

FY2023 School Bus Monitoring System and Stop Safety Review



Figure 1 - Two people pose for a photo at School Bus Safety Week event.

**Pursuant to State Government
Transportation Article § 8-664 and
HB0813 / CH0216, 2022
MSAR #s 14213 and 14214**

**MONTGOMERY COUNTY
GOVERNMENT
Final Version
Released January 19, 2024**

Purpose of this report

This is the second annual report under [MD Code, Transportation, § 8-664](#) and [2022 HB0813 / CH0216](#) enacted during the 2022 Regular Session of the Maryland General Assembly to publicly provide information on the County’s school bus monitoring camera program and steps Montgomery County has taken to reduce violations of passing a stopped school bus through bus stop reviews and driver outreach.

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About the school bus monitoring system

Law for stopping for stopped school buses

When approaching a stopped school bus with activated flashing red lights, Maryland law (MD Code, Transportation, § 21-706) requires that motorists traveling in the same direction as the bus must stop and remain stopped until the stop sign and lights are deactivated. The law also requires that motorists approaching the bus from the opposite direction must stop if there is no physical barrier, such as a grass or raised concrete median.

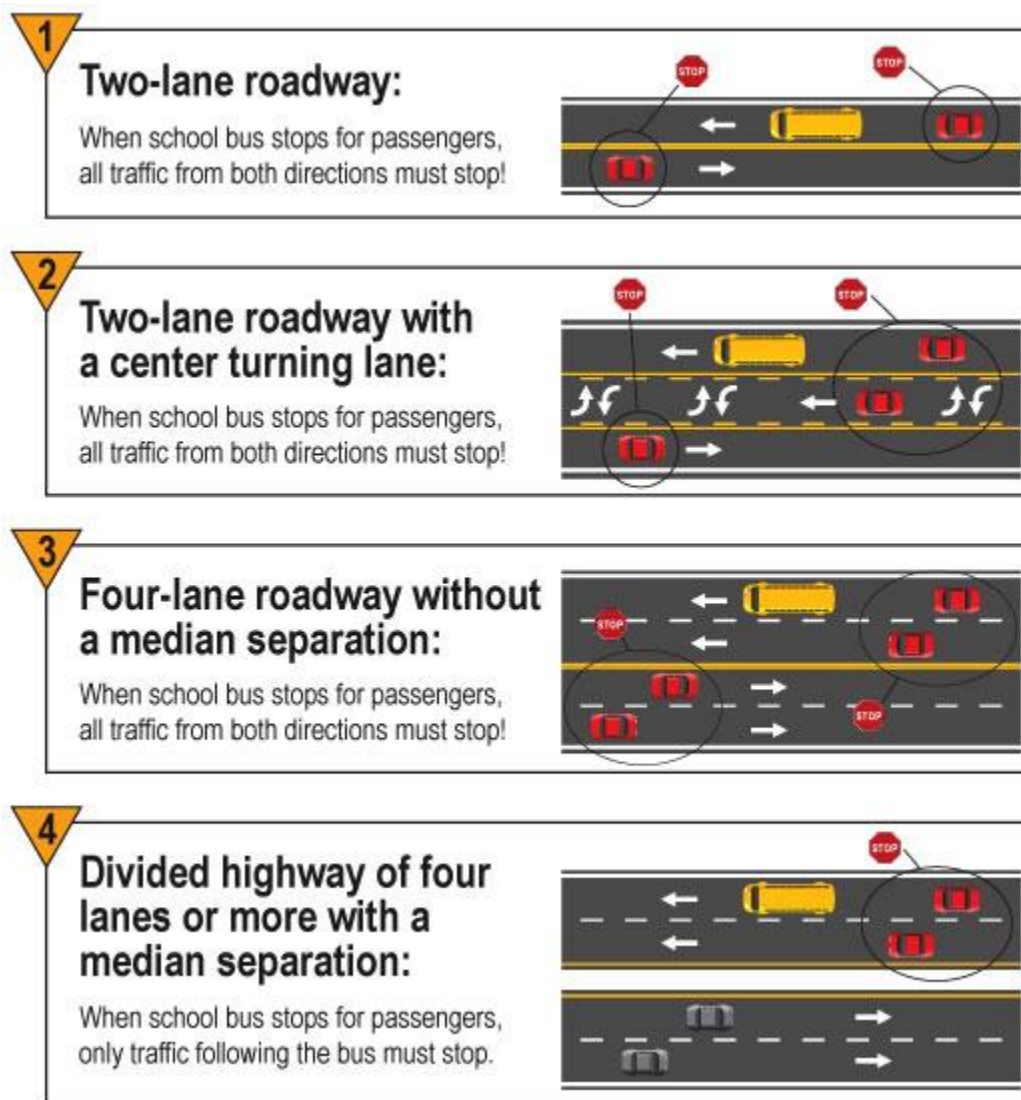


Figure 2 - Image showing when drivers must stop for a stopped school bus.

Background for automated enforcement

The State of Maryland enacted enabling legislation in 2011 that permits local jurisdictions to implement school bus safety camera programs.

A joint pilot between the Montgomery County Police Department (MCPD) and the Montgomery County Public Schools (MCPS) began in January 2014 with 25 cameras placed on the outside of school buses; the cameras were strategically deployed throughout the County. The cameras have the ability to record vehicles that pass stopped school buses that have activated flashing red lights. Violations captured by these cameras are reviewed by the police department's Automated Traffic Enforcement Unit and citations are mailed to the registered owner of the vehicle.

In October 2016, MCPD and MCPS embarked on an Automated School Bus Stop Arm Enforcement Program. After the enactment of State and Local legislation, the program went "live" on October 13, 2016, with a total 81 buses installed with cameras. By November of 2016, the number of camera-equipped buses increased to 103. By March of 2017, the number of buses with cameras increased to over 200 and it remained at that number for the duration of the 2016-2017 school year. For the duration of the 2017-2018 school year, 500 buses were equipped with enforcement cameras. By the 2019-2020 school year, all MCPS school buses were equipped. The decrease between FY22 and FY23 was due to decommissioning older buses in the fleet.

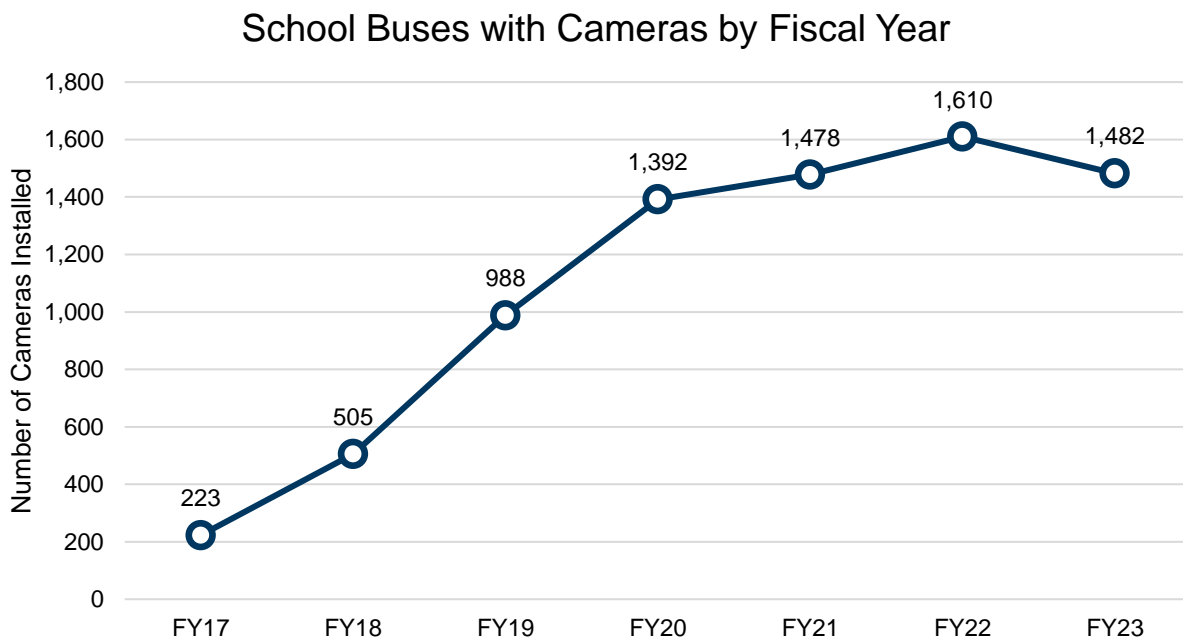


Figure 3 - Number of school buses equipped with cameras by fiscal year.

Citation review process

A common misperception of automated enforcement programs is that videos are not reviewed by a person prior to issuing citations. The school bus camera review process is designed to mirror the same approval process in place for speed and red-light programs. Each citation is reviewed at minimum three times prior to issuance.

The equipment on the buses capture video of vehicles approaching and passing a slowing and stopping school bus. Within the panes of the video there are yellow and red-light indicators which show the activation of the yellow lights and the subsequent activation of the red lights. The video tracks the approach of the bus as well as the vehicle activity around the bus and records this activity. The video is then uploaded to the vendor and their team of reviewers watch the video and identify potential vehicles that have committed a violation of the law. These potential violations, or events, are then used to create the framework of a citation. The vendor then sends an inquiry to the NIC USA to get the registered vehicle owner information. Once that information is received it is placed in the citation framework and it is reviewed a second time, by the vendor, at a higher level. If the event passes both levels of review it is sent to the Police Department to be reviewed by Automated Traffic Enforcement Unit (ATEU) staff. ATEU reviewers then verify the license data through nationwide motor vehicle records, ensure that the information received matches the vehicle in the video, and review the video to affirm or reject that a violation has taken place. The staff have been trained in the law, its meaning, and practical application.

If MCPD reviewers approve the event as a violation, they turn the event into a citation and it gets sent back to the vendor for final creation of the citation. Once approved by MCPD, the final version is sent back to the vendor to be printed and mailed to the violator. This process is legislatively required to be completed within 14 days of the date of the event.

Once the violator receives the citation, they can enter their citation number on the website to view the same video used to make a determination as to the validity of the violation. At that point violators have the option to either pay the citation or request a court date to contest the citation. Violators can also enroll in a payment plan for paying the \$250 fine if necessary. If violators choose to go to court, they mail that request back in and a court date is scheduled. The violators can address the court with their concerns and all parties review the video in court in front of the Judge. The Judge then makes a ruling on the citation based on the evidence and testimony provided. Additionally, if a violator is not satisfied with the verdict rendered in District Court they can appeal the decision to the Circuit Court and possibly beyond.

Process for reviewing, issuing, paying, and contesting an automated enforcement citation

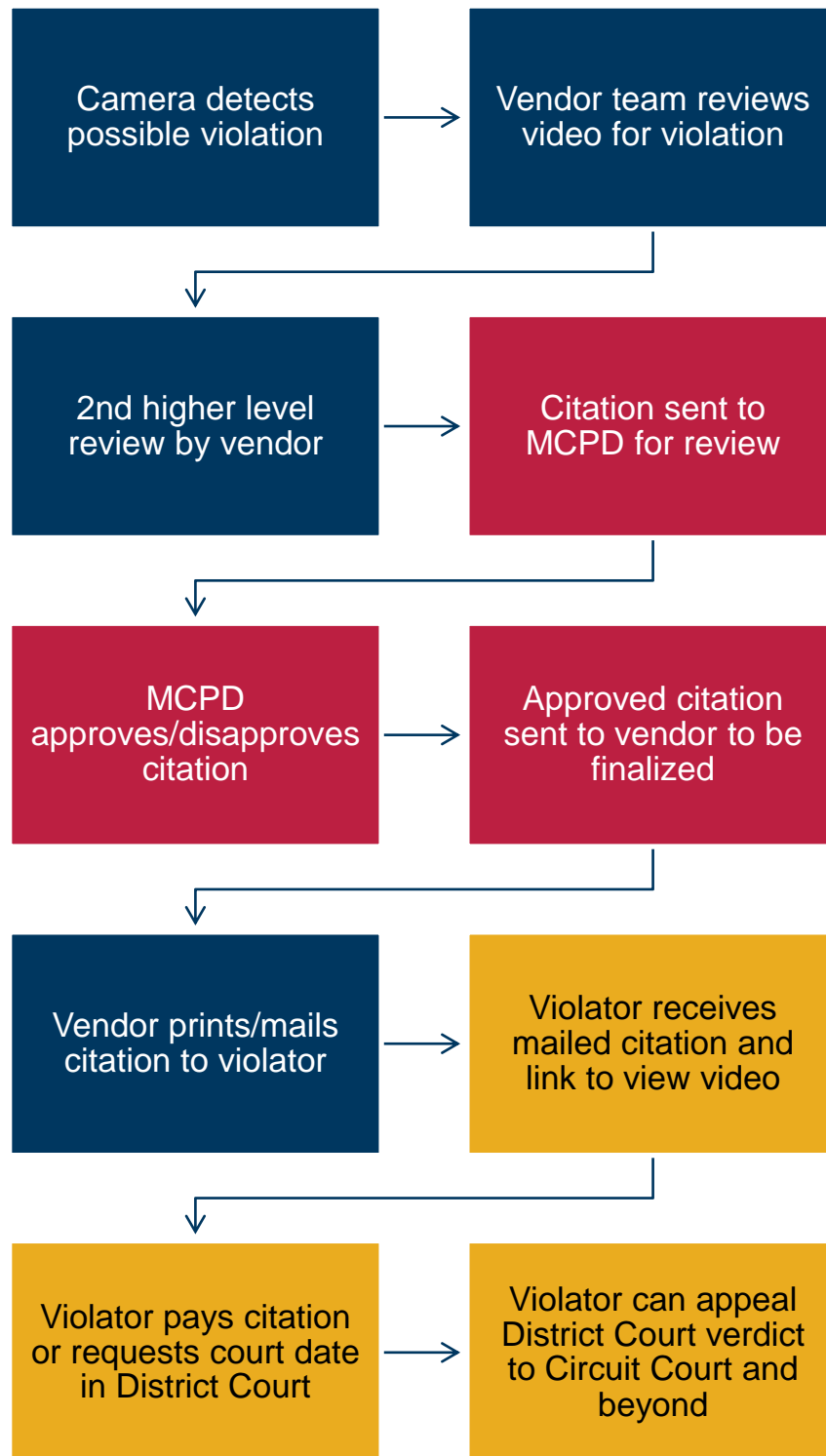


Figure 4 - Flowchart showing how bus stop violations are processed.

Color legend: Blue = vendor role, Red = MCPD role, Gold = Violator role

Bus stop safety programs

The County and State Governments partner on a range of in-person and online promotion of bus stop safety and raising awareness of driver’s responsibility to stop for school buses. Beginning in fiscal year 2023, the Montgomery County Department of Transportation began a safety audit of the school bus stops with the highest number of violations.



Figure 5 - Parents taking picture with school and safety mascots at bus stop safety event.

Public outreach and information

The County, State, and Federal (NHTSA) Government’s back-to-school safety campaigns have some of the highest engagement and reach. During this campaign running from mid-August through October, Montgomery County Departments of Transportation, Police, Fire Rescue, County Executive, and Public Information; Maryland Highway Safety Office (MHSO); and Montgomery County Public Schools provide information on when to stop for a school bus with red lights flashing along with other social norming messaging to encourage drivers to look out for our children getting on and off the bus.

Social Media: The County utilized materials developed by MHSO and NHTSA to broadcast school bus safety messages across multiple social media platforms including X (formerly Twitter), Facebook, Instagram, and videos on YouTube. On X alone, 5 Montgomery County Government accounts have over 248,000 followers. The following page provides a sample of the social media posts this year.

Pete Piringer @mcfrsPIO

Back to @MCPS School for area students this week & @mcfrs Fire Chief Scott Goldstein reminds drivers to exercise extra caution as students head back to school - 'Stop for the School BUS' & Expect changing Traffic & Pedestrian patterns throughout @MontgomeryCoMD

9:45 AM · Sep 1, 2022

X/Twitter: MCFRS PIO



Respect the Bus 2021

MCPSTV 18.2K subscribers

Like Share Save

YouTube: MCPS TV

Montgomery County Department of Transportation October 17, 2022

It's School Bus Safety Week! Here's some important information from Montgomery County Police Department about school bus laws for all drivers to know. [Montgomery County Government](#) [Montgomery County Public Schools](#) #schoolbussafetyweek #schoolbussafety #pedestriansafety

Montgomery County Police Department October 17, 2022

October 17-22, 2022 is National School Bus Safety Week!

The Montgomery County Police Department wants to remind you exactly when you need to stop for school buses and remember to stop at least 20-feet away. We all have to do our part to keep our kids safe. #MCPNews #SchoolBusSafety #BetterTogether

Facebook: MCDOT

Instagram Log In Sign Up

mcdotnow • Follow Original audio

Instagram: MCDOT

Montgomery County en Español August 28

¡Feliz comienzo del curso escolar a los más de 162.000 estudiantes de MCPS! Les deseamos un año repleto de oportunidades y crecimiento académico.

A partir de hoy tendremos los autobuses escolares rodando por nuestras calles y vecindarios. Choferes recuerden hacer el ALTO cuando los autobuses tienen el brazo mecánico extendido con el STOP. Esto significa que los alumnos se están montando o desmontando del autobús.

Y también recuerde que los buses de MCPS están equipados con cámaras de video. Si no hace el ALTO, recibirá una multa a vuelta de correo.

Facebook: Montgomery County en Español

MD Highway Safety Office @zerodeathsMD

If the red lights are flashing, you **MUST** stop for the #SchoolBus. Failure to stop could not only cost you a hefty fine, it might cost a child much more. zerodeathsmd.gov/news/stop-on-r... #SchoolBusSafetyWeek

11:03 AM · Oct 20, 2022

X/Twitter: Highway Safety Office

In person outreach: State and County safety teams focus heavily on back-to-school and bus stop safety from August through October. Outreach teams attend MCPS back-to-school nights and provide bilingual school bus stop safety literature at community events.

Media coverage: During FY23, six stories about the importance of stopping for school buses were generated by five local media outlets. The school bus monitoring system played a key role in driving media interest, as its [cameras provided video evidence](#) illustrating the consequences of failing to stop for a bus.

- WJLA (ABC 7) – 8/31/22
- WTOP (Radio 103.7) – 8/31/22, 3/20/23
- MoCo 360 Media (Online News) – 8/31/22
- WTTG (Fox 5) – 9/1/22
- WUSA (CBS 9) – 9/1/22

Driver's Manual in 9 Languages: The [Maryland Driver's Manual](#), available in the nine most spoken languages in Maryland, provides a plain language explanation of when and how far away to stop for a school bus with its red lights flashing.

Citation language assistance: Citations from officers and automated programs are considered Maryland Court documents and currently provided in English. Persons needing assistance in their preferred language can call the phone number listed on the citation. County Police have a Spanish language representative with language line service for additional languages.

Coordination of efforts: County and State Government agencies continue to utilize the results of bus stop safety reviews, Safe Routes to School walk audits, road safety audits, and resident feedback to enact any recommended changes at the bus stops where feasible. There will be continued community outreach about school bus safety with heavy emphasis in the fall.

Alternative penalties for first offenses: The County Government does not recommend changing the penalties for first time offenders as the current structure provides an educational and deterrent effect. Overall, 90% of vehicles cited by this program in the past 5 years received a single violation.



Example of Highway Safety Office's bilingual palm cards with the stopping law explained.

Bus stop placement and review policies

Montgomery County Public Schools (MCPS) student transportation policy is governed under Board of Education Policy, [EEA](#), Student Transportation, and MCPS Regulation [EEA-RA](#), Student Transportation. Under the regulations “buses are routed in a manner that maximizes safety and efficiency.”

Below are policies and operational procedures MCPS utilizes to maximize safety to and from bus stops.

- Provide right side only pickup and drop off for students on multilane roadways. Right side only avoids requiring students to cross multilane roadways to get on or off the bus.¹
- Provide specialized door to door transportation for students with disabilities.
- Identifying appropriate walking routes to and from a bus stop or school building.
- Providing bus services where an appropriate walking route does not exist. When roadway facilities change, MCPS DOT, in consultation with school principals and the roadway owner, will reassess walking routes.
- Annual review of bus routes and bus stops for safety and on an ongoing basis as needed. In recent years, MCPS has consolidated routes and moved over two dozen stops off main thoroughfares.
- Crash investigation, which can result in additional training or disqualification for bus drivers.
- Collaborating with MCPD and MCDOT on traffic safety, including placement of crossing guards.
- Routing buses on roadways that can
 - accommodate the size and weight of the bus,
 - space for the bus to travel straight or turn around, and
 - turn from the through roadway and entrance back onto the through roadway can be made safely.

¹ Right side only pickup and drop off provides students service on their home side of the street; however, students may cross the road if their destination is elsewhere. In such cases, the school bus monitoring system adds an extra layer of protection for students crossing, complementing the flashing red lights.

2023 Infrastructure review near bus stops

The Montgomery County Government Department of Transportation (MCDOT) examined and developed recommendations for student safety at the locations with the highest school bus monitoring program citations. This year, MCDOT reviewed the following locations:

Bethesda

- River Road (5100 & 5200 Blocks) *
- Arlington Road (7100 Block)

Silver Spring

- East West Highway (1400 Block) *
- Colesville Road (8800 Block) *
- University Boulevard East (800 Block)
- Piney Branch Road (8900 Block) *
- Georgia Avenue (7900 Block)

Gaithersburg

- Clopper Road (900 Block) *
- North Frederick Avenue (400 Block) *

Aspen Hill

- Bel Pre Road & Sun Valley Circle (2300 Block) *

* Recurring locations from the FY22 study.

The full report and recommendations can be found in the **Appendix**. For each location, the review team examined the bus stop location, adjacent roadway characteristics, surrounding land use, pedestrian infrastructure and signage, and observed morning and afternoon student pick up and drop off activity. The review team recommended improving driver awareness for school bus stops in the high violation locations by installing signage on all approaches. Two of the top ten violation locations had a student observed crossing the roadway to get on the bus. One location, the 8900 block of Piney Branch Road, had notable safety concerns and MCDOT recommended to MDOT SHA improvements for the existing mid-block crossing.

Citations issued

Citations by fiscal year

In FY23, the school bus monitoring program issued 52,066 citations, resulting in \$13 million in fines. Of these citations, 72% (37,739) were for drivers passing in the opposite direction, while 28% (14,327) were for those traveling in the same direction as the stopped bus. Citations decreased 13% in FY23, with an 18% decrease in same-direction citations and a 10% decrease in opposite-direction citations. Preliminary FY24 data show a continued downward trend in citations, aligning with the County's experience with other automated enforcement programs.

	FY18	FY19	FY20*	FY21*	FY22	FY23
Citations mailed	34,201	54,837	50,698	7,058	59,614	52,066
Citations per active camera	68	56	36	5	37	35
Citations from opposite direction	20,720	34,415	31,573	4,827	42,127	37,739
Citations from same direction	12,928	20,413	19,125	2,231	17,487	14,327
Citations with direction not captured	553	9	0	0	0	0
Total fines	\$8,549,750	\$13,708,125	\$12,674,500	\$1,764,500	\$14,903,500	\$13,016,500

*School closures during COVID-19 pandemic resulted in fewer bus trips.

FY23 top 10 citation locations

For FY23, the following ten blocks had the highest number of recorded violations. Eight of the top 10 blocks were along multi-lane State roads with the remaining two belonging to the County. These ten blocks accounted for 22% of all citations issued. See the Appendix for a detailed analysis of each bus stop and any safety recommendations.

Block	Roadway Owner	Violations Same Direction	Violations from Opposite Direction	Total Violations
5100 RIVER RD, 20816	State	156	1,888	2,044
8800 COLESVILLE RD, 20910	State	259	1,738	1,997
1400 EAST WEST HWY, 20910	State	217	1,406	1,623
800 UNIVERSITY BLVD E, 20903	State	69	1,074	1,143
5200 RIVER RD, 20816	State	103	992	1,095
400 N FREDERICK AVE, 20877	State	50	907	957
900 CLOPPER RD, 20878	State	190	691	881
7100 ARLINGTON RD, 20814	County	38	686	724
7900 GEORGIA AVE, 20910	State	39	577	616
2300 BEL PRE RD, 20906	County	20	491	511

To see data on citations issued under the school bus monitoring program for all school bus stops, use the link below or visit the Montgomery County Vision Zero website. The reporting unit for school bus stops is the block level.

Link: https://www.montgomerycountymd.gov/visionzero/Resources/Files/FY17-23_Bus_Camera_Tickets_by_Stop_and_Fiscal_Year_PUBLISHED.csv

NOTE ON BLOCK ADDRESSES: When the school bus monitoring system captures a violation, the bus’s latitude and longitude are captured. The latitude and longitude are then matched to the nearest address. When the bus stop is near an intersection, the matched address may be along the intersecting road. Therefore, some of the block information presented in the block summary may reflect a violation that occurred on an intersecting road.

Appendix: FY23 School Bus Stop Safety Review

700 East Pratt Street, Suite 500
 Baltimore, MD 21202
 Phone 410.728.2900
 www.rkk.com

Date: January 17, 2024
To: Michael Paylor, PE, PTOE
 Mark Terry
Organization: Traffic Engineering Studies Section, Division of Traffic Engineering and Operations, Montgomery County Department of Transportation
From: Will Wu, PE, PTOE
Project: MCDOT School Bus Stop Evaluations (Contract No. 1082910) – Task 40
Subject: School Bus Stop Observations and Recommendations

Background

The Maryland General Assembly, under House Bill 813 – Montgomery County Speed and School Bus Monitoring Systems MC 03-22, requires that Montgomery County submit annual reports related to school bus monitoring cameras. Per the bill, Montgomery County “must examine school bus stop violation data to determine the 10 school bus stop locations at which the highest number of citations for passing a school bus are issued and implement alternatives for those stops...”

The one-page flyer depicted in **Figure 1**, created collaboratively by Montgomery County Public Schools (MCPS) and the Montgomery County Police Department (MCPD), provides information on the Maryland School Bus Law, specifically addressing driver conduct when encountering a stopped school bus with flashing red lights. The guidance emphasizes that on two-lane and multi-lane roadways, drivers must come to a stop in both directions. On multi-lane roadways with a grassy or paved median dividing them, drivers following the bus are mandated to stop, while those traveling in the opposite direction are not required to do so.

In response to the School Bus Law and House Bill 813 legislation, the Montgomery County Department of Transportation (MCDOT) furnished a list of 10 locations for assessment. Building on last year’s report, RK&K conducted observations and evaluations of the operations and behaviors linked to school bus pick-ups and drop-offs at these locations, as outlined in the Study Locations section below, during both morning and afternoon activity periods. This memorandum communicates the current conditions at these locations, highlights field observations during school bus pick-ups and drop-offs, and presents infrastructure recommendations for enhancing safety, marking the second year of such observations.

THE DANGER IS REAL

Understanding the School Bus Law

Let's Work Together to Keep Our Kids Safe

STOP
 FLASHING RED LIGHTS
 STAY STOPPED
 TILL LIGHTS TURN OFF
 IT'S THE LAW

The Maryland Law

- On Two Lane and Multi-Lane Roadways: Motorists traveling in both directions – regardless of how many travel lanes or the presence of a turn lane – **Must Stop and Remain Stopped** until the flashing red bus lights are turned off.
- On Multi-Lane Roadways Divided By a Median Strip: Drivers following the bus must stop. Drivers do not need to stop if they are traveling in the opposite direction of the bus on a multi-lane highway that is divided by a physical barrier such as a grassy or paved median strip. Cars traveling in the opposite direction of the bus on a physically-divided highway may proceed with caution.

When Following or Approaching a School Bus

- Be Prepared To Stop. Flashing yellow lights on the bus are activated 100 to 300 feet before the bus is going to stop to load or unload children.
- Drivers Must Stop and Remain Stopped when red lights flash. Drivers should not proceed until flashing red lights are turned off or the bus begins to move.

Why Drivers Are Not Stopping and What You Can Do

- In the beginning 40 days of the 2017-2018 school year, with 500 buses armed with cameras, 7,919 drivers were recorded illegally passing school buses, which means 198 bus camera citations were recorded per day.
- Are drivers unaware (ignorant) of the law, impatient to get going, or not giving complete attention (driving distracted)?
- The goal for camera installation on all of the County's 1,200 school buses is January 2019.
- Please know and obey the law; and share this information with friends and family.

Violations are reviewed by the police department's Automated Traffic Enforcement Unit and citations are mailed to the registered vehicle owner.

- The camera-generated fine is \$250 with no points on the driver's license.
- A citation issued by a police officer is \$570 with three points on the driver's license.
- The goal is voluntary compliance and keeping our students safe.

STOP (Two Lane Roadway) - Motorists traveling in both directions must stop and remain stopped until flashing red lights are turned off.

MULTILANE (Paved Median) - Motorists following the bus must stop. Motorists traveling in the opposite direction of the bus do not need to stop.

STOP (Grassy Median) - Motorists following the bus must stop. Motorists traveling in the opposite direction of the bus do not need to stop.

Figure 1. Understanding the School Bus Law One-Pager (courtesy of MCPS & MCPD)

Study Locations

The map presented in **Figure 2** displays the 10 locations identified as having the highest frequency of bus stop citations, stemming from violations recorded by school bus cameras due to passing vehicles. The listed locations are as follows with recurring locations from last year marked with an asterisk:

- Bethesda
 - River Road (5100 & 5200 Blocks) *
 - Arlington Road (7100 Block)
- Silver Spring
 - East-West Highway (1400 Block) *
 - Colesville Road (8800 Block) *
 - University Boulevard East (800 Block)
 - Piney Branch Road (8900 Block) *
 - Georgia Avenue (7900 Block)
- Gaithersburg
 - Clopper Road (900 Block) *
 - North Frederick Avenue (400 Block) *
- Aspen Hill
 - Sun Valley Circle (2300 Block) *

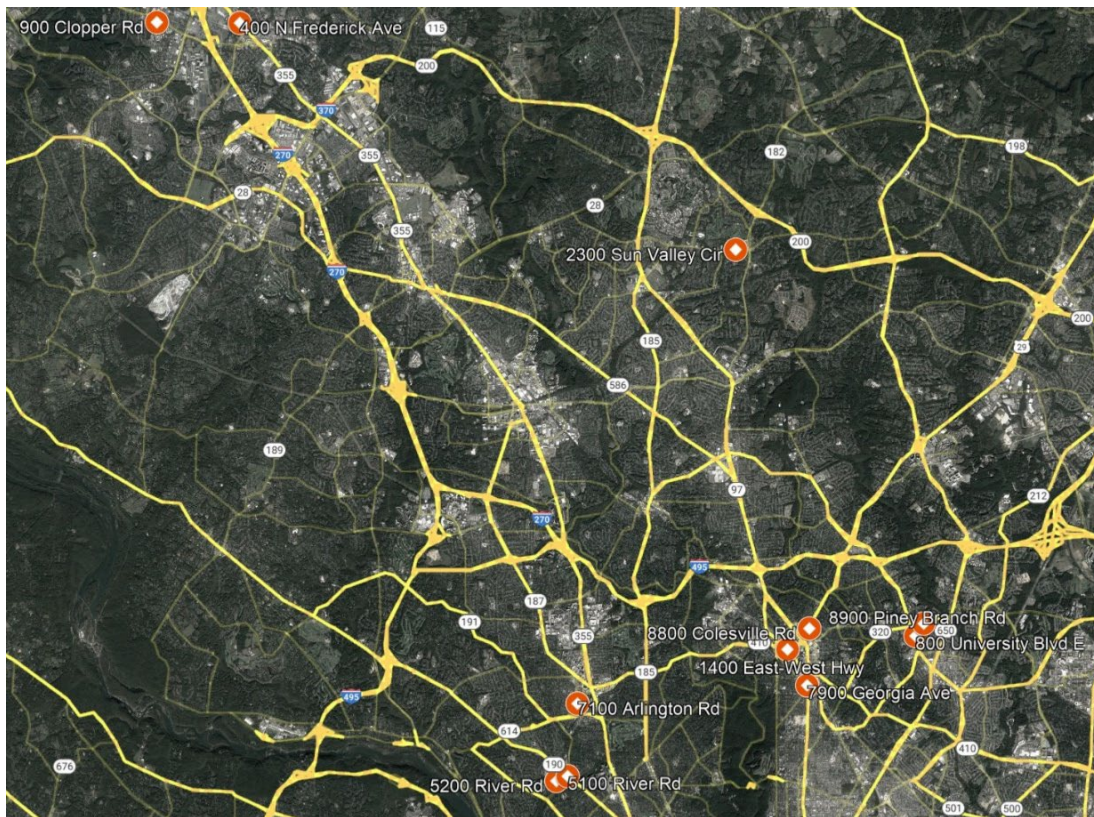


Figure 2: Bus Stop Locations

RK&K completed field observations during the morning pick-up and afternoon drop-off times between November 29, 2023, and December 21, 2023. MCPS supplied the times and locations, which we cross-verified during our field observations. Summaries of the sites and observations at each location are provided.

This study is dedicated to assessing safety at high-citation locations. While approaches like public education on school bus laws, training or re-training school bus drivers on stopping protocols, and police enforcement may offer assistance, this memorandum will concentrate on providing site-specific infrastructure recommendations when field observations indicate changeable conditions and behaviors. Given the widespread occurrence of violations across all sites, it is generally advised to install the S6-1(2) "State Law: Stop for School Bus When Red Lights Flash" signage (**Figure 3**) on both approaches to the bus stops in this study, especially in the absence of a median.

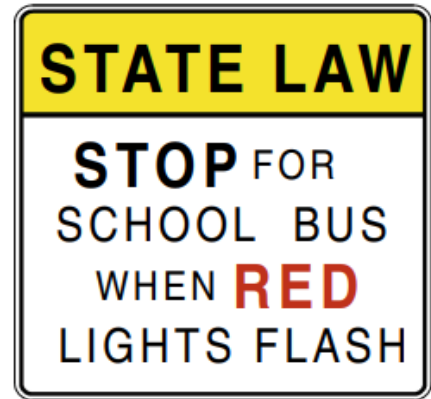


Figure 3. S6-1(2) Sign

River Road (5100 & 5200 Blocks)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 5100 and 5200 blocks of River Road (MD 190) in Bethesda, MD. Specifically, the school buses were observed to stop at 5101 River Rd (The Kenwood Condominiums) and the adjacent transit bus stop, as illustrated in **Figure 4**. Notably, these locations coincide with the Metro and Ride On bus stops.

Adjacent Roadway

River Road is a 5-lane typical section in the vicinity of the school bus stops, with two lanes in each direction and a two-way center left turn lane. The posted speed limit is 35 MPH in both directions. The nearest signalized intersection is less than 300 feet east of the subject school bus stops.

Surrounding Land Use

The immediate vicinity of the bus stop is characterized by multifamily and single-family residential land use adjacent to commercial properties. A high-rise condominium building is directly at the bus stops, while the majority of the community to the east is comprised of single-family homes. Washington Episcopal School is situated to the north of the condominiums, and the Capital Crescent Trail crosses River Road to the west. The Kenwood Condominiums include a parking garage. The commercial properties on the south side of the street are served by frequent curb cuts.

Pedestrian Infrastructure and Signage

WMATA and Ride On bus stops are situated alongside the school bus stops on the north side of River Road, with an additional transit bus stop located on the opposite sides of the street. Concrete sidewalks without buffers are provided along both sides of River Road in the vicinity of the school bus stops. A "Don't Block the Box" treatment is provided for the eastbound River Road approach at Butler Road.

Signalized crossings are present at the intersection of River Road at Little Falls Parkway. Crosswalks are marked, but pavement markings are faded. Pedestrian warning sign assemblies are present for crossings of channelized right turns. Advance warning signs for school bus stops are not present as the school bus stops are visible upstream along River Road.



Figure 4. River Road Bus Stop Locations

Observations

The project team conducted observations at this location on Wednesday, December 13, 2023, during the morning pick-up and afternoon drop-off time periods: 6:45 AM to 8:45 AM and 2:45 PM to 4:00 PM. Weather conditions were clear.

- **Buses Observed:** In the morning, 4 school buses were observed stopping to pick up school children. The school bus stopped in front of The Kenwood Condominiums on 3 occasions and at the transit bus stop on 1 occasion. In the afternoon, 4 school buses were observed stopped to drop off school children at the same locations.
- **Bus Stops:** Children boarding or alighting from the bus entered directly into the adjacent apartment complex, and no children were observed crossing the streets. Most small children were accompanied by parents or guardians.
- **Violations:** In the morning, all motorists traveling eastbound and westbound along River Road stopped for the school bus (**Figure 5**). In the afternoon, all motorists traveling in the same direction as the school bus (westbound) stopped as required. Numerous motorists traveling in the opposite direction (eastbound) were observed passing the school bus while red flashing beacons were activated, and the STOP panel was extended.



Figure 5. WB River Road Morning Stop

- **Pedestrian Crossings:** No students were observed crossing the street traveling to or from the school bus stops. There were multiple pedestrian crossings at the signalized intersection with Little Falls Parkway as well as some crossing at uncontrolled locations closer to Butler Road.
- **Obstructions:** There were no perceived sight distance obstructions for motorists approaching in either direction in the vicinity of the school bus stops.

Recommendations

Our evaluation findings align with the prior year observations. To enhance safety, we recommend the MDOT SHA refresh the existing crosswalk markings at the signalized intersection with Little Falls Parkway to enhance visibility.

Arlington Road (7100 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 7100 Block of Arlington Road in Bethesda, MD. Specifically, the school buses were observed to stop at 7131 Arlington Road (The Upstairs at Bethesda Row), as illustrated in **Figure 6**.

Adjacent Roadway

Arlington Road is a 5-lane typical section in the vicinity of the school bus stops, with two lanes in each direction and a two-way center left turn lane. The posted speed limit is 25 MPH in both directions. The nearest signalized intersections are less than 200 feet north and south of the subject school bus stops, at the intersections with Bethesda Avenue and Elm Street.

Surrounding Land Use

Downtown Bethesda falls within the Urban Core context zone. The immediate vicinity of the school bus stop is characterized by high-density mixed use developments providing residential, retail, and office space. Traveling a block to the west, the land use transforms to lower density residential homes.

Pedestrian Infrastructure and Signage

Ride On and Bethesda Circulator bus stops are situated alongside both sides of the 7100 block of Arlington Road, providing nearside transit bus stops at the signalized intersections. Brick sidewalks with landscaped buffers are provided along both sides of Arlington Avenue in the vicinity of the school bus stop.

Signalized crossings are present at the intersections of Arlington Road at Bethesda Avenue and Elm Street. The signal at Bethesda Avenue includes an exclusive pedestrian phase. Crosswalks include high visibility markings. Advance warning signs for school bus stops are not present as the school bus stops are visible upstream along Arlington Road.

Observations

The project team conducted observations at this location on Wednesday, December 6, 2023, during the morning pick-up and afternoon drop-off time periods: 7:15 AM to 9:00 AM and 3:15 PM to 4:15 PM. Weather conditions were clear.

•



Figure 6. Arlington Road Bus Stop Locations

- **Buses Observed:** In the morning, 2 school buses were observed stopping to pick up school children. The school buses stopped in front of The Upstairs at Bethesda Row apartment building on both occasions. In the afternoon, 1 school bus was observed stopped to drop off school children at the same location.\
- **Bus Stops:** Children boarding the school bus entered directly into the adjacent apartment building, and no children were observed crossing the streets. Most small children were accompanied by parents or guardians. In the afternoon, most children alighting the school bus entered the apartment building (**Figure 7**), but several traveled south along Arlington Road.

- **Violations:** In the morning and afternoon, several motorists traveling in both directions along Arlington Road were observed passing the school bus while red flashing beacons were activated, and the STOP panel was extended.
- **Pedestrian Crossings:** No students were observed crossing Arlington Road traveling to or from the school bus stops. Although several students were observed alighting the school bus in the afternoon and crossing Bethesda Avenue to points south. The segment has heavy pedestrian activity given the urban core context.
- **Obstructions:** There were no perceived sight distance obstructions for motorists approaching in either direction in the vicinity of the school bus stops.



Figure 7. NB Arlington Road Afternoon Stop

Recommendations

Based on our review, there are no notable safety concerns pertaining to school bus stop operations, and no infrastructure changes are deemed necessary for these specific school bus stops.

East-West Highway (1400 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 1400 Block of East-West Highway (MD 410) in Silver Spring, MD. Specifically, the school buses were observed to stop at 1400 East-West Highway (Lenox Park Apartments), as illustrated in **Figure 8**.

Adjacent Roadway

East-West Highway has a variable typical section in the vicinity of the school bus stop. Directly at the school bus stop, the roadway has 6 travel lanes – 2 thru lanes in both directions and dual left turn lanes approaching Colesville Road (MD 384). There is no posted speed limit in the vicinity of the school bus stop along East-West Highway. The nearest signalized intersection is approximately 100 feet east and subject school bus stop, at the intersection with Colesville Road.

Surrounding Land Use

Downtown Silver Spring falls within the Urban Core context zone. The immediate vicinity of the school bus stop is characterized by high-density residential west of Colesville Road and retail and office space east of Colesville Road.

Pedestrian Infrastructure and Signage

WMATA and Ride On bus stops are situated alongside both sides of the East-West Highway. Brick sidewalks with landscaped buffers are provided along both sides of East-West Highway in the vicinity of the school bus stop, with no landscaped buffer directly in front of the school bus stop.

Signalized crossings are present at the intersection of East-West Highway at Colesville Road. Crosswalks include high visibility markings. Advance warning signs for school bus stops are not present.



Figure 8. East-West Highway Bus Stop Locations

Observations

The project team conducted observations at this location on Thursday, December 14, 2023, during the morning pick-up and afternoon drop-off time periods: 6:30 AM to 9:00 AM and 3:15 PM to 4:30 PM. Weather conditions were clear.

- **Buses Observed:** In the morning, only 1 school bus was observed stopping to pick up school children. The school bus stopped in front of Lenox Park apartment building nearest the east driveway. In the afternoon, 1 school bus was observed stopped to drop off school children at the same location (**Figure 9**). It should be noted that per MCPS-provided schedules, additional buses were expected during the morning and afternoon observations.
- **Bus Stops:** Children boarding and alighting the school buses entered directly into the adjacent apartment building, and no children were observed crossing the streets. Most small children were accompanied by parents or guardians.
- **Violations:** In the morning and afternoon, motorists traveling in the same direction as the school buses (eastbound) stopped when the school bus red flashing beacons were activated, and the STOP panel was extended. Many motorists traveling in the opposite direction (westbound) did not stop during the morning observations, but fewer passed the school bus in the afternoon.

- **Pedestrian Crossings:** No students were observed crossing East-West Highway traveling to or from the school bus stops. The segment has heavy pedestrian activity given the urban core context. Non-student pedestrians were observed crossing East-West Highway at midblock locations in close proximity to transit bus stops.
- **Obstructions:** There were no perceived sight distance obstructions for motorists approaching in the westbound direction in the vicinity of the school bus stops. Approaching the school bus stop location in the eastbound direction has horizontal and vertical curvature that may reduce sight lines, though eastbound motorists seemed to be aware stopped vehicles upstream.



Figure 9. EB East-West Highway Afternoon Stop

Recommendations

Our findings at this location align with the previous year observations. There are no notable safety concerns pertaining to school bus stop operations, and no infrastructure changes are deemed necessary for these specific school bus stops.

Colesville Road (8800 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located in the 8800 block of Colesville Road in Silver Spring, MD. Specifically, the school buses were observed to stop at 8811 (Colesville Towers) and 8712/8722 (Montgomery Arms Apartments) Colesville Road, as illustrated in **Figure 10** and **Figure 11**. Notably, these locations coincide with the Metro and Ride On bus stops.

Adjacent Roadway

Colesville Road comprises six travel lanes, with two lanes in each direction and two interchangeable center lanes controlled by overhead lane use indications. In the morning peak, there are four southbound lanes and two northbound lanes, while during the afternoon peak, there are four northbound lanes and two southbound lanes. The posted speed limit is 35 MPH north of Spring Street and 30 MPH south of Spring Street. Signalized intersections are located nearby at Spring Street and Fenton Street.

Surrounding Land Use

The immediate vicinity of the bus stop is characterized by residential land use, while the surrounding area features a commercial landscape with several businesses, hotels, and a mall. Apartment complexes are situated directly at the bus stops, while adjacent streets to the north are lined with single-family homes.



Figure 10. Colesville Road Bus Stop Locations

Pedestrian Infrastructure and Signage

WMATA and Ride On bus stops are situated alongside the school bus stops, with additional public bus stops located on the opposite sides of the street. The bus stop near Fenton Street also serves as a bus rapid transit stop.

A midblock crossing is positioned just north of S Noyes Drive, featuring a marked crosswalk visible on the right side of **Figure 10**. This crossing includes double posted pedestrian crossing signs, ADA ramps, and pedestrian ahead signs in advance. However, the crosswalk exhibits fading in some areas.

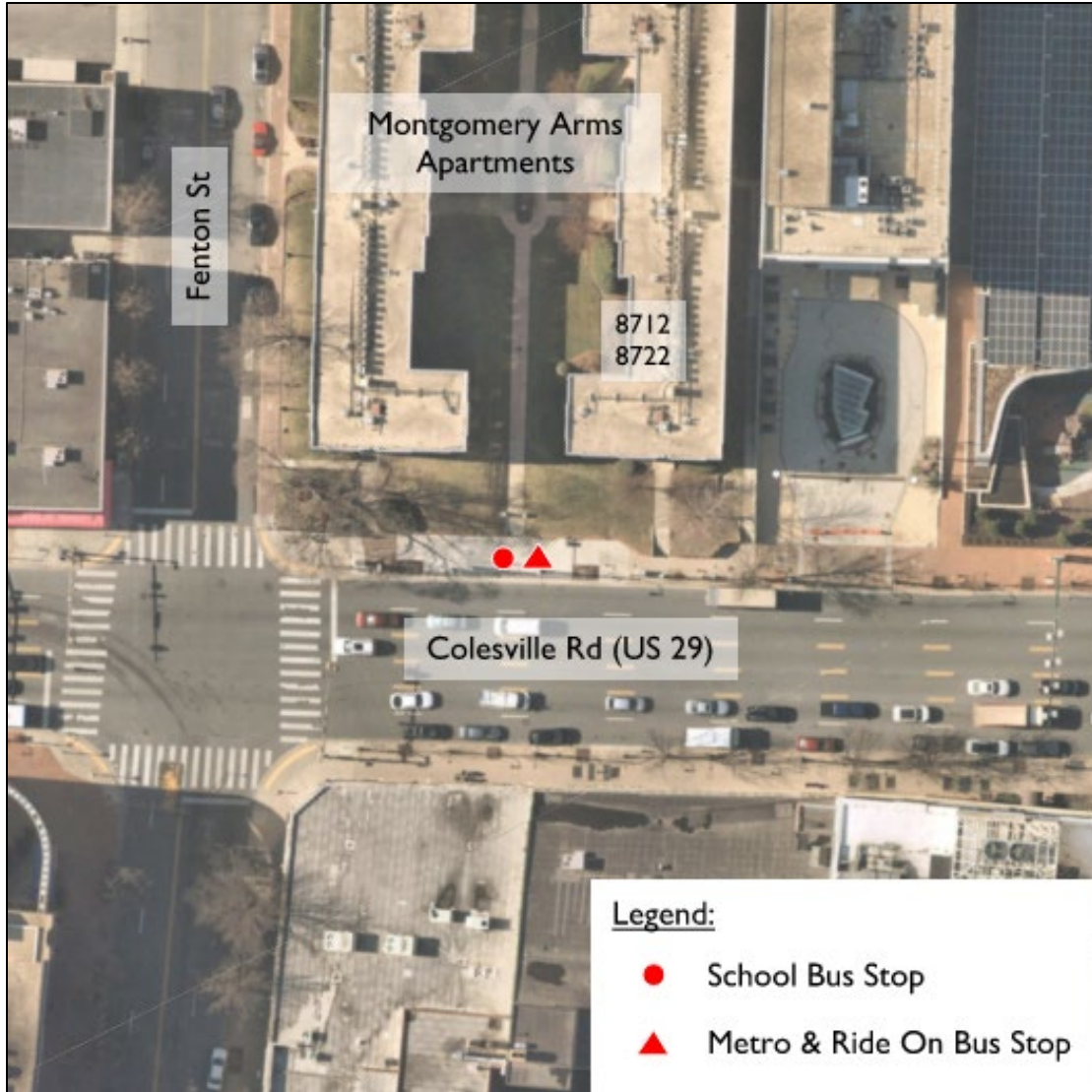


Figure 11. Colesville Road Bus Stop Locations

Observations

The project team conducted observations at this location on Tuesday, December 19, 2023, during the morning pick-up and afternoon drop-off time periods: 7:15 AM to 9:15 AM and 2:45 PM to 4:45 PM. Weather conditions were clear.

- **Buses Observed:** In the morning, school busses stopped in front of Colesville Towers at 7:34 AM, 8:02 AM, 8:41 AM, and 9:09 AM. One bus stopped in front of Montgomery Arms Apartments at 9:14 AM. In the afternoon, school busses stopped in front of Colesville Towers at 2:43 PM, 4:15 PM, and 4:32 PM. One bus stopped in front of Montgomery Arms Apartments at 4:11 PM.
- **Bus Stops:** Children boarding or alighting from the bus entered directly into the adjacent apartment complex, and no children were observed crossing the streets. Most small children were accompanied by parents or guardians.
- **Violations:** In the morning, all motorists traveling in the same direction as the bus, whether there were 2 or 4 lanes in that direction stopped for the school bus. However, in the opposite direction, nearly every single

motorist violated the bus stop (**Figure 12**), except when traffic was congested at the Spring Street intersection. The number of violations were too numerous to count. Afternoon observations showed a similar pattern but included a few violations in the same direction as the bus when there were four lanes in that direction, and a couple of cars proceeded in the far lane.

- **Pedestrian Crossings:** No students were observed crossing the street at the bus stop locations. There were multiple pedestrian crossings at the signalized intersections at Fenton Street and Spring Street as well as a few crossings in the morning at the uncontrolled crossing near S Noyes Drive. Additionally, a few pedestrians crossed in the middle of the street when traffic was particularly backed up between Fenton Street and Spring Street.
- **Obstructions:** There were no sight distance obstructions for drivers approaching in either direction in the vicinity of the bus stops.



Figure 12. NB Colesville Road Afternoon Stop

Recommendations

Our findings at this location align with the previous year observations. To enhance safety, we recommend the MDOT SHA:

- 1) Refresh the existing crosswalk markings at the midblock crossing located at S. Noyes Drive to enhance visibility and ensure pedestrian safety.
- 2) Evaluation of the feasibility of upgrading the pedestrian crossing to an enhanced crossing with a Pedestrian Hybrid Beacon (PHB). While students were not observed crossing at this location, enhancing the crossing would benefit pedestrians in the area. This proactive approach aligns with broader safety considerations for the community.

University Boulevard East (800 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 800 Block of University Boulevard East in Silver Spring, MD. While school buses were expected in the vicinity of 800, 810, and 820 University Boulevard East, no school buses were observed during the time periods provided by MCPS. The segment is illustrated in **Figure 13**.

Adjacent Roadway

University Boulevard East is a 6-lane typical section in the vicinity of the expected school bus stops. However, the roadway and roadsides are both significantly impacted by the ongoing Purple Line construction. The existing condition of traffic control devices was found to be very poor. Lane use assignment was unclear.

Surrounding Land Use

The area is classified as a Suburban Activity Center per MDOT SHA's Context Zones. The immediate vicinity of the expected school bus stops is characterized by residential land use on both sides of the street. There is a mixture of garden apartments and single-family homes.



Figure 13. University Boulevard East Bus Stop Locations

Pedestrian Infrastructure and Signage

WMATA and Ride On bus stops are situated alongside both sides of University Boulevard East. Due to the active construction zone and temporary condition of most traffic controls, an inventory was not completed.

Observations

The project team conducted observations at this location on Wednesday, November 29, 2023, during the afternoon drop-off period: 2:45 PM to 4:45 PM. Observations were performed on Thursday, December 21, 2023, during the AM pick-up period: 6:00 AM to 9:00 AM. Weather conditions were clear.

- **Buses Observed:** No school buses were observed stopping along the subject segment of University Boulevard East. Many school-aged pedestrians were observed walking along the corridor, some using public transit, but none were associated with school buses.
- **Bus Stops:** School bus stops were expected at the intersection of University Boulevard East with Bayfield Street and locations adjacent to the University Manor Apartments.
- **Violations:** N/A.
- **Pedestrian Crossings:** Pedestrians – school-aged and adults – were observed crossing University Boulevard East at numerous uncontrolled and midblock locations.
- **Obstructions:** N/A.

Recommendations

Notably, no school buses stopped along the segment, likely a result of the ongoing construction efforts. It is recommended that the segment be reevaluated upon substantial completion of the Purple Line project should the location reappear on the violations list.

Piney Branch Road (8900 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 8900 Block of Piney Branch Road (MD 320) in Silver Spring, MD. Specifically, the school buses were expected to stop at 8830 Piney Branch Road (Pineway Towers Condominiums), 8860 Piney Branch Road (Park Montgomery Apartments), Piney Branch Road at Carroll Avenue, and 8886 Piney Branch Road as illustrated in **Figure 14**.

Adjacent Roadway

Piney Branch Road is a 5-lane typical section in the vicinity of the school bus stops, with two lanes in each direction and auxiliary left turn lanes. The posted speed limit is 40 MPH in both directions. The nearest signalized intersection is the intersection of Piney Branch Road at Carroll Avenue, which is situated between several transit and school bus stops. The roadway has both vertical and horizontal curvature.

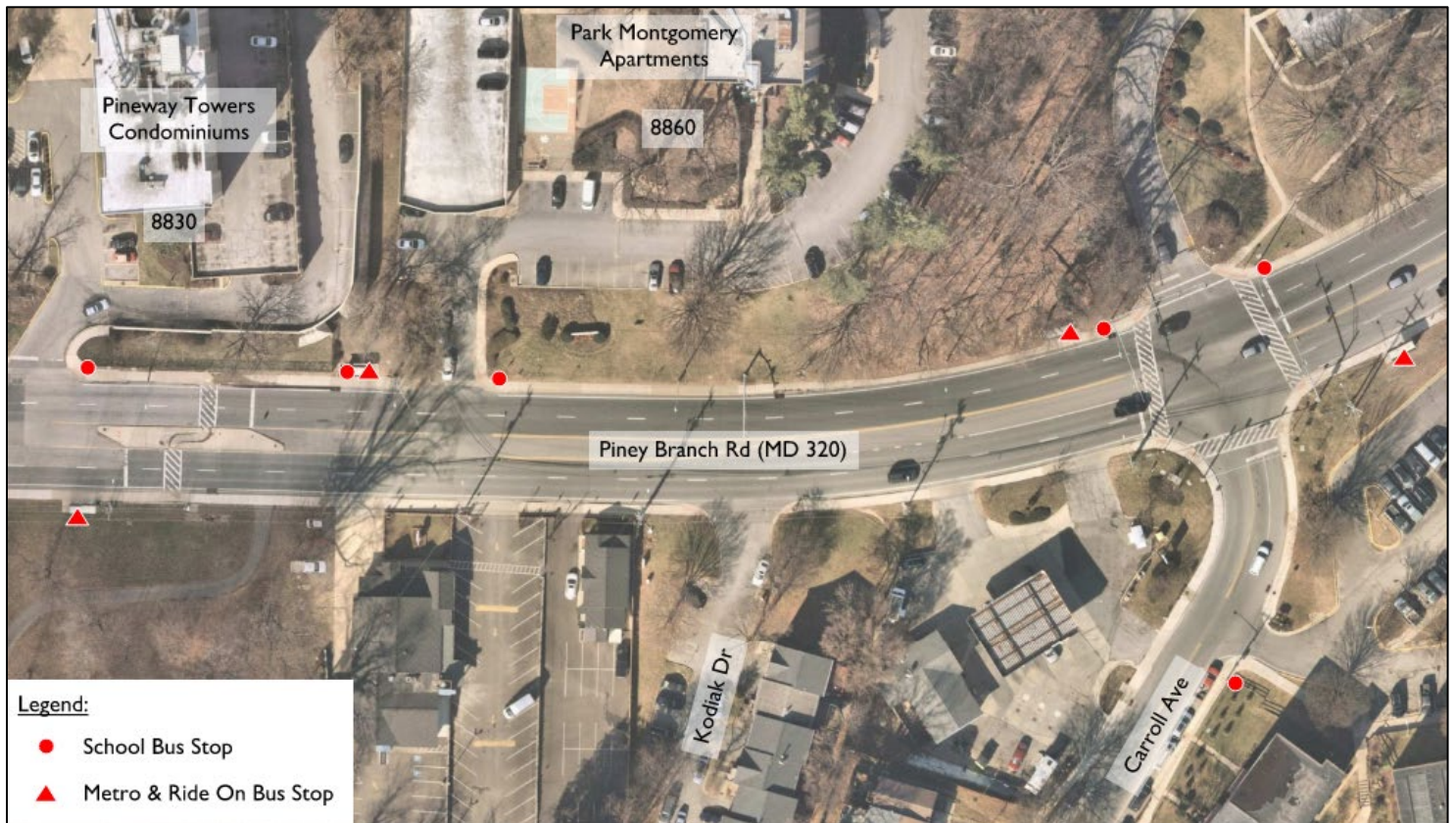


Figure 14. Piney Branch Road Bus Stop Locations

Surrounding Land Use

The subject school bus stops are located in an area classified as a Suburban Activity Center per MDOT SHA's context zones. The immediate vicinity of the school bus stops is characterized by high-density residential, with some commercial properties surrounding.

Pedestrian Infrastructure and Signage

WMATA and Ride On bus stops are situated alongside both sides of Piney Branch Road. Farside transit bus stops are provided at the signalized intersection, and nearside transit bus stops are provided at the midblock crossing. Concrete sidewalks are provided along both sides of the street without buffer and are situated directly adjacent to active travel lanes.

Signalized crossings are present at the intersections of Piney Branch Road at Carroll Avenue. Crosswalks include high visibility markings for the three named street crossings. The west leg crossing is specifically designated as school crossings with sign assemblies. The midblock crossing to the west is located directly in front of the Pineway Towers providing direct connection to the park on the south side of the street. The midblock crossing had advanced overhead hazard identification beacons (HIB) that are pedestrian-activated. However, the signal infrastructure is damaged, and the HIB appears to be non-functional. The crossing is also supplemented with a pedestrian crossing island.

Signs were identified upstream of the crossings related to both school zones and school bus stops.

Observations

The project team conducted observations at this location on Wednesday, November 29, 2023, during the afternoon drop-off period: 2:30 PM to 4:45 PM. Observations were performed on Thursday, December 21, 2023, during the AM pick-up period: 6:45 AM to 9:30 AM. Weather conditions were clear.

- **Buses Observed:** In the morning, 10 school buses were observed stopping to pick up school children at 5 locations along both Piney Branch Road and Carroll Avenue. 3 school buses stopped in front of the Pineway Towers Condominiums at the midblock crossing, 2 school buses stopped at the Park Montgomery Apartments where it shares location with the transit bus shelter, 2 school buses stopped at the transit bus shelter in the northwest quadrant of the Carroll Avenue intersection (**Figure 15**), 1 school bus stopped at the northeast quadrant of the Carroll Avenue intersection, and 2 school buses stopped along Carroll Avenue northbound, at the Carroll Apartments driveway. In the afternoon, 6 school buses were observed stopped to drop off school children at the same locations along Piney Branch Road.
- **Bus Stops:** Most children boarding the school buses in the morning came from the apartments on the north side of Piney Branch Road. During the morning, 1 child was observed crossing Piney Branch Road, east of the midblock crossing, to access the school bus stop. During the afternoon, all children alighting the school buses entered the apartment complexes, and no children were observed crossing the street. Most small children were accompanied by parents or guardians.
- **Violations:** In the morning and afternoon, several motorists traveling in both directions along Piney Branch Road were observed passing the school buses while red



Figure 15. WB Piney Branch Road Afternoon Stop

flashing beacons were activated, and the STOP panel was extended.

- **Pedestrian Crossings:** 1 student was observed crossing Piney Branch Road traveling to the school bus stop in the morning. Many school-aged children were observed throughout the corridor and crossing Piney Branch Road at various locations – uncontrolled and controlled, though not observed to be associated with the subject school bus stops. Many school-aged students were also using the transit bus system. The segment has heavy pedestrian activity and transit use.
- **Obstructions:** There were no perceived sight distance obstructions for motorists approaching in either direction in the vicinity of the school bus stops.

Recommendations

Our findings at this location align with the previous year observations. To enhance safety, we recommend the MCDOT:

- 1) Repair the damage to the existing HIB signal equipment and signing within the midblock crossing island (**Figure 16**).
- 2) Upgrade existing S6-1(2) signs along both sides of Piney Branch Road. (**Figure 17**)



Figure 16. HIB Equipment Damage



Figure 17. State Law Sign Poor Condition

Georgia Avenue (7900 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 7900 Block of Georgia Avenue (US 29) in Silver Spring, MD. Specifically, the school buses were expected to stop near the intersection with Blair Road, as illustrated in **Figure 18**.

Adjacent Roadway

Georgia Avenue is a 6-lane typical section in the vicinity of the school bus stops, with 3 lanes in each direction and on-street parking permitted in the southbound direction during off peak periods. The posted speed limit is 30 MPH in both directions. The nearest signalized intersection is less than 200 feet south of the subject school bus stops, at the intersection with Blair Road, which is also the start of DDOT jurisdiction.

Surrounding Land Use

Downtown Silver Spring falls within the Urban Core context zone. The immediate vicinity of the school bus stop is characterized by dense retail. High-density residential can be found west and north of the site.



Figure 18. Georgia Avenue Bus Stop Locations

Pedestrian Infrastructure and Signage

WMATA bus stops are situated alongside both sides of Georgia Avenue, providing farside transit bus stops at the signalized intersection. Wide sidewalks and landscaped buffers are provided along both sides of the street.

Signalized crossings are present at the intersection of Georgia Avenue at Blair Road / Eastern Avenue NW. Crosswalks are not high visibility markings. Advance warning signs for school bus stops are not present as the school bus stops are visible upstream along Georgia Avenue.

Observations

The project team conducted observations at this location on Wednesday, December 13, 2023, during the morning pick-up and afternoon drop-off time periods: 6:30 AM to 7:00 AM and 3:00 PM to 3:30 PM. Weather conditions were clear.

- **Buses Observed:** In the morning, 1 school bus was observed stopping to pick up school children. The school buses stopped along Jesup Blair Park, north of Blair Road (**Figure 19**). In the afternoon, 1 school bus was observed stopped to drop off school children at the same location.

- **Bus Stops:** Children boarding and alighting the school bus were observed traveling to/from the north. No students were observed crossing Georgia Avenue.
- **Violations:** In the morning and afternoon, no motorists traveling in the same direction as the school bus (northbound) were observed passing the school bus while red flashing beacons were activated, and the STOP panel was extended. The opposite direction (southbound) had many violations in the morning, but none in the afternoon. This was likely a function of when the school bus stopped in relation to the signal phasing at Blair Road.
- **Pedestrian Crossings:** No students were observed crossing Georgia Avenue traveling to or from the school bus stops. The segment has heavy pedestrian activity given the urban core context.
- **Obstructions:** There were no perceived sight distance obstructions for motorists approaching in either direction in the vicinity of the school bus stops.



Figure 19. NB Georgia Avenue Afternoon Stop

Recommendations

There are no notable safety concerns pertaining to school bus stop operations at this time, and no infrastructure changes are deemed necessary for these specific school bus stops.

Clopper Road (900 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 900 Block of Clopper Road (MD 117) in Gaithersburg, MD. Specifically, the school buses were expected to stop at 977 and 983 Clopper Road (Gateway Apartments), Clopper Road at Twelve Oaks Drive, and Metropolitan Grove Road at Gateway Apartments as illustrated in **Figure 20**.

Adjacent Roadway

Clopper Road is a 4-lane typical section in the vicinity of the school bus stops, with two lanes in each direction and no median. The posted speed limit is 35 MPH in both directions. The nearest traffic signal is located at the intersection of Clopper Road at Twelve Oaks Drive / Metropolitan Grove Road.

Surrounding Land Use

This portion of Gaithersburg falls within the Suburban context zone. The immediate vicinity of the school bus stops is characterized by multifamily residential developments as well as self-storage and office space.



Figure 20. Clopper Road Bus Stop Locations

Pedestrian Infrastructure and Signage

Ride On bus stops are situated alongside both sides of the Clopper Road, providing transit bus stops at the signalized intersection and adjacent to the Gateway Apartments driveway. Concrete sidewalks with landscaped buffers are provided along both sides of Clopper Road in the vicinity of the school bus stop.

A signalized crossing of Clopper Road is present at the intersection with Twelve Oaks Drive / Metropolitan Grove Road for the west leg only. The marked crosswalks are not high visibility. Advance warning signs for school bus stops are not present as the school bus stops are visible upstream along Clopper Road.

The project team conducted observations at this location on Wednesday, December 20, 2023, during the morning pick-up and afternoon drop-off time periods: 7:00 AM to 9:15 AM and 2:30 PM to 4:30 PM. Weather conditions were clear.

- **Buses Observed:** In the morning, 2 school buses were observed stopping to pick up school children along eastbound Clopper Road at Twelve Oaks Drive. The school bus stopped at the transit bus shelter. In the afternoon, 3 school buses were observed stopped to drop off school children at the same location. Several other school buses were observed in the area, but all pulled into the apartment complexes to pick-up and drop-off students.
- **Bus Stops:** Children boarding and alighting the school bus were not observed crossing the streets. Most small children were accompanied by parents or guardians.

- **Violations:** In the morning and afternoon, no motorists traveling in either direction along Clopper Road were observed passing the school bus while red flashing beacons were activated, and the STOP panel was extended. This may be due to signal phasing.
- **Pedestrian Crossings:** No students were observed crossing Clopper Road traveling to or from the school bus stops. School-aged pedestrians using public transit buses were observed crossing Clopper Road at the traffic signal.
- **Obstructions:** The crest vertical curve along Clopper Road may limit sight lines for eastbound motorists approaching a stopped school bus. In the morning, the sunrise was observed to be a significant visual impairment for eastbound motorists.



Figure 21. EB Clopper Road Afternoon Stop

Recommendations

Notably, there were school children observed crossing Clopper Road, while the existing configuration of the school bus stops does not necessitate such crossings. Students crossing were not associated with the school buses. These findings align with the previous year observations. Based on the field observations detailed, the following recommendations will be presented to MDOT SHA for consideration:

- 1) Implementation of LPI or pedestrian recall for the traffic signal phasing at Twelve Oaks Drive.

North Frederick Avenue (400 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 400 Block of N. Frederick Avenue (MD 355) in Gaithersburg, MD. Specifically, the school buses were expected to stop at 302 N. Frederick Avenue (Freestate Apartments) and 425 N. Frederick Avenue (Woodlawn Park Apartments). Field observations also found that a school bus stop is located in front of Whetstone Apartments, as illustrated in **Figure 22**.

Adjacent Roadway

N. Frederick Avenue is a 6-lane typical section in the vicinity of the school bus stops, with 2 lanes in the northbound direction, 3 lanes in the southbound direction, and a two-way center left turn lane. The posted speed limit is 30 MPH in both directions. The nearest signalized intersections are approximately 350 feet north of the Whetstone Drive school bus stop at the Odendhal Avenue, a new full color traffic signal at the T-shaped intersection of Dalamar Street, and 600 feet south of the Freestate Apartments at the Chestnut Street intersection.

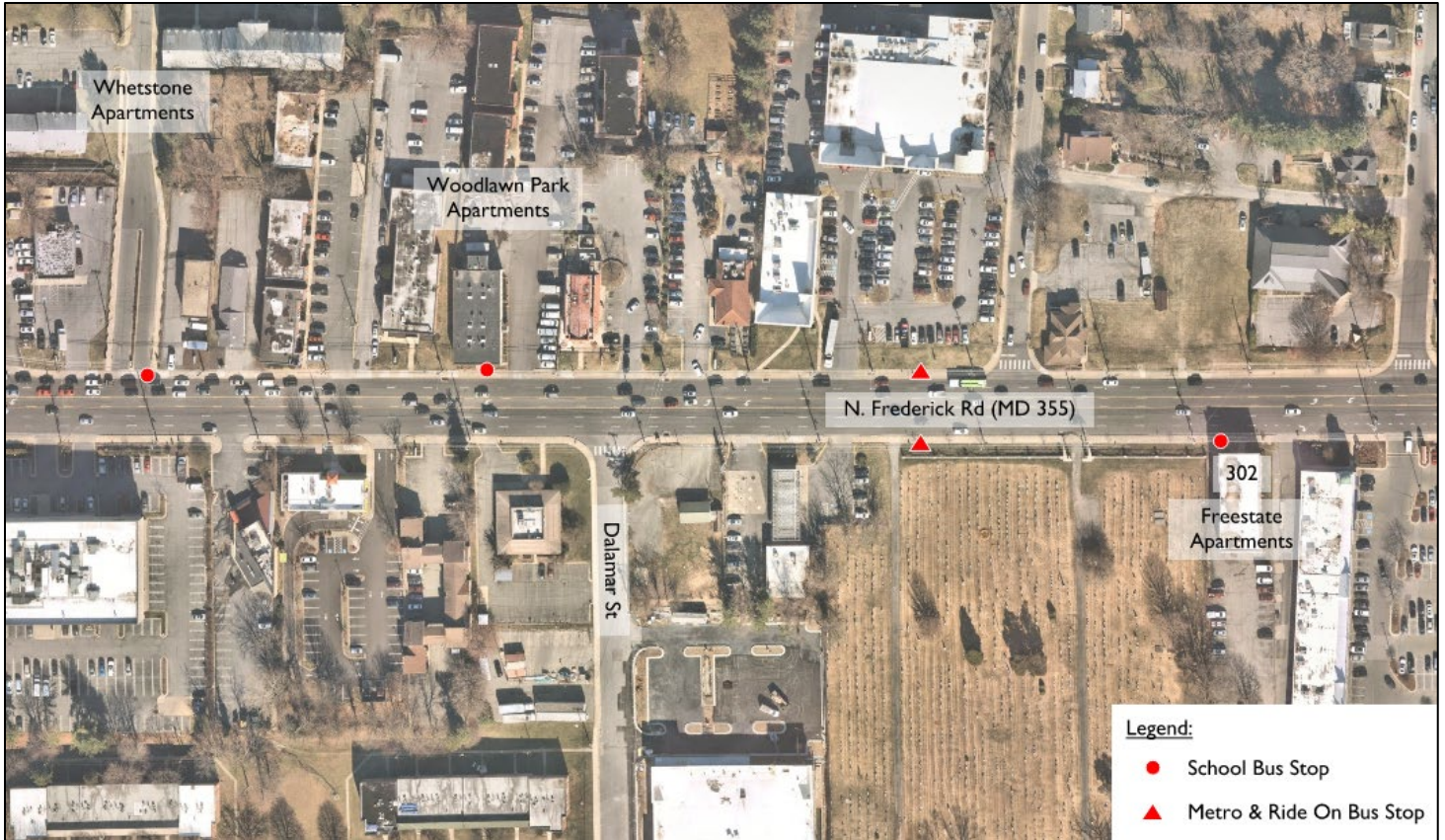


Figure 22. N. Frederick Road Bus Stop Locations

Surrounding Land Use

The subject road segment falls along the boundary between Suburban and Suburban Activity Center contexts per the MDOT SHA Context Zones. The immediate vicinity of the school bus stop is characterized by multifamily residential apartment buildings and lower density commercial properties.

Pedestrian Infrastructure and Signage

Ride On bus stops are situated alongside both sides of the 400 block of N. Frederick Avenue, providing transit bus stops midblock nearest Montgomery Avenue. Wide concrete sidewalks are provided along both sides of N. Frederick Avenue in the vicinity of the school bus stop. The sidewalk zones do not have buffers and are situated directly adjacent to travel lanes.

Signalized crossings are present at the three intersections. Crosswalks include high visibility markings. Advance warning signs for school bus stops are not present as the school bus stops are visible upstream along N. Frederick Avenue.

Observations

The project team conducted observations at this location on Thursday, December 7, 2023, during the morning pick-up and afternoon drop-off time periods: 7:15 AM to 8:45 AM and 2:30 PM to 4:15 PM. Weather conditions were clear.

- **Buses Observed:** In the morning, 4 school buses were observed stopping to pick up school children. The school buses stopped in front of the Freestate Apartment building in the southbound direction on 1 occasion,

in front of Woodlawn Park Apartments in the northbound direction on 1 occasion, and in front of Whetstone Apartments in the northbound direction on 2 occasions. In the afternoon, 4 school bus was observed stopped to drop off school children at the same locations.

- **Bus Stops:** Children boarding and alighting the school buses traveled to/from the adjacent apartment buildings, and no children were observed crossing the streets that were associated with the school buses.
- **Violations:** In the morning and afternoon, motorists were observed passing the school bus while it was stopped at the Whetstone Apartments in the opposite direction (southbound). In the morning, some motorists traveling in the opposite direction (northbound) were observed passing the school bus while red flashing beacons were activated, and the STOP panel was extended, as it dropped off students in front of Freestate Apartments.
- **Pedestrian Crossings:** No students were observed crossing N. Frederick Avenue traveling to or from the school bus stops. Other school-aged pedestrians were observed using the sidewalks and crossing the street at several controlled and uncontrolled midblock locations, but were not associated with the school buses.
- **Obstructions:** There were no perceived sight distance obstructions for motorists approaching in either direction in the vicinity of the school bus stops.



Figure 23. NB N. Frederick Avenue Morning Stop

Recommendations

Our findings at this location align with the previous year observations; however, a full color signal at Dalamar Street has been installed since last year. Based on the field observations detailed, there are no notable safety concerns pertaining to school bus stop operations at this time, and no infrastructure changes are deemed necessary for these specific school bus stops.

Sun Valley Circle (2300 Block)

Existing Conditions

Bus Stop Location

The County-provided information identified the bus stops located along the 2300 Block of Sun Valley Circle in Aspen Hill, MD. The school buses were expected to stop along Bel Pre Road at the Sun Valley Circle driveways that provide access to Kimberly as illustrated in **Figure 24**.

Adjacent Roadway

Bel Pre Road is a 5-lane typical section in the vicinity of the school bus stops, with two lanes in each direction and a two-way center left turn lane. The posted speed limit is 25 MPH in both directions. The nearest signalized intersections are a full color signal at the intersection with Parker Farm Way / Plaza del Mercado, and a PHB at the midblock crossing between N. Gate Drive and Astrodome Drive.



Figure 24. Sun Valley Circle (Bel Pre Road) Bus Stops

Surrounding Land Use

The surrounding area is classified as a Suburban context. The immediate vicinity of the school bus stop is characterized by a mixture of attached and detached residential dwellings, apartments, and a shopping center. Argyle Middle School is located on the south side of Bel Pre Road along this segment.

Pedestrian Infrastructure and Signage

Ride On bus stops are situated alongside both sides of the Bel Pre Road, providing transit bus stops at the signalized intersections. Concrete sidewalks with landscaped buffers are provided along both sides of Bel Pre Road in the vicinity of the school bus stops.

Signalized crossings are present at the intersection of Bel Pre Road with Parkway Farm Way / Plaza del Mercado. The Bel Pre Road crossings include an actuated LPI phase, but the signal does not have APS pushbutton stations. The midblock crossing near Astrodome Drive is controlled with a PHB and supplemented with a pedestrian crossing island. All crosswalks include high visibility markings. There are upstream signs identifying the school zones in both directions and for school bus stops in the westbound direction.

Observations

The project team conducted observations at this location on Tuesday, December 5, 2023, during the morning pick-up and afternoon drop-off time periods: 7:15 AM to 8:45 AM and 3:15 PM to 4:15 PM. Weather conditions were clear.

- **Buses Observed:** 8 school buses were observed stopping to pick up and drop off school children along Bel Pre Road. The locations are illustrated in **Figure 24**, with most locations along westbound Bel Pre Road, and 1 along eastbound near the PHB crossing. There were additional school bus stops in the area that stopped within the Argyle Middle School parking lot and along Sun Valley Circle.
- **Bus Stops:** Children boarding and alighting the school buses mostly traveled directly to/from the adjacent residential complexes. There were several children observed crossing Bel Pre Road at the PHB crossing. Most small children were accompanied by parents or guardians.
- **Violations:** In the morning and afternoon, most motorists traveling in both directions along Bel Pre Road were observed stopping for the school buses while red flashing beacons were activated, and the STOP panel was extended. Some motorists were observed passing the school buses in the opposite direction.
- **Pedestrian Crossings:** No students were observed crossing Bel Pre Road at uncontrolled locations. In the afternoon, students from the school bus were observed using the PHB crossing properly. In the afternoon, school bus stop times overlapped with Argyle Middle School dismissal. There were many school children observed using sidewalks on both sides of the street, but crossing mostly at the traffic signal at Plaza del Mercado. Many students appeared to be meeting in the shopping center to get picked up by caretakers.
- **Obstructions:** There were no perceived sight distance obstructions for motorists approaching in either direction in the vicinity of the school bus stops.



Figure 25. WB Bel Pre Road Afternoon Stop

Recommendations

Our findings align with the previous year observations. Based on the field observations detailed, there are no notable safety concerns pertaining to school bus stop operations at this time, and no infrastructure changes are deemed necessary for these specific school bus stops.

MCDOT is separately evaluating and designing improvements for vulnerable road users along this segment of Bel Pre Road through the Transportation Planning Board's Regional Roadway Safety Program.



Figure 6 - MCDOT and MCPS staff outside Rockville High School during School Bus Safety Week.



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