

Mount Holly Township: Bicycle & Pedestrian Road Safety Audit



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Prepared by:

Cross County Connection

Transportation Management Association

September 2024



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ABOUT CROSS COUNTY CONNECTION TMA

Cross County Connection is the designated Transportation Management Association (TMA) for the seven-county southern New Jersey region: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, and Salem. Cross County Connection addresses the region's mobility needs by fostering the implementation and use of sustainable transportation modes.

Cross County Connection, a non-profit organization, was formally incorporated in 1989 through the efforts of a group of southern New Jersey business leaders, local governments, and state agencies to address traffic congestion and improve air quality in the region.

Cross County Connection's programs and services encourage and facilitate the safe use of public transit, shuttle services, carpooling, vanpooling, bicycling and walking for all. Additional services include public transit travel training, bicycling and walking safety programs, assistance with electric vehicle charging infrastructure and fleets, bicycle and pedestrian infrastructure planning, grant assistance and more. Services are provided to county and local governments, the business community, federal, state and regional transportation agencies, schools, social service organizations and the general public.

Mission Statement

Creating equitable, safe, and environmentally sustainable transportation options in South Jersey.

Vision Statement

To be the trusted resource empowering the South Jersey region to:

- Reduce pedestrian & bicyclist crashes in all communities
 - Improve air quality and reduce traffic congestion through the increased use of commute alternatives
 - Create a culture that embraces safe public transit, walking and biking as an everyday means of transportation for all
-

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1 Introduction

The focus of this bicycle and pedestrian Road Safety Audit (RSA) summary report is an approximate 0.3 square-mile section in the northwest corner of Mount Holly Township, adjacent to its historic downtown. The audit area, shown in Map 1, starts in the northeast at Rancocas Valley Regional High School and ends to the southwest at the intersection of Garden Street and Cherry Street. The audit area is bound by Hedding-Jacksonville Road, Clover Street, Cherry Street, Ridgway Street and Garden Street. Streets within these boundaries are Broad Street, Mount Holly Avenue, Union Street and Risdon Street. The audit area is close to the historic downtown district of Mount Holly, a popular destination for shopping and dining. The RSA was conducted on June 6th, 2024.

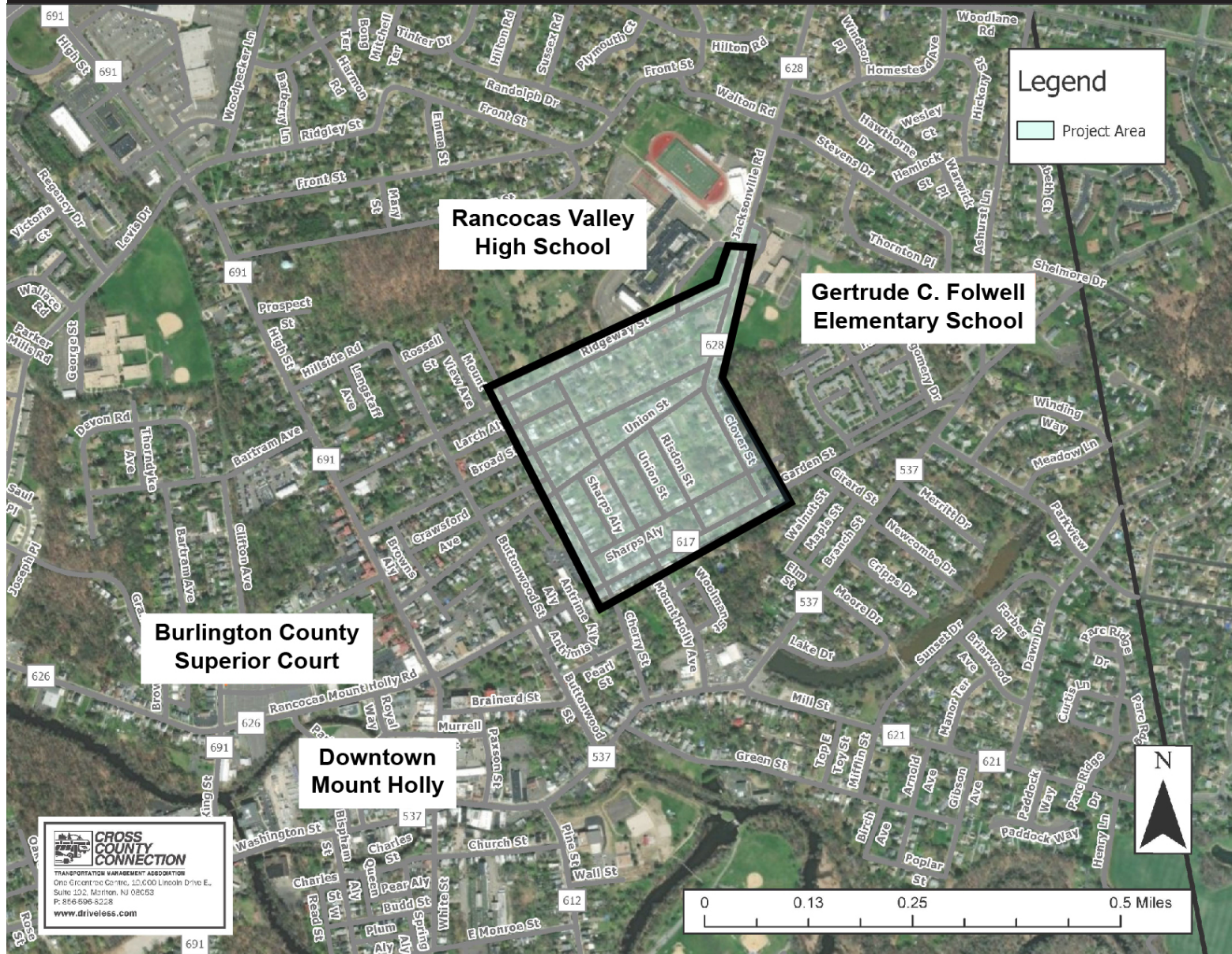


The goal of this report is to identify both short- and long-term improvements and strategies to increase safety for bicyclists and pedestrians on the streets evaluated. The RSA is part of a larger regional Cross County Connection safety project funded through a grant from the New Jersey Department of Highway Traffic Safety (NJDOTS). The NJDOTS grant supported two RSAs in disadvantaged communities, with one in a Burlington County municipality and one in a Camden County municipality (Haddon Township).

To identify potential audit locations, regional crash data was analyzed to identify areas with a high concentration of bicycle and pedestrian crashes within or adjacent to environmental justice (EJ) communities, as identified by the New Jersey Department of Environmental Protection (NJDEP). These are disadvantaged communities that, historically, have disproportionately suffered negative impacts to health, safety, and quality of life, all resulting from transportation and other environmental factors. These impacts include limited mobility, poor air quality, and higher rates of bicycle and pedestrian crashes resulting in serious injury or death.

Final candidate locations were selected in consultation with the respective county planning and engineering departments. Out of ten locations identified, Mount Holly Township was selected as the preferred first option for the Burlington County portion of RSA project.

Map 1 - Bicycle & Pedestrian Audit Area



The initial RSA location suggested was downtown Mount Holly, where there was a high concentration of bicycle and pedestrian crashes. Substantial effort has already been directed to address bicyclist and pedestrian safety downtown, including township-secured grants to fund improvements in this area. Based on consultation with the Mount Holly Mayor, municipal engineer, township manager, and police chief, it was decided to adjust the focus area of the project to an area that has not received as much attention. The community has cited pedestrian safety as an issue on Garden Street and in the area around two local schools, Gertrude C. Folwell Elementary and Rancocas Valley Regional High School. While the concentration of bicycle and pedestrian crashes is not as high as in the downtown, there have been crashes involving pedestrians. The project area has long witnessed unsafe motorist behavior paired with a high volume of foot traffic from the local schools. Mount Holly Township and Burlington County are taking a proactive approach to address these issues before more crashes occur.

Representatives from Cross County Connection, Mount Holly Township, Burlington County, Rancocas Valley Regional High School, and the Mount Holly Police Department participated in the RSA process. This process began with initial meetings with township and county officials to determine the focus area. All participants from this process are listed below in Table 1.

Table 1: Road Safety Audit Working Group					
Name	Title	Organization	Contact	Present At Initial Meeting	Present At Audit
Patrick Farley	Program Director	Cross County Connection TMA	farley@driveless.com	Yes	No
Henry Gottschall	GIS Specialist	Cross County Connection TMA	gottschall@driveless.com	Yes	Yes
Kristen McLaughlin	Sustainable Transportation Planner	Cross County Connection TMA	mclaughlin@driveless.com	No	Yes
Joseph Conte	Planning Intern	Cross County Connection TMA	conte@driveless.com	No	Yes
Chris Banks	Mayor	Mount Holly Township	cbanks@twp.mountholly.nj.us	Yes	No
Josh Brown	Township Manager	Mount Holly Township	jbrown@twp.mountholly.nj.us	Yes	No
Tom Stanuikynas	Supervising Planner	Burlington County	tstanuikynas@co.burlington.nj.us	Yes	Yes
Rick Alaimo	Municipal Engineer	Alaimo Engineering Group	ralaimo@alaimogroup.com	Yes	Yes
William Fields	Coordinator of School Safety	Rancocas Valley Regional High School	wfields@rvrhs.com	No	Yes
Richard Spitler	Police Chief	Mount Holly Police	rspitler@twp.mountholly.nj.us	Yes	No
Cliff Spencer	Police Captain	Mount Holly Police	cspencer@twp.mountholly.nj.us	No	Yes

This report summarizes Cross County Connection’s audit process, its findings, and recommendations to address identified issues. The purpose is to assist Mount Holly Township with addressing their bicyclist and pedestrian safety concerns and facilitate conversations with NJDOT, NJDHTS, Burlington County, and other state and regional partners who share in their goal to improve pedestrian safety and prevent fatalities and serious injuries. This report is a tool to assist Mount Holly Township improve safety along this travel corridor for all road users.

2 Demographic Analysis

An Environmental Justice (EJ) analysis was completed using demographic data obtained through the U.S. Census Bureau's 2022 American Community Survey Five-Year Estimates. The EJ analysis is done as part of an RSA to ensure it is used to provide all communities with safe and accessible streets and ensure local government decision making processes are equitable.

Census data was analyzed for the entirety of Mount Holly Township. The community uses corridors within the project area as pedestrian and bicycle access routes to Folwell Elementary and Rancocas Valley Regional High School, and Garden Street serves as a major access route to downtown Mount Holly.

New Jersey's Environmental Justice Law defines EJ communities as census block groups where any of the following criteria are met: (1) at least 35 percent of individuals live in households that qualify as low-income, defined as at or below two-times the poverty threshold; (2) at least 40 percent of the residents identify as minority or as members of a State recognized tribal community; or (3) at least 40 percent of the households have limited English proficiency. The NJDEP designates these locations as Overburdened Communities (OBCs).

Mount Holly Township qualifies as an OBC because 42% of its residents identify as a minority, surpassing NJDEP's 40% threshold. The Township falls below the low-income population threshold (14.74%) and the limited English proficiency household threshold (2.6%).

Two other categories that are important when determining the presence of communities that should be the focus of EJ efforts are Household Vehicle Access and Disabled Population. Mount Holly has a disabled population of 15.77%, which is a considerable amount of people who require accommodations for equitable roadway access. For perspective, this is slightly higher than the percentage of the disabled population for



all of Burlington County (12.7%). An estimated 11% of Mount Holly's households do not have access to a motor vehicle. This equates to 402 households. When compared to all Burlington County municipalities, this is the fifth highest rate of zero-car households. These Mount Holly residents must walk, bike or use public transportation, making them especially vulnerable when navigating unsafe roadways.

3 Crash Data Analysis

To help determine which areas have bicycle and pedestrian travel safety concerns, recent crash histories were evaluated to identify problem areas. Two analyses were done, one focusing only on pedestrian and bicycle crashes and a second evaluating all crash types. Crash histories within the project area were compared to the entire municipality.



Bicycle and Pedestrian Crashes

For all of Mount Holly Township, from 2017 until November 2023, there were 43 pedestrian crashes in Mount Holly and seven bicycle crashes.¹ Out of the 43 pedestrian crashes, 23% resulted in death or serious injury. Five pedestrians were killed and another five suffered serious injuries. Four out of the seven bicycle crashes resulted in minor injuries, and one resulted in a possible injury. The remaining two bicycle crashes did not result in an injury to the bicyclist.

Table 2: Bicycle & Pedestrian Crash Data

Crash Severity	Pedestrian Crashes	Bicycle Crashes	Total Crashes	Share of Total Crashes
No Injury	9	2	11	22%
Possible Injury	11	1	12	24%
Suspected Minor Injury	13	4	17	34%
Suspected Serious Injury	5	0	5	10%
Fatal Injury	5	0	5	10%
Total	43	7	50	

¹ NJDOT Safety Voyager Tool (2022-2023 crash data was being processed and uploaded at time of analysis and may be incomplete)

In the project area, there have been two pedestrian crashes and no bicycle crashes during this time period, as shown in Map 2. The pedestrian crashes resulted in a possible injury and a serious injury. Despite the low crash count in the project area, Mount Holly Township officials and police chose this location due to frequently observed dangerous motorist behavior and high volumes of pedestrian traffic due to the proximity to the high school and elementary school. The project area also is a thoroughfare to access downtown Mount Holly as well as the Burlington County Superior Court and Sheriff's Office. Although there is not a high frequency of crashes in the project area, there have been close calls and persistent dangerous motorist behavior to warrant intervention to prevent a fatal crash from ever occurring.

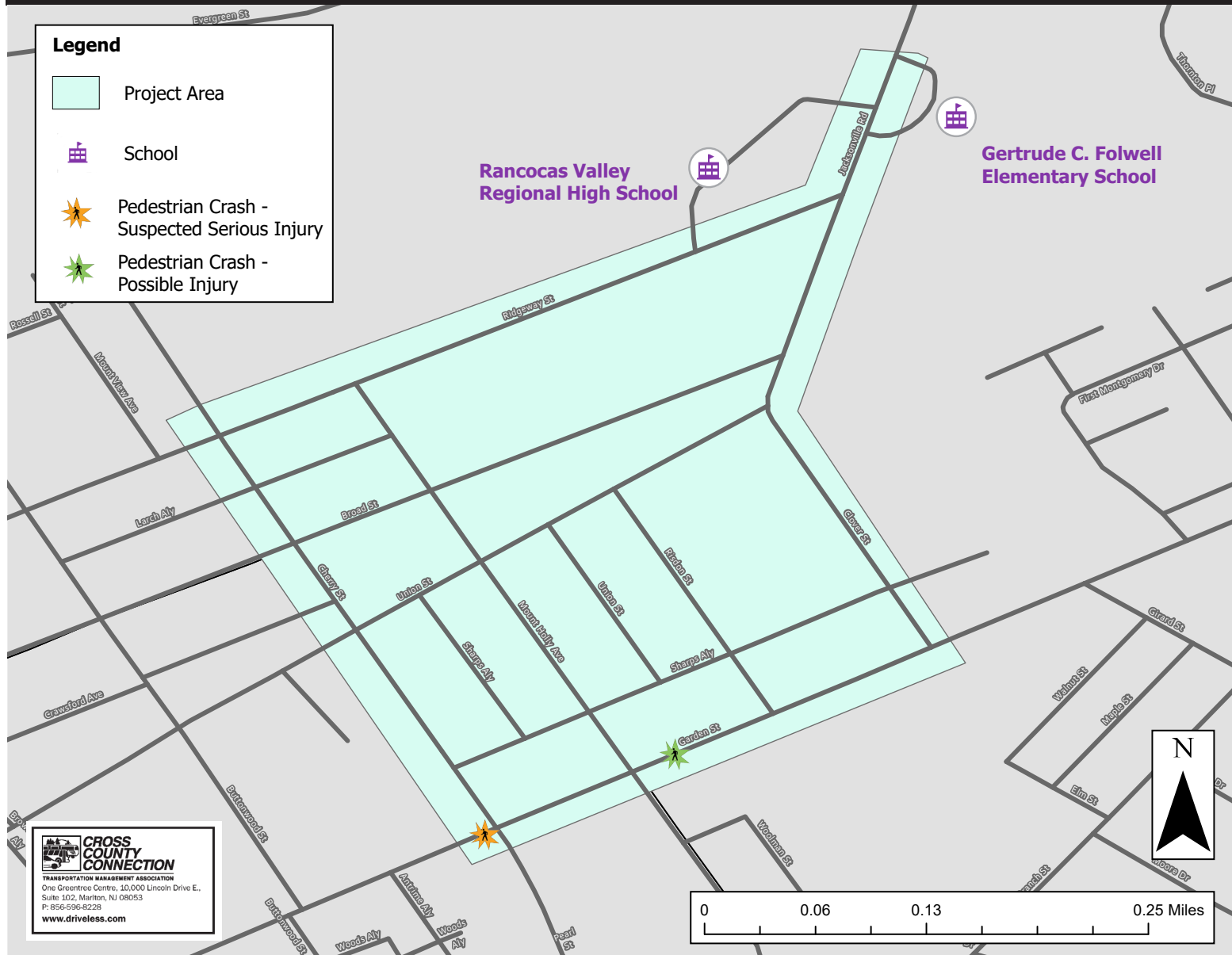
All Crash Types

Since there are concerns with motorist behaviors, all vehicle crashes were analyzed from the same time-frame. Motorists were observed traveling at high speeds and ignoring pedestrians and traffic signs. Analyzing vehicle crashes allows for a deeper understanding of how all roadway users interact in the project area. High rates of vehicle crashes demonstrate safety issues on the roadway that impact pedestrian and bicyclist safety. There have been 143 crashes from 2017 to November 2023 (2022 and 2023 may be incomplete). The intersections with the highest frequency of crashes (shown in Map 3) are as follows:

- Mount Holly Avenue and Garden Street: 41 crashes
- Clover Street and Garden Street: 8 crashes
- Mount Holly Avenue and Broad Street: 8 crashes
- Ridgway Street and Hedding-Jacksonville Road: 8 crashes
- Union Street and Mount Holly Avenue: 4 crashes
- Broad Street and Hedding-Jacksonville Road: 4 crashes
- Union Street and Cherry Street: 4 crashes
- Crawford Avenue and Cherry Street: 4 crashes

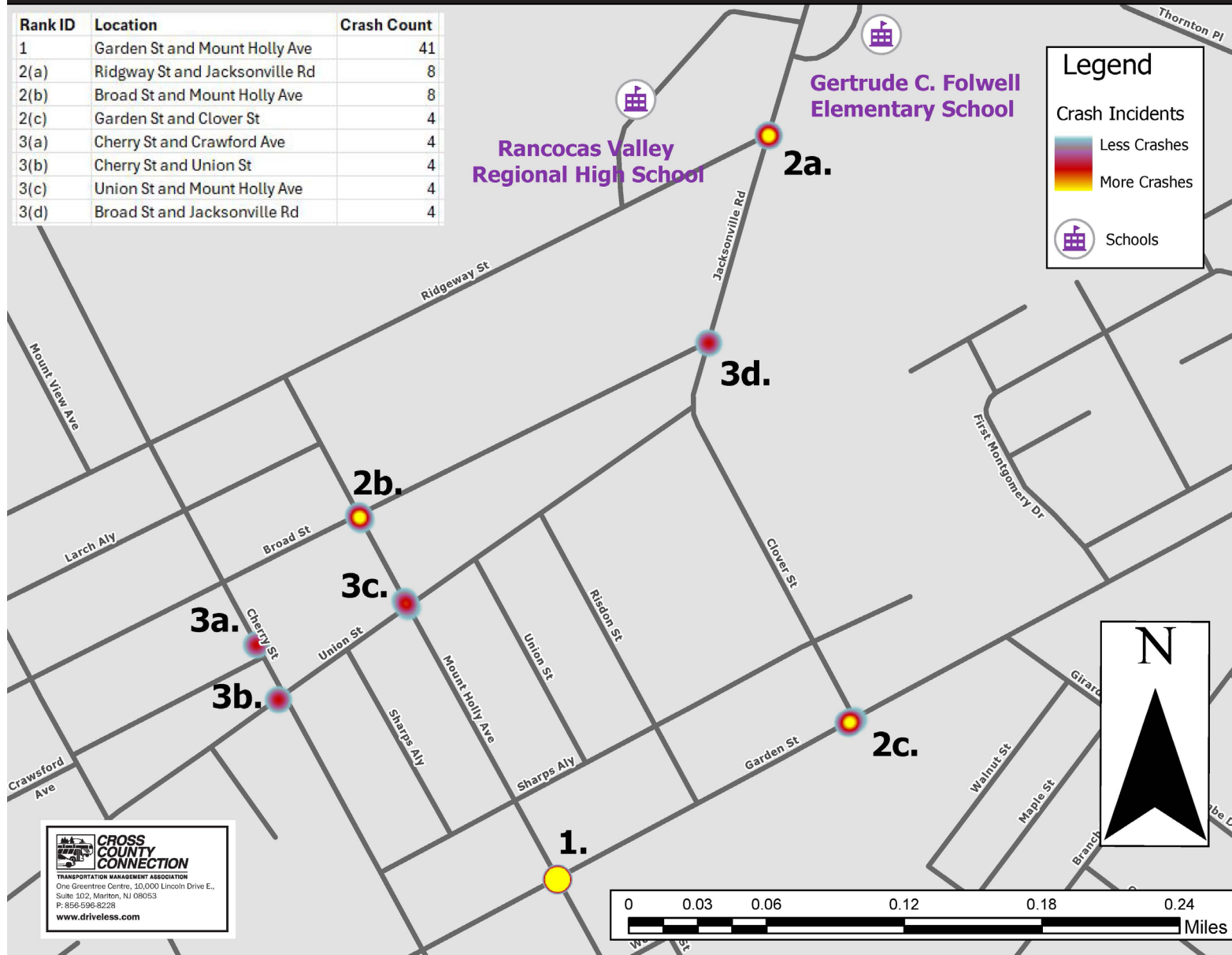
The intersection of Mount Holly Avenue and Garden Street stands out as one with significant safety issues, as 28% (41/143) of crashes in the project area took place here, with 80% of those being right angle crashes. Mount Holly Police Officers reported that these crashes are often the result of speeding on Garden Street and motorists colliding while crossing through the intersection to continue along Mount Holly Avenue. The intersection is one of the most dangerous in Mount Holly, recording the fourth highest number of crashes in the township. In accordance with the goal to reduce pedestrian traffic injuries and fatalities, preventative measures are recommended to address safety issues for all modes of transportation in the project area. The high frequency of crashes at the intersection of Mount Holly Avenue and Garden Street demonstrates a threat to the safety of all road users traveling through the area, going to and from school, accessing Mount Holly's downtown or enjoying the historic character of the neighborhood.

Map 2 - Pedestrian Crashes



Map 3 - Vehicle Crash Hotspots

Rank ID	Location	Crash Count
1	Garden St and Mount Holly Ave	41
2(a)	Ridgeway St and Jacksonville Rd	8
2(b)	Broad St and Mount Holly Ave	8
2(c)	Garden St and Clover St	4
3(a)	Cherry St and Crawford Ave	4
3(b)	Cherry St and Union St	4
3(c)	Union St and Mount Holly Ave	4
3(d)	Broad St and Jacksonville Rd	4



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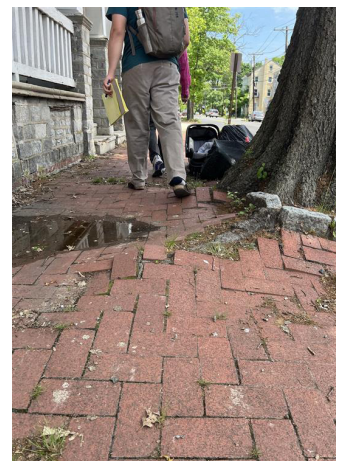
4 Road Safety Audit

The following is a documentation of issues identified during the Mount Holly Bicycle and Pedestrian Road Safety Audit (RSA). An RSA is an interactive assessment of the safety and mobility of all, with emphasis placed on the needs of those most vulnerable road users – pedestrians, bicyclists, and persons with disabilities. It uses a multi-disciplinary team to offer varying perspectives and experiences. This can include engineers, transportation planners, police, bicycle and pedestrian advocates, and community members. The RSA team considers infrastructure, traffic, and environmental & human factors during their evaluation.

The RSA findings are detailed in the categories below.

Sidewalk Conditions

Continuous and level sidewalks, free of obstruction, provide a safe and welcoming environment for pedestrians. While there are abundant sidewalks in the audit area, there was one section missing at the intersection of Clover Street and Garden Street. Many of the existing sidewalks are also cracked and uneven. This is especially prevalent on Garden Street. In many areas this is due to overgrown tree roots growing under and into the sidewalk. Other types of overgrown vegetation, including grass and shrubbery, narrow



the available walking area and become tripping hazards.

Other sidewalk obstructions found include signs, trash cans, wires, and a fire hydrant. These objects should be removed or relocated, and residents should be encouraged to keep sidewalks clear of any objects or debris. All sidewalks should comply with American Disability Association (ADA) standards which specify a minimum 5-foot clear path width for sidewalks to accommodate two wheelchairs passing each other. This width provides an accessible, safe, and comfortable environment for pedestrians to walk side-by-side, pass each other, and for families to walk with strollers.² Any crossings with sidewalk areas should be checked for ADA compliance and updated if needed, including curb ramps, detectable warning surfaces, and adequate landing areas.



Pedestrian Crossings

Crosswalks in Mount Holly are abundant, and many are painted with the preferred continental or ladder striping. There were a few locations where issues were observed. Garden Street is straight with no forms of stop control (signs or traffic signals) at any of its intersections for a 3,600-foot stretch between High Street and Branch Street. These are conditions that often lead to speeding, higher frequency of crashes, and difficulty for any road user – pedestrian, bicyclist, or driver – to cross the street safely. Intersections along Garden Street were found to be crash hotspots in the audit area.

Outdated Crosswalks

Some crosswalks are not painted with the recommended continental or ladder striping. High visibility continental or ladder crosswalk markings are preferred to standard parallel pavement markings. They are more visible to approaching vehicles and have been shown to improve vehicle yielding behaviors.³ Many of these crosswalks are fading, further reducing their visibility and safety for pedestrians. The following crosswalks currently are painted with faded or standard striping:

- Mount Holly Avenue & Broad Street
- Mount Holly Avenue & Union Street
- Garden Street & Buttonwood Street
- Garden Street & Cherry Street
- Clover Street & Union Street



² New Jersey Complete Streets Design Guide

³ NACTO Urban Design Guide

Unmarked Crosswalks

Unmarked crosswalks are also prevalent throughout the audit area on residential roads. Without a marked crossing, there is nothing bringing visibility to pedestrians and alerting motorists that they must stop for pedestrians, even if the intersection has no formal traffic control. This becomes a major safety issue for pedestrians, who have the right-of-way at any marked or unmarked crosswalk.

A wide, unmarked crosswalk exists on Broad Street at the intersection of Hedding-Jacksonville Road. This is an area where many students are walking. The intersection is wider than the other in the study area, making pedestrians more vulnerable to vehicle traffic. Another factor that makes this area difficult for pedestrians to navigate is its alignment. It is located along a sharp curve where Clover Street transitions into Hedding-Jacksonville Road. Speeding is an issue in this location. The curve can impede the visibility of pedestrians, giving a driver less time to react when someone is crossing the street. Care should be made to both slow drivers approaching and negotiating the turn, while indicating clearly the preferred area for pedestrians to cross.

Near Rancocas Valley High School, students were observed crossing Ridgway Street well outside the marked crosswalk near a dental office. This appears to be a straighter, and therefore, preferred path for students walking to destinations south or west of the school grounds using Hedding-Jacksonville Road and Clover Street.



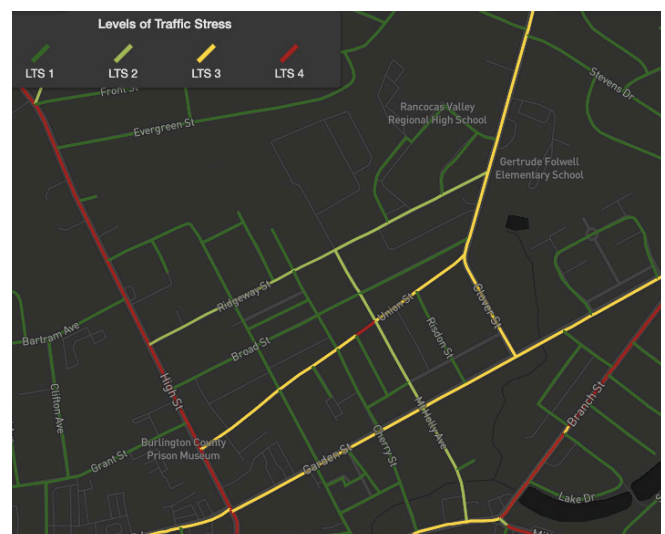
The intersection of Ridgway Street and Mount Holly Avenue has unmarked crosswalks. This intersection sees increased pedestrian traffic from students traveling to and from school. Marking the crosswalks at this intersection would increase student and pedestrian safety.

Other unmarked crosswalks exist throughout the audit area on residential streets. The locations with unmarked crosswalks also do not have stop lines (also known as stop bars) painted at the approaches to stop signs. This creates hazardous conditions for all road users and should have stop lines and continental or ladder crosswalks painted to create a safe and complete pedestrian network.

Lack of Accommodations for Bicyclists

While Mount Holly has a well-connected pedestrian network, it lacks bicycle facilities. Within the audit area, there are no bicycle lanes, bicycle routes, trails, or other space identified for the use of bicyclists. Currently, bicyclists must either ride in the shoulder or vehicle travel lanes, and without proper signage and warnings for motorists, bicyclists are at an increased risk when sharing the road. However, there are areas that have the width or other characteristics supportive of these facilities, such as Hedding-Jacksonville Road.

The NJDOT is promoting the “Star Bicycle Factory



Loop” in Burlington County,⁴ which consists of recommended roads and trails for bicyclists to use to travel from Lumberton to Burlington City, passing through Mount Holly. This route utilizes Garden Street, Clover Street, and Hedding-Jacksonville Road, all of which currently have no on-road or off-road bicycle facilities. Each of these roads have a Bicycle Level of Traffic Stress (LTS) score of three out of four.⁵ This means that only experienced and confident cyclists would feel comfortable riding on these roads in their current conditions. It is especially important to accommodate bicyclists on these roads to ensure a safe and comfortable biking experience along this bike route.

Frequent Crashes at Intersections

Along Mount Holly Avenue, there are a considerable number of two-way stop intersections. Analysis of crash data shows that these locations are hotspots for motor vehicle crashes. Frequent crashes and speeding at intersections not only pose a safety threat for motorists, but also for pedestrians at the same intersections who are at an increased risk of death or serious injury resulting from a crash.

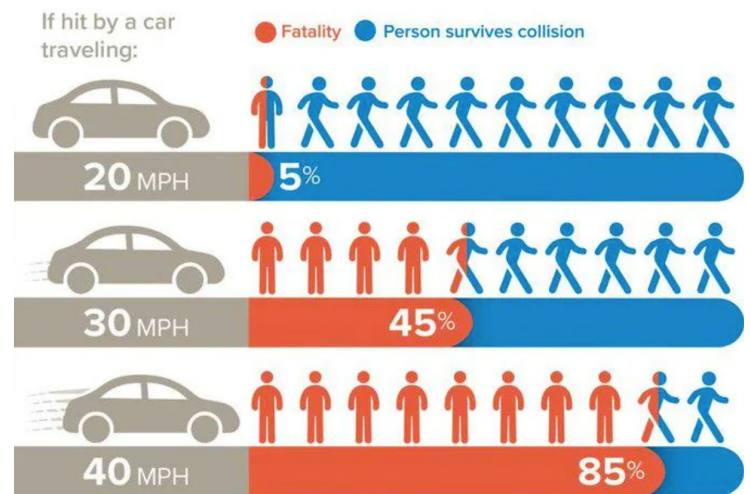
The intersection of Garden Street and Mount Holly Avenue experiences the highest frequency of crashes, reportedly caused by speeding. This intersection would benefit from some form of stop control, which could be either a four-way stop or a signalized intersection, based on a further engineering study. Four-way stops may be appropriate at other intersections along Mount Holly Avenue, as well.

Speeding & Ineffective Traffic Calming

High vehicle speeds are concerning throughout the audit area, but were most often observed on Garden Street, Clover Street, and Hedding-Jacksonville Road. Drivers also do not stop for pedestrians when they are using marked crosswalks. The combination of these behaviors can lead to deadly pedestrian crashes. There are many students, from Rancocas Valley High School and Folwell Elementary School, who use these streets to walk to and from school. Prioritizing measures that will slow vehicle speeds is abundantly important as it correlates with the resulting injury of a crash involving a pedestrian.⁶

Police enforcement of traffic conditions is one way to encourage safer behaviors from motorists, however constant enforcement is not a sustainable practice for any municipality. Periodic enforcement during peak travel hours can improve motorist behaviors at these times, but more permanent traffic calming measures can create consistently safer conditions for all road users at any time of day.

Traffic calming is infrastructure designed to reduce automobile speeds or volumes. The physical measures improve the quality of life



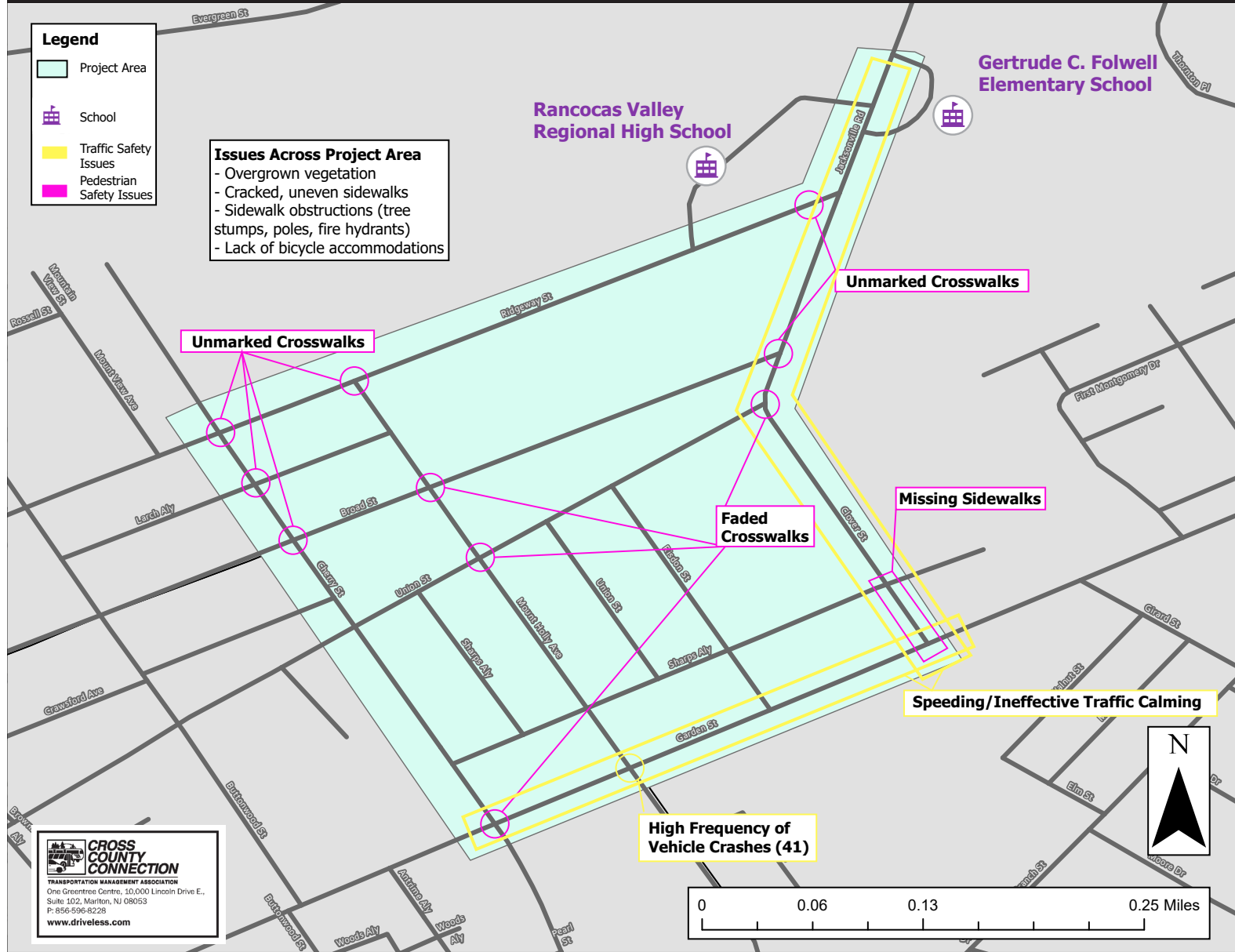
National Traffic Safety Board (2017) Reducing Speeding-Related Crashes Involving Passenger Vehicles. Available from: <https://www.nts.gov/safety/safety-studies/Documents/SS1701.pdf>

4 Burlington County Bikeways: A Tour Guide for Cyclists (NJDOT)
5 DVRPC Bicycle Level of Traffic Stress (LTS) & Connectivity Analysis
6 Vision Zero Network

and increase the safety and comfort of walking and biking.⁷ The only current form of traffic calming along the audit route is a few speed humps. Often with speed humps, it is found that drivers only slow down at the point of contact and proceed to continue speeding directly after. Noise is also a common complaint from those who live or work near them, which has been the case with speed humps along Clover Street. Due to these complaints, the speed humps are being removed, with no plan for another form of traffic calming to replace them. This leaves an opportunity for Mount Holly to test and implement other forms of traffic calming. Removing the speed humps will only address the noise issue but will allow speeding to continue.

7 Federal Highway Administration (FHWA)

Map 4 - Bicyclist & Pedestrian Safety Issues Identified



5 Infrastructure Recommendations

Through consultation with audit participants, potential infrastructure solutions are recommended for further study. Recommendations are suggested based on a review of state and federal engineering and planning resources and guides. There are countermeasures shown to improve pedestrian and bicyclist safety and accessibility where similar issues have been present. Cross County Connection recommends consulting with a licensed engineer to review the outlined recommendations and conduct necessary feasibility and design studies before progressing to project implementation.

All recommendations are shown in Map 5 at the end of this section.

Sources used include the Federal Highway Administration's (FHWA) Manual of Traffic Control Devices (2023) and Proven Safety Countermeasures initiative (PSCi), the American Association of State Highway Transportation Officials' (AASHTO) Guide for the Development of Bicycle Facilities (2012), the National Association of City Transportation Officials' (NACTO) Urban Street Design Guide and Urban Bikeway Design Guide and the NJDOT Complete Streets Design Guide.

Pedestrian Safety Recommendations

Construct Missing Sidewalks

Location: Clover Street and Garden Street Intersection

Mount Holly has adequate sidewalk connectivity throughout the audit area. Only one small portion of sidewalk is missing on Clover Street, where it intersects with Garden Street. To ensure a fully connected sidewalk network, this portion of sidewalk should be paved.

Repair Uneven/Cracked Sidewalks

Location: Throughout Audit Area

While sidewalk connectivity is adequate, there are many areas of those sidewalks that are in disrepair. This

includes uneven and cracked sidewalks which become a hazard, especially for young students and persons with disabilities. Many of these uneven sidewalks are the result of overgrown tree roots which have displaced the brick or concrete sidewalk. These areas should be repaved, or the brick relaid, to result in an even and smooth walking surface, free of tripping hazards.

Since Mount Holly is a historical community, maintaining the character of the town is important. Brick sidewalks add to this character and while they may be costly to replace, the aesthetic benefits can encourage more pedestrian activity. If it is deemed too high a cost to repave the sidewalks with their original brick, concrete made to look like brick can be used in its place. This is a cost-effective alternative to placing new brick as opposed to simply pouring traditional concrete, resulting in lost historical character.



ADA Compliance

Location: Throughout Audit Area

All pedestrian facilities, including sidewalks and crosswalks, should be updated to adequately accommodate persons with disabilities. This includes sidewalks that are at least five feet wide, with a minimum of four feet in clearance from any obstruction. All curb ramps must be equipped with detectable warning surfaces and adequate landings, with excessive slopes that would be difficult for a disabled person to navigate. All signs within the sidewalk area must have a minimum of seven feet of clearance from the bottom of the sign to the sidewalk.

Remove Overgrown Vegetation/Obstructions

Location: Throughout Audit Area

Providing clear, even walkways is necessary for pedestrian safety. Without a safe place to walk, pedestrians may be forced to walk in the road and in the path of vehicles. This can be avoided by maintaining the sidewalks and the vegetation surrounding them. Depending on the right-of-way, either the county or township could periodically have staff check on the conditions and clear any vegetation that is impeding the walkway. If necessary, the county or township can remind property owners of the importance of sidewalk maintenance and use code enforcement if residents do not make an effort to address vegetation and landscaping issues.

Rectangular Rapid Flashing Beacons (RRFB)

Location: Clover Street and Garden Street Intersection

RRFBs provide extra safety for pedestrians crossing the street by alerting motorists with flashing lights, indicating when a pedestrian is trying to cross. These are used at the legs of intersections with no stop control. An RRFB should be considered at the intersection of Clover Street and Garden Street, for pedestrians

crossing Garden Street. Speeding and distracted driving are reported issues here. An RRFB would create better visibility for crossing pedestrians and improve the rate of drivers stopping for them, as they are required to per state law. According to the FHWA, RRFBs can reduce pedestrian crashes by 47%.⁸

An RRFB can also be used as a second option at intersections where either a four-way stop or a traffic signal are recommended in this study, if those options are ruled out.



Paint/Repaint Crosswalks with Ladder or Continental Striping

Location: Throughout

The recommended paint for all crosswalks is high-visibility striping in the “continental” or “ladder” patterns. This ensures that motorists will see the crossings and be aware of any pedestrians trying to cross the road. Any crosswalks in the audit area that are faded or simply not painted should be painted using the continental pattern.

Intersections with crosswalks that currently have faded, standard striping include:

1. Mount Holly Avenue and Broad Street⁹
2. Mount Holly Avenue and Union Street⁹
3. Garden Street and Buttonwood Street
4. Garden Street and Cherry Street¹⁰
5. Clover Street and Union Street

- High Visibility (Preferred)
- Less Visible



Intersections that are missing crosswalks include:

1. Ridgway Street and Mount Holly Avenue
(Mount Holly Avenue crossing)
2. Ridgway Street and Cherry Street
3. Broad Street and Hedding-Jacksonville Road⁹
(Broad Street crossing)
4. Broad Street and Cherry Street
5. Union Street and Cherry Street⁹
6. Union Street and Buttonwood Street



8 FHWA Rectangular Rapid Flashing Beacon Technical Sheet
 9 Vehicle Crash Hotspot (Map 2)
 10 Pedestrian Crash Site (Map 3)



Raised Crosswalks/Intersections

Location: Ridgway Street

Raised crosswalks or intersections are essentially speed tables that also serve as crosswalks. Not only do speed tables slow vehicle speeds and require motorists’ attention, but they elevate pedestrians into the driver’s field of vision and encourage drivers to stop for crossing pedestrians. This greatly improves pedestrian safety and reduces the frequency and severity of crashes for all road users.¹¹ On Ridgway Street, there are currently two speed humps. Near the location of the first speed hump, in front of Rancocas Valley High School, students are seen crossing the road

where there is no marked crossing. Given the conditions, there is an opportunity here to create a mid-block crossing as a raised crosswalk, which will also serve as a speed table replacing the current speed hump in that area.

Curb Extensions

Location: Garden Street, Mount Holly Avenue

Curb extensions visually and physically narrow the roadway, creating safer and shorter crossings for pedestrians. It also increases the available space for street furniture, benches, plantings, and street trees, all of which offer an opportunity to improve aesthetics and build upon Mount Holly’s historic character. Curb extensions increase the overall visibility of pedestrians by aligning them with the parking lane and reducing the overall crossing distance. Curb extensions can also be known as pinch-points, which are used at mid-block crossings. With the volume and speed of traffic on both Mount Holly Avenue and Garden Street, curb extensions at all intersections on these roads would be a useful tool to provide pedestrian safety and visibility while also slowing vehicle speeds.



With the volume and speed of traffic on both Mount Holly Avenue and Garden Street, curb extensions at all intersections on these roads would be a useful tool to provide pedestrian safety and visibility while also slowing vehicle speeds.

Bicyclist Safety Recommendations

Bike Lanes

Location: Hedding-Jacksonville Road

There are wide travel lanes and shoulders on Hedding-Jacksonville Road, in front of the two schools. These shoulders are blocked by cones by the township and are not used for parking during school hours. If parking

¹¹ FHWA Highway Safety Programs: Countermeasure Technical Sheet - Raised Crosswalk

is not utilized outside of school hours, these shoulders can be turned into bike lanes. If the township were to go a step further and provide a barrier, such as flex-posts, between the bike lanes and the travels lanes, this would provide the same effect as the current cones and would simultaneously create a safer biking environment.



Contra-Flow Bike Lane

Location: Ridgway Street

A contra-flow bike lane is designed to allow bicyclists to ride in the opposite direction of motor vehicle traffic. They can be helpful on one-way vehicle streets by allowing bicyclists to ride both in the same direction as traffic and in the opposite direction. This provides better connectivity and safety for bicyclists. This is a possibility on Ridgway Street, which begins at one end as a one-way street and transforms into a two-way street in front of Rancocas Valley Regional High School. Providing that connectivity for bicyclists between the schools and the downtown area would be a great improvement to the current bicyclist conditions. With the addition of contra-flow bike lanes, parking can still be accommodated on one side of the street. Currently, along the one-way portion of Ridgway Street, parking is only allowed on the right side of the street. A contra-flow bike lane can be accommodated on the left side of the street and sharrows can be added in the travel lanes to increase motorists' awareness of bicyclists riding with vehicle traffic.



Contraflow bike lanes are currently in use throughout the country in many states including Massachusetts, New York, Virginia, Maryland, and Illinois, among others .

Bicycle Boulevard Designation

Location: Broad Street

Another option for implementing bicyclist facilities across Mount Holly is to designate neighborhood roads, with less traffic and lower speeds, as clearly marked bicycle routes. There are essentially two levels to this type of designation:

Bicycle Route – A suggested route for bicyclists, made using signs and pavement markings only. Typically done on streets with already low traffic volumes and speeds. Wayfinding signage can also be placed along a roadway to help bicyclists travel to various destinations, including downtown corridors, schools, parks, and more.



Bicycle Boulevard – A route designated and designed to give bicyclists priority. Uses signs and pavement markings that indicate the roadway is intended as a shared, slow street. A bicycle boulevard differs from a bicycle route by being paired with traffic calming measures to create a safe, convenient, and effective means of travel for bicyclists. These treatments will not only benefit bicyclists, but also help create and maintain “quiet” streets that benefit residents and improve safety for all road users.

Both a bike route and boulevard should use signs in accordance with New Jersey’s Safe Passing Law. This means that motorists must leave a safe and reasonable distance of 4 feet or greater and reduce vehicle speeds to 25 miles per hour or less while passing bicyclists or pedestrians.



Traffic Safety Recommendations

Evaluate Warrants for Four-Way Stop Intersections

Location: Mount Holly Avenue and Broad Street, Mount Holly Avenue and Union Street

Mount Holly Avenue is a heavily traveled through-road in the residential area of Mount Holly, connecting the school area to Garden Street and downtown Mount Holly. With no stop control along Mount Holly Avenue, the potential for crashes is higher. Converting a two-way stop to a four-way stop can lead to a decrease in crashes and a safer road for all users.¹² This should be done where Mount Holly Avenue intersects with Broad Street and Union Street. This process must include a traffic study as described in the MUTCD Chapter 4C. The analysis includes vehicle and pedestrian counts, school crossings, crashes, peak traffic, and other considerations. This analysis should be paired with engineer review and appropriate approvals.

Traffic Study for Signalized Intersection

Location: Garden Street and Mount Holly Avenue Intersection

The intersection of Garden Street and Mount Holly Avenue has a high volume of traffic with reports of speeding vehicles. Within the audit area, it has the highest frequency of crashes. Given these considerations, a traffic study should be done to determine if this intersection warrants a traffic signal, as opposed to the current two-way stop. Installing a traffic signal can result in a reduction of crashes, therefore creating a safer road for not only motorists, but pedestrians and bicyclists too.¹² A traffic signal warrant study must include sufficient vehicular and pedestrian counts, the latest three year detailed crash analysis at the intersection and a detailed plan of the intersection. Being an intersection located on a county road, it must receive Burlington County’s approval, and notifications should be given to the surrounding community.

¹² Crash Modification Factors Clearinghouse (USDOT, FHWA)

Stop Lines at All Intersections

Location: Throughout Audit Area

Stop lines should be included at stop sign controlled intersections across all approach lanes. These stop lines should be perpendicular to the travel lane. This serves as a visual cue for drivers to stop for pedestrians and take caution when proceeding through the intersection. Any intersections that do not have stop lines should be painted, and any stop lines that are fading should be repainted. Stop lines should be marked at a minimum of four feet in advance of a marked crosswalk, or up to eight feet in advance of the crosswalk to reinforce stopping for pedestrians.¹³ In the absence of a marked crosswalk, the stop line should be placed at the desired stopping point, but not more than 30 feet, or less than four feet, from the nearest edge.¹⁴



Policy Recommendations

Adopt a Complete Streets Policy

Mount Holly Township should create and adopt a Complete Streets policy. Complete Streets are streets designed for everyone – all users, travel modes, and ability levels – balancing the needs of drivers, pedestrians, bicyclists, transit vehicles, emergency responders, and goods movement. When a municipality adopts a Complete Streets design, this does not mean that every street in every community should have sidewalks, bike lanes, and transit. There is no universal, prescriptive design. By applying Complete Streets as a core, guiding principle, a robust, multi-modal network with facilities for all users can be established incrementally over time.



The NJDOT released the Complete & Green Streets for All: Model Complete Streets Policy & Guide in 2020, which can be found at nj.gov/transportation/eng/completestreets/resources. This document includes a model policy that better incorporates equity and environmental considerations. It also includes updated Complete Streets Checklists that can be used at every stage of transportation projects and roadway improvements to ensure a thorough process that does not miss opportunities to improve road safety for all. Municipalities with a Complete Streets policy also receive an additional point on NJDOT grant program applications. Cross County Connection can be a useful resource in the process of adopting a Complete Streets Policy.

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Safe Routes to School

The Safe Routes to School (SRTS) program is a national program consisting of a series of educational lessons and activities with a goal of encouraging children in kindergarten through 12th grade to safely walk and bicycle to school. Cross County Connection provides the SRTS program to kindergarten through 8th grade classes in South Jersey schools, free of charge through a partnership with the NJDOT.

The SRTS program improves children's health by encouraging physical activity and promoting the use of travel modes that reduce traffic congestion and harmful vehicle emissions around schools. These programs can be utilized by the county, township, or school district in Mount Holly. Cross County Connection can also assist members in creating a Student Travel Plan, which includes a road safety audit specifically targeting the roads students use to travel to and from school.

Cross County Connection can assist with the implementation of these programs, as well as assist the township in applying to SRTS infrastructure grants through NJDOT.

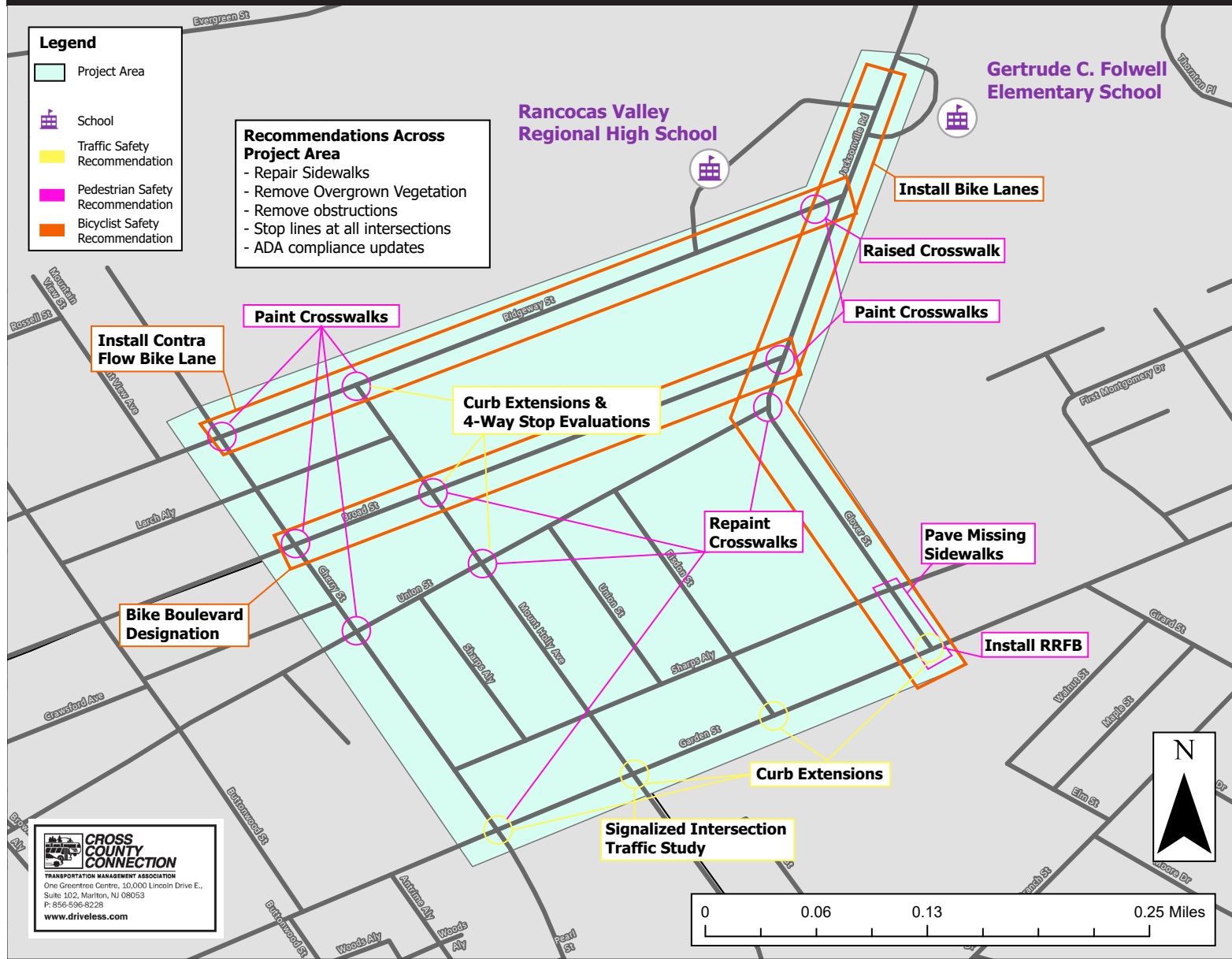


Partner with Burlington County and DVRPC on SS4A Funded Regional Safety Plans

Burlington County was recently awarded Safe Streets and Roads for All (SS4A) funding that will be used to conduct demonstration projects or other supplemental planning activities within the county. The county may use this funding to do more detailed planning work, including priority project selections, planning-level concepts, engineering designs, and installing temporary demonstration projects. Mount Holly Township should coordinate with Burlington County on any recommended infrastructure improvements. Before making these improvements permanent, a temporary demonstration would test the effectiveness of the improvements and assist with community support. This can allow for community feedback and refinement of the final design. Any other projects that the township and county see as a priority for bicyclist and pedestrian safety can be submitted as a potential project for this demonstration funding.

It is also worth noting that some improvement recommendations fall on county roads, which Burlington County has jurisdiction over. The county roads within the audit area are Hedding-Jacksonville Road (starting at Union Street and continuing North) and Garden Street (starting at Mount Holly Avenue and continuing East). Mount Holly Township should partner with Burlington County to achieve any recommendations on these roads and expand upon previous improvements. Burlington County recently repaved the portion of Garden Street which is under its jurisdiction, and installed larger stop signs and supplemental warning signs at the intersection of Garden Street and Mount Holly Avenue due to an increase of crashes.

Map 5 - Bicyclist & Pedestrian Infrastructure Recommendations



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6 Funding Resources

In order to properly make necessary safety improvements to bicycle and pedestrian infrastructure, it is important to consider outside sources of funding. This ensures that the township will not bear sole financial responsibility and can result in faster application of the safety improvements. Potential sources of funding are detailed below for the township to consider. This is not an exhaustive list, as new funding programs are continually being created. Cross County Connection can assist Mount Holly identify appropriate grant opportunities and facilitate coordination with the state and regional agencies that administer them.

Federal Grant Programs

Safe Streets and Roads for All Grant Program

The U.S. Department of Transportation (USDOT) established the Safe Streets and Roads for All (SS4A) discretionary program with funding from the Bipartisan Infrastructure Law. The SS4A program funds regional and local initiatives through grants to prevent roadway deaths and serious injuries. The program also supports the USDOT's National Roadway Safety Strategy and goal of zero roadway deaths using a Safe System Approach. Two types of grants are available: Planning and Demonstration Grants or Implementation Grants. To apply for a demonstration grant, the local agency must have an FHWA approved safety plan, which Burlington County is currently working on at a regional level.

Find more information about applying for an SS4A grants at <https://www.transportation.gov/grants/SS4A>.

Safe Streets For All (SS4A) Grant Types:

Action Plan Grant:

- Assists communities without Vision Zero Plan
- Lays foundation for comprehensive planning

Implementation Grant:

- Provides funding to implement developed strategies
- Executes on systemwide community projects

Safe Routes to School (SRTS) Infrastructure Program

Federal funding is available for SRTS projects that improve the safety of children walking or biking to school. The program is administered through NJDOT. Eligible projects may include the design, construction or installation of sidewalks, crosswalks, signals, traffic-calming, and bicycle facilities within two miles of an elementary or middle school (K-12). Local and regional governments, school districts and individual schools are eligible to apply and receive direct funding.

Find updates and information on SRTS funding at www.saferoutesnj.org/safe-routes-to-school-grants/.

Transportation Alternative (TA) Set-Aside

The NJDOT offers funding for the Transportation Alternatives Set-Aside Program (TA Set-Aside), which is federally funded and administered by NJDOT, in partnership with North Jersey Transportation Planning Authority (NJTPA), DVRPC, and the South Jersey Transportation Planning Organization (SJTPO). TA Set-Aside Grants are community-based, non-traditional transportation projects which expand travel choice, strengthen the local economy, improve the quality of life, and protect the environment. Eligible activities include bikeway construction, acquisition of right-of-way for bikeways and many other projects. County and municipal governments that are responsible for the administration of local transportation safety programs are eligible to apply to the TA Set-Aside Program. The applicant must provide a responsible party who meets federal requirements as a full-time employee of a local public agency.

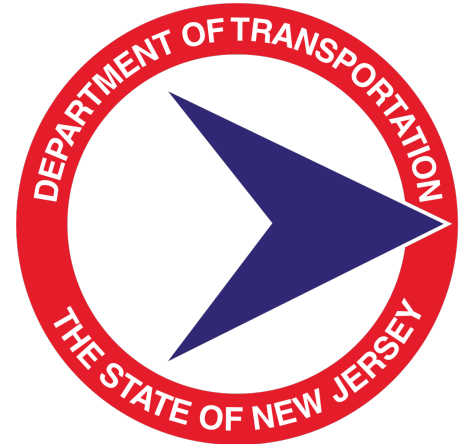
State Grant Programs

Municipal Aid Program

Municipal Aid is a state-funded program administered by NJDOT for roadway and bridge improvements, which may include the installation of bicycle and pedestrian facilities. Each county is appropriated funds for their constituent municipalities based on a formula. Municipalities must submit applications detailing a potential project to their local NJDOT District Office.

Safe Streets to Transit

NJDOT's Safe Streets to Transit (SSTT) Grant Program provides funding to counties and municipalities for projects that will improve pedestrian safety within a half-mile of transit facilities. Mount Holly Township has multiple NJ TRANSIT bus stops within a half mile of the audit area. This grant program gives priority to projects within a one-mile radius of a school; Rancocas Valley High School and Gertrude C. Folwell Elementary School satisfy that requirement. It also gives priority to applicants who have adopted a Complete Streets Policy, which is a recommendation for Mount Holly to implement. Typical eligible projects include intersection safety improvements, traffic control devices that benefit pedestrians, traffic calming measures, sidewalk reconstruction, pedestrian oriented lighting, sidewalk widening, and constructing curb ramps.



Other Funding Sources

NJDOT also provides resources for funding that comes from other sources outside of NJDOT. Those funding sources can be found at <https://njdotlocalaidrc.com/other-funding.php>.

Delaware Valley Regional Planning Commission (DVRPC)

The DVRPC works collaboratively with state and local agencies to address and identify safety concerns within the DVRPC region. The DVRPC funds various grant programs, offers opportunities for safety demonstrations, and can provide assistance or support to municipalities applying for state or federal funding.

A detailed list of all funding opportunities within the DVRPC region can be found at <https://www.dvrpc.org/funding/>. Mount Holly Township should consider applying to these opportunities when possible and partnering with the DVRPC for planning assistance.

In addition to grant programs, DVRPC's annual Work Program includes numerous planning studies to address specific issues at the municipal and county level. The Burlington County Engineer's Office is the local agency that represents Burlington County's municipalities and has the ability to request a planning study on behalf of the county's municipalities.



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7 Conclusion

Cross County Connection conducted the Mount Holly Township Bicycle & Pedestrian Road Safety Audit with the assistance of Mount Holly Township, Mount Holly Township Police Department, Rancocas Valley Public School District, and the Burlington County Office of Public Works – Engineering Division, with funding support from NJDHTS. Mount Holly Township, Burlington County, and NJDHTS are committed to creating streets that are safe for all road users. RSA findings included in this report show that creating better and safer bicycle and pedestrian facilities in areas around Mount Holly’s historic downtown and in areas around its schools should be a priority for future safety efforts. This audit report highlights treatments that will help provide a safer, more enjoyable walking and biking environment for students, residents, commuters, and visitors.

Addressing these recommended improvements will require Mount Holly Township’s continued partnership with Burlington County, and state and regional organizations such as DVRPC, NJDOT, and Cross County Connection TMA.

This study’s recommended infrastructure improvements should be employed alongside education, encouragement, and enforcement programs to have the greatest impact.

Next steps:

- Mount Holly Township, Burlington County, and Cross County Connection should continue working together to create an RSA implementation plan and timeline, including identifying which grant programs can be utilized to fund recommended projects.
- Rancocas Valley School District should partner with Cross County Connection to bring the Safe Routes to School education program into its schools.
- Mount Holly Township and Burlington County should work with Cross County Connection to develop a Complete Streets Policy to create safer streets for all road users in the township.



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