Berwyn Heights Pedestrian and Bicyclist Safety Improvement Action Plan

AUGUST 2024

Prepared by:



Prepared for:





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The mission of the Prince George's County Planning Department is to promote economic vitality, environmental sustainability, design excellence, and quality development that promotes healthy lifestyles in Prince George's County neighborhoods. Berwyn Heights Pedestrian and Bicyclist Safety Improvement Action Plan

August 2024

Prepared by: The MarvLand-National Capital Park and Planning Commission Prince George's County Planning Department



AUGUST 2024

The Maryland-National Capital Park and Planning Commission Prince George's County Planning Department 1616 McCormick Drive Largo, MD 20774 www.pgplanning.org

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Introduction

Background

Berwyn Heights is an incorporated municipality of approximately 3,345 people located in northwest Prince George's County, Maryland. In 2018, the Berwyn Heights Town Council created a Quality-of-Life Commission to address community concerns that the town's appeal as a place to live was diminishing: a portion of the commission's findings focused on the improvement of pedestrian and bicyclist safety. The council then established the Walkable Bikeable Berwyn Heights Task Force to work toward ensuring safe, walkable neighborhoods. Their February 2020 report, "Walkable Bikeable Berwyn Heights,"1 provided a further set of focused recommendations. In fall 2021, the town applied to the Prince George's County Planning Department's Planning Assistance to Municipalities and Communities (PAMC) program to fund a Pedestrian and Bicyclist Safety Improvement Action Plan. The goal was to further refine the recommendations and assess the feasibility of implementation. PAMC funding was approved by the Prince George's County Planning Board on May 5, 2022, and the project kicked off in January 2023. The Berwyn Heights Pedestrian and Bicyclist Safety Improvement Action Plan helps to prioritize investments that will improve safety and accessibility for pedestrians and bicyclists. It includes actions to improve safety in four key areas, and a toolkit for treatments that could be implemented in additional locations.

Study Area



 $[\]label{eq:linear} {}^1.https://www.berwynheightsmd.gov/sites/g/files/vyhlif301/f/uploads/wbbh_final_report_cover_ltr_2-13-2020.pdf$

Walkable Bikeable Berwyn Heights Task Force Recommendations

Table 1 lists the locations for the recommended improvements from the 2020 task force report.

Table 1. Recommendation Locations

Recommendation Locations

Edmonston Road and Pontiac Street intersection Edmonston Road between Pontiac Street and Seminole Street

Greenbelt Road corridor

Goucher Drive (5800 block)

Quebec Street corridor

Seminole Street corridor

Area improvements around Town Center, Sports Park, and Lake Artemesia

Ballew Avenue corridor

Berwyn Road between Charlton Avenue and 60th Avenue

Pontiac Street corridor

60th Avenue corridor, south of Osage Street

Townwide Improvements

Purpose

This action plan focuses on four areas. The project team reviewed existing conditions and developed recommendations to improve pedestrian and bicyclist access and mobility at each.

- Ballew Avenue corridor
- Pontiac Street Intersections at (58th Avenue, Cunningham Drive, and 60th Avenue)
- Berwyn Road between Charlton Avenue and 60th Avenue
- General Intersection Improvements (as modeled at the intersections of Quebec Street/62nd Avenue and Cunningham Drive/Goucher Drive)

The general intersection improvements replaced the Seminole Street corridor recommendations (for a one-way westbound to eastbound direction change) because that recommendation could invite eastbound vehicles into the neighborhood from the much busier Greenbelt Road.

Each location includes actions to address pedestrian and bicyclist access and mobility, with actions grouped by their relative cost and implementation timeframe. The plan prioritizes countermeasures that are lower in cost, have a shorter implementation period, and can improve safety. Based on their proven effectiveness as documented by national research, the implementation of these actions can help to reduce the likelihood of crashes and help the community move toward Vision Zero Prince George's.

WHAT IS VISION ZERO?

Vision Zero is an international effort that was first adopted in 1997 in Sweden. Several European nations and states and cities around the world have since adopted Vision Zero and have achieved significant fatality reductions. Cities and Counties in the United States that have adopted the Vision Zero goal include Austin, Boston, Chicago, Los Angeles, New York, Portland, San Francisco, Durham, San Jose, Washington, D.C., Seattle, Alexandria, Arlington County, Montgomery County, and Prince George's County, Maryland. The Vision Zero approach is summarized by recognizing that no loss of life is acceptable.

Action Plan Goals

- Reduce or prevent pedestrian and bicyclist crashes and conflicts with motor vehicles.
- Increase comfort for pedestrians and bicyclists as they move about the town.
- Provide infrastructure that increases accessibility and mobility for all road users.
- Encourage the use of public transit access/bus stop improvements.
- Strengthen the regional bicycle trail network.
- 2 | Berwyn Heights Pedestrian and Bicyclist Safety Improvement Action Plan

CHAPTER 2 Methodology

To understand the range of safety concerns in Berwyn Heights, the project team connected with stakeholders on a walking tour with M-NCPPC and Berwyn Heights Police Department staff on March 30, 2023. A work session with the Berwyn Heights Town Council and residents was held July 17, 2023.

Work began with a review of the following Walkable Bikeable Berwyn Heights (WBBH) task force safety improvement recommendations:

- Institute a direction change for the one-way portion of Seminole Street and make Seminole Place a one-way route.
- Add speed tables along the blind curves (on Ballew Avenue) after the Greenbelt Road overpass in both directions (see **Map Key 1**).
- Create a one-way (westbound only) route for the block of Berwyn Road between 60th Avenue and Charlton Avenue or limit parking to the north side of Berwyn Road so that cars can pass the blind hill safely. Install a protected pedestrian walkway and allow for bidirectional bicycle traffic (see **Map Key 2**).
- Construct raised intersections along Pontiac Avenue at the intersections of 58th Avenue, Cunningham Drive, and 60th Avenue (see **Map Key 3**).

After analysis and discussion, two alternative locations were identified and replaced the Seminole Street/Seminole Place recommendation location that attracts diverting traffic from Greenbelt Road. The revised key locations (**4A and 4B**) are shown in **Map 1**.





The project team reviewed Berwyn Heights crash data from 2015–2022 to identify spatial distribution of crashes and key crash factors, with an emphasis on incidents involving pedestrians and bicyclists. During this period there were 150 crashes in the study area, 12 involving pedestrians or bicyclists. The majority of crashes were on Greenbelt Road, but some were located deeper in the neighborhood. Most crashes occurred during daylight.

The purpose of the March 2023 site tour was to observe existing pedestrian and bicycle facilities, review the Walkable Bikeable Berwyn Heights (WBBH) task force recommendations, and consider locations where pedestrian and bicycle safety could be improved. During the site visit the team reviewed crash data maps, took photos, and paused for discussion and observation. After the tour, the project team began developing potential safety countermeasures based on their observations.

On July 17, 2023, the town held a work session in the Berwyn Heights Council Chambers. At the work session the project team presented findings from the review, the crash data analysis, and the walking tour to the town leaders and residents. Questions, concerns, and comments were solicited and incorporated into the recommendations that are outlined in this action plan. The project team presented the recommendation locations and highlighted potential countermeasures that would improve multimodal safety. These countermeasures include signage, high-visibility crosswalks and bicycle sharrows as well as the use of paint and flexible bollard posts to expand pedestrian facilities. Some residents voiced concerns that the locations were not comprehensive enough, and that signage alone would not change behaviors. This action plan proposes that these countermeasures be used in concert and be applied beyond the key recommendation locations to provide the greatest safety benefit to Berwyn Heights residents.

Action Plan Packages

The study team developed a package of safety improvement actions as shown in Chapter 4. Countermeasures are broken down by relative cost (low, medium, high) and relative timeframe tiers (short, medium, long) based on project complexity.

- **Short-Term (less than two years):** These include treatments that are relatively low-cost compared to others and require less impact to the existing right-of-way.
- **Medium-Term (two to five years):** These include treatments that are of relatively moderate cost and require more time for their implementation.
- Long-Term (longer than five years): These include treatments that are of significantly higher cost and may have a greater impact on the existing right-of-way.

The prioritization of countermeasures may be adjusted based on additional future site-specific studies such as pedestrian and/or, vehicle counts that are conducted at each location.

CHAPTER 3 Toolkit

This chapter is organized as a toolkit that provides brief descriptions of the countermeasures that the town may wish to implement. Each action description includes information on potential benefits, implementation considerations, cost, and timeframe. Table 2 below summarizes the 22 countermeasures featured in the toolkit. The table includes an action number that relates to the actions described for each of the four project focus locations in Chapter 4. The 22 toolkit countermeasures, or tools, are grouped into four categories based on their relevance to pedestrian/bicyclist infrastructure, roadway improvements, signage/lighting, or miscellaneous improvements.

Pedestrian/bicyclist infrastructure – crosswalk, sharrows, bike lanes, sidewalks (A1–A8)

Roadway improvements – speed bumps/tables, stop bars (B9-B11)

Signage/lighting – Rectangular Rapid Flashing Beacon (RRFB), pedestrian crossing (C12–C19)

Miscellaneous Accessibility – staircase access/bus stop improvements (D20–D22)

Tuble 2	able 2. Toolikit Counter measures									
Tool	Action	Action Description	Rationale	Time frame	Relative Cost	Challenge				
A1	1.4, 2.1, 3.2, 4.1	Installation of crosswalk	To provide greater conspicuity of crossing pedestrians	Short	Low	Requires periodic maintenance of markings				
A2	2.2, 3.8, 4.5	Reconfigure the cross- section of intersecting roadways without a sidewalk to provide a sidewalk or marked non-motorized path	Create a sidewalk using the existing cross section of roadway	Short	Low	 Neighborhood support for retrofitting roadway cross-section for non-motorists; loss of street parking Limited cross-section for some cross-streets 				
A3	1.7, 2.6, 2.7, 2.8, 3.7, 4.8	Installation of raised crosswalk	Enhance conspicuity of crossing; slows vehicles when navigating through intersection	Short/ Medium	Low/ Medium	 Need to be designed to accommodate heavy vehicle traffic on Ballew Avenue Maintain drainage Need to warn drivers of their presence Bus traffic 				

Table 2 Teallyit Countamportune

Table 2	. Toolkit Cou	intermeasures				
Tool	Action	Action Description	Rationale	Time frame	Relative Cost	Challenge
A4	1.10	Relocation of crosswalk	To provide more conspicuity of crossing pedestrians	Medium/ Long	Medium	 Requires southward extension of sidewalk on east side of Ballew Avenue Removal/shift of existing guardrail
A5	1.11	On-street painted bike lane for bicyclists on Ballew Avenue	Provide more conspicuity of bicycle facility	Long	Low/ Medium	 Opposition to removal of parking by businesses Limited cross section for passing vehicles
A6	1.14, 1.15	Sidewalk extension	Provide a marked route for pedestrians	Long	Medium/ High	 Acquiring right-of-way for sidewalk location on Branchville Road
A7	2.9, 3.9, 4.9	ADA warning pad with raised truncated domes at all four corners of an intersection	Facilitate crossing all four legs of the intersection	Long	High	Right-of-wayLack of connecting sidewalks
A8	1.17	Install multiuse path on M-NCPPC property on the east side of Ballew Avenue	Provide separation between motor vehicles and non-motorists	Long	High	• Vegetation clearance and topography
B 9	2.3, 3.3, 3.4, 4.2, 4.3	Painted STOP pavement marking	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
B10	1.8, 4.7	Speed tables (longer and wider speed humps)	Encourage lower motor vehicle speeds	Short/ Medium	Low/ Medium	• Need to be designed to accommodate heavy vehicle traffic on Ballew Avenue
B11	1.9	Median island	Slows traffic at the crossing	Medium/ Long	Low/ Medium	 Ballew Avenue has limited width; would require widening of roadway to accommodate median island Location of treatment needs to account for property access
C12	1.1, 1.3	Install signage and markings to indicate presence of on-street bicycle use	There is little signage and marking the presence of the bicycle facility	Short	Low	Requires periodic maintenance

Table 2	ible 2. Toolkit Countermeasures									
Tool	Action	Action Description	Rationale	Time frame	Relative Cost	Challenge				
C13	1.5, 4.5	Crosswalk Signage	Enhance conspicuity of crossing	Short	Low	Requires periodic maintenance				
C14	2.4, 3.5, 4.4	Double-up STOP signs by adding a second sign on the lefthand side of the roadway.	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear				
C15	3.1	Implement all-way stop	Force all vehicles to stop at the intersection	Short	Low	Maintenance from wear-and-tear				
C16	1.6	Rectangular Rapid Flashing Beacon	Enhance conspicuity of crossing	Short	Low/ Medium	Requires power sourceInstallation depends on the location of the crosswalk				
C17	2.5, 3.6, 4.6	Vehicle-presence activated solar- powered flashing STOP signs	Provide conspicuity of stop	Short	Low/ Medium	 Maintenance Frequency of flashing lights for owners of adjacent property 				
C18	1.12	Pedestrian-scale lighting	Enhance conspicuity of pedestrians	Long	Medium/ High	Requires power source				
C19	1.13	Lighting under overpass	Enhance conspicuity of pedestrians	Long	Medium/ High	Requires power source				
D20	1.2, 1.16 4.10	Pedestrian staircases and ramps	Accessibility	Short/ Long	Low/ High	 Coordination with SHA to maintain crash attenuation with bridge structure Right-of-way acquisition Significant elevation change 				
D21	N/A	Show adjacent jurisdictions connectivity with wayfinding signage	Provide guidance on routes to the traveling public	Short	Low/ Medium	 Scale of wayfinding signage dependent on identified routes and community feedback 				
D22	2.10	Improve access at bus stops with crosswalks, waiting areas, and other amenities	Facilitate access to bus stops	Long	Medium/ High	Right-of-wayDesired number of amenities				

Non-Infrastructure Countermeasures

In addition to the 22 infrastructure-oriented countermeasures, the town may consider enforcement and educational efforts to help reduce risky behavior and to promote a culture of roadway safety townwide.

Enforcement Campaigns

Enforcement of traffic laws can significantly enhance transportation safety, particularly regarding driver's speeding or yielding to pedestrians. Awareness of crash risks can be heightened by strategically increasing law enforcement presence during peak pedestrian crossings, such as school start and end times. This could involve enforcing laws that require drivers to yield to pedestrians at crosswalks, particularly at intersections with a high pedestrian presence. Pedestrians crossing the street could be given educational messages or warnings to encourage safer behavior. In addition, the use of speed cameras at locations throughout the town can help to reduce dangerous driving practices. As the town begins implementing the other treatments recommended in this plan, there is an opportunity to reduce the town-wide speed limit from 25 MPH to 20 MPH. Reductions in the speed limit are more effective when combined with design treatments like those recommended here. Through the enforcement of traffic laws and other complementary safety education campaigns, all road users can become more aware

of their actions, leading to better compliance and, ideally, a safer road environment.

Educational Campaigns

An educational campaign can be an effective strategy for raising lasting awareness, particularly near schools. By implementing educational campaigns aimed at students and community members, safety can be significantly enhanced. These campaigns could cover topics such as right-of-way rules, the importance of yielding, being visible and predictable in various lighting conditions and during inclement weather, making eye contact at conflict points, and avoiding distractions. Collaborating with local schools, community groups, and transit agencies can yield significant benefits. Through these partnerships, relevant pedestrian safety information can be effectively shared at key times such as the start of the school year. Additional educational campaign strategies could include the use of placards, targeted social media messaging, temporary pavement markings or signage, and in-person events. Other educational efforts could help to inform visitors about the rules of the road within the town.

A1 - Marked Crosswalks

Marked crosswalks guide pedestrians to optimal locations when crossing roadways and indicate to drivers that pedestrians have the right-of-way. High-visibility or striped crosswalks allow drivers to see the crosswalk from a greater distance especially in low light. This increased visibility provides drivers with more time to safely stop for pedestrians waiting to cross.

O IMPLEMENTATION LOCATIONS

Intersections and midblock locations with frequent pedestrian traffic such as those near schools, parks, commercial districts, or transit stops. High-visibility crosswalks should be used at uncontrolled crossings and at school crossings or other locations where increased visibility is needed.

BENEFITS

- Encourages safer pedestrian crossing practices
- Increased visibility of pedestrian presence to drivers

CONSIDERATIONS

- Adequate sight distance
- On-street parking should be set back from the crossing for improved visibility
- Maintenance is needed to ensure markings remain visible and effective

S COSTS

• Low



Short



Existing Conditions: Goucher Drive at Cunningham Drive Credit: VHB



Example Application: Painted Crosswalk in Beltsville, MD Credit: Ryan Craun, M-NCPPC

A2 - Retrofit Sidewalks or Protected Sidepaths

Missing sidewalks are barriers to connectivity and degrade the pedestrian experience by forcing people to either walk in the roadway or take alternate, often longer, routes. Where roadways are sufficiently wide, space can be reclaimed for a new sidewalk or a protected sidepath, separated with pavement markings, flexible bollard posts, and curbs.

Benefits include promoting pedestrian safety by providing designated walking spaces, enhancing accessibility for all individuals, and encouraging non-vehicular mobility, helping build healthier and more vibrant communities. The reduced roadway width may also provide the calming of traffic speeds. However, to accommodate the new sidewalk or sidepath, the removal of existing parking may be necessary.

IMPLEMENTATION LOCATION

Almost any high-traffic roadway that lacks sidewalks and forces pedestrians to walk on the road or opt for longer routes. They are particularly beneficial in residential neighborhoods or near schools.

BENEFITS

- Provides a physical separation of pedestrians from vehicles and bicyclists
- Improved pedestrian connectivity and accessibility
- May reduce traffic speeds

CONSIDERATIONS

- May impact parking
- Drainage and underground utility modifications may be necessary for retrofit sidewalks
- Maintenance: Regular maintenance is needed if using pavement markings, flexible bollard posts, and curbs
- Can increase visual clutter

COSTS

• Low (protected sidepath)/High (sidewalk)

🕟 TIMEFRAME

• Short (protected sidepath)/Long (sidewalk)



Existing Conditions: Berwyn Road at 60th Avenue Credit: VHB



Example Application: Grove Street, Silver Spring, MD Credit: VHB

A3 - Raised Crosswalks and Intersections

A raised crosswalk is a traffic-calming feature consisting of a ramped speed table elevated to the level of the sidewalk at a pedestrian crossing, compelling vehicles to slow as they approach. The crosswalks are marked with paint and/or use special paving materials, and detectable warnings and curb ramps are provided for those with low vision. Raised crosswalks enhance pedestrian safety by making pedestrians more visible to drivers and providing level, accessible crossings.

A raised intersection is a speed table, covering an entire intersection, with ramps on all approaches. They can be constructed of asphalt, concrete, or pavers. As part of this design, the crosswalks on each approach are raised to allow pedestrians to cross the road at sidewalk level, providing improved accessibility for those with mobility impairments. Additional benefits include reducing vehicle speeds and discouraging aggressive driving behaviors, such as running STOP signs or speeding, making the intersection safer for all users.

IMPLEMENTATION LOCATIONS

Intersections and midblock crosswalks on local and collector streets with frequent pedestrian traffic. This includes crosswalks within school zones or near pedestrian generators such as parks and playgrounds, community centers, senior living communities, and public transit stops.

BENEFITS

- Improved driver awareness
- Increased visibility of pedestrians
- May reduce vehicle speeds
- Increased accessibility for pedestrians

CONSIDERATIONS

- Drainage and underground utility modifications may be necessary
- Need to be designed to accommodate heavy vehicles
- Vertical deflection needs to accommodate buses and emergency vehicles
- Need to warn drivers of their presence
- May increase traffic noise

\$ COSTS

- Low/Medium
- 🕓 TIMEFRAME
 - Short/Medium



Existing Conditions: Pontiac Street at 60th Avenue Credit: VHB



Existing Conditions: Pontiac Street at 58th Avenue Credit: VHB



Example Application: Swan Road at Ryan Drive, Suitland, MD Credit: Ryan Craun, M-NCPPC



Example Application: Sligo Creek Parkway at Kennebec Avenue, Takoma Park, MD Credit: Ryan Craun, M-NCPPC

A4 - Relocation of Crosswalk

Appropriate pedestrian crossing locations ensure pedestrian safety, mobility, and convenience. Crosswalks should be strategically placed where people frequently cross streets such as school zones, transit stops, and popular walking routes, while ensuring good visibility for both drivers and pedestrians by considering obstacles, road curves, and sightlines. Location selection should also consider speed limits to allow drivers sufficient time to stop safely, and adequate lighting to enhance safety, especially at night.

O IMPLEMENTATION LOCATIONS

Roadways where the current crosswalk location poses safety risks to pedestrians, such as where limited sight distance exists or there are concerns about vehicular speed. It can also be implemented in school zones, transit stops, and popular walking routes.

BENEFITS

- Encourages safer pedestrian crossing practices
- Increased visibility for both pedestrians and drivers

CONSIDERATIONS

- May require sidewalk extensions or new connections
- Need to ensure adequate sight distance and lighting conditions

S COSTS

• Medium

🕔 TIMEFRAME

Medium/Long



Existing Conditions. A crosswalk on Branchville Road that terminates at a curb without a sidewalk (5600 Greenbelt Road). Credit: VHB

A5 - On-Street Bike Lanes

A bike lane is a portion of the roadway typically delineated by pavement markings and signage for the preferential or exclusive use of bicyclists. They can be configured to fit the needs of specific bicycle routes, thereby ensuring connectivity and promoting predictable behavior and interactions between bicyclists and vehicles. Advisory bike lanes provide a dedicated space for bicyclists on both sides of a road, marked with dashed lines. After accounting for these lanes, a two-way center travel lane is provided from the remaining paved roadway space for vehicles. Dashed lines for the advisory bike lanes signify that drivers can temporarily use them if they needed to overtake an oncoming vehicle, provided, of course, the bike lane is not being used by a bicyclist.

O IMPLEMENTATION LOCATIONS

A full bike lane providing a safe and designated space for bicyclists is appropriate on roadways with moderate traffic volumes and speeds greater than 25 mph.² Advisory bike lanes are appropriate on roads where there is low to moderate vehicular traffic but a demand for safe bicycling infrastructure. They can also be beneficial in residential neighborhoods, in school zones, or near parks to provide a safe space for bicyclists and encourage mobility.

BENEFITS

- Provides a separation of bicyclists and vehicles
- Enhances bicyclist comfort and confidence
- Promotes predictable behavior and interactions between bicyclists and vehicles

CONSIDERATIONS

- May not provide enough separation on roadways with higher speeds and traffic volumes, regular truck traffic, or high parking turnover
- Opposition to removal of parking by local businesses
- An approved Request to Experiment is required by the Federal Highway Administration (FHWA) for Advisory Bike Lanes, typically installed on roads with low motor vehicle speed, low-to-moderate traffic volume, or narrow width

\$ COSTS

Low/Medium

🕟 TIMEFRAME

Long



Existing Conditions-no bike lanes (Branchville Road west of Indian Creek, looking east.) Credit: VHB

² Urban Bikeway Design Guide. 2nd Edition <u>Conventional Bike Lanes</u> <u>National Association of City</u> <u>Transportation Officials (nacto.org)</u>



Example Application: Middlebrook Road, Germantown, MD Credit: VHB

Example Application: Kenyon Street, Washington, DC

Credit: VHB



Example Application: Advisory Bike Lane on Potomac Greens Drive, Alexandria, VA Credit: VHB Example Application: Advisory віке Lane on Росотас Greens Drive, Alexandria, vA

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A6 - Sidewalk Continuity

Sidewalk continuity refers to the uninterrupted and consistent presence of sidewalks along streets and roadways, ensuring that pedestrians can walk safely and conveniently without gaps or obstacles. Its benefits include promoting pedestrian safety by providing designated walking spaces, enhancing accessibility for all individuals, and encouraging mobility, contributing to healthier and more vibrant communities.

O IMPLEMENTATION LOCATIONS

Areas where there are gaps or missing sidewalks within residential neighborhoods, commercial districts, and around public facilities, to ensure safe and uninterrupted pedestrian movement.

BENEFITS

• Improved pedestrian connectivity and accessibility

CONSIDERATIONS

- Acquisition of rights-of-way for sidewalks
- Retrofitting existing roadways to provide sidewalks may be necessary

S COSTS

• Medium/High

🕔 TIMEFRAME

• Long



Existing Conditions: Ballew Avenue, Berwyn Heights, MD Credit: VHB



Example Application: Powhatan Street, New Carrollton, MD Credit: Ryan Craun, M-NCPPC

A7 - Crosswalk Curb Enhancements (Curb Extensions/ Bulb-Outs/Pads)

Curb extensions, or bulb-outs, reduce the curb radius at an intersection and may improve pedestrian safety by requiring vehicles to slow down to make a sharper turn. They also provide larger waiting areas at intersection corners, reduce crossing distances for pedestrians thus minimizing their time on the roadways, and improve visibility for both pedestrians and drivers. Curb extensions provide extra space for the installation of curb ramps, especially where existing utilities or other features may obstruct their placement. Interim curb extensions can be installed using pavement markings and flexible delineator posts. Each end of a crosswalk should be complemented with a sidewalk pad and an ADA-compliant ramp.

O IMPLEMENTATION LOCATION

At intersections in areas with high pedestrian traffic like school zones, commercial districts, or near parks. They can also be beneficial in residential neighborhoods to slow down vehicular traffic, reduce crossing distances for pedestrians, and provide extra space for the installation of curb ramps. Sidewalk pads and ramps should be added at those crosswalk ends if they are not currently present.

BENEFITS

- Increased visibility of pedestrians
- Shortened pedestrian crossing distances
- May reduce vehicle speeds
- Increased accessibility for pedestrians

CONSIDERATIONS

- Need to be designed to accommodate bus and heavy traffic
- Design may need to consider presence of bicycle lanes
- Drainage and underground utility modifications may be necessary

- S COSTS • High
- **TIMEFRAME**
 - Long



Existing Conditions: Cunningham Drive at Goucher Drive Credit: VHB



A8 - Paved Multiuse Path

A paved, multiuse path provides a dedicated space for both bicyclists and pedestrians, completely separated from the road and vehicular traffic. This path is wide enough to accommodate both modes of transportation traveling in both directions, ensuring safety and convenience for all users.

IMPLEMENTATION LOCATIONS

Parks and recreational areas to accommodate various users, including bicyclists, pedestrians, and joggers. They can also serve as connections between neighborhoods, providing a route separate from motorized traffic.

BENEFITS

- Provides a physical separation of pedestrians and bicyclists from vehicles
- Ensures safety and convenience for all users

CONSIDERATIONS

- Vegetation clearance and topography
- Tie-ins to existing bicycle and pedestrian facilities
- S COSTS
 - High

TIMEFRAME

• Long



Example Application: Sligo Creek Trail, Takoma Park, MD Credit: VHB



Example Application: Anacostia River Trail, Colmar Manor, MD Credit: Ryan Craun, M-NCPPC

B9 - Painted STOP Pavement Markings and Stop Bars

STOP pavement markings emphasize the need to stop at an intersection, when used in conjunction with existing signage and stop bars. Where there are STOP signs, it is recommended to include a painted stop bar. These markings can address poor visibility of the intersection or STOP signs, and potentially improve driver compliance.

O IMPLEMENTATION LOCATION

Intersections where there are compliance concerns or where visibility is limited due to factors such as vegetation, parked cars, transit stops, or poor lighting.

BENEFITS

- Increased visibility of stop condition
- Encourages driver compliance

CONSIDERATIONS

• Maintenance: Regular maintenance is needed to ensure markings remain visible and effective

\$ COSTS

• Low

🕔 TIMEFRAME

• Short



Existing Condition: Goucher Drive at Cunningham Drive Credit: VHB



Example Application: Kilbourne Place at 18th Street NW, Washington, DC Credit: VHB

B10 - Speed Tables

A speed table is a traffic-calming device designed to reduce vehicle speeds in specific areas, typically at pedestrian crossings or in residential zones. It is a flat-topped raised platform that spans the width of the road. Unlike traditional speed humps or bumps, speed tables are wider and flatter, allowing the entire vehicle to pass over without causing a jarring impact. The design of a speed table encourages drivers to slow down while maintaining a continuous flow of traffic.

O IMPLEMENTATION LOCATIONS

Roadways within residential neighborhoods, school zones, and other areas with high pedestrian traffic. Speed tables can be beneficial when placed near pedestrian crossings to slow down vehicles and increase pedestrian safety.

BENEFITS

• May reduce vehicle speeds

CONSIDERATIONS

- Need to be designed to accommodate heavy vehicles
- Accommodate emergency vehicles and buses with wide track cutouts in the speed table
- · Noise may increase when used by heavy vehicles

S COSTS

• Low/Medium

🕔 TIMEFRAME

Short/Medium



Existing Condition: 60th Avenue Credit: VHB



Example Application: 92nd Avenue, Springdale, MD Credit: Michael E. Jackson, M-NCPPC

B11 - Pedestrian Median Islands

Pedestrian median islands enhance pedestrian safety by serving as refuge areas for pedestrians crossing roads, reducing exposure to incoming vehicles by allowing them to cross one direction of travel at a time. They also may serve as a traffic calming measure by slowing vehicles.

IMPLEMENTATION LOCATIONS

Roadways with a significant mix of pedestrian and vehicular traffic, at mid-block crossings, or near transit stops and other pedestrian-specific locations, as well as on approaches to multilane intersections. They may be implemented at locations with limited sight distance or where there are concerns about vehicular speeds.

BENEFITS

- Reduced pedestrian exposure to oncoming vehicles
- Increased visibility of pedestrians and vehicles
- May slow vehicle speeds

CONSIDERATIONS

- Roadway widening may be needed in the vicinity of the crossing
- Cannot block private access
- Potential maintenance

S COSTS

• Low/Medium

🕓 TIMEFRAME

Medium/Long



Existing Condition: Greenbelt Road Overpass on Ballew Avenue Credit: VHB



Example Application: Auth Way, Camp Springs, MD Credit: Ryan Craun, M-NCPPC

C12 - Shared Lane Markings and Signage

A shared lane refers to a type of roadway lane that is accessible to both bicycles and motor vehicles, without designated space for each. Shared lane markings or "sharrows" are used on roadways to indicate that a specific lane or portion of the road are meant to be shared by both bicycles and vehicles. Sharrows serve as a visual cue to encourage safe and appropriate lane positioning for bicyclists and to remind drivers to expect and accommodate bicyclists on a road.

Regulatory or warning signs indicating "Bicycles May Use Full Lane" can be used alongside sharrows to remind road users that bicyclists have the legal right to use the full width of the lane when it is too narrow for a bicycle and another vehicle to safely travel side by side. These signs also serve as a warning to alert other road users to expect full lane usage by bicyclists in areas where this might not be anticipated.

? IMPLEMENTATION LOCATIONS

Main roads, residential streets, and commercial districts with frequent bicycle traffic and where dedicated bike lanes are not feasible due to space constraints. Also beneficial in areas where there is a need to alert drivers to the presence of bicyclists and in areas with high numbers of parked cars.

BENEFITS

- Increased visibility of bicyclists
- Encourages proper lane positioning of bicyclists/reduces risk of riding too close to parked cars
- Reminds drivers to share the road

CONSIDERATIONS

- Placement: sharrows should guide bicyclists outside of the parked vehicles' "door zone."
- Maintenance: regular maintenance is needed to ensure markings remain visible and effective



Short



Existing Conditions: Worn sharrow on Ballew Avenue Credit: Connor Klein, M-NCPPC



Example Application: Jefferson Street, Hyattsville, MD Credit: Ryan Craun, M-NCPPC

C13 - Crosswalk Signage

Crosswalk signage, in advance and at the crossing, enhances pedestrian safety by providing drivers with visual cues about the presence of a crosswalk, giving them time to reduce their speed and prepare to stop for pedestrians.

IMPLEMENTATION LOCATIONS

At each end of the crosswalk as well as on roadways where the presence of a crosswalk may not be immediately apparent to approaching drivers, such as midblock crosswalks, unsignalized intersections, and locations where increased visibility is needed.

BENEFITS

- Increased driver awareness
- **CONSIDERATIONS**
 - Maintenance: periodic maintenance is needed to ensure signs remain in good condition
- \$ COSTS
 - Low
- **TIMEFRAME**
 - Short



Existing Conditions: Branchville Road west of Indian Creek Credit: VHB



Example Application: College Avenue at Bladen Street, Annapolis, MD Credit: Daniel Sams, M-NCPPC

C14 - Double-Up STOP Signs

To emphasize the stop condition, STOP signs can be placed on both the left and right sides of an intersection. This strategy enhances intersection safety by decreasing the chances of STOP signs being missed or misunderstood, thus reducing the risk of a collision. Double-up STOP signs have shown to have a potential 11 percent reduction in crashes.³

O IMPLEMENTATION LOCATION

Intersections where there are compliance concerns or where visibility is limited due to factors such as vegetation, parked cars, transit stops, or poor lighting.

BENEFITS

- Encourages driver compliance
- Increased visibility of in vicinity of bus stop signs

CONSIDERATIONS

• Maintenance is needed to ensure signs remain visible and effective

\$ COSTS

• Low

TIMEFRAME

• Short



Existing Conditions: Goucher Drive at Cunningham Drive Credit: VHB



Example Application: Garland Avenue and Jackson Avenue, Takoma Park, MD Credit: VHB

³ https://ctre.iastate.edu/research-synthesis/intersections/stop-

signs/double/#:~:text=The%20MUTCD%20(2009)%20indicated%20a,installation%20of%20double% 20stop%20signs.

C15 - Implement All-Way Stop Control (AWSC)

All-Way Stop Control (AWSC) at intersections can be beneficial if used appropriately. It helps clarify right-of-way for drivers and pedestrians, aids in safe pedestrian and bicyclist crossings, and reduces certain types of crashes. AWSC is typically employed when the traffic volumes on intersecting roads are roughly equal. However, the decision to implement AWSC should always be based on a thorough engineering study to ensure its appropriateness and effectiveness as unwarranted STOP signs can increase noncompliance.





IMPLEMENTATION LOCATIONS

Busy intersections where traffic volumes are high and roughly equal on all intersecting roads, to ensure smooth flow of traffic and reduce accidents. They can also be beneficial in residential neighborhoods or in school zones to enhance pedestrian safety, especially during peak hours when children are going to or coming from school.

BENEFITS

- Helps drivers and pedestrians determine right-of-way
- · Assists pedestrian and bicyclist crossings

CONSIDERATIONS

- Needs to be warranted
- Increases fuel consumption



Example Application: Sellman and Montgomery Rds., Beltsville, MD Credit: Michael E. Jackson, M-NCPPC

C16 - Rectangular Rapid Flashing Beacons (RRFBs)

RRFBs are pedestrian-activated warning devices used to enhance crosswalk safety and compliance. They typically consist of two rapidly flashing, high intensity LED lights that create an attentiongrabbing flashing pattern. This alerts drivers to pedestrians who are either waiting to cross or are actively crossing the roadway. These devices are particularly effective in areas with frequent pedestrian crossings where enhanced visual signals are necessary to alert drivers to pedestrians' presence.

O IMPLEMENTATION LOCATIONS

The Federal Highway Administration (FHWA) has approved the use of RRFBs in certain situations, per MUTCD 11th Edition.⁴ This allows RRFBs to be installed to provide supplemental emphasis to pedestrian, school, and trail warning signs at marked crosswalks across uncontrolled approaches.

BENEFITS

- Improved driver awareness
- Increased visibility of pedestrians

CONSIDERATIONS

- Requires power source
- S COSTS
 - Low/Medium

TIMEFRAME

• Short



Existing Conditions: Greenbelt Road Overpass on Ballew Avenue Credit: VHB



Example Application: Main Street and 5th Street, Historic Laurel, MD Credit: Ryan Craun, M-NCPPC

⁴Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) https://mutcd.fhwa.dot.gov/pdfs/11th_Edition/mutcd11thedition.pdf

C17 - Vehicle-Presence Activated Solar-Powered Flashing STOP Signs

A vehicle presence-activated solar-powered flashing STOP sign is a STOP sign that utilizes solar panels to power integrated LEDs and sensors that detect the presence of approaching vehicles. When a vehicle is detected, the LEDs illuminate the perimeter of the sign or the word STOP, alerting drivers to come to a complete stop at the intersection. The benefits include enhanced visibility, particularly in low light conditions or areas with limited sight distance, which can improve driver recognition and compliance. Studies have shown that LEDs embedded in STOP signs increase compliance and decrease vehicle speeds.⁵

IMPLEMENTATION LOCATIONS

At intersections with limited sight distance or where street lighting is poor or non-existent. They can also be used in school zones or at intersections with compliance issues.

BENEFITS

- Enhanced visibility in low light conditions or areas with limited sight distance
- Encourages driver compliance

CONSIDERATIONS

- Frequency of flashing lights for adjacent property owners
- Regular maintenance is needed for signs to remain visible and effective

\$ COSTS

• Low/Medium

U TIMEFRAME

Short



Existing Conditions: Goucher Drive at Cunningham Drive Credit: VHB



Example Application: Plyers Mill Road at St. Paul Street, Kensington, MD Credit: Connor Klein, M-NCPPC

⁵ https://ctre.iastate.edu/research-synthesis/intersections/stop-signs/leds/

C18 - Pedestrian-Scale Lighting

Pedestrian-scale lighting refers to street lighting fixtures designed and positioned to illuminate sidewalks, crosswalks, and pedestrian areas at a scale and intensity suitable for pedestrians. Benefits include improving nighttime visibility, enhancing pedestrian safety, and creating inviting and well-lighted environments that encourage walking and outdoor activities.

O IMPLEMENTATION LOCATIONS

Before midblock and intersection crosswalks to illuminate pedestrians. Pedestrian-scale lighting can also be used along sidewalks, on wide streets and commercial districts, and along multiuse paths. Additional guidance can be found in FHWA's Pedestrian Lighting Primer.⁶

BENEFITS

• Improved pedestrian safety and visibility



• Requires a power source

\$ COSTS

Medium/High

🕔 TIMEFRAME

Long



Existing Conditions: Greenbelt Road at 59th Avenue Credit: VHB



Example Application: University of Maryland, College Park, MD Credit: Ryan Craun, M-NCPPC

⁶ Pedestrian Lighting Primer. https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-09/Pedestrian_Lighting_Primer_Final.pdf

C19 - Underpass Lighting

Underpass lighting improves visibility and safety for pedestrians and vehicles along the passages and improves user comfort in areas that may otherwise be poorly lit and thus intimidating.

O IMPLEMENTATION LOCATIONS

Pedestrian or vehicle underpasses, particularly in areas that are poorly lighted.



• Improved safety and visibility

CONSIDERATIONS

• Requires power source

S COSTS

• Medium/High

TIMEFRAME

• Long



Existing Conditions: Greenbelt Road Overpass at Ballew Avenue Credit: VHB



Example Application: West Hyattsville-Queens Chapel, MD Credit: Ryan Craun, M-NCPPC

D20 - Pedestrian Staircases and Ramps

Pedestrian staircases and ramps enable pedestrians to navigate elevation changes such as at bridges or along hilly terrain. Stair connections should be accompanied by ADA-accessible ramps to reduce barriers to connectivity for individuals using mobility aids, including improving access for people in wheelchairs. Staircases can also be equipped or designed with bicycle access ramps to accommodate bicyclists, enabling them to go up or down without the need to carry their bikes.

? IMPLEMENTATION LOCATIONS

Areas with significant topography changes or near bridges; in areas with high pedestrian traffic such as those near transit stations, parks, or schools.

BENEFITS

• Improved pedestrian connectivity, accessibility, and safety

CONSIDERATIONS

- Requires right-of-way acquisition
- Significant changes in elevation pose challenges in the installation of ramps

S COSTS

• Medium/High

TIMEFRAME

Long



Existing Conditions: Greenbelt Road Overpass at Ballew Avenue Credit: VHB



Example Application: Ramp at Metro Station, Cheverly, MD Credit: Ryan Craun, M-NCPPC

D21 - Bicycle Route Signage and Wayfinding

Bicycle guide signs are used to direct bicyclists along various bicycle routes within a state, county, or local jurisdiction. They provide information about intersecting bicycle routes, distances and directions to various locations, and guidance to popular destinations. These signs are designed to meet the needs of bicyclists, which are often not met by conventional guide signs for drivers. Bicycle guide signs not only provide general navigation guidance, but also suggest the most favorable routes for bicyclists compared to other possible routes. To be effective, these signs must clearly indicate the direction to stay on the route, be installed at each turn, and be periodically placed along long sections of the same road. They should also include destination and distance information to reassure bicyclists that they are on the correct path.

IMPLEMENTATION LOCATIONS

Along roadways and bicycle facilities that are a part of the state or regional bicycle network, as well as along preferred bicycle routes.

BENEFITS

• Provide efficient navigation and guidance to bicyclists

CONSIDERATIONS

• Maintenance: regular maintenance is needed to ensure signs remain visible and effective

\$ COSTS

Low/Medium

🕔 TIMEFRAME

Short



Example Application: Hyattsville, MD Credit: Corianne Setzer, M-NCPPC

D22 - Bus Stop Amenities or Relocation

Enhancing bus stops with shelters, waiting areas, and other amenities improves the passenger experience and promotes public transportation. Proper location of bus stops is a key component of passenger safety. Bus stops should be conveniently located at intersections with connections to the sidewalk network, or in the absence of sidewalks, a short sidewalk connection to the nearest intersection should be provided. Where intersections are widely spaced, mid-block crossings should be provided to ensure riders do not have to deviate significantly from their route. Position bus stops on the far side of intersections, where feasible, so that passengers cross roadways behind the buses which in turn improves their visibility to approaching vehicles.

IMPLEMENTATION LOCATIONS

In areas with high public transit usage and places where bus waiting times are longer. Relocation of bus stops is in those areas where the current bus stop location poses safety risks to passengers, such as poor visibility for approaching vehicles or lack of pedestrian infrastructure. It can also be beneficial where the current location is not convenient for passengers, such as those far from intersections or popular destinations.

BENEFITS

- Improves pedestrian accessibility and comfort
- Promotes the use of public transit

CONSIDERATIONS

- Right-of-way-requirements
- Maintenance

S COSTS

• Medium/High

U TIMEFRAME

• Long (requires adequate right-of-way to install amenities)



Existing Conditions: Pontiac Street at 60th Avenue Credit: VHB



Example Application: Bus Stop at Largo HQ, Largo, MD Credit: Ryan Craun, M-NCPPC



Example Application: A full range of amenities at Rhode Island Avenue, College Park, Credit: Connor Klein, M-NCPPC

Focus Areas

This chapter provides an overview of the four focus areas including a description of the existing conditions, challenges at each location, and a table of recommended countermeasures to improve pedestrian and bicycle access. Each focus area also includes a graphic showing potential locations of countermeasures that correspond to treatments introduced in the Chapter 3 toolkit coded A1–D22. Not every item in the action tables is a necessity. The action tables are intended to provide a range of options with different levels of implementation timeframe and cost.

Ballew Avenue

EXISTING CONDITIONS

Ballew Avenue provides a connection to Lake Artemesia and to Berwyn Road for bicycle, pedestrian, and motor vehicle traffic. Shared bicycle markings are present on Ballew Avenue but are faded. A sidewalk is present on the west side of Ballew Avenue; however, the sidewalk ends just south of the Greenbelt Road overpass, so the path switches to the east side of the road. There is no marked crossing where the path switches sides. Commercial vehicles are prohibited within much of the town aside from Ballew Avenue, so this route is used to access several industrial businesses (Photo D on the next page). The speed limit on Ballew Avenue is 25 miles per hour, and there are no residential properties on the street.

CHALLENGES

Pedestrians and bicyclists face several safety and access challenges on Ballew Avenue.

- The sidewalk network is nonexistent north of the Greenbelt Road overpass, which causes the able-bodied to walk on dirt paths or within the roadway and prevents those who use mobility devices from accessing Ballew Avenue.
- The sidewalk on Ballew Avenue predominantly runs on the west side of the street, but switches to the east side near the Greenbelt Road overpass. There is no crosswalk or pedestrian crossing at this location. This is illustrated in Photo B on the next page.
- Pedestrians face challenges when trying to access Greenbelt Road from Ballew Avenue. There are stairs on the north side of the Greenbelt Road overpass, however, the access at the top of the stairs is blocked by a guardrail. Adding a similar connection on the south side of the overpass, or a safe crossing to the north side on Greenbelt Road, would also be recommended.
- There is a lack of pedestrian-scale lighting along Ballew Avenue, particularly underneath the Greenbelt Road overpass. This is illustrated in Photo A on the next page.
- There are existing on-street bicycle shared use markings ("sharrows") that are significantly faded. Repainting these symbols and adding signage will alert motorists to the presence of sharrows for bicyclists.
- At the Greenbelt Road overpass, Ballew Avenue has a sharp curve. Enhanced signage in advance of this curve is necessary. This is illustrated in Photo C on the next page.
- Ballew Avenue turns into Branchville Road north of the Greenbelt Road overpass. North of the bank parking lot at 5600 Branchville Road, there is a crosswalk connection to Indian Creek Trail. Providing an improved, ADA accessible connection is recommended here.

Map 1. Ballew Avenue Challenge Locations







Existing pedestrian connection to Greenbelt Road. Pedestrian-scale lighting is needed beneath the Greenbelt Road overpass.

Location where the sidewalk switches to the east side of Ballew Avenue. Faded bicycle sharrow can also be seen.

Horizontal curve in the southbound direction.



Sidewalk and industrial/commercial driveways are located on the west side of Ballew Avenue.

Map 2. Ballew Avenue Countermeasures



The actions listed in the following table reflect countermeasures that have the potential for implementation in the vicinity of the Greenbelt Road Overpass over Ballew Avenue.

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
1.1	C12	Sharrow repainting	Along the entirety of Ballew Avenue	Clearly mark the presence of a bicycle facility	Short	Low	Requires periodic maintenance
1.2	D20	Open staircase access from Greenbelt Road to Ballew	Existing staircase access blocked off by guardrail on Greenbelt Road	Accessibility	Short	Low	• Coordination with SHA to maintain crash attenuation with bridge structure
1.3	C12	Install signage and markings to indicate presence of on-street bicycle use	Along the entirety of Ballew Avenue	There is little signage to mark the presence of the bicycle facility	Short	Low	Requires periodic maintenance
1.4	A1	Installation of crosswalk	At existing sidewalk termination	To provide more conspicuity of crossing pedestrians	Short	Low	 Requires periodic maintenance of markings
1.5	C13	Crosswalk Ahead signage	In advance of designated crosswalk location	Enhance conspicuity of crossing	Short	Low	Requires periodic maintenance
1.6	C16	Rectangular Rapid Flashing Beacon	At designated crosswalk location(s)	Enhance conspicuity of crossing	Short	Low/ Medium	Requires power source
1.7	A3	Raised crosswalk	At designated crosswalk location	Enhance conspicuity of crossing	Short/ Medium	Low/ Medium	• Need to be designed to accommodate heavy vehicle traffic on Ballew Avenue
1.8	B10	Speed tables	At various points on Ballew Avenue	Encourage lower motor vehicle speeds	Short/ Medium	Low/ Medium	 Need to be designed to accommodate heavy vehicle traffic on Ballew Avenue

Table 3. Ballew Avenue Countermeasures

Table 3. Ballew Avenue Countermeasures

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
1.9	B11	Median island	At designated crossing	Slow traffic at the crossing	Medium/ Long	Low/ Medium	 Ballew Avenue has limited width; would require widening of roadway to accommodate median island Location of treatment needs to account for property access
1.10	A4	Relocation of crosswalk	Relocate further south of existing location of sidewalks termination	To provide more conspicuity of crossing pedestrians	Medium/ Long	Medium	• Requires southward extension of sidewalk on east side of Ballew Avenue
1.11	Α5	On-street painted bike lane on Ballew Avenue	On both sides of the street	Enhance conspicuity of bicycle facility	Long	Low/ Medium	 Opposition to removal of parking by local businesses
1.12	C18	Pedestrian scale lighting	Along Ballew Avenue	Enhance conspicuity of pedestrians	Long	Medium/ High	Requires power source
1.13	C19	Lighting under overpass	Under the Greenbelt Road overpass	Enhance conspicuity of pedestrians	Long	Medium/ High	Requires power source
1.14	A6	Sidewalk extension northward	Establish sidewalk northward on Ballew Avenue from Greenbelt Road, on to Branchville Road and connecting to sidewalks under Greenbelt Station Way	Provide a marked route for pedestrians	Long	Medium/ High	 Acquiring right-of-way for sidewalk location on Branchville Road

Table 3. Ballew Avenue Countermeasures

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
1.15	A6	Sidewalk extension southward	Extend sidewalk southward on Ballew Avenue from current terminus at Greenbelt Road to location of new crosswalk	Provide a marked route for pedestrians	Long	Medium/ High	 Removal/shift of existing guardrail
1.16	D20	Staircase/ramp on south side of Greenbelt Road	South side of Greenbelt Road	To provide access to Ballew Avenue from southside of Greenbelt Road	Long	High	 Requires right-of-way acquisition
1.17	A8	Install multiuse path on M-NCPPC property on the east side of Ballew Avenue	East side of Ballew Avenue	Provide separation between motor vehicles and non-motorists	Long	High	 Vegetation clearance and topography

Pontiac Street (58th Avenue to 60th Avenue)

EXISTING CONDITIONS

Pontiac Street is a centrally located east-west roadway in Berwyn Heights. This study focuses on the stretch of Pontiac Street with intersections at 58th Avenue, Cunningham Street, and 60th Avenue. There are shared-use bicycle markings, sidewalks on the north side, crosswalks and other pedestrian crossings near Berwyn Heights Elementary School (6200 Pontiac Street). There is a 20 MPH speed limit on Pontiac Street, which is enforced by speed cameras within the school zone. Several intersections are stop controlled between 60th Avenue and 58th Avenue. Public bus routes also operate on Pontiac Street.

CHALLENGES

- Speeding is a noted concern of residents. Countermeasures, such as raised intersections (Photo A on next page) can be employed to reduce vehicle speeds.
- Many students walk to Berwyn Heights Elementary School (Photo B on next page). Enhancing pedestrian safety by providing high-visibility crossings and on-street pedestrian paths where possible is recommended.
- Existing bus stops have signage but feature limited accessible and comfort features.
- Vehicles stop on Pontiac Street for student drop-off rather than following procedures directing drop-offs to the back of the school.

Map 3. Pontiac Street Challenge Locations





The intersection of 58th Avenue and Pontiac Street. A raised intersection is recommended at this location. Retrofitting existing roadway to include sidewalk or protected sidepaths is recommended where no sidewalk exists.



The intersection of 60th Avenue and Pontiac Street. A raised intersection is recommended at this location.



Map 4. Pontiac Street and 58th Avenue Countermeasures



Map 5. Pontiac Street and Cunningham Drive Countermeasures



Map 6. Pontiac Street and 60th Avenue Countermeasures

The actions listed in the following table reflect countermeasures that have the potential for implementation on Pontiac Street.

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
2.1	A1	Painted crosswalks	On all legs of intersection where there is a connecting sidewalk	Provide conspicuity of crossing	Short	Low	Maintenance from wear-and-tear
2.2	A2	Repurpose the cross-section of intersecting roadways without a sidewalk to provide a sidewalk or marked non- motorized path	Cross-streets without a sidewalk	Create a sidewalk using the existing cross section of roadway	Short	Low	 Neighborhood support for retrofitting existing roadway for non- motorists and loss of street parking Limited cross-section for some cross-streets
2.3	В9	Painted STOP pavement marking	In advance of stop bar	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
2.4	C14	Double-up STOP signs	Install corresponding STOP sign on left side of roadway	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
2.5	C17	Vehicle-presence activated solar- powered flashing STOP signs	At STOP signs at intersections	Provide conspicuity of stop	Short	Low/ Medium	 Maintenance Frequency of flashing lights for adjacent property owners
2.6	A3 	Raised intersection or crosswalks	At 58th Street	Slow vehicles when navigating through intersection	Short/ Medium	Low/ Medium	 Maintain drainage Need to warn drivers of their presence Vertical deflection needs to accommodate buses and emergency vehicles

Table 4. Pontiac Street Countermeasures

Table 4. Pontiac Street Countermeasures

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
2.7	A3	Raised intersection or crosswalks	At Cunningham Drive	Slow vehicles when navigating through intersection	Short/ Medium	Low/ Medium	 Maintain drainage Educate drivers of their presence Odd geometry of intersection Vertical deflection needs to accommodate buses and emergency vehicles
2.8	A3	Raised intersection or crosswalks	At 60th Avenue	Slow vehicles when navigating through intersection	Short/ Medium	Low/ Medium	 Maintain drainage Need to warn drivers of their presence Slope of intersection Vertical deflection needs to accommodate buses and emergency vehicles
2.9	Α7	Sidewalk pad at all four corners of an intersection	All intersections	Facilitate crossing all four legs of the intersection	Long	High	Right-of-wayLack of connecting sidewalks
2.10	D22	Improve access at bus stops and at school with crosswalks, waiting areas, NO STOPPING signs (for cars), and other amenities	At and adjacent to bus stops	Facilitate access to bus stops and school	Long	Medium/ High	 Right-of-way Desired number of amenities Student drop-offs on Pontiac instead of at the back of the school

Berwyn Road (60th Avenue to Charlton Avenue)

EXISTING CONDITIONS

The intersection of Charlton Avenue and Berwyn Road is stopcontrolled on two of the three approaches. The westbound approach on Berwyn Road is uncontrolled. This intersection is challenged by poor visibility from the Charlton Avenue approach due to parked vehicles and topography, and the user's assumption that all approaches are stop controlled. 60th Avenue and Berwyn Road are located on a slope, with westbound vehicles on Berwyn Road having to stop at the intersection before proceeding. The eastbound approach on Berwyn Road is not controlled while the southbound approach is controlled.

CHALLENGES

- Looking east from Charlton Road, there are visibility challenges on Berwyn Road due to the topography and parked vehicles. This is illustrated in Photo A on the next page.
- Some approaches at the Charlton Avenue and Berwyn Road intersection and the 60th Avenue and Berwyn Road intersections are uncontrolled, while others are stop controlled. This is illustrated in Photo B on the next page. Motorists expect that all approaches are controlled alike, which leads to confusion and dangerous conditions. Controlling all approaches alike would also improve safety by reducing vehicle speeds through this intersection.
- None of Berwyn Road, Charlton Avenue, and 60th Avenue has pedestrian facilities, leading to unsafe conditions for pedestrians.

Map 7. Berwyn Road (60th Avenue to Charlton Avenue) Challenge Locations





There is limited visibility looking east on Berwyn Road from the Charlton Avenue approach.



The westbound approach has no STOP sign. Adding a STOP-sign and stop bar is recommended. Providing a pedestrian walkway may be possible by removing parking from one side of the street.



Map 8. Berwyn Road (60th Avenue to Charlton Avenue) Countermeasures

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Focus Areas

The actions listed in the following table reflect countermeasures that have the potential for implementation that address the short segment of Berwyn Road between Charlton Avenue and 60th Avenue.

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
3.1	C15	Implement all-way STOP	Berwyn Road at both 60th Avenue and Charlton Avenue	Force all vehicles to stop at the intersection	Short	Low	• Maintenance from wear-and-tear
3.2	A1	Painted crosswalks	On all legs of intersection where there is a connecting sidewalk	Provide conspicuity of crossing	Short	Low	Maintenance from wear-and-tear
3.3	B9	Paint stop bar	At 60th Avenue and Berwyn Road intersection	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
3.4	B9	Painted STOP pavement marking	In advance of stop bar	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
3.5	C14	Double-up STOP signs	Install corresponding STOP sign on left side of roadway	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
3.6	C17	Vehicle-presence activated solar- powered flashing STOP signs	At STOP signs at intersections	Provide conspicuity of stop	Short	Low/ Medium	 Maintenance Frequency of flashing lights for adjacent property owners
3.7	A3	Raised intersection	Berwyn Road at both 60 th Avenue and Charlton Avenue	Slow vehicles when navigating through intersection	Short/ Medium	Low/ Medium	 Maintain drainage Need to warn drivers of their presence Slope of intersection

Table 5. Berwyn Road between Charlton Avenue and 60th Avenue Countermeasures

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
3.8	A2	Repurpose cross- section to dedicate northern side of paved surface to a protected pedestrian facility	On Berwyn Road between 60 th and Charlton	Create a non- motorized facility on the north side of the existing pavement	Short	Low	 If sidewalk/path is constructed, drainage concerns need to be incorporated into design Vegetation management needed to prevent overgrowth above roadway Additional sidewalk/path should be constructed on adjacent road segments for continuity Loss of parking for residents Narrow cross-section to maintain two-way traffic Right-turn radius from Charlton to Berwyn
3.9	A7	Sidewalk pad at all four corners of an intersection	All intersections	Facilitate crossing all four legs of the intersection	Long	High	 Right-of-way Lack of connecting sidewalks

Table 5. Berwyn Road between Charlton Avenue and 60th Avenue Countermeasures

General Intersection Improvements

EXISTING CONDITIONS

Town-wide there are several locations where countermeasures are recommended to improve multimodal safety. The intersections of 62nd Avenue and Quebec Street, and Cunningham Drive and Goucher Drive are used as demonstration locations for these countermeasures. Throughout Berwyn Heights there is a lack of pedestrian and bicycle facilities on many streets as the town was designed to prioritize vehicular movement. Installing pedestrian crossing signs, retrofitting existing roadways to include sidewalks or protected sidepaths, and installing raised intersections with marked crosswalks is recommended where possible. Speeding is a noted issue. Implementing speed tables at mid-block locations on key routes, installing all-way STOP signs, and painting STOP markings on pavement is recommended.

CHALLENGES

- Limited pedestrian and bicycle infrastructure. Both Photos A and B on the next page show no presence of sidewalks. Providing pedestrian and bicycle facilities may require the retrofitting roadway cross-sections to provide space for on-street nonmotorized paths.
- Speeding vehicles are a safety concern.
- Steep topography (such as the locations illustrated in Photos A and B on the next page) is a challenge for safe multimodal use of the roadways due to limited sightline visibility.

Map 9. 62nd Avenue and Quebec Street/Quebec Place Challenge Locations





Near the intersection of 62nd Avenue and Quebec Place. This intersection previously had stop bars, which have disappeared. Painting a STOP pavement marking and stop bar is recommended to improve visibility and safety. This intersection has steep topography that limits sightline visibility.



The intersection of Quebec Street and 62nd Avenue. While there is a painted crosswalk, enhancing it with high-visibility elements is recommended. This intersection has steep topography that limits sightline visibility—painting a STOP pavement marking will improve visibility and safety.



Map 10. Quebec Steet and Cunningham Drive Countermeasures



Map 11. 62nd Avenue and Quebec Street Countermeasures

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Focus Areas

Cunningham Drive and Goucher Drive





Map 12. Cunningham Drive and Goucher Drive Countermeasures

The actions listed in the following table reflect projects to improve the safety for non-motorized users at intersections with demonstration locations at 62nd Avenue/Quebec Street and Cunningham Drive/Goucher Drive.

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
4.1	A1	Painted crosswalks	On all legs of intersection where there is a connecting sidewalk	Provide conspicuity of crossing	Short	Low	Maintenance from wear-and-tear
4.2	B9	Paint stop bar	At intersections where no stop bar is present	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
4.3	В9	Painted STOP pavement marking	In advance of stop bar	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
4.4	C14	Double-up STOP signs	Install complementary STOP sign on left side of roadway	Provide conspicuity of stop	Short	Low	Maintenance from wear-and-tear
4.5	A2	Repurpose the cross-section of intersecting roadways without a sidewalk to provide a sidewalk or marked non- motorized path	Streets without a sidewalk; south side of Quebec Street; east side of 62nd Avenue	Create a sidewalk or separated path using the existing cross section of roadway	Short	Low	 Neighborhood support for retrofitting roadway cross-section for non- motorists and loss of street parking (and school pickup) Limited cross-section for some streets
4.6	C17	Vehicle-presence activated solar- powered flashing STOP signs	STOP signs at intersections	Provide conspicuity of stop	Short	Low/ Medium	 Maintenance Frequency of flashing lights for adjacent property owners

 Table 6. Demonstration locations at 62nd Avenue/Quebec Street and Cunningham Drive/Goucher Drive

Action	Countermeasure	Description	Implementation Location	Rationale	Time Frame	Relative Cost	Challenge
4.7	B10	Speed table	Mid-block on key routes; at crest of hill on Cunningham Drive north of Goucher Drive; on Goucher Drive at crest of hill east and west of Cunningham Drive; on Quebec Street west of 62nd Avenue; and on Quebec Street east of 62nd Avenue	Slow vehicles in advance of intersection	Short/ Medium	Low/ Medium	 Requires accompanying sign warning of vertical displacement Maintenance from wear-and-tear
4.8	A3	Raised intersection or crosswalks	At high traffic intersections	Slow vehicles when navigating through intersection	Short/ Medium	Low/ Medium	 Maintain drainage Need to warn drivers of their presence Slope of intersection
4.9	A7	Sidewalk pad at all four corners of an intersection	All intersections	Facilitate crossing all four legs of the intersection	Long	High	Right-of-wayLack of connecting sidewalks
4.10	D20	Provide accessible access to the elementary school	62nd Avenue/Quebec Street south side	Provide accessibility to the school	Long	High	 Topography

Table 6. Demonstration locations at 62nd Avenue/Quebec Street and Cunningham Drive/Goucher Drive

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