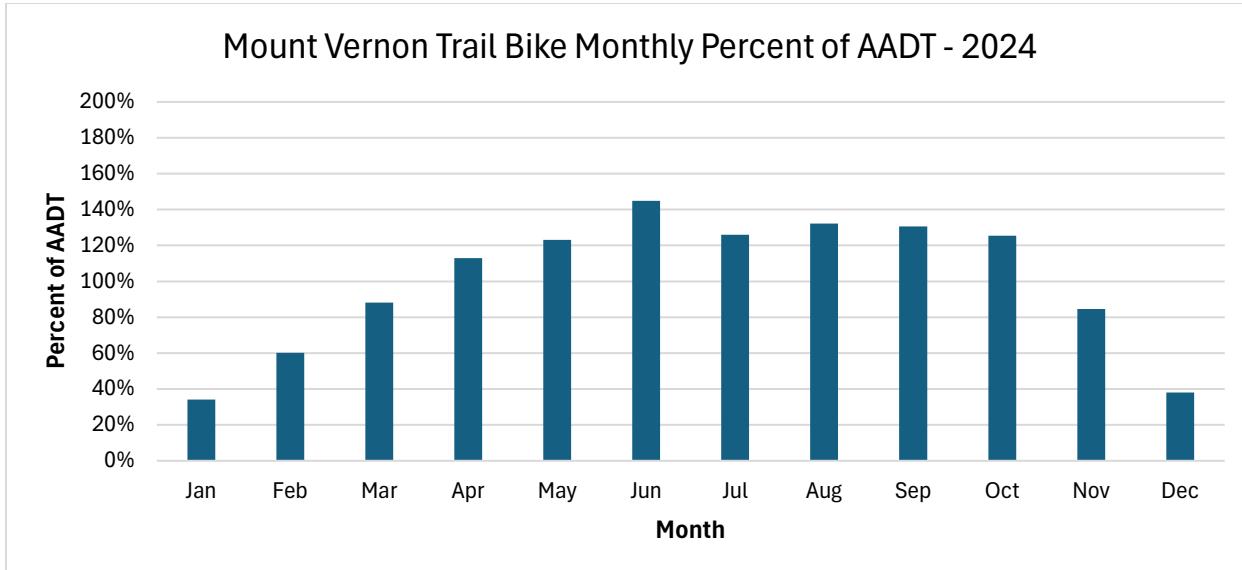
*Data are from Peirce Mill, Rose Park Trail @ P St NW, Piney Branch Trail, and Shoreham Drive averaged.*

## Rock Creek Trail – Pedestrian



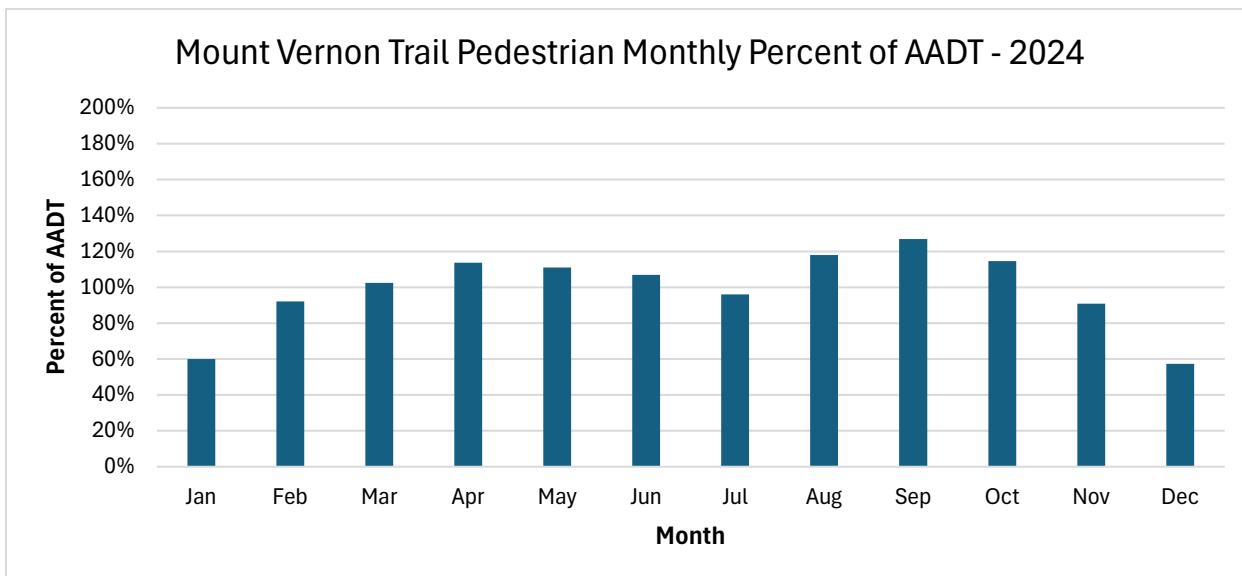
*Data are from Peirce Mill, Piney Branch Trail, Shoreham Drive and Zoo Loop Trail averaged.*

## Mount Vernon Trail – Bike



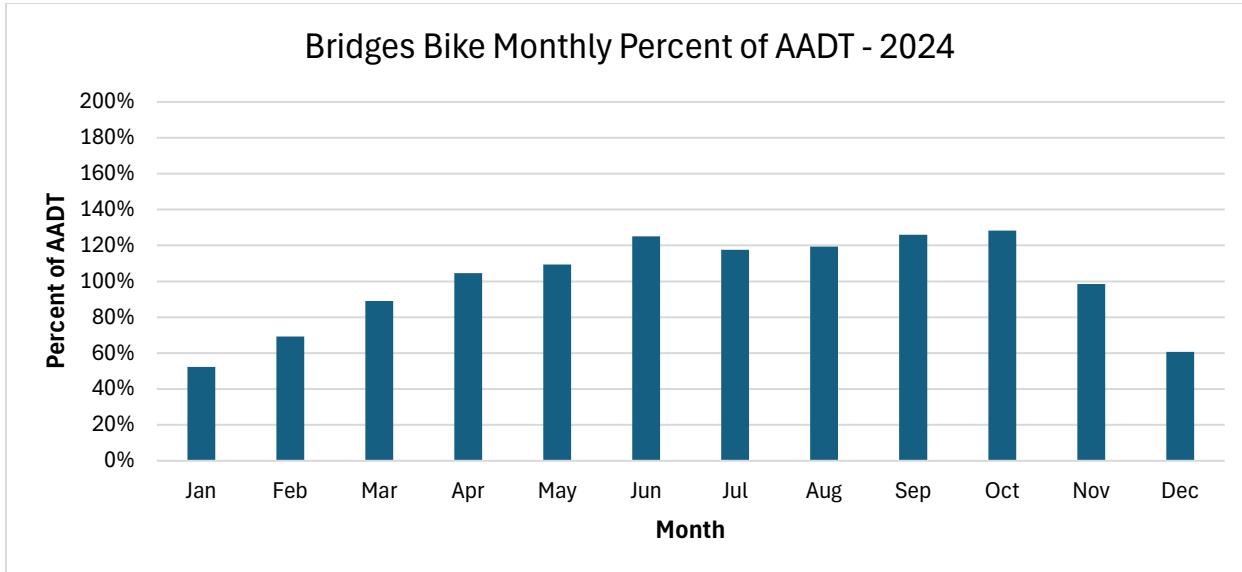
*Data are from Airport South, Theodore Roosevelt Bridge, Rosslyn Bridge, Crystal City Connector and Waynewood Boulevard averaged.*

## Mount Vernon Trail – Pedestrian



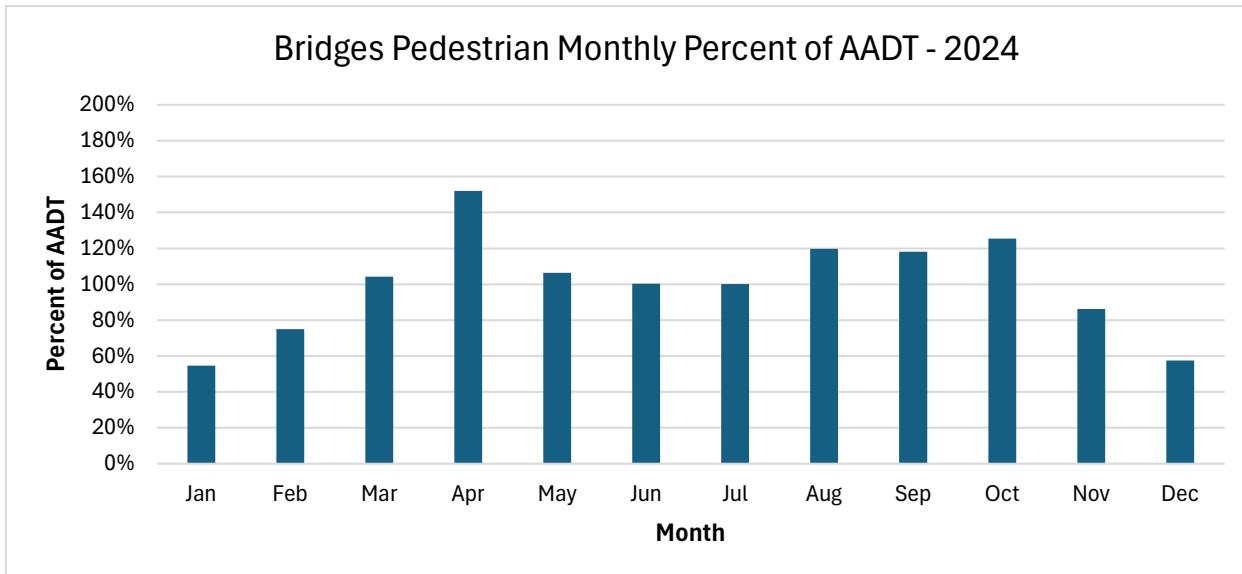
*Data are from Airport South, Rosslyn Bridge, Crystal City Connector and Waynewood Boulevard averaged.*

## Potomac River Bridges – Bike



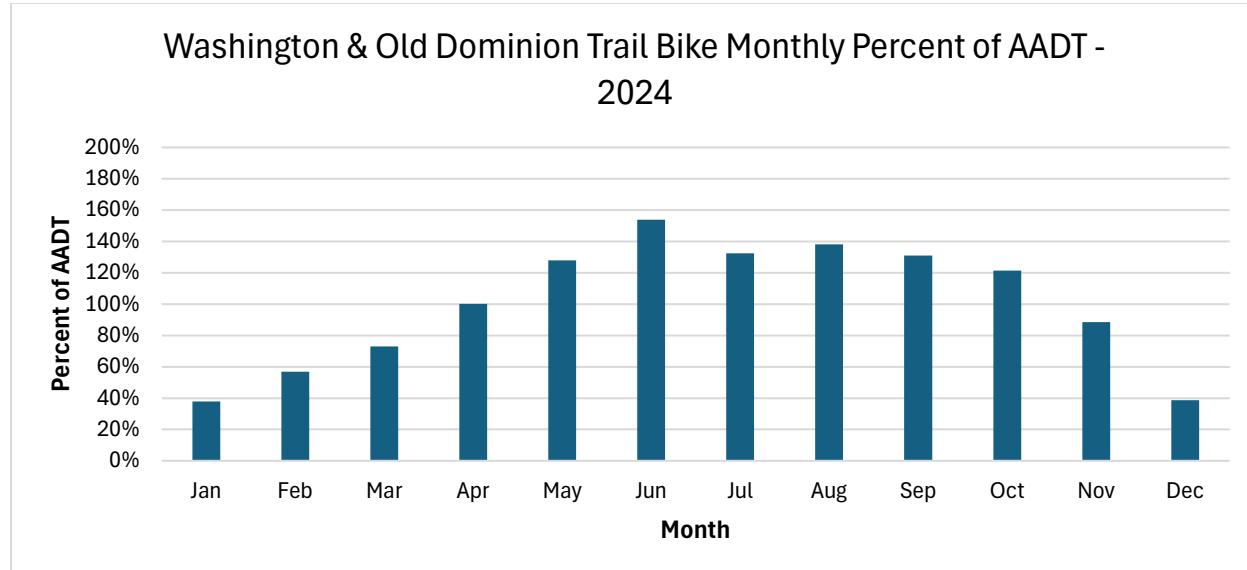
*Data are from Arlington Memorial Bridge and Key Bridge averaged.*

## Potomac River Bridges – Pedestrian



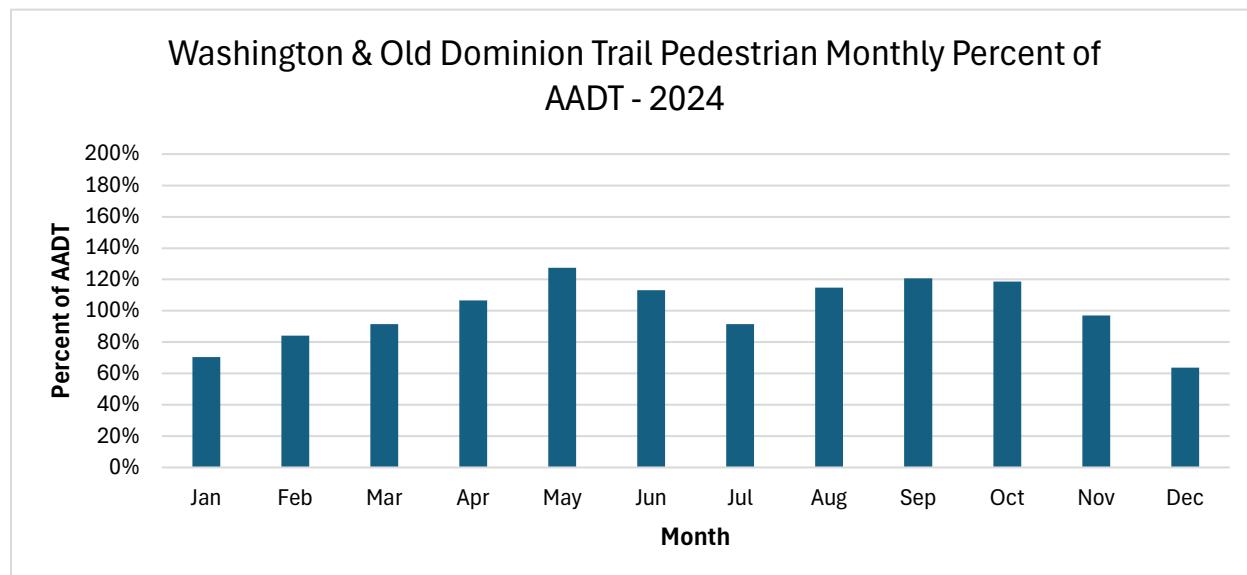
*Data are from Arlington Memorial Bridge and Key Bridge averaged.*

## Washington & Old Dominion Trail – Bike



Data are from Custis Trail (Bon Air Park), Columbia Pike, and East Falls Church Park averaged.

## Washington & Old Dominion Trail – Pedestrian



Data are from Custis Trail (Bon Air Park), Columbia Pike, and East Falls Church Park averaged.

## Peak Hour

For the first time this report now includes a list of the peak hours in 2024 for the trails where these could be computed. This is the peak hour for all the data available at these trail count sites. Since data are often not available for a full year, the months where data are available are listed in the last column. Weekend days are common days for peak hours. This is a metric used in the AASHTO Bike Guide 5<sup>th</sup> edition to guide bicycle facility width.

Table 5 - Peak hour of the year 2024

Site Name	Mode	Peak Hour Date in 2024	Peak Hour	Peak Hour Volume	Full Months Available
<b>Georgetown VC</b>	Both	Saturday, March 16	14:00	182	Feb - Jul
<b>Georgetown Mule Bridge</b>	Both	Sunday, March 24	14:00	370	Jan - Jul
<b>Lock 5</b>	Both	Monday, February 26	17:00	54	Jan - Feb
<b>Lock 6</b>	Both	Sunday, May 12	12:00	96	Jan - Sep
<b>Lock 7</b>	Both	Sunday, February 4	16:00	1453	Jan - Sep
<b>Lock 8</b>	Both	Thursday, March 7	9:00	169	Jan - Sep
<b>Lock 10</b>	Both	Friday, April 26	11:00	436	Jan - Dec
<b>Dickerson Conservation Park</b>	Both	Saturday, February 3	16:00	61	Jan - Aug
<b>Marsden Tract</b>	Both	Sunday, March 17	8:00	160	Jan - Jun
<b>Berma Road</b>	Both	Saturday, February 3	12:00	157	Jan - Sep
<b>Pennyfield Lock</b>	Both	Saturday, March 30	9:00	165	Jan - Jul
<b>Violettes Lock</b>	Both	Sunday, June 9	17:00	120	Jan - Aug
<b>Anacostia River Trail @ Benning</b>	Bike	Saturday, November 2	14:00	198	Jul - Dec
<b>Anacostia River Trail @ Benning</b>	Ped	Friday, October 18	16:00	78	Jul - Dec
<b>Anacostia River Trail @ Benning</b>	Both	Sunday, July 21	11:00	227	Jul - Dec
<b>Anacostia River Trail @ Deane Ave</b>	Bike	Sunday, July 21	10:00	201	Jan - Dec
<b>Anacostia River Trail @ Deane Ave</b>	Ped	Sunday, April 14, 2024	16:00	89	Jan - Dec
<b>Anacostia River Trail @ Deane Ave</b>	Both	Sunday, July 21	10:00	207	Jan - Dec
<b>Anacostia River Trail @ Kenilworth</b>	Ped	Thursday, May 2	10:00	195	Jan - Dec

Site Name	Mode	Peak Hour Date in 2024	Peak Hour	Peak Hour Volume	Full Months Available
Mount Vernon Trail Airport	Bike	Sunday, April 28	14:00	434	Jan - Dec
Mount Vernon Trail Airport	Ped	Saturday, September 7	9:00	210	Jan - Dec
Mount Vernon Trail Airport	Both	Sunday, April 28	14:00	501	Jan - Dec
CC Connector	Bike	Tuesday, April 16	17:00	134	Jan - Dec
CC Connector	Ped	Saturday, February 24	11:00	139	Jan - Dec
CC Connector	Both	Tuesday, March 12	17:00	225	Jan - Dec
Key Bridge	Bike	Wednesday, October 9	17:00	200	Jan - Dec
Key Bridge	Ped	Saturday, August 31	20:00	1,956	Jan - Dec
Key Bridge	Both	Saturday, August 31	20:00	1,994	Jan - Dec
Rosslyn Bridge	Bike	Sunday, March 3	14:00	205	Jan - Dec
Rosslyn Bridge	Ped	Sunday, June 16	17:00	479	Jan - Dec
Rosslyn Bridge	Both	Thursday, July 4	21:00	599	Jan - Dec
Rock Creek Trail @ Peirce Mill	Both	Sunday, April 14	13:00	437	Apr
Rock Creek Trail @ Peirce Mill	Bike	Sunday, April 28	14:00	199	Apr
Rock Creek Trail @ Peirce Mill	Ped	Sunday, April 14	13:00	248	Apr
Rock Creek Trail @ Peirce Mill	Both	Sunday, April 14	13:00	437	Apr
Rock Creek Trail @ Shoreham Dr	Bike	Sunday, April 14	13:00	179	Jan - Apr
Rock Creek Trail @ Shoreham Dr	Ped	Saturday, April 6	10:00	341	Apr
Rock Creek Trail @ Shoreham Dr	Both	Sunday, April 28	11:00	437	Apr
Piney Branch Trail	Bike	Tuesday, April 23	17:00	38	Apr - Jul, Sep, Nov - Dec
Piney Branch Trail	Ped	Monday, February 26	17:00	98	Jan - Apr, Aug, Oct
Piney Branch Trail	Both	Tuesday, April 23	17:00	99	Apr
Columbia Pike	Bike	Monday, September 2	11:00	277	Jan - Dec
Columbia Pike	Ped	Monday, May 20	15:00	317	Jan - Dec
Columbia Pike	Both	Saturday, May 11	15:00	433	Jan - Dec

## Inventory

Table 6 summarizes 203 counters in the National Capital Region, most of which are permanently installed. This is based on the inventory provided by Volpe and updated with newly installed counters and a column to indicate if the counter has been loaded into BikePed Portal and the Status of the counter as of August 2025. It includes 22 retired counters indicated with an asterisk next to the counter name and status of “R”. Counters listed are those installed as of mid-August 2025. Inactive counters (status of “I”) are those which are currently in need of repair but are planned be returned to service in the future, as well as some where personnel changes have led to a temporary lapse in maintenance. Active counters (Status of “A”) are those providing data within the August 2024 to August 2025 period.

- 22 Retired
- 40 Inactive
- 141 Active

Table 6 - Inventory of Pedestrian and Bicycle Counters in the National Capital Region

Owner Agency	Model Company	Facility Name	Counter Name	Direction Capable	Separate Bike/Ped Detection	Loaded in BikePed Portal?	Status
Alexandria	Eco-Counter	Beauregard Trail	Beauregard Trail	Yes	Yes	No	I
Alexandria	Eco-Counter	Eisenhower Trail	Eisenhower Trail	Yes	Yes	No	I
Alexandria	Eco-Counter	Four Mile Trail	Four Mile Trail	Yes	Yes	No	I
Alexandria	Eco-Counter	Holmes Run Trail	Holmes Run Trail	Yes	Yes	No	I
Alexandria	Eco-Counter	Metro Linear Trail	Metro Linear Trail	Yes	Yes	No	I
Alexandria	Eco-Counter	MVT	Mount Vernon Trail #1	Yes	Yes	Yes	I
Alexandria	Eco-Counter	MVT	Mount Vernon Trail #2	Yes	Yes	No	I
Alexandria	Eco-Counter	MVT	Mount Vernon Trail #3	Yes	Yes	Yes	I
Alexandria	Eco-Counter	Onroad	Commonwealth at Mount Vernon	No	No - bikes only	No	I
Alexandria	Eco-Counter	Potomac Yard Trail	Potomac Yard Trail #1	Yes	Yes	No	I
Arlington	Eco-Counter	Arlington Nat. Cemetery - Rt 110	110 Trail (Medgar Evers Bike Trail)	Yes	Yes	Yes	A
Arlington	Eco-Counter	Arlington Memorial Bridge	Memorial Bridge North	Yes	Yes	Yes	A

Owner Agency	Model Company	Facility Name	Counter Name	Direction Capable	Separate Bike/Ped Detection	Loaded in BikePed Portal?	Status
Arlington	Eco-Counter	Arlington Memorial Bridge	Memorial Bridge South	Yes	Yes	Yes	A
Arlington	Eco-Counter	Bluemont Junction Trail	Bluemont Connector	Yes	Yes	Yes	A
Arlington	Eco-Counter	Custis Trail	Ballston Connector	Yes	Yes	Yes	A
Arlington	Eco-Counter	Custis Trail	Custis Bon Air	Yes	Yes	Yes	A
Arlington	Eco-Counter	Custis Trail	Custis Rosslyn	Yes	Yes	Yes	A
Arlington	Eco-Counter	Four Mile Run Trail	Four Mile Run Trail	Yes	Yes	Yes	A
Arlington	Eco-Counter	Four Mile Run Trail	Arlington Mill Drive	Yes	Yes	Yes	A
Arlington	Eco-Counter	Humpback Bridge Trail	Boundary Channel Dr	Yes	Yes	No	A
Arlington	Eco-Counter	Joyce Street	Joyce SB	Yes	Yes	Yes	A
Arlington	Eco-Counter	Joyce Street	Joyce NB	Yes	Yes	Yes	A
Arlington	Eco-Counter	Mount Vernon Trail	MVT Airport	Yes	Yes	Yes	A
Arlington	Eco-Counter	Mount Vernon Trail	CC Connector	Yes	Yes	Yes	A
Arlington	Eco-Counter	Mount Vernon Trail	14th Street Bridge	Yes	Yes	Yes	A
Arlington	Eco-Counter	Mount Vernon Trail	Roosevelt Bridge	Yes	Yes	Yes	A
Arlington	Eco-Counter	Mount Vernon Trail	Rosslyn Bridge	Yes	Yes	Yes	A
Arlington	Eco-Counter	Mount Vernon Trail	Rosslyn Bikeometer	Yes	No - bikes only	Yes	A
Arlington	Eco-Counter	Mount Vernon Trail	Key Bridge East	Yes	Yes	Yes	A
Arlington	Eco-Counter	Mount Vernon Trail	Key Bridge West	Yes	Yes	Yes	A
Arlington	Eco-Counter	Onroad	Clarendon EB	No	No - bikes only	Yes	A

Owner Agency	Model Company	Facility Name	Counter Name	Direction Capable	Separate Bike/Ped Detection	Loaded in BikePed Portal?	Status
Arlington	Eco-Counter	Onroad	Crystal NB	No	No - bikes only	Yes	A
Arlington	Eco-Counter	Onroad	Eads NB	No	No - bikes only	No	A
Arlington	Eco-Counter	Onroad	Eads SB	No	No - bikes only	No	A
Arlington	Eco-Counter	Onroad	Fairfax EB	No	No - bikes only	Yes	A
Arlington	Eco-Counter	Onroad	Fairfax WB	No	No - bikes only	Yes	A
Arlington	Eco-Counter	Onroad	Military NB	No	No - bikes only	Yes	A
Arlington	Eco-Counter	Onroad	Military SB	No	No - bikes only	Yes	A
Arlington	Eco-Counter	Onroad	Quincy SB	No	No - bikes only	Yes	A
Arlington	Eco-Counter	Onroad	Quincy NB	No	No - bikes only	Yes	A
Arlington	Eco-Counter	Onroad	Wilson WB	No	No - bikes only	Yes	A
Arlington	Eco-Counter	W&OD	W&OD Bon Air East	Yes	Yes	Yes	A
Arlington	Eco-Counter	W&OD	W&OD Bon Air West	Yes	Yes	Yes	A
Arlington	Eco-Counter	W&OD	W&OD Columbia Pike	Yes	Yes	Yes	A
Arlington	Eco-Counter	W&OD	W&OD East Falls Church Park	Yes	Yes	Yes	A
Arlington	Eco-Counter	Washington Boulevard Trail	Washington Boulevard Trail	Yes	Yes	No	A
Arlington	Eco-Counter	Arlington Boulevard Trail	Arlington Boulevard Trail*	Yes		Yes	R
Arlington	Eco-Counter	Arlington Memorial Bridge	Pyro 11 (Memorial Circle/Arlington Memorial Bridge)*	Yes	No	Yes	R
Arlington	Eco-Counter	Custis Trail	Custis Trail (Lee Hwy & N Lynn St)*	No	No	Yes	R
Arlington	Eco-Counter	Custis Trail	Custis Trail (Ballston Beaver Pond) *	Yes	Yes	No	R

Owner Agency	Model Company	Facility Name	Counter Name	Direction Capable	Separate Bike/Ped Detection	Loaded in BikePed Portal?	Status
Arlington	Eco-Counter	Four Mile Run Trail	Four Mile Run - piezo*	Yes	No - bikes only	Yes	R
Arlington	Eco-Counter	Four Mile Run Trail	Pyro 04 - Four Mile Run*	Yes	No	Yes	R
Arlington	Eco-Counter	Onroad	Sidewalk on Campbell Ave (outside Robeks) *			Yes	R
Arlington	Eco-Counter	Onroad	Sidewalk on N Nash St (Arlington Temple) *			Yes	R
Arlington	Eco-Counter	Onroad	Trail along N Rhodes Street*			Yes	R
Arlington	Eco-Counter	W&OD	W&OD (near Fire Station 6) *	Yes	Yes	Yes	R
DDOT	Eco-Counter	Anacostia Riverwalk Trail	ART - 11th Street	Yes	Yes	Yes	A
DDOT	Eco-Counter	Anacostia Riverwalk Trail	ART - Benning Rd	Yes	Yes	Yes	A
DDOT	Eco-Counter	Anacostia Riverwalk Trail	ART - Deane Ave	Yes	Yes	Yes	A
DDOT	Eco-Counter	Anacostia Riverwalk Trail	ART - Kenilworth	Yes	Yes	Yes	A
DDOT	Eco-Counter	Anacostia Riverwalk Trail	ART - River Terrace	Yes	Yes	Yes	A
DDOT	Eco-Counter	Onroad	11th St NW	No	No - bikes only	Yes	A
DDOT	Eco-Counter	Onroad	14th St NW	No	No - bikes only	Yes	A
DDOT	Eco-Counter	Onroad	Columbia Rd NW	No	No - bikes only	Yes	A
DDOT	Eco-Counter	Onroad	East Capitol Street	No	No - bikes only	Yes	A
DDOT	Eco-Counter	Onroad	R Street NW	No	No - bikes only	Yes	A
DDOT	Eco-Counter	Onroad	Wharf Classic - Maine Ave Cycle Track	No	No - bikes only	Yes	A
DDOT	Eco-Counter	Marvin Gaye Trail	MGT - 48th Pl	Yes	Yes	Yes	A

Owner Agency	Model Company	Facility Name	Counter Name	Direction Capable	Separate Bike/Ped Detection	Loaded in BikePed Portal?	Status
DDOT	Eco-Counter	Marvin Gaye Trail	MGT - 60th St	Yes	Yes	Yes	A
DDOT	Eco-Counter	Metropolitan Branch Trail	MBT - Alethia Tanner Park	Yes	Yes	No	A
DDOT	Eco-Counter	Metropolitan Branch Trail	MBT - Blair Road (Oglethorpe)	Yes	Yes	No	A
DDOT	Eco-Counter	Metropolitan Branch Trail	MBT - Rhode Island Ave	Yes	Yes	Yes	A
DDOT	Eco-Counter	Metropolitan Branch Trail	MBT - Riggs Road NE	Yes	Yes	No	A
DDOT	Eco-Counter	Oxon Run Trail E	Oxon Run Park East Bank	Yes	Yes	Yes	A
DDOT	Eco-Counter	Oxon Run Trail W	Oxon Run Park West Bank	Yes	Yes	Yes	A
DDOT	Eco-Counter	Onroad	1st St NE*	No	No	Yes	R
DDOT	Eco-Counter	Onroad	15th St NW Cycletrack*	No	No	Yes	R
DDOT	Eco-Counter	Onroad	Eye St SW bikelane*	No	No	Yes	R
DDOT	Eco-Counter	Onroad	Kaiser Permanente Cntr for Total Health*	No	No	Yes	R
Fairfax	Eco-Counter	I-66 Parallel Trail	#1 - Gallows Road	Yes	Yes	No	A
Fairfax	Eco-Counter	I-66 Parallel Trail	#2 - Yeonas Drive	Yes	Yes	No	A
Fairfax	Eco-Counter	I-66 Parallel Trail	#3 - near Vienna Metro	Yes	Yes	No	A
Fairfax	Eco-Counter	I-66 Parallel Trail	#4 - Platten Drive by Fairfax County Pkwy	Yes	Yes	No	A
Fairfax	Eco-Counter	I-66 Parallel Trail	#5 - Route 123 near White Granite Drive	Yes	Yes	No	A
Fairfax	Eco-Counter	I-66 Parallel Trail	#6 - Route 50 near Fairfax Farms Road	Yes	Yes	No	A
Fairfax	Eco-Counter	I-66 Parallel Trail	#7 - Stringfellow Park & Ride	Yes	Yes	No	A

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Fairfax	Eco-Counter	I-66 Parallel Trail	#8 - Braddock Road, East of Route 28	Yes	Yes	No	A
GBID	Eco-Counter	Onroad	1325 Wisconsin				I
GBID	Eco-Counter	Onroad	1629 Wisc (Book Hill)				I
GBID	Eco-Counter	Onroad	2929 M St				I
Montgomery	Eco-Counter	Capital Crescent Trail	CCT #1 @ Bethesda	Yes	Yes	Yes	A
Montgomery	Eco-Counter	Capital Crescent Trail	CCT #2 @ Dalecarlia	Yes	Yes	Yes	A
Montgomery	Eco-Counter	Capital Crescent Trail	CCT @ Bradley	Yes	Yes		A
Montgomery	Eco-Counter	Capital Crescent Trail	CCT @ Mass Ave	Yes	Yes		A
Montgomery	Eco-Counter	Capital Crescent Trail	CCT @ River	Yes	Yes		A
Montgomery	Eco-Counter	Cabin John Trail	CJT @ Bradley	Yes	No		A
Montgomery	Eco-Counter	Copperhead Run Trail	Copperhead Run Trail-Ped	Yes	No		A
Montgomery	Eco-Counter	Matthew Henson Trail	MHT 1@ Layhill	Yes	Yes	Yes	A
Montgomery	Eco-Counter	Matthew Henson Trail	MHT @ Winding Creek	Yes	Yes	Yes	A
Montgomery	Eco-Counter	Muddy Branch Trail	MBT @ Quince Orchard - Peds	Yes	No		A
Montgomery	Eco-Counter	Paint Branch Trail	PBT @ Valley Mill	Yes	Yes		A
Montgomery	Eco-Counter	Rock Creek Trail	Rock Creek Trail 1 @ Wildwood	Yes	Yes	Yes	A
Montgomery	Eco-Counter	Rock Creek Trail	Rock Creek Trail 2 @ Baltimore	Yes	Yes	Yes	A
Montgomery	Eco-Counter	Sligo Creek Trail	SCT @ Dennis Ave	Yes	Yes		A
Montgomery	Eco-Counter	Seneca Greenway Trail	SGT @ Watkins Mill	Yes	No		A

Owner Agency	Model Company	Facility Name	Counter Name	Direction Capable	Separate Bike/Ped Detection	Loaded in BikePed Portal?	Status
Montgomery	Eco-Counter	Ten Mile Creek Trail	Ten Mile Creek Trail	Yes	No		A
Montgomery	Eco-Counter	Upper Rock Creek Trail	Upper RCT @ Needwood - Peds	Yes	No		A
Montgomery	TRAFx	Capital Crescent Trail	CCT & Little Falls N	No	No		I
Montgomery	TRAFx	Capital Crescent Trail	CCT & Little Falls S	No	No		I
Montgomery	TRAFx	Capital Crescent Trail	CCT @ Loughboro Mill	No	No		I
Montgomery	TRAFx	Onroad	BH RP Contact Station	No	No		I
Montgomery	TRAFx	Powerline Trail	Powerline @ Colton	No	No		I
Montgomery	TRAFx	Powerline Trail	Powerline @ 118	No	No		I
Montgomery	TRAFx	Rock Creek Trail	Beach Dr @ Knowles	No	No		A
Montgomery	TRAFx	Rock Creek Trail	Beach Dr @ Wildwood	No	No		A
Montgomery	TRAFx	Rock Creek Trail	Rock Creek Trail @ Wildwood	No	No		I
Montgomery	TRAFx	Sligo Creek Parkway	Sligo Creek Pkwy @ Dennis	No	No		I
Montgomery	TRAFx	Sligo Creek Parkway	Sligo Creek Pkwy @ Kennebec	No	No		I
Montgomery	TRAFx	Sligo Creek Parkway	Sligo Creek Pkwy @ Piney Branch S	No	No		I
Montgomery	TRAFx	Sligo Creek Trail	Sligo Creek Trail @ Dennis	No	No		I
Montgomery	TRAFx	Sligo Creek Trail	Sligo Creek Trail @ Kennebec	No	No		I
Montgomery	TRAFx	Sligo Creek Trail	Sligo Creek Trail @ Piney Branch S	No	No		I
Montgomery	TRAFx	Ten Mile Creek Trail	Ten Mile Creek Trail @ 121	No	No		I
Montgomery	TRAFx	Ten Mile Creek Trail	Ten Mile Creek Trail @ Old West Baltimore	No	No		I
Montgomery	TRAFx		NW Branch South of Lamberton	No	No		I

Owner Agency	Model Company	Facility Name	Counter Name	Direction Capable	Separate Bike/Ped Detection	Loaded in BikePed Portal?	Status
Montgomery	TRAFx		RC Greenway South of Springbrook	No	No		I
Montgomery	TRAFx	Little Falls Parkway	LFPkwy NB Mass Av	No	No		R
Montgomery	TRAFx	Little Falls Parkway	LFPkwy SB Mass Av	No	No		R
Montgomery	TRAFx	Little Falls Parkway	Little Falls Pkwy N	No	No		R
Montgomery	TRAFx	Little Falls Parkway	Little Falls Pkwy S	No	No		R
NPS	Eco-Counter	Mount Vernon Trail	MVT at Waynewood Blvd. (Bridge 12)	Yes	Yes	Yes	A
NPS	Eco-Counter	Mount Vernon Trail	MVT at Tulane Dr. (Bridge 23)	Yes	Yes	-	A
NPS	Eco-Counter	Oxon Cove Trail	Oxon Cove 1 - Trail	Yes	Yes	No	A
NPS	Eco-Counter	Oxon Cove Trail	Oxon Cove 2 - Bridge	Yes	Yes	No	A
NPS	Eco-Counter	Rock Creek Trail	Piney Branch Trail	Yes	Yes	Yes	A
NPS	Eco-Counter	Rock Creek Trail	RCT @ Peirce Mill	Yes	Yes	Yes	A
NPS	Eco-Counter	Rock Creek Trail	Rose Park Trail @ P Street NW	Yes	Yes	Yes	A
NPS	Eco-Counter	Rock Creek Trail	RCT @ Shoreham Drive	Yes	Yes	Yes	A
NPS	Eco-Counter	Rock Creek Trail	RCT - Zoo Loop Trail	Yes	Yes	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Falls Road Spur	No	No	Yes	I
NPS CHOH	TRAFx	C&O Canal Trail	Chain Bridge Access	No	No	Yes	I
NPS CHOH	TRAFx	C&O Canal Trail	Lock 5	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Lock 6	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Lock 7	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Glen Echo	No	No	Yes	A

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NPS CHOH	TRAFx	C&O Canal Trail	Lock 8	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Lock 10	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Marsden Tract Foot Bridge	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Anglers Inn	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Berma Road	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Swains Lock	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Pennyfield	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Violettes Lock	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Sycamore Landing access	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Whites Ferry	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Dickerson / Warm Water access	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Lock 33	No	No		I
NPS CHOH	TRAFx	C&O Canal Trail	Lock 38 Lower	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Lock 38 Upper	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	McMahon's Mill access	No	No	Yes	I
NPS CHOH	TRAFx	C&O Canal Trail	Cumberland Terminal	No	No	Yes	A
NPS CHOH	TRAFx	C&O Canal Trail	Billy Goat Trail A - Upstream Entrance	No	No	Yes	I
NPS CHOH	TRAFx	C&O Canal Trail	Billy Goat Trail C	No	No	Yes	I
NPS CHOH	TRAFx	C&O Canal Trail	Weverton	No	No	Yes	I
NPS CHOH	TRAFx	Capital Crescent Trail	Georgetown VC (Level 3 access)	No	No	Yes	A
NPS CHOH	TRAFx	Capital Crescent Trail	Georgetown Mule Bridge (MM-1)	No	No	Yes	A

Owner Agency	Model Company	Facility Name	Counter Name	Direction Capable	Separate Bike/Ped Detection	Loaded in BikePed Portal?	Status
NPS CHOH	TRAFx	Capital Crescent Trail	31st St Georgetown at C&O Trail	No	No	Yes	A
NPS CHOH	TRAFx	Capital Crescent Trail	Potomac St Georgetown at C&O Trail	No	No	Yes	A
NPS CHOH	TRAFx	Capital Crescent Trail	Capital Crescent	No	No	Yes	A
NPS CHOH	TRAFx	Capital Crescent Trail	Whites Ferry Towpath	No	No		I
NPS CHOH	TRAFx	C&O Canal Trail	Lock 31 access*	No	No		R
NPS CHOH	TRAFx	C&O Canal Trail	Fort Frederick access*	No	No		R
NPS CHOH	TRAFx	C&O Canal Trail	Cohill Station*	No	No		R
NPS CHOH	TRAFx	C&O Canal Trail	Little Pool access*	No	No		R
Prince George's	Eco-Counter	Anacostia River Trail	Bladensburg Waterfront Park @ Quincy Run #1	Yes	Yes	No	A
Prince George's	Eco-Counter	Hensen Creek	HCT (Tor Bryan Park) #2	Yes	Yes	No	A
Prince George's	Eco-Counter	Hensen Creek Trail	HCT - Huntley Sq Spur #3	Yes	Yes	No	A
Prince George's	Eco-Counter	Hensen Creek Trail	HCT - s of Brinkley Rd #4	Yes	Yes	No	A
Prince George's	Eco-Counter	NW Branch Trail	NWB - Riverfront W Hyatts #5	Yes	Yes	No	A
Prince George's	Eco-Counter	Northeast Branch Trl	NEB @ Wells/Linson N #6	Yes	Yes	No	I
Prince George's	Eco-Counter	Northeast Branch Trl	NEB @ Wells/Linson S #7	Yes	Yes	No	A
Prince George's	Eco-Counter	Northwest Branch Trl	NWB Spur @ Chillum Park #8	Yes	Yes	No	A
Prince George's	Eco-Counter	Wash Balt & Annapolis Trl	WB&A - Horse Pen Park & WSSC Bldg #9	Yes	Yes	No	A
Prince George's	Eco-Counter	Paint Branch Trl	PBT @ Acredale Park #10	Yes	Yes	No	A
Prince George's	Eco-Counter	Paint Branch Trl	PBT @ Acredale Park - Mobile #11	No		No	A

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Prince George's	Eco-Counter	Paint Branch Trl	PBT @ PB Elementary Sch #12	Yes	Yes	No	A
Prince George's	Eco-Counter	RI Ave Trolley Trl	Trolley Line N of Campus Dr #13	Yes	Yes	No	A
Prince George's	Eco-Counter	Sligo Creek Trail	SGT @ Parklawn Bldg #14	Yes	Yes	No	A
Prince George's	Eco-Counter	Tucker Road Trail Trl	Tucker Rd Ath Complex South loop #15	Yes	Yes	No	A
Prince George's	Eco-Counter	Tucker Road Trail Trl	Tucker Rd Ath Complex North loop #16	Yes	Yes	No	A
Prince George's	Eco-Counter	Walker Mill Rgnl Park	Walker Mill Regional #17	Yes	Yes	No	A
Prince George's	Eco-Counter	Watkins Rgnl Park	WRP - Imagine Playground #18	Yes	Yes	No	A
Prince George's	Eco-Counter	Watkins Rgnl Park	WRP - Old Enterprise Rd #18	Yes	Yes	No	A
Prince George's	Eco-Counter	Wash Balt & Annapolis Trl	WB&A - Old Pond Drive #20	Yes	Yes	No	A
Prince George's	Eco-Counter	Wash Balt & Annapolis Trl	WB&A - by Gun Club #21	Yes	Yes	No	A
Prince George's	Eco-Counter	Woodrow Wilson Br Trl	WWB - on Bridge - Mobile #22	No		No	A
Prince George's	Eco-Counter	Woodrow Wilson Br Trl	WWB - on Trail #22	Yes	Yes	No	A
Prince George's	Eco-Counter	Woodrow Wilson Br Trl	WWB - Tunnel passage #24	Yes	Yes	No	A
Prince George's	Eco-Counter	Little Paint Branch Trail	LPBT - Fairland Regional Park Stmwrt Bldg #25	Yes	Yes	No	A
Prince George's	Eco-Counter	Lake Artemesia	Lake Artemesia - N Entrance #26	Yes	Yes	No	A
Prince George's	Eco-Counter	Anacostia River Trail	Cottage City (Route 1) Counter - not working	Yes	Yes	No	I
Rockville	Eco-Counter		Rockville Town Center	Yes	No - Ped only		A
Rockville	Eco-Counter		Twinbrook	Yes	No - Ped only		A

Notes: Sites with "Loaded into BikePed Portal?" column blank, indicate data are not loaded into BikePed Portal.  
 Last column "Status" uses the following codes: A = Active; I = Inactive; R= Retired

## References

American Association of State Highway and Transportation Officials (AASHTO) (2024). Guide for the Development of Bicycle Facilities, 5th Edition.

Miranda-Moreno, L., Nosal, T., Schneider, R., & Proulx, F. (2013). Classification of Bicycle Traffic Patterns in Five North American Cities. *Transportation Research Record: Journal of the Transportation Research Board*, 2339, 68-79. <https://doi.org/doi:10.3141/2339-08>