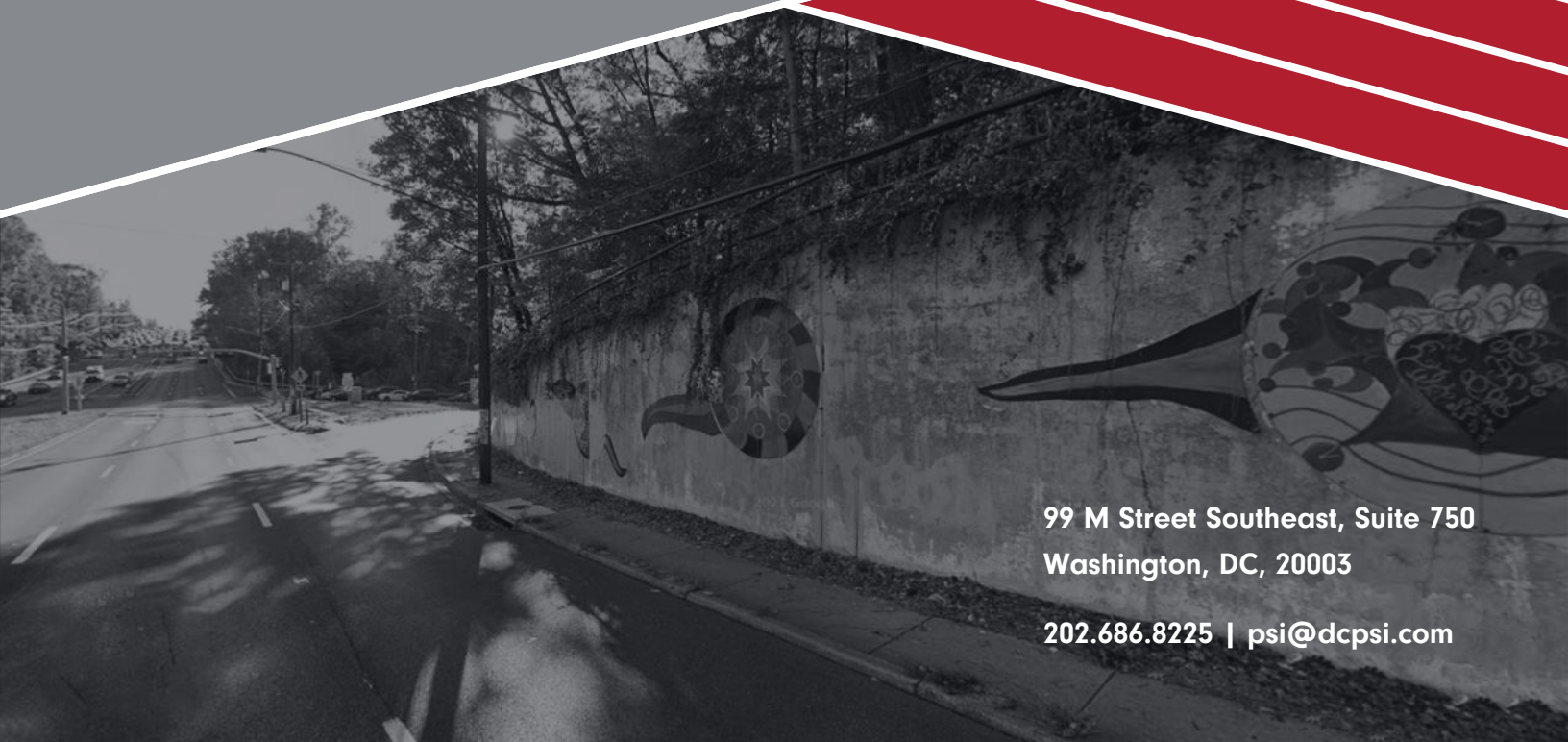


# MD 650 (New Hampshire Avenue) High Injury Network Safety Study

## ROAD SAFETY AUDIT REPORT



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# Road Safety Audit (RSA) Report

***MD 650 (New Hampshire Avenue)  
between I-495 (Capital Beltway) and MD 320 (Piney Branch Road)***

## **High Injury Network Safety Study**

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## 1.0 INTRODUCTION

Montgomery County's Vision Zero Plan established a goal to eliminate serious injury and fatal collisions on County roads by 2030. Prince George's County's Vision Zero Plan also established a similar goal of reaching zero fatal and serious injury crashes on roadways by the year 2040. In support of these Vision Zero Initiatives, Montgomery and Prince George's County have identified roadway segments where fatal and serious injury crashes were most frequent. These roadway segments are part of each county's High Injury Network (HIN).

The 1.2-mile segment of MD 650 (New Hampshire Avenue) between I-495 (Capital Beltway) and MD 320 (Piney Branch Road) was identified as part of Montgomery and Prince George's counties' HINs. The MD 650 HIN safety study project, funded by the Transportation Planning Board (TPB), was initiated as part of the counties' on-going support of Vision Zero Plan. The primary objective of this HIN safety study is to identify potential risks to road users and recommend safety improvements along MD 650 (New Hampshire Avenue) between I-495 (Capital Beltway) and MD 320 (Piney Branch Road). It is expected that the safety improvement alternatives recommended from this study will yield benefits to all users and residents along the corridor in the study area. This Road Safety Audit (RSA) report summarizes the findings of the safety study.

## 2.0 BACKGROUND

### 2.1 STUDY AREA

The study limits are defined by a 1.2-mile segment of MD 650 (New Hampshire Avenue) between I-495 (Capital Beltway) and MD 320 (Piney Branch Road), as seen in **Figure 1**. MD 650 (New Hampshire Avenue) is classified as a Principal Arterial within the study area and includes 11 intersections highlighted in **Table 1**.

**Table 1: Study Intersections**

MD 650 (New Hampshire Avenue) from I-495 (Capital Beltway) to MD 320 (Piney Branch Road)		
County	Intersection	Traffic Control Type
Montgomery County	MD 650 (New Hampshire Avenue) Southbound at I-495 Eastbound On-Ramp	Free-Flow
	MD 650 (New Hampshire Avenue) Northbound at I-495 Eastbound Off-Ramp (28B)	Free-Flow
	MD 650 (New Hampshire Avenue) Southbound at I-495 Eastbound Off-Ramp (28A)	Signalized
	MD 650 (New Hampshire Avenue) Northbound at I-495 On-Ramp	Free-Flow
	MD 650 (New Hampshire Avenue) at Oakview Drive	Signalized
	MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road	Signalized
	MD 650 (New Hampshire Avenue) at Fox Street	Side-Street Stop Controlled
	MD 650 (New Hampshire Avenue) at Northampton Drive	Signalized
Prince George's County	MD 650 (New Hampshire Avenue) at Metzerott Road	Signalized
	MD 650 (New Hampshire Avenue) at Southampton Drive	Side-Street Stop Controlled
	MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road)	Signalized

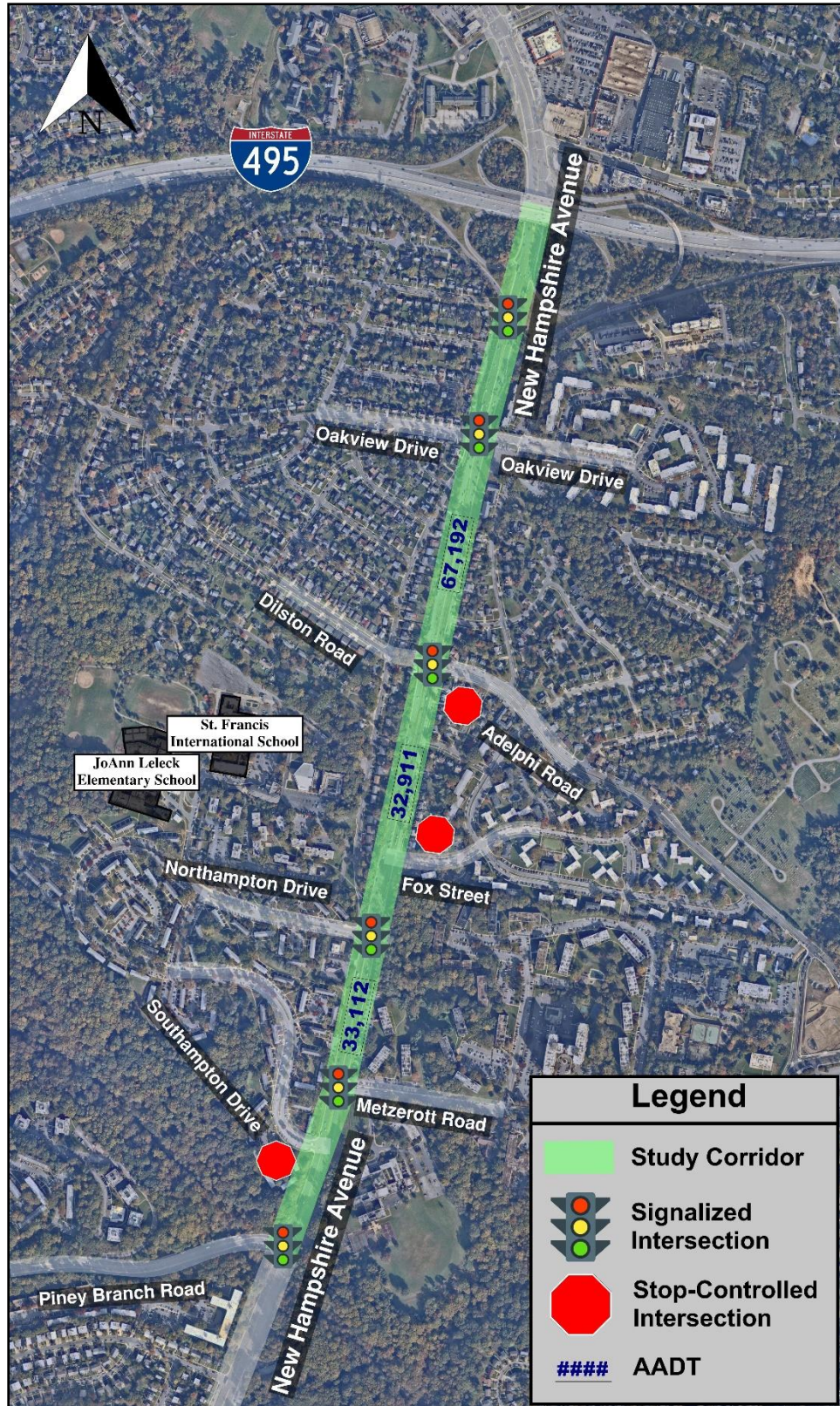


Figure 1: Study Area

## 2.2 ROADWAY FEATURES

### 2.2.1 Vehicular Facilities

Lane configurations at all major intersections along the corridor can be seen below in **Figure 2**.

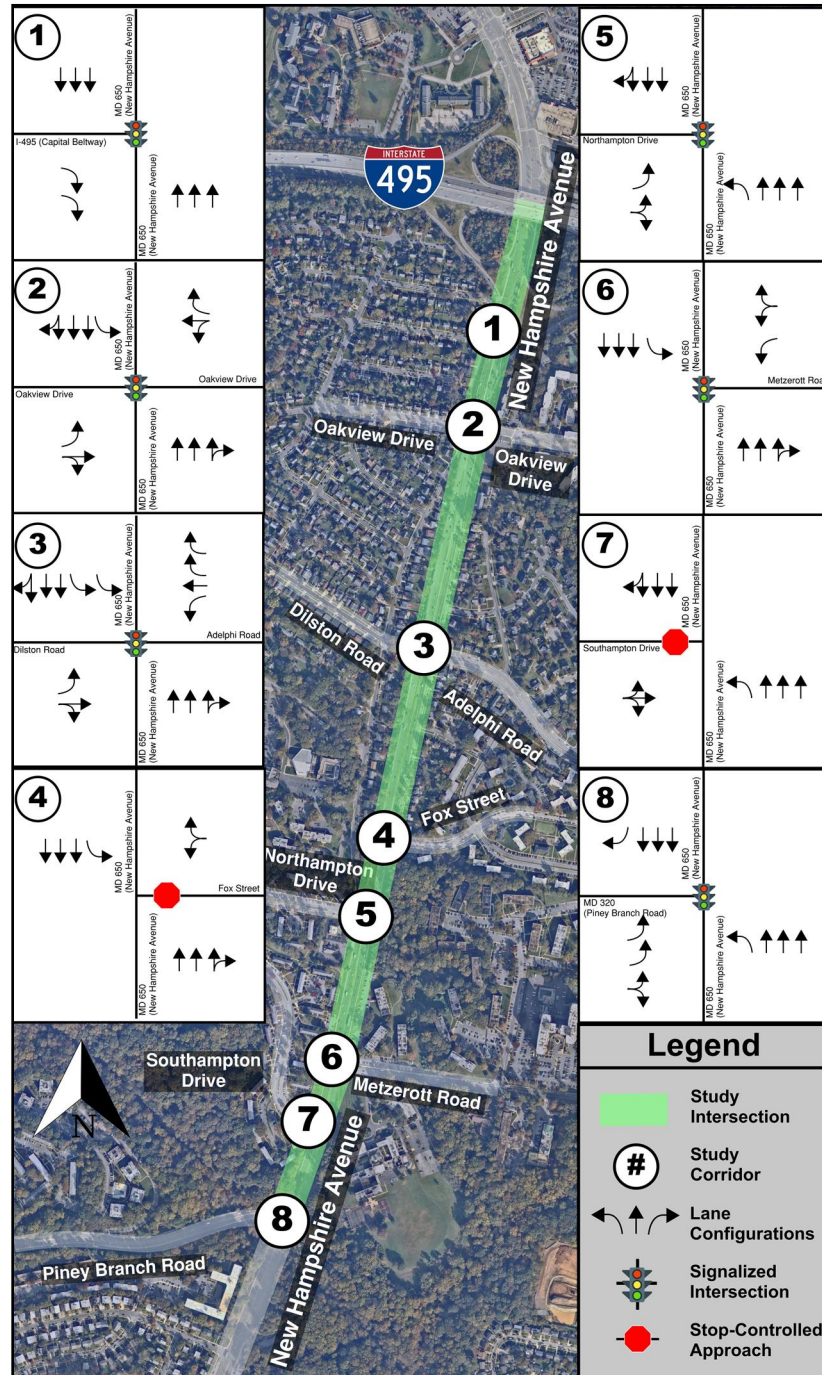


Figure 2: Lane Configurations

**MD 650 (New Hampshire Avenue)** is classified as a Major Highway and traverses both Montgomery County, to the north, and Prince George's County, to the south. This mainline roadway is assumed to have a north-south orientation and consists of six through lanes (three in each direction). The posted speed limit along most of the study corridor is 35 mph. However, between MD 320 (Piney Branch Road) and Southampton Drive the posted speed limit for the northbound direction of MD 650 (New Hampshire Avenue) is 40 mph. In addition, there are mainline turning bays for left turns at all six signalized intersections within the study area. Parking is restricted along MD 650 (New Hampshire Avenue) within the study area. There is one driveway to a commercial property along the study corridor.

**I-495 (Capital Beltway)** is classified as an Interstate and is assumed to have an east-west orientation within the study area. It consists of nine through lanes. There are four through lanes in the eastbound direction and 5 through lanes in the westbound direction. The posted speed limit near the study area is 55 mph. There are four intersections with I-495 ramps within the study corridor.

**Oakview Drive** is classified as a Primary Residential roadway and is assumed to have an east-west orientation. To the west of MD 650 (New Hampshire Avenue), Oakview Drive consists of two through lanes (one in each direction), on-street parking, and runs .7 miles into residential neighborhoods and ends at Roscoe Nix Elementary School and pedestrian access to the Anacostia Tributary Trail System. To the east, Oakview Drive runs approximately 200 feet to a partially stop-controlled intersection with Mt. Pisgah Road and access to several apartment buildings and religious establishments. The posted speed limit along Oakview Drive 25 mph.

**Dilston Road** is a local roadway and is assumed to have an east-west orientation. It consists of two through lanes (one in each direction), on-street parking, and a left turn bay at MD 650. It runs west of MD 650 approximately .9 miles into residential neighborhoods. The posted speed limit is 25 mph.

**Adelphi Road** is classified as a County Road and is assumed to have an east-west orientation. It consists of four through lanes (two in each direction) with a grass median. It runs east of MD 650 several miles towards The University of Maryland (UMD) and East-West Highway. Adelphi Road, near the study area, consists of driveways for single family homes. The posted speed limit is 35 mph.

**Fox Street** is a local roadway and is assumed to have an east-west orientation. It consists of two lanes (one in either direction) and on-street parking. Fox street runs .3 miles east of MD 650 and consists of driveways to parking lots for apartment buildings. The posted speed limit is 25 mph.

**Northampton Drive** is a local roadway and is assumed to have an east-west orientation. It consists of two lanes (one in each direction), which are divided by a grass median, and on-street parking. Northampton Drive runs .4 miles to Southampton Drive and provides access to several apartment buildings and condos. Avenal Road intersects with Northampton Drive immediately adjacent to MD 650 (New Hampshire Avenue). The posted speed limit along the Northampton Drive is 25 mph.

**Metzerott Road** is classified as a County Road and is assumed to have an east-west orientation. It consists of two lanes (one in each direction) and on-street parking. Metzerott Road runs several miles east of MD 650 and has a few driveways to parking lots for apartment complexes and commercial properties.

**Southampton Drive** is a local roadway and is assumed to have an east-west orientation. It consists of two through lanes (one in either direction), separated by a grass median, and on-street parking. Southampton

Drive runs .5 miles to Northampton Drive and provides access to several apartment buildings and condos. The posted speed limit along the Southampton Drive is 25 mph.

**MD 320 (Piney Branch Road)** is classified as a State Highway and is assumed to have an east-west orientation. It consists of four through lanes (two in each direction) divided by a concrete median. MD 320 (Piney Branch Road) runs several miles towards Washington, D.C. Near the study area, MD 320 provides access to local roads serving commercial establishments and apartment buildings. Parking is restricted at all times near MD 650 (New Hampshire Avenue). The posted speed limit is 40 mph.

### 2.2.2 Pedestrian Facilities

Overall, the pedestrian facilities along MD 650 (New Hampshire Avenue) within the limits of the study corridor are in poor to satisfactory condition and include the following:

- Concrete sidewalks of varying widths are present along both sides of MD 650 (New Hampshire Avenue) for most of the study area. However, there is no sidewalk along northbound MD 650 (New Hampshire Avenue) between Metzert Road and Piney Branch Road (MD 320). There is also no sidewalk along MD 650 (New Hampshire Avenue) between Capital Beltway (I-495) and Oakview Drive. There is little to no buffer between the sidewalk and the edge of travel lanes along the study corridor and there appears to be very limited right of way to facilitate the addition of such buffers. While the sidewalks throughout the study corridor provide direct access to bus stops, the inadequacy or lack of buffer creates an uncomfortable walking experience for pedestrians traveling along the corridor.
- Concrete sidewalks are present along both sides of Oakview Drive to the east of MD 650 (New Hampshire Avenue) with widths of 5 feet or more. A strip of natural vegetation provides a buffer between the sidewalk and travel lanes along the north sidewalk on Oakview Drive. The adequate widths and buffer along the sidewalks on Oakview Drive to the east of MD 650 (New Hampshire Avenue) create a more comfortable walking experience for pedestrians. To the west of MD 650 (New Hampshire Avenue), there is only a sidewalk along eastbound Oakview Drive. This sidewalk is approximately 5 feet wide and provides pedestrians with a comfortable walking experience.
- Concrete sidewalks that are approximately 5 feet wide are present along eastbound and westbound sides of Adelphi Road near its intersection with MD 650 (New Hampshire Avenue). There is a strip of natural vegetation which serves as a buffer between the sidewalk and travel lanes along both sides of Adelphi Road. The adequate width and buffer along the sidewalks on Adelphi Road facilitate a comfortable walking experience for pedestrians who utilize these facilities.
- Concrete sidewalks are present along both the eastbound and westbound sides of Dilston Road near its intersection with MD 650 (New Hampshire Avenue). These sidewalks are approximately 5 feet wide. There is a strip of natural vegetation which provides a buffer between the sidewalk and travel lanes along both sides of Dilston Road. The sidewalk width and buffer along the sidewalks on Dilston Road provides a comfortable walking experience for pedestrians.
- Concrete sidewalks are present along both the eastbound and westbound directions of Fox Street near its intersection with MD 650 (New Hampshire Avenue). These sidewalks are approximately 5 feet wide and there is a strip of natural vegetation which provides a buffer between the sidewalk and travel lanes along both sides of Fox Street. Additionally, parking is permitted along both directions of

the roadway which provides a buffer between the sidewalk and travel lanes along the roadway. The adequate sidewalk width and buffer provides a comfortable experience for pedestrians walking along Fox Street.

- Concrete sidewalks of 5 feet or more are present along both the eastbound and westbound directions of Northampton Drive near its intersection with MD 650 (New Hampshire Avenue). There is a strip of natural vegetation as well as resident parking which provides a spatial buffer between the sidewalk and travel lanes along both sides of Northampton Drive. The adequate sidewalk width and additional buffer along Northampton Drive provides a very comfortable experience for pedestrians walking along the roadway.
- Concrete sidewalks that are approximately 5 feet wide are present along both the eastbound and westbound directions of Metzert Road near its intersection with MD 650 (New Hampshire Avenue). However, there is no buffer between the sidewalk and travel lanes along directions on Metzert Road. Despite the sidewalk widths being sufficient along Metzert Road, the lack of a spatial buffer may cause a somewhat comfortable experience for pedestrians utilizing the facilities.
- Concrete sidewalks in excess of 5 feet are present along both the eastbound and westbound directions of Southampton Drive near its intersection with MD 650 (New Hampshire Avenue). There is also a strip of natural vegetation which provides a buffer between the sidewalk and travel lanes along both sides of Southampton Drive. In addition, there is a spatial buffer in the form of resident parking along eastbound Southampton Drive. The adequate sidewalk width and buffer along Southampton Drive creates a very comfortable walking experience for pedestrians.
- Concrete sidewalks at MD 650 (New Hampshire Avenue) and MD 320 (Piney Branch Road) are less than 5 feet wide along the westbound direction. There is also no spatial buffer between the sidewalk and travel lane. This may create an uncomfortable walking experience for pedestrians. Along the east bound direction of Pine Branch Road (MD 320) sidewalks are approximately 5 feet wide. However, the lack of a spatial buffer may cause an uncomfortable walking experience for pedestrians.
- Marked crosswalks are provided on all mainline approaches of MD 650 (New Hampshire Avenue) at signalized intersections along the study corridor. However, there are a few locations within the study area where crosswalk markings are either completely missing or faded at pedestrian crossing facilities. These locations include:
  - MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road) auxiliary right turn lane
    - Crosswalk markings missing due to patching road repair on utility cut
  - MD 650 (New Hampshire Avenue) at Southampton Drive west crosswalk
    - Missing crosswalk markings at pedestrian sidewalk ramps
  - MD 650 (New Hampshire Avenue) at Northampton Drive west intersection leg
    - Missing crosswalk markings across Northampton Drive and across Avenel Road
  - MD 650 (New Hampshire Avenue) at Northampton Drive south intersection leg
    - Faded crosswalk markings
  - Fox Street
    - Missing crosswalk markings at pedestrian sidewalk ramps at east leg of intersection
  - Avenel Road at MD 650 (New Hampshire Avenue) and Capital Beltway (I-495)

- Missing crosswalk markings across Avenel Road at pedestrian ramp at existing pedestrian cut-through access 750 feet north of Oakview Drive
- Countdown Pedestrian Signals (CPS) are provided for all signalized intersection approaches that contain a marked crosswalk. Accessible Pedestrian Signals (APS) are also provided at all signalized intersections. However, the APS at MD 650 (New Hampshire Avenue) and Northampton Drive is not functioning and has outdated signage (based on observations from a field audit assessment on March 29, 2022).

Pedestrian Level of Comfort (PLOC) is a metric used to quantify how comfortable people feel when they walk under various existing conditions. The PLOC scores pedestrian facilities in Montgomery County from 1 (best) to 4 (worst) based on pathway and crossing features such as land use, pathway width, posted speed limit, pathway buffer width, pathway condition, on-street separation, and traffic volume. The rating scale of the PLOC consists of four qualitative ratings which are associated with the each PLOC score. These ratings are very comfortable, somewhat comfortable, uncomfortable, and undesirable.

**Figure 3** presents the PLOC ratings obtained from the Maryland-National Capital Park and Planning Commission's (M-NCPPC) MC Atlas online database for pedestrian facilities along the study corridor. Most of the pedestrian pathways along MD 650 (New Hampshire Avenue) are categorized as undesirable. However, the west sidewalk along the study corridor between Northampton Drive and Piney Branch Road is classified as uncomfortable and the east sidewalk along MD 650 (New Hampshire Avenue) between Fox Street and Oakview Drive is categorized as somewhat comfortable. The sidewalks along Oakview Drive, Dilston Road, and Adelphi Road near their intersection with MD 650 (New Hampshire Avenue) are classified as somewhat comfortable. The sidewalks along Northampton Drive and Southampton Drive near their respective intersections with MD 650 (New Hampshire Avenue) are classified as very comfortable. The sidewalks at MD 650 (New Hampshire Avenue) and MD 320 (Piney Branch Road) are rated as undesirable.

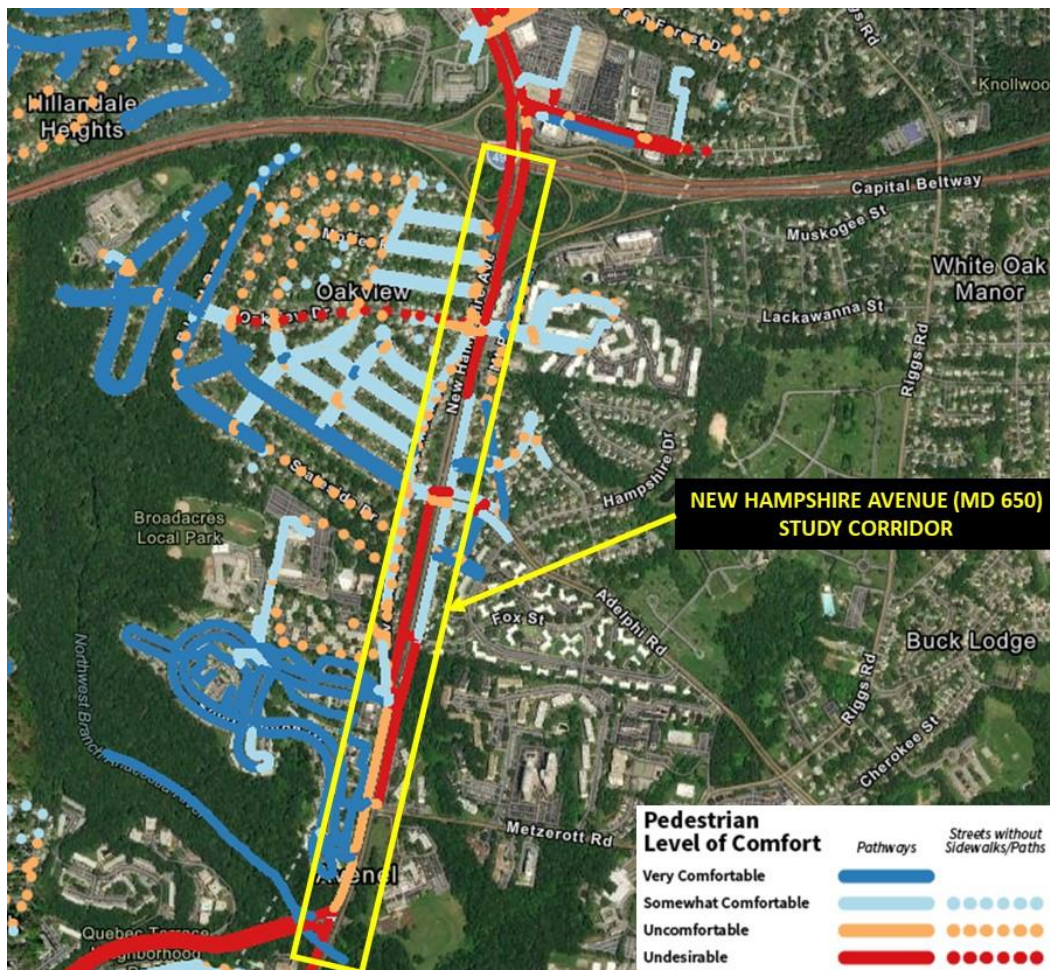


Figure 3: Pedestrian Level of Comfort

## 2.3 TRAFFIC DATA

The Annual Average Daily Traffic (AADT) within the study limits on MD 650 (New Hampshire Avenue) is presented in **Figure 1**. The 1.2-mile study corridor is divided into three homogenous sections based on the AADT as presented in **Table 2**.

Table 2: Corridor Volume

New Hampshire Avenue (MD 650) Section	AADT (2020)
Between Capital Beltway (I-495) and Adelphi Road/Dilston Road	67,192 veh/day
Between Adelphi Road/Dilston Road and Northampton Drive	32,911 veh/day
Between Northampton Drive and Piney Branch Road (MD 320)	33,112 veh/day

The AADT was obtained from Maryland's GIS Data Catalog. These counts are representative of 2020 traffic volumes; however, the actual count was performed between 2018-2019 and growth factors were applied by MDOT. These growth factors were determined based on previous yearly growth rates calculated from automatic traffic recorders (ATRs). These volumes are not representative of the effects the COVID-19

pandemic had on traffic volumes in 2020. Pre-COVID 19 traffic volumes were used for the purposes of this study, as volumes are expected to recover from peak pandemic levels.

The AADT in both directions was generally steady at the intersection of MD 650 (New Hampshire Avenue) and MD 320 (Piney Branch Road) to the intersection of MD 650 (New Hampshire Avenue) and Adelphi Road/Dilston Road.

There is a significant change in AADT at the intersection of MD 650 (New Hampshire Avenue) and Adelphi Road/Dilston Road. This is due to Adelphi Road serving as a minor arterial roadway that provides a major connection between MD 650 and I-495 with MD 193 and The University of Maryland. As a result, AADT volumes are significantly higher on MD 650 (New Hampshire Avenue) north of Adelphi Road, as compared to MD 650 (New Hampshire Avenue) south of Adelphi Road.

Turning movement count data was obtained in 2021. Counts were taken from 6 AM – 9 AM during the AM peak period and 4 PM – 7 PM during the PM peak period. AM peak hours varied slightly between intersections, but generally started between 7:00 and 7:15 AM. PM peak hours varied more and started between 4:45 and 5:45 PM. The intersection with the highest volumes was MD 650 (New Hampshire Avenue) at Oakview Drive.

Summaries of vehicular Turning Movement Counts (TMCs) and pedestrian counts during AM and PM peak hours are shown in **Figure 4**, below.

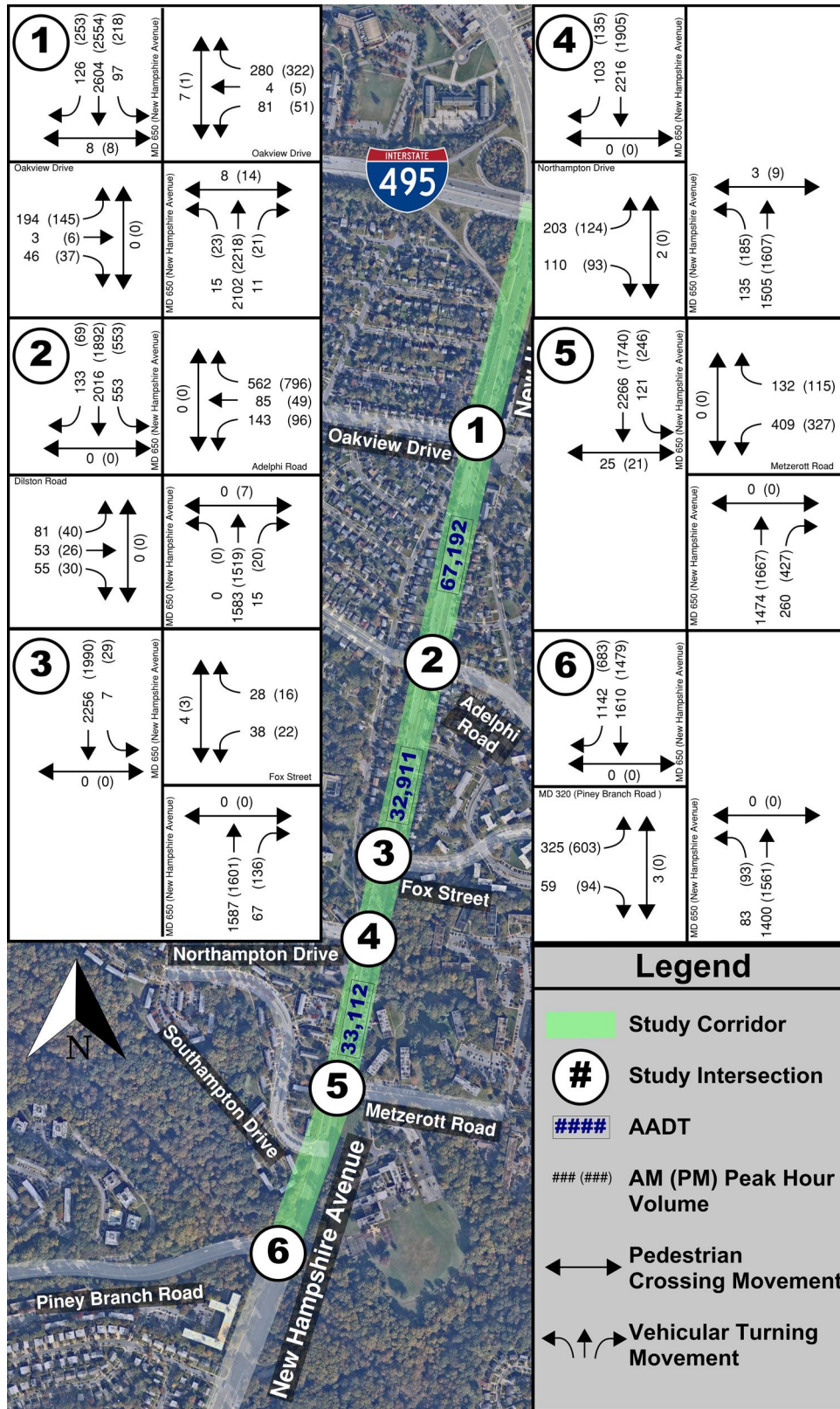


Figure 4: Peak Hour Volumes and AADT

## 2.4 SPEED DATA

PSI received speed data from MCDOT which was collected on MD 650 (New Hampshire Avenue), south of Oakview Drive on Wednesday, January 12, 2022, by pneumatic tubes. A summary of the results from analysis of the speed survey data is presented in **Table 3**.

**Table 3: Summary of Vehicle Speed Survey**

	North Bound	South Bound
Total days	1	1
Speed Limit	40	40
Average Speed (mph)	29	28
50th Percentile (mph)	30	29
85th Percentile (mph)	40	35
Pace Speed Range	26-35	26-35
1 day sample volume (vehicles)	18779	24028

The posted speed limit within this segment of MD 650 (New Hampshire Avenue) study corridor is 40 mph. From the analysis of the BRT speed data, 99% of the southbound traffic are traveling below 40 mph while 86.5% of the northbound traffic are traveling below 40 mph. It should be noted that this speed data was collected along a segment of MD 650 (New Hampshire Avenue) that experiences significant levels of congestion for several hours of the day, at least in part due to the relative proximity of the I-495 (Capital Beltway) interchange and congestion associated with it.

In addition, PSI received speed sentry data from MCPD which was collected along northbound and southbound MD 650 (New Hampshire Avenue), near the intersection of Fox Street. This speed survey of the northbound traffic was done from February 7<sup>th</sup>, 2022, until February 14<sup>th</sup>, 2022. The survey for the southbound traffic was done from February 14<sup>th</sup>, 2022, until February 21<sup>st</sup>, 2022. Both surveys were conducted for 24 hours each day. Totals of 46,431 and 88,691 vehicles were sampled in the northbound and southbound directions, respectively. A summary of the speed survey results is presented in **Table 4**.

**Table 4: Speed Sentry Data**

Data Category	Northbound	Southbound
Total Days	8	8
Posted Speed Limit (mph)	40	40
Average Speed (mph)	34	38
50 <sup>th</sup> Percentile Speed (mph)	35	40
85 <sup>th</sup> Percentile Speed (mph)	42	48
Pace Speed Range	30-40	36-46
8-Day Sample Volume (Vehicles)	46,431	88,691

The results of the speed sentry data collection shows that the average vehicular speed in both northbound and southbound MD 650 (New Hampshire Avenue) is below 40 mph. However, the 85<sup>th</sup> percentile speed exceeded the posted speed limit by approximately 2 mph in the northbound direction of MD 650 (New Hampshire Avenue) and 7.5 mph in the southbound direction. The negative gradient along southbound MD 650 (New Hampshire Avenue) was a likely factor for the increased vehicular speeds in the southbound

direction of the roadway segment. Another likely factor for the discrepancy between the northbound and southbound 85<sup>th</sup> percentile speeds is the fact that queuing regular occurs near Capital Beltway (I-495) in the northbound direction which, possibly lowers the 85<sup>th</sup> percentile speeds in that direction. The maximum vehicular speed on the northbound and southbound directions of MD 650 (New Hampshire Avenue) were 81 mph and 102 mph respectively. The number of vehicles that violated the posted speed limit in the northbound and southbound directions were 1105 out of 46431 and 7921 out of 88691 respectively.

Detailed speed reports can be found in **Appendix B**.

## 2.5 LAND USE

The MD 650 (New Hampshire Avenue) HIN falls within an area that is classified as a Suburban Activity Center (Zone C) context zone according to MDOT SHA's 2019 Context Driven Guide (MDOT SHA Context Zone Interactive Map; MDOT SHA Context Driven Guide). A Suburban Activity Center is defined in the Context Driven guide as an area found along a major arterial which typically has less development than an urban center. It is characterized by several medium density land use features which include multi-family and single family residential as well as commercial and office facilities. In this type of context zone, development primarily consists of detached low-rise structures that are setback from the roadway. Another key feature of a Suburban Activity center is off-street parking which is typical located between structures and the roadway. It should be noted that Suburban Activity centers serve a wide range of travel modes and trip types which demand a balance approach between accessibility and mobility.

The type of land use along the study corridor primarily consists of Medium to High Density Residential, however, there are pockets of Institutional land use as well. Several schools are located near the study area which include: Brookview School, Roscoe Nix Elementary School, St. Francis International School, Kids Kave Learning Center, and JoAnn Leleck Elementary School. There are also several parks located near the study area: George Washington/ Mt. Lebanon Cemetery, Broadacres Local Park, and Anacostia Tributary Trail System.

## 2.6 OTHER CORRIDOR STUDIES, PLANS AND REDEVELOPMENT

### 2.6.1 Montgomery County Bicycle Master Plan

Montgomery County Bicycle Masterplan (**Figure 5**) presents the County's vision to deliver a world class, well-connected, bicycle network that provides safety, accessibility, and comfort to bicyclists and offers a viable transportation alternative for all persons throughout the county. This Bicycle Master Plan is a vital component of Montgomery County's Vision Zero efforts to eradicate traffic-related fatalities and serious injuries. It was adopted by was adopted by the Maryland-National Capital Park and Planning Commission in 2018. The Master Plan has four main goals: (1) increase bicycling rates in Montgomery County, (2) create a highly connected, convenient, and low stress bicycle network, (3) provide equal access to low-stress bicycling facilities for all community members of Montgomery County, and (4) improve the safety of bicycling. The Bicycle Master Plan proposed 1,150 miles of bikeways of which 279.2 miles existed as of December 2020. These bikeways consisted of 603 miles of sidewalks, 174 miles of off-street trails, 98 miles of separated bike lanes, and 51 miles of neighborhood greenways. **Figure 5** shows the existing and proposed bikeways along the HIN on MD 650 (New Hampshire Avenue). It can be observed from this figure t

that the Bicycle Master Plan proposes sidepaths for both the northbound and southbound directions of the study corridor between the intersections of MD 650 (New Hampshire Avenue) & Capital Beltway (I-495) and MD 650 (New Hampshire Avenue) & Northampton Drive, respectively.

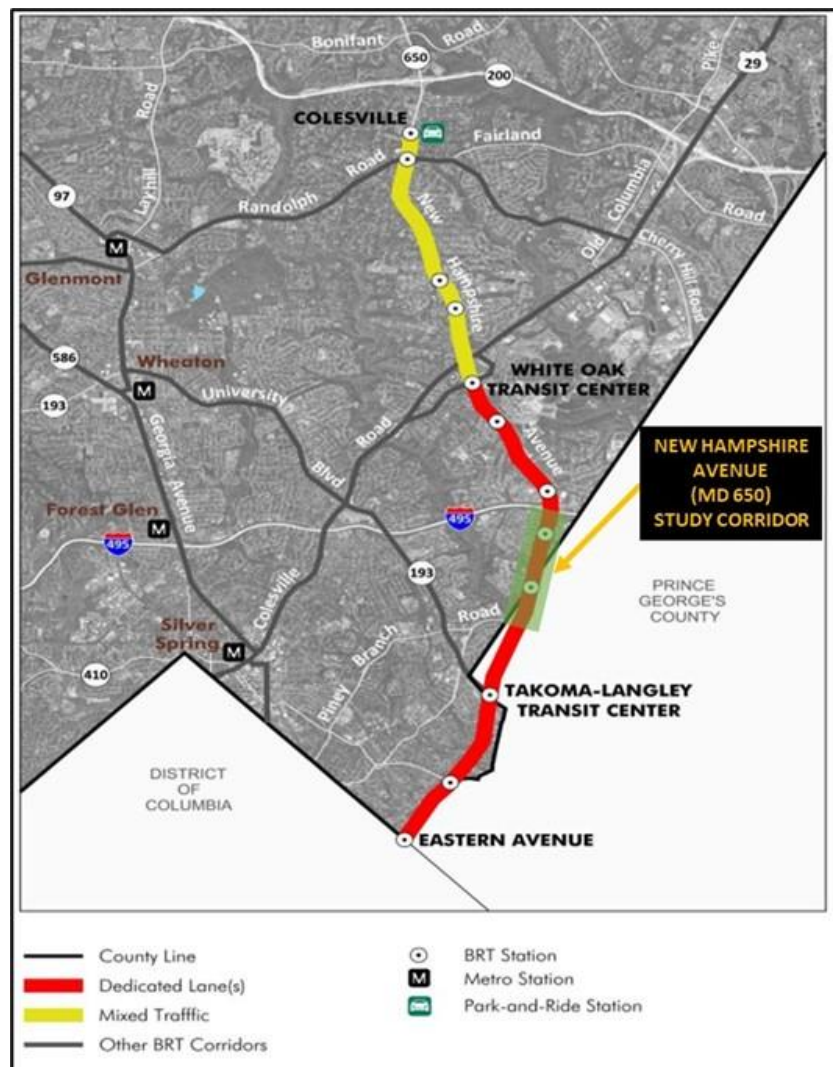


**Figure 5: Bicycle Masterplan within Study Corridor**

## 2.6.2 MD 650 (New Hampshire Avenue) Bus Rapid Transit

The MD 650 (New Hampshire Avenue) Bus Rapid Transit (BRT) corridor was conceptualized in the Countywide Transit Corridors Functional Master Plan that was adopted by the Maryland-National Capital Park and Planning Commission in 2013. The main aim of the Master Plan was to recommend measures that would significantly enhance the quality and level of transit service offerings to Montgomery County's developed areas and regions earmarked for new or redevelopment. The Master Plan proposed the implementation of a 102-mile, BRT network to meet current and future mobility needs of Montgomery County and identified 11 suitable transportation corridors to implement such a system. The 8.5-mile corridor along MD 650 (New Hampshire Avenue) between Colesville Park & Ride and the District of Columbia Line was identified as a prime BRT route (**Figure 6**). This is because it traverses the emerging mixed-use center at White Oak and the activity centers of Langley Park and Takoma Park. In addition, MD 650

(New Hampshire Avenue) experiences high traffic volumes in the southbound direction during morning peak and high traffic volumes in the northbound direction during evening time peak. It can be observed from **Figure 6** that a portion of the proposed BRT route on MD 650 (New Hampshire Avenue) runs along the 1.2-mile study corridor under consideration in this Road Safety Audit. Two proposed BRT stops also lie within the RSA study area. These stops are located at the intersections of MD 650 (New Hampshire Avenue) & Capital Beltway (I-495) and MD 650 (New Hampshire Avenue) & Northampton Drive, respectively. The Master Plan also recommended the repurposing of an existing lane within the study limits of the RSA to accommodate a dedicated BRT lane on MD 650 (New Hampshire Avenue).



**Figure 6: Proposed BRT Section within the Study Corridor**

### 2.6.3 Prince George's County Pedestrian Safety Improvements on Metzerott Road

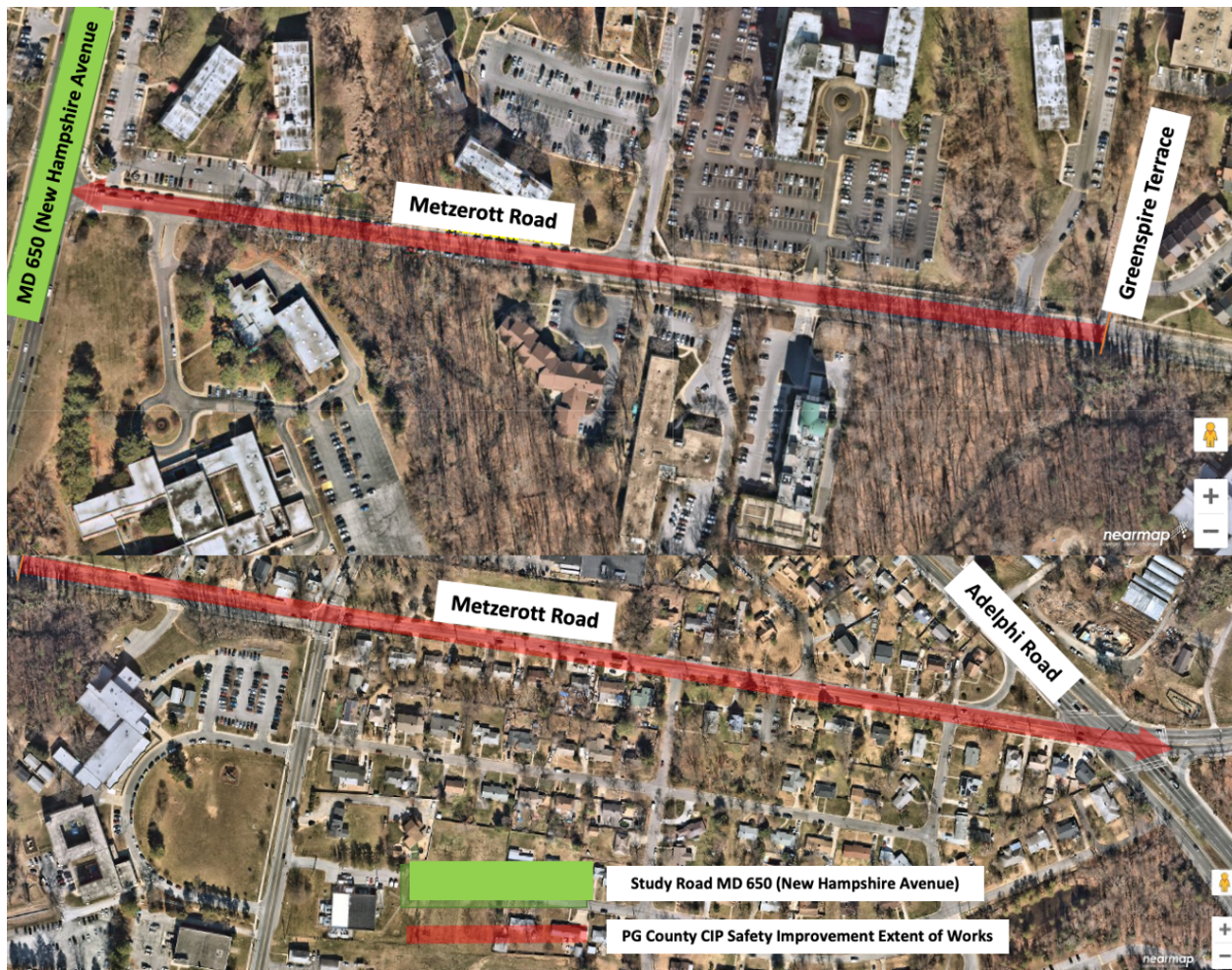
Under the Pedestrian Safety CIP Improvement program, Prince George's County Department of Public Works and Transportation has approved the following improvement works along Metzerott Road from New Hampshire Avenue to the intersection with Adelphi Road, a 0.87-mile segment:

- Provision of concrete sidewalk as a shared use path on the westbound and eastbound directions
- Fine Milling and Resurfacing along Metzerott Road
- Roadway Lighting
- New RRFB signal (approximately 1900 feet from MD 650 (New Hampshire Avenue))
- New Bus Stops (approximately 1300 feet from MD 650 (New Hampshire Avenue) in westbound direction and approximately 1450 feet from MD 650 (New Hampshire Avenue) in eastbound direction)

It should be noted that the five pedestrian safety improvements mentioned above is likely to impact the study corridor in ways which include but is not limited to:

- Increased pedestrian volume at the junction with MD 650 (New Hampshire Avenue) due to NEW bus stops on the eastbound and westbound directions of Metzerott Road near the MD 650 (New Hampshire Avenue)/ Metzerott Road intersection

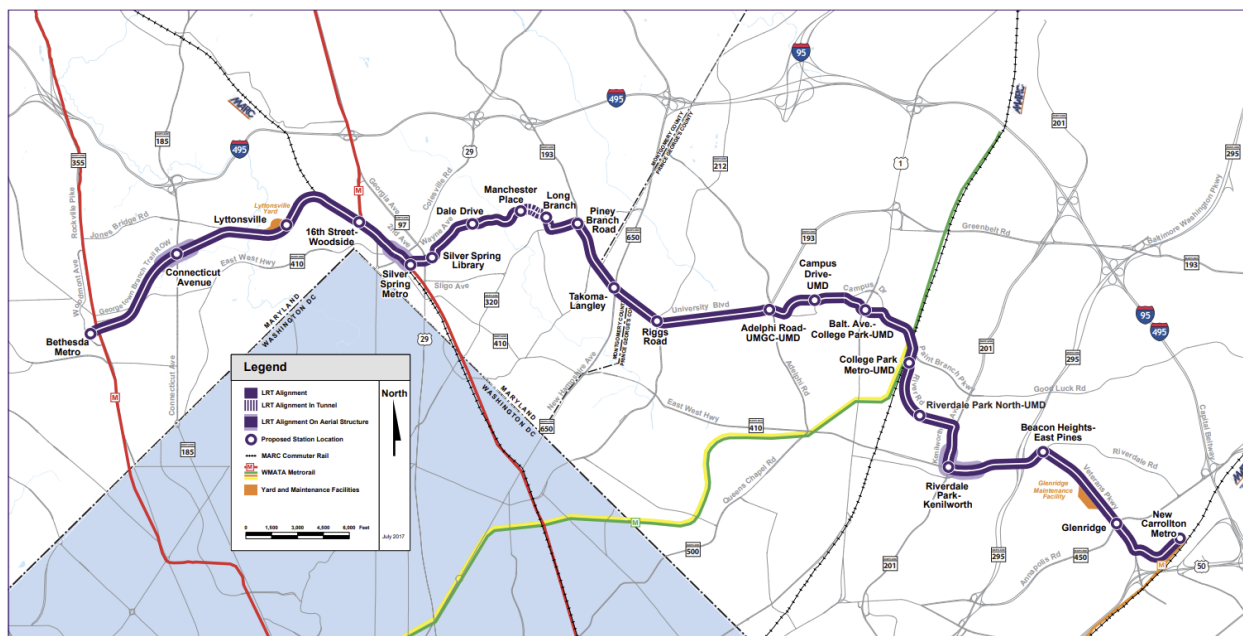
As a result, there is an additional need to consider further pedestrian infrastructure/facilities at the intersection of Metzerott Road and MD 650 (New Hampshire Avenue). **Figure 7** shows the extent of the proposed CIP pedestrian safety improvement.



**Figure 7: Metzerott Road: Extent of CIP Safety Improvement Works**

#### 2.6.4 Maryland Department of Transportation Purple Line

The Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) Purple Line is a 16-mile light rail that spans from Bethesda in Montgomery County to New Carrollton in Prince George's County. After construction, the Purple Line will offer a direct connection to the Red, Green and Orange Lines of the Metrorail at Bethesda, Silver Spring, College Park and New Carrollton. The Purple Line will also connect to the MARC, Amtrak, and local bus services. An overview of the general alignment of the Purple Line is shown in **Figure 8**. As seen, the Purple Line will have 21 stations upon completion. Two of these stations will be approximately 1 mile south of the HIN study corridor along MD 650 (New Hampshire Avenue). Additionally, one station would be located across from the Takoma-Langley Transit Center in the center of University Boulevard East while the other will be in the center of University Boulevard East near the intersection of University Boulevard East & MD 320 (Piney Branch Road). Proximity of these stations to the MD 650 (New Hampshire Avenue) corridor could lead to an increase in multimodal traffic in the study area.



**Figure 8: MDOT Purple Line Route Alignment**

## 2.7 PUBLIC TRANSIT AND RIDERSHIP

There are three transit services available to commuters within the study limits. These services include Washington Metropolitan Area Transit Authority (WMATA) routes C8 and K6, Montgomery County Ride On (Ride On) routes 20 and 24, and University of Maryland (UMD) Shuttle-UM route 108.

WMATA bus route C8 runs east-west along Adelphi Road and north-south along the MD 650 (New Hampshire Avenue) (from Adelphi Road, northward). This route begins at Fort Totten Station in Washington DC and ends at White Oak in Silver Spring, MD. WMATA bus route C8 has stops along the northern portion of study corridor and Adelphi Road. WMATA bus route K6 runs north-south throughout the entirety of the study corridor along MD 650 (New Hampshire Avenue) and east-west along Northampton Drive and Southampton Drive. This route begins at Marinelli Road/Rockville Pike and ends at College Park Station. WMATA bus route K6 has bus stops along the study corridor; north of Northampton Drive, and bus stops very close to the study corridor on Northampton Drive and Southampton Drive respectively. Ride On bus routes 20 and 24 run east-west along MD 320 (Piney Branch Road) and north-south along MD 650 (New Hampshire Avenue); throughout the entire study corridor. These two bus routes have several stops directly on the MD 650 (New Hampshire Avenue) HIN, Northampton Drive, and Southampton Drive. Shuttle-UM bus route 108 run east-west along Metzerott Road and north-south along (from Metzerott Road to Oakview Drive). Ride On route 20 runs from Silver Spring, MD to Powder Mill Road while Ride On route 24 runs from Takoma Station/Bay H to Powder Mill Road. Shuttle-UM bus route 108 has stops along MD 650 (New Hampshire Avenue), Metzerott Road, and Mt. Pisgah Road. The bus route runs from Regent Drive Garage to Mt Pisgah Road at Chateau Apartment.

Bus stops are identified along MD 650 (New Hampshire Avenue) by WMATA, Ride On, and Shuttle-UM signage which contain details regarding route information. Bus stop shelters are provided at the following locations:

- MD 650 (New Hampshire Avenue) southbound at Oakview Drive
  - Location: Near side of intersection
  - WMATA Stop ID: 2000321
  - Ride On Stop ID: 24492
- MD 650 (New Hampshire Avenue) northbound at Oakview Drive
  - Location: Near side of intersection
  - WMATA Stop ID: 2000319
  - Ride On Stop ID: 24462

**Figure 9** show the locations of WMATA, Ride On, and UMD Shuttle-UM stops bus routes and bus stops within the study corridor.



**Figure 9: WMATA, RideOn, and UMD Transit Routes**

**Table 5** presents data regarding WMATA, Ride On, and UMD Shuttle-UM bus stop ID numbers at each stop and the level of utilization at each stop (i.e., daily boarding and alighting) respectively. Approximately 1533

passengers on average use transit services along the study corridor daily. There are 5 bus stop locations in the southbound direction and 6 bus stop locations in the northbound direction. The northbound and southbound stop locations at Oakview Drive have the highest level of utilization serving almost 49% of all passengers. The locations with the second and third highest level of utilization is northbound MD 650 (New Hampshire Avenue) at Adelphi Road and at Fox Street which serves approximately 13% and 15% of all passengers, respectively. The average daily WMATA ridership was 808 passengers in total in 2019. More than half of these passengers (i.e., 53%) used the northbound and southbound Oakview stop locations. The Adelphi and Dilston stop location was also heavily utilized, serving 20% of daily passengers. With respect to Ride On average daily ridership, the two Ride On bus routes (i.e., 20 and 24) which run along the study corridor combined to serve a total of 340 passengers in 2019. Riders predominantly utilized the near side intersection bus stops at MD 650 (New Hampshire Avenue) and Oakview Drive along these routes. The far side intersection bus stops at Dilston Road and MD 650 (New Hampshire Avenue) SB, Fox Street and MD 650 (New Hampshire Avenue) NB had very low ridership. The midblock bus stop along northbound MD 650 (New Hampshire Avenue) near Madre Street also had very low ridership utilization. Shuttle-UM route 108 served a total of 385 passengers between January and February 2022. Approximately 28% of daily passengers utilized the bus stop location at MD 650 (New Hampshire Avenue) and Metzerott Road while 22% of riders used the bus stop at MD 650 (New Hampshire Avenue) and Adelphi Road. The bus stops at MD 650 (New Hampshire Avenue) and Fox Street and MD 650 (New Hampshire Avenue) and Oakview Drive served approximately 27% and 22% respectively.

**Table 5: Average Ridership on the Transit Routes**

Location	Direction	Transit Agency	Stop ID			Alighting (Passengers)	Onboarding (Passengers)	Percentage of Transit Users Served
			WMATA	Ride On	UMD			
New Hampshire Avenue (MD 650) at Oakview Drive	Southbound	WMATA / Ride On	2000321	24492	-	233	87	21%
New Hampshire Avenue (MD 650) at Dilston Road		WMATA / Ride On / UMD	2000305	24488	SB	76	24	7%
New Hampshire Avenue (MD 650) at Fox Street		WMATA / Ride On	2000279	28886	-	9	6	1%
New Hampshire Avenue (MD 650) at Northampton Drive		WMATA	3004275	-	-	61	3	4%
New Hampshire Avenue (MD 650) at Metzerott Road		UMD	-	-	SB	64	7	5%
New Hampshire Avenue (MD 650) at Oakview Drive	Northbound	WMATA / Ride On / UMD	2000319	24462	NB	104	327	28%
New Hampshire Avenue (MD 650) at Madre Street		WMATA / Ride On	24460	24460	-	0	3	< 1%
New Hampshire Avenue (MD 650) at Adelphi Road		WMATA / Ride On / UMD	2000302	24458	NB	65	140	13%
New Hampshire Avenue (MD 650) at Fox Street		WMATA / Ride On / UMD	2000283	24456	NB	77	149	15%
New Hampshire Avenue (MD 650) at Northampton Drive		WMATA	3004276	-	-	3	56	4%
New Hampshire Avenue (MD 650) at Metzerott Road		UMD	-	-	NB	9	30	2%
Total						701	832	100%

### 3.0 CRASH DATA SUMMARY

This section summarizes the crash history received from Maryland Department of Transportation (MDOT) for the period from January 1, 2015, to December 31, 2019, for the study corridor - MD 650 (New Hampshire Avenue) from MD 320 (Piney Branch Road) junction to I-495 (Capital Beltway) interchange. Total crash history included 625 crashes, involving 1,378 vehicles and 1,814 people. The data has been reviewed and summarized in the following section.

#### 3.1 CRASH SEVERITY

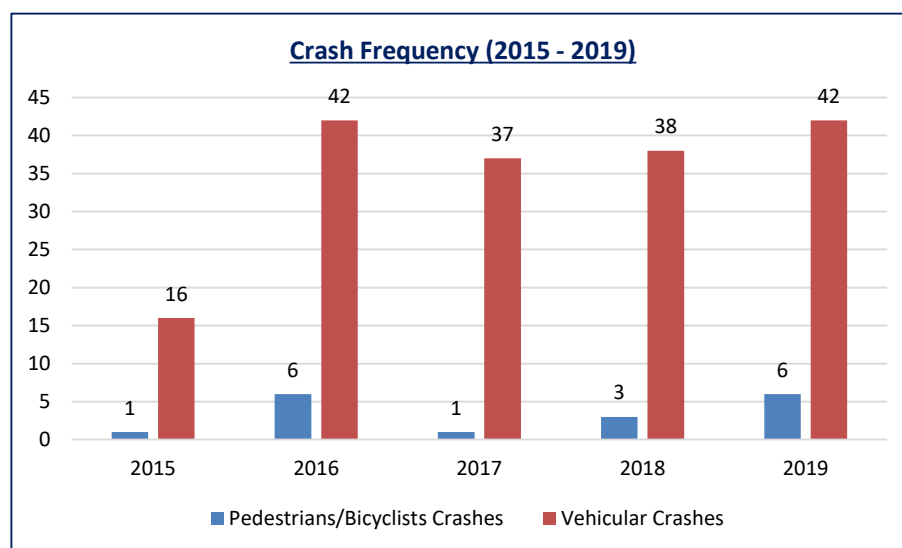
Crash severities analyzed and discussed in this section of the Road Safety Audit (RSA) Report include fatal, serious, and minor injury crashes. These crash severities are translated from MDOT injury descriptions, summarized below in **Table 6**:

**Table 6: Crash Descriptions**

No	MDOT SHA Description	MCDOT Description
1	Fatal crashes	Fatal crashes
2	Incapacitating/disabling injury crashes	Serious injury crashes
3	Non incapacitating injury crashes	Minor injury crashes

The crash severities discussed in subsequent sections uses the MCDOT descriptions presented in **Table 6**. It should be noted that possible incapacitating injury crashes and Property Damage Only (PDO) crashes are omitted in this analysis. This is to be consistent with Vision Zero Plan to eliminate fatalities and serious injuries crashes.

**Figure 10** presents the overall crash frequency grouped by pedestrian/bicycle crashes and vehicular crashes along the study corridor between 2015 and 2019. There were 175 vehicular crashes including 17 that involved pedestrians or bicyclists.

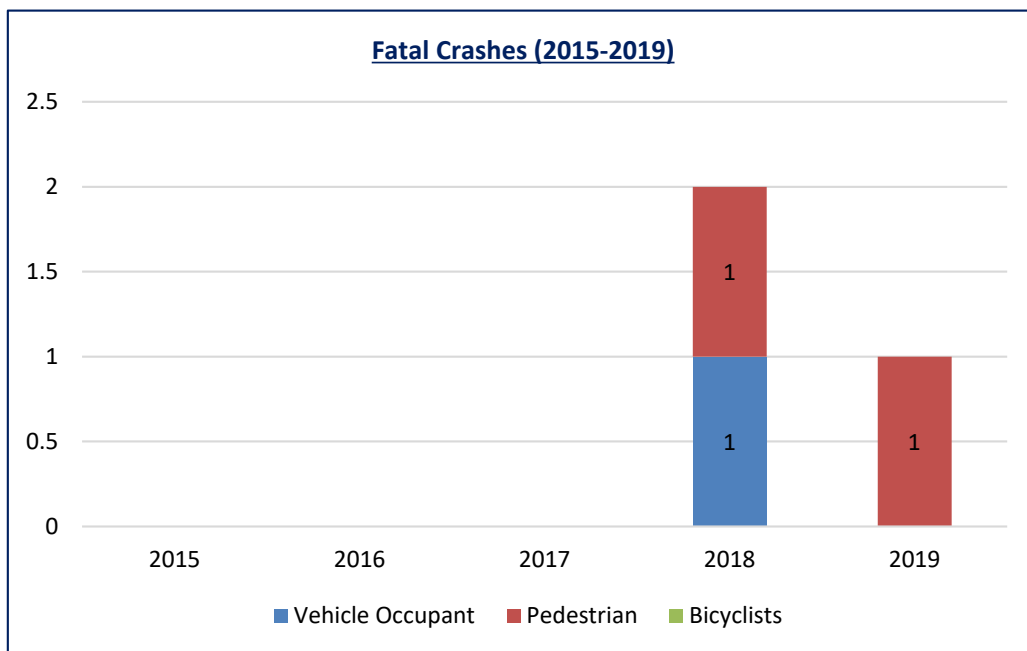


**Figure 10: Overall Crash Frequency by Year (2015 - 2019)**

Out of the 175 crashes, there were 3 fatal crashes, 19 serious injury crashes, and 153 minor injury crashes along the study corridor from 2015 to 2019.

### 3.1.1 Fatal Crashes

**Figure 11**, shows fatal crashes from 2015 to 2019 by road user type.



**Figure 11: Fatal Crash Frequency by Year (2015 - 2019)**

The 3 fatal crashes occurred at the following locations:

1. Intersection of MD 650 (New Hampshire Drive) at Oakview Drive
2. Intersection of MD 650 (New Hampshire Avenue) at Northampton Drive
3. Intersection of MD 650 (New Hampshire Avenue) at Metzerott Road

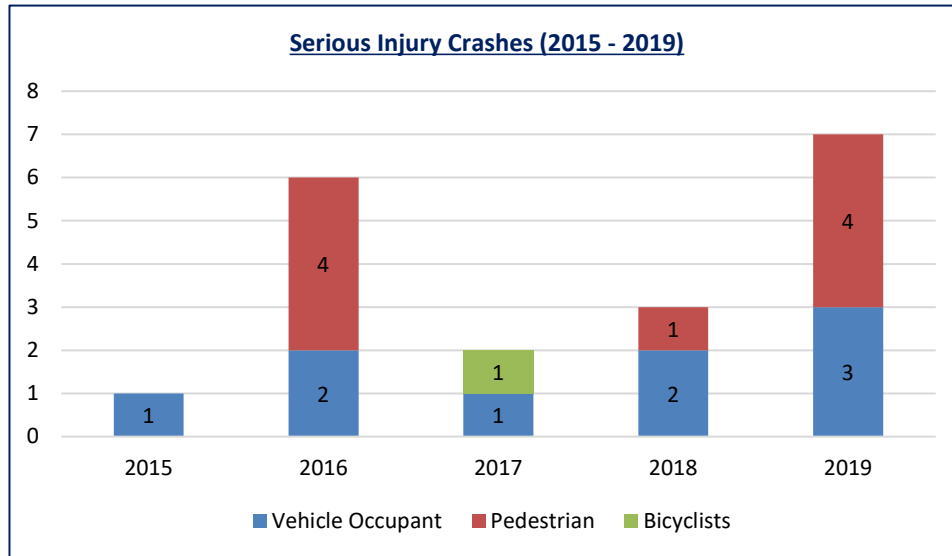
From available data, the fatal crashes affected vehicle occupants (1 driver and 1 passenger) and 2 pedestrians. The crash locations involving pedestrians occurred at the intersection of MD 650 (New Hampshire Avenue) at Oakview Drive and the intersection of MD 650 (New Hampshire Avenue) at Metzerott Road. The crash at Metzerott Road occurred during daylight, under dry surface condition and was attributed to a same movement angle collision. The crash at Oakview Drive occurred under dark condition (lights on) and dry surface condition. **Figure 12** presents the geospatial distribution and the attributes of the crashes. 2 out of the 3 fatal crashes were as a result of same movement angle collision under dry surface conditions.



**Figure 12: Geospatial Distribution of Fatal Crashes**

### 3.1.2 Serious Injury Crash Frequency by Year

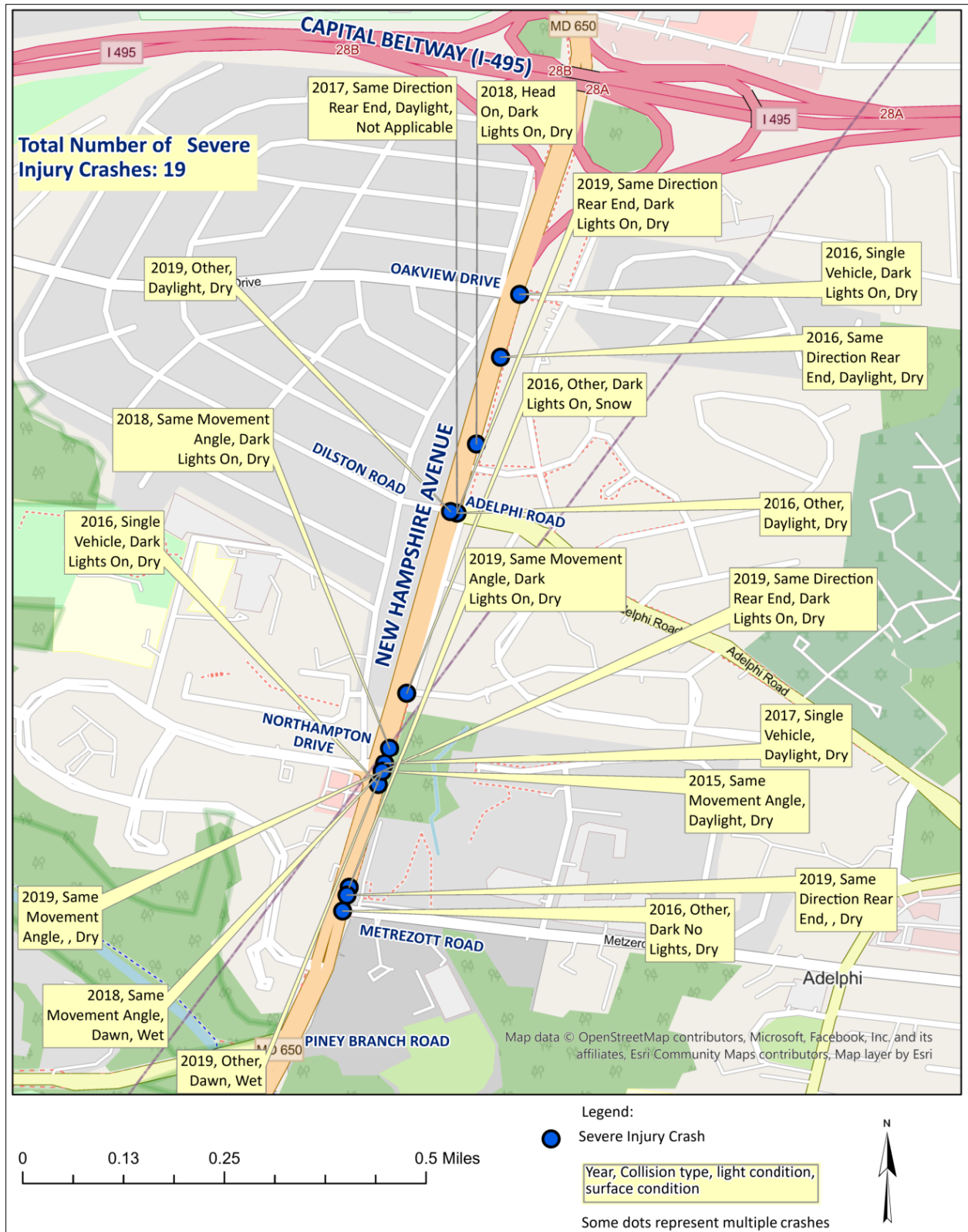
**Figure 13** shows the number of serious injury crashes between 2015 and 2019.



**Figure 13: Crash Frequency for Serious Injuries by Year (2015 - 2019)**

There were 19 serious injury crashes between 2015 and 2019 within the study corridor. These included 1 crash involving a bicyclist and 9 crashes involving pedestrians.

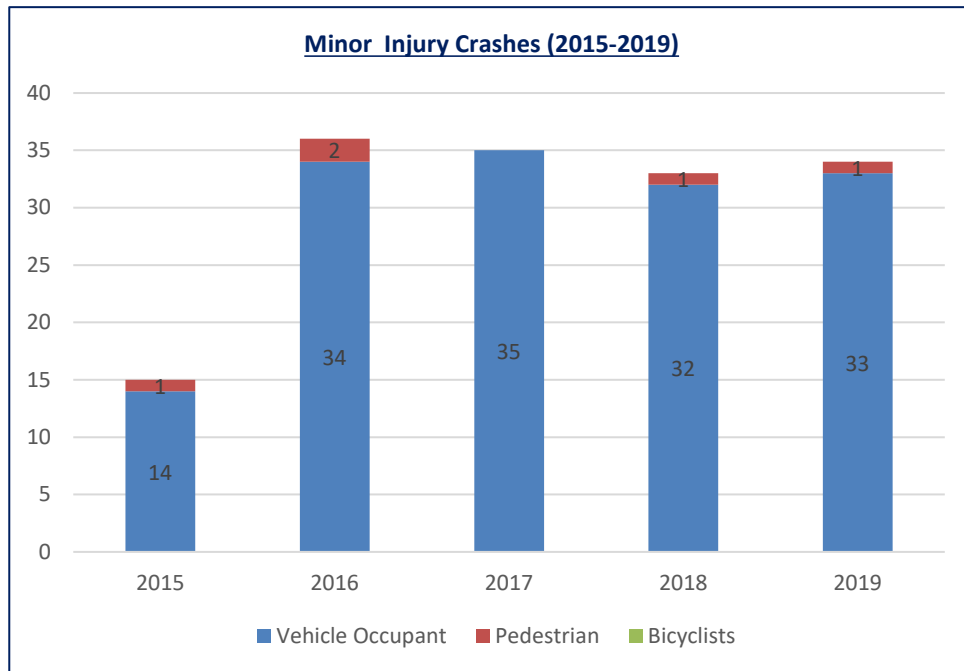
**Figure 14** shows the spatial distribution and other attributes of the serious injury crashes.



**Figure 14: Serious Injury Crash Sites (2015-2019)**

### 3.1.3 Minor Injury Crash Frequency by Year

From **Figure 15**, out of the 153 minor injury crashes, there were 5 crashes that affected pedestrians. **Figure 16** shows the general locations of the minor injury crashes within the study corridor and period. Some of the dots in **Figure 16** represents multiple crashes.



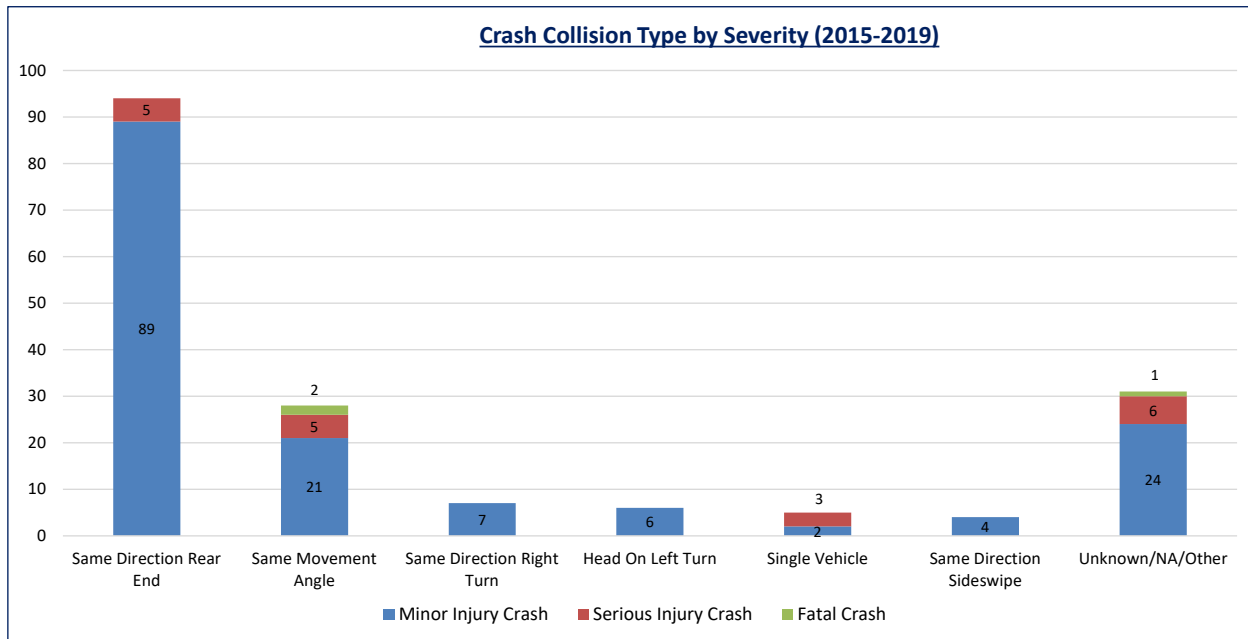
**Figure 15: Crash Frequency for Minor Injuries by Year (2015-2019)**



**Figure 16: Minor Injury Crash Locations (2015-2019)**

### 3.2 CRASH/COLLISION TYPE

**Figure 17** and **Table 7** summarize the crash collision type by severity along the study corridor between 2015 and 2019. There are 3 fatal crashes that affected a vehicle occupant, a driver and 2 pedestrians. 2 of the 3 fatal crashes were attributed to same movement angle collision. From **Table 7**, same direction rear end collisions contributed 54% of the crashes. Same movement angle and same direction right turn contributed 16% and 4% respectively. Both head on left turn and single vehicle contributed 3% of the crashes. Same direction sideswipe collisions contributed 2% of the crashes.



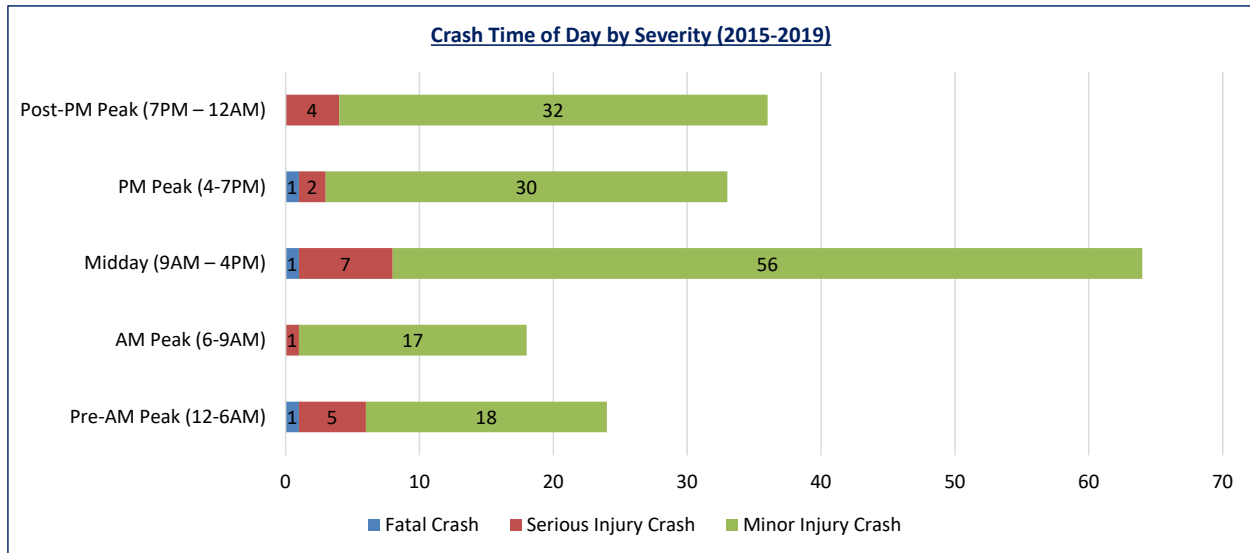
**Figure 17: Crash Collision Type by Severity**

**Table 7: Crash Collision Type by Severity**

Collision type/Crash Type	Fatal Crash	Serious Injury Crash	Minor Injury Crash	Sub Total (Number)	Sub Total (Percentage)
Same Direction Rear End	0	5	89	94	54%
Same Movement Angle	2	5	21	28	16%
Same Direction Right Turn	0	0	7	7	4%
Head On Left Turn	0	0	6	6	3%
Single Vehicle	0	3	2	5	3%
Same Direction Sideswipe	0	0	4	4	2%
Unknown/NA/Other	1	6	24	31	18%
	3	19	153	175	100%

### 3.3 CRASH BY TIME OF DAY

**Figure 18** and **Table 8** summarize the peak hour crashes by severity. 37% of the total crashes occurred during the midday (9AM - 4PM). The 3 fatal crashes occurred during the PM peak (4PM – 7PM), midday (9AM - 4PM) Peak and pre-AM Peak (12AM - 6AM) times respectively. The lowest number of crashes were during the AM peak (6AM – 9AM) time totaling 10%.



**Figure 18: Crashes by Time of Day by Severity**

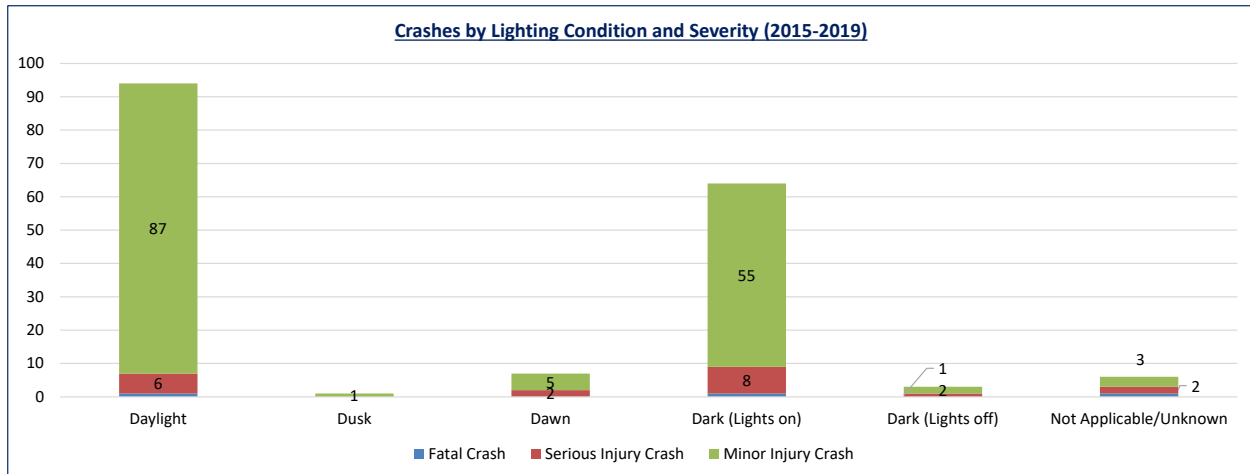
**Table 8: Crashes by Time of Day by Severity**

Time	Fatal Crash	Serious Injury Crash	Minor Injury Crash	Sub Total (Number)	Sub Total (Percentage)
Pre-AM Peak (12-6AM)	1	5	18	24	14%
AM Peak (6-9AM)	0	1	17	18	10%
Midday (9AM – 4PM)	1	7	56	64	37%
PM Peak (4-7PM)	1	2	30	33	19%
Post-PM Peak (7PM – 12AM)	0	4	32	36	21%
<b>Total</b>	<b>3</b>	<b>19</b>	<b>153</b>	<b>175</b>	<b>100%</b>

### 3.4 CRASH BY LIGHTING CONDITION

Table 9 and Figure 19 present a summary of the crash severity by lighting conditions. 54% and 37% of the crashes occurred during daylight and dark (with lights on) conditions respectively. 2% of the crashes occurred under dark (with lights off). 1% of crashes occurred at Dusk and 4% occurred at dawn.

The fatal crash involving a pedestrian at MD 650 (New Hampshire Avenue) and Oakview Drive occurred while the pedestrian was crossing MD 650, in a crosswalk, during dark conditions (with lights on). The fatal crash at Northampton Drive also occurred during dark conditions, however the overhead lighting conditions were recorded as unknown.



**Figure 19: Crashes by Lighting Condition by Severity**

**Table 9: Crashes by Lighting Condition by Severity**

Lighting Condition	Fatal Crash	Serious Injury Crash	Minor Injury Crash	Sub Total (Number)	Sub Total (Percentage)
Daylight	1	6	87	94	54%
Dusk	0	0	1	1	1%
Dawn	0	2	5	7	4%
Dark (Lights on)	1	8	55	64	37%
Dark (Lights off)	0	1	2	3	2%
Not Applicable/Unknown	1	2	3	6	3%
<b>Total</b>	<b>3</b>	<b>19</b>	<b>153</b>	<b>175</b>	<b>100%</b>

### 3.5 CRASH BY WEATHER AND SURFACE CONDITIONS

**Table 10** presents a summary of the crash severity by weather condition at the time of the crash. 48% of the crashes occur during clear weather while 10% of the crashes occurred under rainy condition. All the fatal crashes occurred under clear weather conditions. In addition, 8 out of the 19 serious injury crashes occurred under clear weather conditions.

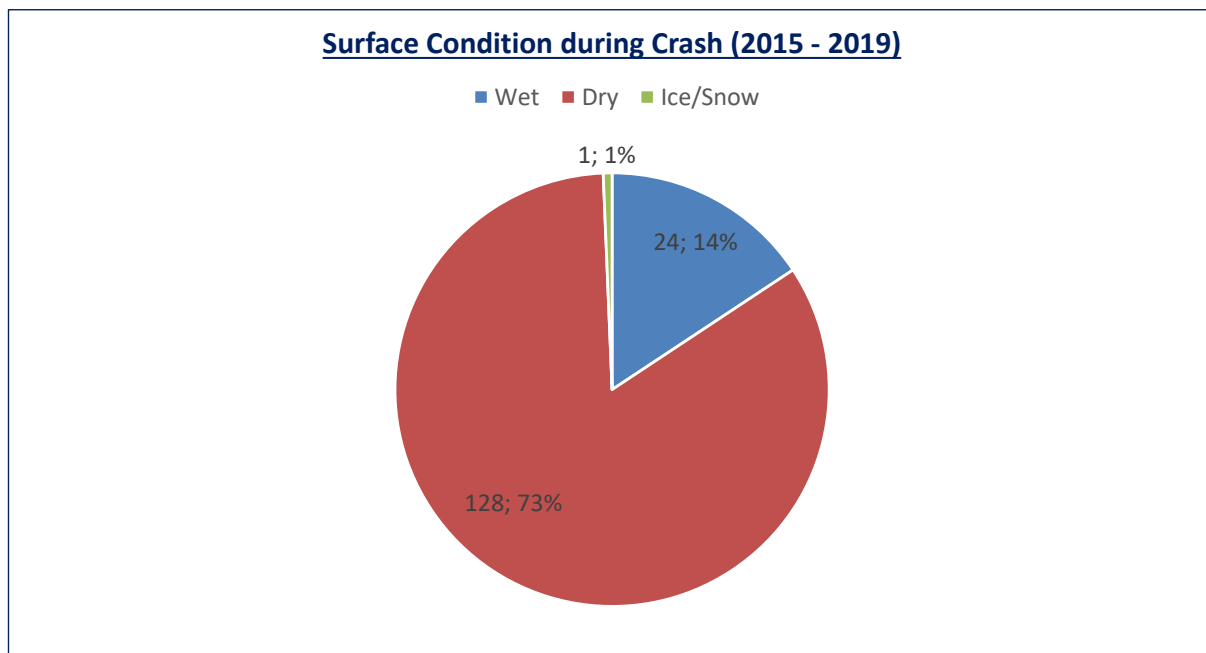
**Table 10: Crashes by Weather Condition by Severity**

Weather Conditon	Fatal Crash	Serious Injury Crash	Minor Injury Crash	Sub Total (Number)	Sub Total (Percentage)
Clear	3	8	73	84	48%
Cloudy	0	2	4	6	3%
Raining	0	1	16	17	10%
Wintry Mix	0	0	1	1	1%
N/A/Other	0	8	59	67	38%
<b>Total</b>	<b>3</b>	<b>19</b>	<b>153</b>	<b>175</b>	<b>100%</b>

Looking at **Table 11** and **Figure 20**, the 3 fatal crashes occurred under dry surface condition. Overall, most crashes occurred under dry surface conditions (128 crashes/73% of total crashes), while much of the remainder occurred under wet surface conditions (24 crashes/14% of total crashes). 1 crashes occurred under snowy/icy surface conditions.

**Table 11: Crashes by Surface Condition by Severity**

Surface Conditon	Fatal Crash	Serious Injury Crash	Minor Injury Crash	Sub Total (Number)	Sub Total (Percentage)
Wet	0	2	22	24	14%
Dry	3	15	110	128	73%
Ice/Snow	0	1	0	1	1%
Unknown/NA	0	1	21	22	13%
Total	3	19	153	175	100%



**Figure 20: Crashes by Surface Condition**

### 3.6 PEDESTRIANS AND BICYCLISTS INVOLVED IN CRASHES BY SEVERITY

**Table 12** presents a summary of crashes that involved pedestrians and bicyclist by injury severity. It shows that 2 out of the 3 fatal crashes involved pedestrians, 10 out of the 19 serious injury crashes involved 1 bicyclist and 9 pedestrians while 5 out of 153 minor injury crashes involved pedestrian.

**Table 12: Pedestrian and Bicyclists involved in Crashes by Severity**

	Fatal Crash	Serious Injury Crash	Minor Injury Crash	Sub Total (Number)	Sub Total (Percentage)
Bicyclist	0	1	0	1	6%
Pedestrian	2	9	5	16	94%
Total	2	10	5	17	100%

## 4.0 FIELD REVIEW AND OBSERVATIONS

A field walk assessment was conducted by the RSA team on March 29, 2022, along MD 650 (New Hampshire Avenue) between Piney Branch Road (MD 320) and Capital Beltway (I-495). The field assessment reviewed several categories of pedestrians, bicyclists, and motorists' safety concerns within the study limits. These issues related to pedestrian, bicyclist, and motorist safety within the study limits. The safety concerns identified during the field walk assessment are highlighted and summarized in the following sections. The photographs which correspond to these field observations are illustrated in **Appendix C**.

### 4.1 PAVEMENT CONDITIONS AND MARKINGS

The condition of thermoplastic pavement markings along the MD 650 (New Hampshire Avenue) was visually evaluated. The thermoplastic pavement markings within the study area were in good condition. However, there were several intersection locations with pedestrian sidewalk ramps present but no crosswalk markings, deteriorated (i.e., faded) crosswalk markings, or crosswalks with limited visibility to approaching drivers. These locations include:

- MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road)
  - Missing crosswalk markings due to patching road repair on utility cut – southwest crosswalk crossing the channelized right turn lane
- MD 650 (New Hampshire Avenue) at Southampton Drive
  - Missing crosswalk markings and stop lines at pedestrian sidewalk ramps – west leg crossing Southampton Drive
- MD 650 (New Hampshire Avenue) at Northampton Drive
  - Missing crosswalk markings and stop line along – west leg crossing Northampton Drive
  - Faded crosswalk markings – south intersection leg crossing MD 650 (New Hampshire Avenue)
- Avenel Road at MD 650 (New Hampshire Avenue) and Northampton Drive intersection
  - Missing crosswalk markings and stop lines at pedestrian sidewalk ramps – crossing Avenel Road
- Fox Street
  - Missing crosswalk markings and stop lines at pedestrian sidewalk ramps – east leg crossing Fox Street
- 9810 New Hampshire Avenue (service road) at sidewalk connection to mainline MD 650 (New Hampshire Avenue) at I-495 (Capital Beltway) eastbound off-ramp (28B) signalized intersection.
  - Missing crosswalk markings across New Hampshire Avenue service road that connects the existing pedestrian ramp to the existing sidewalk. A pedestrian ramp on the west side of New Hampshire Avenue service road is also not present.

### 4.2 SIDEWALK CONDITION

Sidewalk and trailhead conditions were assessed based on the overall state of the sidewalk or trailhead surface and the adequacy of the effective width for pedestrians. There were numerous sidewalk locations the MD 650 (New Hampshire Avenue) within the limits of the study corridor which were in a general state

of disrepair. The sidewalk facilities at the following locations require reconstruction due to poor surface conditions:

- Pedestrian Refuge Island at west intersection leg of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road)
  - There is no concrete surface on some sections of the sidewalk.
- MD 320 (Piney Branch Road) north sidewalk
  - Entrance to Anacostia River trail system is unpaved and obstructed with foliage.
- MD 650 (New Hampshire Avenue) west sidewalk between Piney Branch (MD 320) and Southampton Drive
  - Sidewalk surface is spalled.
  - No buffer between roadway and sidewalk.
  - Curb height was estimated to be less than 4 inches.
- MD 650 (New Hampshire Avenue) west sidewalk at MD 650 (New Hampshire Avenue) and Capital Beltway (I-495)
  - Buildup of debris on sidewalk ramp at Capital Beltway (I-495) Ramp 6 merge could be attributed to flooding or poor drainage.

There were several areas within the study limits where sidewalk facilities either presented pedestrian trip hazards or provided insufficient horizontal or vertical clearance for pedestrians. Some of these areas include:

- MD 650 (New Hampshire Avenue) West sidewalk between Piney Branch (MD 320) and Southampton Drive
  - Utility pole and vegetation along sidewalk limit effective sidewalk width for pedestrians.
  - Low-hanging speed limit sign limits vertical height clearance for pedestrians.
  - Foliage along sidewalk limits effective sidewalk width for pedestrians.
- MD 650 (New Hampshire Avenue) west sidewalk between Southampton Drive and Metzerott Road
  - Sidewalk is cracked and uneven.
  - “Traffic Signal at Piney Branch Road” sign limits vertical height clearance for pedestrians.
- MD 650 (New Hampshire Avenue) west sidewalk between Metzerott Road and Northampton Drive
  - Sidewalk is cracked and uneven.
- MD 650 (New Hampshire Avenue) west sidewalk between Northampton Drive and Dilston/Adelphi Road
  - Overgrown trees cause pedestrians to utilize roadway to avoid obstruction on sidewalk.
  - Foliage reduces effective sidewalk width for pedestrians.
- MD 650 (New Hampshire Avenue) west and east sidewalk at MD 650 (New Hampshire Avenue) and Capital Beltway (I-495)
  - Metal storm drain covers on east and west sidewalks (approximately 500 feet and 250 feet from Capital Beltway (I-495) Ramps 28A and 28B, respectively) are not secured which creates a trip hazard.

### 4.3 ADA COMPLIANCE

The ADA compliance of sidewalk facilities throughout the study corridor was visually evaluated based on the presence of sidewalk ramps at crosswalks, overall characteristics of sidewalk ramps, effective sidewalk width for pedestrians at ramp landings, presence of detectable warning surfaces (DWS), availability of accessible pedestrian signals (APS) and position of pedestrian push buttons. There were various locations along MD 650 (New Hampshire Avenue) where pedestrian sidewalk and ramp facilities did not appear to be ADA compliant based on visual inspection. These locations include:

- MD 650 (New Hampshire Avenue) west sidewalk between Metzert Road and Northampton Drive
  - Insufficient pedestrian landing area on midblock pedestrian refuge island and corresponding sidewalk ramps at pedestrian crossing facility at 7-Eleven access driveway.
  - No DWS at midblock pedestrian refuge island and sidewalk ramps at 7-Eleven access driveway.
- Northampton Drive median at MD 650 (New Hampshire Avenue) and Northampton Drive
  - There are no pedestrian ramps in the southwest corner of the intersection to cross the channelized eastbound right turn lane, or to access the channelization island from any direction
  - There is no sidewalk on the eastbound right turn channelization island in the southwest corner to facilitate pedestrian movement.
  - There are no pedestrian ramps in the northeast, southeast, and northwest corners of the intersection to facilitate pedestrian crossings of MD 650 (New Hampshire Avenue).
  - There are no pedestrian ramps or curb cuts in the narrow concrete median along the eastbound Northampton Drive approach to allow pedestrians to safely cross Northampton Drive.
  - There is no APS located on any pedestrian movement except for the southwest channelization island, which appears to be broken as it gave no audible feedback when pushed.
- MD 650 (New Hampshire Avenue) at Fox Street
  - No detectable warning surface (DWS) on sidewalk ramps at Fox Street
- MD 650 (New Hampshire Avenue) at Dilston/Adelphi Road
  - Insufficient pedestrian landing area on median between MD 650 (New Hampshire Avenue) and Fox Street. Adjacent DWSs on the east leg Adelphi Road median cut-through are not a minimum of 2 feet away from each other.
  - Insufficient pedestrian landing area on median at Adelphi Road.
- MD 650 (New Hampshire Avenue) east sidewalk between Dilston/Adelphi Road and Oakview Drive
  - Traveling northbound, the only sidewalk present is along the east side of the service road. This sidewalk ends approximately halfway between Adelphi Road and Oakview Drive, and with no ADA connection to the sidewalk along the east side of New Hampshire Avenue, which continues north to Oakview Drive.
- MD 650 (New Hampshire Avenue) at Oakview Drive

- APS push button in the northwest corner of the intersection (to facilitate crossing MD 650 (New Hampshire Avenue)) was estimated to be greater than the 4 feet maximum distance from ramp landing.
  - APS push button in northwest corner of intersection does not operate as designed or intended (does not vibrate).
  - Redundant pedestrian push button (i.e., two push buttons) at northeast corner of intersection.
- Mt. Pisgah Road east Sidewalk
  - Surface is unpaved and concrete sidewalk is completely missing. It should be noted however, that this sidewalk fell outside the scope of this study.
- 9801 MD 650 (New Hampshire Avenue) (service road) east Sidewalk between Oakview Drive and Capital Beltway (I-495) Ramp 28A merge lane
  - Surface is unpaved and concrete sidewalk is completely missing along west and east sides of 9801 MD 650 (New Hampshire Avenue) (service road).
  - There is no sidewalk ramp along the west side of New Hampshire Avenue (service road) near 9801 MD 650 (New Hampshire Avenue) (service road), despite there being a connection to the sidewalk along southbound mainline New Hampshire Avenue across the street.
- New Hampshire Avenue (west) sidewalk at MD 650 (New Hampshire Avenue) and Capital Beltway (I-495) southbound Off-ramp
  - Slope of pedestrian access ramp to 9801 MD 650 (New Hampshire Avenue) (service road) is estimated to be greater than 8%.

It should be noted that a detailed ADA study was not completed as part of this study.

#### 4.4 LIGHTING CONDITIONS

Existing lighting infrastructure along the MD 650 (New Hampshire Avenue) study corridor appeared to be adequate (based on field observations) in the southern sections of the study limits. However, the absence of lighting in portions of the northern part of the study corridor was of particular concern because it also limited the ability of motorists to safely detect the presence of crossing pedestrians at nightfall. There is a lack lighting infrastructure at the following locations along MD 650 (New Hampshire Avenue):

- MD 650 (New Hampshire Avenue) east and west sides between Oakview Drive and Capital Beltway (I-495)
- MD 650 (New Hampshire Avenue) east and west sides under Capital Beltway (I-495) overpass bridge
- Crosswalk at MD 650 (New Hampshire Avenue) northbound and the ramp to Capital Beltway (I-495) Inner and Outer Loops.
- Crosswalk at MD 650 (New Hampshire Avenue) northbound and the ramp from Capital Beltway (I-495) Inner loop. However, it should be noted that lighting is provided in advance of the crosswalk on the ramp.
- Crosswalk at MD 650 (New Hampshire Avenue) southbound and the ramp from Capital Beltway (I-495) Inner loop.

- MD 650 (New Hampshire Avenue) west side between Northampton Drive and Oakview Drive (corridor lighting).
- Crosswalk at MD 650 (New Hampshire Avenue) channelized southbound right turn at MD 320 (Piney Branch Road).
- Crosswalk at MD 320 (Piney Branch Road) eastbound right turn at MD 650 (New Hampshire Avenue)
- Pedestrian refuge island at the northwest corner of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road)

## 4.5 ROADWAY SIGNING

Signing along MD 650 (New Hampshire Avenue) within the study corridor limits was visually assessed for visibility, clarity, appropriateness, and orientation relative to approaching traffic. Most of the signing throughout the study area was in a good overall condition but there were a few road signs that required replacement, relocation, or removal. These signs were located at:

- MD 650 (New Hampshire Avenue) Median between MD 320 (Piney Branch Road) and Southampton Drive
  - Posted speed limit for MD 650 (New Hampshire Avenue) northbound was not reduced from 40 mph to 35 mph even though the posted speed limit on the other segments of the study area was recently reduced to 35 mph. Additionally, this roadway segment is on a steep incline and potentially slow down a vehicle unless the driver accelerates.
- MD 650 (New Hampshire Avenue) at Metzerott Road
  - Metzerott Road street sign attached to traffic signal pole is faded and barely visible to drivers along MD 650 (New Hampshire Avenue) due to its location - at west sidewalk. Additionally, there is an overhead Metzerott Road street sign on the traffic signal mast arm at the intersection which makes the signing on the sidewalk redundant.
- MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road
  - The standalone signpost should be removed - WMATA Bus Stop 2000305 on MD 650 (New Hampshire Avenue) west sidewalk.
  - The stop sign on the Fox Road (service road) northbound approach to Adelphi Road does not align with the stop line, potentially creating confusion as to where motorists should stop.
- Service Road along northbound MD 650 (New Hampshire Avenue) between Dilston Road / Adelphi Road and Oakview Drive
  - Madre Street sign is not secured and hanging off of utility pole number 805428.

## 4.6 SIGNALIZATION

Issues related to signal operations at signalized intersections along the study corridor were identified through visual analysis. No obvious or apparent concerns were observed with respect to the signal operations at three of the five signalized intersections within the study limits. However, potential signalization issues are detected at two intersections. They are as follows:

- MD 650 (New Hampshire Avenue) at Metzerott Road
  - A pedestrian was left stranded at the north leg MD 650 (New Hampshire Avenue) median while completing a crossing indicating a need to review pedestrian crossing times and clearance intervals at intersection.
- MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road
  - Signal phasing serving eastbound (i.e., Dilston Road) and westbound (i.e., Adelphi Road) intersection approaches is concurrent. That is, all eastbound and westbound movements share the same green time as well as the same crossing time with the crosswalk along the south intersection leg. There are conflicts between westbound vehicles turning left, eastbound through traffic, eastbound vehicles turning right, and pedestrians crossing the south leg of the intersection.

## 4.7 SIGHT DISTANCE

It should be noted that a formal sight distance evaluation/measurement was not completed as part of this study. Sight lines between pedestrians crossing the channelized southbound right turn lane at MD 320 (Piney Branch Road) and oncoming southbound right turning vehicles appear to be limited by the retaining wall on the west side of MD 650 (New Hampshire Avenue) southbound approach.

## 4.8 ROADWAY OPERATIONS

### 4.8.1 Driver Behavior

Between 33,000 and 67,00 vehicles are estimated to travel along the MD 650 (New Hampshire Avenue) corridor daily. The following observations made by the field audit team relating to driver behavior include the following:

- During the AM and PM peaks, there is significant queuing along northbound MD 650 (New Hampshire Avenue), which extend from the on-ramp to Capital Beltway (I-495) Inner and Outer Loops, back through Oakview Drive, and toward Adelphi Road. This traffic congestion appears to be influenced by heavy congestion on Capital Beltway (I-495), heavy volumes of northbound MD 650 (New Hampshire Avenue) traffic seeking to access Capital Beltway (I-495) via the on-ramp, and last-minute lane changes along northbound Capital Beltway (I-495) by motorists attempted to "cut-in" to the outermost northbound lane to access the on-ramps.
- Vehicles were observed not coming to a full and complete stop on the Fox Road (service road) stop-controlled approach at Adelphi Road, immediately parallel to MD 650 (New Hampshire Avenue). This is concerning due to the mix of signalized and stop-controlled approaches in immediate proximity to one another, especially considering the dual left turn lanes from southbound MD 650 (New Hampshire Avenue) that can conflict with northbound right turning lanes from Fox Road (service road).
- Vehicles were observed taking several turns at high speeds to/from MD 650 (New Hampshire Avenue) which is a potential safety issue because of potential conflicts with pedestrians:
  - Northbound ramp to Capital Beltway (I-495) eastbound/westbound Inner and Outer loops

- Northbound ramp from Capital Beltway (I-495) eastbound Inner loop
- Southbound ramp to Capital Beltway (I-495) eastbound Inner loop
- Eastbound right at Northampton Drive
- Southbound right at Southampton Drive
- Northbound left at Southampton Drive
- Southbound right at MD 320 (Piney Branch Road)

#### 4.8.2 Pedestrian Behavior

During the field audit assessment, pedestrians were observed crossing MD 650 (New Hampshire Avenue) at unmarked and midblock crosswalks throughout the study corridor. In addition, there were a few areas within the study limits where the location of crossing facilities placed pedestrian safety at risk due to limited motorist sight distance, motorist behavior, and/or miscellaneous hazards. These areas included:

- MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road) Northwest crosswalk
  - Limited pedestrian visibility at crosswalk for southbound approach vehicles turning right (i.e., westbound) onto MD 320 (Piney Branch Road).
- MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road) Southwest crosswalk
  - Limited pedestrian visibility at crosswalk for eastbound approach vehicles turning right (i.e., southbound) onto MD 650 (New Hampshire Avenue).
- MD 650 (New Hampshire Avenue) at Southampton Drive west intersection leg crossing
  - Limited visibility for southbound New Hampshire Avenue right turning vehicles seeing pedestrians crossing Southampton Drive from north to south, due to an existing berm and landscaping. A larger curb radius in the northwest corner of the intersection, and existing downward slope along southbound New Hampshire Avenue, allow for vehicle to make right turns at higher speeds. This increases the risk potential when turning vehicles conflict with crossing pedestrians.

#### 4.8.3 Bicyclist Behavior

Under the existing conditions along MD 650 (New Hampshire Avenue), bicyclists are permitted to share the full lane with motorists in both directions based on posted signs. However, many bicyclists using the corridor appeared to prefer using the sidewalks, likely due to the heavy traffic volumes and higher speeds in New Hampshire Avenue travel lanes.

### 4.9 UTILITY POLES AND SIGNPOST CONDITIONS

The condition of utility poles and signposts were visually inspected throughout the study corridor to determine whether they were structurally sound or required urgent replacement. The structural integrity of most utility poles and signposts along MD 650 (New Hampshire Avenue) was satisfactory but there were a few utility poles and signposts that appeared to be in critical condition. These utility poles were located at:

- MD 320 (Piney Branch Road) north sidewalk near MD 650 (New Hampshire Avenue) and MD 320 (Piney Branch Road) eastbound.
  - Wooden utility pole located approximately 150 feet from intersection is eroded at base.
- MD 650 (New Hampshire Avenue) Median at Southampton Drive

- Wooden signpost for “Metzerott Road / University of Maryland Next Signal” sign is not anchored to ground on one side and sways in the wind.
- MD 650 (New Hampshire Avenue) Median between Metzerott Road and Northampton Drive
  - Wooden signpost is not anchored to ground on one side and sways in the wind.
- Service Road along northbound MD 650 (New Hampshire Avenue) between Dilston Road / Adelphi Road and Oakview Drive
  - Wooden utility pole on west sidewalk (approximately 250 feet from Adelphi Road) is broken at the mid-section of pole and leaning east towards Madre Street

#### 4.10 OTHER OBSERVATIONS

There were several miscellaneous hazards along MD 650 (New Hampshire Avenue) which could not be clearly categorized but posed safety risks to pedestrians, bicyclists, and motorists. These hazards included:

- MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road) Pedestrian Refuge Island
  - Old Detour sign is lying near curbside in rightmost lane on MD 650 (New Hampshire Avenue) southbound.
- MD 650 (New Hampshire Avenue) west sidewalk at MD 650 (New Hampshire Avenue) and Metzerott Road
  - Cables exposed at the base of traffic signal pole at southwest intersection corner
- MD 650 (New Hampshire Avenue) east sidewalk between Metzerott Road and Northampton Drive.
  - Old utility pole lying along sidewalk (approximately 300 feet from MD 650 (New Hampshire Avenue) at Northampton Drive.
  - Old road sign lying on sidewalk (approximately 75 feet from MD 650 (New Hampshire Avenue) at Northampton Drive.
- Northampton Drive north sidewalk at MD 650 (New Hampshire Avenue) and Northampton Drive
  - Bus shelter missing at WMATA bus stop 2000269
- MD 650 (New Hampshire Avenue) Median between Northampton Drive and Fox Street
  - Traffic drum randomly placed near curb edge along leftmost lane on MD 650 (New Hampshire Avenue) southbound approximately 120 feet from MD 650 (New Hampshire Avenue) at Fox Street intersection.
- New Hampshire Avenue east sidewalk between MD 650 (New Hampshire Avenue) northbound at Capital Beltway (I-495) eastbound/westbound On-ramp and MD 650 (New Hampshire Avenue) at Capital Beltway (I-495)
  - Tree growing from storm drain near road edge along rightmost lane on MD 650 (New Hampshire Avenue) northbound

## 5.0 SUMMARY OF RECOMMENDED IMPROVEMENTS

Based on field review, observations and analysis of available data, potential improvements were identified that could address safety issues identified within the New Hampshire Avenue study corridor. These recommendations are compiled by timeframe (expected time to completed from point of project initiation), including Short-Term (0-12 months) and Long-Term (12+ months), as well as by relative cost, including low (< \$100k), medium (\$100k - \$250k) and high (>\$250k).

Recommendations are presented in **Table 13** through **Table 28**. Each table represents a major intersection or road segment along MD 650 (New Hampshire Avenue), beginning with the MD 320 (Piney Branch Road) and ending with the I-495 interchange at the north end of the study area.

**Appendix C** summarizes the observations made during the safety field walk audit completed on March 29, 2022.

**Table 13: Recommendations for MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road)**

Location 1: MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road) – Signalized Intersection				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
1.1	The pavement at the entrance to the Northwest Branch Trail of the Anacostia Tributary Trail System is damaged and covered in foliage along the north side of Piney Branch Road, west of New Hampshire Avenue.	Clear foliage and consider repaving the entrance to the Northwest Branch Trail, located along the north side of Piney Branch Road, west of New Hampshire Avenue. (MDOT/PGCDPW&T)	Short-Term	Low
1.2	Missing sidewalk section within the pedestrian refuge island at northwest corner of the intersection of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road).	Repair or reconstruct the sidewalk at the northwest corner of the intersection of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road). (MDOT/PGCDPW&T)	Short-Term	Low
1.3	There is a damaged utility pole located 25 feet west of the northwest crosswalk at MD 650 (New Hampshire Avenue) and MD 320 (Piney Branch Road).	Contact PEPCO to perform structural analysis and replace/reinforce wood utility pole at northwest, as necessary. Add reflective warning marker (OM-3L) to the utility pole. (PSI has notified PEPCO)	Short-Term	Low
1.4	Pedestrian crosswalk has poor visibility between motorists and pedestrians at northwest and southwest corners of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road), crossing the southbound right and eastbound right vehicle movements, respectively.	Along the southbound MD 650 (New Hampshire Avenue) and the eastbound MD 320 (Piney Branch Road) approaches, replace the existing advance pedestrian warning sign configurations by removing the existing “AHEAD” (W16-9P) plaque and replaced with “ACROSS RAMP” plaque to warn incoming turning vehicles of the pedestrian crossing across channelized turn. (MDOT/PGCDPW&T)	Short-Term	Low
1.5	Pedestrian crosswalk has poor visibility between motorists and pedestrians at northwest and southwest corners of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road), crossing the southbound right and eastbound right vehicle movements, respectively.	If feasible, install flex posts or quick curb to effectively narrow and/or tighten the channelized right turn lanes from southbound MD 650 (New Hampshire Avenue) and eastbound MD 320 (Piney Branch Road) to slow incoming vehicles and reduce pedestrian crossing distance. This could also include relocation of crosswalk and pedestrian ramps to shorten crossing distance and improve sight distance. (MDOT/PGCDPW&T)	Short-Term	Medium

1.6	Pedestrian crosswalk has poor visibility between motorists and pedestrians at northwest and southwest corners of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road), crossing the southbound right and eastbound right vehicle movements, respectively.	If feasible, remove/reconstruct channelized right turn lanes in the northwest and southwest corners of the intersection to improve sight distance, such that right turning vehicles must come to the signal to complete their turns. Design should also include improved lighting of pedestrian crossings and refuge islands. (MDOT/PGCDPW&T)	Long-Term	High
1.7	Fallen streetlight pole lying on the ground on the northwest channelizing island along MD 320 (Piney Branch Road) needs to be removed	Contact PEPCO to remove streetlight pole lying on the ground on the northwest channelizing island along MD 320 (Piney Branch Road). (PSI has notified PEPCO)	Short-Term	Low
1.8	Fallen detour sign (W20-2) located at the northwest channelizing island at MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road).	Remove detour sign (W20-2) located at the northwest channelizing island at MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road). (MDOT/PGCDPW&T)	Short-Term	Low
1.9	Pedestrian APS push button located at the southwest pedestrian refuge island of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road) is not operating as designed (it does not produce sound nor vibrate).	Repair or replace APS push button located at the southwest pedestrian refuge island of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road). (PGCDPW&T)	Short-Term	Low
1.10	Crosswalk markings for pedestrians crossing the eastbound right movement are partially faded or missing at the southwest corner of MD 650 (New Hampshire Avenue) and MD 320 (Piney Branch Road) intersection. All crosswalks also lack high visibility continental crosswalk markings.	Repaint all crosswalks with high visibility continental style crosswalks markings at the intersection of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road). (MDOT/PGCDPW&T)	Short-Term	Low
1.11	Pothole on southbound approach of MD 650 (New Hampshire Avenue) at Piney Branch Road poses a safety risk to motorists.	Fill pothole on southbound MD 650 (New Hampshire Avenue). (MDOT/PGCDPW&T)	Short-Term	Low
1.12	Every approach's existing red clearance time (2 seconds) does not meet the red clearance interval time calculated for the respective approach of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road). This was calculated using the NCHRP Traffic Signal Timing Manual, adopted by FHWA.	Perform a full yellow change and red clearance interval analysis, and if feasible, change the timing to reflect timings calculated using NCHRP Traffic Signal Timing Manual. (MDOT/PGCDPW&T)	Short-Term	Low

**Table 14: Recommendations for MD 650 (New Hampshire Avenue) between Piney Branch Road and Southampton Drive**

Location 2: MD 650 (New Hampshire Avenue) between Piney Branch Road and Southampton Drive – Road Segment				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
2.1	Spalling on sidewalk surface, abundance of foliage and dead plant material, and noncompliant curb height along MD 650 (New Hampshire Avenue) west sidewalk between MD 320 (Piney Branch Road) and Southampton Drive.	Repair or reconstruct the sidewalk, grass, and curb on the west side of MD 650 (New Hampshire Avenue) between MD 320 (Piney Branch Road) and Southampton Drive. (MDOT/PGCDPW&T)	Long-Term	Medium
2.2	Sidewalk is missing on east side of MD 650 (New Hampshire Avenue) between MD 320 (Piney Branch Road) and Southampton Drive.	Evaluate the feasibility of installing new sidewalk along the east side of MD 650 (New Hampshire Avenue) between Ruatan Street and Metzert Road to provide connectivity to the existing sidewalks at these locations. Install sidewalk if feasible. Evaluate feasibility of installing marked pedestrian crosswalks on the north and south legs of New Hampshire Avenue at Piney Branch Road, associated pedestrian ramps, and Accessible Pedestrian Signals/Countdown Pedestrian Signals (APS/CPS) in conjunction with sidewalk installation. (MDOT/PGCDPW&T)	Long-Term	High
2.3	Obstructed sidewalk on west side of MD 650 (New Hampshire Avenue) between MD 320 (Piney Branch Road) and Southampton Drive. Obstructions include debris, vegetation, and dead plant material.	Begin monthly mowing, trimming, and clearing, especially during spring and summer months, to ensure unobstructed pedestrian travel way over the sidewalk on the west side of New Hampshire Avenue between Piney Branch Road and Southampton Drive. (MDOT/PGCDPW&T)	Short-Term	Low
2.4	Obstructed sidewalk on west side of MD 650 (New Hampshire Avenue) between MD 320 (Piney Branch Road) and Southampton Drive. Obstructions include retaining wall, utility poles, and sign posts.	Investigate redesign alternatives of 5' or wider sidewalk on west side of MD 650 (New Hampshire Avenue) between MD 320 (Piney Branch Road) and Southampton Drive. Alternative analysis could consider relocation of the adjacent retaining wall, MD 650 lane width and/or median width reductions, or removal of a travel lane to allow for wider, ADA-compliant sidewalks and grass buffer. (MDOT/PGCDPW&T)	Long-Term	High

2.5	There is a 40-mph posted speed limit sign (R2-1) on northbound MD 650 (New Hampshire Avenue), approximately 300 feet north of the intersection at MD 320 (Piney Branch Road). This is not uniform with the 35-mph posted speed limit throughout the study corridor.	Verify that the speed limit is 35 mph along MD 650 (New Hampshire Avenue) northbound of MD 320 (Piney Branch Road). If not, reduce speed limit to 35mph. (MDOT/PGCDPW&T)	Short-Term	Low
2.6	Artwork is in need of rehabilitation on retaining wall on west side of MD 650 (New Hampshire Avenue) between MD 320 (Piney Branch Road) and Southampton Drive.	Reach out to art group to repair artwork at this location. (MDOT/PGCDPW&T)	Short-Term	Low
2.7	Noncompliant mounted height of speed limit sign (R2-1) along the west sidewalk of MD 650 (New Hampshire Avenue), approximately 250 feet north of the intersection of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road). This sign is low hanging and limits pedestrian vertical clearance under the sign.	Raise the speed limit sign (R2-1) along the west side of MD 650 (New Hampshire Avenue) approximately 250 feet north of the intersection of MD 650 (New Hampshire Avenue) at MD 320 (Piney Branch Road) to provide sufficient vertical clearance for pedestrians on sidewalk per MUTCD, Maryland, and Prince George's County Standards. (MDOT/PGCDPW&T)	Short-Term	Low

**Table 15: Recommendations for MD 650 (New Hampshire Avenue) at Southampton Drive**

Location 3: MD 650 (New Hampshire Avenue) at Southampton Drive – Side Street Stop-Controlled Intersection				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
3.1	Crosswalk pavement markings and stop bar are missing at the eastbound approach of MD 650 (New Hampshire Avenue) and Southampton Drive.	Paint high visibility continental crosswalk markings and stop bar between existing curb ramps at the eastbound approach of MD 650 (New Hampshire Avenue) at Southampton Drive. (MDOT/PGCDPW&T)	Short-Term	Low
3.2	Vehicles make right turns onto Southampton Drive from southbound MD 650 (New Hampshire Avenue) at high speeds.	If feasible, install gore pavement markings and flexible posts to tighten right turning radius and decrease speed of vehicles turning right from southbound MD 650 (New Hampshire Avenue) at Southampton Drive. (MDOT/PGCDPW&T)	Short-Term	Low
3.3	Vehicles make right turn onto Southampton Drive from southbound MD 650 (New Hampshire Avenue) at high speeds.	If feasible, install permanent curb bulb out to tighten right turning radius and decrease speed of vehicles turning right from southbound MD 650 (New Hampshire Avenue) at Southampton Drive. (MDOT/PGCDPW&T)	Long-Term	Medium
3.4	Vehicles turning left onto northbound MD 650 (New Hampshire Avenue) from eastbound Southampton Drive experience difficulty finding gaps in traffic to complete their turns, especially during peak periods at MD 650 (New Hampshire Avenue), Southampton Drive west leg.	Evaluate intersection crosshatch pavement markings within intersection and “Do Not Block Intersection” signs (R10-7) for southbound and northbound approaches at MD 650 (New Hampshire Avenue) at Southampton Drive. (MDOT/PGCDPW&T)	Long-Term	Low
3.5	Vehicles turning left onto northbound MD 650 (New Hampshire Avenue) from eastbound Southampton Drive experience difficulty finding gaps in traffic to complete their turns, especially during peak periods at MD 650 (New Hampshire Avenue), Southampton Drive west leg.	Perform full signal warrant analysis at MD 650 (New Hampshire Avenue) at Southampton Drive and install signal if warranted. If signal not warranted, develop other access management practices such as a “Maryland T” type intersection. (MDOT/PGCDPW&T)	Long-Term	High

**Table 16: Recommendations for MD 650 (New Hampshire Avenue) between Southampton Drive and Metzerott Road**

Location 4: MD 650 (New Hampshire Avenue) between Southampton Drive and Metzerott Road – Road Segment				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
4.1	Sidewalk is cracked and uneven along the west side of MD 650 (New Hampshire Avenue) between Southampton Drive and Metzerott Road.	Repair/reconstruct sidewalk along the west side MD 650 (New Hampshire Avenue) between Southampton Drive and Metzerott Road. (MDOT/PGCDPW&T)	Long-Term	Medium
4.2	There is missing sidewalk on the east side of MD 650 (New Hampshire Avenue) between Southampton Drive and Metzerott Road	Evaluate the feasibility of installing new sidewalk along the east side of MD 650 (New Hampshire Avenue) between Ruatan Street and Metzerott Road to provide connectivity to the existing sidewalks at these locations. Install sidewalk if feasible. Evaluate feasibility to install pedestrian crossing at Southampton Drive in conjunction with sidewalk installation. (MDOT/PGCDPW&T)	Long-Term	High

**Table 17: Recommendations for MD 650 (New Hampshire Avenue) at Metzerott Road**

Location 5: MD 650 (New Hampshire Avenue) at Metzerott Road – Signalized Intersection				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Time frame	Relative Cost
5.1	Street name is not visible on sign located on utility pole on MD 650 (New Hampshire Avenue) at Metzerott Road	Remove street name sign located on utility pole on MD 650 (New Hampshire Avenue) at Metzerott Road. There are existing street name signs on the mast arms that are sufficient. (MDOT/PGCDPW&T)	Short-Term	Low
5.2	Cables are exposed at transformer base of traffic signal at the northwest corner of MD 650 (New Hampshire Avenue) and Metzerott Road.	Fix the exposed traffic signal cables at the transformer base of the traffic signal pole at the northwest corner of MD 650 (New Hampshire Avenue) and Metzerott Road. (MDOT/PGCDPW&T)	Short-Term	Low
5.3	Existing crosswalks are missing high visibility continental style pavement markings on the east and north legs of the intersection	Restripe crosswalks on the east and north legs of the intersection with high visibility continental style crosswalk markings. (MDOT/PGCDPW&T)	Short-Term	Low
5.4	The existing red clearance time of the westbound approach (3 seconds) does not meet the red clearance interval time calculated for this approach. This was calculated using the NCHRP Traffic Signal Timing Manual, adopted by FHWA.	Perform a full yellow change and red clearance interval analysis, and if feasible, change the timing to reflect timings calculated using NCHRP Traffic Signal Timing Manual. (MDOT/PGCDPW&T)	Short-Term	Low
5.5	The southwest corner near the pedestrian ramp and push button is missing lighting.	Install a light pole at the southwest corner of MD 650 (New Hampshire Avenue) at Metzerott Road. (MDOT/PGCDPW&T)	Long-Term	Medium
5.6	Object marker sign (OM1-3) missing from north side median.	Install object marker sign and small post on the north side median, in from the of the existing keep right sign (R4-7). (MDOT/PGCDPW&T)	Long-Term	Low
5.7	There is a conflict between southbound vehicles take a permissive left turn over three lanes of traffic and an active pedestrian crossing. There was at least one fatal collision at this intersection.	If feasible, modify the signal phasing for the southbound left turn from permissive/protected to protected only. (MDOT/PGCDPW&T)	Long-Term	Medium

**Table 18: Recommendations for MD 650 (New Hampshire Avenue) between Metzerott Road and Northampton Drive**

Location 6: MD 650 (New Hampshire Avenue) between Metzerott Road and Northampton Drive – Road Segment				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
6.1	Sidewalk is cracked and uneven along MD 650 (New Hampshire Avenue) west side between Metzerott Road and Northampton Drive.	Reconstruct/repair sidewalk on west side of MD 650 (New Hampshire Avenue) between Metzerott Road and Northampton Drive. (MDOT/PGCDPW&T)	Long-Term	Medium to High
6.2	Sidewalk is cracked and uneven along MD 650 (New Hampshire Avenue) east side between Metzerott Road and Northampton Drive.	Reconstruct/repair sidewalk on east side of MD 650 (New Hampshire Avenue) between Metzerott Road and Northampton Street (MDOT/PGCDPW&T)	Long-Term	Medium to High
6.3	Fallen sign (R4-7) on the east side of MD 650 (New Hampshire Avenue) approximately 750 feet north of Metzerott Road.	Remove sign (R4-7) fallen on the ground on the east side of MD 650 (New Hampshire Avenue) approximately 750 feet north of Metzerott Road. (MDOT/PGCDPW&T)	Short-Term	Low
6.4	Driveway to access 7-Eleven is cracked and ramps currently non-ADA compliant and are diagonally directed on the west side of MD 650 (New Hampshire Avenue), approximately 150 feet south of Northampton Drive.	Reconstruct driveway apron to include ADA compliant pedestrian crossing. Evaluate feasibility of raised pedestrian crossing. (MDOT/PGCDPW&T/Property Owner)	Long-Term	Medium

**Table 19: Recommendations for MD 650 (New Hampshire Avenue) at Northampton Drive**

Location 7: MD 650 (New Hampshire Avenue) at Northampton Drive – Signalized Intersection				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
7.1	All pedestrian crossings are missing ADA-compliant curb ramps and have missing or faded crosswalk and stop line pavement markings at MD 650 (New Hampshire Avenue) at Northampton Drive.	Install ADA-compliant ramps, high visibility continental crosswalk markings for all pedestrian crossings, and stop lines at MD 650 (New Hampshire Avenue) at Northampton Drive. Incorporate these improvements into the existing MDOT/MCDOT joint intersection improvement plan at MD 650 and Northampton Drive. (MDOT/MCDOT)	Long-Term	Medium
7.2	Pedestrian crossing is missing an ADA-compliant pedestrian ramp or crossing at median island on the west leg of MD 650 (New Hampshire Avenue) at Northampton Drive. There is also a storm drain on the west leg median within the existing signalized pedestrian crossing.	Evaluate feasibility of ramp and crosswalk improvement on the west leg of MD 650 (New Hampshire Avenue) and Northampton Drive. This design must evaluate the conflict of pedestrian crossing with the storm drains located in the median on the west leg, between the existing north-south pedestrian crossing signals. Incorporate these improvements into the existing MDOT/MCDOT joint intersection improvement plan at MD 650 and Northampton Drive. (MDOT/MCDOT)	Long-Term	Medium
7.3	All pedestrian crossings are missing ADA-compliant APS push buttons at MD 650 (New Hampshire Avenue) at Northampton Drive.	Install pedestrian bush buttons (APS) at all pedestrian crossings of MD 650 (New Hampshire Avenue) at Northampton Drive. Incorporate these improvements into the existing MDOT/MCDOT joint intersection improvement plan at MD 650 and Northampton Drive. (MDOT/MCDOT)	Long-Term	Medium
7.4	Crosswalks are not sufficiently lit on the south and west legs of MD 650 (New Hampshire Avenue) at Northampton Drive.	Evaluate lighting and, if necessary, add lighting for the south and west leg crosswalks at MD 650 (New Hampshire Avenue) at Northampton Drive. Incorporate these improvements into the existing MDOT/MCDOT joint intersection improvement plan at MD 650 and Northampton Drive. (MDOT/MCDOT)	Long-Term	Medium

7.5	Pedestrian crossing is missing high visibility continental crosswalk markings and stop line at the intersection of Northampton Drive at Avenel Road.	Install continental style crosswalk markings and a stop line at the intersection of Northampton Drive at Avenel Road. Incorporate these improvements into the existing MDOT/MCDOT joint intersection improvement plan at MD 650 and Northampton Drive. (MDOT/MCDOT)	Short-Term	Low
7.6	Several potholes in roadway pose safety risk on Northampton Drive eastbound approach	Fill pothole on Northampton Drive eastbound approach. (MDOT/MCDOT)	Short-Term	Low
7.7	Steel plate poses safety risk to motorist along MD 650 (New Hampshire Avenue) northbound approach.	Replace steel plate with pavement surfacing along MD 650 (New Hampshire Avenue) northbound approach. (MDOT/MCDOT)	Short-Term	Low
7.8	Missing bus shelter at bus stop on the north side of Northampton Drive, west of Avenel Road.	Add/Replace bus shelter on the north side of Northampton Drive, west of Avenel Road. Consider County policy on placement of shelter. (MDOT/MCDOT/WMATA)	Short-Term	Low to Medium
7.9	Every approach's existing red clearance time (2 seconds) does not meet the red clearance interval time calculated for the respective approach. This was calculated using the NCHRP Traffic Signal Timing Manual, adopted by FHWA.	Perform a full yellow change and red clearance interval analysis, and if feasible, change the timing to reflect timings calculated using NCHRP Traffic Signal Timing Manual. (MDOT/MCDOT)	Short-Term	Low
7.10	There were multiple observations made of pedestrians crossing at unsignalized or unmarked areas near the intersection along MD 650 (New Hampshire Avenue). There are also a high number of crashes involving serious injuries at this intersection, some of which included pedestrians.	If feasible, redesign of entire intersection with the above recommendations. Also included should be the evaluation of a signalized crosswalk across the north leg of New Hampshire Avenue (with associated pedestrian ramps, CPS/APS, and pedestrian refuge island), along with the removal of the channelized right turn lane in the southwest corner, or the addition of a truck apron in the channelized right turn lane in the southwest corner to slow down turning vehicles. Coordinate improvements with those involved with the MD 650 BRT study, and the existing MDOT/MCDOT joint intersection improvement plan at MD 650 and Northampton Drive.. (MDOT/MCDOT)	Long-Term	High

**Table 20: Recommendations for MD 650 (New Hampshire Avenue) between Northampton Drive and Fox Street**

Location 8: MD 650 (New Hampshire Avenue) between Northampton Drive and Fox Street – Road Segment				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
8.1	Sidewalk is narrow (4' average width) and often obstructed by overgrown bushes and trees on east and west sides of MD 650 (New Hampshire Avenue) between Northampton Drive and Fox Street.	Begin monthly trimming during spring and summer months to ensure unobstructed pedestrian travel way over the sidewalk on the east and west side of New Hampshire Avenue between Northampton Drive and Fox Street. (MDOT/MCDOT)	Short-Term	Low
8.2	Sidewalk is narrow (4' average width) and often obstructed by overgrown bushes and trees on west side of MD 650 (New Hampshire Avenue) between Northampton Drive and Fox Street.	Evaluate design for improved pedestrian walkway on west side, including moving the guardrail either back away from the roadway or between the sidewalk and vehicle lanes to accommodate added sidewalk width, between Northampton Drive and Fox Street. Implement design if feasible. (MDOT/MCDOT)	Long-Term	High
8.3	Sidewalk is narrow (4' average width) and often obstructed by overgrown bushes and trees on east side of MD 650 (New Hampshire Avenue) between Northampton Drive and Fox Street.	Evaluate design for improved pedestrian walkway on east side, including moving the guardrail either back away from the roadway or between the sidewalk and vehicle lanes to accommodate added sidewalk width, between Northampton Drive and Fox Street. Implement design if feasible. (MDOT/MCDOT)	Long-Term	High

**Table 21: Recommendations for MD 650 (New Hampshire Avenue) at Fox Street**

Location 9: MD 650 (New Hampshire Avenue) at Fox Street – Side Street Stop-Controlled Intersection				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
9.1	Pedestrian ramp is not ADA-compliant at southeast corner of MD 650 (New Hampshire Avenue) at Fox Street.	Install ADA-compliant pedestrian ramp at southeast corner of MD 650 (New Hampshire Avenue) at Fox Street. (MDOT/MCDOT)	Short-Term	Low
9.2	Pedestrian ramp is missing 4' x 4' turning space behind the ramp per ADA-guidelines at northeast corner of MD 650 (New Hampshire Avenue) at Fox Street.	Install ADA-compliant transition ramp at the northeast corner of MD 650 (New Hampshire Avenue) at Fox Street. (MDOT/MCDOT)	Short-Term	Low
9.3	The existing pedestrian crossing is missing high visibility continental crosswalk markings at the east leg of MD 650 (New Hampshire Avenue) at Fox Street.	Install high visibility continental crosswalk markings at the east leg of MD 650 (New Hampshire Avenue) at Fox Street. (MDOT/MCDOT)	Short-Term	Low
9.4	Pedestrians observed repeatedly crossing at unmarked and unsignalized locations across MD 650 (New Hampshire Avenue) at Fox Street.	Perform signal and HAWK signal warrant analysis with protected signalized pedestrian crossing across MD 650 at Fox Street. If warranted, design signalized crossing. If not, develop safe pedestrian crossing alternatives for pedestrians. (MDOT/MCDOT)	Long-Term	High

**Table 22: Recommendations for MD 650 (New Hampshire Avenue) between Fox Street and Dilston Road / Delphi Road**

Location 10: MD 650 (New Hampshire Avenue) between Fox Street and Dilston Road / Adelphi Road – Road Segment				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
10.1	Sidewalk is narrow (4' average width) and often obstructed by overgrown bushes and trees on east and west sides of MD 650 (New Hampshire Avenue) between Fox Street and Dilston Road / Adelphi Road.	Begin monthly trimming during spring and summer months to ensure unobstructed pedestrian travel way over the sidewalk on the east and west side of New Hampshire Avenue between Fox Street and Dilston Road / Adelphi Road. (MDOT/MCDOT)	Short-Term	Low
10.2	Sidewalk is narrow (4' average width) and often obstructed by overgrown bushes and trees on west side of MD 650 (New Hampshire Avenue) between Fox Street and Dilston Road / Adelphi Road.	Evaluate design for improved pedestrian walkway on west side, including moving the guardrail either back away from the roadway or between the sidewalk and vehicle lanes to accommodate added sidewalk width, between Fox Street and Dilston Road / Adelphi Road. Implement design if feasible. (MDOT/MCDOT)	Long-Term	High

**Table 23: Recommendations for MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road**

Location 11: MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road – Signalized Intersection				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
11.1	There is insufficient landing space for meeting ADA compliance for pedestrian ramps and the definition of pedestrian refuge on the median island nose between MD 650 (New Hampshire Avenue) and Fox Road approaches in the southeast corner of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road.	Evaluate widening the median island nose between Fox Road and MD 650 (New Hampshire Avenue) approaches to create more space for pedestrian refuge. (MDOT/MCDOT)	Long-Term	Medium
11.2	There is uneven pavement surface and potholes pose a risk to motorists at high speed along MD 650 (New Hampshire Avenue) northbound approach.	Repair potholes and broken pavement along MD 650 (New Hampshire Avenue) northbound approach. (MDOT/MCDOT)	Short-Term	Low
11.3	There is a signpost with no sign panel adjacent to the southbound bus stop on the west side of MD 650 (New Hampshire Avenue), approximately 40 feet south of the intersection of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road.	Evaluate the previous sign located on the post and verify that it is no longer needed. If not needed, remove signpost located adjacent to the southbound bus stop west side of MD 650 (New Hampshire Avenue), approximately 40 feet south of the intersection of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road. (MDOT/MCDOT)	Short-Term	Low
11.4	Stop sign does not align with stop line on Fox Road approach at the intersection of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road.	Move stop sign next to stop bar on Adelphi Road (MDOT/MCDOT)	Short-Term	Low
11.5	Observations made at this intersection suggested a conflict between side street left turning vehicles and pedestrians, especially during congested peak hours. Due to the permissive left turn, westbound vehicles must find a gap in eastbound vehicular traffic and south side pedestrian crossing in order to complete the left turn. Many times, drivers will stop abruptly for pedestrians crossing or create a near-miss incident with either pedestrians or other vehicles as they attempt to rush through a gap in traffic. There is at least one	Add Right/Left turn yield to Pedestrian sign (R10-15) for Dilston Road and Adelphi Road approaches at the signalized intersection at MD 650 (New Hampshire Avenue). (MDOT/MCDOT)	Short-Term	Low

	serious injury crash involving a crossing pedestrian being hit by a westbound left turning vehicle.			
11.6	Observations made at this intersection suggested a conflict between side street left turning vehicles and pedestrians, especially during congested peak hours. Due to the permissive left turn, vehicles must find a gap in vehicular traffic and pedestrian crossing in order to complete the left turn. Many times, drivers will stop abruptly for pedestrians crossing or create a near-miss incident as they attempt to rush through a gap in traffic. There is at least one serious injury crash involving a crossing pedestrian being hit by a westbound left turning vehicle	Perform a signal phasing and timing analysis at this intersection. Evaluate the feasibility of changing the Adelphi Road/Dilston Road approach left turn phasing, and if feasible, change to split phasing or protected left turn phasing. This would reduce the number of conflicts with left turning vehicles. Would likely require further improvements to mitigate congestion such as lane configuration, signal timing, and signal phasing analyses. Evaluate feasibility and coordinate with recommended improvements included in the MD 650 BRT/RideOn study. (MDOT/MCDOT)	Long-Term	Medium
11.7	Observations made at this intersection suggested a conflict between northbound right turning vehicles from the Fox Road stop-controlled approach at Dilston Road / Adelphi Road and northbound right and southbound left turning vehicles from MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road. The stop-controlled approach so close to the signalized approaches creates the potential for unexpected conflicts for roadway users at this intersection.	Evaluate feasibility of alternative intersection/signal design, including the removal or signalization of Fox road approach at the intersection of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road. Pursue feasible alternatives. (MDOT/MCDOT)	Long-Term	High

**Table 24: Recommendations for MD 650 (New Hampshire Avenue) between Dilston Road / Adelphi Road and Oakview Drive**

Location 12: MD 650 (New Hampshire Avenue) between Dilston Road / Adelphi Road and Oakview Drive – Road Segment				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
12.1	There is discontinuation of sidewalk between the service road and mainline along MD 650 (New Hampshire Avenue) east side approximately 850 feet north of the intersection of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road.	Add sidewalk connection between the service road and mainline along MD 650 (New Hampshire Avenue) east side approximately 850 feet north of the intersection of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road. (MDOT/MCDOT).	Short-Term	Low to Medium
12.2	There is buildup of debris and dead plant material on the sidewalk along the east side of New Hampshire Avenue approximately 900 feet north of the intersection of MD 650 (New Hampshire Avenue) and Dilston Road / Adelphi Road.	Regularly cleanup sidewalk along MD 650 (New Hampshire Avenue) east sidewalk (MDOT/MCDOT)	Short-Term	Low
12.3	“Madre St” Street sign (D3-1) is not adequately secured to utility pole on MD 650 (New Hampshire Avenue) east side approximately 250 feet north of the intersection of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road.	Replace broken and falling signs on the utility pole on MD 650 (New Hampshire Avenue) east side approximately 250 feet north of the intersection of MD 650 (New Hampshire Avenue) at Dilston Road / Adelphi Road. (MDOT/MCDOT)	Short-Term	Low

**Table 25: Recommendations for MD 650 (New Hampshire Avenue) at Oakview Drive**

Location 13: MD 650 (New Hampshire Avenue) at Oakview Drive – Signalized Intersection				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
13.1	Pedestrian APS push button is not operating as designed (it does not produce sound nor vibrate) located at the northwest corner of MD 650 (New Hampshire Avenue) at Oakview Drive.	Install ADA-compliant pedestrian APS Push button at the northwest corner of MD 650 (New Hampshire Avenue) at Oakview Drive. (MDOT/MCDOT)	Short-Term	Low
13.2	There is a redundant pedestrian push button on the northeast corner of MD 650 (New Hampshire Avenue) at Oakview Drive.	Remove redundant pedestrian push button on the northeast corner of MD 650 (New Hampshire Avenue) at Oakview Drive. (MDOT/MCDOT)	Short-Term	Low
13.3	Existing crosswalk markings are parallel lines on all legs of the intersection	Restripe all crosswalk on all legs with high visibility continental style crosswalk markings. (MDOT/MCDOT)	Short-Term	Low
13.4	The existing crosswalk on the west leg is 75 feet with at MD 650 (New Hampshire Avenue) and Oakview Drive, which is significantly longer than the crosswalk on the east leg (50 feet).	Evaluate the feasibility of extending the sidewalk at the northwest corner of MD 650 (New Hampshire Avenue) at Oakview Drive to reduce the crosswalk distance on the west leg. If feasible, extend the sidewalk with ADA compliant ramps. The evaluation should include an Auto Turn analysis for southbound right and evaluation of a NTOR restriction for southbound right turning vehicles. (MDOT/MCDOT)	Long-Term	Medium
13.5	The bus stops at the northwest and southeast corners of MD 650 (New Hampshire Avenue) at Oakview Drive have the highest ridership numbers in the corridor. From AADT and turning movement count data, the intersection at Oakview Drive has the highest volume of traffic in the study corridor. In addition, there was one fatal crash involving a pedestrian at this intersection in 2018.	Evaluate existing signal timings and phasing at the New Hampshire Avenue/Oakview Drive intersection to determine the feasibility of implementing exclusive left-turn phasing (or split phasing) and shorter cycle lengths to reduce vehicle and pedestrian conflicts while not significantly degrading overall intersection traffic operations. If feasible, implement timing and phasing improvements. Coordinate analysis and recommendations with the MD 650 BRT Study team. (MDOT/MCDOT)	Long-Term	Medium

**Table 26: Recommendations for MD 650 (New Hampshire Avenue) between Oakview Drive and I-495 Overpass**

Location 14: MD 650 (New Hampshire Avenue) between Oakview Drive and I-495 Overpass – Road Segment				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
14.1	Lighting is not working under the I-495 overpass over MD 650 (New Hampshire Avenue) for travel ways or sidewalks.	Repair underpass lighting under the I-495 overpass over MD 650 (New Hampshire Avenue) for travel ways or sidewalks. (MDOT)	Long-Term	Medium
14.2	Streetlighting is missing along the east and west sides of MD 650 (New Hampshire Avenue) between Oakview and Capital Beltway (I495)	Perform lighting analysis and, if feasible, install lighting infrastructure along MD 650 (New Hampshire Avenue) north of Oakview Drive between Oakview and Capital Beltway (I-495). Evaluate feasibility with Montgomery County Lighting Plans. (MCDOT/MDOT)	Long-Term	High
14.3	There is a small tree in the storm drain on the east side of MD 650 (New Hampshire Avenue), approximately 250 feet north of the I-495 on-ramp from northbound MD 650 (New Hampshire Avenue).	Remove small tree in storm drain approximately 250 feet north of the I-495 on-ramp from northbound MD 650 (New Hampshire Avenue). (MDOT)	Short-Term	Low
14.4	There is missing sidewalk on Mt. Pisgah Road immediately south of the intersection of Oakview Drive and Mt. Pisgah Road.	Evaluate feasibility of sidewalk on Mt. Pisgah Road from Oakview Drive to Madre Street. Install sidewalk if feasible. It should be noted that while observations were made at this intersection, it was just outside of the official study corridor limits. (MDOT/MCDOT)	Long-Term	High
14.5	There is missing sidewalk on New Hampshire Avenue (service road) between Oakview Drive and Cottrell Terrace, west of MD 650 (New Hampshire Avenue). MD 650 currently does not have a sidewalk on the west side between Oakview Drive and the I-495 EB off-ramp, and New Hampshire Avenue (service road) is used as a parallel pedestrian travel way instead for the west side.	Evaluate feasibility of sidewalk on New Hampshire Avenue (service road) between Oakview Drive and Cottrell Terrace. (MDOT/MCDOT)	Long-Term	High

14.6	Pedestrian crossing is missing one ADA-compliant ramp on the west side and crosswalk markings across New Hampshire Avenue (service road), 40 feet south of Cottrell Terrace.	Provide ADA-compliant pedestrian ramp on west side and high visibility continental crosswalk markings on New Hampshire Avenue (service road), 40 feet south of Cottrell Terrace, to align with existing pedestrian ramp on east side. (MDOT/MCDOT)	Short-Term	Low
14.7	Pedestrian access has high slope and is not ADA-compliant between MD 650 (New Hampshire Avenue) and New Hampshire Avenue (service road), approximately 40 feet south of Cottrell Terrace.	If feasible, redesign and install pedestrian access with reduced slope onto New Hampshire Avenue (service road). (MDOT/MCDOT)	Short-Term	Medium
14.8	There is an unrepaired utility patch along Avenel Road on the east side in front of the storm drain 30 feet north of Moffett Road which poses a safety risk/hazard to motorist.	Repair the utility patch on Avenel Road on the east side in front of the storm drain 30 feet north of Moffett Road which poses a safety risk/hazard to motorist. (MDOT/MCDOT)	Short-Term	Low

**Table 27: Recommendations for MD 650 (New Hampshire Avenue) at Capital Beltway (I-495) Ramps**

Location 15: MD 650 (New Hampshire Avenue) at Capital Beltway (I-495) Ramps – Four On/Off Ramps				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
15.1	There is buildup of dirt and debris which may be a result of flooding on the pedestrian ramp on the east side of the I-495 EB off-ramp to northbound MD 650 (New Hampshire Avenue).	Perform drainage analysis on this area. If necessary, add catch basin near pedestrian ramp on the east side of the I-495 EB off-ramp to northbound MD 650 (New Hampshire Avenue). (MDOT)	Long-Term	Medium
15.2	Posted speed limit (R2-1) signage missing from Capital Beltway (I-495) EB off-ramp (28B) to SB MD 650.	Evaluate ramp design speed based on stopping sight distance for crosswalks and roadway curvature. Post speed limit on Capital Beltway (I-495) EB off-ramp (28B) to SB MD 650 based on evaluation. (MDOT)	Short-Term	Low
15.3	Posted speed limit (R2-1) signage missing from Capital Beltway (I-495) EB off-ramp (28A) to NB MD 650.	Evaluate ramp design speed based on stopping sight distance for crosswalks and roadway curvature. Post speed limit on Capital Beltway (I-495) EB off-ramp (28A) to NB MD 650 based on evaluation. (MDOT)	Short-Term	Low
15.4	Streetlight missing from unsignalized pedestrian crossings on Capital Beltway (I-495) ramps (3) with MD 650 (New Hampshire Avenue), south of the I-495 overpass: I-495 EB on-ramp from SB MD 650, I-495 EB off-ramp to NB MD 650 (28A), and I-495 EB/WB on-ramp from MD 650 NB.	Install lighting for unsignalized pedestrian crossings on Capital Beltway (I-495) ramps (3) with MD 650 (New Hampshire Avenue), south of the I-495 overpass: I-495 EB on-ramp from SB MD 650, I-495 EB off-ramp to NB MD 650 (28A), and I-495 EB/WB on-ramp from MD 650 NB. (MDOT/MCDOT)	Long-Term	Medium
15.5	Vehicles travel at high speeds along on- and off-ramps for I-495, near unsignalized pedestrian crossings.	Install flashing pedestrian warning signs (W11-2) to give emphasis to warning signs when pedestrians are present at the pedestrian crossings for I-495 ramps. (MDOT/MCDOT)	Long-Term	Medium

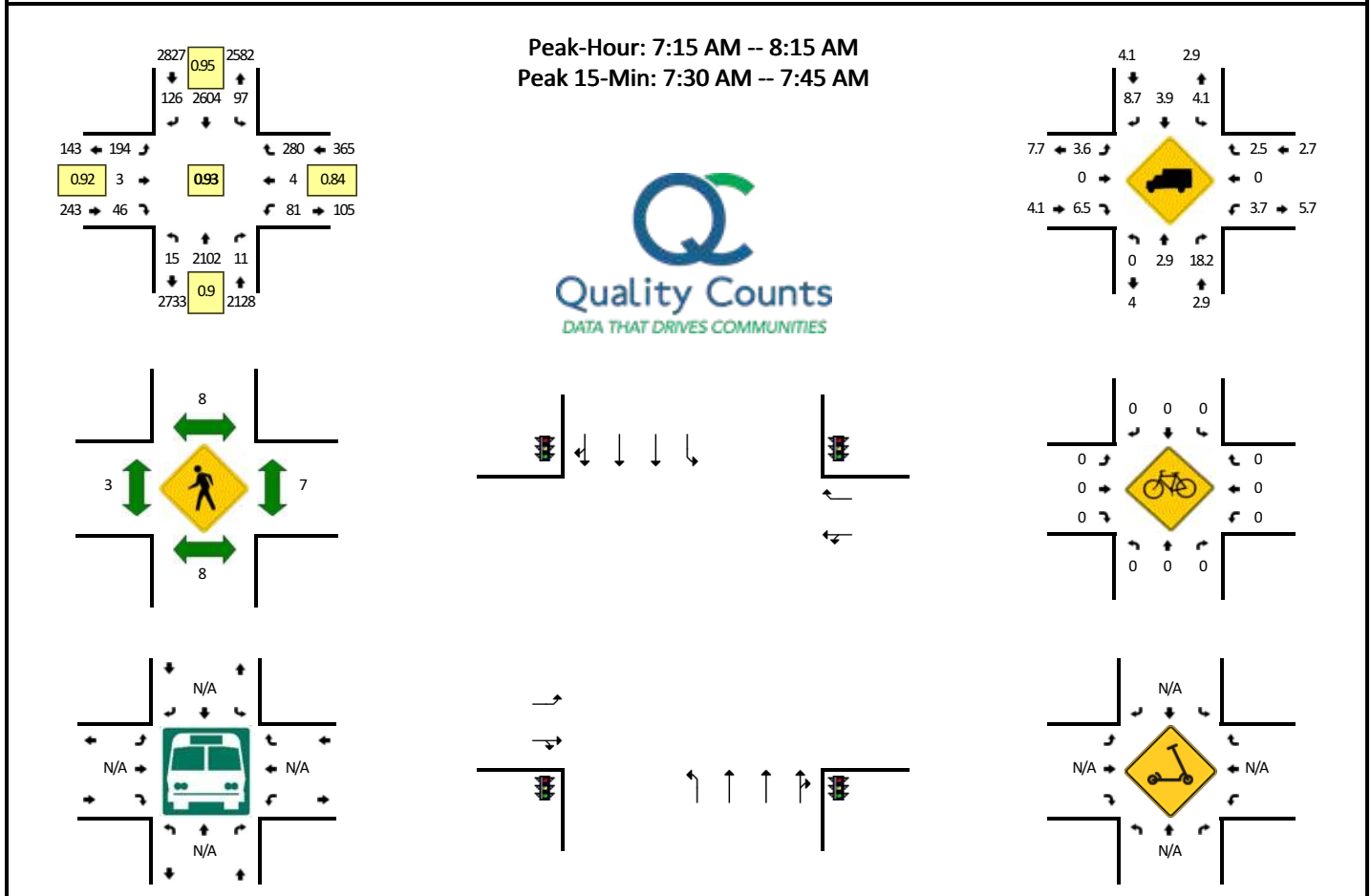
**Table 28: Recommendations for MD 650 (New Hampshire Avenue) Corridor**

Location 16: MD 650 (New Hampshire Avenue) Corridor – Between MD 320 (Piney Branch Road) and Capital Beltway (I-495)				
Issue No.	Safety Issue/Observations	Recommendation (Responsible Agency)	Timeframe	Relative Cost
16.1	During field visits, pedestrians observed crossing MD 650 (New Hampshire Avenue) at unmarked locations numerous times between Southampton Drive and Oakview Drive. There are also 8 crashes involving pedestrians resulting in serious injuries or fatalities in the most recent available 5-year crash data.	<p>Improve existing pedestrian facilities with high visibility crosswalk markings, ADA-compliant ramps, and APS at all signalized intersections. (MDOT/MCDOT/PGCDPW&amp;T)</p> <p>Consider implementing context sensitive median barriers throughout the corridor. (MDOT/MCDOT/PGCDPW&amp;T)</p> <p>Conduct a signal warrant analysis and consider adding further protected pedestrian crossing in order to provide further pedestrian crossing options, such as at Fox Street. (MDOT/MCDOT/PGCDPW&amp;T)</p> <p>Consider providing pedestrian travel way along both sides of MD 650 (New Hampshire Avenue) along the entire study corridor in order to improve pedestrian accessibility and comfort. (MDOT/MCDOT/PGCDPW&amp;T)</p>	Long-Term	High
16.2	There are currently “Bikes may use full lane” signs (R4-11) along MD 650 (New Hampshire Avenue) within the project area. The few bicyclists that use this roadway are often seen using the sidewalk instead, and community input suggests bicyclists do not feel safe traveling on the roadway.	Evaluate the feasibility of adding dedicated bicycle infrastructure. Off-street bike lanes may be preferred to separate bicycles from high-speed vehicles or peak hour congestion. Implement if feasible. Coordinate with recommended improvements included in the MD 650 BRT study. (MDOT/MCDOT/PGCDPW&T)	Long-Term	High
16.3	Several intersections along the MD 650 (New Hampshire Avenue) corridor are in need of signal phasing or timing analysis.	It is recommended to perform a complete signal phasing and timing study along the corridor in order to increase safety of all road users while not significantly exacerbating existing congestion and queueing. Consider use of shorter cycle lengths to decrease pedestrian delay. (MDOT/MCDOT/PGCDPW&T)	Long-Term	High

## Appendix A: Turning Movement Counts

**LOCATION:** 17 - New Hampshire Ave -- Oakview Dr  
**CITY/STATE:** Silver Spring, MD

**QC JOB #:** 15650633  
**DATE:** Tue, Dec 7 2021

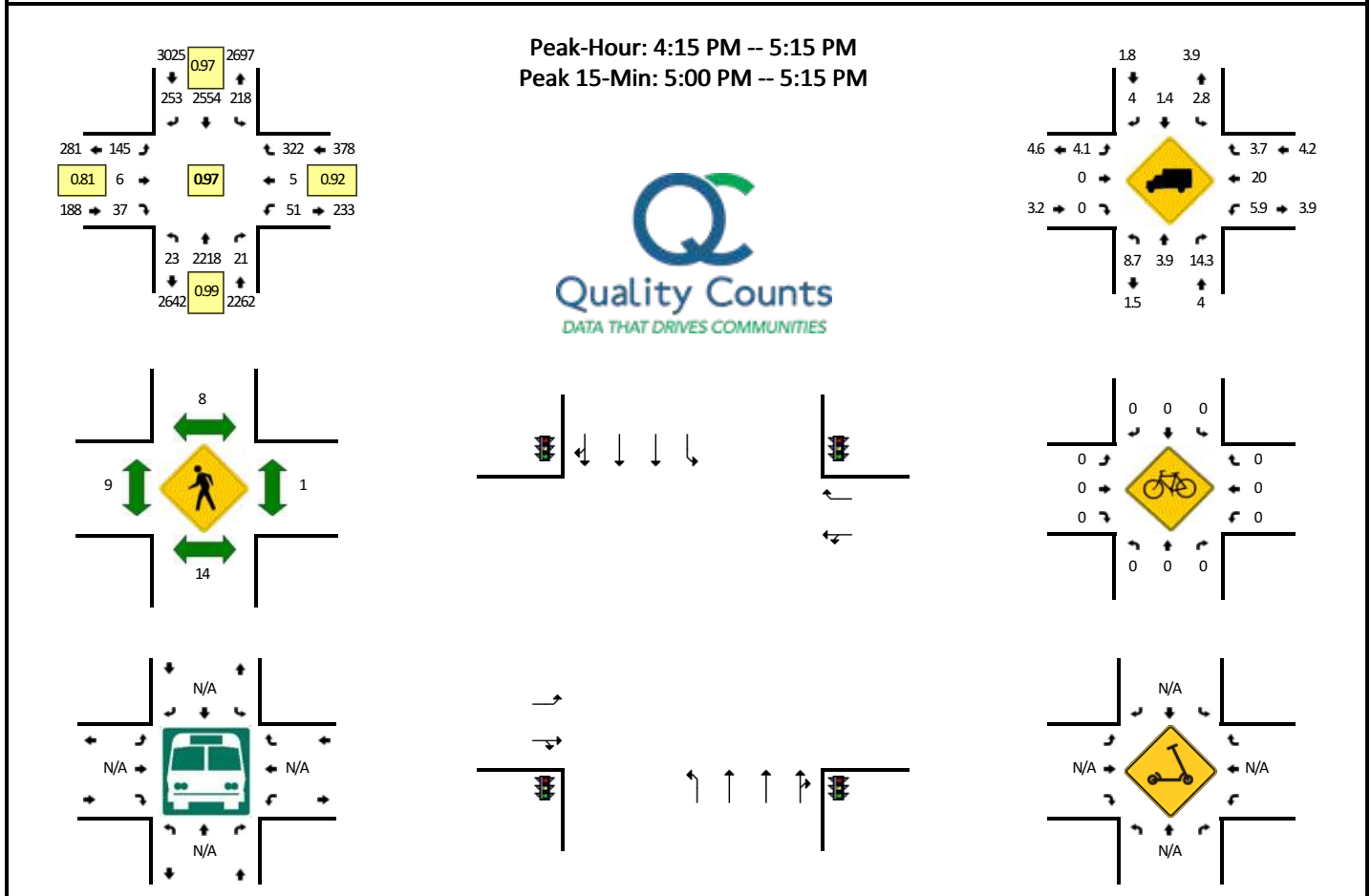


15-Min Count Period Beginning At	17 - New Hampshire Ave (Northbound)				17 - New Hampshire Ave (Southbound)				Oakview Dr (Eastbound)				Oakview Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	5	463	3	0	11	336	6	0	30	0	12	0	11	0	100	0	977	
6:15 AM	2	519	3	1	12	469	17	1	42	0	11	0	15	0	73	0	1165	
6:30 AM	0	479	2	0	13	458	9	2	41	3	12	0	11	1	69	0	1100	
6:45 AM	1	435	2	0	19	592	19	1	43	0	11	0	27	0	58	0	1208	4450
7:00 AM	6	463	2	0	20	608	22	0	41	2	9	0	16	1	82	0	1272	4745
7:15 AM	4	531	2	0	24	629	18	1	50	2	11	0	20	2	80	0	1374	4954
7:30 AM	4	586	3	1	31	689	24	1	46	1	12	0	19	1	75	0	1493	5347
7:45 AM	2	515	2	0	19	641	35	2	52	0	14	0	27	1	81	0	1391	5530
8:00 AM	3	470	4	1	17	645	49	2	46	0	9	0	15	0	44	0	1305	5563
8:15 AM	8	488	4	0	9	596	44	3	22	0	8	0	10	2	41	0	1235	5424
8:30 AM	4	400	4	0	19	403	32	2	31	6	11	0	22	7	48	0	989	4920
8:45 AM	4	393	5	0	21	497	50	3	52	7	8	0	14	11	51	0	1116	4645
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	2344	12	4	124	2756	96	4	184	4	48	0	76	4	300	0	5972	
Heavy Trucks	0	48	0		4	84	12		4	0	0		4	0	16		172	
Buses																		
Pedestrians		8				8				0				16			32	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

**Comments:**

**LOCATION:** 17 - New Hampshire Ave -- Oakview Dr  
**CITY/STATE:** Silver Spring, MD

**QC JOB #:** 15650634  
**DATE:** Tue, Dec 7 2021

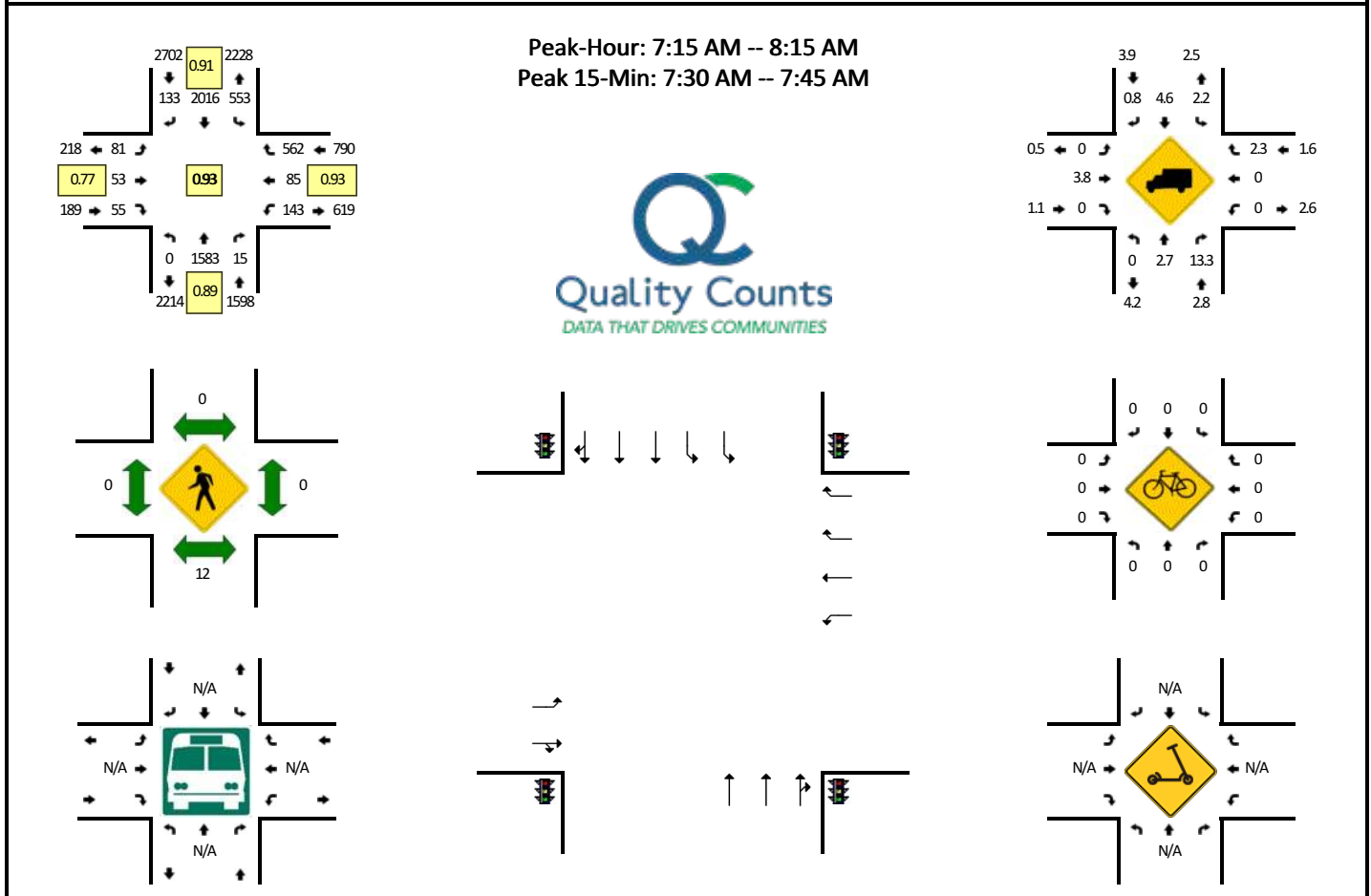


15-Min Count Period Beginning At	17 - New Hampshire Ave (Northbound)				17 - New Hampshire Ave (Southbound)				Oakview Dr (Eastbound)				Oakview Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	552	5	2	38	419	47	1	45	3	12	0	11	2	86	0	1230	
4:15 PM	4	558	7	0	53	629	80	2	24	1	13	0	10	1	84	0	1466	
4:30 PM	8	540	4	0	51	643	54	2	41	1	8	0	9	0	77	0	1438	
4:45 PM	7	554	7	0	48	622	59	4	33	1	8	0	17	2	75	0	1437	5571
5:00 PM	4	566	3	0	54	660	60	4	47	3	8	0	15	2	86	0	1512	5853
5:15 PM	3	572	3	2	43	642	41	3	36	1	10	0	11	1	73	0	1441	5828
5:30 PM	5	568	5	0	45	607	47	2	33	0	9	0	13	3	78	0	1415	5805
5:45 PM	9	558	7	0	42	588	63	3	57	3	4	0	12	0	64	0	1410	5778
6:00 PM	11	544	6	0	50	611	55	4	52	2	9	0	18	0	66	0	1428	5694
6:15 PM	10	564	2	0	53	618	44	3	30	1	8	0	13	0	72	0	1418	5671
6:30 PM	10	551	7	1	51	625	42	4	27	0	8	0	10	1	60	0	1397	5653
6:45 PM	7	550	10	2	53	560	43	5	24	0	4	0	13	1	74	0	1346	5589
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	2264	12	0	216	2640	240	16	188	12	32	0	60	8	344	0	6048	
Heavy Trucks	4	56	0		0	36	4		8	0	0		4	0	12		124	
Buses																		
Pedestrians		8				0				0				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

**Comments:**

**LOCATION:** 18 - New Hampshire Ave -- Dilston Rd/Adelphi Rd  
**CITY/STATE:** Silver Spring, MD

**QC JOB #:** 15650635  
**DATE:** Tue, Dec 7 2021

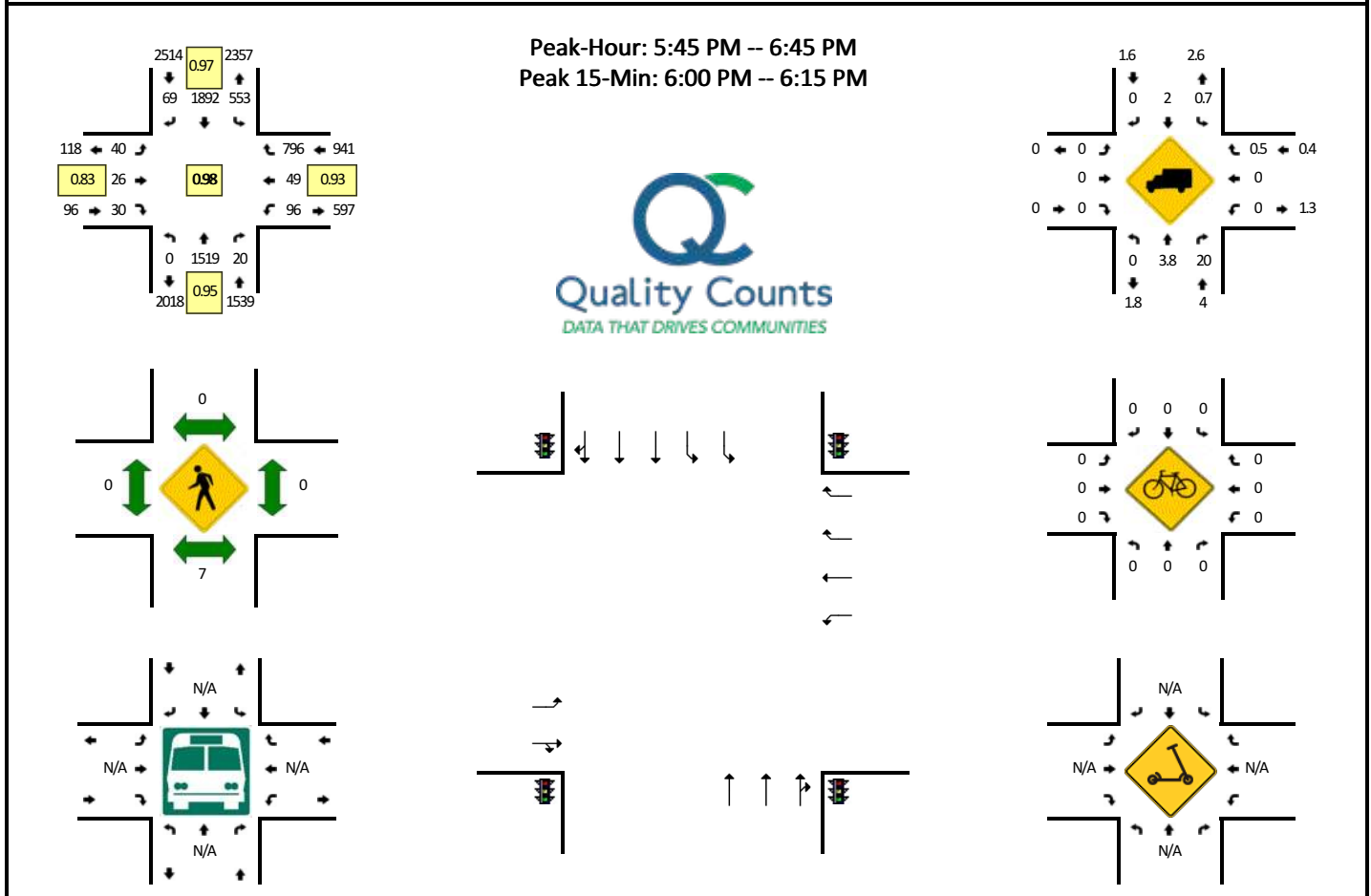


15-Min Count Period Beginning At	18 - New Hampshire Ave (Northbound)				18 - New Hampshire Ave (Southbound)				Dilston Rd/Adelphi Rd (Eastbound)				Dilston Rd/Adelphi Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	361	5	0	47	295	2	0	9	6	8	0	14	1	117	0	865	
6:15 AM	0	389	3	0	69	408	6	0	6	6	12	0	16	4	137	0	1056	
6:30 AM	1	355	1	0	67	396	4	0	5	6	11	0	21	3	123	0	993	
6:45 AM	0	353	4	0	110	498	13	1	14	13	11	0	29	3	118	0	1167	4081
7:00 AM	0	341	4	0	106	474	11	1	10	8	11	0	37	10	125	0	1138	4354
7:15 AM	0	406	6	0	113	484	19	1	22	11	15	0	33	11	168	0	1289	4587
7:30 AM	0	442	5	0	154	562	25	0	7	9	17	0	43	16	143	0	1423	5017
7:45 AM	0	366	2	0	141	480	54	0	29	18	14	0	35	36	135	0	1310	5160
8:00 AM	0	369	2	0	143	490	35	1	23	15	9	0	32	22	116	0	1257	5279
8:15 AM	0	363	5	0	143	470	18	0	14	5	9	0	28	7	127	0	1189	5179
8:30 AM	0	291	4	0	142	266	12	1	7	8	13	0	17	2	114	0	877	4633
8:45 AM	0	287	5	0	169	370	8	0	12	8	10	0	26	8	106	0	1009	4332
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1768	20	0	616	2248	100	0	28	36	68	0	172	64	572	0	5692	
Heavy Trucks	0	52	4		16	64	0		0	0	0		0	0	8		144	
Buses																		
Pedestrians		4				0				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

**Comments:**

**LOCATION:** 18 - New Hampshire Ave -- Dilston Rd/Adelphi Rd  
**CITY/STATE:** Silver Spring, MD

**QC JOB #:** 15650636  
**DATE:** Tue, Dec 7 2021

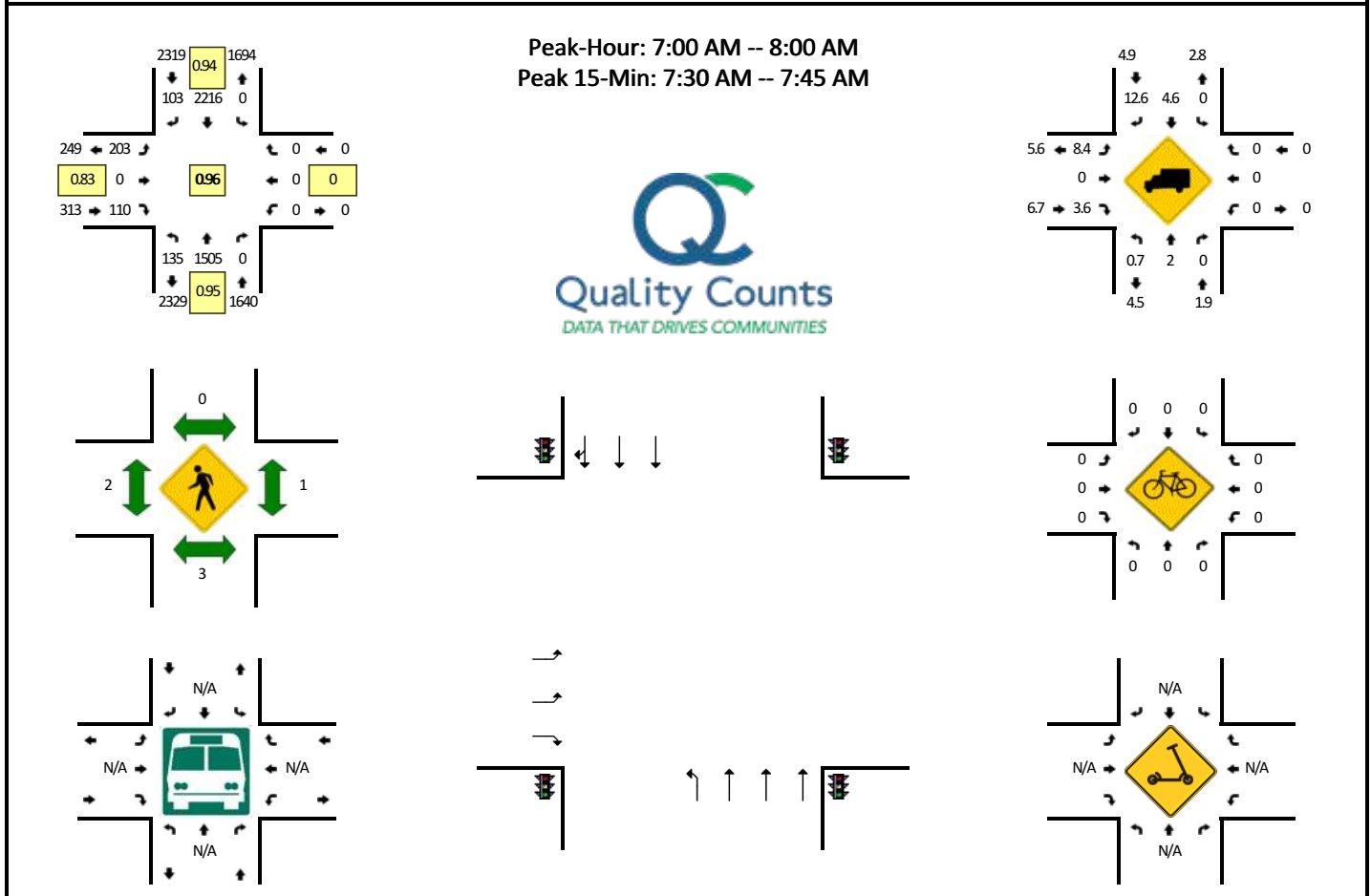


15-Min Count Period Beginning At	18 - New Hampshire Ave (Northbound)				18 - New Hampshire Ave (Southbound)				Dilston Rd/Adelphi Rd (Eastbound)				Dilston Rd/Adelphi Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	361	1	0	124	293	11	1	15	9	6	0	16	11	194	0	1042	
4:15 PM	0	380	4	0	136	470	22	0	15	7	6	0	23	13	192	0	1268	
4:30 PM	0	340	7	0	154	466	14	0	10	8	9	0	24	17	213	1	1263	
4:45 PM	1	361	3	0	151	442	15	1	11	2	7	0	26	9	196	0	1225	4798
5:00 PM	0	352	6	0	166	474	11	0	10	10	8	0	26	10	234	0	1307	5063
5:15 PM	0	358	2	0	166	458	28	0	17	7	6	0	29	16	195	0	1282	5077
5:30 PM	0	352	11	0	134	441	9	1	19	7	12	0	28	12	212	1	1239	5053
5:45 PM	0	399	5	0	143	455	14	1	11	9	9	0	35	13	161	0	1255	5083
6:00 PM	0	399	3	0	148	456	22	0	10	9	6	0	18	14	207	0	1292	5068
6:15 PM	0	361	6	0	101	529	16	0	14	2	8	0	22	8	211	0	1278	5064
6:30 PM	0	360	6	0	159	452	17	1	5	6	7	0	21	14	217	0	1265	5090
6:45 PM	0	424	11	0	139	414	16	0	8	6	5	0	13	9	151	0	1196	5031
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1596	12	0	592	1824	88	0	40	36	24	0	72	56	828	0	5168	
Heavy Trucks	0	84	4	0	8	40	0	0	0	0	0	0	0	0	4	0	140	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scooters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

**Comments:**

**LOCATION:** 19 - New Hampshire Ave -- Northampton Rd  
**CITY/STATE:** Adelphi, MD

**QC JOB #:** 15650637  
**DATE:** Tue, Dec 7 2021

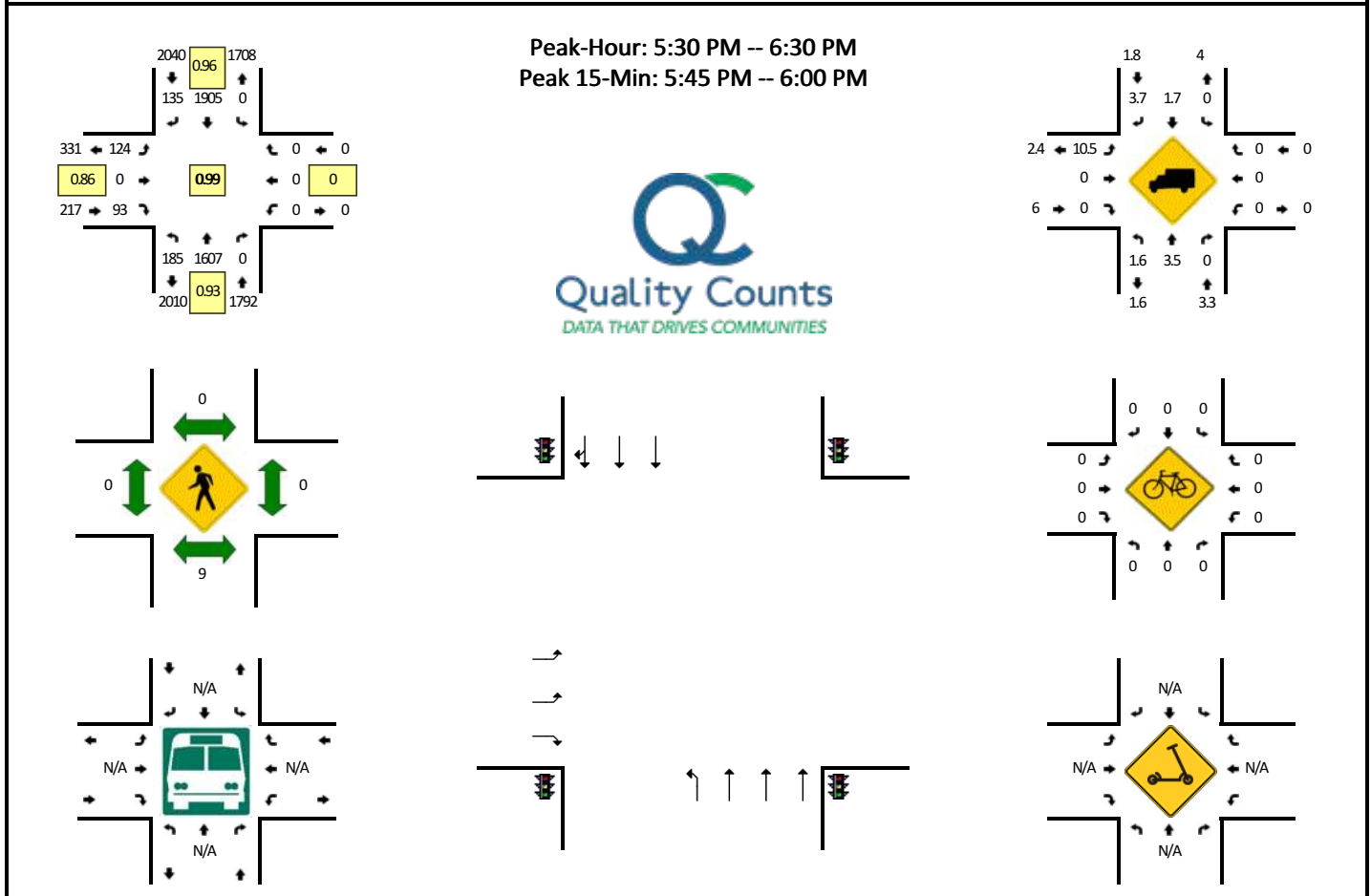


15-Min Count Period Beginning At	19 - New Hampshire Ave (Northbound)				19 - New Hampshire Ave (Southbound)				Northampton Rd (Eastbound)				Northampton Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	30	319	0	0	0	327	17	0	57	0	20	0	0	0	0	0	770	
6:15 AM	15	353	0	1	0	438	17	0	51	0	13	4	0	0	0	0	892	
6:30 AM	29	330	0	0	0	409	14	0	40	0	19	0	0	0	0	0	841	
6:45 AM	20	303	0	3	0	533	23	0	51	0	21	2	0	0	0	0	956	3459
7:00 AM	29	335	0	0	0	536	20	0	39	0	26	3	0	0	0	0	988	3677
7:15 AM	34	396	0	1	0	541	30	0	62	0	25	7	0	0	0	0	1096	3881
7:30 AM	34	397	0	2	0	599	21	0	43	0	19	1	0	0	0	0	1116	4156
7:45 AM	35	377	0	0	0	540	32	0	45	0	40	3	0	0	0	0	1072	4272
8:00 AM	22	324	0	0	0	519	39	0	45	0	25	1	0	0	0	0	975	4259
8:15 AM	23	288	0	0	0	478	23	0	49	0	23	3	0	0	0	0	887	4050
8:30 AM	14	309	0	1	0	297	17	0	23	0	11	1	0	0	0	0	673	3607
8:45 AM	27	248	0	0	0	372	24	0	24	0	24	15	0	0	0	0	734	3269
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	136	1588	0	8	0	2396	84	0	172	0	76	4	0	0	0	0	4464	
Heavy Trucks	4	44	0		0	80	8		16	0	0		0	0	0		152	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0			0	0			0	0			0	0			0	
Scooters																		

**Comments:**

**LOCATION:** 19 - New Hampshire Ave -- Northampton Rd  
**CITY/STATE:** Adelphi, MD

**QC JOB #:** 15650638  
**DATE:** Tue, Dec 7 2021

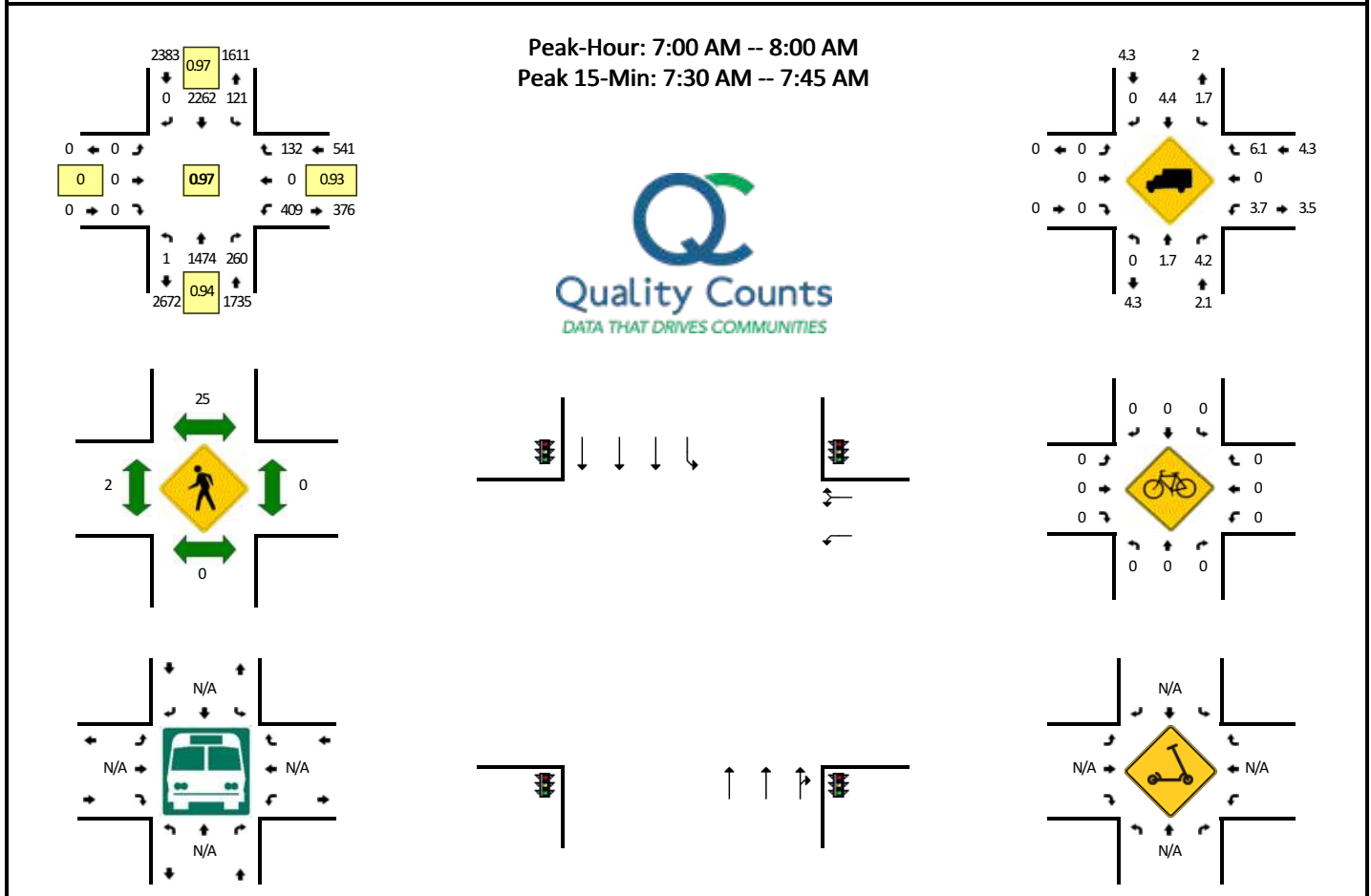


15-Min Count Period Beginning At	19 - New Hampshire Ave (Northbound)				19 - New Hampshire Ave (Southbound)				Northampton Rd (Eastbound)				Northampton Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	52	384	0	3	0	299	35	0	20	0	28	2	0	0	0	0	823	
4:15 PM	38	399	0	1	0	456	48	0	28	0	21	2	0	0	0	0	993	
4:30 PM	35	369	0	2	0	475	44	0	25	0	24	3	0	0	0	0	977	
4:45 PM	40	371	0	3	0	448	42	0	36	0	25	3	0	0	0	0	968	3761
5:00 PM	45	330	0	1	0	477	46	0	26	0	29	10	0	0	0	0	964	3902
5:15 PM	51	364	0	2	0	486	30	0	22	0	18	7	0	0	0	0	980	3889
5:30 PM	48	390	0	3	0	483	40	0	19	0	24	4	0	0	0	0	1011	3923
5:45 PM	53	429	0	2	0	452	34	0	17	0	25	7	0	0	0	0	1019	3974
6:00 PM	25	416	0	6	0	467	31	0	35	0	18	5	0	0	0	0	1003	4013
6:15 PM	47	372	0	1	0	503	30	0	30	0	26	7	0	0	0	0	1016	4049
6:30 PM	37	352	0	6	0	466	34	0	20	0	19	5	0	0	0	0	939	3977
6:45 PM	30	351	0	4	0	400	35	0	30	0	20	3	0	0	0	0	873	3831
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	212	1716	0	8	0	1808	136	0	68	0	100	28	0	0	0	0	4076	
Heavy Trucks	0	52	0		0	44	0		12	0	0		0	0	0		108	
Buses																		
Pedestrians	0	8			0	0			0	0			0	0			8	
Bicycles	0	0			0	0			0	0			0	0			0	
Scooters																		

**Comments:**

**LOCATION:** 20 - New Hampshire Ave -- Metzerott Rd  
**CITY/STATE:** Adelphi, MD

**QC JOB #:** 15650639  
**DATE:** Tue, Dec 7 2021

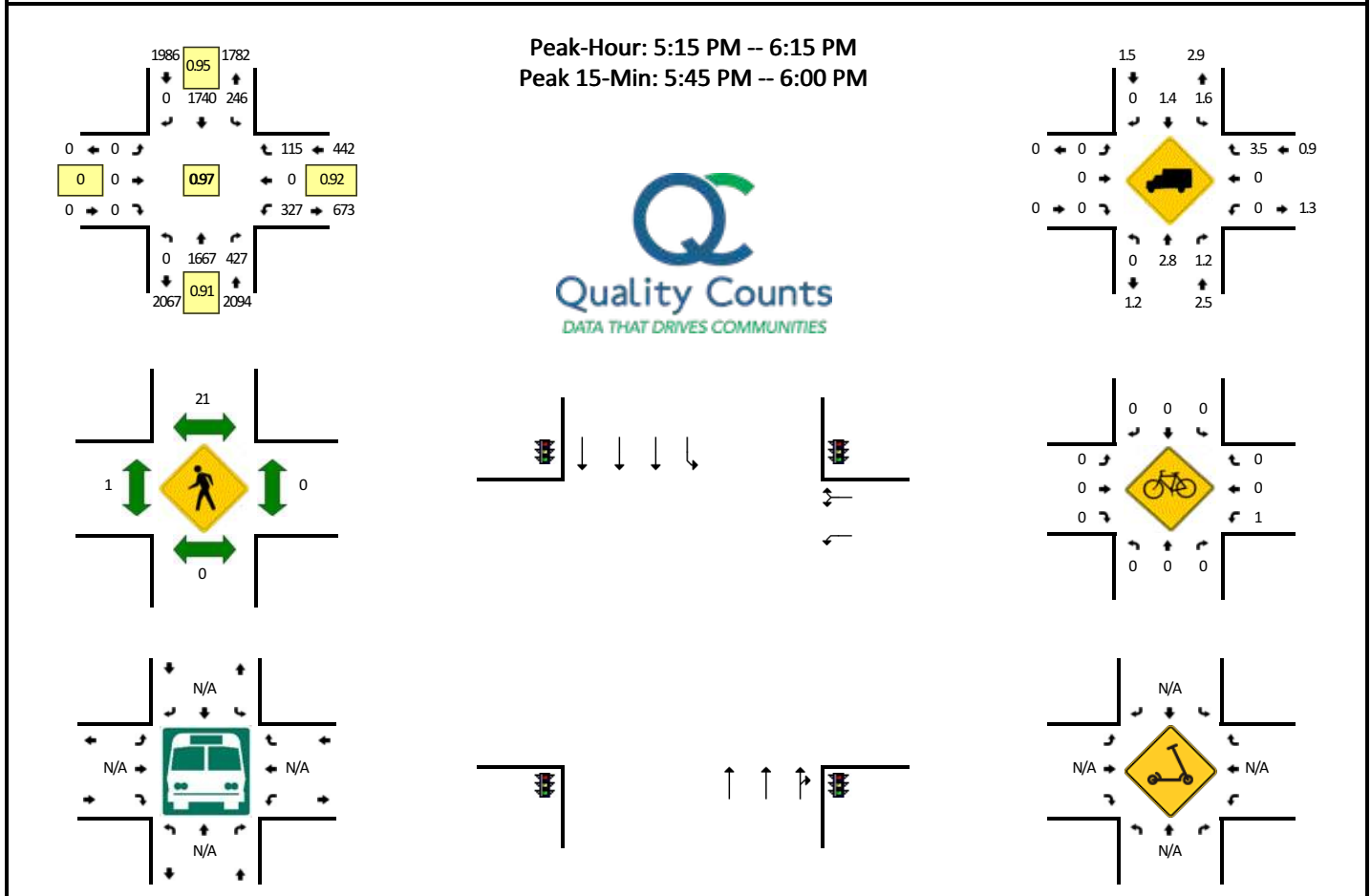


15-Min Count Period Beginning At	20 - New Hampshire Ave (Northbound)				20 - New Hampshire Ave (Southbound)				Metzerott Rd (Eastbound)				Metzerott Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	331	46	0	27	319	0	0	0	0	0	0	68	0	31	0	822	
6:15 AM	0	332	38	0	20	436	0	0	0	0	0	0	90	0	37	0	953	
6:30 AM	0	334	43	0	17	419	0	1	0	0	0	0	109	0	34	0	957	
6:45 AM	0	291	50	0	31	524	0	1	0	0	0	0	65	0	27	0	989	3721
7:00 AM	0	339	48	0	32	547	0	1	0	0	0	0	101	0	33	0	1101	4000
7:15 AM	0	380	60	0	27	567	0	2	0	0	0	0	104	0	41	0	1181	4228
7:30 AM	0	377	81	1	23	592	0	1	0	0	0	0	98	0	31	0	1204	4475
7:45 AM	0	378	71	0	34	556	0	1	0	0	0	0	106	0	27	0	1173	4659
8:00 AM	0	306	60	0	31	529	0	1	0	0	0	0	118	0	28	0	1073	4631
8:15 AM	0	280	49	0	24	498	0	1	0	0	0	0	88	0	21	0	961	4411
8:30 AM	0	304	50	0	19	287	0	2	0	0	0	0	74	0	23	0	759	3966
8:45 AM	0	236	50	0	30	364	0	1	0	0	0	0	75	0	34	0	790	3583
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1508	324	4	92	2368	0	4	0	0	0	0	392	0	124	0	4816	
Heavy Trucks	0	40	16		0	64	0		0	0	0	0	8	0	4		132	
Buses																		
Pedestrians	0	0				16			0	0			0	0			16	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

**Comments:**

**LOCATION:** 20 - New Hampshire Ave -- Metzerott Rd  
**CITY/STATE:** Adelphi, MD

**QC JOB #:** 15650640  
**DATE:** Tue, Dec 7 2021

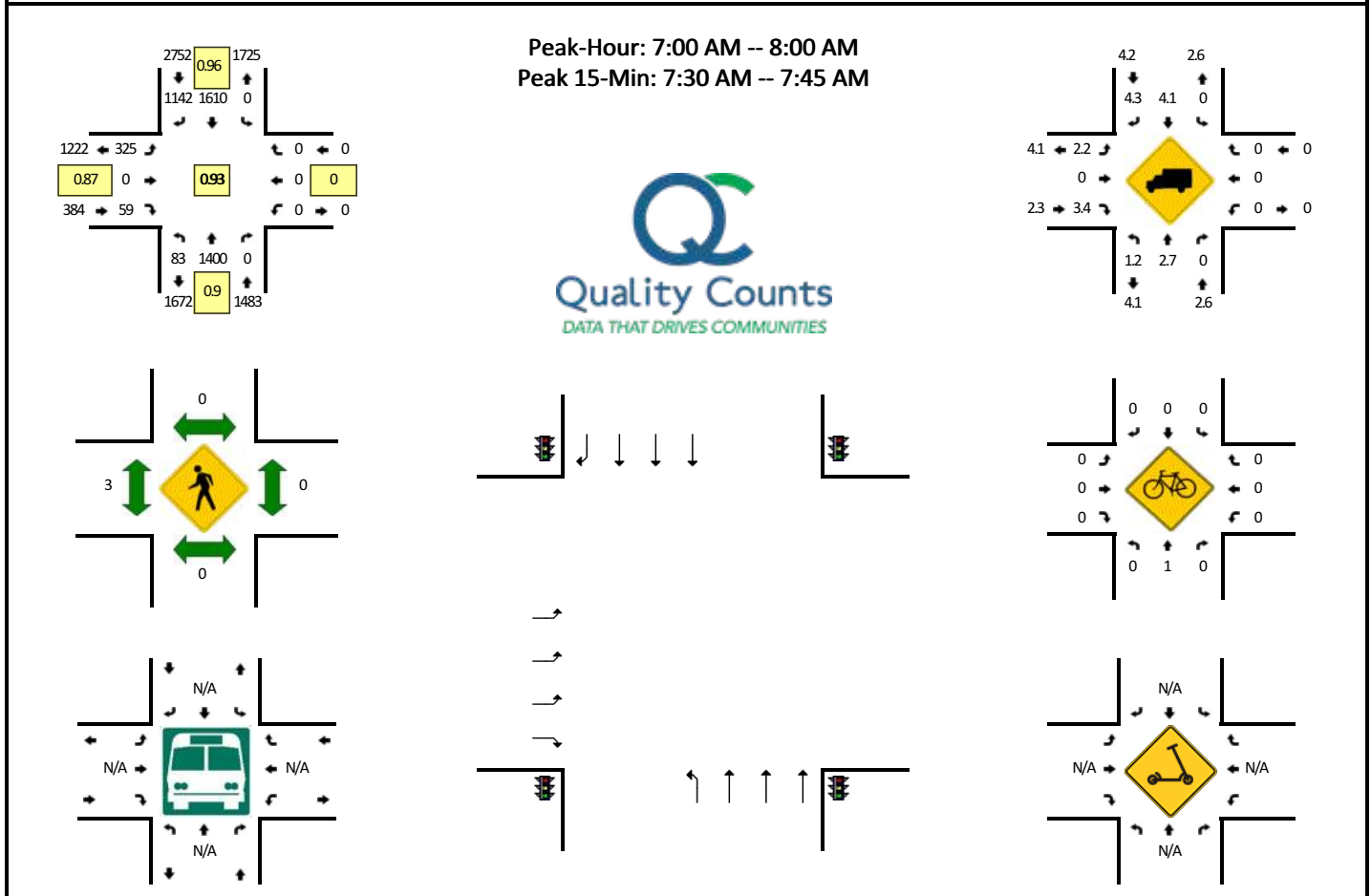


15-Min Count Period Beginning At	20 - New Hampshire Ave (Northbound)				20 - New Hampshire Ave (Southbound)				Metzerott Rd (Eastbound)				Metzerott Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	397	101	0	65	278	0	1	0	0	0	0	81	0	23	0	946	
4:15 PM	0	382	92	0	58	422	0	0	0	0	0	0	76	0	24	0	1054	
4:30 PM	0	400	101	0	65	433	0	1	0	0	0	0	102	0	27	0	1129	
4:45 PM	0	389	119	1	68	428	0	1	0	0	0	0	95	0	29	0	1130	4259
5:00 PM	0	346	111	0	70	427	0	1	0	0	0	0	80	0	31	0	1066	4379
5:15 PM	0	418	104	0	61	434	0	0	0	0	0	0	85	0	26	0	1128	4453
5:30 PM	0	390	114	0	65	457	0	0	0	0	0	0	72	0	34	0	1132	4456
5:45 PM	0	446	127	0	57	431	0	0	0	0	0	0	80	0	25	0	1166	4492
6:00 PM	0	413	82	0	63	418	0	0	0	0	0	0	90	0	30	0	1096	4522
6:15 PM	0	409	97	1	49	456	0	0	0	0	0	0	87	0	18	0	1117	4511
6:30 PM	0	351	101	0	56	426	0	3	0	0	0	0	86	0	29	0	1052	4431
6:45 PM	0	362	89	1	52	401	0	1	0	0	0	0	82	0	27	0	1015	4280
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1784	508	0	228	1724	0	0	0	0	0	0	320	0	100	0	4664	
Heavy Trucks	0	32	8		4	40	0		0	0	0		0	0	0		84	
Buses																		
Pedestrians	0	0				12			4				0	0			16	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

**Comments:**

**LOCATION:** 21 - New Hampshire Ave -- Piney Branch Rd  
**CITY/STATE:** Adelphi, MD

**QC JOB #:** 15650641  
**DATE:** Tue, Dec 7 2021

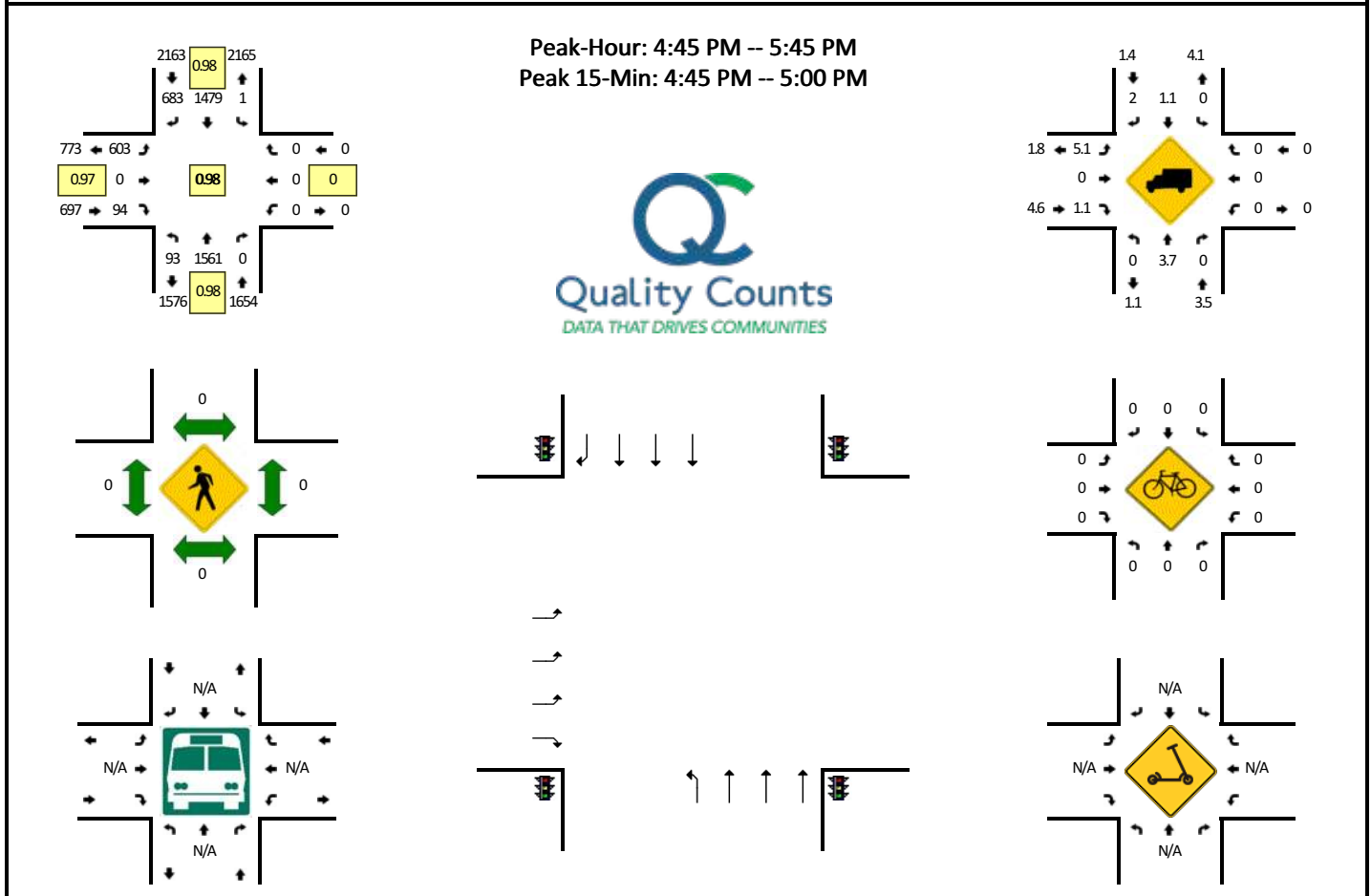


15-Min Count Period Beginning At	21 - New Hampshire Ave (Northbound)				21 - New Hampshire Ave (Southbound)				Piney Branch Rd (Eastbound)				Piney Branch Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	37	306	0	0	0	283	123	0	82	0	19	0	0	0	0	0	850	
6:15 AM	37	322	0	0	0	319	224	0	58	0	9	0	0	0	0	0	969	
6:30 AM	16	283	0	0	0	305	230	0	79	0	11	0	0	0	0	0	924	
6:45 AM	17	288	0	0	0	331	270	1	67	0	14	0	0	0	0	0	988	3731
7:00 AM	16	324	0	0	0	386	283	0	64	0	14	0	0	0	0	0	1087	3968
7:15 AM	15	368	0	0	0	411	262	0	74	0	15	0	0	0	0	0	1145	4144
7:30 AM	29	381	0	2	0	422	296	0	90	0	17	0	0	0	0	0	1237	4457
7:45 AM	20	327	0	1	0	391	301	0	97	0	13	0	0	0	0	0	1150	4619
8:00 AM	10	278	0	1	0	410	254	0	88	0	30	0	0	0	0	0	1071	4603
8:15 AM	11	256	0	1	0	425	199	0	86	0	21	0	0	0	0	0	999	4457
8:30 AM	7	268	0	0	0	234	136	0	75	0	11	0	0	0	0	0	731	3951
8:45 AM	10	222	0	1	0	299	155	0	75	0	7	0	0	0	0	0	769	3570
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	116	1524	0	8	0	1688	1184	0	360	0	68	0	0	0	0	0	4948	
Heavy Trucks	4	56	0		0	40	44		8	0	4		0	0	0		156	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0			0	0			0	0			0	0			0	
Scooters																		

**Comments:**

**LOCATION:** 21 - New Hampshire Ave -- Piney Branch Rd  
**CITY/STATE:** Adelphi, MD

**QC JOB #:** 15650642  
**DATE:** Tue, Dec 7 2021

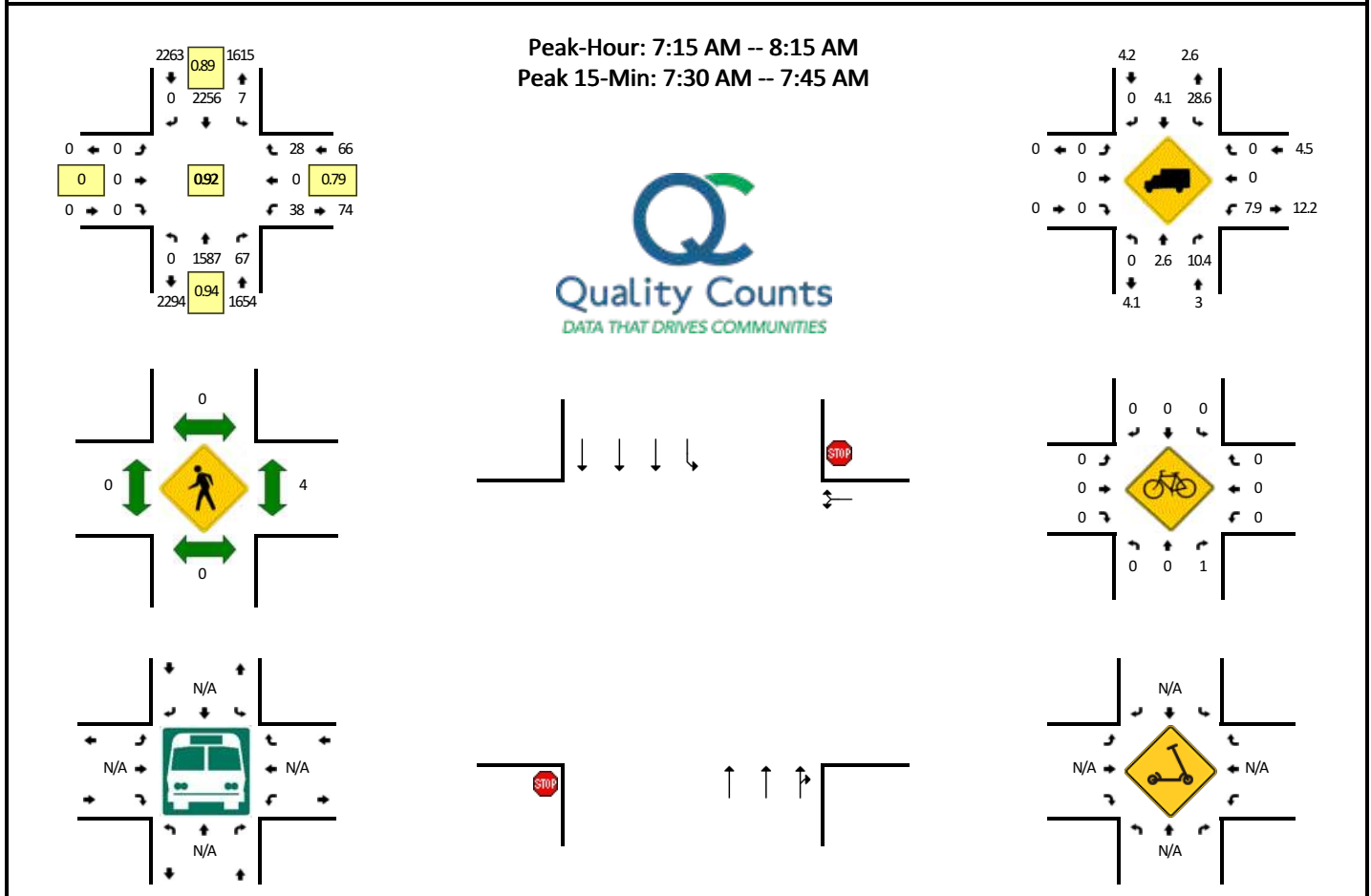


15-Min Count Period Beginning At	21 - New Hampshire Ave (Northbound)				21 - New Hampshire Ave (Southbound)				Piney Branch Rd (Eastbound)				Piney Branch Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	21	357	0	1	0	237	156	0	158	0	24	0	0	0	0	0	954	
4:15 PM	14	342	0	2	0	354	165	0	138	0	16	0	0	0	0	0	1031	
4:30 PM	12	371	0	0	0	375	170	0	149	0	23	0	0	0	0	0	1100	
4:45 PM	26	397	0	1	0	383	170	0	151	0	28	0	0	0	0	0	1156	4241
5:00 PM	21	382	0	1	0	354	189	0	152	0	18	0	0	0	0	0	1117	4404
5:15 PM	25	387	0	0	0	376	154	1	144	0	26	0	0	0	0	0	1113	4486
5:30 PM	18	395	0	1	0	366	170	0	156	0	22	0	0	0	0	0	1128	4514
5:45 PM	24	385	0	2	0	358	154	0	159	0	24	0	0	0	0	0	1106	4464
6:00 PM	25	383	0	1	0	354	165	0	131	0	24	0	0	0	0	0	1083	4430
6:15 PM	34	411	0	0	0	390	165	0	153	0	29	0	0	0	0	0	1182	4499
6:30 PM	15	354	0	0	0	346	165	0	126	0	19	0	0	0	0	0	1025	4396
6:45 PM	15	352	0	1	0	329	163	0	106	0	24	0	0	0	0	0	990	4280
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	104	1588	0	4	0	1532	680	0	604	0	112	0	0	0	0	0	4624	
Heavy Trucks	0	40	0		0	20	28		40	0	4		0	0	0		132	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0			0	0			0	0			0	0			0	
Scoters																		

**Comments:**

**LOCATION:** 53 - New Hampshire Ave -- Fox St  
**CITY/STATE:** Silver Spring, MD

**QC JOB #:** 156506101  
**DATE:** Tue, Dec 7 2021

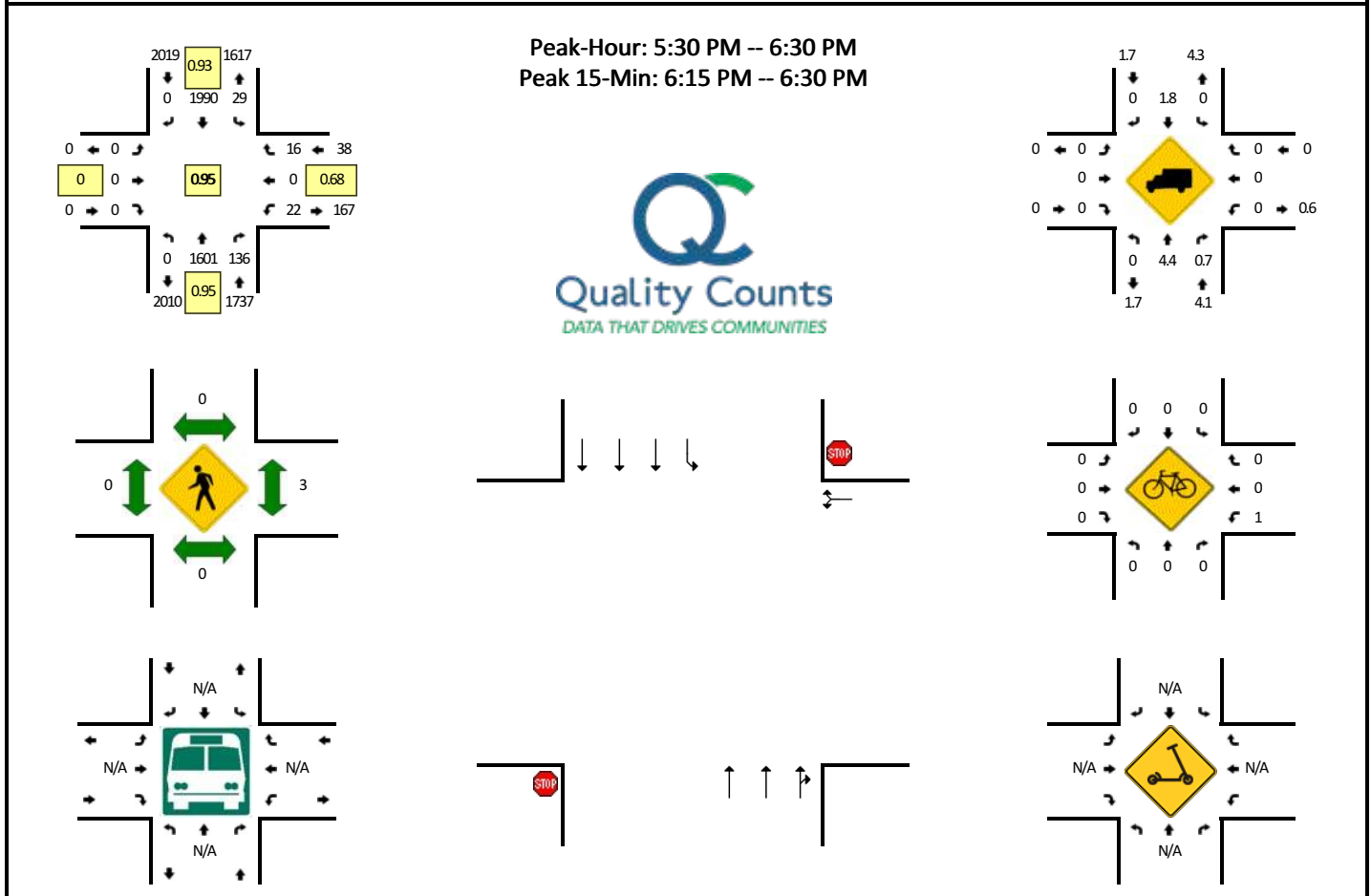


15-Min Count Period Beginning At	53 - New Hampshire Ave (Northbound)				53 - New Hampshire Ave (Southbound)				Fox St (Eastbound)				Fox St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	352	18	0	4	304	0	0	0	0	0	0	12	0	8	0	698	
6:15 AM	0	388	19	0	3	437	0	0	0	0	0	0	8	0	11	0	866	
6:30 AM	0	360	14	0	2	428	0	0	0	0	0	0	12	0	5	0	821	
6:45 AM	0	343	15	0	2	531	0	0	0	0	0	0	12	0	3	0	906	3291
7:00 AM	0	357	11	0	1	534	0	0	0	0	0	0	9	0	7	0	919	3512
7:15 AM	0	426	16	0	3	535	0	0	0	0	0	0	11	0	7	0	998	3644
7:30 AM	0	423	14	0	1	632	0	0	0	0	0	0	6	0	7	0	1083	3906
7:45 AM	0	385	20	0	1	547	0	0	0	0	0	0	7	0	7	0	967	3967
8:00 AM	0	353	17	0	2	542	0	0	0	0	0	0	14	0	7	0	935	3983
8:15 AM	0	340	12	0	2	507	0	1	0	0	0	0	6	0	3	0	871	3856
8:30 AM	0	294	8	0	3	295	0	1	0	0	0	0	6	0	4	0	611	3384
8:45 AM	0	286	9	0	2	404	0	0	0	0	0	0	9	0	3	0	713	3130
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1692	56	0	4	2528	0	0	0	0	0	0	24	0	28	0	4332	
Heavy Trucks	0	56	12		0	56	0		0	0	0		0	0	0		124	
Buses																		
Pedestrians	0	0			0	0			0	0			8				8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

**Comments:**

**LOCATION:** 53 - New Hampshire Ave -- Fox St  
**CITY/STATE:** Silver Spring, MD

**QC JOB #:** 156506102  
**DATE:** Tue, Dec 7 2021



15-Min Count Period Beginning At	53 - New Hampshire Ave (Northbound)				53 - New Hampshire Ave (Southbound)				Fox St (Eastbound)				Fox St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	361	34	0	5	320	0	0	0	0	0	0	5	0	4	0	729	3441
4:15 PM	0	373	48	0	14	490	0	0	0	0	0	0	5	0	1	0	931	
4:30 PM	0	371	28	0	7	507	0	0	0	0	0	0	8	0	4	0	925	
4:45 PM	0	352	27	0	6	466	0	0	0	0	0	0	4	0	1	0	856	
5:00 PM	0	355	31	0	10	509	0	0	0	0	0	0	3	0	3	0	911	
5:15 PM	0	357	33	0	9	483	0	0	0	0	0	0	9	0	5	0	896	
5:30 PM	0	385	35	0	8	482	0	0	0	0	0	0	4	0	9	1	924	
5:45 PM	0	427	29	0	5	474	0	0	0	0	0	0	3	0	1	0	939	
6:00 PM	0	384	41	0	8	497	0	0	0	0	0	0	2	0	4	0	936	
6:15 PM	0	405	31	0	8	537	0	0	0	0	0	0	11	0	2	1	995	
6:30 PM	0	349	29	2	10	482	0	0	0	0	0	0	4	0	2	0	878	3748
6:45 PM	0	376	26	0	7	439	0	0	0	0	0	0	8	0	4	0	860	3669
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	1620	124	0	32	2148	0	0	0	0	0	0	44	0	8	4	3980	
Heavy Trucks	0	64	0	0	0	40	0	0	0	0	0	0	0	0	0	0	104	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scooters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

**Comments:**

## Appendix B: Speed Sentry Data



# Extended Speed Summary

New Hampshire Ave @ Fox St, NB

Start: 2022-02-07

End: 2022-02-14

Times: 0:00-23:59

Violation Threshold: Speed Limit + 10

Speed Range: 1 to 150

## Overall Summary

Total Days of Data: 8

Speed Limit: 40

Average Speed: 34.13

50th Percentile Speed: 34.53

85th Percentile Speed: 41.89

Pace Speed Range: 30-40

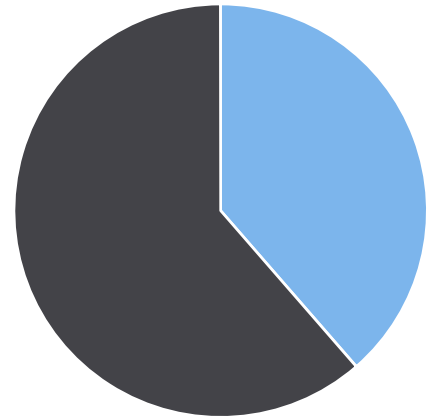
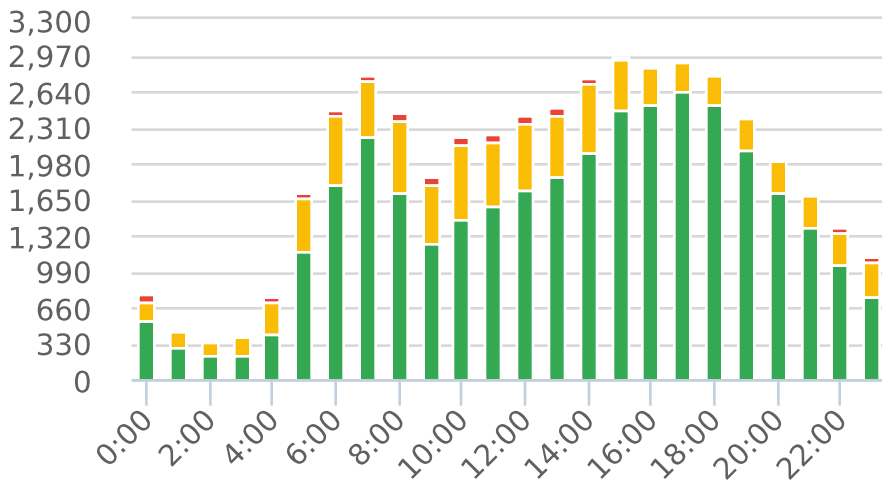
Minimum Speed: 5

Maximum Speed: 81

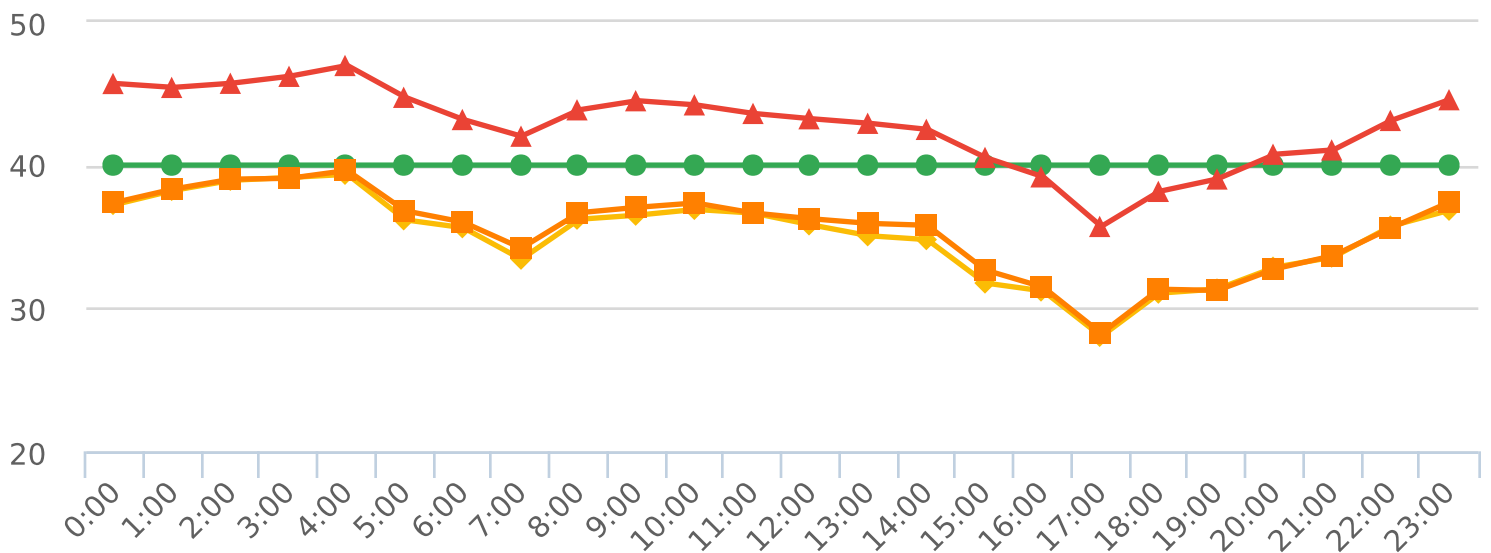
Display Mode: Display Off

Average Volume per Day: 5803.9

Total Volume: 46431



Violators Inside Threshold Compliant Vehicles Slowed Other



Speed Limit Average Speed 50% Speed 85% Speed



Start: 2022-02-07

End: 2022-02-14

Times: 0:00-23:59

# Extended Speed Summary

New Hampshire Ave @ Fox St, NB

Violation Threshold: Speed Limit + 10

Speed Range: 1 to 150

Time	Sign Mode	Speed Limit	Total # Vehicles	Total # Violator	% Violator	Avg # Vehicles	Avg # Violators	Min Speed	Max Speed	Avg Speed	50% Speed	85% Speed	Sign Effectiveness
0:00	Display Off	40	775	57	7.4%	110.7	8.1	5	65	37.2	37.4	45.7	29.7%
1:00	Display Off	40	468	32	6.8%	66.9	4.6	8	69	38.2	38.3	45.4	29.5%
2:00	Display Off	40	371	25	6.7%	53.0	3.6	6	67	38.9	39.0	45.7	26.6%
3:00	Display Off	40	404	24	5.9%	57.7	3.4	8	73	39.1	39.1	46.2	25.4%
4:00	Display Off	40	764	54	7.1%	109.1	7.7	6	70	39.4	39.6	47.0	25.7%
5:00	Display Off	40	1720	65	3.8%	245.7	9.3	5	63	36.2	36.8	44.7	31.7%
6:00	Display Off	40	2474	62	2.5%	353.4	8.9	5	66	35.6	36.0	43.2	33.2%
7:00	Display Off	40	2793	46	1.6%	399.0	6.6	5	66	33.4	34.2	42.0	42.1%
8:00	Display Off	40	2437	76	3.1%	348.1	10.9	5	67	36.2	36.7	43.9	33.9%
9:00	Display Off	40	1854	58	3.1%	309.0	9.7	5	68	36.5	37.1	44.5	32.2%
10:00	Display Off	40	2218	70	3.2%	316.9	10.0	5	67	36.9	37.4	44.2	33.4%
11:00	Display Off	40	2239	71	3.2%	319.9	10.1	5	81	36.6	36.7	43.6	33.4%
12:00	Display Off	40	2417	66	2.7%	345.3	9.4	5	62	35.8	36.2	43.2	34.9%
13:00	Display Off	40	2486	63	2.5%	355.1	9.0	5	73	35.1	35.9	42.9	35.4%
14:00	Display Off	40	2773	56	2.0%	396.1	8.0	5	63	34.8	35.8	42.5	38.9%
15:00	Display Off	40	2960	36	1.2%	422.9	5.1	5	65	31.8	32.7	40.5	47.0%
16:00	Display Off	40	2889	37	1.3%	412.7	5.3	5	62	31.2	31.5	39.2	50.2%
17:00	Display Off	40	2930	23	0.8%	418.6	3.3	5	75	28.0	28.2	35.7	51.1%
18:00	Display Off	40	2791	13	0.5%	398.7	1.9	5	78	31.1	31.3	38.2	47.4%
19:00	Display Off	40	2401	14	0.6%	343.0	2.0	5	73	31.3	31.2	39.0	39.4%
20:00	Display Off	40	2033	30	1.5%	290.4	4.3	5	67	32.9	32.8	40.8	37.9%
21:00	Display Off	40	1712	37	2.2%	244.6	5.3	5	68	33.6	33.7	41.1	36.9%
22:00	Display Off	40	1398	45	3.2%	199.7	6.4	6	66	35.7	35.6	43.1	35.1%
23:00	Display Off	40	1124	45	4.0%	160.6	6.4	5	68	36.8	37.4	44.6	35.6%
Total Volumes/ Avg			46431	1105	2.4%	6677.1	159.3	5	81	35.1	35.4	42.8	36.1%
Total/Avg w/o Feedback			46431	1105	2.4%	6677.1	159.3	5	81	35.1	35.4	42.8	36.1%
Total/Avg w/ Feedback			0	0	0	0.0	0.0	n/a	n/a	n/a	n/a	n/a	n/a



Start: 2022-02-07

End: 2022-02-14

Times: 0:00-23:59

# Volume by Speed

## New Hampshire Ave @ Fox St, NB

Speed Bins: Size 5, Range 1 to 150

Time View: By Hour (Total Volumes)

Time	1 to 5	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	31 to 35	36 to 40	41 to 45	46 to 50	51 to 55	56 to 60	61 to 65	66 to 70	71 to 75	76 to 80	81 to 85	86 to 90	91 to 95	96 to 100	101 to 150	Avg Speed	Total
0:00	1	4	3	8	35	93	164	218	128	64	37	13	7	0	0	0	0	0	0	0	0	37.4	775
1:00	0	3	1	6	16	37	101	120	107	45	22	6	1	3	0	0	0	0	0	0	0	38.4	468
2:00	0	1	0	0	11	31	68	108	98	29	17	7	0	1	0	0	0	0	0	0	0	39.1	371
3:00	0	1	1	2	9	38	76	101	96	56	21	1	1	0	1	0	0	0	0	0	0	39.1	404
4:00	0	7	0	2	29	78	110	195	184	105	35	13	5	1	0	0	0	0	0	0	0	39.2	764
5:00	4	13	17	41	92	233	360	417	320	158	45	19	1	0	0	0	0	0	0	0	0	36.3	1720
6:00	4	26	22	51	156	363	523	628	479	160	49	11	1	1	0	0	0	0	0	0	0	35.5	2474
7:00	3	36	49	97	227	498	679	646	365	147	35	9	1	1	0	0	0	0	0	0	0	33.6	2793
8:00	1	16	29	47	111	307	560	641	462	187	55	17	2	2	0	0	0	0	0	0	0	36.2	2437
9:00	2	20	15	35	99	218	375	491	372	169	41	12	3	2	0	0	0	0	0	0	0	36.5	1854
10:00	2	21	22	40	82	199	457	653	484	188	55	12	2	1	0	0	0	0	0	0	0	37.1	2218
11:00	1	14	18	34	106	259	512	643	419	162	48	18	4	0	0	0	1	0	0	0	0	36.5	2239
12:00	2	26	32	53	103	309	543	671	444	168	47	16	3	0	0	0	0	0	0	0	0	35.9	2417
13:00	9	54	39	56	141	285	566	714	395	164	44	15	3	0	1	0	0	0	0	0	0	35.1	2486
14:00	6	43	35	63	128	377	710	724	483	148	41	11	4	0	0	0	0	0	0	0	0	35.0	2773
15:00	26	99	91	112	260	553	771	569	324	119	27	5	4	0	0	0	0	0	0	0	0	31.9	2960
16:00	19	118	105	137	279	510	766	574	261	83	31	4	2	0	0	0	0	0	0	0	0	31.0	2889
17:00	51	230	189	199	339	525	681	438	187	68	16	4	2	0	1	0	0	0	0	0	0	28.0	2930
18:00	4	39	67	132	313	665	826	482	194	56	8	3	0	0	1	1	0	0	0	0	0	31.1	2791
19:00	1	38	47	118	296	580	589	443	210	65	12	1	0	0	1	0	0	0	0	0	0	31.3	2401
20:00	5	29	37	75	201	402	511	452	209	82	23	5	1	1	0	0	0	0	0	0	0	32.8	2033
21:00	1	32	33	50	138	332	409	397	212	71	26	9	0	2	0	0	0	0	0	0	0	33.3	1712
22:00	0	16	11	20	64	188	374	371	226	83	27	13	4	1	0	0	0	0	0	0	0	35.7	1398
23:00	2	5	9	22	42	132	223	329	212	103	31	9	3	2	0	0	0	0	0	0	0	37.0	1124
Total	144	891	872	1400	3277	7212	10954	11025	6871	2680	793	233	54	18	5	1	1	0	0	0	0	34.2	46431



Start: 2022-02-07

End: 2022-02-14

Times: 0:00-23:59

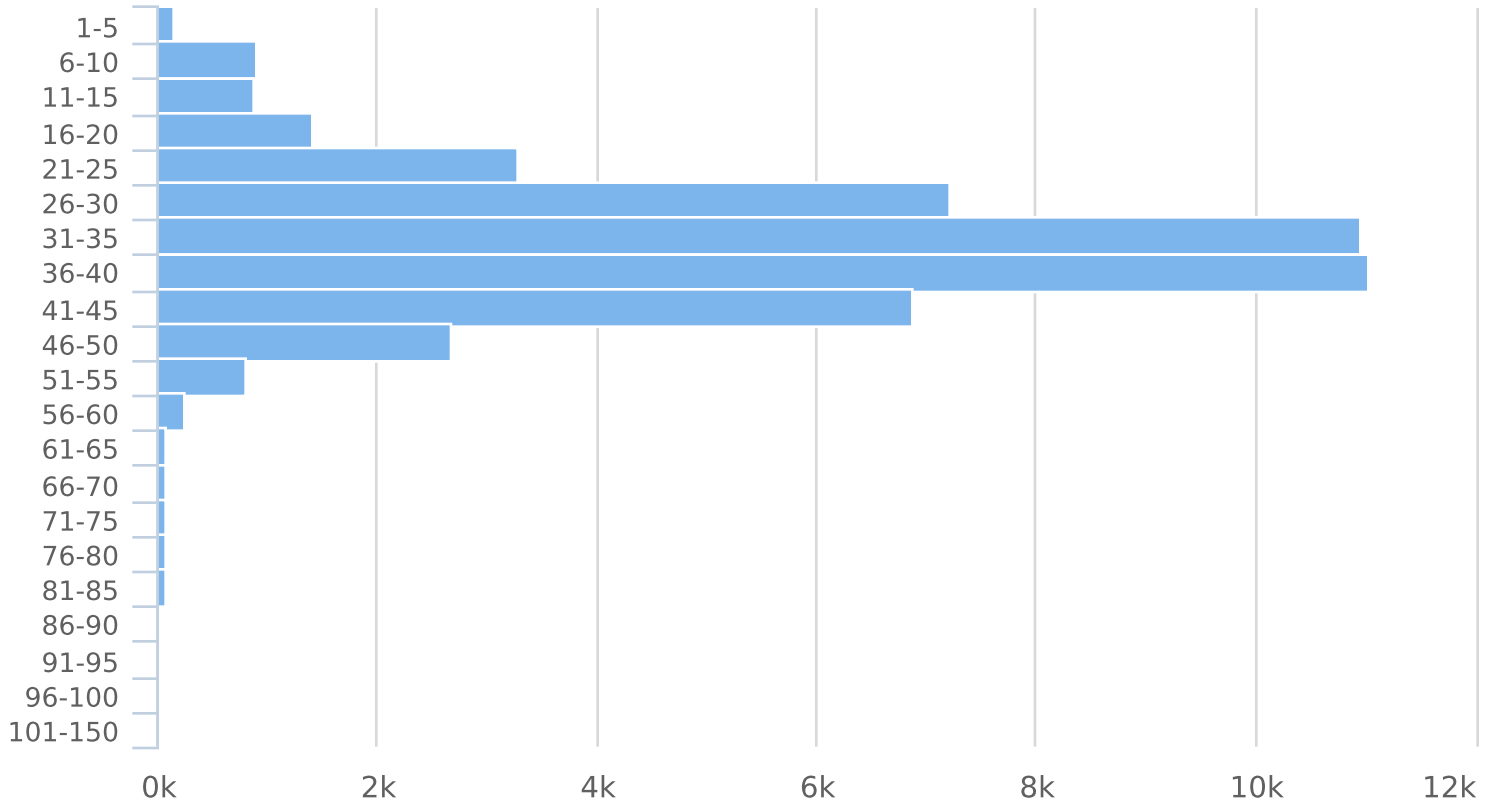
# Volume by Speed

New Hampshire Ave @ Fox St, NB

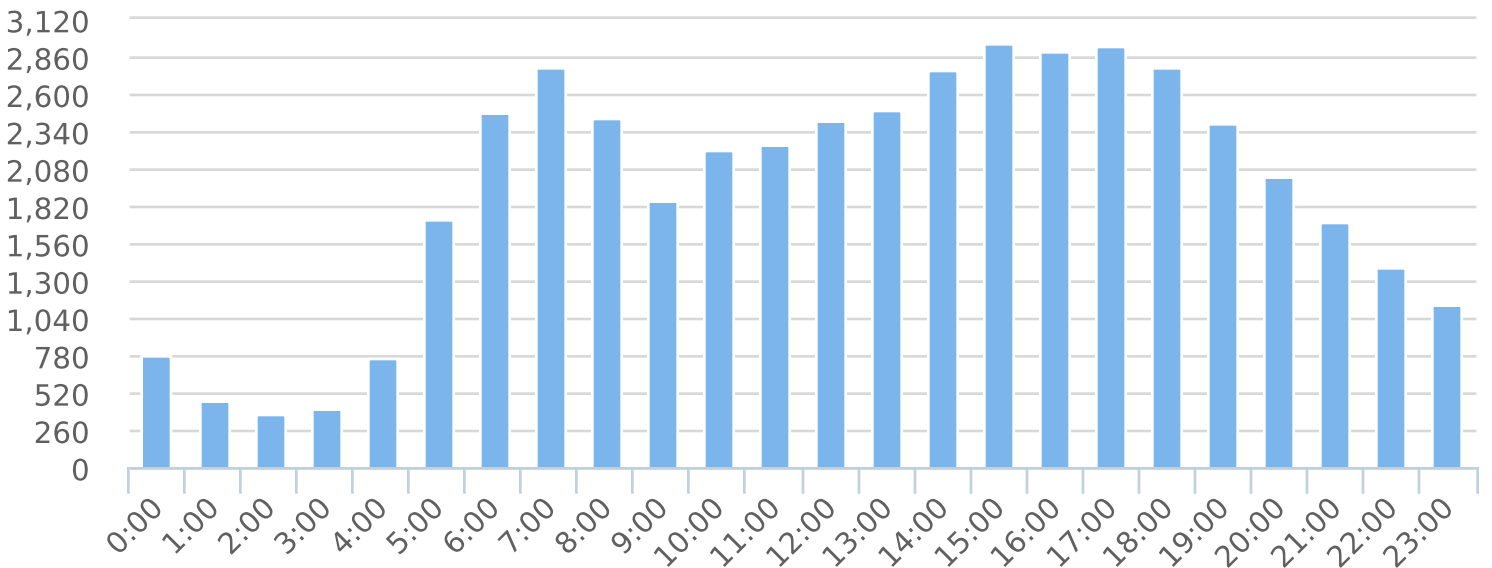
Speed Bins: Size 5, Range 1 to 150

Time View: By Hour (Total Volumes)

Total Volume by Speed Distribution



Volume over Time





# Extended Speed Summary

New Hampshire Ave @ Fox St, SB

Start: 2022-02-14

End: 2022-02-21

Times: 0:00-23:59

Violation Threshold: Speed Limit + 10

Speed Range: 1 to 150

## Overall Summary

Total Days of Data: 8

Speed Limit: 40

Average Speed: 38.32

50th Percentile Speed: 39.77

85th Percentile Speed: 47.54

Pace Speed Range: 36-46

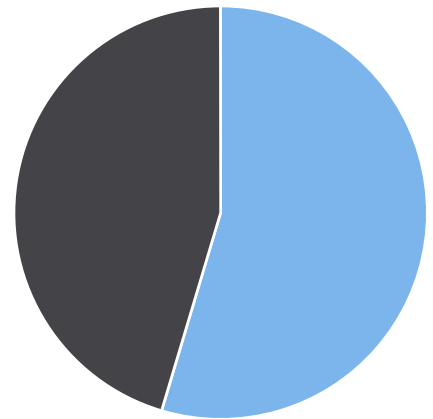
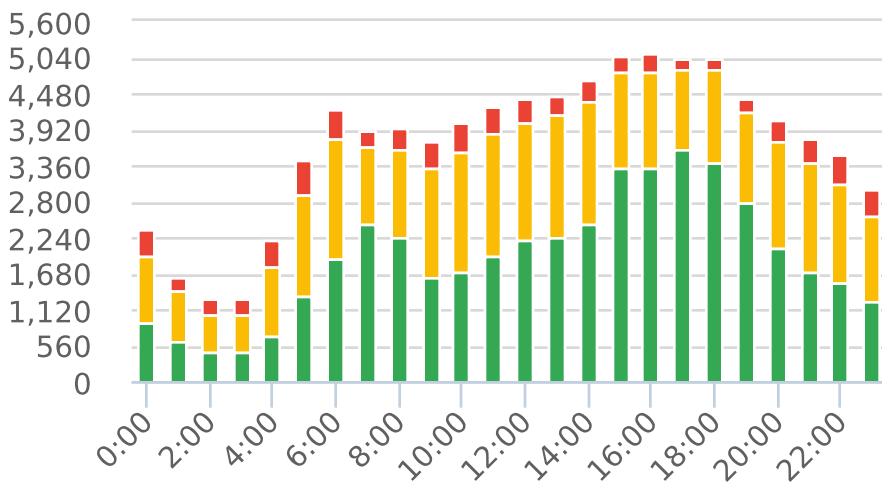
Minimum Speed: 5

Maximum Speed: 102

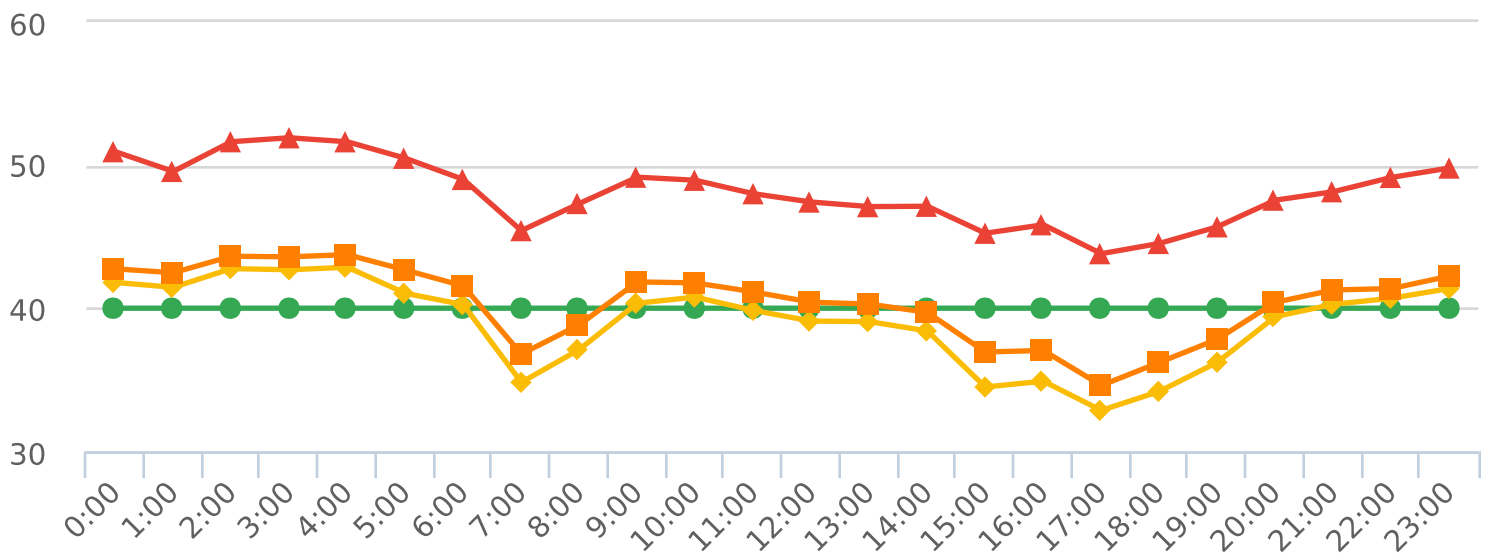
Display Mode: Display Off

Average Volume per Day: 11086.4

Total Volume: 88691



■ Violators 
 ■ Inside Threshold 
 ■ Compliant 
 ■ Vehicles Slowed 
 ■ Other



● Speed Limit 
 ◆ Average Speed 
 ■ 50% Speed 
 ▲ 85% Speed



Start: 2022-02-14

End: 2022-02-21

Times: 0:00-23:59

# Extended Speed Summary

New Hampshire Ave @ Fox St, SB

Violation Threshold: Speed Limit + 10

Speed Range: 1 to 150

Time	Sign Mode	Speed Limit	Total # Vehicles	Total # Violator	% Violator	Avg # Vehicles	Avg # Violators	Min Speed	Max Speed	Avg Speed	50% Speed	85% Speed	Sign Effectiveness
0:00	Display Off	40	2350	388	16.5%	335.7	55.4	5	102	41.8	42.8	50.9	48.7%
1:00	Display Off	40	1633	206	12.6%	233.3	29.4	5	91	41.5	42.5	49.6	48.4%
2:00	Display Off	40	1267	236	18.6%	181.0	33.7	5	90	42.8	43.6	51.6	45.4%
3:00	Display Off	40	1291	245	19.0%	184.4	35.0	5	81	42.7	43.6	51.9	45.3%
4:00	Display Off	40	2210	413	18.7%	315.7	59.0	5	80	42.9	43.7	51.6	43.2%
5:00	Display Off	40	3445	529	15.4%	492.1	75.6	5	80	41.0	42.7	50.5	46.8%
6:00	Display Off	40	4243	487	11.5%	606.1	69.6	5	84	40.2	41.6	49.0	51.2%
7:00	Display Off	40	3909	265	6.8%	651.5	44.2	5	78	34.8	36.8	45.4	55.4%
8:00	Display Off	40	3940	348	8.8%	656.7	58.0	5	78	37.1	38.8	47.3	55.5%
9:00	Display Off	40	3721	419	11.3%	620.2	69.8	5	87	40.3	41.8	49.2	52.2%
10:00	Display Off	40	4014	449	11.2%	573.4	64.1	5	78	40.8	41.8	48.9	49.3%
11:00	Display Off	40	4252	386	9.1%	607.4	55.1	5	85	39.8	41.1	48.0	50.5%
12:00	Display Off	40	4378	361	8.2%	625.4	51.6	5	76	39.1	40.4	47.4	50.9%
13:00	Display Off	40	4458	318	7.1%	636.9	45.4	5	75	39.1	40.3	47.1	51.6%
14:00	Display Off	40	4678	310	6.6%	668.3	44.3	5	82	38.4	39.7	47.1	54.6%
15:00	Display Off	40	5066	249	4.9%	723.7	35.6	5	79	34.5	36.9	45.2	62.1%
16:00	Display Off	40	5082	250	4.9%	726.0	35.7	5	76	34.9	37.0	45.8	63.9%
17:00	Display Off	40	5010	173	3.5%	715.7	24.7	5	71	32.9	34.6	43.8	63.6%
18:00	Display Off	40	5016	175	3.5%	716.6	25.0	5	68	34.2	36.2	44.5	62.8%
19:00	Display Off	40	4405	214	4.9%	629.3	30.6	5	74	36.2	37.8	45.7	59.8%
20:00	Display Off	40	4055	315	7.8%	579.3	45.0	5	83	39.4	40.4	47.6	55.3%
21:00	Display Off	40	3759	340	9.0%	537.0	48.6	5	83	40.3	41.3	48.1	54.8%
22:00	Display Off	40	3506	431	12.3%	500.9	61.6	5	85	40.7	41.4	49.1	54.0%
23:00	Display Off	40	3003	414	13.8%	429.0	59.1	5	81	41.4	42.2	49.8	51.6%
Total Volumes/ Avg			88691	7921	8.9%	12945.6	1156.1	5	102	39.0	40.4	48.1	53.2%
Total/Avg w/o Feedback			88691	7921	8.9%	12945.6	1156.1	5	102	39.0	40.4	48.1	53.2%
Total/Avg w/ Feedback			0	0	0	0.0	0.0	n/a	n/a	n/a	n/a	n/a	n/a



Start: 2022-02-14

End: 2022-02-21

Times: 0:00-23:59

# Volume by Speed

## New Hampshire Ave @ Fox St, SB

Speed Bins: Size 5, Range 1 to 150

Time View: By Hour (Total Volumes)

Time	1 to 5	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	31 to 35	36 to 40	41 to 45	46 to 50	51 to 55	56 to 60	61 to 65	66 to 70	71 to 75	76 to 80	81 to 85	86 to 90	91 to 95	96 to 100	101 to 150	Avg Speed	Total
0:00	4	47	39	39	39	69	164	500	617	444	259	89	26	6	5	0	1	1	0	0	1	41.8	2350
1:00	3	32	24	26	30	39	132	346	475	320	132	43	16	7	2	4	1	0	1	0	0	41.5	1633
2:00	1	11	27	15	22	27	90	246	334	258	160	47	15	7	4	1	1	1	0	0	0	42.8	1267
3:00	2	27	19	18	16	26	86	249	325	278	139	53	29	15	5	3	1	0	0	0	0	42.9	1291
4:00	3	38	47	44	21	32	135	387	580	510	252	105	38	11	3	4	0	0	0	0	0	42.9	2210
5:00	13	85	91	68	36	99	278	640	917	689	347	134	37	8	1	2	0	0	0	0	0	41.2	3445
6:00	11	81	106	85	88	155	417	966	1115	732	329	98	42	13	3	1	1	0	0	0	0	40.2	4243
7:00	35	195	191	201	222	299	519	785	743	454	179	59	15	8	3	1	0	0	0	0	0	34.9	3909
8:00	18	134	133	150	192	245	474	879	834	533	225	77	26	13	4	3	0	0	0	0	0	37.2	3940
9:00	9	85	76	75	85	149	365	784	980	694	289	89	31	7	0	1	1	1	0	0	0	40.2	3721
10:00	8	85	63	56	66	135	358	937	1134	723	311	96	28	10	1	3	0	0	0	0	0	40.7	4014
11:00	18	77	101	74	96	152	438	985	1201	724	265	90	24	4	1	0	2	0	0	0	0	39.7	4252
12:00	12	89	78	94	84	170	525	1145	1198	622	253	83	18	5	1	1	0	0	0	0	0	39.3	4378
13:00	11	100	88	87	92	201	575	1071	1271	644	233	54	24	6	1	0	0	0	0	0	0	39.0	4458
14:00	14	92	78	116	135	234	617	1181	1273	628	216	72	16	4	0	1	1	0	0	0	0	38.6	4678
15:00	36	217	223	266	369	463	678	1047	1009	509	171	58	12	5	2	1	0	0	0	0	0	34.5	5066
16:00	29	206	189	252	353	436	717	1116	992	542	174	52	13	7	3	1	0	0	0	0	0	34.9	5082
17:00	58	262	250	333	383	543	749	1026	858	375	115	40	13	3	2	0	0	0	0	0	0	32.7	5010
18:00	30	208	193	255	341	492	766	1136	978	442	135	34	4	2	0	0	0	0	0	0	0	34.2	5016
19:00	21	144	122	154	210	369	662	1090	932	487	151	45	14	3	1	0	0	0	0	0	0	36.1	4405
20:00	17	75	82	68	73	178	500	1077	1087	583	221	65	16	5	4	3	1	0	0	0	0	39.2	4055
21:00	3	76	65	45	59	136	396	939	1064	636	237	66	21	12	3	0	1	0	0	0	0	40.3	3759
22:00	10	59	65	55	47	137	360	801	980	561	255	118	36	14	7	0	1	0	0	0	0	40.7	3506
23:00	5	61	61	50	41	77	294	670	752	578	248	89	51	14	9	2	1	0	0	0	0	41.3	3003
Total	371	2486	2411	2626	3100	4863	10295	20003	21649	12966	5296	1756	565	189	65	32	13	3	1	0	1	38.3	88691



Start: 2022-02-14

End: 2022-02-21

Times: 0:00-23:59

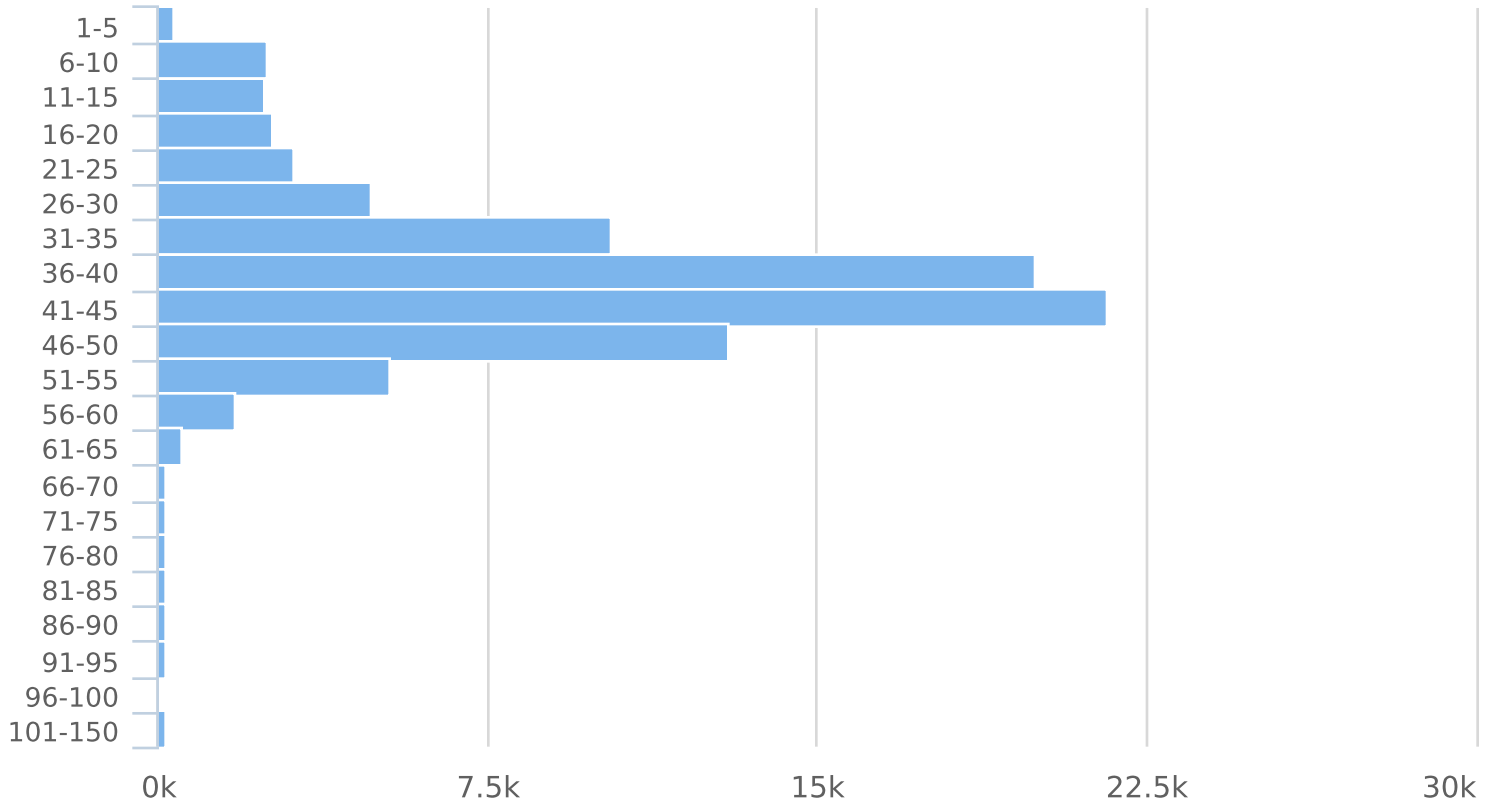
# Volume by Speed

New Hampshire Ave @ Fox St, SB

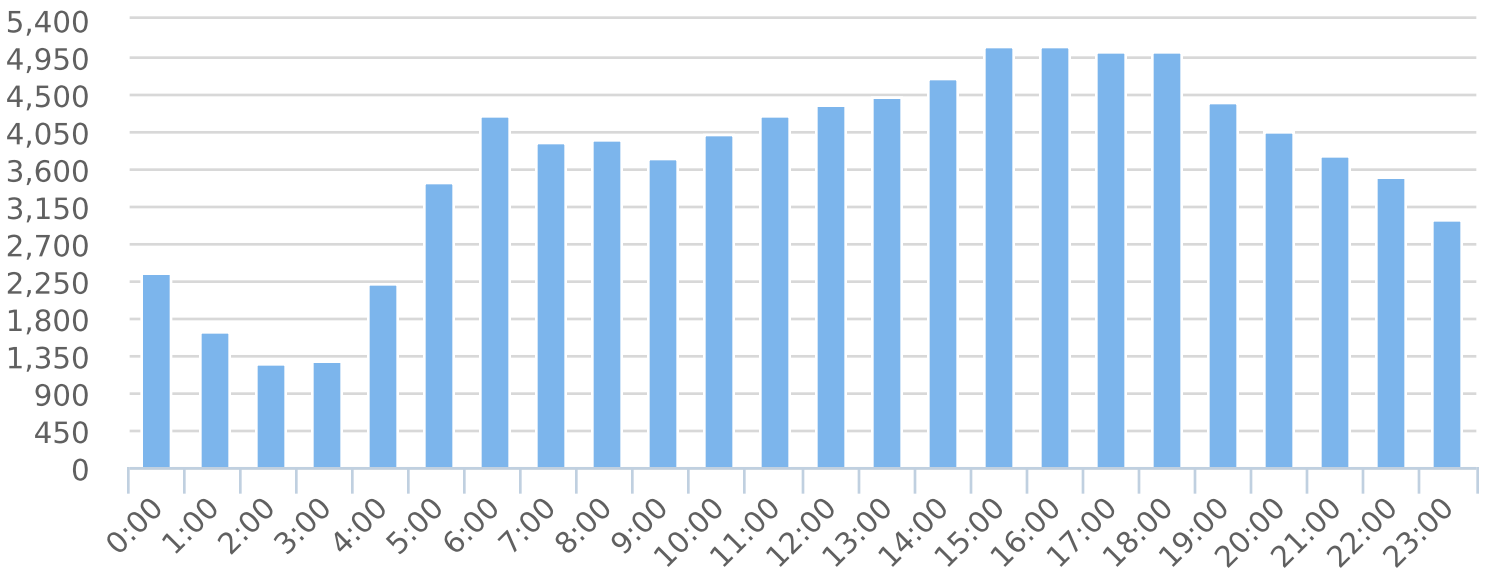
Speed Bins: Size 5, Range 1 to 150

Time View: By Hour (Total Volumes)

Total Volume by Speed Distribution



Volume over Time



## Appendix C: Field Photographs of Existing Condition

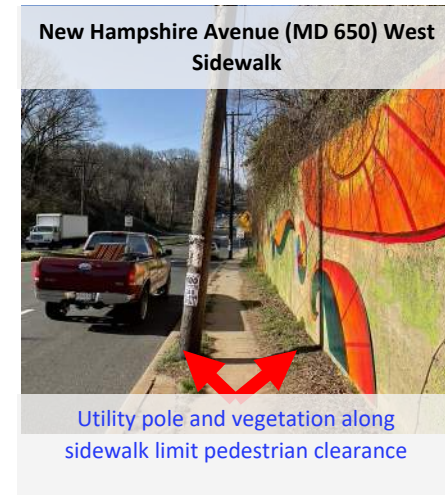
New Hampshire Avenue (MD 650) at Piney Branch Road (MD 320) to New Hampshire Avenue (MD 650) at Southampton Drive

*Sidewalk and Trailhead Disrepair*



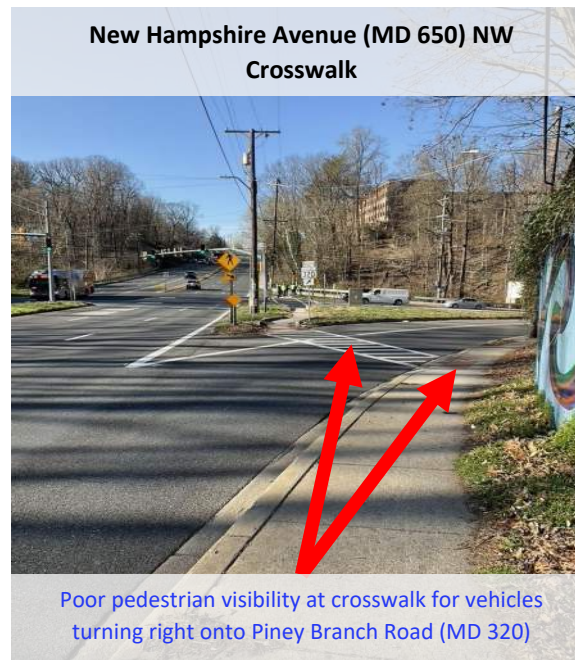
New Hampshire Avenue (MD 650) at Piney Branch Road (MD 320) to New Hampshire Avenue (MD 650) at Southampton Drive

*Obstructed Sidewalks*



New Hampshire Avenue (MD 650) at Piney Branch Road (MD 320) to New Hampshire Avenue (MD 650) at Southampton Drive

*Limited Visibility with Crosswalks*



*Missing or Faded Pavement Marking*



New Hampshire Avenue (MD 650) at Piney Branch Road (MD 320) to New Hampshire Avenue (MD 650) at Southampton Drive

*Destroyed Light pole*



*Utility Pole Replacement*



*Speed Limit*



New Hampshire Avenue (MD 650) at Piney Branch Road (MD 320) to New Hampshire Avenue (MD 650) at Southampton Drive

*Broken Items*



Pothole(s)



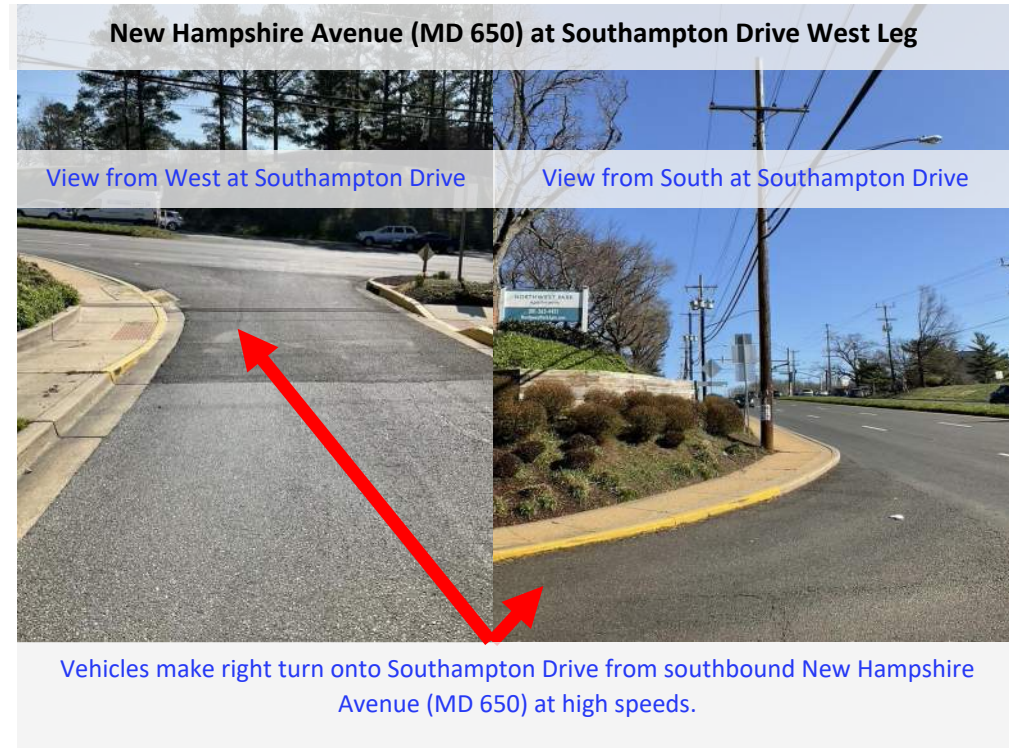
New Hampshire Avenue (MD 650) at Southampton Drive to New Hampshire Avenue (MD 650) at Metzerott Road

*Sidewalk Disrepair*



New Hampshire Avenue (MD 650) at Southampton Drive to New Hampshire Avenue (MD 650) at Metzerott Road

*Pedestrian Crosswalk Hazards*



New Hampshire Avenue (MD 650) at Southampton Drive to New Hampshire Avenue (MD 650) at Metzerott Road

*Roadway / Motorist Hazards*



New Hampshire Avenue (MD 650) at Metzerott Road to New Hampshire Avenue (MD 650) at Northampton Drive

*Trip Hazards and Non-ADA Accessible Sidewalks*



New Hampshire Avenue (MD 650) at Metzerott Road to New Hampshire Avenue (MD 650) at Northampton Drive

*Roadway / Motorists*

**New Hampshire Avenue (MD 650) at  
Metzerott Road**



Street name is not visible on sign

**New Hampshire Avenue (MD 650) Median**



Missing object marker

New Hampshire Avenue (MD 650) at Metzerott Road to New Hampshire Avenue (MD 650) at Northampton Drive

*Miscellaneous Safety Concerns*



New Hampshire Avenue (MD 650) at Northampton Drive to New Hampshire Avenue (MD 650) at Dilston Road / Adelphi Road

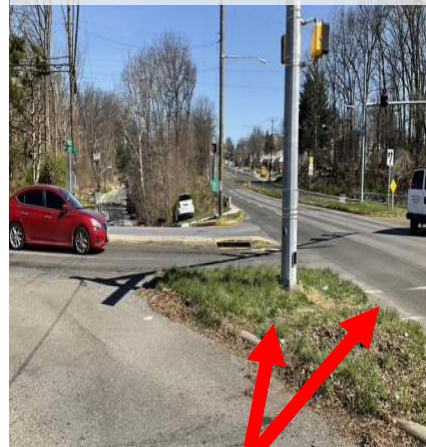
*Non-ADA Accessible Sidewalks & Ramps*

**Northampton Drive Median**



No ADA compliant pedestrian ramps at median

**Pedestrian Refuge Island**



No ADA compliant pedestrian ramps at pedestrian refuge island

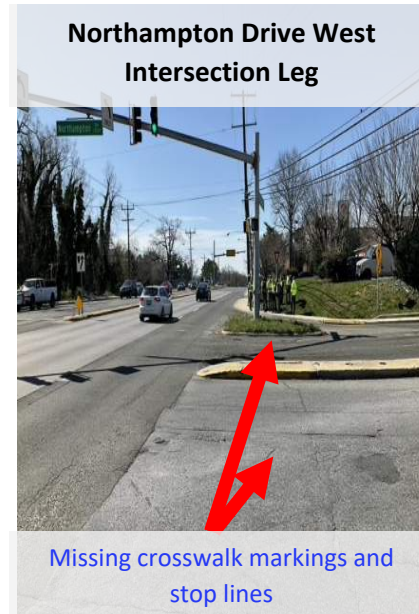
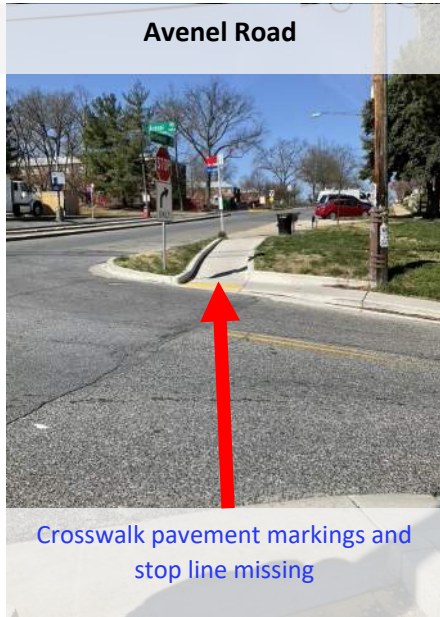
**New Hampshire Avenue (MD 650) West & East Sidewalks**



No ADA compliant pedestrian ramps at pedestrian refuge island

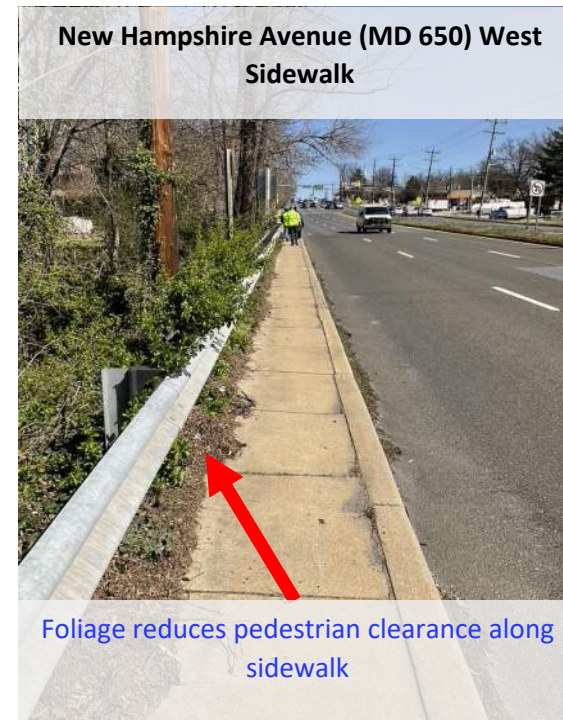
New Hampshire Avenue (MD 650) at Northampton Drive to New Hampshire Avenue (MD 650) at Dilston Road / Adelphi Road

*Pedestrian Crosswalk Hazards*



New Hampshire Avenue (MD 650) at Northampton Drive to New Hampshire Avenue (MD 650) at Dilston Road / Adelphi Road

*Obstructed Sidewalks*



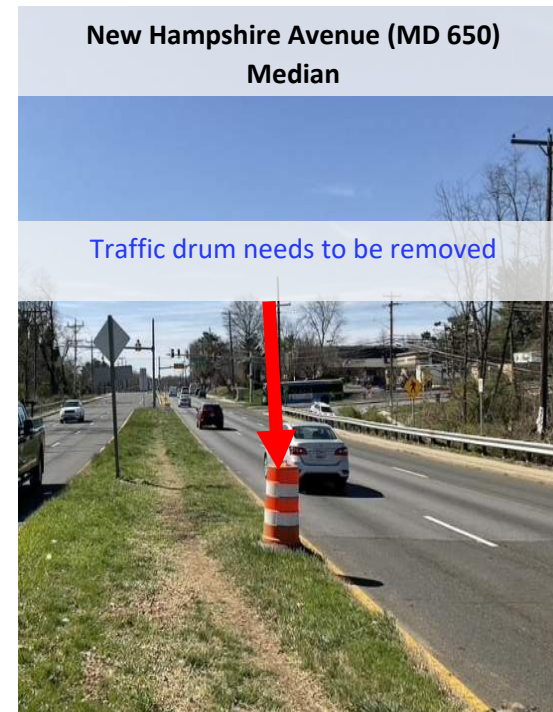
New Hampshire Avenue (MD 650) at Northampton Drive to New Hampshire Avenue (MD 650) at Dilston Road / Adelphi Road

*Roadway / Motorist Hazards*



New Hampshire Avenue (MD 650) at Northampton Drive to New Hampshire Avenue (MD 650) at Dilston Road / Adelphi Road

*Miscellaneous Safety Concerns*



New Hampshire Avenue (MD 650) at Fox Street to New Hampshire Avenue (MD 650) at Dilston Road / Adelphi Road

*Non-ADA compliant Ramp*



*Pedestrian Crosswalk Hazards*



New Hampshire Avenue (MD 650) at Dilston / Adelphi Road to New Hampshire Avenue (MD 650) at Oakview Drive

*Non-ADA Accessible Sidewalks & Ramps*

**New Hampshire Avenue (MD 650) East Sidewalk**



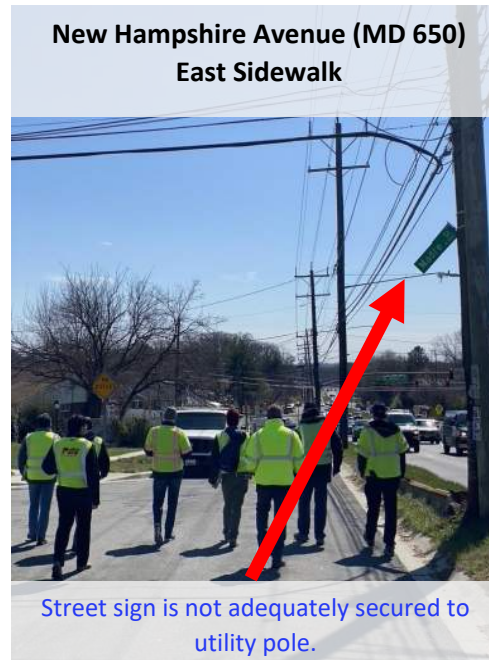
New Hampshire Avenue (MD 650) at Dilston / Adelphi Road to New Hampshire Avenue (MD 650) at Oakview Drive

*Roadway / Motorist Hazards*



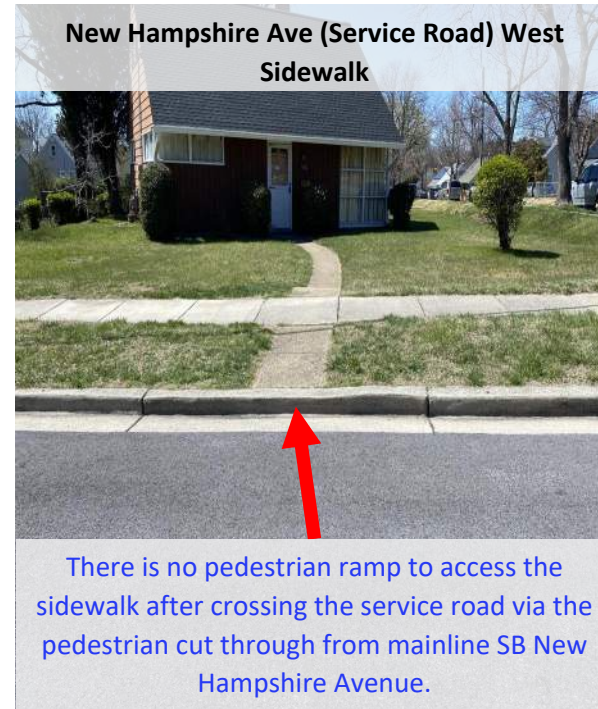
New Hampshire Avenue (MD 650) at Dilston / Adelphi Road to New Hampshire Avenue (MD 650) at Oakview Drive

*Sign Replacement / Relocation / Removal*



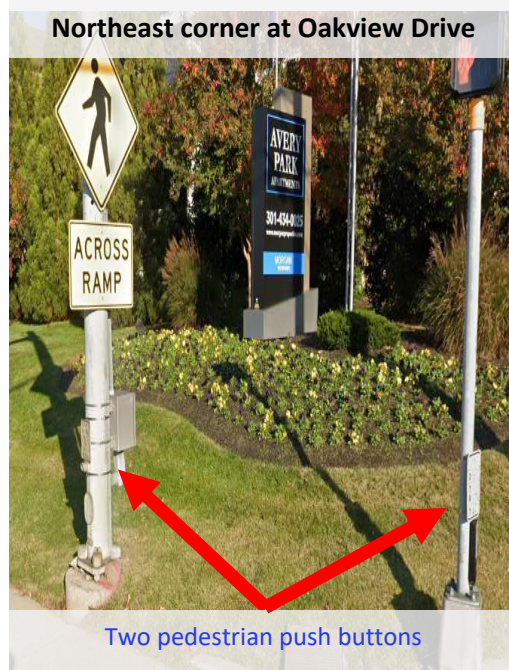
New Hampshire Avenue (MD 650) at Oakview Drive to New Hampshire Avenue (MD 650) at Capital Beltway (I-495)

*Non-ADA Accessible Sidewalks & Ramps*



New Hampshire Avenue (MD 650) at Oakview Drive to New Hampshire Avenue (MD 650) at Capital Beltway (I-495)

*Redundant Pedestrian Push Button*



*Non-ADA Compliant Pedestrian Push Button*



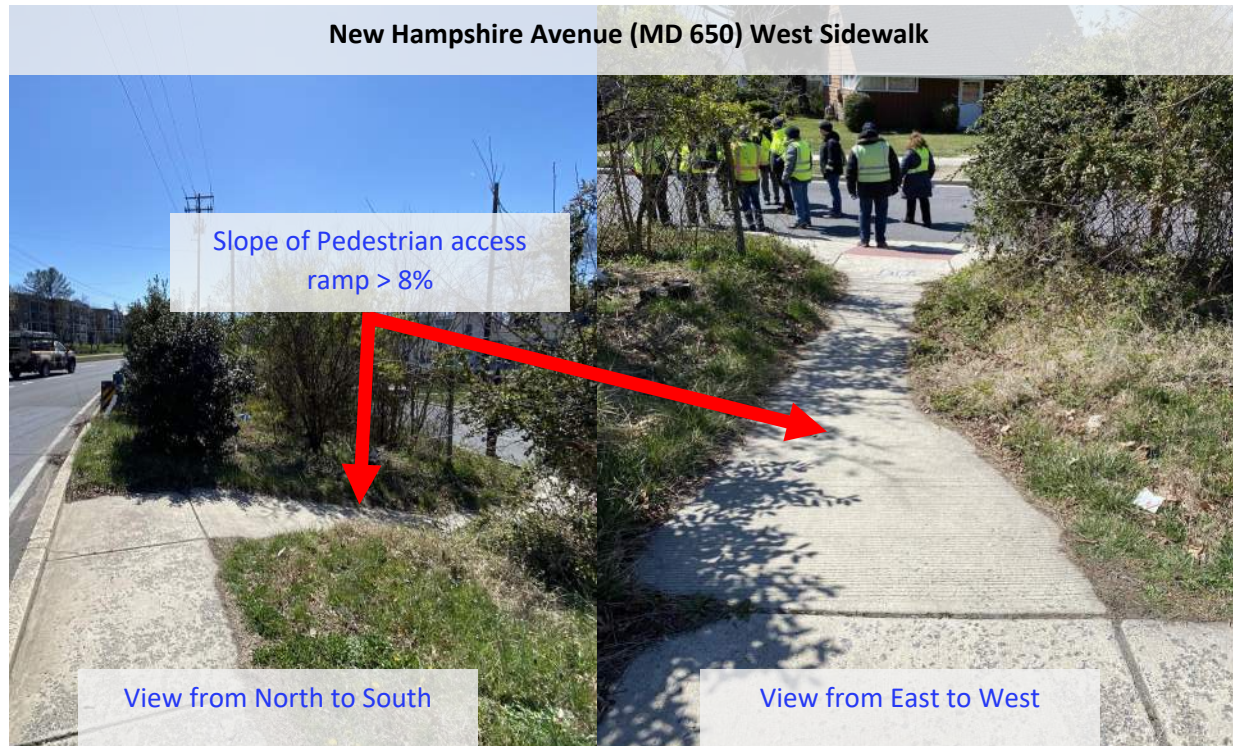
New Hampshire Avenue (MD 650) at Oakview Drive to New Hampshire Avenue (MD 650) at Capital Beltway (I-495)

*Roadway / Motorist Hazards*



## New Hampshire Avenue (MD 650) at Capital Beltway (I-495)

### *Non-ADA Accessible Sidewalks & Ramps*



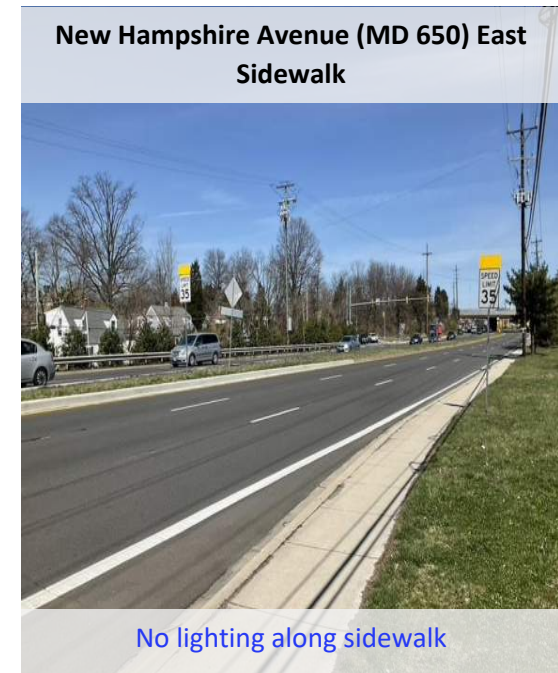
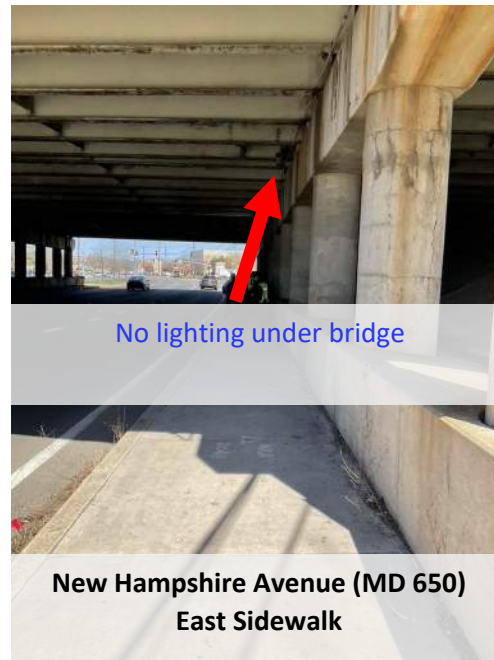
New Hampshire Avenue (MD 650) at Capital Beltway (I-495)

*Sidewalk Drainage*



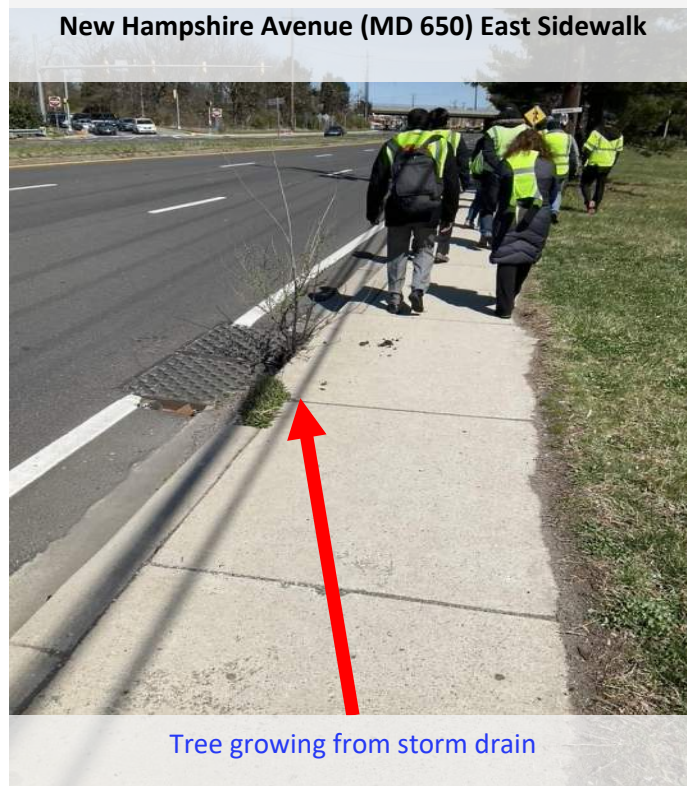
## New Hampshire Avenue (MD 650) at Capital Beltway (I-495)

### *Lighting*



New Hampshire Avenue (MD 650) at Capital Beltway (I-495)

*Miscellaneous Hazards*



## New Hampshire Avenue (MD 650) Corridor Wide

### *Pedestrian crossing Mid-block*

