Information Related to Bike Lanes on Old Georgetown Road (MD 187)

A Report for the Maryland General Assembly

Senate Budget and Taxation Committee

and

House Appropriations Committee

Maryland Department of Transportation

State Highway Administration

October 2024

The Maryland Department of Transportation State Highway Administration (SHA) offers this report in response to the Maryland General Assembly's request for information on the Old Georgetown Road (MD 187) bike lanes between Tilden Lane and Ryland Drive, including:

1. A detailed analysis of any cut-through traffic impacts on surrounding neighborhoods' streets as a result of the bike lane;
2. Northbound and southbound travel times during both peak and off-peak hours, including travel times for emergency and police vehicles;
3. Bike lane utilization counts;
4. Year-over-year data for crash statistics from March 15 to August 1 from 2018 to 2024 specifying the type of crash;
5. Specific crash data for segments of the bike lanes;
6. Vehicle volume counts for northbound and southbound during both peak and off-peak hours;
7. An analysis of the impact of the lanes on the sidewalks with any accompanying data;
8. Information about communications with first responders and any impact of the bike lanes on first responders;
9. How the bike lanes are addressed during winter weather, including how they performed during winter 2023 through 2024; and
10. Cost information for maintenance of the bike lanes in fiscal 2023 and year-to-date 2024.

Introduction

In December 2022, the Maryland State Highway Administration (SHA) installed bicycle lanes along the MD 187 corridor between Tilden Lane and Ryland Drive as part of a lane repurposing to address bicycle safety concerns, including a fatality. The outermost travel lane in each direction was repurposed and converted to a buffered bike lane. The extent of the bike lanes and lane repurposing are presented below in Figure 1.

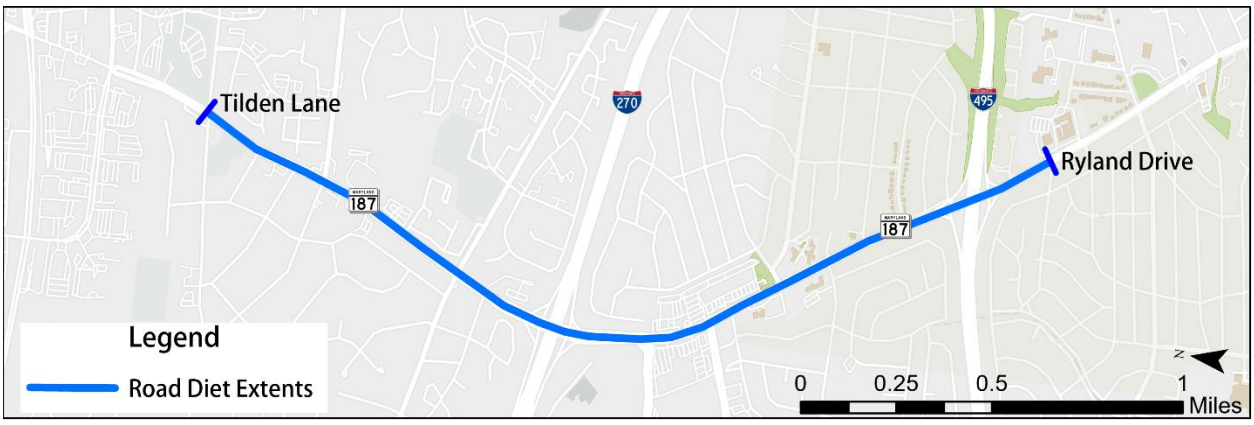

Figure 1: Extents of the MD 187 Lane Repurposing

1. Neighborhood Cut-Through Traffic Impacts

An Origin-Destination study was performed in August 2024 to verify the percentage of vehicles traveling in a North-South orientation that are using Luxmanor Road between Tilden and Tuckerman Lanes to avoid driving on MD 187 within those limits. Based on its proximity to MD 187, Luxmanor Road was identified to be the route most likely to be used as a local street alternative to MD 187 in the presence of congestion on Old Georgetown Road.

This analysis was completed using license plate recognition cameras to track the path of vehicles traveling along MD 187 and Luxmanor Road on Wednesday August 21, 2024, between 6 AM and 8 PM. One camera was used per lane, per location. While being recorded, license plate data was transcribed with software used to match the data between recording locations. This methodology has a sample catch rate of 75-90%, which assures that the trip patterns captured are a good representation of all trips. Figure 2 displays the studied locations along the two routes:

A. MD 187 north of Tilden Lane/Nicholson Lane
B. Luxmanor Road south of Tilden Lane
C. Poindexter Lane between Luxmanor Road and MD 187
D. Luxmanor Road north of Tuckerman Lane
E. MD 187 south of Tuckerman Lane

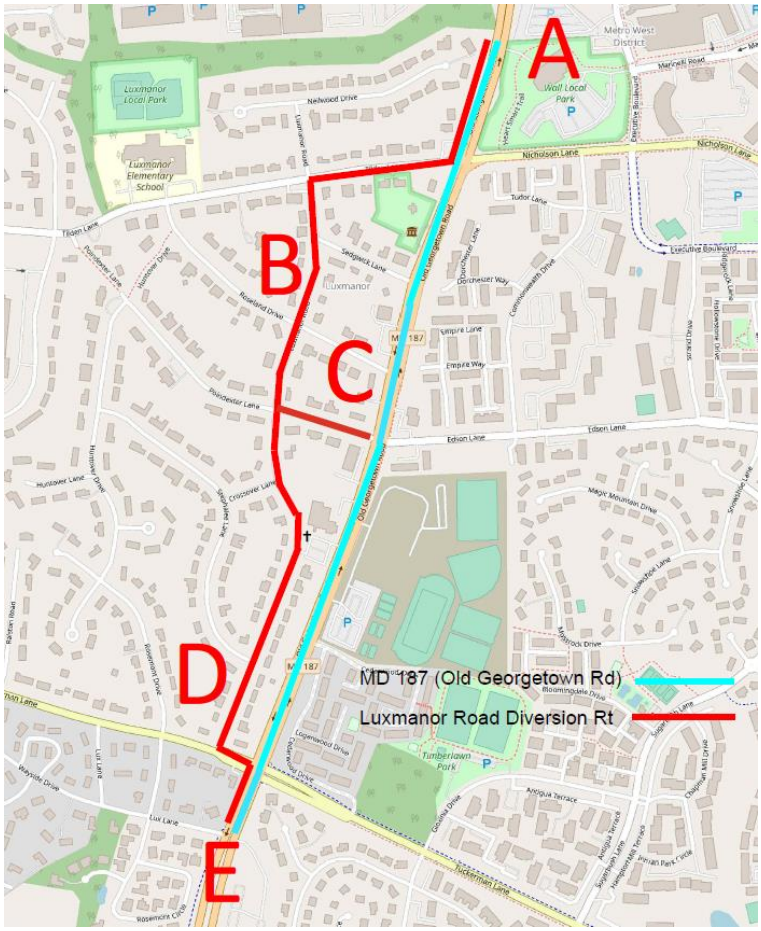

Figure 2: Routes for Neighborhood Cut-Through Analysis

Trips that traveled between recording locations A and/or B to and from recording locations D and/or E that also used a combination of locations B, C, and D to make the trip and took less than 15 minutes between the end points were considered trips that potentially used Luxmanor Road as a bypass. Trips longer than 15 minutes that traveled these patterns were assumed to be travelers that had a destination within the Luxmanor Road corridor and therefore were not using the route only to divert from any congestion on MD 187.

Over the course of the 14-hour recording period on August 21, a total of 13 trips in the southbound and northbound directions were documented taking a path that would be considered a potential cut-through trip per the above attributes. This was out of a total of approximately 6,400 trips recorded that day passing at least two of the recording stations (about 0.2% of the total). Most of the recorded trips passed directly between locations A and E.

This result is similar to the analysis SHA performed on Wednesday January 18, 2023, shortly after the bicycle lanes were installed on MD 187. That previous 2023 survey showed 18 trips over 14 ½ hours, out of approximately 5,500 recorded journeys, fitting the attributes of a cut-through trip (about 0.3% of the total).

2. Corridor Travel Time

Typical mid-weekday (Tuesday to Thursday) travel times for vehicular traffic along MD 187, between Tilden Lane and Ryland Drive, were obtained from the Regional Integrated Transportation Information System (RITIS) platform for three time periods to demonstrate changes over time:

1. May 2019 – the last May before the Covid pandemic modified travel patterns.
2. May 2023 – May following the 2022 implementation of the lane repurposing and bike lanes.
3. May 2024 – most recent May during which counts were collected along the corridor.

Figure 3 and Figure 4 present the average weekday corridor travel times in minutes by hour of the day along the northbound and southbound directions, respectively.

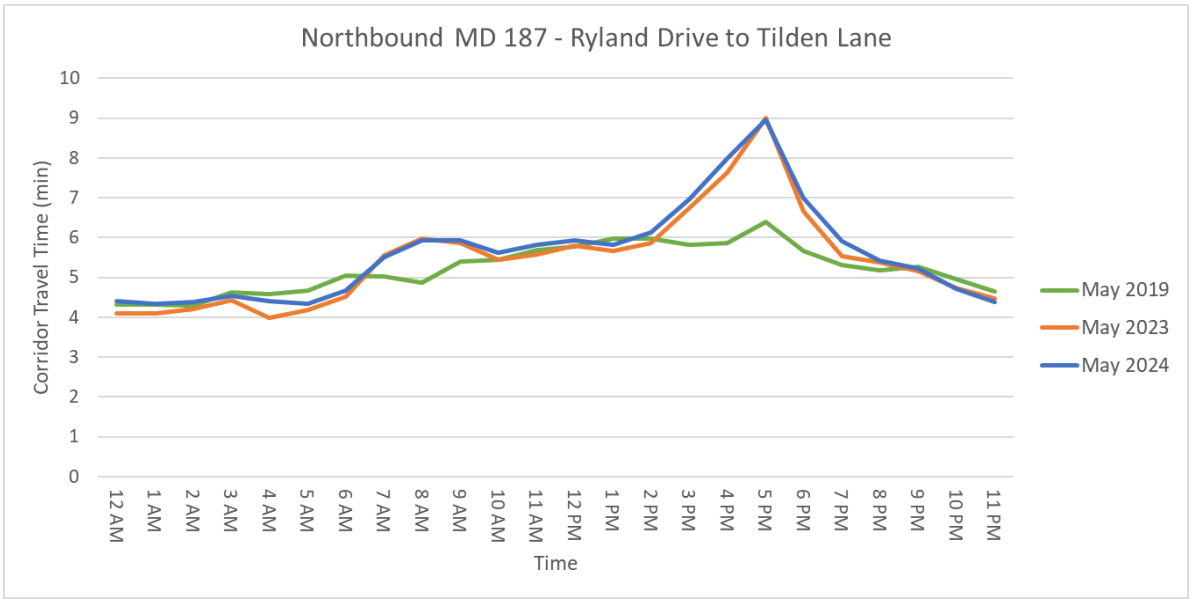

Figure 3: Northbound MD 187 Travel Times

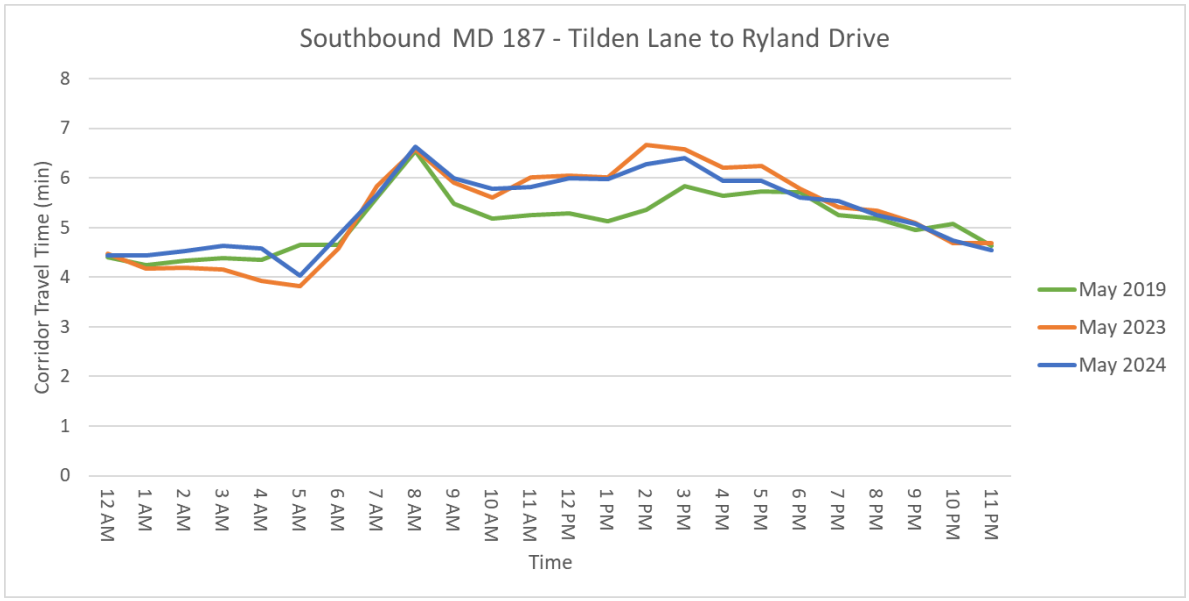

Figure 4: Southbound MD 187 Travel Times

Corridor travel times have remained stable between May 2023 and May 2024. Below is a summary of the impacts of the lane repurposing on corridor travel times:

- In the northbound direction, AM peak period travel times have increased by up to 22% and PM peak period travel times have increased up to 40% since the installation of the bike lanes. This has resulted in added delay time of under 3 minutes in the northbound direction. Off-peak travel times have remained comparable.
- In the southbound direction, peak hour travel times have remained comparable during the AM peak period and slightly increased (up to 4%) during the PM peak period. Off-peak

travel times have increased by approximately 10% to 17%. This has resulted in added delay time of under 2 minutes in the southbound direction.

It should be noted that a portion of the observed travel time increases may be attributed to the posted speed limit reduction implemented by SHA which came into effect in April 2023 (40 mph to 35 mph).

3. Bike Lane Utilization Counts

Bicycle volumes along the MD 187 corridor were collected in May 2024 during a typical weekday and Saturday. The number of daily cyclists recorded traveling along MD 187 are summarized in Table 1 and compared to previous counts from September 2022 (before the bike lanes) and April 2023 (after the bike lanes).

Table 1: Daily Cyclists along MD 187

Location	Weekday			Saturday
	Sep '22	Apr '23	May '24	May '24
Tuckerman Lane	25	44	53	11
I-270 North Ramp	34	56	26	2
I-270 South Ramps	34	63	36	16
Rock Spring Drive	n/a	61	35	11
Democracy Boulevard	16	70	37	9

4. Year-Over-Year Crash Data

Crash data for the MD 187 corridor, between Tilden Lane and Ryland Drive, was obtained from the SHA Office of Traffic and Safety (OOTS) for the six-year period between January 1, 2018, and December 31, 2023. Crashes from 2024 were not included as the data is not finalized. A summary of recorded crash types and severity is presented in Table 2 and Crash data from March 15 to August 1 for each year is also summarized in **Error! Not a valid bookmark self-reference.** and Table 5 as this time period was specifically requested by the Maryland General Assembly.

Table 4, respectively.

Table 2: MD 187 Crash Severity

Crash Severity	Year						
	2018	2019	2020	2021	2022	2023	TOTAL
Fatal	0	0	0	0	1	0	**1**
Injury	28	29	16	8	19	19	**119**
Property Damage Only	49	29	22	22	33	58	**213**
TOTAL	**77**	**58**	**38**	**30**	**53**	**77**	**333**

Table 3: MD 187 Crash Type

Crash Type	Year						
	2018	2019	2020	2021	2022	2023	TOTAL
Rear End	31	16	16	9	12	31	**115**
Left Turn	17	13	8	11	11	11	**71**
Angle	10	13	8	3	10	10	**54**
Sideswipe	9	6	3	2	8	11	**39**
Fixed Object	4	9	3	3	5	8	**32**
Pedestrian	**3**	**1**	**0**	**0**	**2**	**1**	**7**
Bike	**0**	**0**	**0**	**1**	**2**	**1**	**4**
Parked Vehicle	0	0	0	0	1	0	**1**
Opposite Direction	0	0	0	0	0	0	**0**
Other	3	0	0	1	2	4	**10**

One pedestrian and one bike crash occurred following the implementation of the bike lanes. The pedestrian crash occurred at the southbound approach of the I-495 outer loop ramp terminal. While stopped at the signal, a driver exited their vehicle to inspect it. The light turned green while they were still out of the vehicle, and they were struck by another vehicle's side-view mirror. The crash did not result in any injuries and was unrelated to the presence of the bike lanes. The bike crash is described in the following Bike Crash Data section.

Crash data from March 15 to August 1 for each year is also summarized in **Error! Not a valid bookmark self-reference.** and Table 5 as this time period was specifically requested by the Maryland General Assembly.

Table 4: MD 187 Crash Data - March 15 to August 1

Crash Severity	Year						
	2018	2019	2020	2021	2022	2023	TOTAL
Fatal	0	0	0	0	1	0	**1**
Injury	7	9	2	3	8	7	**36**
Property Damage Only	19	11	2	12	7	19	**70**
TOTAL	**26**	**20**	**4**	**15**	**16**	**26**	**107**

Table 5: MD 187 Crash Type – March 15 to August 1

Crash Type	Year						
	2018	2019	2020	2021	2022	2023	TOTAL
Rear End	11	6	2	4	1	6	**30**
Left Turn	5	3	0	5	5	5	**23**
Angle	2	4	1	1	5	5	**18**
Sideswipe	4	3	1	1	1	4	**14**
Fixed Object	1	4	0	2	0	2	**9**
Pedestrian	**1**	**0**	**0**	**0**	**2**	**0**	**3**
Bike	**0**	**0**	**0**	**1**	**2**	**1**	**4**
Parked Vehicle	0	0	0	0	0	0	**0**
Opposite Direction	0	0	0	0	0	0	**0**
Other	2	0	0	1	0	3	**6**

5. Bike Crash Data

Bike crash data for the MD 187 corridor, between Tilden Lane and Ryland Drive, was also summarized from OOTS for the six-year period between January 1, 2018, and December 31, 2023. Similarly to the general data, crashes from 2024 were not included as the data is not finalized.

Table 6: MD 187 Bike Crash Data

Crash Severity	Year						
	2018	2019	2020	2021	2022	2023	TOTAL
Fatal	0	0	0	0	1	0	**1**
Injury	0	0	0	1	1	0	**2**
Property Damage Only	0	0	0	0	0	1	**1**
TOTAL	**0**	**0**	**0**	**1**	**2**	**1**	**4**

Three of the four recorded bike crashes happened prior to the implementation of the bike lanes, and one crash happened afterwards. The crash which occurred following the implementation of the bike lanes happened at one of the entrances to the Wildwood Shopping Center. A motorist making a right turn into the shopping center cut off a cyclist traveling northbound along the MD 187 bike lane. The crash resulted in property damage only. The bike crashes which occurred before the implementation all resulted in injury or a fatality.

6. Vehicle Traffic Volumes

In May 2024, 24-hour intersection counts were collected during a typical weekday at several key locations along the corridor, including Tuckerman Lane and Democracy Boulevard. The daily traffic volumes south of Tuckerman Lane and north of Democracy Boulevard were converted to Annual Average Daily Traffic (AADT) and compared to 2022 and 2023 AADTs, as shown in 7. AADTs have not varied significantly since the implementation of the bike lanes. It has changed less than 2% since 2022 at each location.

Table 7: MD 187 Annual Average Daily Traffic

Location	AADT		
	2022	2023	2024
South of Tuckerman Lane	36,100	36,600	36,000
North of Democracy Blvd	28,700	28,500	28,200

Hourly traffic volumes along MD 187 were also compared, as shown in Figure 5 and Figure . Diurnal traffic trends remain similar before and after the implementation of the bike lanes, with the 2023 and 2024 volumes seeing a reduction of approximately 10% or less during the peak and midday hours.

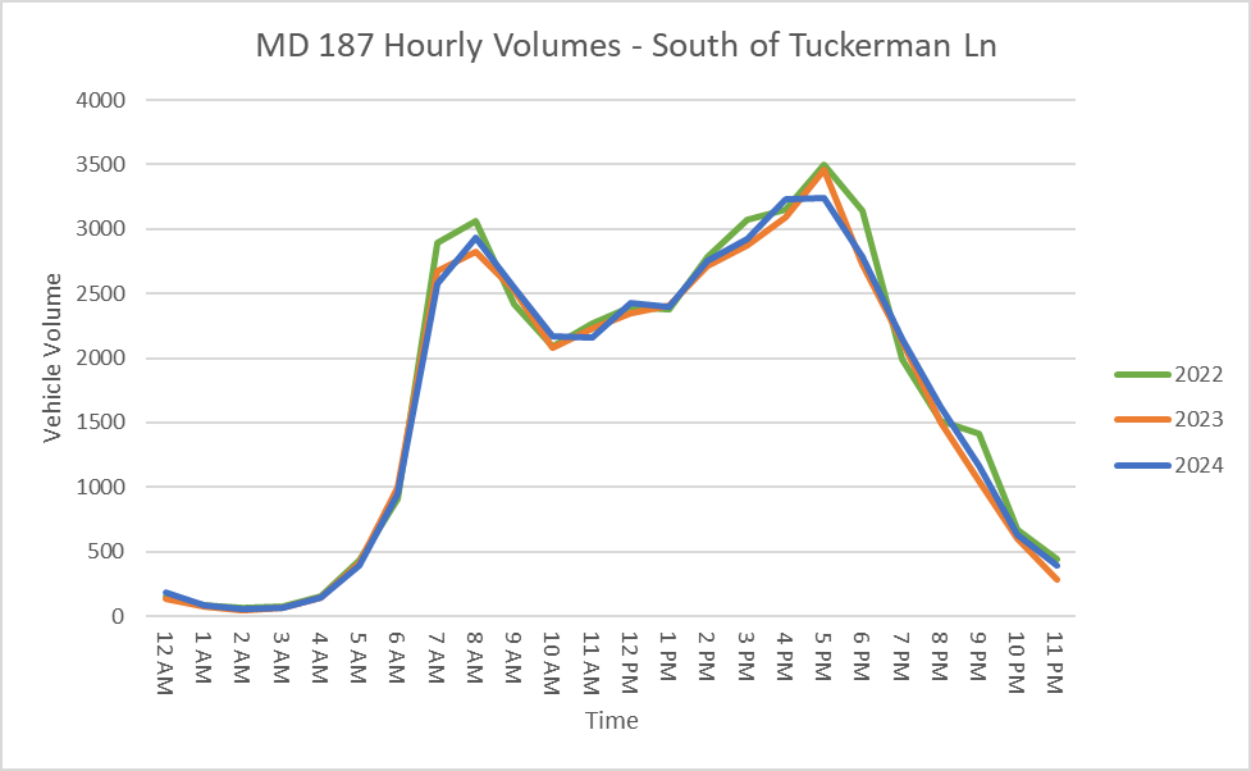

Figure 5: MD 187 Hourly Traffic Volumes – South of Tuckerman Lane

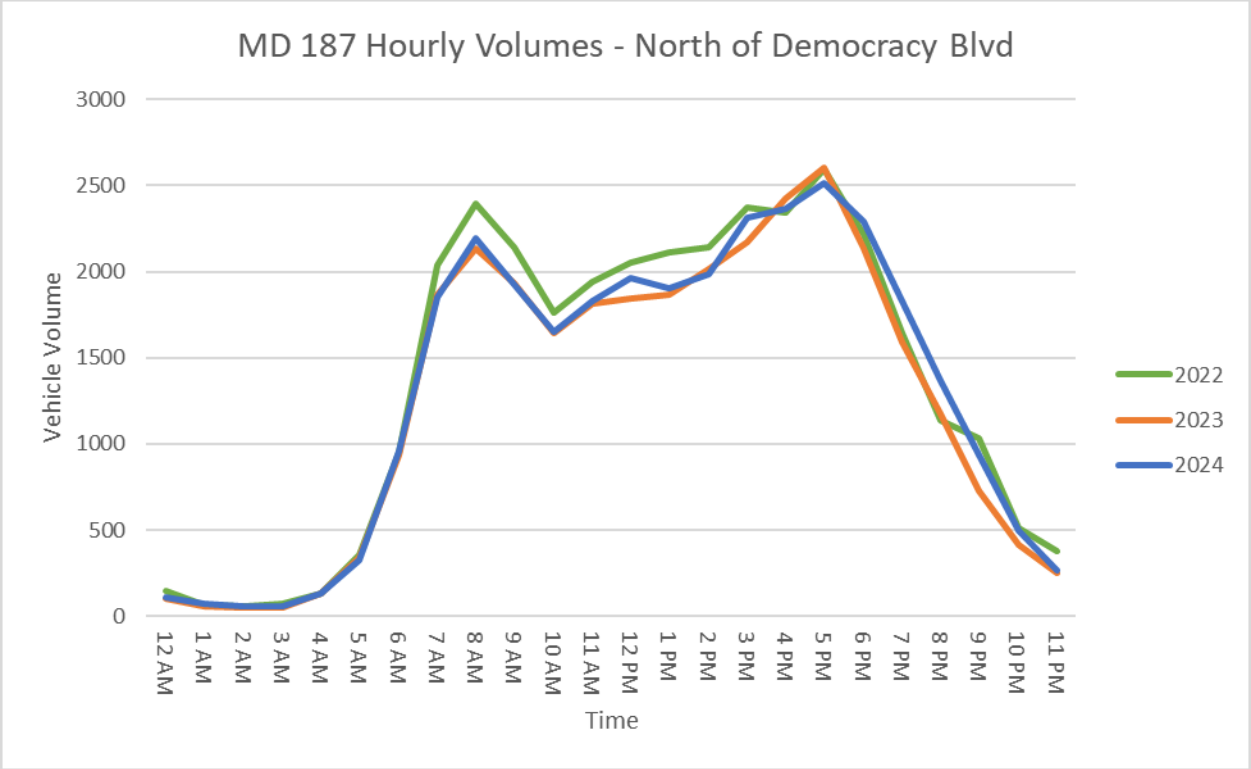

Figure 6: MD 187 Hourly Traffic Volumes – North of Democracy Boulevard

7. Impact of Bike Lanes (Including Sidewalks)

The installation of the bike lanes has had the following impacts on the MD 187 corridor:

Travel Times

- Increased peak hour vehicle travel times. This increase is largest in the northbound direction (22% increase in the AM; 40% increase in the PM). A portion of the travel time increase is due to the posted speed limit reduction. The travel time increase is under 3 minutes.
- Off peak travel times remain comparable.

Bike Utilization

- Cyclists no longer need to travel along the sidewalk to avoid vehicular traffic.
- The number of cyclists has increased since the implementation of the bike lanes.
- Bike volumes are notably higher during weekdays than during the weekend based on the initial 2024 weekend counts.

Safety

- The greater visibility of the bike lanes (flexible posts, painted pavement) at intersections and driveways brings more attention to all vulnerable users traveling along the corridor.

- The bike lanes provide an offset between the travel lanes and sidewalks, providing for better pedestrian safety and comfort.
- Bikes traveling along the corridor no longer need to contend with obstacles on the sidewalk (poles, trash cans, etc.).
- One bike crash has occurred since the installation of the bike lanes. The crash resulted in property damage only instead of a fatality of injury.

Traffic Volumes

- Daily traffic volumes remain comparable to what they were before the bike lanes.
- Peak hour traffic volumes have decreased by approximately 10%.

8. First Responders

Prior to the installation of the bike lanes along MD 187, SHA coordinated directly with the Montgomery County Fire & Rescue Service and Montgomery County Police Department regarding the project and impacts to traffic operations along the corridor.

Since the installation, SHA has reached out to several emergency service agencies about the impact of the bike lanes on first responders. SHA reached out to Montgomery County Department of Transportation (MCDOT), Montgomery County Fire Rescue Service (MCFRS), and the National Institute of Health and Walter Reed National Military Medical Center requesting first responder travel data. None of the agencies have been able to provide first responder travel data for the MD 187 corridor. National Institute of Health reported that there has been no impact to their operations, and directed SHA to the NIH Fire Department. Suburban Hospital reported that there has been no impact to their operations as they do not provide ambulance services. SHA has no first responder data to provide for the corridor.

9. Winter Weather Maintenance

Since the installation of the bike lanes, there has not been a snowfall substantial enough to require snow removal along MD 187. Salt applied from trucks on the mainline has been sufficient to melt snow in the bike lanes.

A 6-inch snowfall would result in an estimated snow removal cost of $10,500 (30 hours at $350 per hour for crew and equipment). SHA anticipates that a heavy wet snow would result in delineators being impacted by snow removal operations, resulting in reinstallation and replacement costs after the storm.

10. Maintenance Cost

The bike lanes are maintained at monthly intervals by two SHA Maintenance shops (geographic dividing line is the Capital Beltway). Maintenance is performed on a Sunday and takes approximately 10 hours per shop. Maintenance teams consist of 1 Team Leader, 10 Facility Maintenance Technician, 2 dump trucks, and a skid steer loader with a sweeper bucker.

For Fiscal Years 2023 and 2024, the total maintenance cost for the MD 187 bike lanes including staff and equipment, is approximately $46,700.