Haverford Township
County of Delaware, PA

SAFETY ACTION PLAN:

Haverford Township, Pennsylvania

A Comprehensive Overview

JULY 2024
PREPARED BY: **CHPLANNING, LTD.**
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ACKNOWLEDGEMENTS

The development of this Action Plan could not have been possible without the hard work of the project team, the input of Haverford Township residents, and community partners. This effort was led by Haverford Township Manager, David Burman and the consultant team at CHPlanning.

PROJECT SPONSOR

Haverford Township

FUNDING PROVIDED BY

Haverford Township

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TABLE OF CONTENTS

Table of Figures

LETTER FROM THE TOWNSHIP MANAGER

On behalf of the Project Team and Advisory Committee, I am pleased to present Haverford Township's Safety Action for review and approval by the Board of Commissioners. This plan represents the Township's commitment to creating safer streets for everyone in our community. Although Haverford Township has not experienced a high number of fatal crashes compared to our neighboring muncipalities, the seven fatalities and 27 serious injuries recorded over a six-year period (2017-2022) are far too many. Every road fatality and serious injury is preventable, and such incidents on our roads are unacceptable.

As part of this Action Plan, the Board of Commissioners will be asked to adopt a resoultion committing to reducing deaths and serious injuries by 50% before 2030, with the ultimate goal of zero fatalities and serious injuries by 2040. The comprehensive Safety Action Plan supports that goal.

Data, comprehensive community input, and research and expertise of best practices for infrastructure and other improvements form the foundation of the action plan. Using the principles of the Safe Systems Approach, our Action Plan emphasizes the need to focus on ensuring the safe movement of all residents and visitors, regardless of their mode of transportation. We give particular attention to our most vulnerable populations—those under the age of 18 and those over 65, who together make up 43 percent of our community.

In addition to serving over 50,000 residents, our Township is a hub for major employers and is home to public schools, grocery stores, parks, a university, and several places of worship. We are well connected to the surrounding region through regional rail lines, and an interurban light rail line, and several bus lines with service provided by the Southeastern Pennsylvania Transportation Authority's (SEPTA) network. These destinations and transit systems bring diverse populations from across the region into the community to work, shop, play, and worship. It is our collective responsibility to ensure that these road users move around safely.

We believe that the recommendations outlined in this Safety Action Plan will enhance the safety and well-being of everyone who uses our streets. We are committed to working to achieve our vision of a safe transportation environment with no fatalities and serious injuries, and this plan is a significant step towards making this a reality.

EXECUTIVE SUMMARY

The Haverford Township Safety Action Plan is a comprehensive initiative aimed at enhancing road safety for all residents and visitors. This plan is rooted in the principles of the United States Department of Transportation's Safe Systems Approach, which prioritizes safer people, vehicles, speeds, roads, and post-crash care.

Haverford Township, home to over 50,000 residents, is a community with a rich history, scenic nature trails, and bustling commercial strip. It is well-connected through regional rail lines and several bus routes, making it a hub for a diverse population that travels for work, shopping, recreation, and worship.

One of the major concerns of community members is safety for pedestrians and bicyclists. Safety for walking and biking has been shown nationally to provide environmental, economic, and social benefits, greatly improving the quality of life for residents. Lower carbon emissions, increased foot traffic for local shops, and more independence for those who cannot drive are all benefits reaped by improving walking and biking safety.

The Haverford Safe Streets for All project team conducted a thorough analysis of crash data, identifying patterns and gathering extensive community input to understand residents' experiences and priorities. This data-driven approach informed the development of targeted recommendations.

Speed is a critical factor in the severity of crash outcomes. Lower speeds significantly reduce the likelihood of fatal crashes. Consequently, the plan prioritizes self-enforcing infrastructure that naturally encourages drivers to adhere to safer speeds. These measures are designed to protect all road users, especially the township's most vulnerable populations—those under 18 and over 65, who constitute 43% of the community.

The plan's recommendations include enhancements to pedestrian infrastructure, traffic calming measures, improved lighting, and the creation of slow zones. These interventions aim to make roads safer for non-motorized users while maintaining efficient movement for motorized traffic.

Haverford Township has committed to reducing road fatalities and serious injuries by 50% by 2030, with the ultimate goal of zero fatalities and serious injuries by 2040. This ambitious target underscores the Township's dedication to creating a safe transportation environment for everyone. Through continued community engagement and transparent communication, Haverford Township is poised to implement effective safety measures that will significantly improve the quality of life for all residents and visitors. The collaborative efforts of residents, local authorities, and stakeholders will ensure the successful realization of the plan's objectives, fostering a safe and inclusive environment for all road users.

INTRODUCTION

STUDY AREA

Haverford Township is a growing suburb with a population of 50,431 and a land area of 9.95 square miles. The Township is bounded generaly by Darby Creek in the west, by Township Line Road in the south, East County Line Road in the east, and by Landover Road and Mill Road in the north. The township is divided into 9 wards, each with its own commissioner.

SAFE SYSTEMS APPROACH

The Haverford Township Safety Action Plan utilizes the United States Department of Transportation Safe Systems Approach as a foundational guide. This approach delineates a set of principles aimed at enhancing road safety across diverse jurisdictions in the nation. At its core, this approach encompasses a series of objectives that Haverford Township has embraced to guide its mission of mitigating and ultimately eradicating severe injuries and fatalities on the Township's roads.
Key tenets of the Safe Systems Approach include prioritizing the following areas:

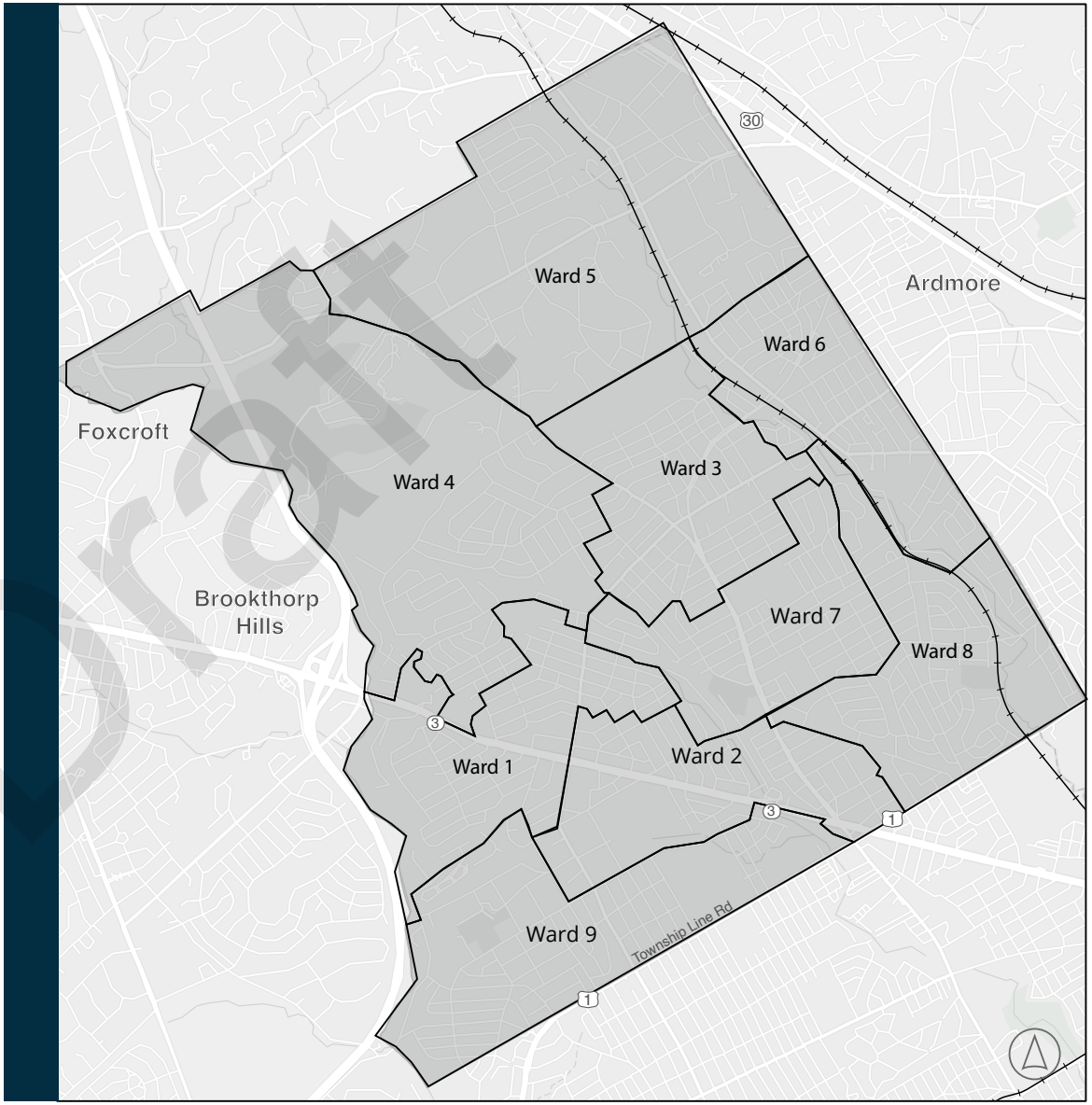


Figure. 1 - Study Area and Current Ward Boundaries

- Safer people
- Safer vehicles
- Safer speeds
- Safer roads
- Post-crash care

Based on the USDOT's safe systems approach, the Township adopts the following principles to achieve the goal of zero severe injuries and fatalities by 2040 on all Township roads.

- Prioritizing elimination or crashes that result in Death and serious injuries
- Design transportation systems that can accommodate certain types and levels of human mistakes
- Design transportation systems that are human-centric and accommodates physical vulnerabilities.
- Different stakeholders have a shared responsibility in making our roads safe
- Take a proactive approach to road safety
- Redundancy is Crucial: Reducing risks requires that all parts of the transportation system be strengthened, so that if one part fails, the other parts still protect people.

Figure. 2 - Safe System Approach | Source: FHWA

ROADWAYS

Several major interstates cross through the township. The I-476 Blue Route runs north-south along the western edge of the Township. U.S. Route 1 travels along Township Line Road in a southwest-northeast direction along the southeastern border. U.S. Route 30 follows Lancaster Avenue in a west-east direction across the northern tip. Pennsylvania Route 3 runs along West Chester Pike in a northwest-southeast direction through the southern part of the township. Additionally, Pennsylvania Route 320 briefly passes through the western tip of the township along Sproul Road.

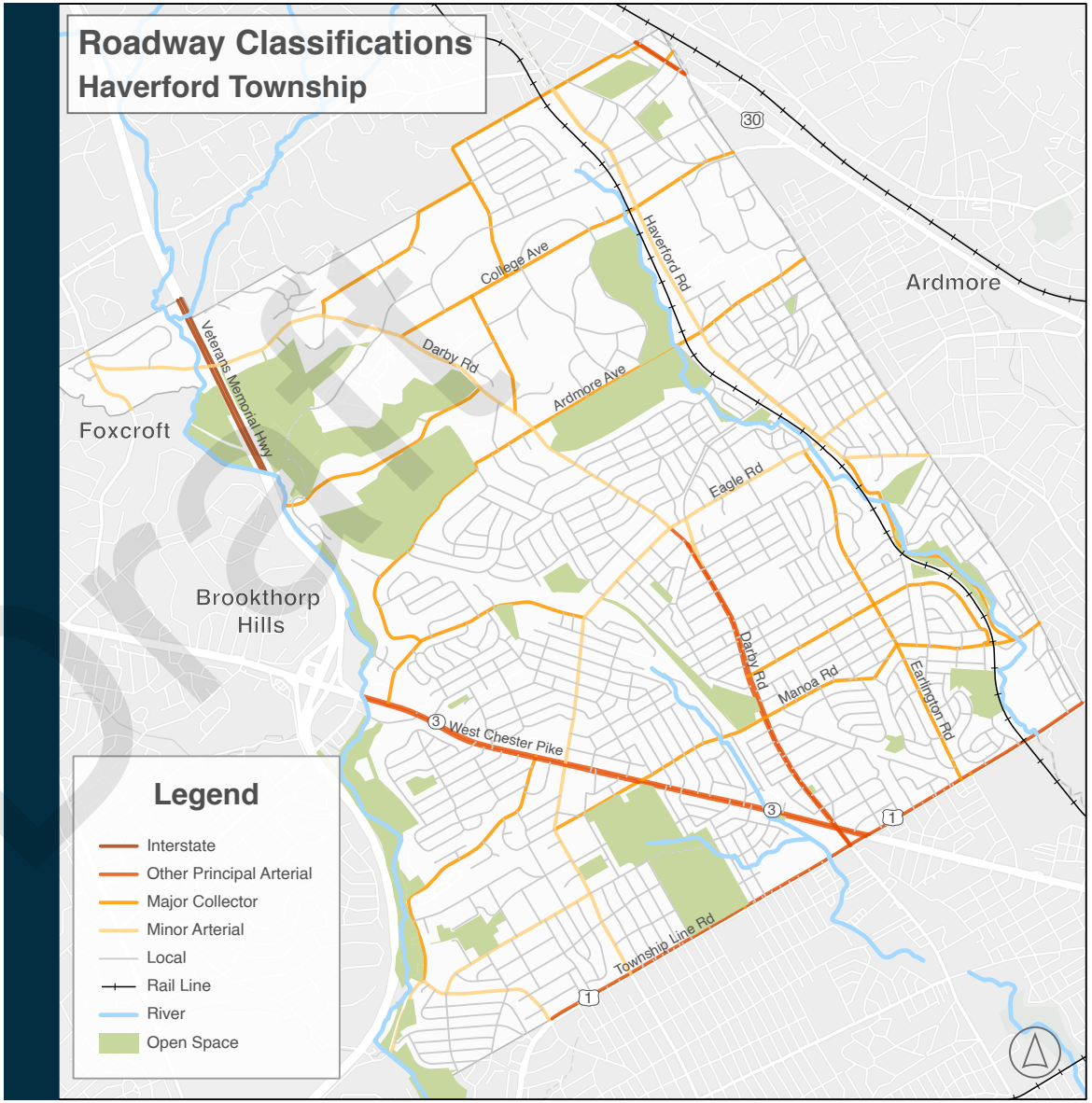


Figure. 3 - Roadway Classifications

TRANSIT

Haverford Township is connected to the surrounding region through regional rail lines, and an interurban light rail line, and several bus lines with service provided by the Southeastern Pennsylvania Transportation Authority's (SEPTA) network.

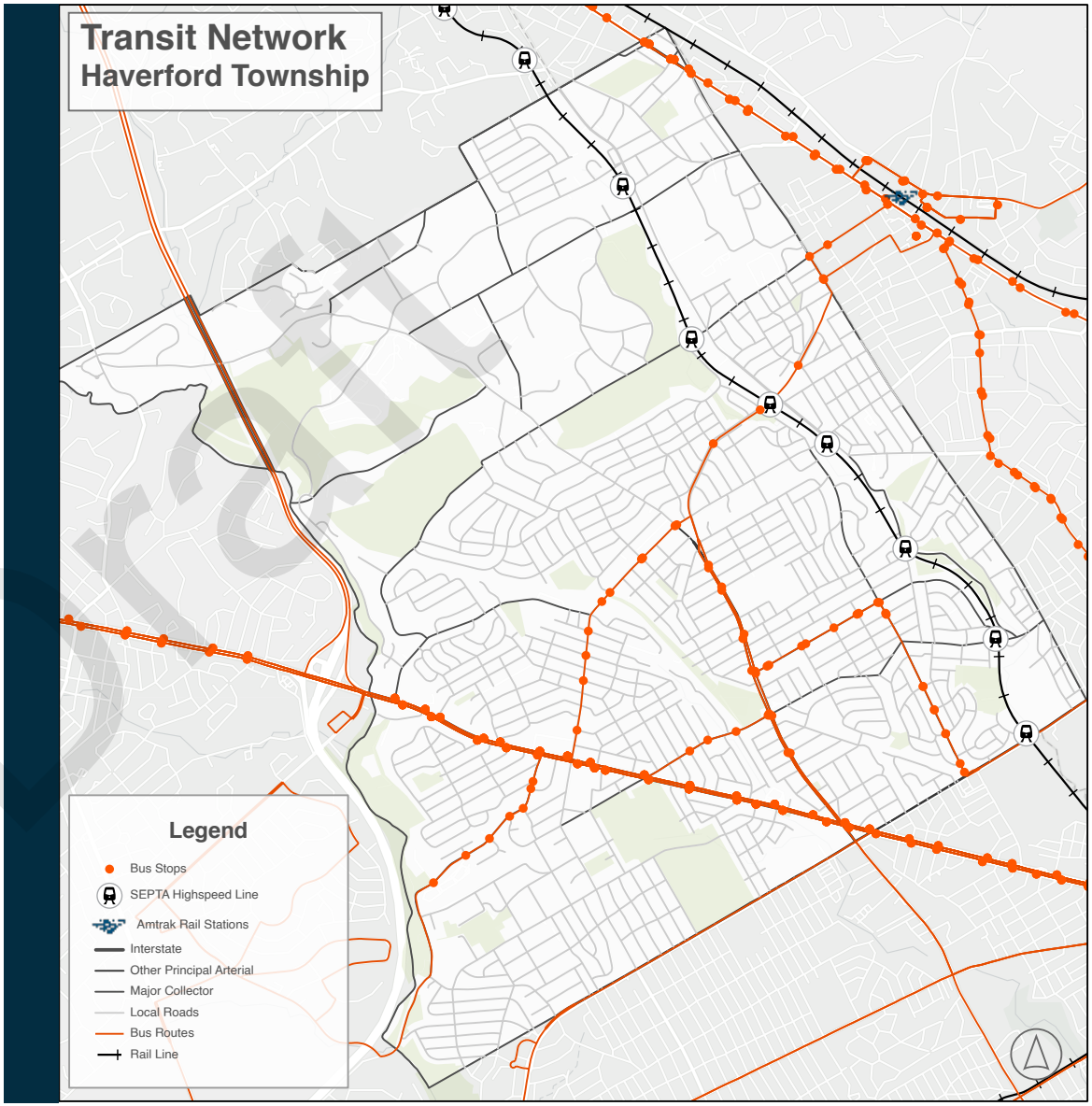


Figure. 4 - Transit Network | Source: Penn DOT Open Data

CRASH DENSITY

The data used for this action plan came from several sources due to the absence of a single comprehensive data source. Specifically, data was gathered from the Haverford Township Police Department (HTPD), Emergency Medical Services and PennDOT for the crash data analysis.

HTPD data was used to develop the crash heat map. The map visualizes the location of all crashes (over 7,000 incidents) that have occurred in the Township (including non-fatal crashes) over the last six years. The methodology used includes cleaning HTDP crash data (years 2018-2023) which consisted of removing incomplete data. The crashes were then geocoded based on where they occurred, and a point density map was developed to identify where the crashes are concentrated. Areas with the highest concentration of crashes were highlghted in yellow.

The analysis, as shown in the map, shows a concentration of crashes on major arterial roads such as portions of West Chester Pike, Eagle Rd, Darby Rd, Township Line Rd, Haverford Rd, as well as collector roads such as Earlington Rd.

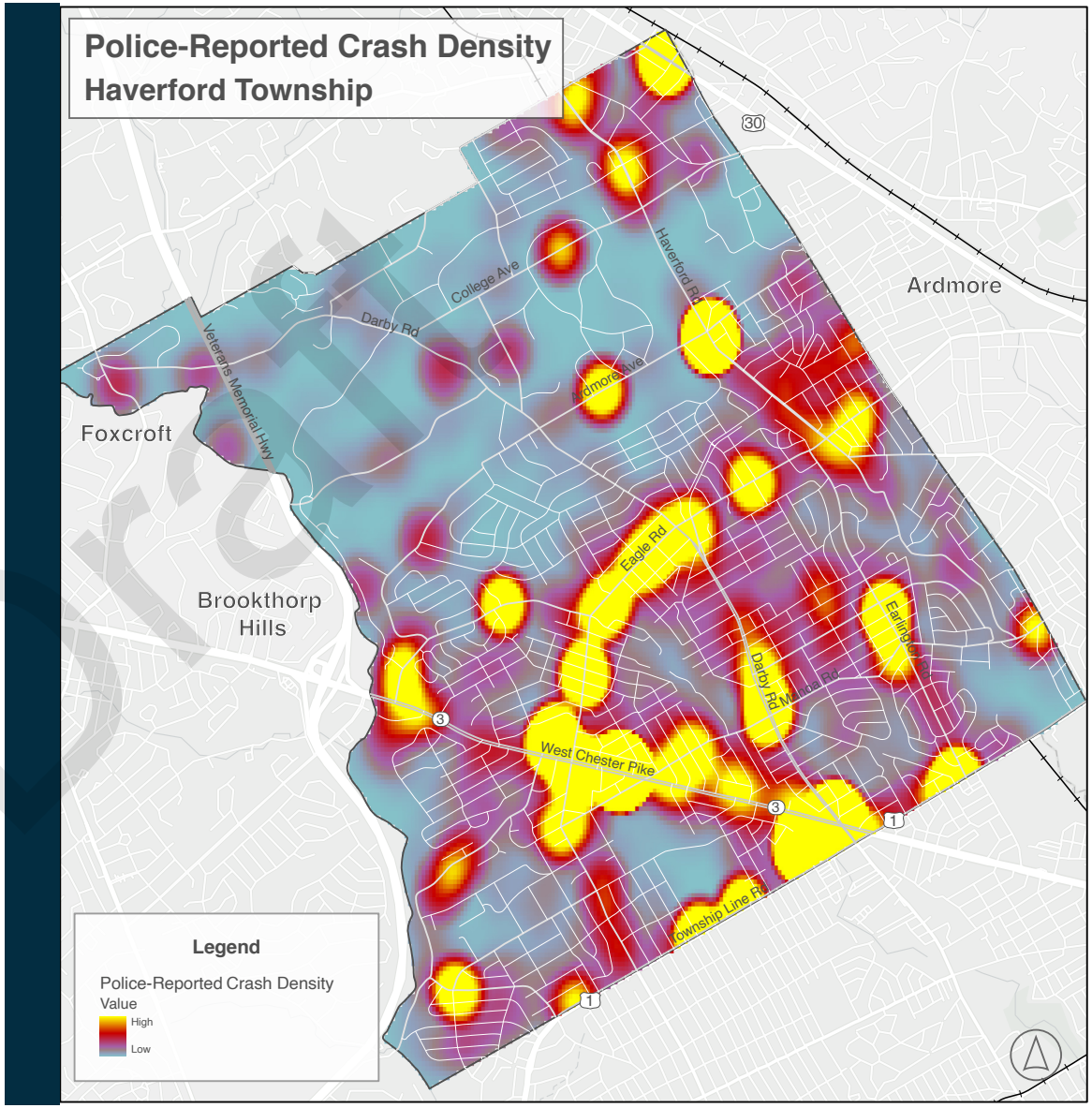


Figure. 5 - Police-Reported Crash Density | Source: Local Police Data

WALKER AND CYCLIST CRASHES

Crash data from the Township's Police Department does not specify the types of vehicles involved in incidents. However, PennDOT data reveals that bicycle crashes in the Township showed a sharp increase in 2020—possibly due to increased bicycling activity at the onset of the COVID-19 pandemic—then reduced in 2021 and rose again in 2022. Conversely, pedestrian-involved crashes have remained relatively consistent over the past five years.

The map indicates that these incidents are concentrated on principal arterial roads such as West Chester Pike and collector roads like Manoa Rd, as well as on local roads including Fairlamb Avenue.

Year	Bicycle Involved Crashes	Pedestrian Involved Crashes
2022	8	21
2021	1	22
2020	10	27
2019	5	24
2018	5	22
2017	5	26

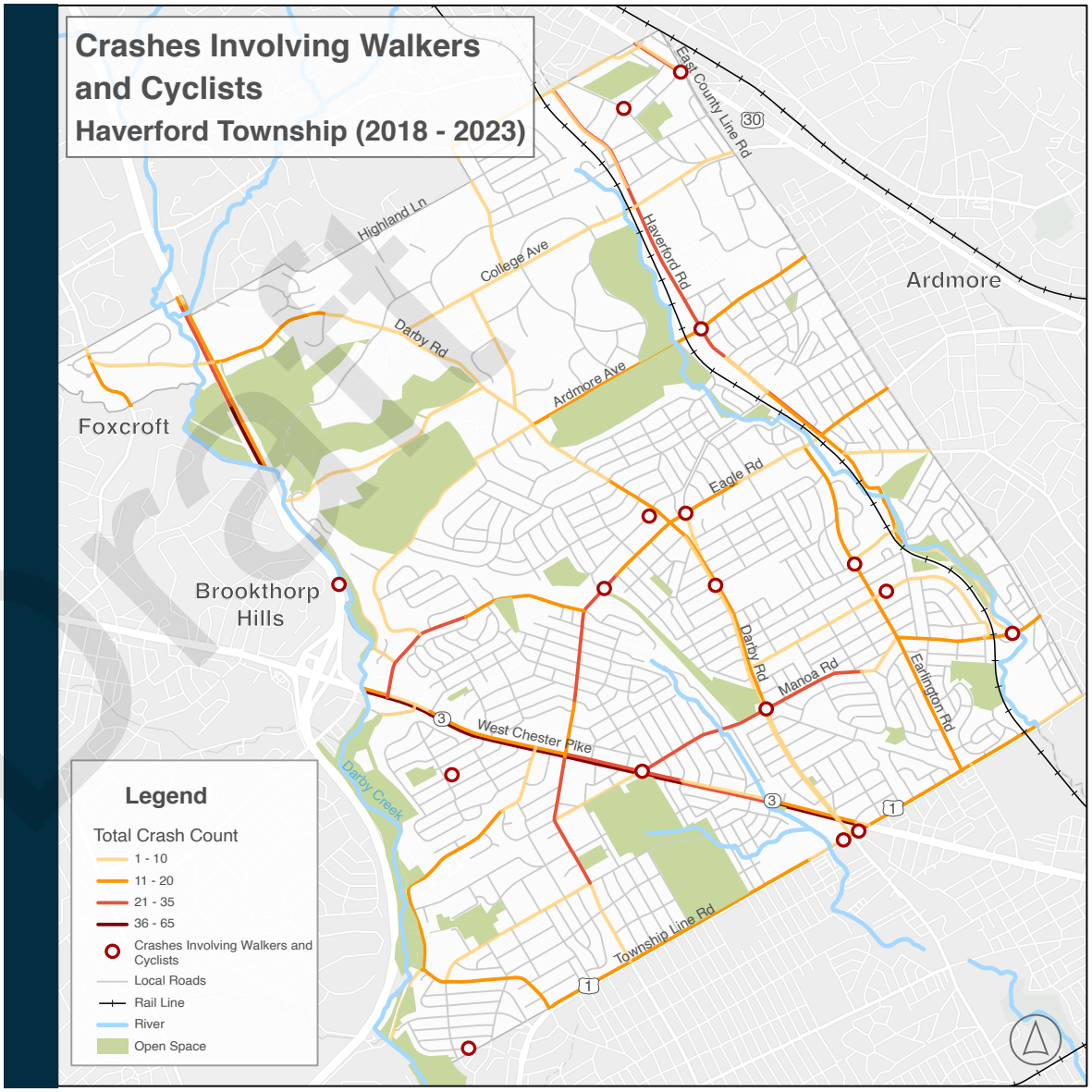


Figure. 6 - Crashes Involving Walkers and Cyclists | Source: Dispatch Data from EMS Provide (Narberth Ambulance)

HIGH INJURY NETWORK

The high injury network highlights the roads in the Township with the highest concentration of fatal and serious injury crashes. This analysis helps the Township prioritize locations for countermeasures to reduce crashes and eliminate serious injuries and fatalities.

The map, showing seven fatalities and 27 serious injuries, highlights road segments where these incidents occurred over five years (2018-2022). Data analysis shows that all fatal and serious injury crashes are concentrated on 10.2% (16.5 miles) of Haverford Township roads. Most fatalities and serious injuries happen on major arterial and collector roads, which are mostly state-owned, but local roads like Steel Road, Turnbull Avenue, Ellis Road, and Maryland Avenue have also seen severe crashes.

PennDOT data also reveals road conditions during accidents. About 44 percent happened at intersections, 26 percent at signalized intersections, 56 percent at mid-block intersections, and about 30 percent in poorly lit areas or in streets with reduced visiblity.

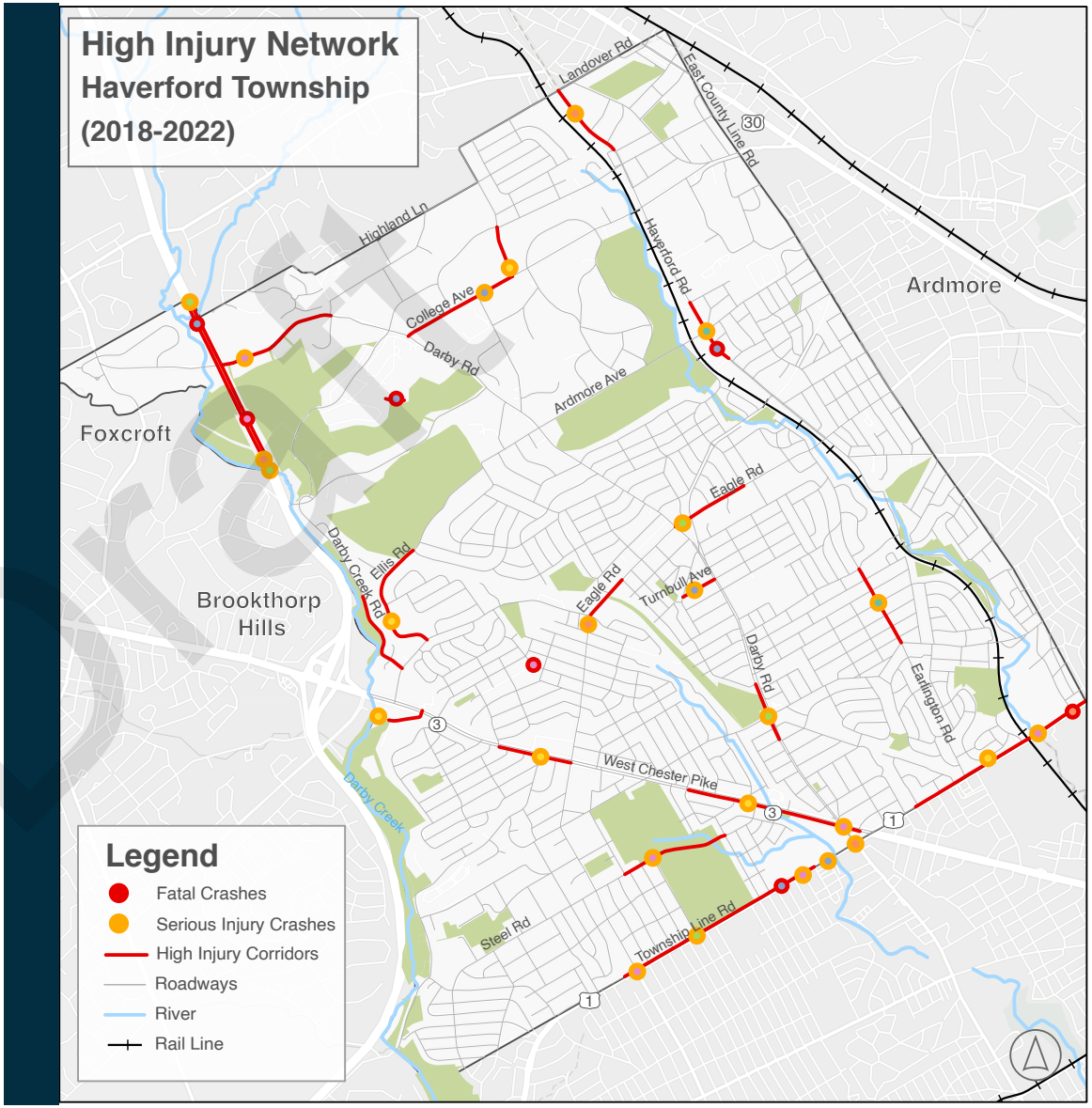


Figure. 7 - High Injury Network | Source: PennDOT Crash Information

EQUITY CONSIDERATIONS

The vulnerable populations in the Township are those consisting of higher percentages of people with disabilities, indviduals aged 65 and older, and those experiencing a pollution burden. To get an overall sense of vulnerability, the average percentage of people with disabilities, elderly individuals, and people experiencing a pollution burden has been calculated for each census block. Overlaying this data layer on the High Injury Network shows how the Township's vulnerable populations are impacted and allows the Township to make equity considerations when prioritizing areas to apply countermeasures.

The map shows that the northwestern part of the Township, where 15-24.5 percent of the population is vulnerable, has a concentration of several high injury corridors. Additionally, other census blocks with vulnerable populations are situated near these dangerous corridors. This underscores the additional burden these populations may experience due to mobility issues, which are exacerbated by their proximity to unsafe roads, often a result of inadequate infrastructure.

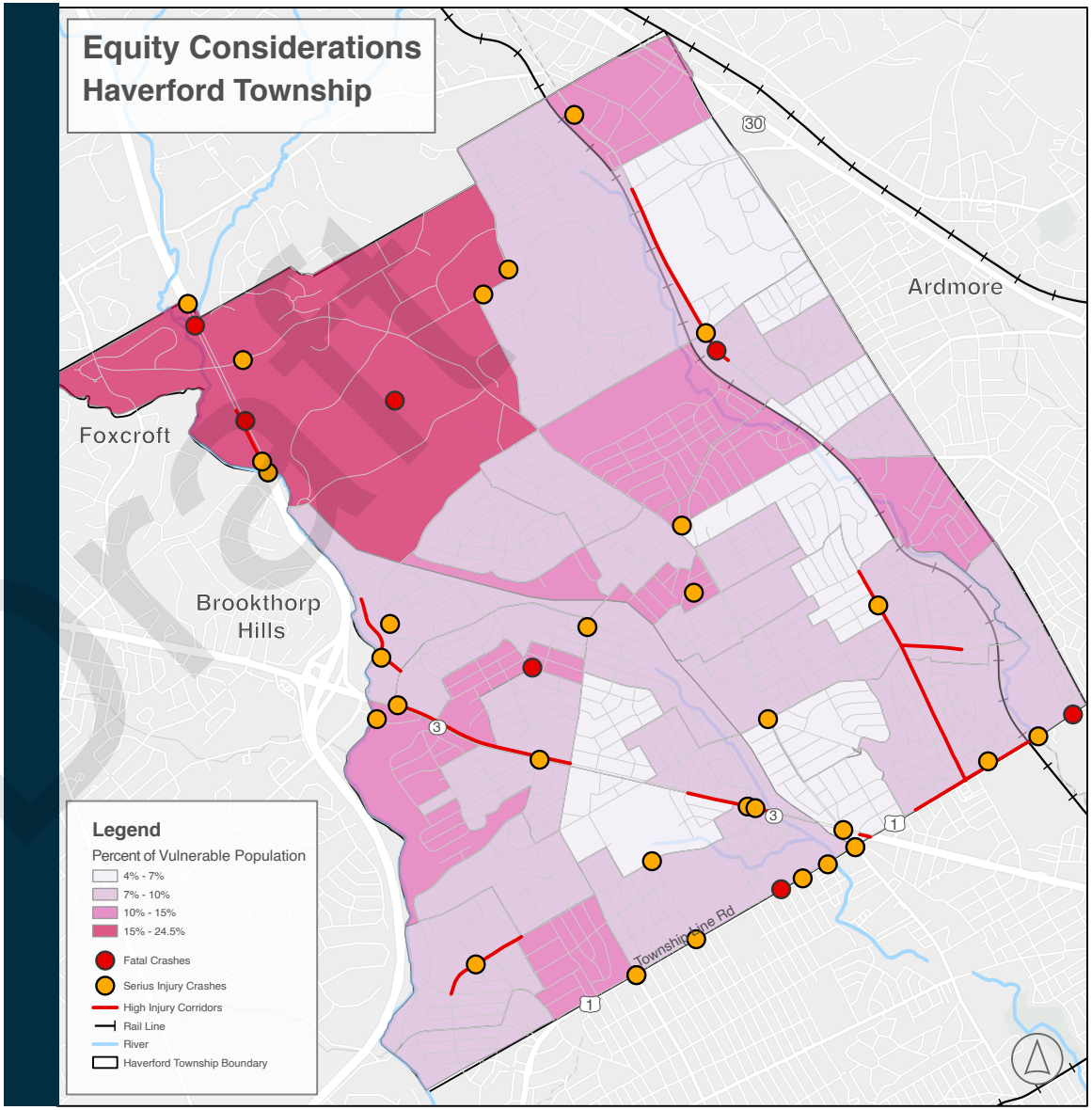


Figure. 8 - Equity Consideration | Source: American Community Survey (ACs)2020 - PennDOT Crash Data

COMMUNITY ENGAGEMENT

Haverford Township conducted comprehensive community engagement activities throughout the development of the Safety Action Plan to collect and understand residents' experiences with the Township's transportation systems. These activities included surveys, focus groups, and township-wide public meetings.

Throughout the engagements, residents provided insights on the infrastructure and non-infrastructure challenges of the Township's transportation systems with a particular focus on safety and accessibility. These insights, along with quantitative data, have been invaluable in giving a more complete picture of the challenges residents face travelling by motorized and non-motorized modes of transportation in the Township. In addition, the results of the engagement have informed the development of the recommendations outlined in this Safety Action Plan.

The kick-off public meeting was held virtually and provided direction for the development of the Safety Action Plan. During the meeting, attendees shared their vision for how they see the Township evolving over the next 10 years and what they hope to achieve in terms of road safety and accessibility.
Following this meeting, the team conducted a survey that amassed over 750 responses and included a total of 21 questions. Eleven questions focused on transportation safety challenges and possible solutions, while the remaining questions gathered demographic information.
The survey revealed that the dominant mode of transportation in the Township is cars, with walking being the second most popular choice (33%). Respondents ranked speeding vehicles, safety at crosswalks, drivers ignoring stop and yield signs, and sidewalk space as top safety concerns.
Additionally, respondents suggested several countermeasures they believed would significantly improve biking and walking safety. These included traffic calming measures such as speed bumps, adding bike lanes, expanding sidewalk infrastructure, and installing signalized pedestrian crossings.

Demographically, most respondents (77%) have an annual household income above $100,000, are between the ages of 45-64 (37%) and are predominantly white (96%). In comparison, 62% of the Township's households earn above $100,000, and 85 % of the population is white.
Smaller focus group meetings were held throughout the nine wards of the Township. The results of these discussions showed that the issues in the Township are consistent across the wards, with participants' concerns mainly falling into the following larger themes:

- **Traffic and Road Safety Issues:** Participants frequently mentioned safety concerns near schools, cut-through traffic, high speeds on residential roads, and blocked intersections due to congestion on major roads.
- **Parking Issues:** Concerns included both parking on sides of the street and parking on one side of the street.
- **Close-Calls at Specific Intersections and Streets:** The

following map shows some frequently mentioned locations where residents either witnessed or experienced close-call encounters or near-accidents.

- **Issues with Physical Road Infrastructure:** Attendees highlighted problems with existing trail infrastructure, insufficient street lighting, narrow sidewalks, unsignalized crosswalks, and a lack of bus routes.
- **Suggestions for Improving Continuous Community Engagement and Education:** Participants suggested education and training on bike and scooter safety, continuous communication through Township commissioners, mailers, multimedia campaigns, and existing communication avenues such as the local newspaper, The Patch.

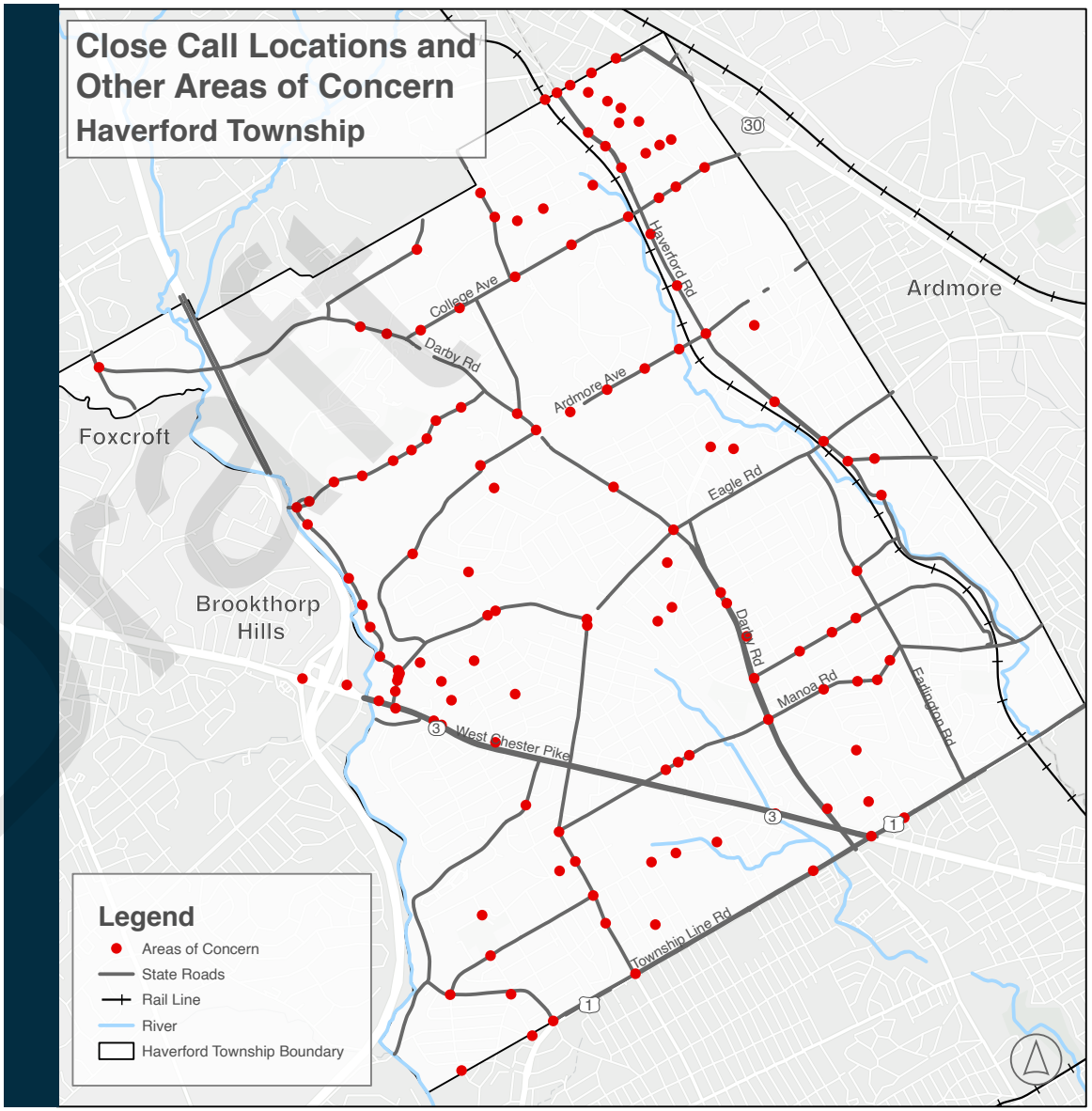


Figure. 9 - Area of Concern | Source: Feedback from focus group meetings

HAVERFORD SAFE STREETS FOR ALL RECOMMENDATIONS

The following recommendations are a result of a multi-step study of road safety across Haverford Township. These are at the conceptual stage and, although the planning process included reviews of governing codes and requirements, each infrastructure project would require a more detailed engineering study per PennDOT and the United States Department of Transportation.
The following layers of analysis were used to determine the locations and strategy for improving safety in Haverford Township.

- High Injury Network using PennDOT crash data 2018-2022. This network highlights the roads where deaths and serious injuries have occurred in the past five years.
- Total Crashes using PennDOT crash data 2018-2022. This highlights all crashes (including those where no serious injury was reported) to understand where general patterns of crashes exist in the Township.
- Near-Miss Locations – Based on engagement from residents across the Township, the CHPlanning team mapped locations where people often see "near misses."
- Key Destinations – Proximity to facilities with high pedestrian activity such as schools, churches, parks, and grocery stores.
- To prioritize projects, a Haverford Township Safe Streets Project Ranking System was also developed. It is based on the Pennsylvania Department of Transportation's (PennDOT) project ranking system, with some modifications based on inputs from local context and from residents and stakeholders. This system also provides a structure for any future inquiries from residents for intervention on local streets.

<table>
<tr><th>Criteria</th><th>Points</th><th>Basis for Point Assignment</th></tr>
<tr><td>Speed</td><td>0 to 15</td><td>Percentage of vehicles going over the speed limit (1 point for every 0.1%). Road segments were ranked based on the percentage of motorists going over the speed limit. This dataset comprises police-reported data for a selection of roads and is not comprehensive, as it does not encompass all road segments (Assigned a value of 0 to road segments lacking speed data).
<table>
<tr><th>Percentage of Motorists Speeding on Road Segment</th><th>Points Assigned to Road Segment</th></tr>
<tr><td><0.1%</td><td>1</td></tr>
<tr><td>< 0.1% and >1%</td><td>10</td></tr>
<tr><td>>1% and <2%</td><td>11</td></tr>
<tr><td>>6% and <7%</td><td>16</td></tr>
<tr><td>...</td><td>...</td></tr>
</table>
</td></tr>
<tr><td>Volume</td><td>0 to 10</td><td>Average daily traffic volumes (ADT)
Assign 10 points to the maximum ADT and then calculate the rest based on the equation. This dataset comprises police-reported data for a selection of roads and is not comprehensive, as it does not encompass all road segments (Assigned a value of 0 to road segments without traffic volume data).</td></tr>
<tr><td>Killed or Serious Injury Crashes</td><td>0 to 20</td><td>20 points assigned if the point is directly on a road segment.</td></tr>
<tr><td>All Crashes</td><td>0 to 20</td><td>20 points assigned if the point is directly on a road segment.</td></tr>
<tr><td>Elementary or Middle Schools</td><td>0 to 10</td><td>Range of 1 to 10 points assigned to road segments with school crosswalks located within a 500 ft buffer from schools.</td></tr>
<tr><td>Pedestrian Generators (key destinations)</td><td>0 to 10</td><td>Range of 1 to 10 points assigned to road segments located within a 500 ft buffer of each public facility (such as parks, community centers, schools) or commercial use that generates a significant number of pedestrians based on their proximity to these key destinations.</td></tr>
<tr><td>Pedestrian Facility</td><td>0 to 10</td><td>5 points assigned if there is no continuous sidewalk on one side of the street; 10 points if missing on both sides.</td></tr>
<tr><td>Vulnerable Population (% per census block)</td><td>0 to 5</td><td>Percentage of 65 and older
Percentage of People with disabilities
Pollution Burden
5 points assigned to the census blocks which have higher percentages of one of the vulnerable populations than the Township average.</td></tr>
<tr><td>Total Points Possible</td><td>100</td><td></td></tr>
</table>

ROAD SEGMENT RANKING

Top Ranking Streets:

- Darby Road
- Ellis Road
- Darby Creek Road
- Earlington Road
- West Chester Pike

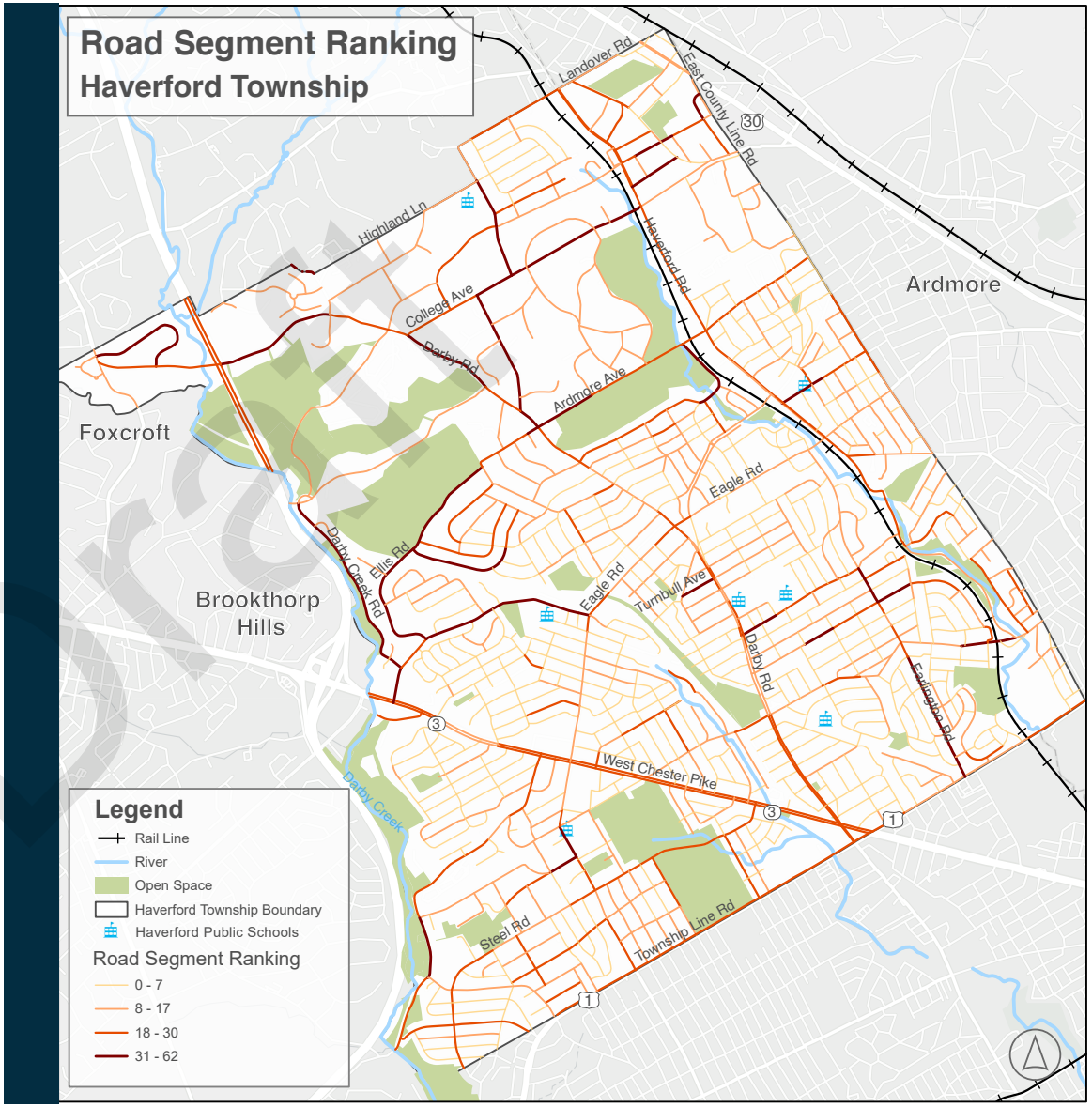


Figure. 10 - Road Segment Ranking |
Source: PennDOT Open Data, Police-Reported Data, American Community Survey (ACS)

RECOMMENDATIONS

The recommendations below were developed using a systems approach. Based on the analysis detailed above, priority areas were identified to allow the Township to quantifiably prioritize areas for improvement. However, these recommendations can be implemented at other locations in the Township. The recommendations are described using the following structure:

TIERS

To allow for phasing of large projects and flexibility in funding, many projects have multiple "tiers" that the Township may choose to implement. Each recommendation has one to three tiers. Tier one describes the quickest and least expensive version of an intervention, while subsequent tiers provide a more comprehensive version of that intervention. These tiers provide a path for phasing that the Township can pursue. For example, a tier one intervention may be implemented immediately, with additional elements added years down the line, when additional funding is available, to upgrade the infrastructure to tier two or tier three.

ELEMENTS

Elements describe the infrastructure or programming components that make up a project. For example, three different elements would be signage, lighting, and distribution of safety brochures. Recommendations may have one-to-eight elements.

RECOMMENDATIONS

Figure 11 maps each of the infrastructure and non-infrastructure recommendations on the top-ranked road segments in the Township. These recommendations are based on a comprehensive assessment of the most fitting interventions for each of these segments. For details on the road segment ranking methodology, please refer to page 19.

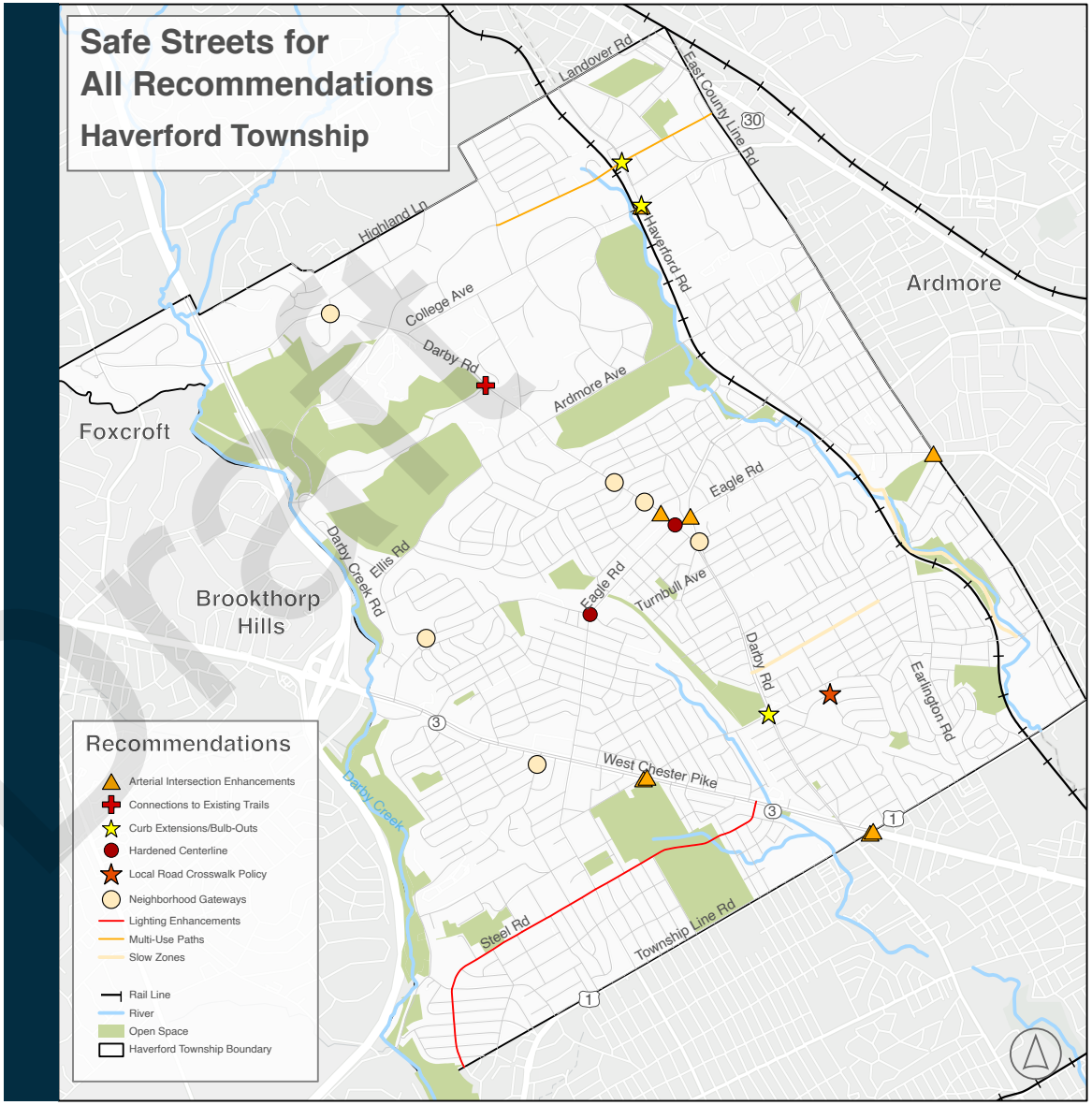
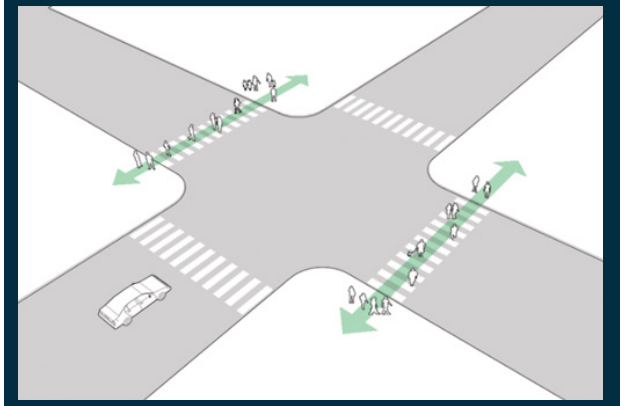


Figure. 11 - Recommendations

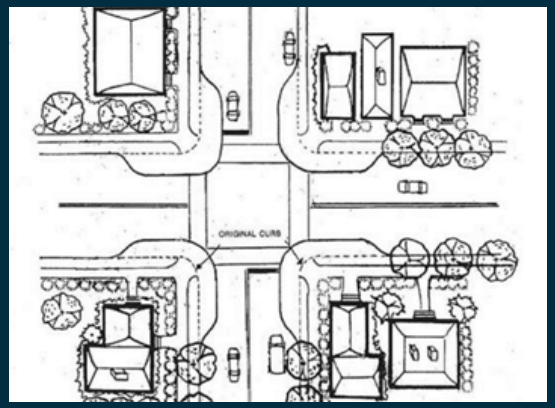
Recommendation	Elements	Summary
Arterial Intersection Enhancements	Leading Pedestrian Intervals Pedestrian Refuge Islands Rectangular Rapid Flashing Beacons (RRFBs) at Uncontrolled Intersections	Interventions that aim to improve road connectivity and to allow safe use of arterials for pedestrians.
Arterial Intersection Turn Calming	Basic Hardened Centerline Curb Extensions/Bulb-outs	Interventions that aim to create safer crossing across arterial roads near business districts and on school routes.
Local Road Crosswalk Policy	Daylighting Parking Policy Ladder Crosswalk Raised Crosswalk	Interventions to make local roads more walkable and improve visibility for all road users.
Neighborhood Gateways	Neighborhood Signage Pavement Treatments Pinch point Stormwater Management and Landscaping	Interventions to address safety concerns related to cut through traffic and to improve neighborhood traffic management.
Safe Routes to School Program	Bike to School Day Bicycle and Pedestrian Educational Flyers Parent Travel Surveys Travel Plans Walk Audits with Parents and School Administrators Daylighting Parking	Interventions to improve safety for school aged children walking and biking to school in the Township.
Sidewalk and Curb Maintenance Program	Sidewalk and Curb Ramp Assessment and Annual Prioritization Opportunity to Bundle Contracting with Township Payment Installment Program Payment Assistance Program Sidewalk and Curb Ramp Assessment and Annual Prioritization Payment Assistance Program	Intervention to establish and maintain high quality, walkable and ADA compliant sidewalk network across the Township while addressing issues of affordability.

Recommendation	Elements	Summary
Access Management Plan	Access Management Plan	Intervention to identify opportunities to address issues with transportation and land use, evaluate access points, consolidate redundancies, and lay out policies for future development that will improve connectivity and efficiency in the Township.
Connection to Existing Trails	Connections to Existing Trails Permeable Pavement (allows water to pass through reducing runoff and aiding in stormwater management)	Intervention to address gaps in the existing trail network and upgrade trail pavements to minimize stormwater runoff.
Local Data Collection and Analysis	Data Collection and Analysis	Recommendation to improve data collection and distribution through development of a comprehensive dashboard that records crash and infrastructure related data.
Bike Paths and Multi-use Paths	Paint Signage Dividers (e.g. Zipper Modular Traffic Segregator) Bollards Protected Bike Path (protected by parallel parking)	Intervention to increase safe bicycle facilities throughout the Township.
Slow Zones	Reduce Posted Speed Limits Pavement Markings Indicating Slow Zone Bicycle Sharrows Painted Chicanes	Intervention to establish low stress paths for pedestrians and cyclists and more multi-modal paths.
Lighting Enhancements	Streetlamps	Intervention to improve lighting conditions for trails and the overall street network across the Townships.



ARTERIAL INTERSECTION ENHANCEMENT

Tiers and Elements	Tier One: Increase Pedestrian Crossing Times Element One: Leading Pedestrian Intervals Tier Two: Infrastructure Safety for Pedestrians Element One: Pedestrian Refuge Islands Element Two: Rectangular Rapid Flashing Beacons (RRFBs) at Uncontrolled Intersections
Description	Haverford has several state arterials traversing the Township, carrying high volumes of vehicles. These roadways have many key destinations along them, requiring residents to cross these roads to access them. Pedestrian safety enhancements at these intersections aim to improve connectivity throughout the Township and allow for safe use of arterials for pedestrians. **Pedestrian Refuge Islands** – If the road is over a specific width, provide a refuge island. **Rectangular Rapid Flashing Beacons** – especially effective at multi-lane crossings with speed limits less than 40 mph. Pushbutton activated to prevent the risk of drivers being desensitized to the flashing lights. These beacons should be reserved for intersections with significant pedestrian safety issues, to maintain their effectiveness. Therefore, it is recommended that RRFBs be used on state roads on the Township High Injury Network. RRFB's are shown to increase motorist yielding rates up to 98%. **Leading Pedestrian Intervals** – at signalized intersections, we recommend a leading pedestrian interval calibration to the lights. A leading pedestrian interval allows for the pedestrian to enter the crosswalk 3-7 seconds before vehicles get a green light. This improves visibility of pedestrians and data shows a 13% reduction in pedestrian-vehicle crashes at intersections with a leading pedestrian interval . If there's a conflict between turns on red and the implementation of leading pedestrian intervals, consider modifying the turn on red policy.
Road/Intersection Type	Mid-block and signalized intersections on arterial roads.
Recommended Locations for Priority Implementation	Manoa Rd and West Chester Pike Darby Rd and West Hillcrest Ave Darby Rd and East Hathaway Ln Haverford and County Line roads Haverford Rd and College Ave Township Line Rd and West Chester Pike

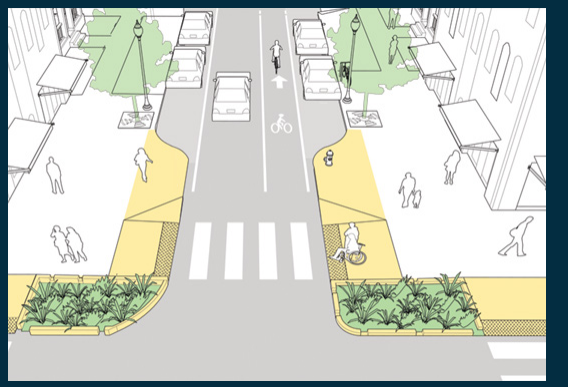


ARTERIAL INTERSECTION TURN CALMING

Tiers and Elements	**Tier One: Tighter Turn Radius** **Element One:** Basic Hardened Centerline **Tier Two: Tighter Turn Radius and Decrease Pedestrian Crossing Distance** **Element One:** Curb Extensions/Bulb-outs
Description	To create safer crossings across arterial roads near business districts and on routes to school, we recommend curb extensions/bulb-outs or hardened centerlines. These bulb-outs would result in an extension of approximately 6 feet from the existing curb, reducing the crossing distance for pedestrians while maintaining adequate travel lane width . These bulb-outs also provide space to include green stormwater infrastructure and vertical plantings to visually indicate to motorists that this is a pedestrian-scale area. At intersections without the space for bulb-outs or curb extensions, a Basic Hardened Centerline is recommended. This intervention includes installing rubber bollards on the centerline, up to 6 feet into the intersection. This provides a physical barrier between lanes, directing turning vehicles into the appropriate lane and slowing their turning speeds. In New York, similar turn calming treatments have resulted in a 54.3% reduction in median left turn speeds and 32.7% reduction in median right turn speeds .
Road/Intersection Type	Signalized intersections between two arterial roads.
Recommended Locations for Priority Implementation	**Curb Extensions/Bulb-Outs** Darby and Manoa roads (On Darby, extend median to provide pedestrian refuge island and extend curbs by approximately 6 ft to reduce crossing distance) College Ave and Haverford Rd Buck Ln and Haverford Rd. **Hardened Centerline** Eagle and Darby roads Eagle and Lawrence roads

LOCAL ROAD CROSSWALK POLICY

Tiers and Elements	**Tier One: Improve Visibility between Motorists and Pedestrians** **Element One:** Daylighting Parking Policy **Element Two:** Ladder Crosswalk **Tier Two: Additional Traffic Calming and Improved Pedestrian Visibility** **Element One:** Raised Crosswalk
Description	To make local roads more walkable and improve visibility of pedestrians, we recommend a Local Crosswalks Policy to create consistency in local intersection design. There are three main design elements that can be implemented across the Township that includes: • Ladder crosswalks: The ladder crosswalk design is recommended as the basic standard for official road crossings across the Township. • Raised crosswalks: Recommended at local intersections on paths to schools. When implementing a raised crosswalk in the Township, include advanced yield or stop markings on the roadway. According to the Federal Highway Administration, these advanced markings are seen to reduce pedestrian crashes up 25%. • Daylighting policy - Prohibits parking 20 feet from an intersection. This allows for better visibility of traffic, pedestrians, and reduces the risk of collisions between turning vehicles and pedestrians. In addition, after conducting an inventory of existing infrastructure, the Township should identify all crosswalks that are not in compliance with PennDOT standards. These crosswalks should be removed or upgraded to create consistency in infrastructure standards and pedestrian and driver behavior.
Road/Intersection Type	Intersections between two local/neighborhood roads
Recommended Locations for Priority Implementation	Glen Arbor and Alston



NEIGHBORHOOD GATEWAYS

Tiers and Elements	**Neighborhood Gateways** **Tier One: Visual Indicators** **Element One:** Neighborhood Signage **Tier Two: Textural Indicators** **Element One:** Pavement Treatments **Tier Three: Roadway Narrowing** **Element One:** Pinch point **Element Two:** Stormwater Management and Landscaping
Description	One of the major concerns of Haverford Township residents is the safety of children on local streets. Many people throughout the region commute to and through Haverford Township and may divert from arterial roads through the local neighborhoods. To address these safety concerns and improve neighborhood traffic management, we recommend implementing visual indicators at key intersections. To create visual indicators that identify entrance to a neighborhood, pavement treatments, pinch points with landscaping, and signage are recommended at the following intersections.
Road/Intersection Type	Local roads with purely residential land use. Prioritize local roads that intersect with major arterials.
Recommended Locations for Priority Implementation	Ellis near Lawrence Glendale near Walnut Hill Ln Shawnee near Darby Rd Colfax near Darby Rd Cambell near Darby Rd Scarlet Oak Drive near Darby Rd

SAFE ROUTES TO SCHOOL PROGRAM

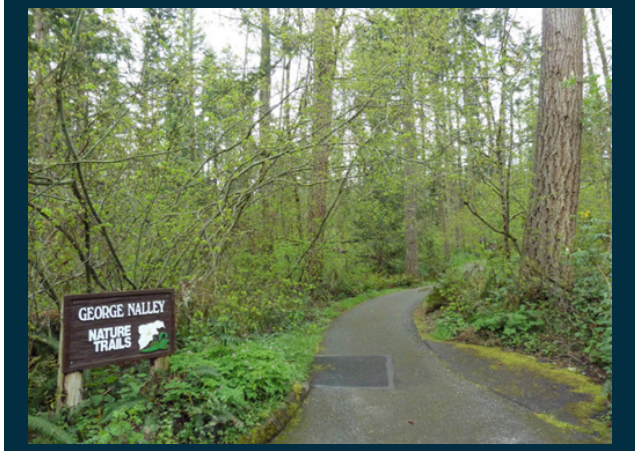
Tiers and Elements	**Tier One: Education** **Element One:** Bike to School Day **Element Two:** Bicycle and Pedestrian Educational Flyers **Tier Two: Engagement** **Element One:** Parent Travel Surveys **Element Two:** Travel Plans **Element Three:** Walk Audits with Parents and School Administrators **Tier Three: Infrastructure** **Element One:** Daylighting Parking **Element Two:** Raised Crosswalks
Description	Safe Routes to School programs are multi-pronged efforts to improve safety for school aged children walking and biking on their way to school . These program frameworks include education for kids to learn how to travel safely as a pedestrian and bicyclist, engineering projects on routes to school, and parent travel surveys to evaluate the impact of these interventions. **Infrastructure (see Local Road Crosswalk Policy)** • **Daylighting** - In the intersections directly adjacent to all Haverford schools and parks, we recommend the implementation of a daylighting policy. Daylighting limits the street parking around an intersection, blocking off 20 ft of parking spaces around a crosswalk to improve visibility for both the pedestrians and motorists in that area. The area blocked off for daylighting allows for alternative uses such as bike racks, curb extensions, planters, or green stormwater management infrastructure. • **Raised Crosswalks** - In intersections on local roads adjacent to schools, we recommend raised crosswalks at the same grade as sidewalks. These crosswalks act both as traffic calming and improved pedestrian visibility. **Engagement** • **Parent Travel Surveys** – in collaboration with the Haverford School district, we recommend conducting a parent travel survey. Survey templates are available through the Safe Routes – National Center for Safe Routes to School . These surveys provide a baseline for understanding how students are getting to school, barriers for walking and biking, and a method of evaluation after intervention. • Developing and distributing a **Travel Plan** in collaboration with Haverford School District. This provides details on safe routes to walk and bike to each school. **Education** • Bike to school day with helmet give away. Work with local bike shops to secure donations and/or facilitate bulk order of bikes/helmets. • Develop, distribute, and implement a Bicycle and Scooter **Helmet Campaign** across Haverford Township schools. This recommendation aims to proactively create a safe biking culture in the Township. ◦ Aimed at elementary and middle school aged children, the campaign can target children who live within a mile of a school (therefore, not served by the school bus system). This campaign should be designed to include electric scooter riders as well, as Township residents have noticed an increase in the use of electric scooters over the past few years. • **Mail educational brochures** to homes across the Township.
Road/Intersection Type	Systemic program focused on The School District of Haverford Township.
Recommended Locations for Priority Implementation	Township-wide

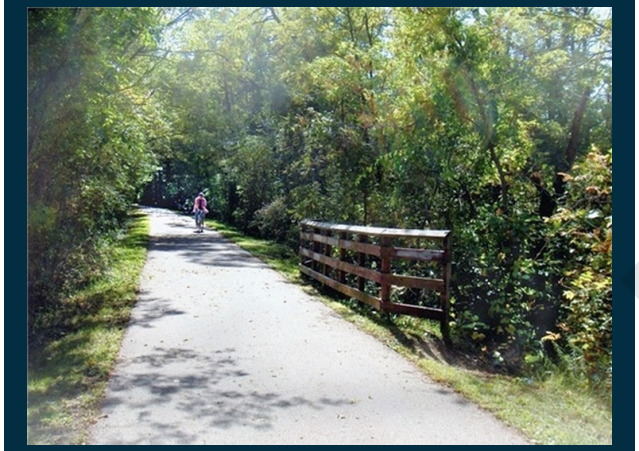
SIDEWALK AND CURB RAMP MAINTENANCE PROGRAM

Tiers and Elements	**Tier One: Sidewalk and Ramp Repair** **Element One:** Sidewalk and Curb Ramp Assessment and Annual Prioritization **Element Two:** Opportunity to Bundle Contracting with Township **Tier Two: Payment Programs** **Element One:** Payment Installment Program **Element Two:** Payment Assistance Program
Description	Pennsylvania state law requires that property owners maintain and repair the sidewalks adjacent to their property . This creates hurdles to establishing and maintaining a high-quality, walkable, and ADA compliant sidewalk network across Haverford Township. Municipalities across the state and country experience the same issue. With the goals of building a robust sidewalk network and avoiding inequities in costs towards residents, the following policies are proposed. **Policy for New Sidewalks** It is recommended that Haverford Township pay for new sidewalk development using capital grant funding. The installation of sidewalks would be dependent on receipt of that funding. It is recommended that Haverford Township consider the utilization of rubberized concrete sidewalks for new installations. Rubber sidewalks are flexible, porous rubber pavement system. Rubber sidewalks offer advantages over traditional concrete sidewalks due to their increased porosity and flexibility. Many communities have embraced rubberized pavers, especially around trees where roots can cause concrete sidewalks to heave. Additionally, they can be utilized in most scenarios where sidewalks are placed in straight alignment. While the initial costs may be higher, the potential savings in maintenance expenses could outweigh the upfront investment . **Policy for Maintaining Existing Sidewalks** Modeled after the City of Minneapolis' sidewalk repair program : • Every year, the Township will identify priority areas for sidewalk maintenance. This prioritization could be informed by the age of the sidewalk, proximity to key destinations, and the extremity of the need for repair (e.g. uplift in sidewalks because of tree roots causing unevenness and a tripping hazard) • Send a notice to property owners adjacent to the planned sidewalk repairs. ◦ Property owners can decide to hire their own contractor or have the Township hire a contractor. ◦ The Township bundles all sidewalks in that area within one contract, creating efficiency of scale. ◦ Each property owner is billed for their section of sidewalk. ◦ Property owners can pay their fee all at once, or in installments added to their property taxes as a special payment. ▪ If the cost is less than $500.00, the property owner pays the assessment in one payment. ▪ If the cost is between $500.00 and $1500.00, the property owner pays the assessment in five (5) equal annual payments. ▪ If the cost is more than $1500.00, the property owner pays the assessment in ten (10) equal annual payments. Interest is charged only on the remaining principal; interest rates vary.
Road/Intersection Type	Township-wide
Recommended Locations for Priority Implementation	Township-wide. Areas for sidewalk maintenance prioritized annually.

ACCESS MANAGEMENT PLAN

Tiers and Elements	Tier One: Access Management Plan
Description	Land Use and Transportation are closely intertwined, and decisions in one area always impact the other. The development patterns along major roadways in Haverford Township impact traffic patterns, continuity of sidewalks, and the number of conflict points between motorists, pedestrians, and bikers. To identify opportunities to address this relationship between land-use and transportation, we recommend conducting an access management plan focused on the commercial districts within Haverford Township. This plan would cover the following topics: • Evaluating Access Points and reducing /consolidating where possible. • Identifying opportunities to consolidate parking lots. • Implementing parking requirements for new developments. • Identifying opportunities to move entrances to parking lots/developments from arterials to collector roads. • Recommend zoning changes impacting setbacks, parking requirements, access requirements, for new developments in commercial corridors.
Road/Intersection Type	Commercial areas
Recommended Locations for Priority Implementation	Haverford Road West Chester Pike Eagle Road





CONNECTIONS TO EXISTING TRAILS

Tiers and Elements	**Tier One: Acquisition and Development of Connections to Existing Trails** **Element One:** Connections to Existing Trails **Tier Two: Using Permeable Pavements in Construction** **Element One:** Permeable Pavement (allows water to pass through reducing runoff and aiding in stormwater management)
Description	Haverford Township has several public trails that have the potential to further connect neighborhoods with key destinations in the area. Currently, there are some gaps in the trail network that can be addressed to create a more fully connected network. Based on the Right of Way (ROW) standards below, it is anticipated that existing unpaved ROW exists adjacent to many of these roads. The existing ROW should be the priority to use as trail extensions. This recommendation also includes the use of permeable pavement in these trails' development to minimize stormwater runoff. **Right of Way** • Right of way is anticipated to be wider than the paved area based on the Municipal Code Right-of-way and paving widths. • The minimum widths of the rights-of-way and the paving shall not be less than the following unless approved by the Board of Commissioners upon recommendations by the Planning Commission and Township Engineer:
Road/Intersection Type	Township-wide
Recommended Locations for Priority Implementation	Connection from Darby/Marple Intersection to Southbrook Trail

Type of Street	Minimum Right-of-Way Width (feet)	Minimum Paving Width (feet)
Residential and minor collector streets	50	27
Major collector streets	60	38
Major arterial street	80 to 100	50 to 80

LOCAL DATA COLLECTION AND ANALYSIS

Tiers and Elements

Tier One: Acquisition and Development of Connections to Existing Trails
Element One: Connections to Existing Trails

Tier Two: Using Permeable Pavements in Construction
Element One: Permeable Pavement (allows water to pass through reducing runoff and aiding in stormwater management)

Description

This recommendation covers improvements in data collection and distribution. It's aim is to collect more detail on the types of crashes happening in the Township and measure improvements as a result of the implemented projects. It is suggested that in order to gather the most comprehensive data the Haverford Police Department and Health Department should build and maintain a crash database that is formatted to quickly and accurately analyze the data. Some of the data below is already captured by the Police Department, Delaware Valley Regional Planning Commission, and/or PennDOT. Existing databases should be utilized to their full extent. Dashboard properties should include:

Crash Dashboard	Infrastructure Inventory

• Coordinates of crash.
• Number of people involved.
• People under 18 involved.
• Time of Day (AM/PM)
• Date
• Severity of the crash
• Pedestrians involved (yes/no)
• Property Damage
• Bicyclist involved.
• Scooter involved.
• Number of vehicles involved,
• Seat Belt Used by Passenger(s) (Yes/No).
• Location Type
  ◦ Signalized Intersection
  ◦ Stop Sign Intersection
  ◦ Mid-Street
	• Signage (location, relevance, retroreflective coating condition)
	• Road GIS data
	  ◦ Road Classification
	  ◦ Road Width
	• Traffic Volume by Road
	• Public Transportation (stations and routes)
	• Signage and Light Locations
	  ◦ Street and Traffic Lighting
	  ◦ Timing
	• Bicycle Routes
	• Crossing Guard Locations
	• Sidewalks
	  ◦ Sidewalk Conditions (quality)

Road/Intersection Type

Township-wide

Recommended Locations for Priority Implementation

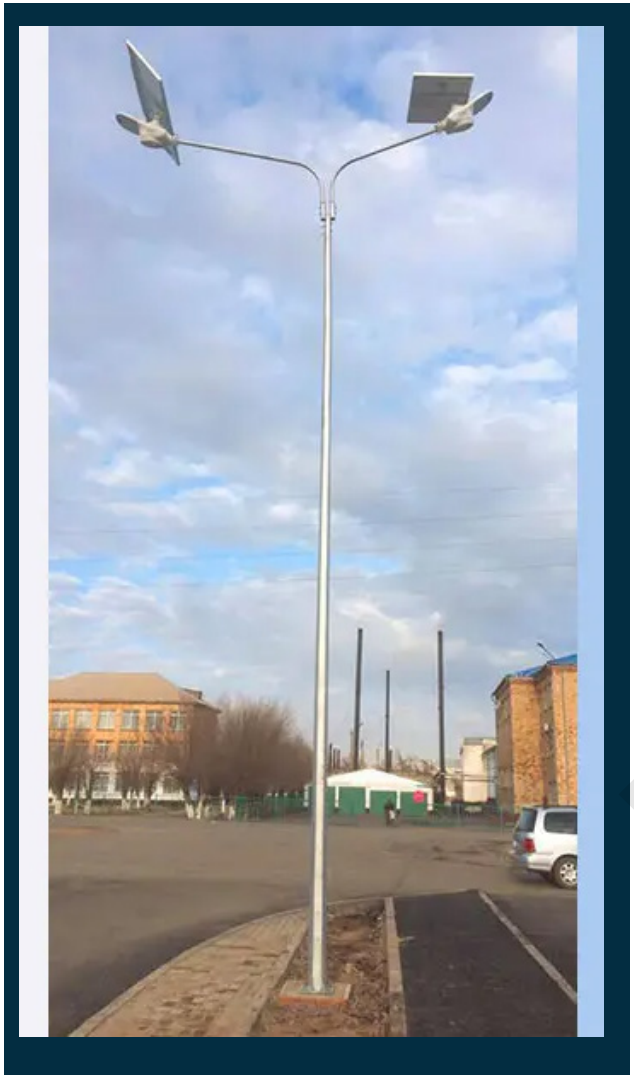
Township-wide

BIKE PATHS AND MULTI-USE PATHS

Tiers and Elements	**Tier One: Painted Sharrows (Shared Lane Markings)** **Element One:** Paint **Element Two:** Signage **Tier Two: On-Road Multi-Use Paths** **Element One:** Dividers (e.g. Zipper Modular Traffic Segregator) **Element Two:** Bollards **Tier Three: Protected Bike Path (protected by parallel parking)**
Description	The historic development of Haverford Township has led to many narrow roadways, limiting the available space for separated bicycle infrastructure. This recommendation provides several options for bicycle facilities based on the dimensions and traffic volume of the roadway.
Road/Intersection Type	Collector and arterial roads
Recommended Locations for Priority Implementation	Multi-Use Paths: Buck Lane Protected Bike Lane: Sections of Darby Road

SLOW ZONES

Tiers and Elements	**Tier One: Speed Reductions and Visual Indicators** **Element One:** Reduce Posted Speed Limits Element Two: Pavement Markings Indicating Slow Zone **Element Three:** Bicycle Sharrows **Tier Two: Physical Traffic Calming** **Element One:** Painted Chicanes
Description	Designated slow zones in the Township allow for local roads to be low-stress paths for pedestrians and bicyclists even when space is limited for fully separated infrastructure. Areas of the Township that are already popular among pedestrians are good candidates for slow zones, where the design elements indicate to motorists that this is a multi-modal route. Elements include pavement markings indicating slow zones or reduced speed limits, shared path markings like bicycle sharrows, and chicanes.
Road/Intersection Type	Local roads connected to key destinations.
Recommended Locations for Priority Implementation	Karakung Drive Brookline Road Commercial Corridor



LIGHTING ENHANCEMENTS

Tiers and Elements	**Tier One: Street and Trail Lighting** **Element One:** Streetlamps
Description	To provide walkable conditions during all times and weather conditions, we recommend lighting enhancements within the Township. This aims to improve usability of trails and connective roadways for pedestrians and awareness of pedestrian paths for oncoming motorists. To mitigate light pollution, LED lights with downward-directed light paths are recommended.
Road/Intersection Type	Non-residential paths along sidewalks and bike routes
Recommended Locations for Priority Implementation	Steel Road Township Trails

PERFORMANCE METRICS

The Performance and Evaluation Metrics allow the Township to continue a data-informed approach to this work by fully utilizing existing data sources, measuring impact of infrastructure and policy interventions, and presenting data publicly to provide transparency around decision-making. We recommend continued coordination with Delaware County, DVRPC, and PennDOT to identify additional opportunities for collaboration, especially with data collection and analysis. The County, DVRPC, and PennDOT are some of the best resources for traffic data in the region.

CRASH DATA DASHBOARD

The Township should build and display a publicly accessible crash dashboard on the Haverford Township website. This dashboard will provide a transparent data platform to measure some of the impacts of road safety interventions and give public visibility to priority areas in the Township.

By layering PennDOT data with Haverford Police Department data, this dashboard will provide a detailed look at the crashes occurring in Haverford Township and some of the contributing factors to those crashes. This would include a slight change in methodology to the Police Department's current crash data collection process. This data collection could be conducted during the police department's normal crash response protocol. The dashboard could be maintained by the Township Engineer. CHPlanning also recommends that this dashboard include an equity layer to allow for a clear understanding of where the most vulnerable residents are. After reviewing Haverford Township demographics, we have identified the vulnerable populations that have regionally significant concentrations in some of the Township census tracts.

Data	Source
Continuous miles of off-road trails	Delaware County Planning Department. Delaware County Existing Trails
Sidewalks, shapefile	DVRPC. Township to add proposed, in construction, and completed (until DVRPC updates their data)
Sidewalks protected/ non-protected	DVRPC, Township to add proposed, in construction, and completed (until DVRPC updates their data)
Sidewalk, maintenance responsibility	Adjacent plot lines
Crosswalks, type (ladder, raised, signalized)	Delaware County Planning Department
Traffic lights	OpenStreetMap
Dollars spent on safety projects	Haverford Township

PROJECT DASHBOARD

One of the goals of the Haverford Qualified Safety Action Plan is to provide a comprehensive and consistent strategy addressing road safety in the Township. The foundation of this work is to gather a baseline inventory of existing infrastructure in the Township. Much of this data already exists – sidewalks, crosswalks, and trails – and simply needs to be input into a dashboard. The signage and traffic signal data may need to be collected in the field and geolocated.

This infrastructure dashboard would track ongoing and completed infrastructure projects across the Township. The dashboard would tag the progress of each project: planned, in progress, completed; value of each project; geolocate each project. By providing this dashboard, grantors, the public, local, state and federal legislators, and other community stakeholders can track progress and get clarity on the systemic approach the Township is taking. It is recommended that the maintenance of this data falls under the responsibility of the Township Engineer.

PROJECT-BASED DATA COLLECTION

For each engineering project, there should be a data collection process to measure the safety and traffic flow impacts of the project. Data would be collected before the implementation of the project to set a baseline. Afterwards, that same data collection process would occur to show the impact on safety, driver behavior, and counts of pedestrians and bikers.

Since this data collection would occur for every new infrastructure project, it is recommended that the collection and memo be built into the scope for the project engineer. For consistency, it is recommended that the Township provide a data collection and memo template to be used across projects. The following data would require manual data collection process conducted by the project team – time of day, day of the week, weather conditions, location of observation must all stay consistent for reliable before and after the intervention. This data would not have to be presented publicly, but rather would support grant reporting and future Township decision making.

Data	Source
Continuous miles of off-road trails	Delaware County Planning Department. Delaware County Existing Trails
Sidewalks, shapefile	DVRPC. Township to add proposed, in construction, and completed (until DVRPC updates their data)
Sidewalks protected/ non-protected	DVRPC, Township to add proposed, in construction, and completed (until DVRPC updates their data)
Sidewalk, maintenance responsibility	Adjacent plot lines
Crosswalks, type (ladder, raised, signalized)	Delaware County Planning Department
Traffic lights	OpenStreetMap
Dollars spent on safety projects	Haverford Township
Count of walkers	Manual Collection
Count of bikes	Manual Collection
Crosswalk waiting time (count of cars that pass without stopping for a pedestrian)	Manual Collection
Vehicle speeds	Haverford Police Department (radar)

CONCLUSION

The Haverford Township Safety Action Plan utilizes the guiding principles of USDOT's Safe Systems approach and adopts a comprehensive, data-driven method to enhance road safety for all residents. By integrating community input, leveraging best practices, and focusing on high-risk areas, the plan aims to significantly reduce traffic-related injuries and fatalities in the Township. Key components of the plan include targeted infrastructure improvements on priority road segments, educational campaigns, and policy changes designed to foster a safer environment for pedestrians, cyclists, and motorists alike.

Through sustained community engagement and transparent communication, Haverford Township is committed to continuously refining and implementing effective safety measures. The collaborative efforts between residents, local authorities, and stakeholders will ensure the successful realization of the plan's objectives. By developing an action plan that prioritizes safety and accessibility, Haverford Township is taking a vital step towards creating a safer, more connected community for everyone

Haverford Township

County of Delaware, PA