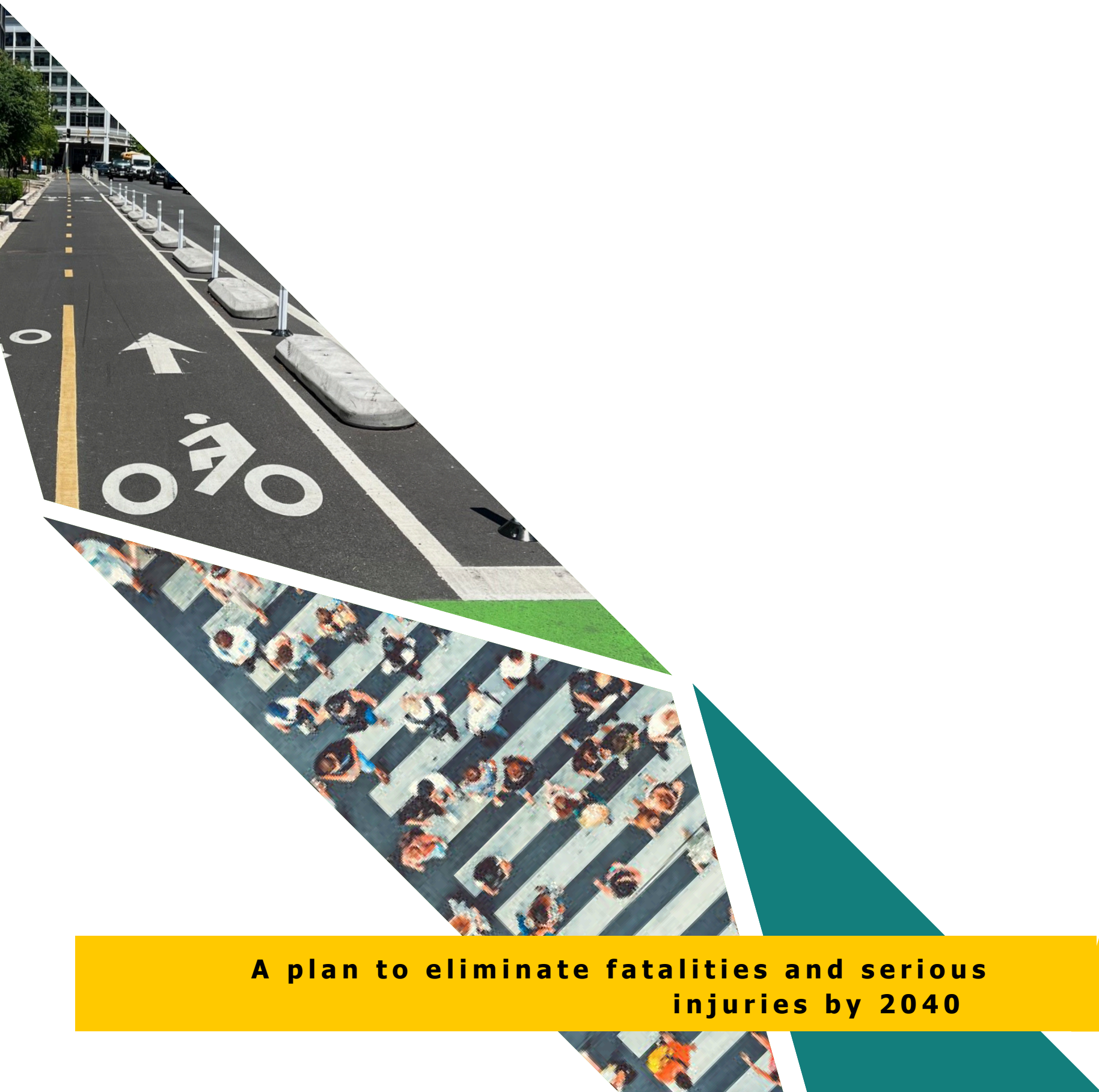


SAFE STREETS & ROADS FOR ALL ACTION PLAN

A VISION ZERO
IMPROVEMENT PLAN

City of Aberdeen
Town of Bel Air
City of Havre de Grace



A plan to eliminate fatalities and serious
injuries by 2040

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Staff Team

- Patricia Shepherd AICP, Project Manager - EXP
- Cerasela Cristei, PhD, PE, PMP, PTOE, Lead Transportation Engineer - EXP
- Bo Yuan, PE, PMP, PTOE Traffic Engineer - Endesco
- Hank Love, Designer - EXP
- Chester Zhang, PE, PTOE, RSP1, Traffic Engineer - Endesco
- Dan Williams, PE, PMP, QA/QC - EXP

With Support from the Traffic Safety Committee & Advisors

- Phyllis Grover - Director of Planning & Community Development - City of Aberdeen
- Kyle Torster - PE, Director of Public Works- City of Aberdeen
- Kevin Small - RLA, AICP, Director of Planning & Community Development - Town of Bel Air
- Police Chief Charles Moore - Town of Bel Air
- Tim Bourcier - AICP, JD, Director of Planning - City of Havre de Grace
- Dianne Klair, Planner - City of Havre de Grace
- Alex Rawls - Chief, Department of Planning & Zoning - Harford County
- Muge Turkman - Traffic Team Leader Harford County, District 4 - MDOT SHA (District 4)
- Handy Phyll Jr. Transportation Engineer IV MDOT, Traffic, Harford County, Maryland State Highway Administration - SHA (District 4)
- Joe Moges, SHA Senior Safety Officer - MDOT SHA

Prepared by:



Commitment to Vision Zero

The municipalities of Aberdeen, Bel Air, and Havre de Grace pledge to incorporate the strategies, and recommendations in this Safe Streets and Roads for All Action Plan to reach zero traffic fatalities and severe injuries by 2040.



Phyllis G. Grover
Director of Planning and Community Development
City of Aberdeen



Kevin Small, RLA, AICP
Director of Planning and Community Development
Town of Bel Air



Tim Bourcier, AICP, JD
Director of Planning
City of Havre de Grace



SECTION 1 - OVERVIEW



Section 1 - Overview

In 2022, 42,514 lives were lost in crashes on US roadways, and an additional 7,500 people perished after being struck by vehicles while walking along or across US roadways¹. Among all modes of transportation, bicycling and walking are the most vulnerable, with any crash involving a motor vehicle often resulting in severe injury for the non-motorist. Reflecting on the profound impact a single preventable death can have on countless lives, it becomes clear that change is not just necessary but imperative.

Safe Streets and Roads for All and Vision Zero

Safe Streets and Roads for All (SS4A)

The Bipartisan Infrastructure Law (BIL) established the Safe Streets and Roads for All (SS4A) discretionary program with \$5 billion in appropriated funds over 5 years, 2022-2026. The SS4A program funds, approximately \$1 billion per year, are allocated for Vision Zero Planning, Demonstration & Implementation of projects at the local, regional, and tribal levels to prevent roadway deaths and severe injuries. The Town of Bel Air has joined forces with the City of Aberdeen and City of Havre de Grace, as recipients of a Safe Streets and Roads for All (SS4A) grant to study how the three municipalities can make their streets safer for their most vulnerable users. These users are defined as non-motorists and include pedestrians, bicyclists, members of the community with disabilities who require mobility accommodations, and those using public transportation. Through this grant funding, twenty-three intersections were identified for further evaluation and analysis. A complete intersection list is depicted in Figure 1-1.

These evaluations and analyses, along with information obtained through the public outreach process are used to develop this SS4A Action Plan. This Plan will recommend short, mid, and long-term improvements for each selected intersection and provide the framework necessary for future multimodal transportation safety upgrades.

The SS4A Action Plan introduces proven safety countermeasures at each intersection, recommends updates to policies and standards

¹ The National Highway Traffic Safety Administration (NHTSA)

that are not aligned with current vision zero goals, and increases equity by prioritizing those in neighborhoods that are impacted by existing conditions or lack of safe and convenient transportation options.



Figure 1-1: Selected Intersections

Vision Zero

Vision Zero aims to eliminate all traffic fatalities and severe injuries while enhancing safety, health, and equitable mobility for all. First implemented in Sweden in the 1990s, its success in Europe, marked by substantial reductions in serious and fatal traffic incidents, has spurred its adoption in major U.S. cities².



² Vision Zero Network - [What is Vision Zero?](#) | [Vision Zero Network](#)

Central to Vision Zero is the integration of the safe systems approach (see Figure 1-2), which fundamentally alters the traditional paradigm in two key ways.

1. Vision Zero **acknowledges human fallibility** and emphasizes designing road systems and policies to mitigate the impact of inevitable errors, thereby reducing the likelihood of severe harm. This necessitates continuous improvement in roadway infrastructure, speed management protocols, and other related systems.
2. Vision Zero is a **multidisciplinary approach**, bringing together diverse and necessary stakeholders to address this critical problem: traffic fatalities and severe injuries. In the past, meaningful, cross-disciplinary collaboration among local traffic planners and engineers, policymakers, and public health professionals has not been present, but this needs to become the norm. Vision Zero acknowledges that many factors contribute to safe mobility -- roadway geometry, travel speeds, road user behaviors, technology, and policies -- and sets clear goals to achieve the shared goal of zero fatalities and severe injuries.



Figure 1-2: Safe System Approach

The SS4A Project Goals

- ◆ To take a proactive stance in designing roads that specifically address the needs of our most vulnerable users: pedestrians, bicyclists, people who use public transportation, and people with disabilities.

- ◆ To support Vision Zero by recommending safety improvements to eliminate all severe crashes that result in severe injury or fatality.
- ◆ To follow the Safe Systems Approach which recognizes that humans make mistakes that can lead to crashes, that death and severe injuries on our roadways are unacceptable and that all stakeholders have a shared responsibility to ensure fatal and severe crashes do not occur.
- ◆ To perform safety analyses of the identified intersections noting the location and severity of crashes, as well as the contributing factors and crash types by road users (motorists, pedestrians, transit users, etc.).
- ◆ To ensure equitable investment in the safety needs of underserved communities.

The Traffic Safety Committee

The SS4A Traffic Safety Committee was established by the three municipalities as a Steering Committee to oversee the development of the SS4A Action Plan. The Committee is comprised of representatives from the Town of Bel Air, the City of Aberdeen and the City of Havre de Grace Departments of Planning and Community Development, Public Works, and Police along with representatives from Harford County’s Department of Planning and Director’s Office, and the Maryland Department of Transportation, State Highway Administration, District 4. On December 18, 2023, an in-person kick-off meeting was held to review the scope of the safety analysis and set expectations, share information on existing plans and studies, develop a SharePoint site for project documents and discuss the project schedule. This Committee continued to meet bi-weekly through the end of March 2024 for a total of six times. The Committee’s role was key in providing input throughout the action plan development process for reviews of project milestones such as the Technical Memorandum and the draft Action Plan. The project schedule (Table 1-1) was developed to set deliverable dates for the major milestones: the Public Workshops in February 2024, the Technical Memorandum in March 2024 and the Action Plan in May 2024 with Final Public Presentations to the elected Boards and Commissions in June and July 2024.

These municipalities are closely located along the I-95 and US 40 corridor in Harford County. Each municipality has unique characteristics and visions for the growth, development, and safety of their neighborhoods. However, these municipalities have State Roads that carry higher volumes of traffic crossing their local roads and follow both State and County Road design standards. In addition, transit routes connect these municipalities providing transportation opportunities to and from where residents live and work, attend college, or access healthcare.

Each municipality identified intersection locations that either had a prior crash history that involved a pedestrian fatality or severe injury or roadway characteristics that created safety challenges within their communities. They partnered together to achieve the goal of developing an Action Plan that will help them to improve safety and reduce traffic related deaths in their Town and Cities to zero. This Action Plan builds upon existing local, County, and State Master Plans and Traffic Safety initiatives and policies and integrates a comprehensive, equitable, and data-driven approach to achieving the goals of eliminating traffic related severe injuries and fatalities in the Town of Bel Air, the City of Aberdeen, and the City of Havre de Grace.

The Purpose of this Action Plan

Within the State of Maryland, there were 566 traffic deaths on roadways, including 132 pedestrians and 11 bicyclists in 2022. There were also 2,595 pedestrians injured³.

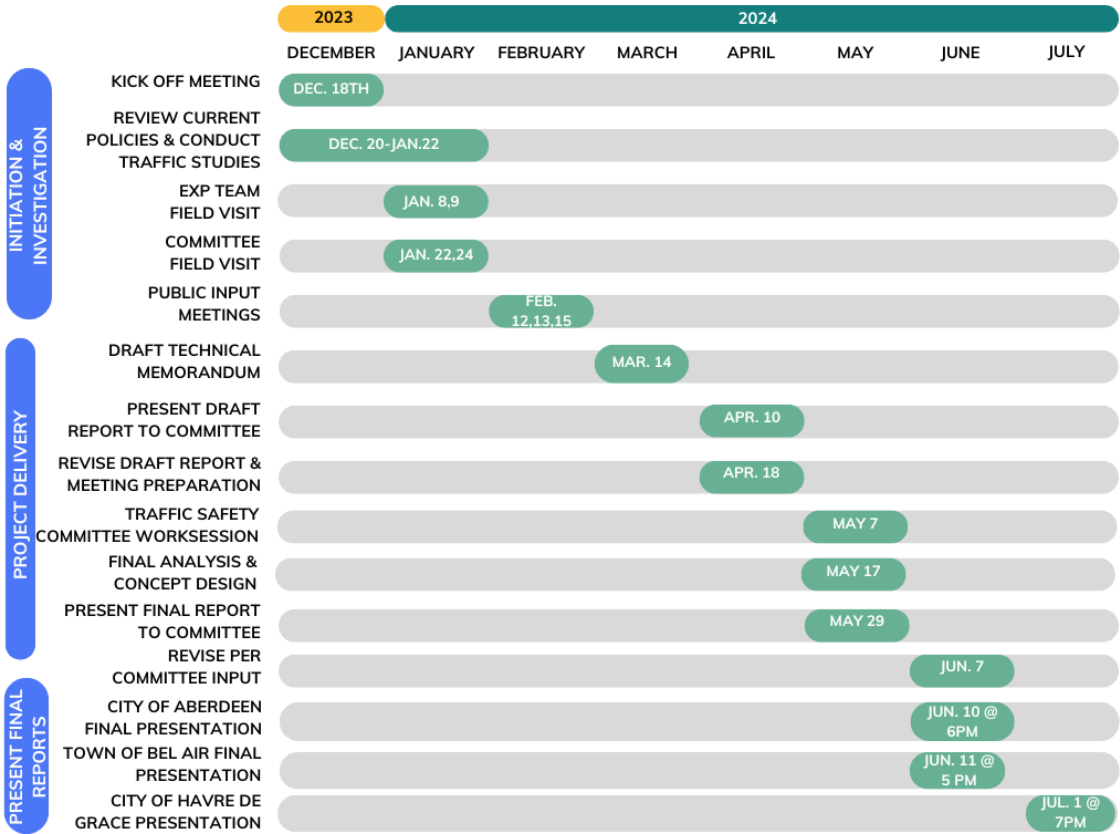


The State of Maryland enacted Vision Zero in 2019 and their goal for reaching zero fatalities and severe injuries is by 2030. Harford County’s Strategic Highway Safety Plan (2021-2025) aligns with reaching the State’s Vision Zero goals by 2030. Overall targets are:

1. Reduce fatalities from a five-year average of 19 in 2015-2019 to 18 or fewer in 2021-2025.
2. Reduce injuries from a five-year average of 1,429 in 2015-2019 to 1,087 or fewer in 2021-2025.
3. Reduce severe injuries from a five-year average of 107 in 2015-2019 to 51 or fewer in 2021-2025.

To achieve these goals the SS4A grant funding (F. Y. 2022-2026) supports local initiatives to prevent death and severe injury on roads and streets through a set of strategic action items developed as part of an SS4A Action Plan.

Table 1-1: SS4A Action Plan Schedule



³ MARYLAND DEPARTMENT OF TRANSPORTATION Highway Safety Office

Selected Intersection Locations

There are 23 intersections selected for improvement under this Safe Streets and Roads for All Action Plan. Figure 1-3 displays all intersections and their geographic orientation.

Each municipality had the opportunity to bring forward between 6 and 9 intersections using selection criteria based on:

- ◆ Crash History
 - ◆ Functional Road Classification and Traffic Volumes
 - ◆ Actual or Expected Speed
 - ◆ Long Crossing Distances for Pedestrians
 - ◆ Unsignalized Intersections
 - ◆ Transit Corridors with Bus Stops
 - ◆ Location of Nearby School Crossings
- ◆ A High Volume of Pedestrians or Cyclists
 - ◆ Proximity to a Trail Crossing
 - ◆ Lack of Pedestrian Infrastructure, including crosswalks or Pedestrian Refuge Islands
 - ◆ Existing Non-ADA Compliance
 - ◆ Lack Of Accessible Pedestrian Signals or Countdown Time Pedestrian Indicators
 - ◆ Location of Underserved Communities

These intersections have been prioritized for this grant to work towards reducing the number of fatalities and severe injuries from crashes involving pedestrians and cyclists to zero.

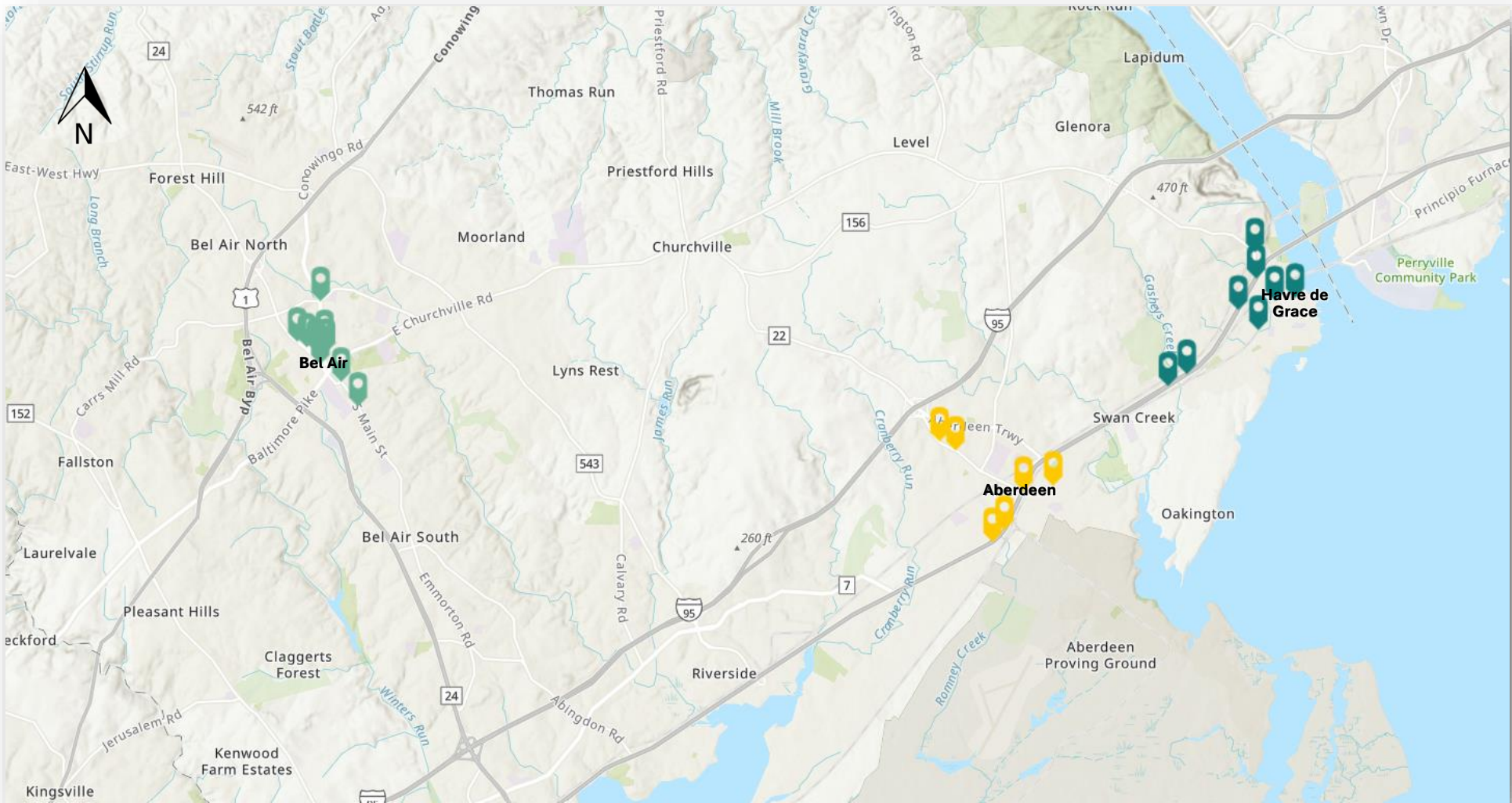


Figure 1-3: Map of Selected Intersections



SECTION 2 - SAFETY ANALYSIS



Section 2 - Safety Analysis

The safety analysis for the selected intersections was conducted via evaluation metrics including adherence to standards and guidelines, vehicle speeds both perceived and observed, intersection level of service (LOS), signal warrant standards, and historical crash analysis. For each selected intersection location, the project team investigated the existing conditions, including crash history, signal timing (if relevant), daily traffic volumes, posted speed limit, traffic patterns, pedestrian and bicyclist facilities presence and geometry, pavement markings, and signage.

Historical Crash Analysis

The crash data presented in this section was acquired from the MDOT SHA Crash Data Sheets. These reports can be found in Appendix C.

MDOT SHA maintains a database derived from reports submitted to, processed, and approved by the Maryland State Police Official Crash Reporting System. Data are regularly updated and subject to change.

A complete summary of the recorded crashes in each municipality between 2018 and 2022¹ can be found in Appendix A. Figure 2-1, Figure 2-2, and Table 2-1 provide a brief overview of this crash data collected sorted by municipality.

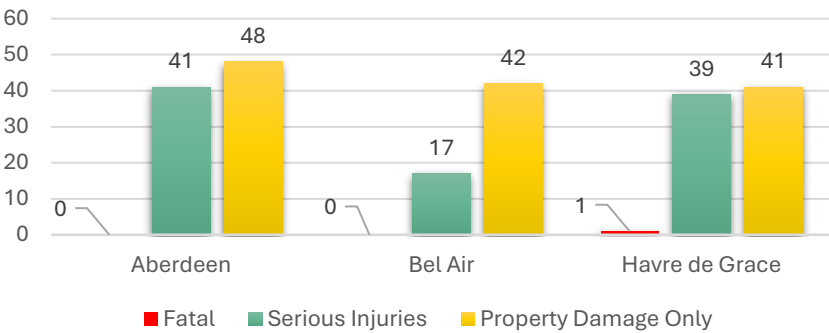


Figure 2-1: Total Crashes by Municipality

¹ Data for intersections A2.2, B9, H7 and H8 are from 2019-2023.

Table 2-1: Crash Types by Municipality

Crash Type	Municipality			Total
	Aberdeen	Bel Air	Havre de Grace	
Wrong-way Driving	1	0	1	2
Rear End	12	16	28	56
Sideswipe	1	4	4	9
Left Turn	33	8	14	55
Angle	22	13	17	52
Pedestrian	4	4	3	11
Parked Vehicle	0	1	0	1
Fixed Object	8	8	7	23
Other	7	0	3	10
Total	88	54	77	219

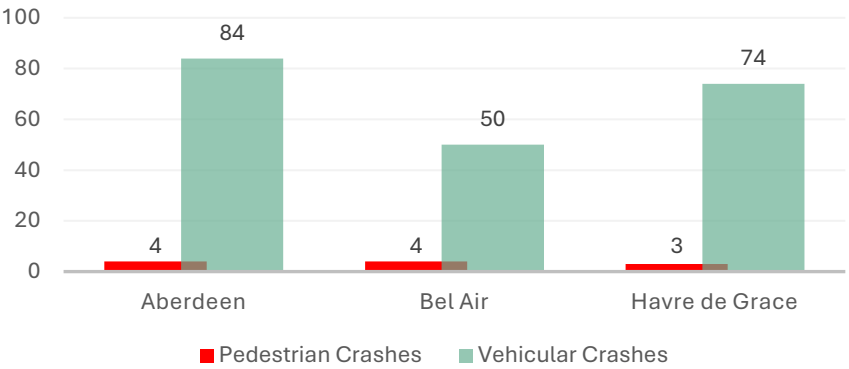


Figure 2-2: Pedestrian vs. Vehicular Crashes per Municipality

Further investigations into the crash data for each intersection can be found in the relevant municipal section in 6A, 6B, and 6C.

Data Limitations

The data presented does not capture near-misses or unreported crashes. Despite these limitations, it is the most complete data source available.

Crash Trends

The project team scrutinized crash records for every intersection, considering factors such as crash type, severity, lighting, road conditions, causes, day and time of occurrence, and yearly trends over five years. While each intersection possesses unique traits, some shared similarities allowed for joint analysis. Three such clusters were pinpointed among the selected intersections and are outlined in the following tables.

US Route 40 Corridor

Intersections A1&A4, A2.1, A2.2, H1, H2, H3, and H4 are along the US Route 40 corridor.

Table 2-2: Data Along US Route 40 Corridor

US 40 Corridor						Note
	2018	2019	2020	2021	2022	
Total Crashes	20	25	19	23	28	-
Fatalities	1	0	0	0	0	One fatality (pedestrian) in Jan 2024
Pedestrian-related	2	1	1	0	1	One fatality (pedestrian) in Jan 2024

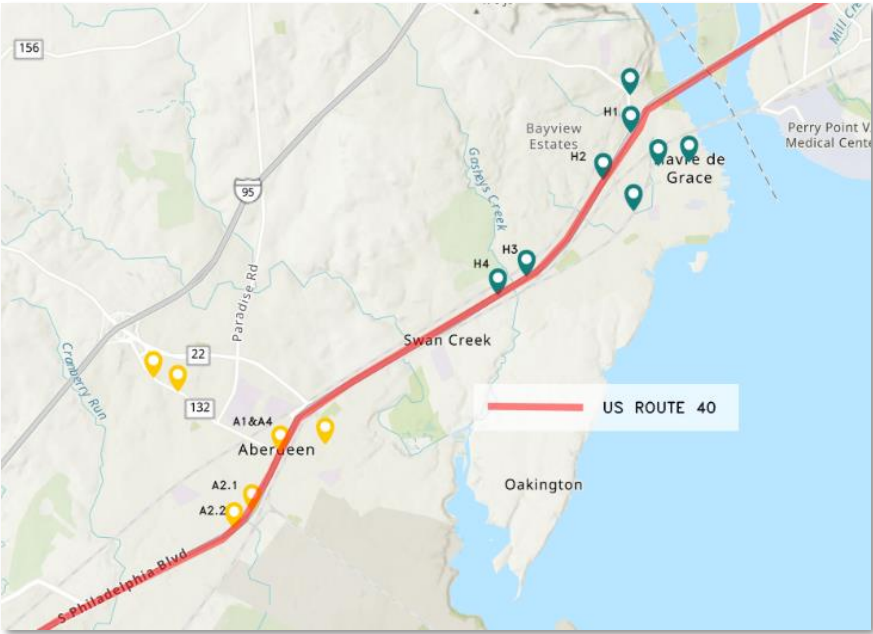


Figure 2-3: US Route 40 Corridor

Bel Air Downtown District

Bel Air’s downtown district includes intersections B1, B2, B3, B5, B6, B7 and B8. See Figure 2-4 for the extent of this area. Although Aberdeen and Havre de Grace have downtown areas as well, these intersections were selected for analysis due to their concentration within the downtown district.

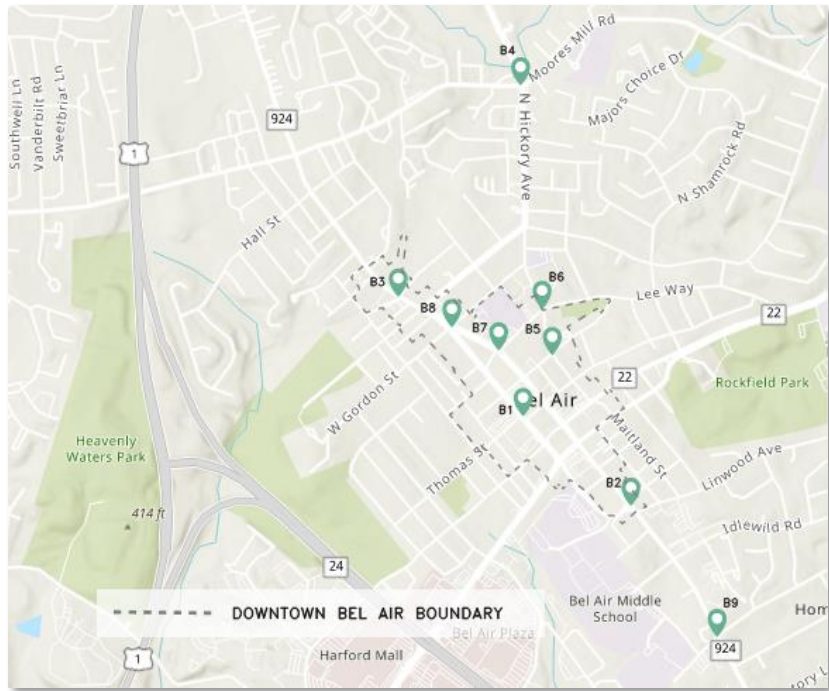


Figure 2-4: Map of Bel Air Downtown

Table 2-3: Bel Air Downtown District

Bel Air Downtown District						
	2018	2019	2020	2021	2022	Note
Total Crashes	10	10	5	4	10	-
Fatalities	0	0	0	0	0	One fatality (pedestrian) in Nov 2017
Pedestrian-related	1	2	0	0	1	One fatality (pedestrian) in Nov 2017

Signalized Intersections

There are signalized intersections at B1, B4, B5, B9, A1/A4, A3, A6, H1, H2, and H6.

Table 2-4: Summary of All Signalized Intersections in the Study Areas

Signalized Intersections						
	2018	2019	2020	2021	2022	Note
Total Crashes	30	20	22	23	34	-
Fatalities	1	0	0	0	0	One fatality (pedestrian) in Nov 2017
Pedestrian-related	2	1	1	0	2	One fatality (pedestrian) in Nov 2017

Other Evaluation Metrics & Criteria

Standards and Guidelines

The following reference manuals were used to develop the basis of design for this Action Plan:

- ◆ The Maryland Manual on Uniform Traffic Control Devices (MD-MUTCD)
- ◆ National Association of City Transportation Officials (NACTO) Urban Street Design Guide
- ◆ FHWA’s Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations
- ◆ FHWA’s Separated Bike Lane Planning and Design Guide (2015)
- ◆ AASHTO Guide for the Development of Bicycle Facilities
- ◆ Highway Capacity Manual (HCM) by the Transportation Research Board of the National Academies of Sciences, Engineering, and Medicine
- ◆ Harford County Design Guidelines

Vehicle Speeds

The posted speed limit for each roadway at the selected intersections was identified and summarized in the Conclusion. Knowing the posted speed on the road is crucial for the following reasons:

- Safety* - Speed limits are set to ensure safe driving conditions. When drivers adhere to these limits, crashes are less likely to occur. Excessive speed can lead to loss of control, reduced reaction time, and more severe collisions.
- Traffic Flow* - Speed affects traffic flow. Consistent speeds help maintain a smooth flow, reduce congestion, and prevent sudden stops or slowdowns.
- Design of Infrastructure* - Road geometry and signage are influenced by speed limits. Properly designed roads will encourage safe speeds.
- Legal Compliance* - Speed limits are legally enforced. Violating them can result in fines, penalties, or even license suspension.

85th Percentile Speed - At intersections where speeding was previously identified as an item of concern and brought to the attention of the project, speed counts were taken to determine the roadway’s 85th percentile. The 85th percentile speed is the speed at or below which 85% of drivers travel on a road segment. It represents the speed that most drivers perceive as safe under open road conditions and favorable circumstances.

Annual Average Daily Traffic (AADT)

Annual Average Daily Traffic (AADT) is a measure used primarily in transportation planning and engineering. It is the total volume of vehicle traffic of a segment of roadway for a year divided by the number of days (365). AADT is a measurement to describe how busy the roadway is daily. It is not relevant to Level of Service (LOS). All AADT data was collected using the MDOT SHA Annual Average Daily Traffic Online Web Tool².

² [Maryland annual average daily traffic \(SHA statewide AADT shapefiles\). Maryland’s GIS Data Catalog.](#)

Level of Service (LOS)

As defined in the Highway Capacity Manual, level of service (LOS) is “a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience”. In general, the following six levels are used to describe the traffic conditions:

A	Free flow, with low volumes and desirable speeds. For a signalized intersection, there is no congestion, and all queues clear in a single cycle.	D	Approaching unstable flow; drivers have little freedom to select their own speeds. For a signalized intersection, there is significant congestion on critical approaches, but the intersection is functional. Cars are required to wait through more than one cycle during short peaks. No long-standing queues formed.
B	Reasonably free flow, but speeds are beginning to be restricted by traffic conditions. For a signalized intersection, there is very light congestion, and an occasional approach phase is fully utilized.	E	Unstable flow: there may be short stoppages. For a signalized intersection, there is severe congestion with some long-standing queues on critical approaches. Queues may block nearby intersection(s) upstream of critical approach(es).
C	Stable flow, but most drivers are restricted in the freedom to select their own speeds. For a signalized intersection, there are light congestion and occasional backups on critical approaches.	F	Forced or breakdown flow; unacceptable congestion; stop-and-go. For a signalized intersection, there is total breakdown with stop-and-go on critical approaches.

Critical Lane Volumes analysis (CLV) and Highway Capacity Software (HCS) methods were used to calculate the LOS. CLV is a method commonly used by transportation planners and traffic engineers to calculate the volume/capacity ratio at an intersection and its level of service. The HCS is a software tool used for macroscopic traffic analysis based on the HCM methodologies.

SIGNALIZED VS. UNSIGNALIZED INTERSECTIONS- Although their calculation methods for LOS and quantitative values are different, both signalized and unsignalized intersections use the same LOS scale (A-F), which is universal for all roadways/intersections.

DETERMINING THE “ACCEPTABILITY” OF THE LOS – A level of service of D or better are acceptable for corridors and local streets. This means the congestion level is acceptable. In terms of safety improvements, this means there is room to reduce the capacity slightly to allow room for safety improvements. Complete level of service calculations for each intersection can be found in Appendix B.
Disclaimer on LOS: The FHWA does not mandate specific minimum LOS values.

MUTCD Signal Warrants
As required by the MD-MUTCD, “The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions”. The MD-MUTCD has nine “Signal Warrants” that list applicable factors including traffic volumes, pedestrian volumes, school crossing, coordinated traffic signal system, crash experiences, roadway network, and an intersection near a grade crossing. Meeting one or multiple warrants would support (although not require) the installation of a traffic signal.

Traffic Volumes
Traffic volumes have a pivotal role in traffic and safety improvement studies. From a traffic congestion perspective, collecting and analyzing traffic volumes helps design measures that reduce delays, improve travel times, and enhance overall transportation efficiency. Reviewing traffic volumes properly helps to manage traffic movements, minimize conflicts, and provide clear guidance for maneuvering and improving overall safety. By analyzing traffic volumes and the capacity of an intersection, deficiencies and areas of concern can be identified and countermeasures can be properly developed to address congestion and improve safety for all road users. Traffic volume data were collected from the following sources:

- ◆ MDOT INTERNET TRAFFIC MONITORING SYSTEM (I-TMS) - a web-based portal tool providing statewide traffic data was used to download available turning movements.

- These are generally 13-hour, from 6 AM to 7 PM turning movements counts at intersections on weekdays.
- ◆ TRAFFIC IMPACT STUDIES - for abutting properties or proposed site developments were provided by the municipalities. They generally provide AM and PM peak hour turning movement count data and LOS analysis results for pre-development conditions and anticipated post-development conditions considering the traffic volumes that would be generated by the development.
 - ◆ FIELD SPOT COUNTS - For locations where traffic data was not available, field spot counts were conducted during the peak hours.

The traffic volumes were used in CLV analyses and HCS analyses to calculate the level of service of the study locations during the peak hours.

Field Observations, Driver Behavior, and Vicinity Investigations

During the data collection and analysis phase, site visits and field observations were necessary to understand the intersections and roadways’ deficiencies and actual and perceived challenges. At each intersection, the project team documented the adjacent land uses, posted speed limits, adequacy of lighting available, and conditions of crosswalks, the type of intersection controls, lack of safe access routes, missing sidewalks and ADA-compliant ramps, and lack of bike lane networks. An existing conditions map illustrating challenges and deficiencies at each intersection has been developed with recommendations for short-, intermediate-, and long-term traffic safety improvements/countermeasures. Recommended countermeasures are shown on the intersection maps and in a matrix format to create an action plan prioritizing location, setting timelines, and providing planning level cost estimates.

Public Outreach

In addition to the field visits and site inventories, the project team conducted three public workshops and online surveys for each municipality and recorded concerns expressed by all participating stakeholders. An overview of these public outreach efforts is provided in Section 3, with further details presented in each municipality section.



SECTION 3 - PUBLIC OUTREACH



Section 3 - Public Outreach

In addition to technical analyses, a robust public outreach effort was initiated to hear from community representatives and residents of each municipality about improving safety, accessibility, and connectivity in their communities.

Safe Streets and Roads for all Action Plan Public Outreach Meetings

Three public workshops were held, one for each municipality, to gain insight into the safety concerns at each intersection. Public notices (Figure 3-1) were sent to the municipal representatives two weeks in advance to inform the stakeholders about the upcoming workshops.



Figure 3-1: Bel Air Public Workshop Flyer

These public notices contained a QR code to an online survey on safe streets and roadway improvements that were created for that specific municipality. Details on the contents of this survey are discussed later in this section.

Run of Show

The public workshops were interactive and allowed each participant to view an intersection location map on a table with one table for each intersection, or sometimes two intersections.

Each intersection map was accompanied by a series of stickers that represented countermeasures or solutions that could be implemented to enhance operations safety. These countermeasures were first presented to the participants in a booklet (see Figure 3-2) to inform them of the purpose the countermeasure may play in improving roadway safety. The countermeasures presented in the infographic are the same that are displayed at the beginning of Section 6.



Figure 3-2: Excerpt from Presented Countermeasure Booklet

Attendees were then asked to add a sticker if they preferred a certain countermeasure over another at various locations at and around the selected intersection.

If there were additional comments, those were made on sticky notes and placed on the map at the identified location. See Figure 3-3 for an example.



Town of Bel Air Public Workshop held on February 12, 2024



City of Aberdeen Public Workshop held on February 13, 2024



Havre de Grace Public Workshop held on February 15th, 2024.

Presented Material

In addition to the countermeasure booklet, a series of graphic display boards were also provided to explain the following key concepts:

- 1. The Safe System Approach
- 2. Vision Zero and the Safe Streets and Roads for All Action Plan
- 3. Complete Streets
- 4. Additional Guidance for Pedestrian and Bikeway Infrastructure

These display boards are available on the public workshop web application that is described in further detail below.



Figure 3-3: Example of Public Workshop Intersection Comments

Public Workshop Web Application

These infographics and the information obtained during the public workshop are available via an online Storymap. All the public comments that were made via stickers or sticky notes are recorded in this application. If individuals were unable to attend the public workshop, they had the opportunity to use this web app until the survey period closed on March 8th, 2024.

Links to:

- [ArcGIS Storymap](#)
- [Aberdeen Project Page](#)
- [Bel Air Project Page](#)
- [Havre de Grace Project Page](#)

Input and Outcome

Table 3-1 provides the total attendance by the municipality. Sections 6A, 6B, and 6C break out the responses provided during the public workshops by the municipality.

Table 3-1: Workshop Information

	Aberdeen	Bel Air	Havre de Grace
	February 13, 2024	February 12, 2024	February 15, 2024
	City Council Chambers	Bel Air Armory	Havre de Grace Community Center
	18 Attendees	33 Attendees	13 Attendees

SS4A Public Survey

A survey for public input was available that could be accessed via the QR code in the handout shown in Figure 3-1 and through a link on the SS4A Storymap online. The comment period on this

survey was open before the public workshops and for two weeks after they were held. Bel Air received 126 responses, Aberdeen 97, and Havre de Grace 33.

The following questions were asked via the survey:

1. Name

2. Address

3. Email Address

4. How often do you use each mode of transportation in a typical week?
- Modes presented: Personal Vehicle, Public Transit, Walking, Biking, Rideshare
5. What are your concerns about traveling throughout the City of Havre de Grace (specific to each municipality)?

6. What would encourage you to walk more than you currently do?

7. What would encourage you to bike more than you currently do?

8. Is the pedestrian crossing time adequate to allow you to cross the streets safely?

9. Are there any other concerns you have regarding safe travel in Havre de Grace (specific to each municipality)? Explain.

10. Are there any other improvements or specific safety concerns you would like to see in the City of Havre de Grace (specific to each municipality) along certain corridors?

11. What characteristics about your community do you find unique that can be reflected in the proposed improvements?

12. Are there any transportation facilities in Havre de Grace (specific to each municipality) that you wish there were more of or that you really enjoy?

Three dashboards were created, one for each municipality, to summarize the survey results. The dashboards were made available to the public. Any personal information that was given in these surveys is not visible on these dashboards.

- [Safe Streets and Roads for All - City of Aberdeen \(Survey Results\)](#)
- [Safe Streets and Roads for All - Town of Bel Air \(Survey Results\)](#)
- [Safe Streets and Roads for All – City of Havre de Grace \(Survey Results\)](#)

These survey results are also presented in each of the municipality subsections 6A, 6B and 6C. The complete list of the responses to questions 9 through 12, that allowed for write-in responses, is presented in the Appendix.



SECTION 4 - EQUITY CONSIDERATIONS



Section 4 - Equity Considerations

“Our Department (USDOT) is mindful of the importance of fair access to transportation, a powerful force for opportunity as Americans of all backgrounds in all kinds of communities seek safe and affordable means to get to work, school, and everywhere else we need to be. Ensuring equity and accessibility for every member of the traveling public is one of the Department of Transportation’s highest priorities.” – Secretary Pete Buttigieg

One of the intentions of this Action Plan is to ensure connectivity for the most vulnerable users. The Federal Highway Administration (FHWA) defines a vulnerable user as a non-motorist with a fatality analysis reporting system (FARS) person attribute code for pedestrian, bicyclist, other cyclists, and person on personal conveyance or an injured person that is, or is equivalent to, a pedestrian or pedal cyclist as defined in the ANSI D16¹. Since community members who identify as vulnerable users due to their socioeconomic status do not have a way of traveling through the transportation network via a motorized vehicle, this plan focuses primarily on the impact the proposed improvements will have on these individuals. It is also necessary to evaluate general population dynamics to further understand the communities affected by the proposed work. Lack of affordable, safe, multimodal transportation options to employment and retail centers, schools, recreational and medical facilities, and places of worship can lead to social isolation, limited access to essential services, and reduced economic opportunities, exacerbating existing inequalities.

The data presented in the following section has been acquired using statistics from the United States Census Bureau and the US Census American Unity Community Survey.

Factors in Equity Considerations

This Action Plan places a strong emphasis on equity and will address any disproportionate burden of traffic fatalities and serious injuries on low-income households, older adults and youth, people with disabilities, and households with limited vehicle access. Those who cannot afford a car or are physically unable to drive due to age or disability rely on walking, biking, and public transportation to travel to their destinations.

One of the primary goals of this Action Plan is “to ensure equitable investment in the safety needs of underserved communities.”

¹ [Approved American National Standard – Manual on Classification of Motor Vehicle Traffic Crashes](#)

Area of Persistent Poverty

- The county consistently had greater than or equal to 20 percent of the population living in poverty in all three of the following datasets: (a) the 1990 decennial census; (b) the 2000 decennial census; and (c) the most recent (2021) Small Area Income Poverty Estimates; OR
- The Census Tract in which the project is located has a poverty rate of at least 20 percent as measured by the 2014-2018 5-year data series available from the American Community Survey of the Bureau of the Census; OR
- The project is in any territory or possession of the United States.

Historically Disadvantaged Community

1. any Census Tract identified as disadvantaged in the Climate & Economic Justice Screening Tool (CEJST), created by the Council on Environmental Quality (CEQ), which identifies such communities that have been marginalized by underinvestment and overburdened by pollution; or
2. any Federally Recognized Tribe or Tribal entity, whether they have land.

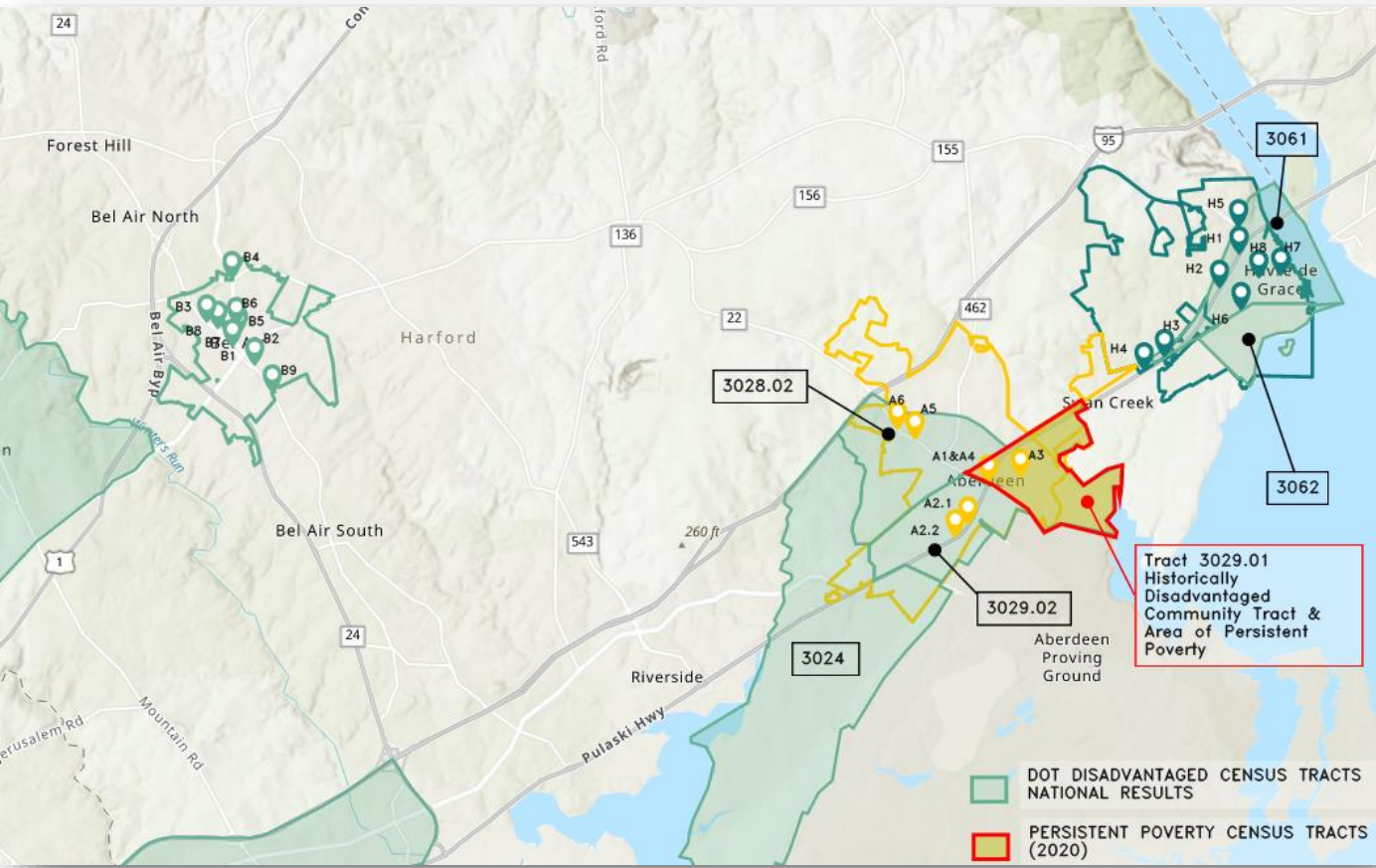


Figure 4-1: Disadvantaged Communities and Areas of Persistent Poverty

An investigation was conducted to address this goal and assessed which areas of each municipality would be the most greatly impacted by safety and design enhancements for pedestrians, cyclists, and transit users. Figure 4-1 summarizes the areas of persistent poverty and designated disadvantaged community census tracts, two factors that the FHWA uses to ensure equitable design considerations.

Historically Disadvantaged Communities (HDCs) and Areas of Persistent Poverty (AoPP) are disproportionately impacted by severe and fatal crashes. This is due to a historic lack of infrastructure investment in these communities, coupled with high rates of walking, bicycling, and transit use. This action plan identifies the extent to which HDCs suffer disproportionate impacts of severe and fatal crashes in the Town of Bel Air, The City of Aberdeen, and the City of Havre de Grace and recommends prioritizing improvements within those areas. See the tables presented in Section 7 for more details.

Initial crash data collected for this action plan indicates that there are more frequent crashes and more serious crashes in low-income communities (see Figure 4-2).

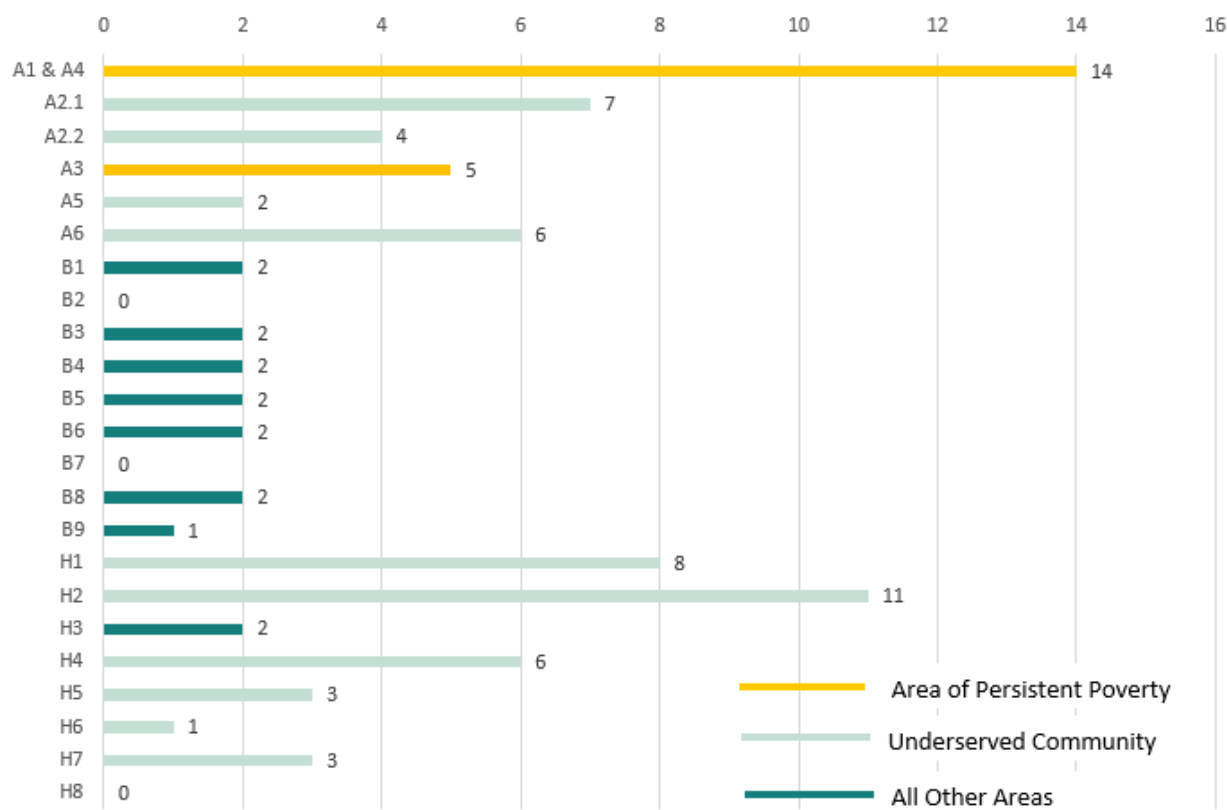


Figure 4-2: Total Crashes by Census Designation

It's crucial to understand that bicycle facilities are vital not just as a convenience for cyclists but also as a necessity for those with transportation challenges. This includes demographic groups often affected by such challenges, such as low-income households, households without vehicles, individuals who rely on transit, walking, or biking for commuting, as well as children and seniors.

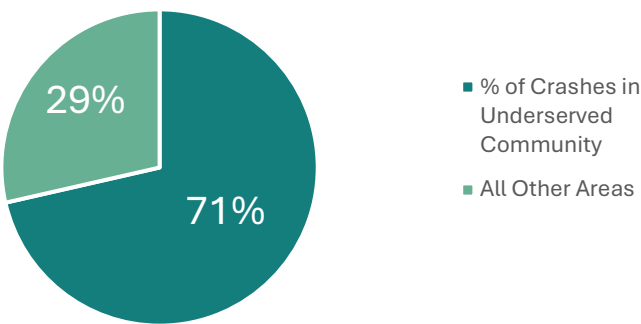


Figure 4-3: Crashes in Underserved Community

The city of Aberdeen is the only municipality that has a census tract within an area of persistent poverty. The intersections within this tract, A1& A4 and A3, account for a total of 39 crashes out of the 86 recorded in Aberdeen. Further research was conducted on these tracts and can be found in Section 6A.

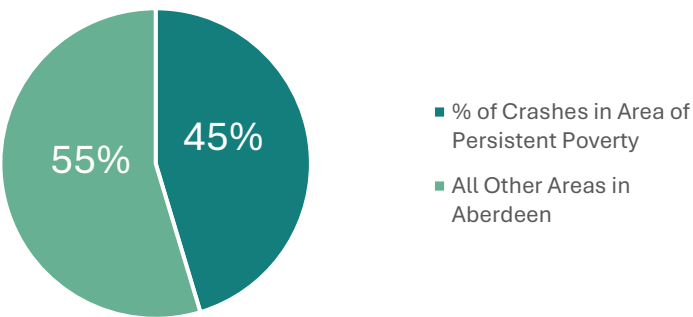


Figure 4-4: Persistent Poverty Statistics

Equitable Consideration and Municipal Demographics

It is not just income and poverty considerations that are necessary for ensuring an equitable design outcome but all other underserved populations including vulnerable road users, public transport transit users, senior citizens, people with disabilities, students, those without vehicles, and minority populations.

Demographic information provided by the American Community Survey is available in Sections 6A, 6B, and 6C on each specific municipality to ensure a holistic approach to equitable inclusion for the proposed improvements.



SECTION 5 - POLICY REVIEW & PROCESS



Section 5 - Policy Review and Processes

Each municipality has previously developed plans and studies emphasizing multimodal transportation objectives. State and County plans have established Strategic Highway Safety Plans, which align with the vision of achieving zero fatalities in the state of Maryland and Harford County. This Action Plan supports the goals and plans of each municipality, the county and the state, ensuring that individuals of all ages and abilities can travel safely and conveniently using any mode of transportation to access employment, parks, schools, and retail destinations.

Existing Plans & Studies

HarfordNEXT (County Master Plan)¹



HarfordNEXT aims to strengthen communities and their connections by balancing land use, economic development, mobility, and environmental sustainability. It

emphasizes integrating transportation and land use planning, improving bicycle and pedestrian facilities, enhancing transit services, and managing congestion. The plan also focuses on enhancing community vitality, economic prosperity, and environmental stewardship. Specific initiatives include expanding the trail network, promoting transportation demand management (TDM), and improving road safety. Additionally, it aims to promote healthy communities by ensuring access to

services, developing recreational facilities, and encouraging active lifestyles.

Harford County Bike and Ped Plan²

The Bike and Ped plan for Harford County has many existing policies that can be implemented within the municipalities to accomplish the county’s bike and ped goal to:

“Create an environment where people will choose to make riding a bicycle or walking part of their everyday life.”

The following policies are highlighted in this plan and should be implemented at the municipal level as well.

- ◆ Improve bicycle and pedestrian mobility throughout the County by providing a system that is suitable for all users and offers access to major destination areas.
- ◆ Ensure that features and amenities that support bicycle and pedestrian activity are provided in a manner that sustains door-to-door travel.
- ◆ Assist bicyclists and pedestrians by offering signage and maps that clearly identify directions, destinations, and services while also promoting awareness of bicycle and pedestrian activity.
- ◆ Promote education and awareness about the value of bicycle and pedestrian travel and encourage safe bicycle, pedestrian, and motor vehicle interaction.

Harford County Highway Safety Plan (2021-2025)³

In 2013, the Harford County Council passed Bill 13-33 to establish the Traffic Safety Advisory Board (TSAB) and tasked that entity with developing and implementing a local Strategic Highway Safety Plan (SHSP). A plan, like the State SHSP, was developed to cover the years 2016-2020. A recent update to the Harford County SHSP is a five-year plan covering 2021-2025, covering the same timeframe as that of the State SHSP. The Board meets every other month to review the Harford County Highway Safety Plan and

oversee the progress for advancing their vision zero goals by prioritizing programs and supporting strategies to decrease crash fatalities by 50% and a goal of zero deaths by 2030. The Harford County SHSP 2021-2025 states their goals and targets as follows:

- ◆ Reduce fatalities from a five-year average of 19 in 2015-2019 to 18 or fewer in 2021-2025.
- ◆ Reduce injuries from a five-year average of 1,429 in 2015-2019 to 1,087 or fewer in 2021-2025.
- ◆ Reduce severe injuries from a five-year average of 107 in 2015-2019 to 51 or fewer in 2021-2025.

2050 Maryland Statewide Bicycle and Pedestrian Master Plan⁴



The 2050 Maryland Statewide Bicycle and Pedestrian Master Plan provides trends in pedestrian and bicycle safety improvements and identifies strategies for improving active transportation access across the state, incorporating input from the public and setting specific goals. The development of this action plan followed the same procedures highlighted in this statewide master plan and aims to be in harmony with the goals established in Section 5 of the Maryland Statewide Bicycle and Pedestrian Master Plan.

¹ [HarfordNEXT](#)
² [Harford County Bike and Ped Plan](#)

³ [Harford County Highway Safety Plan \(2021-2025\)](#)

⁴ [2050 Maryland Statewide Bicycle and Pedestrian Mater Plan](#)

Maryland Strategic Highway Safety Plan (SHSP) 2021-2025⁵

This Action Plan aligns with the goals and objectives of the Maryland Strategic Highway Safety Plan (SHSP) 2021-2025. Maryland has adopted a comprehensive approach to address highway safety in the State. According to the Maryland 2021-2025 SHSP, “The Zero Deaths Maryland strategy incorporates principles from Vision Zero and other proven safety programs to provide a broad systems perspective that considers the interaction of the road user with the road design as a necessary component to achieve zero deaths on our roads.” The goal is zero deaths in Maryland by 2030. The Maryland Pedestrian Safety Action Plan (2023) complements and expands the Maryland 2021-20225 SHSP.

Zero Deaths Maryland⁶

The Zero Deaths Maryland⁷ plan was used to estimate interim targets and used the following criteria:

- ◆ Number of Fatalities
- ◆ Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
- ◆ Number of Severe Injuries
- ◆ Rate of Severe Injuries per 100 million VMT
- ◆ Number of Non-motorized Fatalities and Nonmotorized Severe Injuries

Additional Policies Relating to Safe Travel

Reviews of policies that are currently implemented on the municipal level are available in Sections 6A, 6B, and 6C.

Policy Recommendations

Policies and resources at all levels of government must be aligned with Vision Zero goals. Safety is the number one priority for roadways, thus, after a comprehensive review of the existing plans, policies, and regulations, action items for policy implementation have been identified for each municipality and itemized in Table 5-1.

⁵ [Maryland Strategic Highway Safety Plan](#)

⁶ [Zero Deaths Maryland](#)

⁷ See Appendix E for further information in this plan

Table 5-1: Policy Recommendations

Action Item	Steps for Implementation
1. Create and Implement Vision Zero Policy and Action Plan	◆ Develop and Adopt a Vision Zero Policy and develop a Vision Zero Plan that is updated every five years. ◆ Aligning Vision Zero with the 2021-2025 Maryland Highway Safety Plan and the Harford County Strategic Highway Safety Plan. ◆ Establish a Vision Zero Strategy Committee to provide input on plan development, project implementation and public outreach. A plan monitoring process shall be developed once adopted. ◆ Establish a Vision Zero website for the safety campaign, utilizing social media and online tools to identify areas of concern, regularly updating crash data, and communicating progress through a report card to the community. ◆ Conduct before and after ped and bike counts at strategically selected locations. ◆ Encourage the School System to adopt a Safe Routes to School program.
2. Create and Implement Complete Streets Policy and Design Guidelines	◆ Develop and Adopt a Complete Streets Policy and Design Guidelines. ◆ Develop a development review checklist that aligns with complete street guidelines.
3. Pedestrian and Bicycle or Multimodal Master Plans	◆ Develop pedestrian and bicycle master plans or a multimodal master plan. ◆ Commit funding each year to new bike lane design and installation (ensure funds distributed within disadvantaged communities or areas where bikeway connectivity to destinations or public transit are needed) include costs for vertical post delineators and concrete bikeway median. ◆ Leverage town funds through the state’s Kim Lamphier bikeways grant- funding is 80 (state)/20 (town) match. ◆ Apply for the State Kim Lamphier Bikeways Grant each year to continue to advance bikeway projects. ◆ Collaborate with the town & cities, county, and state resurfacing efforts to create a list of fiscal year resurfacing projects and provide bike lane designs in advance along roads identified in the bicycle master plan. ◆ Adopt green pavement policy for conflict areas, separated bike lanes and protected intersections. ◆ Develop educational materials, printed and videos demonstrating how to navigate with new facility types such as floating bus stops.

These commitments to revising existing policies will help to improve roadway safety and contribute to the overall goals of Vision Zero. Shifting the focus from auto-centric design standards to a people-first approach with complete street guidelines and standards will change the level of comfort, safety, and access opportunities for the residents of each municipality. This holistic approach calls for changes such as reconfiguring lanes and using speed management plans to lower speeds, bolstering police enforcement and traffic safety education to make it safer for drivers, bicyclists, and pedestrians, and creating a multimodal transportation system to provide safe access for everyone regardless of where, when or by what mode they chose to travel, their demographic or economic background or their age and ability.

Specific guidelines to incorporate this frame of policy implementation are presented in Table 5-2.

Table 5-1: Policy Recommendations Cont.

Action Item	Steps for Implementation
3a. Update Existing Plans	◆ Aberdeen: Update Transportation Section of Plan Aberdeen Comprehensive Plan (April 10, 2023) to adhere to these recommended design improvements. ◆ Bel Air: update 2013 Town of Bel Air Bicycle and Pedestrian Plan per requirements stated in 2022 Town of Bel Air Comprehensive Plan. ◆ Havre de Grace: incorporate the presented material of this Action Plan into the ongoing Envision Havre de Grace Comprehensive Plan.
4. Adhere to the Most Recent National Design Standards	◆ Compare current municipal design standards with the latest applicable State and Federal guidelines and update as necessary. ◆ Adopt the 11th edition of the FHWA’s MUTCD – will be required after January 18, 2026. ◆ Incorporate these standards into those already used in the Harford County Road Code (2008). Further details available in Appendix E
5. Enforce Existing Policies	◆ Deploy speed reader feedback trailers to use as messaging device. ◆ Determine if automated speed cameras are an option. ◆ Explore applying school zone speed limits to street segments near schools. ◆ Consider piloting a Twenty is Plenty Program that establishes a municipal-wide speed limit on local roadways to 20 MPH. ◆ Work with MDOT SHA on reducing speed, where needed. ◆ Collaborate with Police Department to update crash data.

Table 5-2: Updates to Existing Policies

Relevant Municipality	Recommended Action	Agency Responsible	Timeframe -years
Improve the Municipality’s Internal Vision Zero Practices			
All	- Hire a Vision Zero Coordinator or assign staff to oversee that all Capital Projects comply with Vision Zero goals.	DPWT	1 to 2
	- Develop a Complete Streets Policy and Guidelines.	Planning & Community Development	3 to 5
	- Update roadway design standards to include Vision Zero elements including high visibility continental crosswalks, intersection daylighting, protected bike lanes, separated bike lanes, green pavement, intersection corner islands (protected intersections), adequate bicycle parking.	Traffic Safety Executive Committee	3 to 5
Bel Air	- Update to the 2013 Bicycle and Pedestrian Plan.	Planning & Community Development	3 to 5
Havre de Grace	- Continue to implement the recommendations from the HDG Bicycle Lane Project Feasibility Study and Design and the momentum of the Quick Build Project.	Planning	1 to 2
Aberdeen	- Develop a Pedestrian and Bicycle Master Plan within the City of Aberdeen as recommended in the April 10, 2023, plan Aberdeen (Ch. 7-Transportation).	Planning & Community Development	3 to 5
Coordinate Engineering Improvements with Education Campaigns			
All	- When new design treatments or signal upgrades (RRFB or HAWK) are installed develop on-site education campaigns or brochures and videos.	Planning, DPWT and Public Information	Ongoing
	- Coordinate countermeasure deployment with press releases, ribbon cuttings and social media announcements to bring awareness of Vision Zero efforts.	Planning, DPWT and Public Information	Ongoing
	- Partner with Parks and Recreation or Elementary Schools to develop Traffic Gardens where children begin to understand road safety in a safe environment such as a school site or park.	Planning, Parks and Recreation and Elementary School	Ongoing
	- Incorporate Vision Zero goals with Safe Routes to School Programs and funding opportunities.	Planning and School Board	Ongoing
Collaborate with Police Enforcement Strategies			
All	- Strategically deploy photo radar van along highspeed corridors where allowed by state law.	Planning and Police	1 to2 (Ongoing)
	- Coordinate with MDOT SHA speed reduction/management efforts on State Roads at high crash locations where speeding is a concern.	Planning and Police	Ongoing
	- Use of new technology safety cameras or videos to observe dangerous behaviors and collect data to support funding for new designs or programs.	Planning and Police	Ongoing
Equity Considerations			
All	- Establish a standing Executive Traffic Safety Committee or decide if the County's Existing Traffic Safety Advisory Board (TSAB) can be expanded to include a broader cross-section of the community.	Municipalities and Harford County Sheriff's Office	Ongoing
	- Ensure that a robust and equitable public engagement process is included in every project. Conduct in multiple languages (Spanish/English) if needed. Incorporate all users’ viewpoints, bicyclists, transit users and people with disabilities.	Planning and Public Information	Ongoing
	- Prioritize Vision Zero Investments in Disadvantaged Areas including low-income and/or low-mobility communities.	Planning and DPWT	Ongoing
Grant Funding			
Harford County and Bel Air	- Pursue TAP funding and Maryland Kim Lamphier Bikeways Network Program grant funding to implement recommendations or phases of the proposed improvements identified in the March 2023 Bel Air to Harford Community College Bikeways Connector.	Planning	Ongoing
Aberdeen & Havre de Grace	- Pursue TAP funding and Maryland Kim Lamphier Bikeways Network Program grant funding for the US 40 Shared Use Path from Aberdeen to Havre de Grace.	Planning	Ongoing
All	- Pursue FHWA SS4A Supplemental Planning and Demonstration grant funding to perform additional signal warrant studies, feasibility studies, and demonstration projects based on the recommendations in this Action Plan. - MDOT Bicycle and Pedestrian Accessibility Funds (Fund 88 (Bicycle retrofit) and Fund 79 (new Sidewalk Construction for Pedestrian Access) on State Roads (75% State funded and 25% local jurisdiction funded)	Planning	Ongoing



SECTION 6 - RECOMMENDATIONS



Section 6 - Recommendations

The recommendations presented in the following sections were selected after thorough consideration of crash statistics, public concern, and physical characteristics. These considerations are provided on the intersection “snapshot.”

Engineering Countermeasures

As mentioned in Section 3, a series of countermeasures were presented to the public to obtain their input on the type of improvements they might like to see installed within their communities. Descriptions and pictures for each of these countermeasures are provided in the Appendix.

Effectiveness of Countermeasures.

The countermeasures presented in the following sections have an associated crash modification factor (CMF). This CMF is provided via a range of variables from the Crash Modification Factor Clearinghouse used by the Federal Highway Administration to evaluate the effectiveness of an improvement. Per the CMF Clearinghouse, a Crash Modification Factor (CMF) is "a multiplicative factor that indicates the proportion of crashes that would be expected after implementing a countermeasure."

To determine the overall effectiveness of the countermeasure the following formula is used:

$$\begin{aligned} & \text{Expected \# of Crashes with Countermeasure} \\ &= CMF \times \text{Expected \# of Crashes without Countermeasure} \end{aligned}$$

For example: If the average number of crashes at an intersection is 10 per year, and a high visibility continental crosswalk is installed, which has a CMF of 0.63, the average crashes can be assumed to be reduced to 6.3 or approximately 6 crashes per year. A table of CMF’s provided for each of the countermeasures proposed can be found in the Appendix.

Any improvement's success should also be measured by getting feedback from stakeholders and principally from the daily users of the transportation infrastructure and facilities.

Cost of Countermeasures

The cost presented has been calculated given a variety of factors, which can be found in the Appendix.

Timeline and Prioritization

The presented countermeasures in section 6A, 6B, and 6C have an associated “term” based on the amount of time a countermeasure will take to implement. They are:

Short-term: 0-3 Years

Intermediate-term: 4-5 Years

Long-term: More than 5 Years

The timeline also depends on the funding availability and stakeholder collaboration, policy enhancements and education when implemented in parallel.

Non-Engineering Countermeasures

The 5 E’s are essential components in promoting safer walking and biking routes. These elements aim to create better conditions for vulnerable road users. “Engineering” has already been discussed and the remaining are described in further detail below:

Education: Teach students and community members about walking and biking safety. This can happen through in-school curriculum, bike/pedestrian safety assemblies, newsletters, and tips sheets. For example, a traffic garden is depicted in the photos to the right.

Encouragement: Get students and parents excited about walking and biking by hosting special events, walking school buses, bike trains, and schoolwide competitions.

Enforcement: Work with local law enforcement to reduce negative behaviors such as speeding, double parking, or disobeying traffic signals.



Traffic Gardens –
Educating
Children About
Traffic Safety



Evaluation: Regularly assess the effectiveness of the implemented strategies. Record walking and biking rates, parent concerns, and traffic data to evaluate program success.

Additional Considerations for Countermeasure Recommendations

Effective engagement requires meeting communities where they are and addressing their specific needs. The following should be considered prior to the installation of any of the recommendations provided in the subsequent sections.

Legislative Action

Legislation at multiple levels — including at municipal, countywide, or statewide scale — can help address human behaviors that result in crashes which cause fatal or serious injuries.

Public Input and Engagement

- ◆ Further ongoing public engagement to reach disadvantaged communities.
- ◆ Public engagement must reach all stakeholders, particularly the disadvantaged communities, thus promoting equity.

Understanding Marginalized Communities

- ◆ Marginalized communities include those historically excluded from civic participation due to factors like race, wealth, immigration status, and sexual orientation.
- ◆ Local leaders must understand the unique needs of their community and tailor assistance programs accordingly.
- ◆ Areas of Persistent Poverty should be considered at the forefront of all design implementation to ensure the communities here are provided the necessary resources,

Inclusive Infrastructure Investment

- ◆ Engaging communities is crucial for infrastructure investments.
- ◆ Partnering with trusted local organizations can facilitate meaningful engagement with marginalized communities.



Figure 6-1: Twenty is Plenty Pilot Program in Montgomery County

Speed limit setting is one example of legislation used to influence behaviors that result in speeding. Some municipalities in the United States have recently adopted 20 mph residential speed limits through “Twenty is Plenty” campaigns.



SECTION 6A - CITY OF ABERDEEN RECOMMENDATIONS



Section 6A - City of Aberdeen

Aberdeen, Maryland, is undergoing significant transformation as it strives to maintain its family-friendly atmosphere and close-knit community spirit. Understanding the city's demographics is crucial in navigating its evolving identity, with collaborative efforts from the City of Aberdeen, MDOT, Harford County Economic Development, and Aberdeen Proving Ground/Resident driving its growth and expansion. Zoning regulations and policies play a pivotal role in shaping Aberdeen's future, especially in terms of fostering safe and efficient travel. The initiatives in HarfordNEXT underscore the necessity of preserving infrastructure integrity, with MD 22, Aberdeen Proving Ground, and the Aberdeen Train Station identified as critical areas for Transportation Demand Management (TDM) improvements. Despite these advancements, challenges remain, particularly concerning the east side of Aberdeen's access to multi-modal transportation options. The appropriation of funding for Amtrak and the Aberdeen TOD Station Square improvements signifies a step towards addressing these barriers, highlighting the city's commitment to enhancing its transportation infrastructure and accessibility.

Existing Policies and Regulations

Aberdeen Comprehensive Plan 2023

The City's existing Comprehensive Plan aims to develop master plans for pedestrians, bikes, and other non-motorized modes of transportation, ensuring safe and convenient pathways that connect to Main Street and the TOD areas. It also seeks to connect residential, commercial, and recreational nodes for pedestrians and non-motorized transportation, with a sidewalk master plan to identify gaps in the existing network.

Big-ticket transportation improvements in Aberdeen include

1. Transforming US 40 into a green boulevard (see Figure 6-1) and
2. Creating an accessible underpass at the MARC/Amtrak station for pedestrians to safely cross the train tracks and connect the east and west side neighborhoods within the city.

Smaller improvements like bus shelters, wayfinding, new sidewalks and ADA ramps and general beautification efforts are also underway to promote alternative modes of transportation. The Aberdeen Transit Oriented Development Master Plan, adopted in May 2021, focuses on maximizing development potential within a half-mile of the Aberdeen MARC Commuter Rail and Amtrak Station. It emphasizes mixed-use development with commercial spaces at street level, pedestrian-friendly environments, and open spaces.



Figure 6-1: Excerpt from Aberdeen Comprehensive Plan Depicting the Proposed Conditions of the US 40 "Green Boulevard"

Transportation Oriented Development (TOD) Area

Key components of the TOD area plan include upgrading N Philadelphia Blvd. and S Philadelphia Blvd. to "true boulevards," incorporating TOD and pedestrian-friendly stormwater treatment facilities and widening Amtrak to four lanes in the future. Community feedback has highlighted several suggested improvements, such as relocating the station closer to civic center activities, creating an inviting underpass for pedestrians, and constructing a parking structure with mixed uses adjacent to the station. Additionally, plans for the proposed US 40 Shared Use Path aim to improve bike and pedestrian access in Harford County, integrating with potential future paths to enhance connectivity in the region.

Section 6A - City of Aberdeen

Adoption of Harford County Roadway Improvements

Per the Municipal Code of Aberdeen, under Chapter 470, Article 1, the city adopted the Harford County Rd Code for its standards by reference. Given this information the design considerations proposed adhere to Harford County's standards.

Ongoing Developments

US 40 Shared Use Path

Beginning at the Aberdeen MARC/Amtrak station and continuing for 5 miles along US 40 to Erie Street in Havre de Grace, the proposed US 40 Shared Use Path will provide pedestrians and cyclists with a new way to travel between the two cities.

The combined option depicted in Figure 6-2 is the preferred alternative that will likely be proposed to gain funding for the advancement of its preliminary design. It runs along the west side of US 40 and switches to the east side at Lewis Lane in Havre de Grace.



Figure 6-2: Design Options for US 40 Shared Use Path

The proposed path was chosen as an intersection improvement by the City of Aberdeen for this Action Plan indicated by the "A4" intersection ID. Due to the proximity of this proposed path

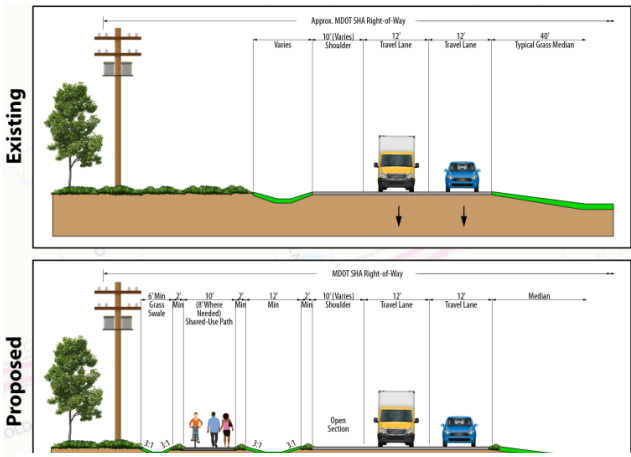


Figure 6-3: Section View of Proposed US 40 Shared Use Path

with the A1 intersection, the two are often indicated as one central location.

The data collected in the A1& A4 snapshot will help identify potential conflicts at intersection locations to inform future US 40 shared-use path design solutions. The investigation into this path will be more relevant to the Action Plan itself as the Project Team hopes to propose improvements that can be integrated easily when this path is installed.

Aberdeen Marc/Amtrak Train Station & Susquehanna River Rail Bridge Project

Since 2012, a multimodal facility in Aberdeen has been included in the County's priority letter since 2007. Harford County requested MDOT funding for the environmental and engineering analysis of underground conditions for the transition of the existing pedestrian overpass to be removed and a pedestrian underpass be constructed with ADA accessibility that will improve the safety, visibility, and accessibility for commuters and residents. The city was approved for a Fiscal Year 2023 Congressionally Directed Spending grant of \$4.0M for the Aberdeen Station Square, Phase I for preliminary engineering and design, geotechnical, and acquisition.

The City of Aberdeen will also soon receive \$800,000 from the U.S. Department of Transportation's Reconnecting Communities and Neighborhoods Grant Program to Complete Phase 1 of this project.

"The Aberdeen Marc/Amtrak Train Station and the Susquehanna River Rail Bridge Project will have positive economic and transportation impacts on the rail corridor. The Infrastructure Investment and Job Act has funded many bridge, tunnel, and rail projects throughout the northeast corridor including \$30-50 million dollars in funding to extend the Aberdeen Train Station platform approximately 1050' to the south with a new multi-level elevator building and significant upgrades to make the station ADA accessible. New plans will be under development in the future." - **ABERDEEN MARC TRAIN STATION TOD – STATION SQUARE IMPROVEMENTS (EXCERPT FROM APRIL 10, 2023 ABERDEEN COMPREHENSIVE MASTER PLAN, TRANSPORTATION, P. 7-33).**



Figure 6-4: Visualization of the Proposed Susquehanna River Rail Bridge Project

The Susquehanna River Rail Bridge (see Figure 6-4) is a critical link along the Northeast Corridor (NEC), which is the busiest rail line in the United States. The existing bridge creates a bottleneck in train capacity and restricts speed along the NEC. The Susquehanna River Rail Bridge Project will improve rail connectivity along the NEC by replacing the two-track bridge with four tracks over the Susquehanna River between the City of Havre de Grace in Harford County, Maryland, and the Town of Perryville in Cecil County, Maryland. Preliminary Engineering (30%) was completed in August 2022 and \$40 million in grant funding was awarded to the Maryland Department of Transportation (MDOT) and Federal Railroad Administration (FRA) for the final design through an additional cooperative agreement between FRA, MDOT/MTA, and Amtrak.

Aberdeen Activity Center and A5 Intersection

The City of Aberdeen acquired a 13.4-acre site for an Activity Center several years ago. \$9 million has been budgeted in FY2022 to design and construct the facility along West Bel Air Avenue at Middleton Road. This will impact on one of the intersections under review at West Bel Air Avenue and Middleton Road. MDOT SHA also has verbally stated there is an ongoing work order to update the existing pedestrian crossing this summer with a continental-style crosswalk marking. Also in this work order, minor improvements are suggested such as installing flex posts for traffic calming from the eastbound approach.

Selected Intersections in Aberdeen

The following intersections listed below were selected for areas of study in Aberdeen, each with an identification number used throughout this section. See Figure 6-5 for a map view.

- A1 & A4** – WEST BEL AIR AVENUE (MD 132) AT US 40 & US 40 SHARED USE PATH
- A2.1** – JAMES AVE & US 40
- A2.2** – CAROL AVE & US 40
- A3** – MD 22 AT OLD POST AND POST ROAD (MD132B)
- A5** – MIDDLETON RD & WEST BELAIR AVENUE (MD 132)
- A6** – MD 132 AT BUSH CHAPEL ROAD AND BEARDS HILL RD (MD 132A)

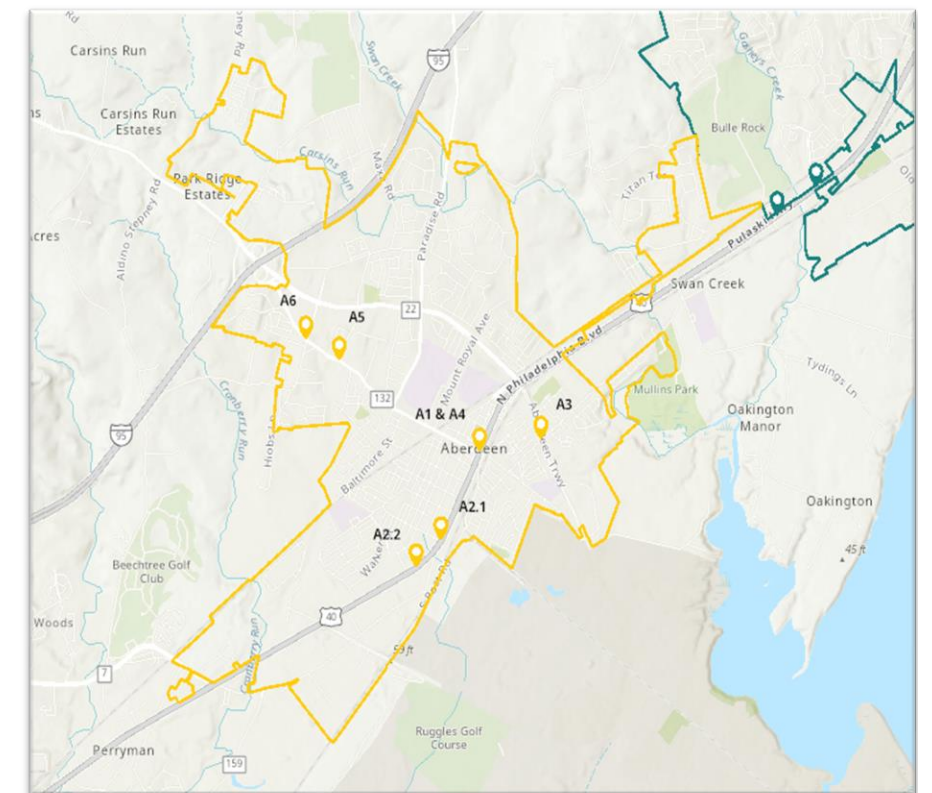


Figure 6-5: Aberdeen Selected Intersections

Historic Crash Analysis

Of the total 217 reported crashes in this study, 86 of them occurred in Aberdeen. The most common collision was a left turning movement crash which accounted for 38% of all crashes. Although no fatalities were recorded, 48% of the crashes involved a serious injury either to the driver of the vehicle or to a nearby pedestrian. 3 of the 86 crashes involved a pedestrian, with two of them occurring at the A1&A4 intersection. With most crashes occurring during dry conditions and on Fridays

Crashes Involving Impairment

Within the six selected intersection areas, about 6% of crashes were due to the driver being under the influence of alcohol or a controlled substance.

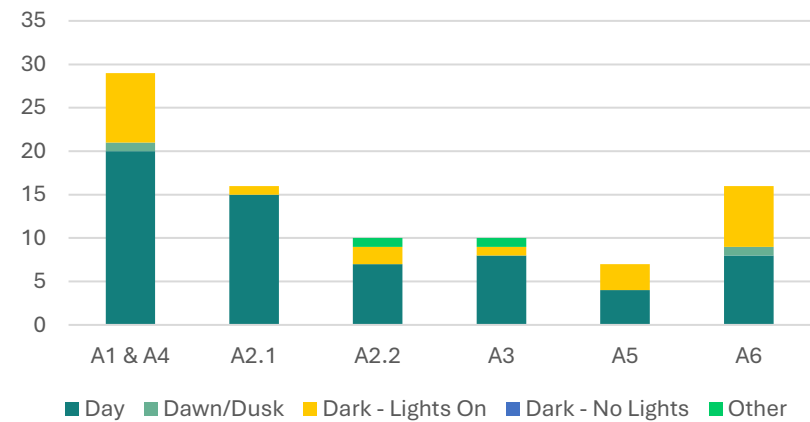


Figure 6-7: Crashes by Lighting Available

Top 3 Probable Causes of Crashes in Aberdeen

- ♦ Fail to Yield to Right-of-Way – 36%
- ♦ Failure to Give Full Attention – 10%
- ♦ Failure to Obey Traffic Signals – 5%

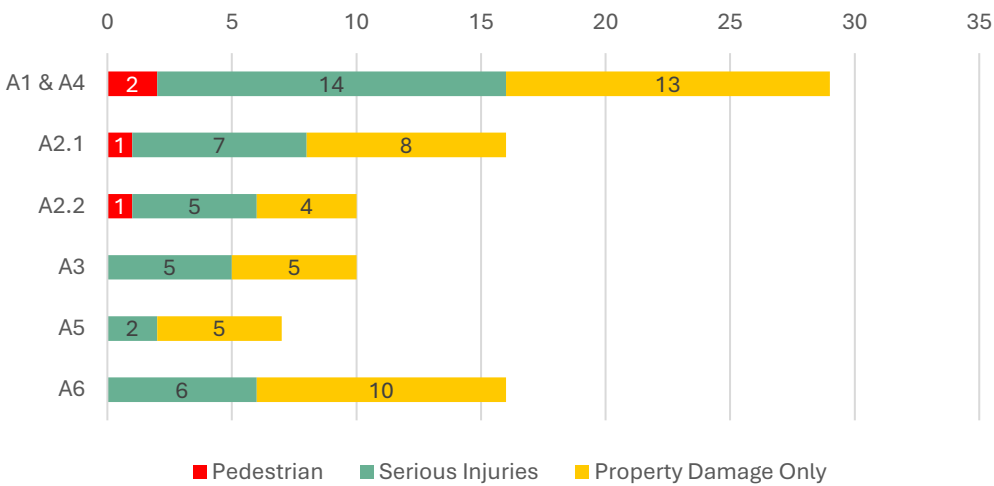


Figure 6-6: Aberdeen Crashes by Involvement

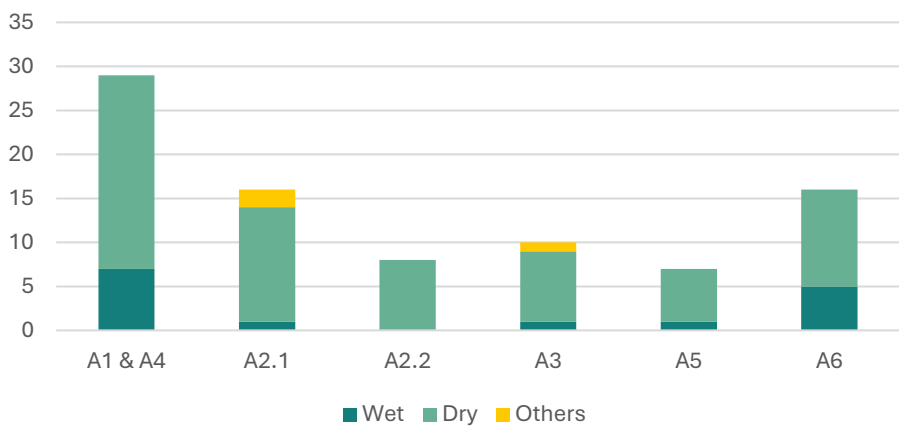


Figure 6-8: Crash by Surface Conditions

Table 6-3: Crashes by # of Vehicles Involved

# of Vehicles Involved	Intersection ID					
	A1 & A4	A2.1	A2.2	A3	A5	A6
Single	3	1	0	3	0	5
Two	26	15	8	7	7	10
3 +	0	0	0	0	0	1

Table 6-1: Crash Summary by Collision Type

Crash Type	Intersection ID						Total
	A1 & A4	A2.1	A2.2	A3	A5	A6	
Wrong-way Driving	0	0	0	1	0	0	1
Rear End	7	0	1	1	3	0	12
Sideswipe	0	0	0	1	0	0	1
Left Turn	14	7	0	1	1	10	33
Angle	4	6	5	2	3	1	21
Pedestrian	2	1	0	0	0	0	3
Parked Vehicle	0	0	0	0	0	0	0
Fixed Object	1	0	0	2	0	5	8
Other	1	2	2	2	0	0	7

Table 6-2: Crashes by Day of the Week

Day of the Week	Intersection ID						Total
	A1 & A4	A2.1	A2.2	A3	A5	A6	
SUN	0	0	0	0	1	3	4
MON	3	4	0	3	0	2	12
TUE	4	3	0	1	1	0	9
WED	4	4	1	3	0	4	16
THU	6	1	2	0	0	5	14
FRI	7	2	4	2	2	0	17
SAT	5	2	1	1	3	2	14

Table 6-4: Alcohol or Drug Involvement

Alcohol or Controlled Substance Involvement	Intersection ID						Total
	A1 & A4	A2.1	A2.2	A3	A5	A6	
Yes	2	0	2	0	0	1	5
No	27	16	6	10	7	15	81

Demographics

Aberdeen is located along the I-95 Corridor 26 miles northeast of Baltimore, in Harford County, Maryland. Home to well-known landmarks such as Aberdeen Proving Ground, the headquarters of the US Army Test and Evaluation Command, the Ripken Experience™, and Leidos Field at Ripken Stadium. The city possesses a variety of destinations and attractions for residents and visitors. The Aberdeen Train Station also puts the city on the map as a transportation hub, creating connections for nearly 119 million people within a 10-hour train ride to major metropolitan areas like Boston, Philadelphia, New York, and Washington D.C. along the northeast corridor. I-95 and US 40 provide two parallel routes through the city, while MD 22 (Churchville Road), connects directly to Aberdeen Proving Ground and the greater Churchville - Bel Air area. Other State highways serving Aberdeen include MD 7, MD 132, MD 159, MD 462, and MD 715. The Maryland Area Rail Commuter (MARC), Amtrak, and the Norfolk Southern/CSX railways provide other transportation choices within the city and region.

Table 6-5 summarizes the most recent US Census¹ data available for the City of Aberdeen and is presented to understand the road users that will be most affected by proposed design improvements for each intersection.

“The outdated pedestrian infrastructure at Aberdeen’s Train Station not only limits accessibility to public transportation services, it also hinders travel across the City. Through the Infrastructure Investment and Jobs Act, we secured funding to update the infrastructure of the past – like this – and lay the foundation for a future of connectivity and more economic prosperity,”

- SENATOR VAN HOLLEN.

Equity Considerations

As shown in Table 6-5 Aberdeen’s largest impoverished population is below the age of 18, which can be interpreted to mean more focus should be given to the youth and around school zones where they’re likely to be for most of the week. A variety of other factors can aid in identifying population areas that require additional considerations, including income, race, mobility concerns, and access to motor vehicles. Several charts and maps on the next sheet review these different demographic categories to get a better representation of the communities surrounding the selected intersections.

As was mentioned in Section 4: Equity Considerations, Figure 6-9 indicates that the A1, A3 & A4 intersections in Census Tract 24025302901 are within areas of persistent poverty and historically underserved communities. Because this is the only tract in this Action Plan within both a Historically Disadvantaged Census Tract and an Area of Persistent Poverty, further information on this area is provided on page 6A-6.

All other tracts within Aberdeen are considered historically disadvantaged or deemed “disadvantaged community tracts”, all intersections being within these bounds.

Table 6-5: Summary of Demographic Data

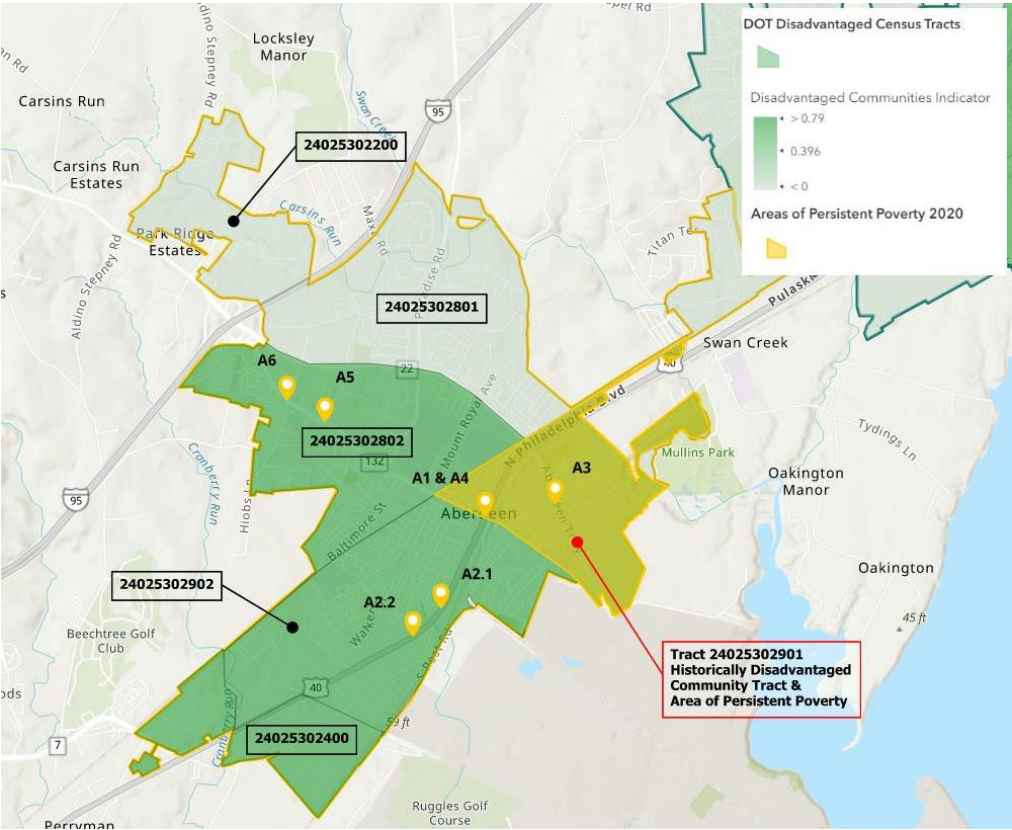
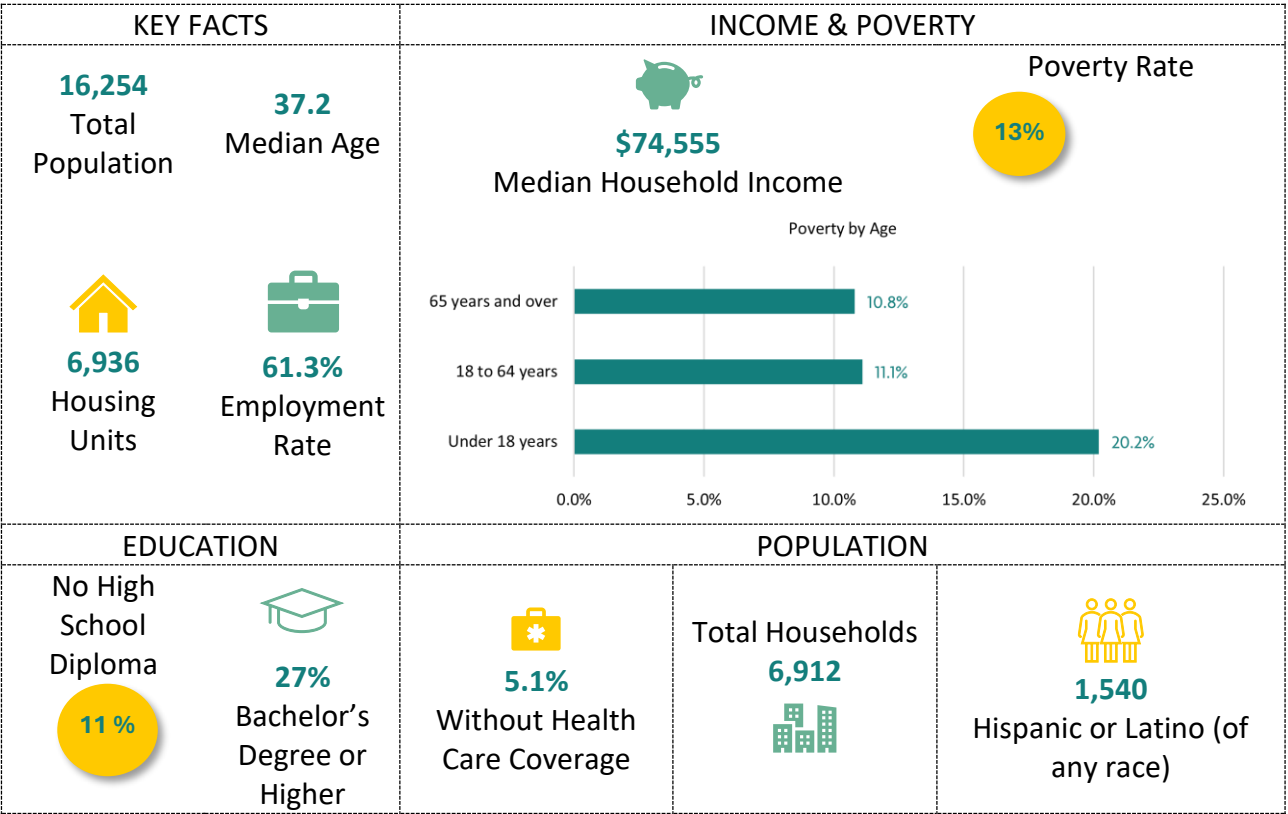


Figure 6-9: Aberdeen Disadvantaged Community Tracts

¹ US Census Data Aberdeen, MD

Table 6-6: % of Households that are Low to Moderate Income

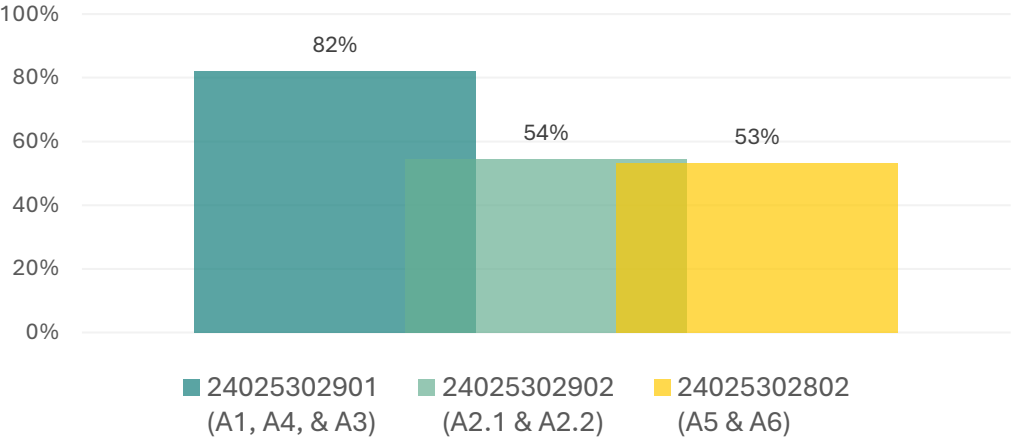


Table 6-6 indicates that all the selected intersections are within census tracts where at least 50% of residents are low to moderate-income.

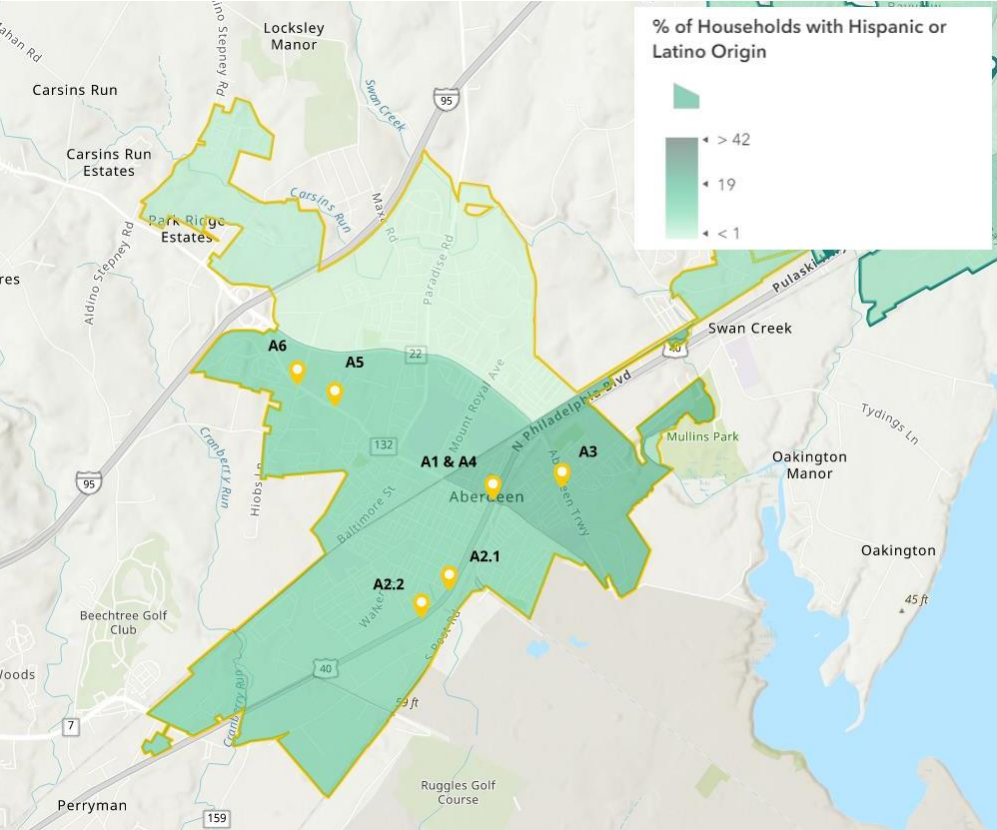


Figure 6-13: % of Households with Hispanic or Latino Origin

“I am so pleased to announce the \$800,000 to continue with this project. The project will bring quality jobs to the area and provide residents and visitors an improved and accessible commuting experience.

– Mayor Patrick L. McGrady

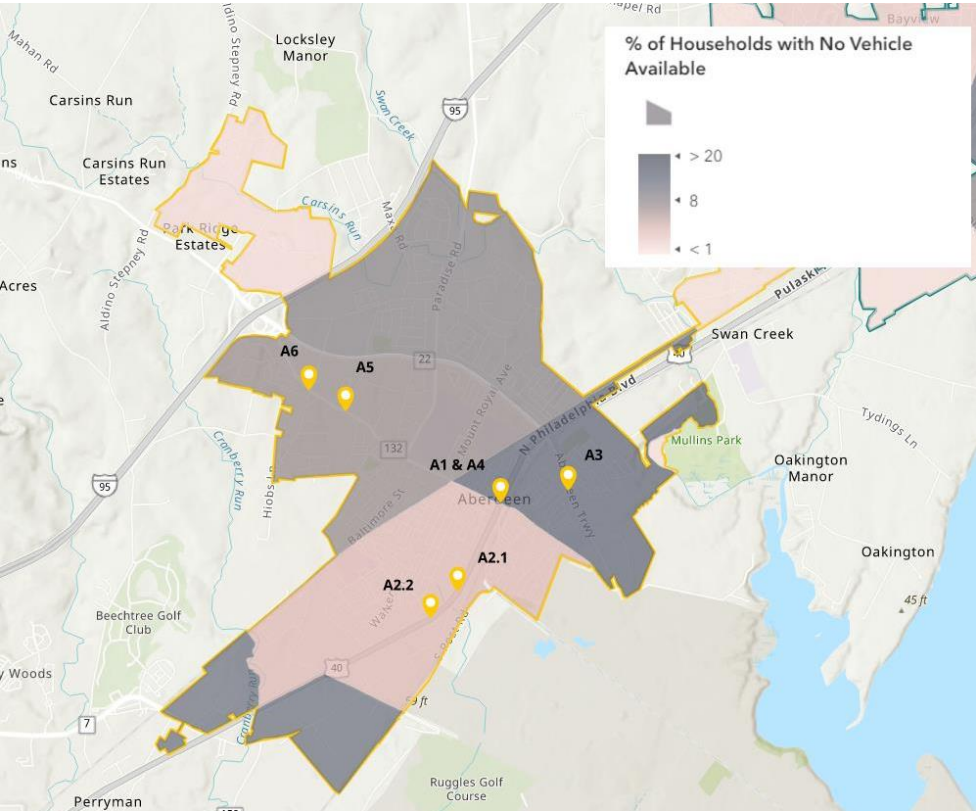


Figure 6-11: % of Households with No Vehicle

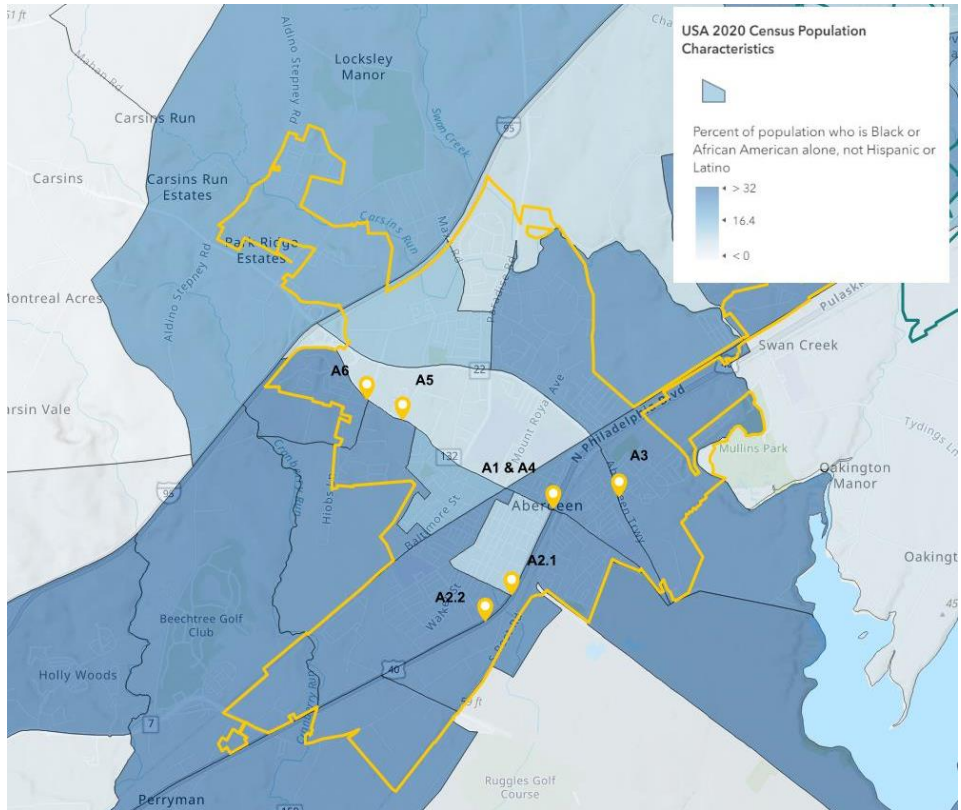


Figure 6-12: % of Population who is Black or African American

Figure 6-12 and Figure 6-13 indicate the highest percentages of Hispanic or Latino and African Americans in the same tract that is designated an Area of Persistent Poverty.

Figure 6-11 indicates the highest percentage of Aberdeen’s population that does not have access to a vehicle at home is also in this area of persistent poverty and have higher percentages north of US 40.

Existing Equity Considerations

The City of Aberdeen’s existing development initiative has previously considered this area of persistent poverty and seeks to maximize development in a designated Transit Oriented (TOD) Development Zone, which connects to the A1 & A4 intersections by the MARC/Amtrak train station.

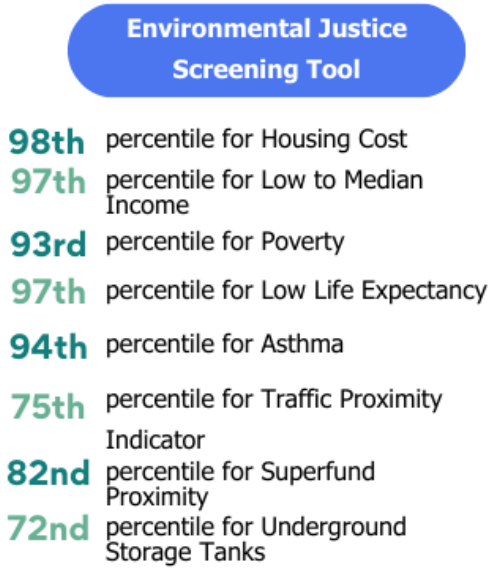


Figure 6-10: Aberdeen Amtrak/MARC Station

The Amtrak/MARC Station serves Maryland Area Regional Commuter (MARC), Amtrak, and regional bus services, but access between the east and west sides of the station is limited. The station is currently accessed via a non-ADA compliant tunnel and pedestrian bridge. In March 2024, the USDOT Reconnecting Communities and Neighborhood Grant program awarded funding to modernize and upgrade the station. Planned improvements include creating a safe and efficient intermodal transportation hub, constructing a new ADA-compliant pedestrian underpass to replace the outdated pedestrian overpass, and enhancing accessibility for all users. These upgrades will eliminate physical and economic barriers, connect East and West Bel Air Avenue, and support redevelopment around the station.

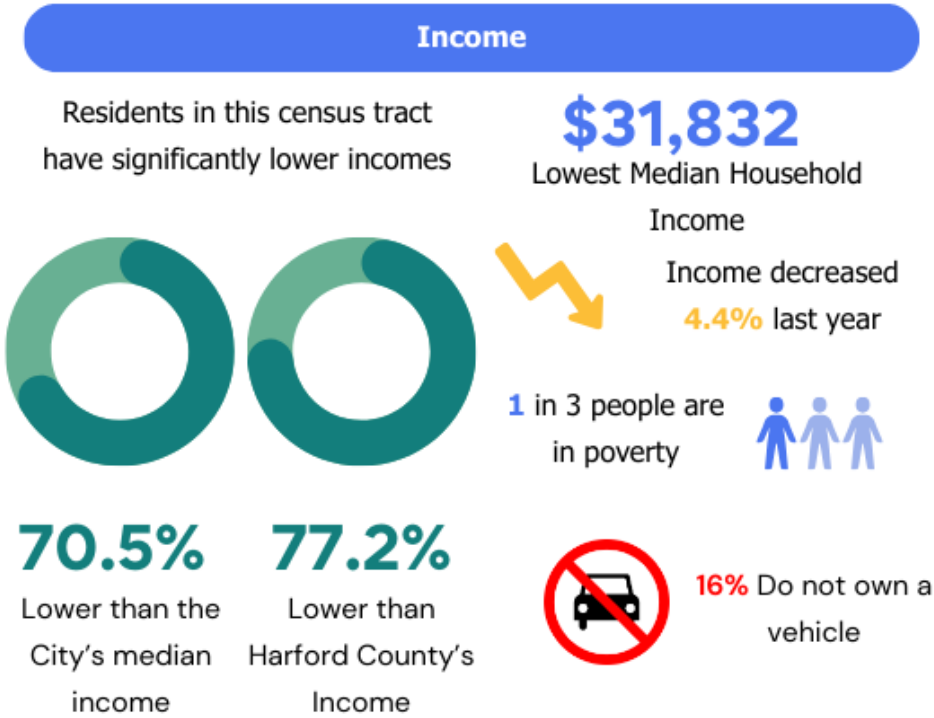
Census Tract 24025302901

According to the FHWA Grant Project Location Verification Tool, Census tract 24025302901 (from here on out referred to as “the tract”), is identified as a disadvantaged area.



The reasoning for this tract’s poor quality of life and economic strain are likely due to several factors:

- 1. **Isolation** – The east side of Aberdeen is bound by the Aberdeen Train Station and railroad tracks (west), Aberdeen Proving Ground (east and south), and a former landfill (north).
- 2. **Lack of Service** - No retail, healthcare, or vital services are located on the east side, deterring commuters due to poor connectivity, perceived illicit activities, and safety concerns.
- 3. **Historical Context and Low-Income Housing** – Between 1940 and 1965, 500 defense houses and 800 apartment units were built, many of which remain in deteriorating condition. The east side offers older, more affordable housing, with several low-income developments from the 1970s still standing after decades of neglect and mismanagement. Overall, 50% of Aberdeen’s residential housing structures, mostly on the east side, were built before 1970.



Those without vehicles wanting to try to access resources once they arrive to the station have quite the journey, and local public transportation can be irregular and hard to rely on.

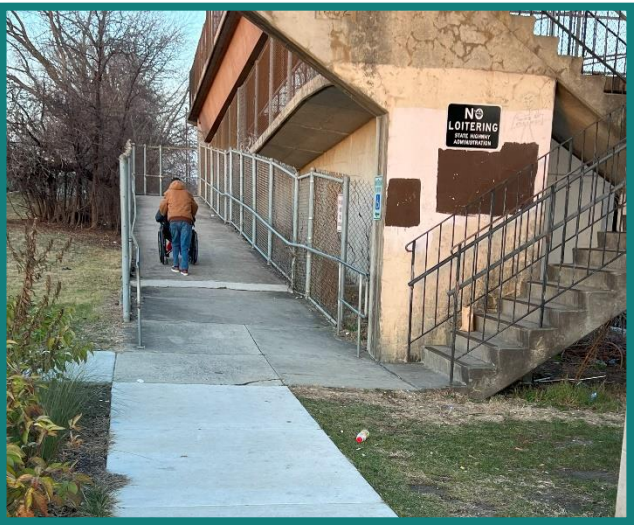
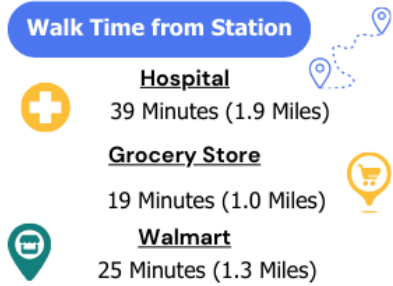


Figure 6-14: Wheelchair User on the Railway Overpass



A Message from the East Side of the Tracks

Several attendees of the Aberdeen Public Workshop were representatives of Halls Cross Road Elementary School. Given the location of the school and its proximity to both the A1 and A3 intersections, an additional meeting with them was held to better understand their concerns for students and community members in eastern Aberdeen. Their key concerns mirror those outlines on this page, and they requested the following specific initiatives and upgrades:

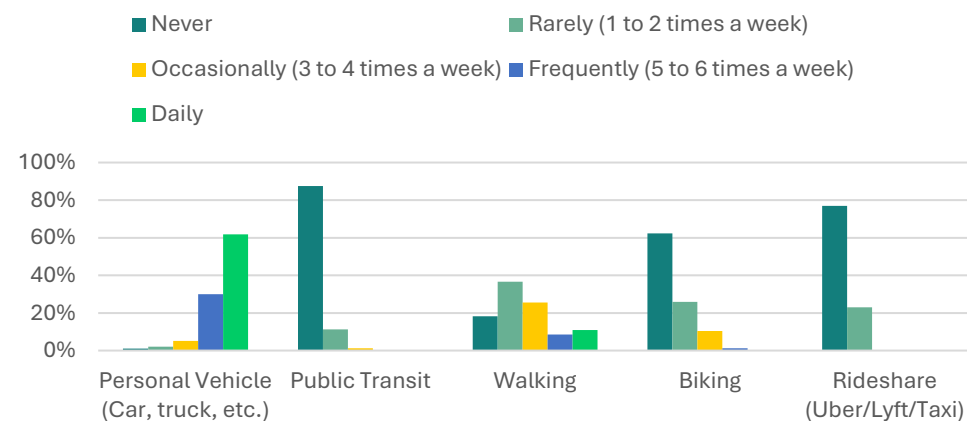
- 1. Install sidewalks in the Swan Meadows area of the City of Aberdeen. Streets such as Aberdeen Ave., Swan Street, Liberty St., Defense Dr. and Victory Street
- 2. Consider pedestrian and cyclist upgrades through the Safe Routes to School grant program
- 3. Continue to implement programs like
 - a. the bike helmet initiative led by Healthy Families and Healthy Harford,
 - b. Bike Rodeos with the Police Department, and
 - c. The MD Statewide Kids in Safe Seats (KISS) program.



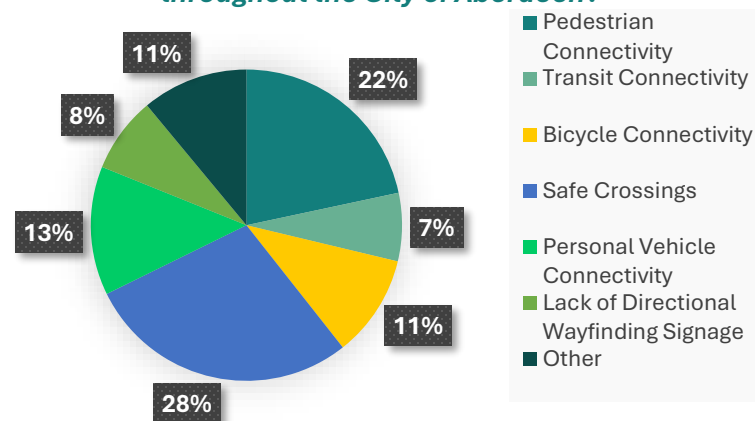
Public Input

The following information provides a summary of the survey results that are described in Section 3: Public Engagement. All 98 responses were provided by Aberdeen residents. For write-in questions, the results have been condensed based on the relevance of this project, but a complete list of the answers provided can be found in the Appendix. For input that was received in the public workshops, this information can be found in the individual analyses of each intersection in the following sections.

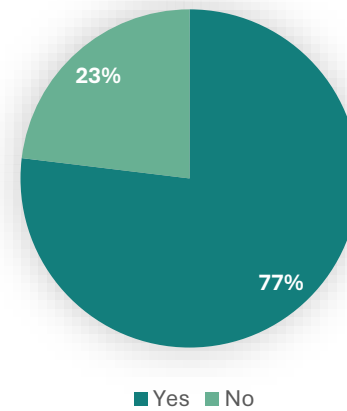
How often do you use each mode of transportation in a typical week?



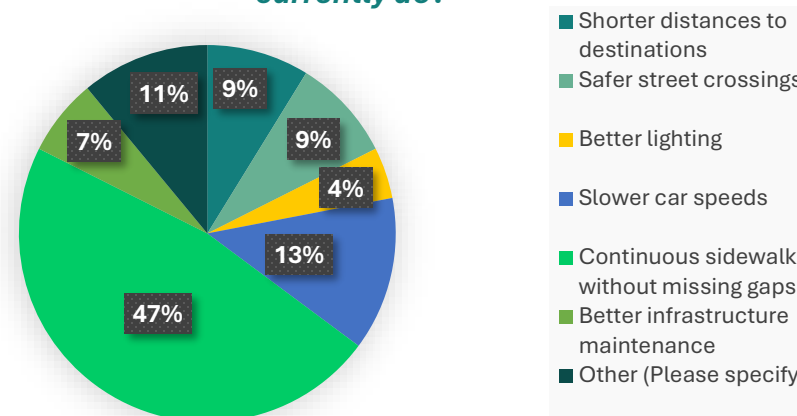
What are your concerns about traveling throughout the City of Aberdeen?



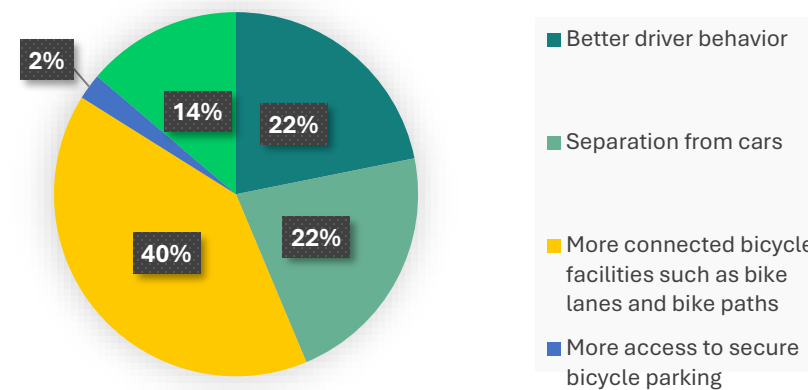
Is the pedestrian crossing time adequate to allow you to cross the streets safely?



What would encourage you to walk more than you currently do?



What would encourage you to bike more than you currently do?



Are there any other concerns you have regarding safe travel in the City of Aberdeen?

- ◆ Illegal Parking
- ◆ Speeding Vehicles → Request for more enforcement
- ◆ Lack of Sidewalks and Lighting
- ◆ Truck Traffic
 - > Concerns about new truck stop
 - > Large trucks parking along US 40 shoulder
 - > Semi-trucks in residential areas or on downtown streets
- ◆ Bicyclist and Pedestrian Safety
 - > Connected sidewalks
 - > Bike protection along US 40
 - > Upgrade downtown with ADA-accessible walkways
- ◆ Intersection Safety
 - > Visibility concerns
 - > Pedestrian and bicycle enhancements

Are there any other improvements or specific safety concerns you would like to see in the City of Aberdeen along certain corridors?

- ◆ Truck Traffic
 - > Specifically on Philadelphia Rd
 - > Create designated truck routes
 - > Improved road an lane painting on road surfaces
- ◆ Traffic Congestion
 - > at Chick-fil-A and Beards Hill Shopping Center
 - > plan for increase due to new housing complex on Beards Hill Rd.
- ◆ Sidewalk Connectivity
- ◆ Safety for Pedestrians at the Train Station
- ◆ Increased Public Transportation

Are there any transportation facilities in Aberdeen that you wish there were more of or that you really enjoy?

- ◆ There is a strong sense of community via the support of small businesses, and walkable downtown
- ◆ The historic train station
- ◆ Tree lined-sidewalks and a commitment to increasing green space in general
- ◆ Need more sidewalks, bike routes, alternative forms of transportation etc. for the lower-income populations



INTERSECTION ANALYSIS

A1& A4 – West Bel Air Avenue (MD 132) at US 40² & US 40 Shared Use Path

Existing Conditions & Site Visit Observations

The A1 intersection is characterized as a transportation hub and sits in the middle of the Transportation Oriented Development (TOD) area under the City of Aberdeen’s zoning initiative. The intersection serves access to the Aberdeen MARC/Amtrak Train Station and APG Road which takes vehicles to the nearby Aberdeen Proving Ground, a major employment area. Directly adjacent to the east leg of the intersection is the bus access for train users and the parking lot for the station.

Intersection Qualities

Speed Limit	AADT
• W Bel Air Ave – 30 mph (Posted)	• W Bel Air Ave – 13,140
• US 40 – 30 mph (Posted)	• US 40 – 39,283
• US 40 ~ 40 mph (85 th Percentile)	LOS
	• Level A for AM Peak
	• Level C for PM Peak
Roadway Classification	
• W Bel Air Ave – Minor Arterial	
• US 40 – Principal Arterial	

Recent and Planned Projects

Future improvements for this area include upgrades to the underground and aboveground rail crossing and the implementation of the US 40 Shared Use Path which begins on the NE quadrant. These improvements are described in detail in the Ongoing Developments section. This intersection is also part of the Transportation Oriented Development (TOD) Zone. The TOD proposes specific upgrades to the design of the US 40 thoroughway and includes the integration of bike lanes, increased connectivity to the train station, and the conversion of US 40 to a “true boulevard,” depicted in Figure 6-15.

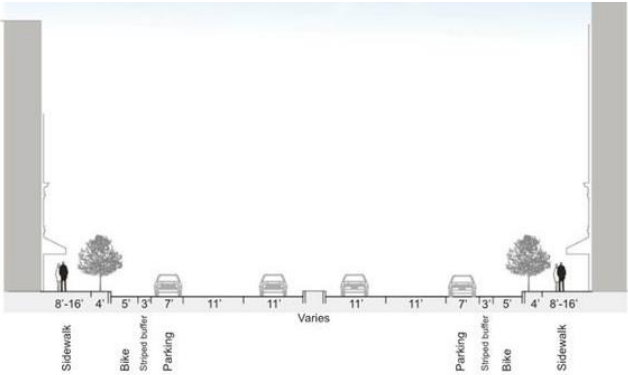


Figure 6-15: TOD Proposed Street Section

Identified Deficiencies

1. Buses having difficulties parking right in front of the bus shelter without encroaching into the APG Rd travel lane.
2. No ADA-compliant sidewalk connecting the underground tunnel to the bus shelters.
3. (Reported by train station worker) During peak hours, queued buses block the accessible parking spaces, causing long waiting time (10+ mins) for vehicles to move out.
4. Vehicles coming down from APG Rd may have difficulties slowing down and risk crashing into the bus shelters or curb. (Geometric factors: downhill slope + sharp turning radii.)
5. Existing crosswalk markings are outdated.
6. The push button in the NW quadrant is loose.
7. Vehicles needing to access the train station use APG Rd to make an illegal U-turn.

Observation: Pedestrians Cross APG Rd illegally



² US 40 is assumed to run in an east-west direction, per MDOT SHA

Crash Analysis

Key Findings of Reported Crashes

- 29 total reported crashes in 5 years.
- No fatal crashes.
- Two crashes involved pedestrians.
- **Observed Crash Pattern:** 12 crashes b/t eastbound left turn and westbound through traffic on US 40.
- 5 rear-ends on US 40.

Interpretation of Data

- ◆ Pedestrian safety improvements (pavement marking, signing, signal equipment, lighting) are needed at the intersection.
- ◆ ADA improvements are needed at the station access.
- ◆ High number of crashes between eastbound left turn and westbound thru traffic on US 40 and need mitigation.
- ◆ Installation of bike facilities should be evaluated (underway in the US 40 SUP study).

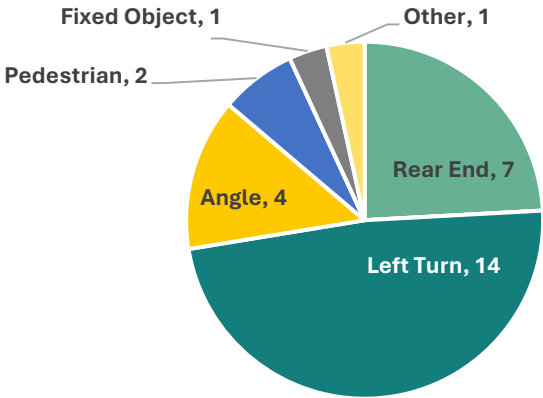


Figure 6-16: Crashes by Type

Public Input

Countermeasures Requested

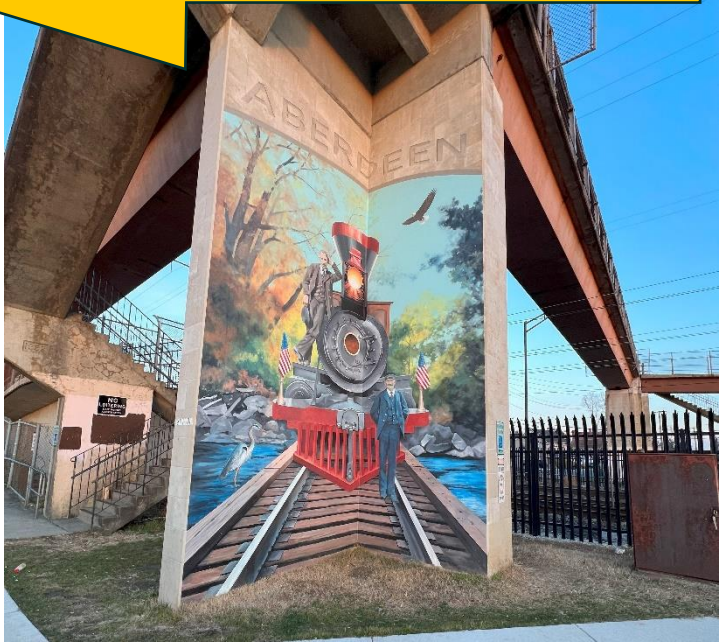
- Cycle tracks on US 40
- Countdown Pedestrian Signal
- Pedestrian Refuge Island on North leg of US 40
- Leading Pedestrian Interval
- Curb extension on SW quadrant – to try and keep vehicles from entering the service road.
- Consider closing the channelized right turn from west bound US 40 to W Bel Air Ave

Concerns

- Not enough time for pedestrians to cross.
- Train station does not feel safe for pedestrians or commuters.
- Access road is not always used safely – sometimes people speed on it to avoid traffic on US 40
- West Bel Air Ave should have truck restrictions on it.
- Connect businesses further south of the intersection with sidewalks.
- Speeding on US 40
- Existing crossing at W Bel Air and Howard St is inadequate and needs upgrades

“Appreciate the beautification of the commuter train station area and the efforts to make it safer for travelers to access. “

- ABERDEEN RESIDENT IN ONLINE SURVEY



“Safety in and around the Aberdeen Train Station”

- ABERDEEN RESIDENT IN ONLINE SURVEY REGARDING REQUESTED IMPROVEMENTS

“The train station is a huge unique factor of the town and should be more accessible.”

- ABERDEEN RESIDENT IN ONLINE SURVEY REGARDING CHARACTERISTICS THEY APPRECIATE ABOUT THE CITY

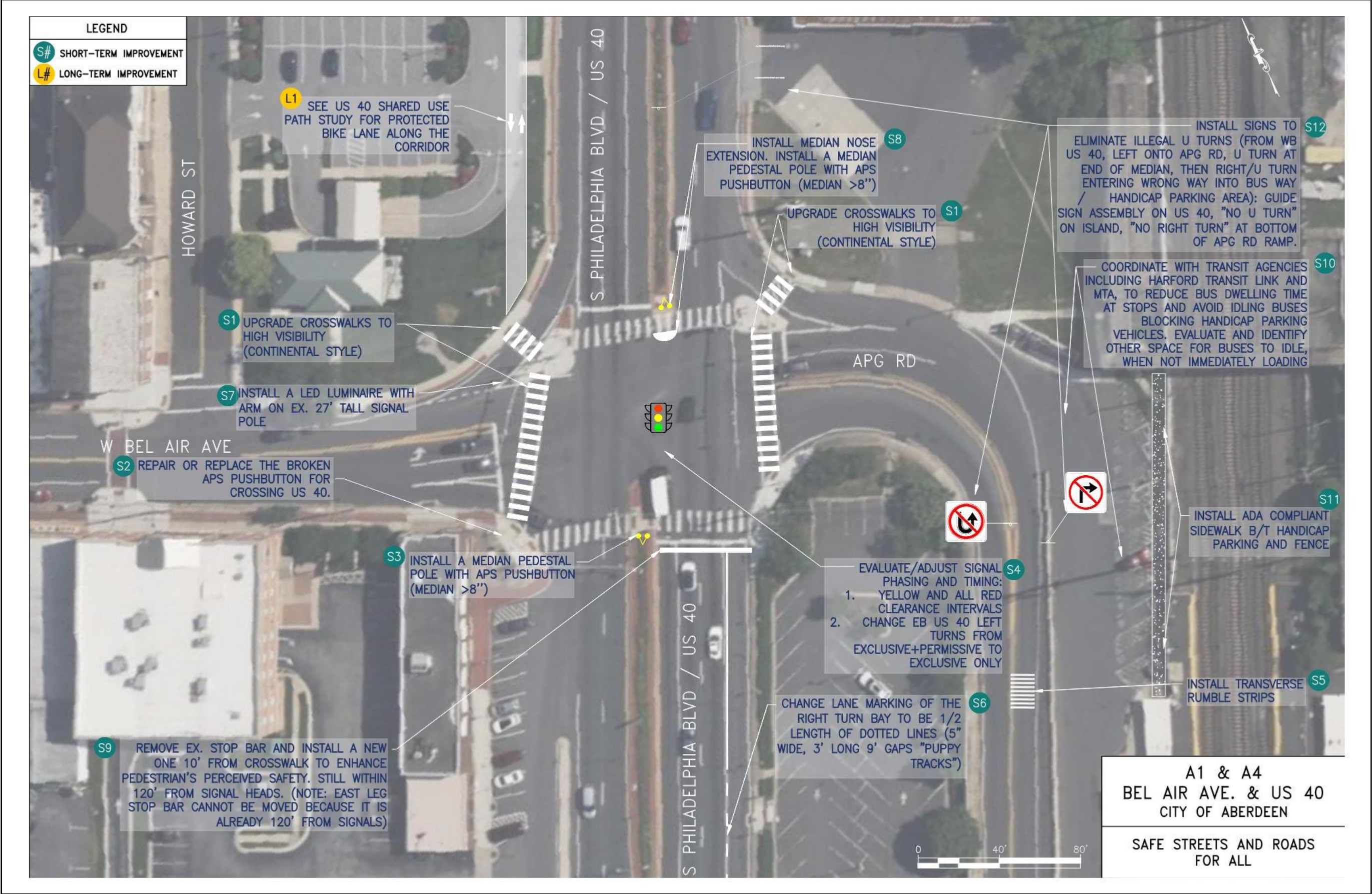


Figure 6-17: Mayor Patrick McGrady with Residents at the Aberdeen Public Workshop

Recommendations

Table 6-7: A1&A4 Recommendations

Countermeasure			Cost	Notes
Short Term (0-3 Years)	S1	Upgrade crosswalks to high visibility (continental style)	\$11,700	
	S2	Repair or replace the broken APS pushbutton for crossing US 40.	\$1,300	
	S3	Install a median pedestal pole with APS pushbutton (median >8")	\$19,500	
	S4	Evaluate/adjust signal phasing and timing. 1. Yellow and All Red clearance intervals 2. Change EB US 40 left turns from Exclusive + Permissive to Exclusive Only.	\$8,200	
	S5	Install transverse rumble strips	\$800	
	S6	Change lane marking of the right turn bay to be 1/2 length of dotted lines (5" wide, 3' long 9' gaps "puppy tracks").	\$2,400	
	S7	Install an LED luminaire with arm on ex. 27' tall signal pole.	\$6,500	
	S8	Install median nose extension. Install a median pedestal pole with an APS pushbutton (median >8")	\$25,600	
	S9	Remove ex. stop bar and install a new one 10' from the crosswalk to enhance pedestrian's perceived safety. Still within 120' from signal heads. (note: east leg stop bar cannot be moved because it is already 120' from signals)	\$1,100	
	S10	Coordinate with transit agencies including Harford Transit Link and MTA, to reduce bus dwelling time at stops and avoid idling buses blocking handicap parking vehicles. Evaluate and identify other space for buses to idle, when not immediately loading.	\$0	Coordination efforts. No construction.
	S11	Install ADA-compliant sidewalk between handicap parking and fence.	\$27,700	
	S12	Install signs to eliminate illegal U turns. Add a guide sign assembly on US 40, "no U turn" on island, "no Right turn" at bottom of APG Rd ramp.	\$1,600	Vehicles turning left onto APG Rd from WB US 40 illegally U-turn at the island, then take an illegal right turn into the train station's parking lot and bus pick up and drop off zone.
Long Term (5+)	L1	See US 40 SUP study for protected bike lane along the corridor.	TBD	Cost pending for future bike lane study results.



A2.1 – James Avenue at US 40³

Existing Conditions & Site Visit Observations

A2.1 is characterized as an unsignalized intersection along a four-lane divided highway, US 40 (two travel lanes in each direction with a raised median). James Avenue is flanked by industrial and retail land uses at US 40 but provides access to an established residential neighborhood and two schools, George D. Lisby Elementary School, and St. Joan of Arc Catholic School, about ¼ mile away from the intersection. James Avenue is the service road merging point where there are numerous conflicting turning movements. Transit stops are located on both sides of US 40; however, speeds and long crossing distances make it difficult for pedestrians or cyclists to feel safe crossing. There are variable-width shoulders but no designated bike lanes, missing sidewalks with no ADA handicap access and an overall lack of pedestrian and bicycle connectivity. A proposed sidewalk along the EB side of US 40 is proposed in the Master Plan.



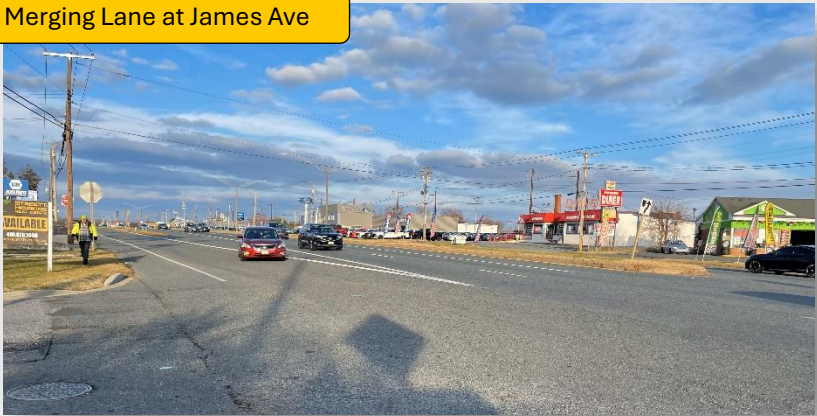
Identified Deficiencies

1. Westbound service road (STOP controlled) unsafely merges into the main road while crossing the intersection.
2. WB right-turning vehicles from US Route 40 attempting to access James Ave violate the pavement markings when they turn after the divisional island and conflict with merging traffic on the service road.
3. Disconnected sidewalk along WB US 40 between James Ave and Warren St. ADA ramp on the NW corner has no receiving ramp on the opposing side.
4. Stop signs at SB James Ave and the end of the service road are without accompanying stop bars.
5. The bus stop in front of the 7-11 has no ADA-compliant bus pad.
6. The existing bike lane is discontinued west of James Ave.
7. Left turns from James Ave to EB US 40 are unsafe and difficult.
8. Disconnected sidewalk along WB US 40 south of the 7-11.

Pedestrian Waiting for Bus



Merging Lane at James Ave



Intersection Qualities

Speed Limit

- James Avenue – **25** mph (Posted)
- US 40 – **40** mph (Posted)
- US 40 ~ **47** mph (85th Percentile)

Roadway Classification

- James Avenue – **Collector**
- US 40 – **Principal Arterial**

AADT

- US 40 - **39,283**
- James Avenue – **1,495**

LOS

- Level **A** for AM Peak
- Level **A** for PM Peak

³ US 40 is assumed to run in a west-east direction, per MDOT SHA.

Public Input

Countermeasures Requested

- Remove the stop sign on James Ave and make a signalized intersection.
- Make James Ave a right turn only with no left turn onto eastbound US 40
- Walkways
- Cycle track along US 40

Concerns

- Disconnected walkways along US 40
- No pedestrian crossing.
- Biking feels dangerous along US 40

“Sidewalks along Rt 40 to allow for pedestrians to access the businesses without needing car”

- ABERDEEN RESIDENT IN ONLINE SURVEY

Crash Analysis

Key Findings of Reported Crashes

- 16 total reported crashes in 5 years.
- 5+ reported crashes occurred in 12-month periods (May 2019 to March 2020, Dec 2020 to Dec 2021).
- No fatal crashes.
- One crash involved a cyclist.
- **Observed Crash Pattern:** All crashes, except the cyclist crash, involved through vehicles on US 40.

Interpretation of Data

- ◆ Pedestrian safety improvements (pavement marking, signing, ADA-compliant facilities) are needed at/near the intersection and at the bus stop.
- ◆ Roadway access improvements are needed for the service road.
- ◆ Installation of bike facilities should be evaluated.
- ◆ High number of crashes between various turning movements due to complex geometry and need mitigation.

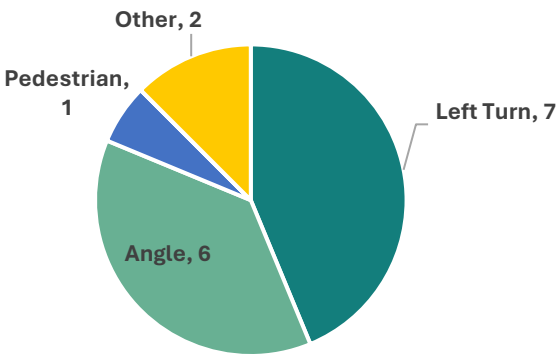


Figure -6-18: Crashes by Type

Recommendations

Table 6-8: A2.1 Recommendations

Countermeasure			Cost	Notes
Short Term (0-3 Years)	S1	Install Stop line marking.	\$300	
	S2	Install ADA-compliant bus pad and bench.	\$3,900	
Intermediate Term (4-5 years)	M1	Install new sidewalks (~950') with ADA ramps to Warren St. Install a new crosswalk on James Ave.	\$432,500	
	M2	Close service road access to US 40 on the west end. Build curb/gutter to fix the drainage problem. Leave 12' shoulder space for future bike lane (see Long-term mitigation). Modify lane line marking at 7-Eleven to shorten	\$300,000	MDOT SHA Estimate
Long Term (5+)	L1	Evaluate feasibility of adding protected bike lane along the corridor.	TBD	Cost pending for future bike lane study results.

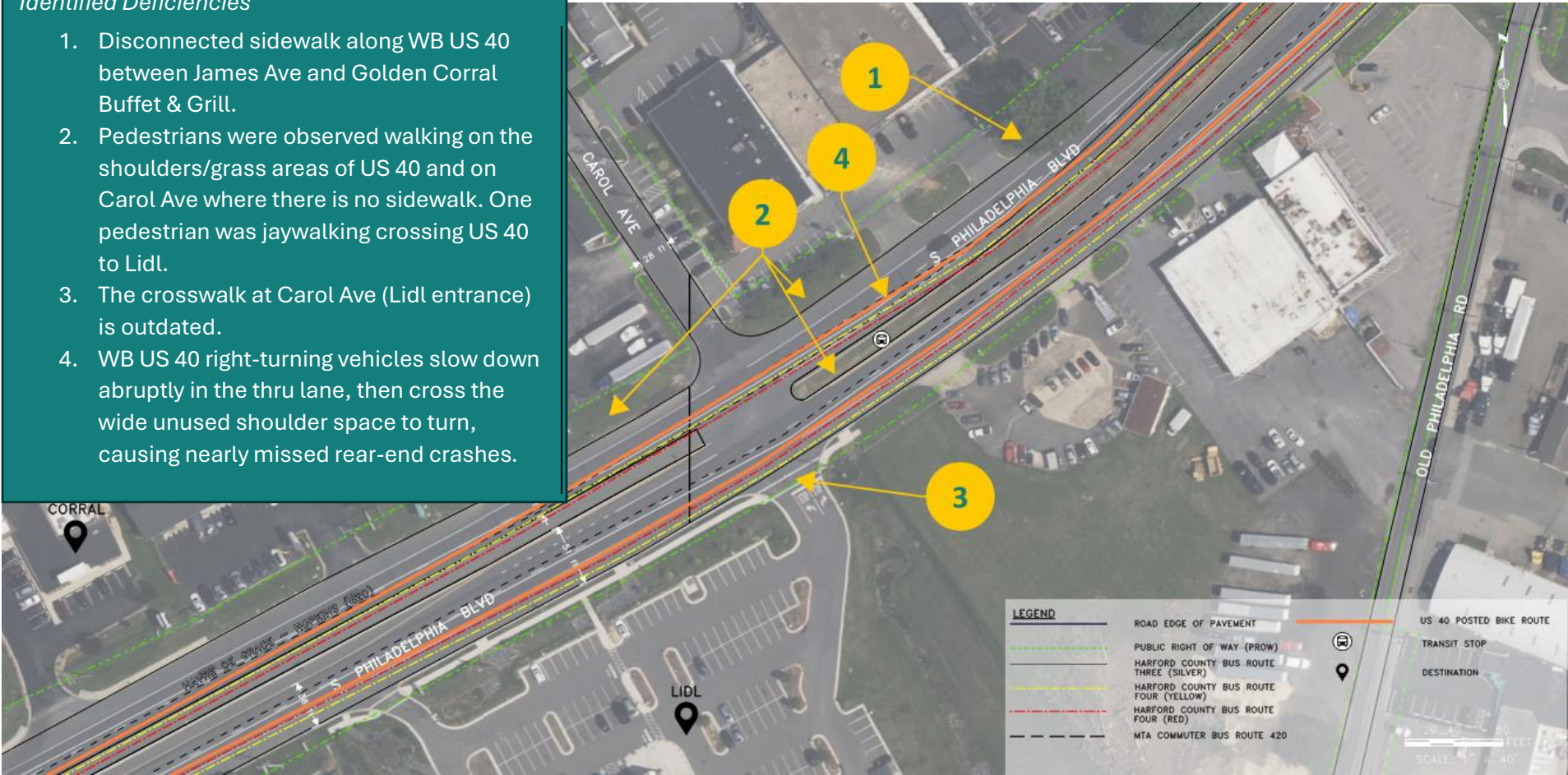


A2.2 – Carol Avenue at US 40⁴

Existing Conditions & Site Visit Observations

Carol Avenue at US 40 shares similar characteristics to James Avenue and US 40. Also located along the US 40 corridor, A2.2 is approximately 1270’ south of James Avenue. This is an unsignalized intersection along a four-lane divided highway- two travel lanes in each direction with a raised median. Carol Avenue is flanked by industrial and retail land uses at US 40 but provides access to an established residential neighborhood and the George D. Lisby Elementary School about a half mile away. The newly constructed Lidl grocery store at the southern side of the A2.2 intersection is a popular destination for pedestrians and transit users. The conducted traffic analysis for this grocery store determined that at the date of its construction in February 2017 the “road network is capable of supporting the development without the need for further improvements” However, this may have changed over the last 8 years. Field observations indicated that pedestrians often walk along US 40 to get here even though the sidewalk is not fully complete on either side. A bus stop on the northern side of US 40 also provides pedestrian traffic to the grocery store.

- Identified Deficiencies*
- 1. Disconnected sidewalk along WB US 40 between James Ave and Golden Corral Buffet & Grill.
 - 2. Pedestrians were observed walking on the shoulders/grass areas of US 40 and on Carol Ave where there is no sidewalk. One pedestrian was jaywalking crossing US 40 to Lidl.
 - 3. The crosswalk at Carol Ave (Lidl entrance) is outdated.
 - 4. WB US 40 right-turning vehicles slow down abruptly in the thru lane, then cross the wide unused shoulder space to turn, causing nearly missed rear-end crashes.



A2.2 – Carol Avenue at US 40

Intersection Qualities

Speed Limit	AADT
- Carol Avenue – 25 mph (Posted) - US 40 – 40 mph (Posted) - US 40 ~ 47 mph (85th %)	- Carol Avenue – <5000 - US 40 – 39,283
Roadway Classification	LOS
- Carol Avenue – Collector - US 40 – Principal Arterial	- Level A for AM Peak - Level A for PM Peak

Public Input

Countermeasures Requested	Concerns
- Add a signal or other crossing device for pedestrians (APS or CPS) - Walkways - Speed cameras. - Cycle track along US 40	- Disconnected walkways along US 40. - No pedestrian crossing. - Biking feels dangerous along US 40.

“Traffic Light with better lighting is needed at Carol Ave & Pulaski Hwy. Can be extremely dangerous for cross traffic and at night pedestrian foot traffic is not visible to drivers.”

FROM ABERDEEN RESIDENT IN ONLINE SURVEY



Pedestrian walking along US 40

⁴ US 40 is assumed to run in a west-east direction, per MDOT SHA.

Crash Analysis

Key Findings of Reported Crashes

- ◆ One recent fatality in 2024 that was not included in the reported preliminary data received from MDOT SHA
- ◆ 8 total reported crashes in 5 years.
- ◆ 5+ reported crashes occurred in a 12-month period (Oct 2021 to Sep 2022).
- ◆ 0 crashes involving pedestrians or cyclists.
- ◆ **Observed crash pattern:** All crashes, except 1, involved vehicles from Carol Ave.

Interpretation of Data

- ◆ Pedestrian safety improvements (pavement marking, signing, ADA-compliant facilities) are needed at/near the intersection and at the bus stop.
- ◆ A safe pedestrian crossing on US 40 is missing near this location.
- ◆ Installation of bike facilities should be evaluated.
- ◆ Most crashes were caused by different turning movements and need mitigation

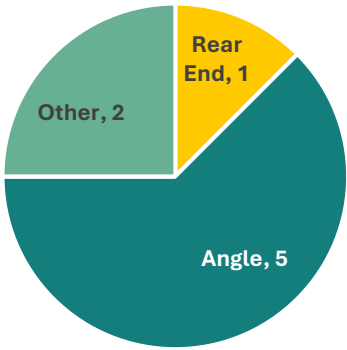


Figure 6-19: Crashes by Type

Recommendations

Table 6-9: A2.2 Recommendations

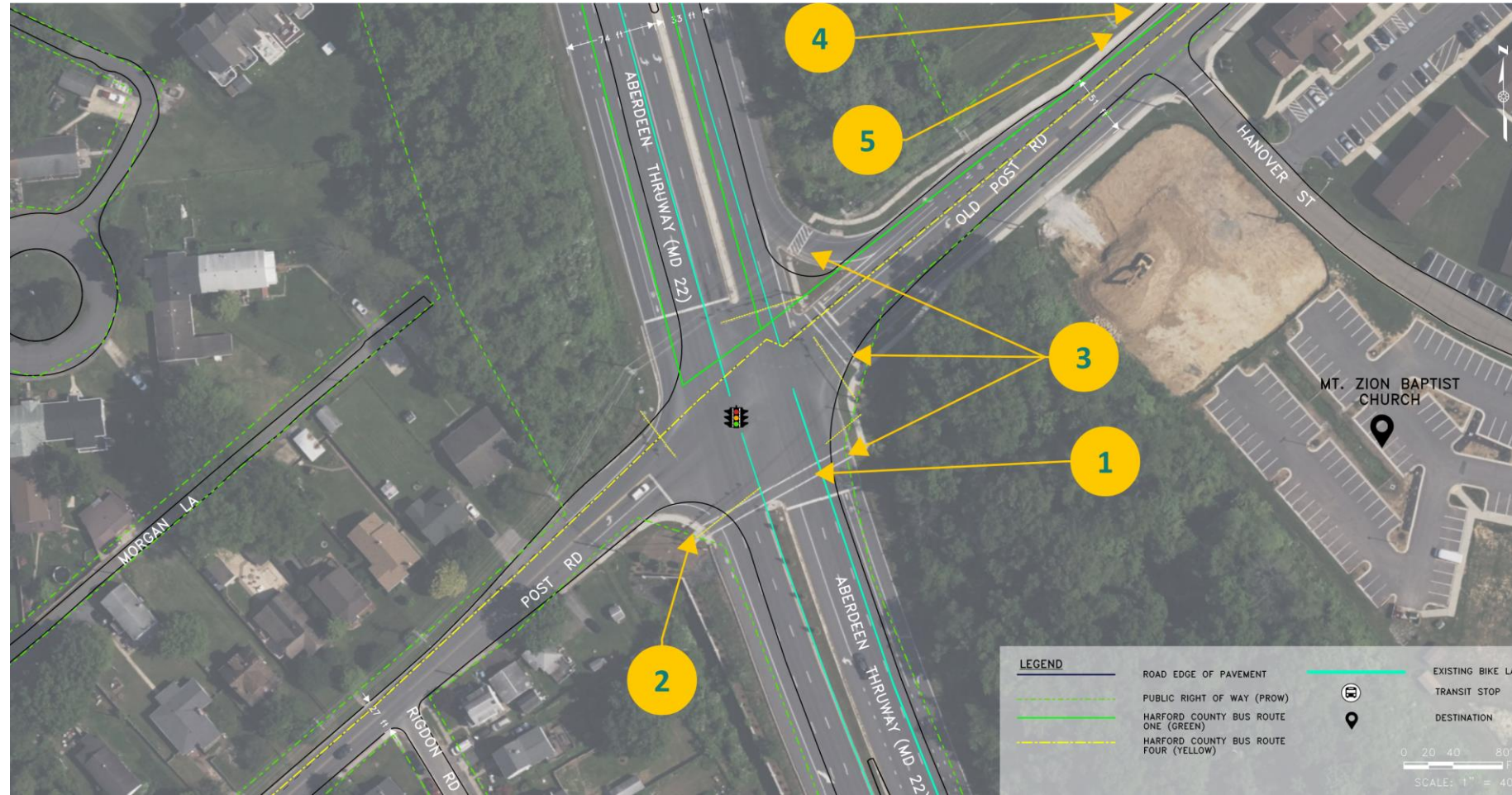
Countermeasure			Cost	Notes
Short Term (0-3 Years)	S1	Install Stop line marking.	\$300	
	S2	Upgrade crosswalks to high visibility (continental style)	\$4,700	
Intermediate Term (4-5 years)	M1	Install new sidewalks (~500') with ADA ramps to Golden Corral, including new ADA ramps and crosswalk on Carol Ave	\$223,800	
	M2	Install new sidewalks (~1000') with ADA ramps to James Ave (7-Eleven)	\$438,800	
	M3	Install new sidewalk (~1100') with ADA ramps to Walmart intersection.	\$453,400	
	M4	Perform a Signal Warrant Study for a new full-color traffic signal here (mainly Warrant 7 Crash Experience). If warranted, can install two new crosswalks on US 40 on both sides, with APS/CPS ped signals on all 4 corners and the medians.	\$325,000	The new signal will provide safe and much-needed crossings on US 40 and address unsafe left turns from side streets.
Long Term (5+)	L1	Evaluate the feasibility of adding a protected bike lane along the corridor.	TBD	Cost pending for future bike lane study results.



A3 – MD 22⁵ at Old Post and Post Road (MD132B)

Existing Conditions & Site Visit Observations

A signalized intersection, A3 serves both the regional traffic from MD 22 and the collector traffic from Old Post and Post Roads. MD 22 is a multilane divided highway with a raised median while Old Post/Post Road each has two lanes in each direction. There are bike lanes on MD 22, the southeast side of Old Post Road, and the northwest side of Old Post Road. Several Harford County transit routes use this intersection but do not have nearby stops.



Intersection Qualities

Speed Limit

- Old Post/Post Road – **30** mph (Posted)
- MD 22 – **40** mph (Posted)
- Old Post Road – **35** mph (85th Percentile)

Roadway Classification

- Old Post/Post Road – **Collector**
- MD 22 – **Principal Arterial**

AADT

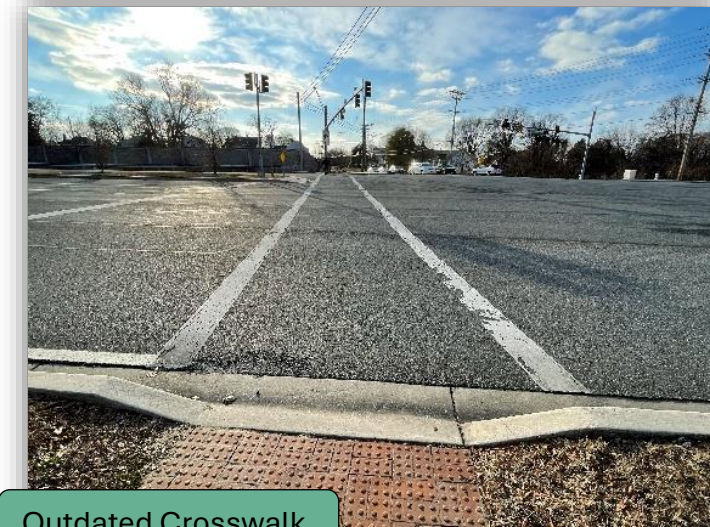
- Old Post/Post Road – **3,691**
- MD 22 – **28,440**

LOS

- Level **A** for AM Peak
- Level **B** for PM Peak

Identified Deficiencies

1. Long crossing distance of east leg crosswalk.
2. The pushbutton at the southeast corner is 13' from the curb (<=10' required)
3. Existing crosswalk markings are outdated.
4. The BIKE LANE sign near the south of Center Deen Ave should say BIKE LANE **BEGIN**.
5. Vegetation covered route name sign (JCT MD22) near north Center Deen Ave.



Outdated Crosswalk



Outdated Crosswalk

⁵ MD 22 is assumed to run in a west-east direction, per MDOT SHA.

Public Input

Countermeasures Requested

- Crosswalk visibility enhancements
- Walkways along Old Post Rd and MD 22
- APS, CPS, Wider crosswalks
- More Lighting
- Pedestrian Refuge Island on south leg of MD 22
- Road Diet
- Overpass for Pedestrians

Concerns

- Disconnected walkways.
- Safety of the bike lanes on MD 22
- Not enough time for pedestrians to cross MD 22
- The intersection feels too wide.
- Missing crosswalks on west leg of Old Post Rd

“We need better pedestrian safety from Hanover St to Old Post Rd. Many families cross 22 on foot to get to and from Hall’s Cross Roads Elementary School. Lighting is a huge safety issue as well. It is so dark & high traffic with walkers and cars. Speed bumps along Old Post Road!! 60% of our school population are walkers!! These are kids ages 4-10!!”

- REPRESENTATIVE FROM HALL’S CROSS AT ABERDEEN PUBLIC WORKSHOP

Crash Analysis

Key Findings of Reported Crashes

- 10 reported crashes in 5 years.
- No fatal crash.
- 0 crash involved pedestrian/cyclist.
- **Observed crash pattern:** None found.

Interpretation of Data

- ♦ Pedestrian safety improvements (pavement marking, signing, signal equipment, ADA-compliant facilities) are needed at/near the intersection.
- ♦ Speeding issue mitigation is needed on Post Road and MD 22.
- ♦ Installation of bike facilities should be evaluated.

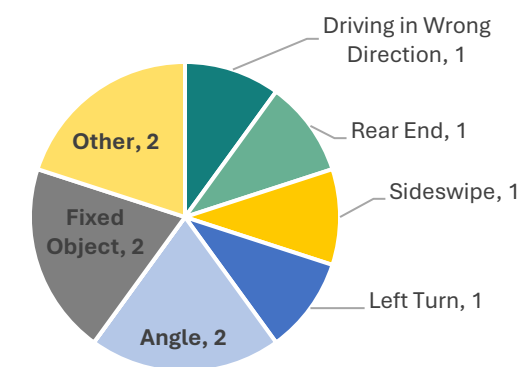


Figure 6-20: Crashes by Type

Recommendations

Table 6-10: A3 Recommendations

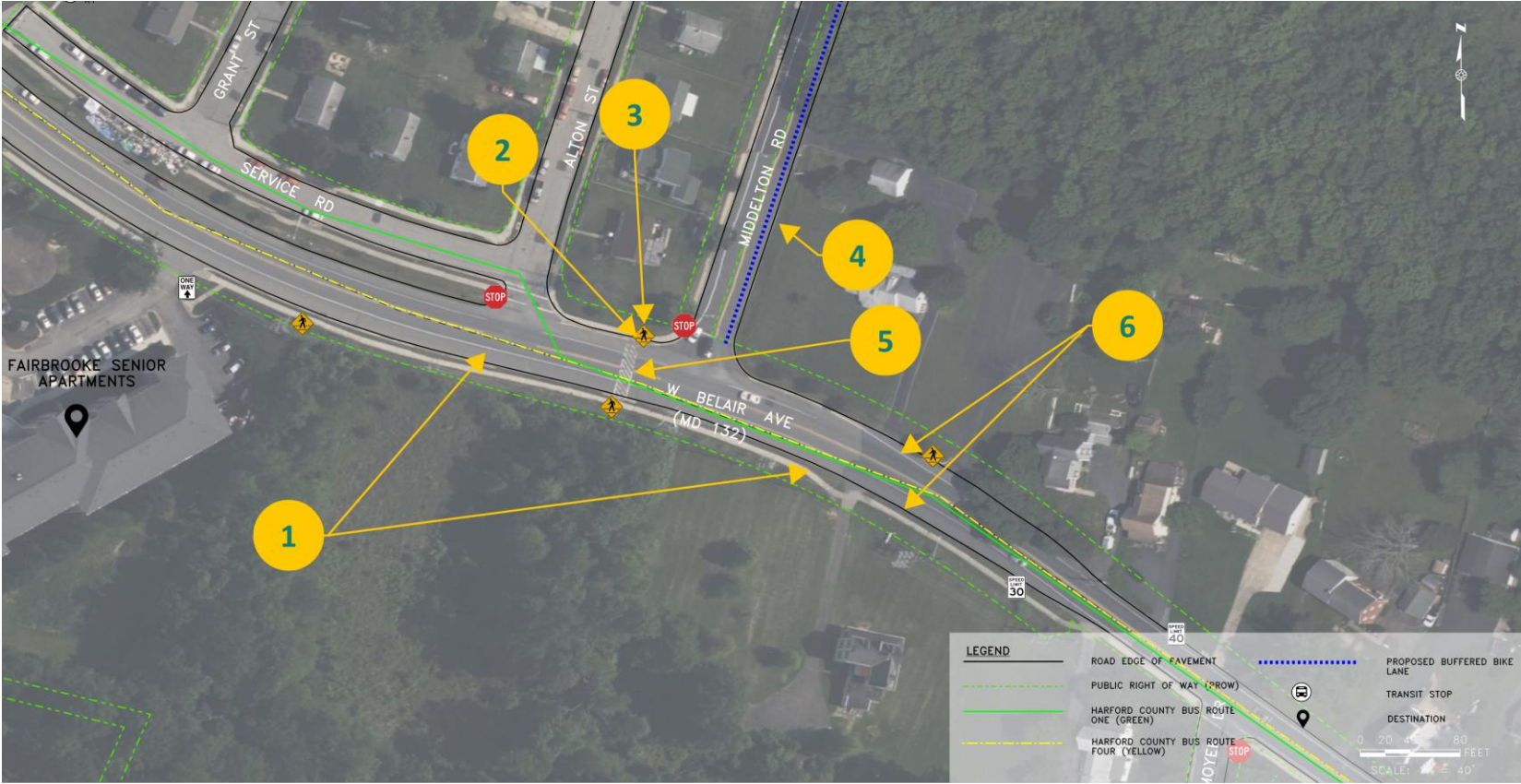
Countermeasure			Cost	Notes
Short Term (0-3 Years)	S1	Upgrade APS/CPS pedestrian signals (move to a new pedestal pole closer to ramp); add an APS pushbutton in median.	\$39,000	
	S2	Extend median for pedestrian refuge.	\$12,500	
	S3	Upgrade crosswalks to high visibility (continental style).	\$21,100	
	S4	Install raised median with landscape.	\$45,500	
	S5	Countermeasure removed	--	Speed hump removed per SHA comments, suggest speed cushion instead
	S6	Trim vegetation in front of MD-22 Sign	N/A	Standard Maintenance of Roadway
Intermediate Term (4-5 years)	M1	Perform a lighting study for Old Post Rd and Post Rd, and evaluate if lighting improvements are needed (existing continuous lighting is present, but citizens requested adding more lights)	TBD	Need a lighting improvement study. Cost pending on the results.
	M2	Upgrade intersection and traffic signal, install crosswalks on north and west legs, install ADA ramps, APS/CPS ped signals.	\$190,000	MDOT SHA Estimate
	M3	Install new sidewalk (~1400')	\$624,000	Constrained by utility poles, slopes, steps, and underground utilities.
	M4	Relocate crosswalk and ped signs ~30' east for better visibility from WB right-turn traffic. Adjust the sidewalk within the island.	\$14,700	
Long Term (5+)	L1	Evaluate the feasibility of adding a bike lane along the corridor.	TBD	Cost pending for future bike lane study results.



A5 – Middleton Road at West Bel Air Avenue (MD 132⁶)

Existing Conditions & Site Visit Observations

An unsignalized intersection at Middleton Road and W. Bel Air Avenue (MD 132), A5 serves as a connection point for residential and commercial activity as well as the new University of Maryland Upper Chesapeake Medical Center. The UM-UCMC facility is located at the northern end of Middleton Road which is a two-way travel lane with a proposed buffered bike lane on either side. MD 132 is also a two-lane travel way but has a wide shoulder on either side. To the southwest of the intersection are the Fair Brooke Senior Apartments and further west is the A6 intersection which is discussed more below. Bus stops are directly adjacent to the senior living center on either side of MD 132.



Intersection Qualities

Speed Limit

- Middleton Road – **30** mph (Posted)
- MD 132 – **30** mph (Posted)
- MD 132~**36** mph (85th Percentile)

Roadway Classification

- Middleton Road – **Collector**
- MD 132 – **Minor Arterial**

AADT

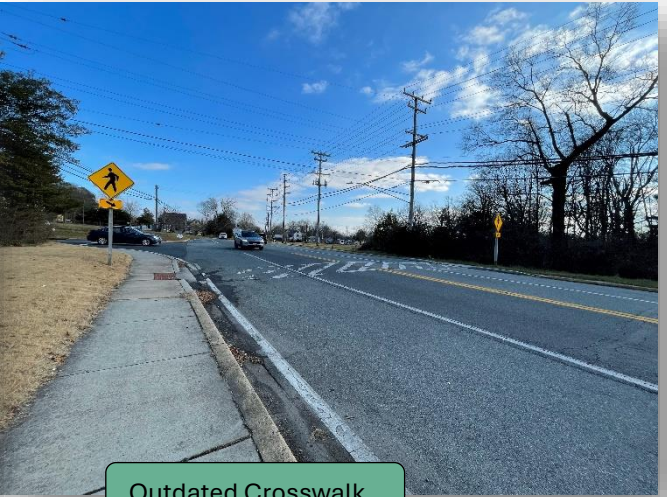
- Middleton Road - **<5000**
- MD 132 – **13,140**

LOS

- Level **A** for AM Peak
- Level **A** for PM Peak

Identified Deficiencies

1. Dangerous crossing: several pedestrians were jaywalking across W Bel Air Ave near the intersection without using the pedestrian crosswalk.
2. Pedestrian crosswalk signs and pavement markings lack visibility to southbound right-turning vehicles from Middleton Rd.
3. Existing crosswalk markings are outdated.
4. Missing sidewalk on the east side of Middleton.
5. The crosswalk is unnecessarily long and hard to cross safely.
6. Wide shoulders on both sides of MD 132 – available space for bike infrastructure upgrades.



Recent and Planned Projects

Aberdeen Activity Center – An activity center is planned at this intersection to the south in the open lot. Further information about this center is provided in the Ongoing Developments Section.

⁶ MD 132 is assumed to run in a west-east direction, per MDOT SHA

Public Input

Countermeasures Requested

- Roundabout
- Walkways
- APS, CPS and RRFB
- Curb extension on northwest quadrant.

Concerns

- The pedestrian crossing is inadequate.
- Disconnected sidewalks on West Bel Air Ave
- Perceived speeding on W Bel Air Ave

Crash Analysis

Key Findings of Reported Crashes

- ◆ 7 reported crashes in 5 years.
- ◆ No 5 or more reported crashes in a 12-month period.
- ◆ No fatal crash.
- ◆ 0 crash involved pedestrian/cyclist.
- ◆ **Observed crash pattern:** 3 crashes between EB Thru and EB Left-turn.

Interpretation of Data

- ◆ Pedestrian safety improvements (pavement marking, signing, ADA-compliant facilities) are needed at/near the intersection.
- ◆ Installation of bike facilities should be evaluated.

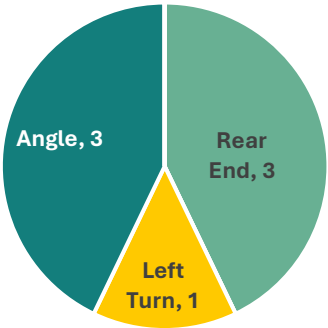


Figure 6-21: Crashes by Type

Recommendations

Table 6-11: A5 Recommendations

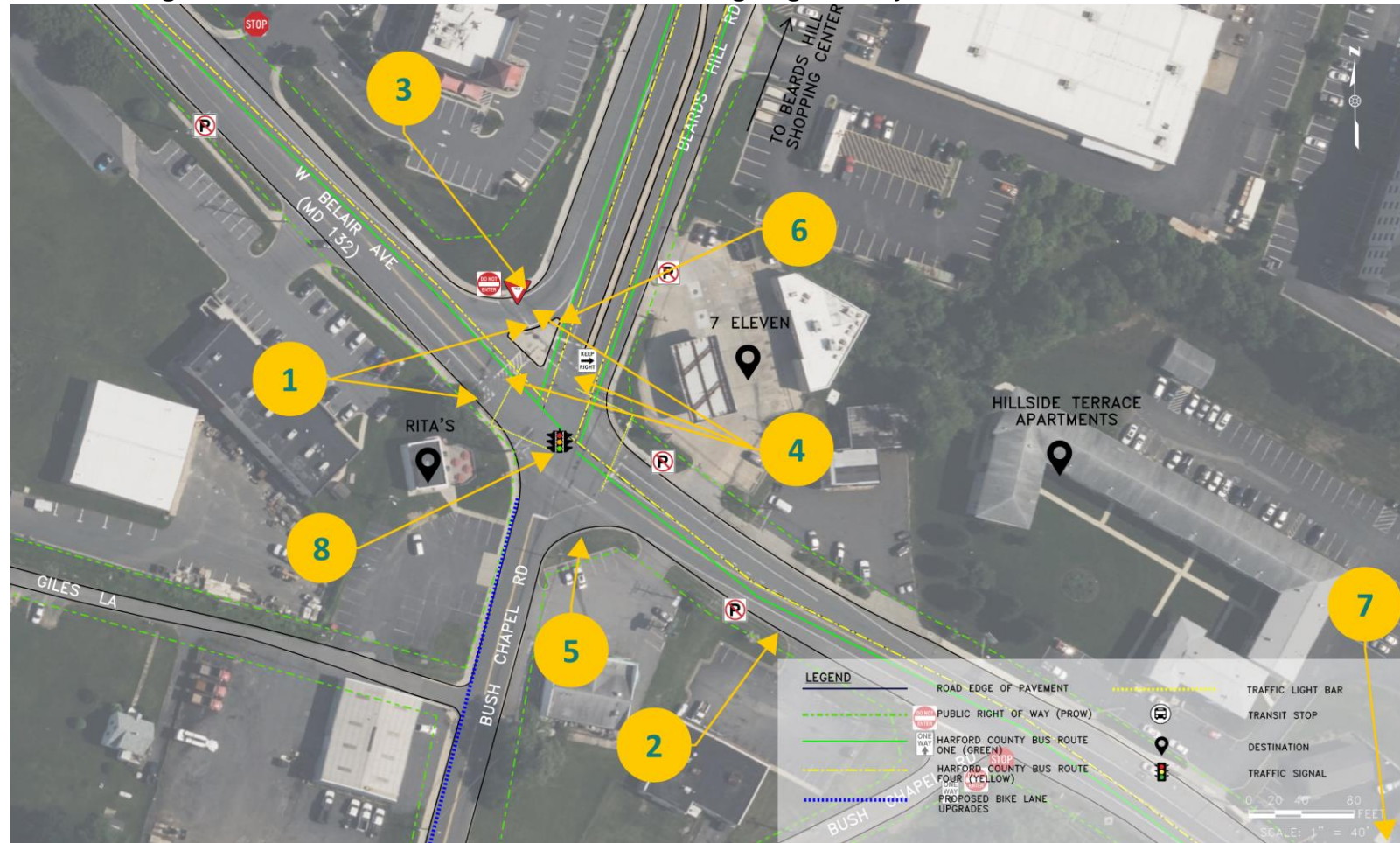
Countermeasure			Cost	Notes
Short Term (0-3 Years)	S1	Upgrade crosswalks to high visibility (continental style)	\$4,000	MDOT SHA Estimate
	S2	Install Rectangular Rapid Flashing Beacons (RRFB).	\$81,300	
	S3	Install curb extension with new ADA ramp.	\$80,000	MDOT SHA Estimate. Further coordination required for bike lane installation.
	S4	Install driver speed feedback sign at proper location.	\$7,800	
	S5	Install curb extension with new ADA ramp.	\$47,100	Further coordination required for bike lane installation.
Long Term (5+)	L1	Evaluate feasibility of adding protected bike lane along the corridor.	TBD	Cost pending for future bike lane study results.
	L2	Evaluate potential improvements considering planned Activity Center access.	\$0	To be completed by the Activity Center project.
	L3	Evaluate feasibility of a roundabout, which can accommodate the planned Community Center driveway on the south side.	\$731,300	Constrained by Right-Of-Way and above- and underground utilities.



A6 – MD 132⁷ at Bush Chapel Road and Beards Hill Rd (MD 132A)

Existing Conditions & Site Visit Observations

A6 is a signalized intersection that connects commercial developments to the north and residential neighborhoods to the south. W. Bel Air Avenue (MD 132) is a two-lane road with broad shoulders, offering access to suburban shopping centers, corner retail stores, and multifamily residential areas, such as Hillside Terrace Apartments and Fairbrooke Senior Housing. As it extends eastward, it transitions to serving single-family homes.



Intersection Qualities

Speed Limit

- Bush Chapel/Beards Hill Road – **30** mph (Posted)
- MD 132 – **40** mph (Posted)

Roadway Classification

- Bush Chapel/Beards Hill Road – **Collector**
- MD 132 – **Minor Arterial**

AADT

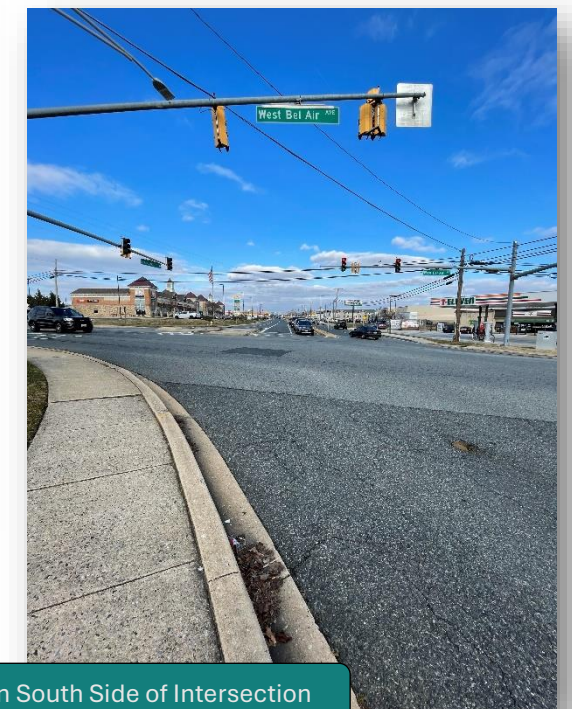
- Bush Chapel/Beards Hill Road – **4,550**
- MD 132 – **13,140**

LOS

- Level **A** for AM Peak
- Level **A** for PM Peak

Identified Deficiencies

1. Pedestrian ramps are installed at this intersection without pedestrian signals.
2. Disconnected sidewalk along EB MD132 between Beards Hill Rd and Fairbrooke Senior Apartments (~600' east of Beards Hill Rd).
3. No pedestrian crossing signs at the northwest corner channelizing the island. And the turn lane appears to be excessively wide.
4. Existing crosswalk markings are outdated.
5. Existing curb radii make it impractical to add necessary sidewalks/crosswalks.
6. Lacking object marker at the tip of the north channelizing island.
7. ADA ramps are present near the two bus stops but without a marked crosswalk. Vehicles are driving in the wide shoulder space.
8. Motorists were observed making prohibited SB U turns.



⁷ MD 132 is assumed to run in a west-east direction, per MDOT SHA.

Public Input

Countermeasures Requested

- Crosswalk Visibility Enhancements
- Walkways
- Speed reduction on W Belair Ave
- Roundabout
- LPI, CPS, and APS
- Road diet
- Cycle tracks
- Overpass for Pedestrians

Concerns

- There’s long queuing after people use the Chick Fil A and are trying to get back on the highway
- Trucks getting back on the highway take illegal U-turns at the intersection
- Speeding along W Bel Air Ave
- Disconnected sidewalks
- Needs to be another place to cross further north of the intersection closer to Beards Hill Shopping Center on Beards Hill Rd

“I’m concerned about the 132 & Beards Hill intersection. There should be better pedestrian crossings there and when turning left onto Beards Hill coming from downtown Aberdeen, the sightline is difficult to see if there are cars coming from the shopping plaza. That intersection is frustrating.”

Crash Analysis

Key Findings of Reported Crashes

- ◆ 16 reported crashes in 5 years.
- ◆ No fatal crash.
- ◆ 0 crash involved pedestrian/cyclist.
- ◆ Observed crash pattern:
 - > Left turn between EB left turns and WB thrus.
 - > Fixed object collision on the SE quadrant.

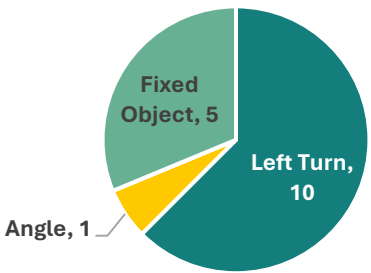


Figure 6-22: Crashes by Type

Interpretation of Data

- ◆ Pedestrian safety improvements (pavement marking, signing, signal equipment, ADA-compliant facilities) are needed at/near the intersection.
- ◆ Illegal southbound U-turns on Bush Chapel Rd at the signal need mitigation.
- ◆ Installation of bike facilities should be evaluated.
- ◆ Roadway vertical profile and speeding could have caused sight line issue and high number of crashes between eastbound left turn and westbound thru traffic, need mitigation.

Recommendations

Table 6-12: A6 Recommendations

Countermeasure			Cost	Notes
Short Term (0-3 Years)	S1	Slightly extend island curb, reduce width of channelized right-turn, install new sidewalk, crosswalks, ADA ramps.	\$42,000	MDOT SHA Estimate
	S2	Upgrade crosswalks to high visibility (continental style)	\$9,400	
	S3	Install 2 object marker signs at nose of median	\$1,600	
	S4	Evaluate/adjust signal phasing and timing:	\$6,500	1. Yellow and All Red clearance intervals 2. Change EB left turns from Exclusive+Permissive to Exclusive Only.
Intermediate Term (4-5 years)	M1	Remove channelized right-turn, install new sidewalk, crosswalks, ADA ramps.	\$160,000	MDOT SHA Estimate
	M2	Option 1 (to continue to prohibit SB U turns): Remove these exits. All exiting traffic to use north exit (on Beards Hill Rd) or south exit (on W. Bel Air Ave)	TBD	Cost pending for future traffic study study results.
	M3	Option 2 (to allow SB U turns): Shift all lanes to the west to use the empty 12'-wide shoulder space, rebuild/shift island to the west, widen median, and allow southbound U-turns.	TBD	Cost pending for future traffic study study results.
	M4	Upgrade traffic signal. Including to add new crosswalks on east leg and south legs, add APS/CPS ped signals for all crosswalks.	\$650,000	MDOT SHA Estimate
	M5	Install curb extension with new crosswalks, sidewalks, and ADA ramps.	\$75,000	MDOT SHA Estimate
	M6	Install new sidewalks and ADA ramps to connect intersection with ex. sidewalk.	\$400,000	MDOT SHA Estimate
Long Term (5+)	L1	Evaluate feasibility of adding protected bike lane along the corridor.	TBD	Cost pending for future bike lane study results.





SECTION 7 - PROJECT PRIORITIZATION AND PROGRESS



Section 7 - Project Prioritization and Progress

The Action Plan serves as a living document that provides a variety of crash countermeasure projects and strategies that can be implemented to reduce fatal and serious injury crashes within the Town of Bel Air, the City of Aberdeen, and the City of Havre de Grace. The plan can be used in coordination with partner agencies and long-range planning efforts, such as those conducted by Harford County and Maryland Department of Transportation (MDOT), State Highway Administration (SHA) to identify priority projects. Clear, measurable short-term, intermediate-term goals, and long-term goals combined with timelines and accountability by agencies responsible for implementation will create a framework that is transparent so progress can be measured year to year.

Assessing the Recommendations' Effectiveness

This Action Plan provides the necessary countermeasures to the identified issues at the selected intersections. A significant amount of data was collected, analyzed and results incorporated in the proposed countermeasures categorized based on estimated cost and implementation duration.

The short-term measures can be implemented within one to three years and estimated costs vary between \$0 for interagency coordination and \$170,000 for more complex measures including sidewalks and raised concrete medians.

The intermediate-term measures can be implemented within four to five years, may require various levels of design and costs can vary between \$15,000 for short sections of sidewalk and pavement markings to \$1,000,000 and over for more complex countermeasures.

The long-term measures require further studies and county-wide and even statewide coordination to interlace the envisioned countermeasures into the larger vision of each municipality, the county, and the state. These measures may take five years and longer to be implemented and the estimated costs will vary widely.

Assessment of the effectiveness of the implemented countermeasures provides information that will help the municipalities decide if the investment reduced crash frequency or severity. Such assessment can be performed one to three years after the implementation for enough data to be collected at each location. The new data will then be compared with the data before implementation.

There are several methods at different effort levels to conduct the evaluation that can be implemented:

1. Collect public data.
2. Conduct a comparative assessment of before and after crash data and traffic volumes.
3. Conduct a before/after study.
4. Conduct a rigorous before/after analysis.

The municipalities can use the baseline data collected with this Project when developing the evaluation. The FHWA Highway Safety Manual, Chapter 6, Table 6.1 provides a comparison of data inputs required for the possible analysis methods.

Roadway Infrastructure Upgrades

- ◆ Upgrades with responsibility, and cost, are provided in Section VI and the Appendices.
- ◆ Equity considerations in the upgrade process are discussed in detail in Section IV.
- ◆ Documenting recommendations for each jurisdiction are covered in detail in Section VI.

- ◆ Strategies to address common challenges and opportunities are also covered in detail in Section VI.

By implementing the proposed countermeasures alone may result in reduction of roadway crashes and fatalities, especially those involving pedestrians, bicyclists and citizens with disabilities and could result in elimination when combined with other strategies. Such strategies include stakeholder collaboration, policy enhancements and education and when implemented in parallel will enhance the efficiency of proposed countermeasures and contribute to reaching the objectives of Vision Zero.

Guidance by the Vision Zero Network¹ indicates that many cities use a 10-year time frame as their baseline to achieve zero deaths. This Action Plan follows that approach by identifying short, intermediate, and long-term goals to track progress and meet a target date of zero deaths by 2034. Adjustments to this goal will need to be made once progress reports are reviewed.

Project Prioritization

To prioritize the suggested recommendations, a series of factors have been considered, including crash analysis findings, equity considerations, the built environment and public engagement. Based on these factors, scoring criteria were developed to rank the prioritization of each selected intersection improvement while ensuring equitable consideration to each factor. This criterion is in Table 7-1.

¹ [Vision Zero Action Plan](#)

Table 7-1: Prioritization Considerations for Improvements

Criteria	Requirements
Equity	1. The intersection is within: a) An area of persistent poverty and/or b) A disadvantaged community tract
	2. The population around the intersection: a) Is largely non-white (at least 20%) b) Is largely without access to vehicles
Safety	1. Serious injuries or fatalities have occurred to pedestrians at or around the intersections
	2. The intersection study area: a) Lacks safe bicycle facilities. b) Lacks safe pedestrian facilities.
Complete Streets	The intersection requires the implementation of Complete Streets principles and safe bicycle and pedestrian access to transit, schools, health care facilities, retail & other destinations
Public Outreach	The intersection was identified as needing improvement by the community during the public workshops or in the survey responses.

Table 7-2: Prioritization by Intersection

ID	Intersection	Equity 1a	Equity 1b	Equity 2a	Equity 2b	Safety 1	Safety 2a	Safety 2b	Complete Streets	Public Outreach	Total
A1 & A4	US 40 & W. Bel Air Ave. and US 40 Shared Use Path from Aberdeen Train Station to Havre de Grace	★		★	★	★	★	★	★	★	8
A2.1	James Ave. & US 40		★	★		★	★	★	★	★	8
A2.2	Carol Avenue & US 40		★	★			★	★	★	★	6
A3	MD 22 @ Old Post and Post Road	★		★	★		★	★	★	★	7
A5	Middelton Road @ West Bel Air Avenue (MD-132)		★	★	★		★	★	★	★	7
A6	MD 132 @ Bush Chapel Road		★	★	★		★	★	★		6
B1	Court House Square (Office/Courtland Streets) at S Bond Street (MD 924)					★	★	★	★	★	5
B2	Kenmore Avenue at S Main Street (MD 924)			★			★	★	★	★	5
B3	Ellendale Street (Ma & Pa Trail) at N Main Street (MD 924)					★	★	★	★	★	5
B4	Moore’s Mill Road at Hickory Avenue						★	★	★	★	4
B5	Pennsylvania Avenue at Hickory Avenue					★	★	★	★	★	5
B6	Lee Street at Hickory Avenue						★	★	★	★	4
B7	Lee Street at N Main Street						★	★	★	★	4
B8	Gordon Street at N Main/N Bond Streets					★	★	★	★	★	5
B9	MacPhail Road at S Main Street			★			★	★	★	★	5
H1	US 40 at Otsego/Ohio Streets		★	★	★	★	★	★	★	★	8
H2	US 40 at Lewis Lane		★	★	★	★	★	★	★	★	8
H3	US 40 at Martha Lewis Blvd		★	★	★		★	★	★	★	7
H4	US 40 at Blenheim Lane						★	★	★	★	4
H5	MD Route 155 at Ohio Street		★	★	★		★	★	★	★	7
H6	Revolution Street at Lewis Lane		★	★	★		★	★	★	★	7
H7	Pennington Avenue at N. Union Avenue		★	★	★	★	★	★	★		7
H8	Pennington Avenue at N. Juniata Street		★	★	★		★	★	★		6

Tracking Progress

To track progress toward achieving plan goals an Executive Traffic Safety Committee can consider tracking annual performance measures such as:

1. Continuously update data and assess fatal and severe injury crashes involving vulnerable users (bicycles and pedestrians).
2. Create a progress schedule for short-term and intermediate-term projects implemented and evaluate several long-term projects initiated.
3. Inventory of supplemental studies or new designs begun.
4. Document miles of sidewalks constructed or repaired.
5. Document miles of new bicycle infrastructure installed.
6. Document number of speed management programs initiated.
7. Document new intersection ADA accessibility upgrades and high visibility crosswalks were installed.
8. Document new, upgraded, and modified signals.

Prioritizing and growing a robust Vision Zero program requires ongoing monitoring and continuous refinement to city processes, strategic partnerships, community engagement, and resources. Strengthening existing relationships with County and State agencies and working strategically towards meeting the same goals will create a successful cultural shift.