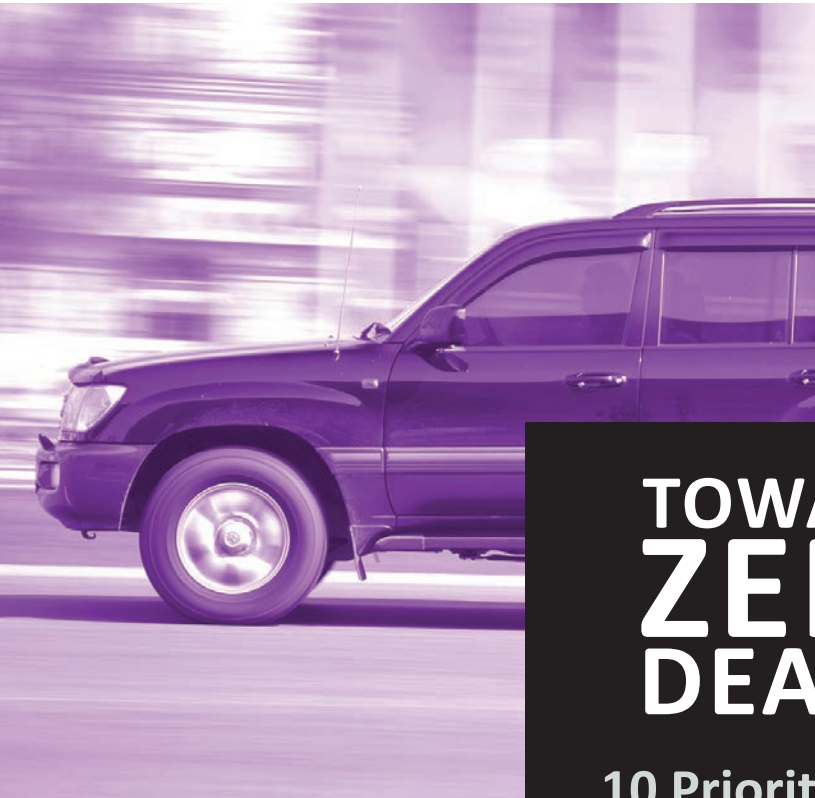
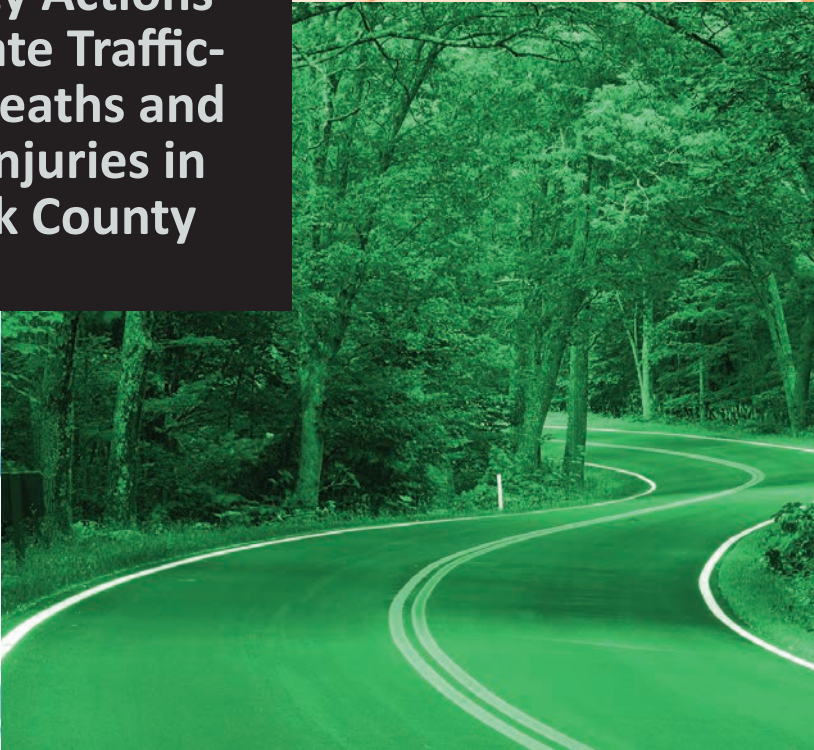
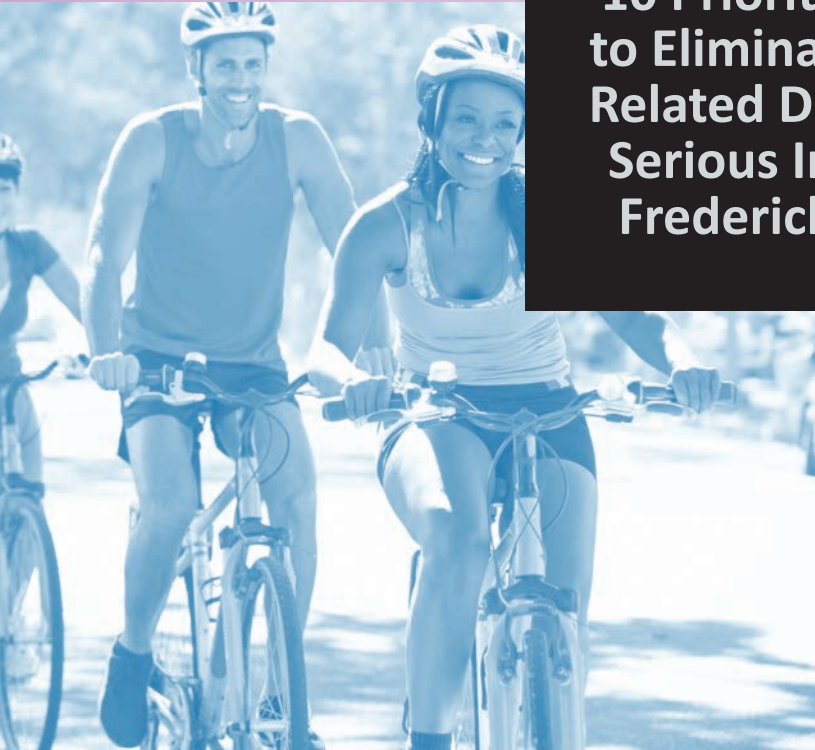




TOWARDS ZERO DEATHS

10 Priority Actions
to Eliminate Traffic-
Related Deaths and
Serious Injuries in
Frederick County



Towards Zero Deaths Frederick County

More than 100 people lost their lives in traffic crashes in Frederick County over the past few years—more than those who were lost to suicide and drug or alcohol overdose combined.

Eight were young people under the age of 20, and 24 were older adults aged 65 or over. Ten were pedestrians. More wore their seatbelt than not, and more than a third of the deaths occurred on weekends when traffic volumes are significantly lower than on weekdays.

We have a natural tendency to look for a physical cause of traffic crashes—a dangerous intersection, a steep hill or a sharp curve—and sometimes minimize human behaviors that contribute to or are the primary cause of crashes, such as speeding, aggressive driving, and walking outside of marked crosswalks. Our strategies to reduce the number of serious injuries and fatalities must address both the physical and human factors.

The 2019 Livable Frederick Master Plan recognized the need to “aggressively engage in roadway safety planning” to “assess risks, identify and control hazards, and continually evaluate and improve our transportation and infrastructure

systems.” On September 1, 2020 County Executive Jan Gardner issued a policy directive to move forward with a Towards Zero Deaths plan that makes safety the highest priority on roadways and for all users: drivers, pedestrians, and bicyclists. The Frederick County Department of Planning and Permitting, Department of Public Works, and the Sheriff’s Office are leading the effort Towards Zero Deaths. In addition, our towns and cities, fire and rescue companies, hospitals, the school system, and community groups all have a role to play. Moving forward, a task force which includes all of these entities will meet regularly to share information and resources, implement the actions of this plan, and report on progress to the County Executive, County Council and the residents of Frederick County.

This document identifies ten focus areas that can be addressed and will contribute to a reduction in serious injuries and fatalities. Each focus area has specific actions that should be taken by individuals, community organizations, and all levels of government. Actions are not specific to any location as we recognize that it is behaviors that must change as much as our transportation infrastructure.

LEADING CAUSES OF DEATH ON ROADS IN FREDERICK COUNTY



30 IMPAIRED



44 DISTRACTED



10 PRIORITY ACTIONS TO ELIMINATE TRAFFIC-RELATED DEATHS AND SERIOUS INJURIES IN FREDERICK COUNTY

NOTE: MANY FATALITIES WERE THE RESULT OF MULTIPLE CAUSES. DETAILS ON ALL DATA SOURCES CAN BE FOUND ON THE LAST PAGE OF THIS DOCUMENT. UNLESS OTHERWISE SPECIFICALLY NOTED, DATA COLLECTED IS FOR ALL ROADS IN FREDERICK COUNTY (MUNICIPAL, COUNTY, AND STATE BETWEEN 2015 - 2019.)

Moving Frederick County Towards Zero Deaths: A Data-Driven, Community-Informed Approach

Strong plans are informed by both data and stakeholder input. The data for Frederick County indicates that the leading contributors to serious injuries and fatalities are speeding and distracted, aggressive, and impaired driving. Stakeholders believe that enforcement and education are critical local actions necessary to curb these behaviors.

Unsafe behavior leading to serious injury and death can also be mitigated through both systemic and location-

specific infrastructure improvements. Specific crash types (such as vehicles leaving the roadway or head-on collisions) and contributing factors (such as poor lighting, wet pavement or limited sight distance) can be reduced in severity by placing guard rails, installing street lights, or applying special paving materials. These measures could reduce fatalities and the severity of injuries in at least 30% of serious crashes, according to data compiled by the Maryland Highway Safety Office and the Crash Modification Factors Clearinghouse of the Federal Highway Administration.

40%

POTENTIAL REDUCTION
IN CRASH SEVERITY
BY INSTALLING
RUMBLE STRIPS ALONG
RURAL ROADS

50%

POTENTIAL REDUCTION
IN CRASH SEVERITY
BY INSTALLING
STREET LIGHTS AT RURAL
INTERSECTIONS

47%

POTENTIAL REDUCTION
IN CRASH SEVERITY
BY INSTALLING
FLASHING BEACONS
AT CROSSWALKS

Source: Federal Highway Administration, Crash Modification Factor Clearinghouse

From interviews with community leaders and agency staff, we heard that:



*School zones
need extra
visibility and
enforcement.*

*Neighborhood traffic
calming gets a lot of
attention but doesn't
correlate to the biggest
safety problems.*

*The County has changed
a lot in the past 20 years.
We need to get away
from the old way of
doing things.*

*Judges and prosecutors
need to take speeding
and distracted driving
more seriously.*

*There are too many
gaps in the sidewalks,
which makes walking
unsafe near small
towns.*

*People need to take
more responsibility for
their driving behavior.
Government alone
can't fix these problems.*

The Towards Zero Deaths plan starts from the premise that we should not accept the status quo—believing that most traffic crashes are “accidents” and are thus inevitable. While governments can take certain actions to improve safety, human behavior must improve to prevent collisions. Traffic safety is a matter of individual road users assuming their share of the responsibility for safe roads.



The following principles are at the heart of the Towards Zero Deaths approach:

RECOGNIZE FAILURES

True “accidents” are rare. Except in cases such as a medical emergency behind the wheel, most traffic collisions result from at least one (and often more than one) failure that can be recognized and altered ahead of time.

IDENTIFY KEY FACTORS

With focused attention, we can identify the factors most likely to contribute to injuries and fatalities on our roadways, develop measures to counteract those, and thus prevent traffic deaths.

CONSIDER HUMAN SHORTCOMINGS

Measures must take into consideration the natural human shortcomings around which our system of human-operated vehicles revolves. Our focus should be to reduce the likelihood and severity of poor decision-making.

FOCUS ON PREVENTION

Crashes that damage property are inconvenient, but serious injuries are life changing and fatalities are life-ending. We should focus on preventing deaths and serious injuries rather than reducing the total number of crashes, so as not to neglect areas in need—for example, rural roadways with fewer crashes but more fatalities and serious injuries.

IDENTIFY AND ELIMINATE FAILURE

We should approach our road network as we would any other complex system, identify and eliminate opportunities for error or failure at all points within the system, rather than attempting to eliminate causes of error or failure at only one point (e.g. a physical characteristic of the roadway) and considering any other failure to be an unavoidable accident.

VALUE OF INVESTMENT

One death on our roads is too many. But because it is impossible to quantify the loss—familial, social, and economic—incurred in even one traffic death, the inverse is also true: even one life saved is priceless. Every death eliminated leads to unquantifiable benefits. There is value in every dollar that contributes to saving lives, no matter how small or large the total amount.

Increase Impaired Driving Education & Enforcement

Over the past decade, Frederick County has averaged 140 serious crashes with serious injury or fatality annually. Although Frederick County's rates are slightly lower than the statewide average, the total number of crashes is still unacceptable by any standard. Fewer arrests per million vehicle miles traveled for impaired driving have taken place in Frederick County than elsewhere the state in each of the last three years.

Dedicating resources to a combination of education and enforcement activities is necessary to combat impaired driving:

- Highly-visible late evening and weekend sobriety checkpoints are an effective deterrent to impaired driving.
- Education and outreach campaigns targeted to young males with support from community groups and liquor licensees can stop impaired driving before it begins.
- A strong but fair judicial approach that does not shy away from penalizing impaired drivers is important to reduce recidivism.

What's currently happening in Frederick County?

- Maryland State Police and the Frederick Police Department conduct periodic sobriety checkpoints at key locations leaving Downtown Frederick.
- The Safe Ride Foundation of Frederick County has provided more than 14,000 low-cost rides home for intoxicated persons since inception of the SOS Safe Ride program in 2015.
- The State's Attorney's office successfully prosecutes 150-200 impaired-driving cases to a guilty verdict annually while approximately 500 additional cases receive probation before judgment.
- More than 950 Frederick County drivers currently participate in the Maryland Ignition Interlock Program.

Key Players:

- Sheriff's Office, Maryland State Police, and municipal police departments
- Maryland Judiciary
- Frederick County Liquor Board



Nearly 60 percent of alcohol- and drug-involved crashes, injuries, and fatalities take place Friday through Sunday.

Resources Available:

- Maryland Highway Safety Office provides grants to fund impaired-driving enforcement and education activities.
- Continued partnerships with community groups like the Safe Ride Foundation serve as a "force multiplier" against impaired driving.



Build a Network of Bicycle and Pedestrian Facilities

Frederick County residents and workers who walk or bicycle are uniquely vulnerable in the transportation network, without a vehicle, seat belts, and airbags to protect them. While important strides have been made in educating motorists, pedestrians, and bicyclists about the importance of awareness, proper behavior, and safety equipment usage, the most effective way to prevent injury and fatality among people walking and bicycling is to separate them from motor vehicles as much as possible.

The County updated its Bikeways and Trails Plan in 2018, laying out a strong network of proposed trails (which by their nature are fully separated from motorized traffic) and on-street bikeways (which may not be). The County is continuing to advance this plan with annual capital appropriations averaging \$2 million for design and construction of trails through 2027. There is no comparable plan for pedestrian improvements (sidewalks, countdown signals at intersections, etc.) other than for a plan to achieve compliance with the Americans with Disabilities Act. The on-street bike network has lagged in terms of implementation. Marked bicycle lanes, painted buffer zones, flex posts and other delineators are low-cost improvements that can be performed without construction impacts.

As next steps, the County should:

- Include a systemic funding account for sidewalks in the capital improvement program, beyond that which is required for ADA compliance.
- Clarify and strengthen the zoning and site planning codes and adequate public facilities requirements to include sidewalk beyond the property frontage to the nearest logical destination.
- Coordinate sidewalk construction efforts with Frederick County Public Schools as new schools are built.
- Consider changing the law to make the County rather than property owners responsible for repair of sidewalks.
- Establish one or more full-time positions to be responsible for coordinating implementation of bicycle and pedestrian plans.
- Dedicate county funds within the CIP for sidewalks and shared use paths rather than being largely reliant on state grants.
- Achieve consistency among the county and municipalities in design standards and policies for bicycle and pedestrian facilities.

What's currently happening in Frederick County?

- In the last decade, Frederick County and its municipalities have received over \$500,000 from the Maryland Bikeways Program, and over \$10 million in Transportation Alternatives Program (TAP)



85% of bicycle-involved crashes and more than 90% of pedestrian-involved crashes result in an injury or fatality.

funding primarily for bikeway construction.

- Frederick County is developing a Complete and Green Streets manual that will specify standards and expectations for bicycle and pedestrian accommodation along County roads.
- The City of Frederick is advancing final design plans for a bicycle/pedestrian path along the US 40 "Golden Mile" west of downtown.
- The County updated its sidewalk inventory and ADA facilities plan in 2019 and continues to implement compliance efforts.

Key Players:

- County and municipal public works departments
- MDOT SHA and MDOT Office of Planning & Capital Programming
- Frederick County Public Schools (FCPS)

Resources Available:

- MDOT provides grants through the Maryland Bikeways Program, Transportation Alternatives Program (TAP), and Safe Routes to School program.
- MDOT SHA, AASHTO, NACTO, FHWA, and other statewide and national organizations publish guidance and standards for bicycle and pedestrian facilities.

Improve Data Collection, Analysis, and Sharing Among Agencies

Agencies at all levels of government collect millions of data points regarding traffic safety, including detailed information on crash causes, roadway conditions, driver behavior, injuries and fatalities, citations written and adjudicated, etc. Most of these disciplines have developed standard data reporting methods that are shared vertically. For example, crashes documented by law enforcement are entered into the statewide Automated Crash Reporting System (ACRS) system; emergency medical systems use the Maryland Trauma Registry. But rarely are these datasets shared across different agencies, and many agencies are not aware of the data held by others.

To reduce communications barriers and increase accountability for eliminating traffic deaths and serious injuries, agencies should share data transparently among themselves and with the public using the following strategies:

- Include Vision Zero as a strategic goal and report annual outcomes in the County's annual budget document.
- Encourage cross-agency, data-driven decision-making resource allocation.
- Develop an understanding across agencies of the data resources already available to identify traffic safety concerns and outcomes; put in place data sharing protocols where there may be concerns about privacy or liability that may otherwise inhibit data sharing.
- Improve on-site crash reporting by law enforcement officers and encourage that all crashes be documented, even where only minor property damage occurs.
- Conduct a multi-agency review of fatal and serious injury crashes that begin from the time the driver entered the vehicle until transport to and treatment at the hospital.

What's currently happening in Frederick County?

- All law enforcement agencies submit crash reports through ACRS; MSP collects and MDOT SHA quality-checks this data.
- Maryland Police and Correctional Training Commissions collect and disseminate annual speed monitoring system reports as required by Maryland statutes.
- EMS providers input patient data into eMEDS®, which is moving the state toward compatibility with the Chesapeake Regional Information System for Patients (CRISP) as well as national EMS databases.



Sixteen separate law enforcement agencies responded to crashes in Frederick County from 2017 to 2019.

Key Players:

- Sheriff's Office, Maryland State Police and municipal police departments
- County and municipal public works and planning departments
- Maryland Highway Safety Office
- Department of Fire and Rescue Services
- Maryland Institute for Emergency Medical Services Systems

Resources Available:

- Maryland Highway Safety Office (MHSO) and the National Study Center for Trauma and Emergency Medical Systems (NSC)'s Maryland Center for Traffic Analysis (MCTA) provides data services to allied agencies throughout the state.
- MDOT SHA makes location-specific crash data available, with privacy safeguards, upon request.
- MDOT Highway Safety Office provides all local governments with crash data from Risk Analysis of Vehicle Environmental Network (RAVEN).

Integrate Traffic Safety Considerations into Development Design Standards

The review of plans for new development projects is an opportunity to solve problems—and prevent traffic injuries and fatalities—before they happen. This requires an understanding of potential safety issues on different roadway types and site conditions, and willingness to upgrade design standards to avoid or mitigate safety concerns as part of initial construction.

The County's current design standards incorporate some basic safety considerations, for example: roadway geometry, design speeds, sidewalks, and sight distance.

The County should also implement proactive requirements which would prevent serious or fatal injuries involving motorists, pedestrians, or bicyclists:

- Design through-streets in new subdivisions to include traffic calming measures to prevent speeding.
- Include street lighting at subdivision entrances regardless of signalization.
- Require a traffic safety assessment for all new developments accessing primary roads.
- Review the most frequently granted design waivers to understand their safety consequences.
- Upon adoption of the Complete and Green Streets, the County should aggressively implement them on all newly constructed roads and identify opportunities to retrofit roadways with significant pedestrian and bicycle activity.
- Broaden the County's authority to require removal or relocation of obstructions within or adjacent to the public right of way, such as mail boxes, lawn ornaments, signs, and pruning of trees and shrubs which are determined to be safety hazards.
- Develop a consistent access management policy for local roads.

What's currently happening in Frederick County?

- Various County manuals and guidelines set standards for sight distance, pavement markings, intersection spacing, right-of-way width, and sidewalks in new development.
- The Office of Life Safety reviews site plans to ensure adequate access for emergency vehicles.
- MDOT SHA evaluates safety when considering access permits for new developments along state highways.



More than 5,000 housing units on more than 60 subdivisions have been developed since 2018.

Key Players:

- Division of Planning and Permitting
- Department of Public Works
- Municipal planning/permitting agencies
- Department of Fire and Rescue Services.

Resources Available:

- FHWA Road Safety Audit guidelines include a methodology and prompt lists for Pre-Construction Road Safety Audits.
- The Interactive Highway Safety Design Model (IHDSM) Crash Prediction Module is a free-to-use software provided by FHWA that automatically computes crash frequencies based on design criteria.



Conduct High Profile Activities to Combat Distracted Driving

Today's drivers are inundated with distractions; the meals and drinks that typified "distracted driving" two decades ago are now joined by ever-more-capable smartphones, infotainment screens, digital billboards, and more. The traffic safety consequences are clear: within Frederick County, distracted driving caused nearly 10,000 injuries and 100 fatalities in the past decade—roughly during that time half of all traffic fatalities and two-thirds of injuries. Unlike speeding—which is readily measured from outside a vehicle—distracted driving is more difficult for law enforcement to detect, especially at the high speeds when its consequences are most severe.

Therefore, efforts to combat distracted driving must:

- Focus on awareness and education in addition to enforcement. This includes outreach efforts targeted to young and middle-aged drivers who are most likely to engage in distracted driving.
- Include a media strategy that highlights real-life consequences of distracted driving.
- Encourage the State's Attorney's office and Judiciary to be mindful of distracted driving when adjudicating traffic violations that include serious injury or fatal crashes.
- Include engineering measures such as centerline and edgeline rumble strips.

What's currently happening in Frederick County?

- Law enforcement agencies issue 1,500 to 2,000 distracted driving citations per year in Frederick County.
- The Frederick County Health Department disseminates Maryland Highway Safety Office (MHSO) coordinated messages on Facebook and Twitter.
- The Frederick County Department of Fire and Rescue Services (FCDFRS) has produced and distributed distracted-driving videos on YouTube during Distracted Driving Awareness Month.
- Frederick County Public Library has conducted distracted-driving awareness programs for teens.

Key Players:

- Sheriff's Office, Maryland State Police and Municipal Police Departments
- Maryland Judiciary
- Frederick County Health Department
- Frederick County Public Schools



In contrast to impaired driving, which heavily skews male, nearly as many distracted drivers in injury- or fatality-causing crashes are female as male.

Resources Available:

- MHSO provides grants to fund impaired-driving enforcement and education activities such as a tabletop distracted-driving simulator for use at schools.
- MHSO also provides social-media toolkits for distracted driving that align with statewide messaging.



Maintain Response Time and Capabilities for Emergency Responders

Prevention of traffic deaths doesn't end with crash prevention or severity mitigation. When injuries occur, emergency medical services work to stabilize the situation and prevent more serious health consequences or death.

Frederick County's Division of Fire and Rescue Services (DFRS) effectively and consistently responds to emergencies in the County in a timely fashion; over the last four years, DFRS reports a response time that meets standards 97 percent of the time. This is an extraordinary response in the context of the "golden hour"—the first hour after injury which largely determines a critically injured person's chances for survival. However, as the County has transitioned from a predominantly rural county to a more suburban locale with greater traffic congestion, the risk of slower response times is real.

Critical injury and fatal crashes disproportionately occur in rural areas. Care must also be taken to preserve response times in rural areas where volunteer fire companies play a critical role but have resources which are stretched thin.

Strategies to reinforce the safe and strong response capabilities include:

- Continuing to invest in the fire and rescue training academy and ongoing training to ensure consistent and well-trained career and volunteer personnel.
- Working with MDOT SHA to evaluate access points to and turnarounds on I-70 and I-270.
- Improving training to clear crash scenes quickly and reduce the chance of secondary collisions.
- Assessing opportunities for smaller fire and rescue apparatus to minimize the impact of street width reduction projects (bike lanes, bumpouts, parking aisles, etc.) which are also important to reducing crashes, especially for bicyclists and pedestrians.

What's currently happening in Frederick County?

- DFRS received a Staffing for Adequate Fire and Emergency Response (SAFER) grant from the U.S. Department of Homeland Security in Fall 2020. The grant will support 22 additional career positions, allowing increased staffing in the City of Frederick and Town of Thurmont.
- The Northgate Fire Station located near the intersection of Monocacy Blvd and US 15, is scheduled to open in the first quarter of 2022.



More than 1,800 injuries in Frederick County required transportation to a trauma center between 2015 and 2020.

Key Players:

- Division of Fire and Rescue Services
- Sheriff's Office, Maryland State Police, and municipal police departments
- County and municipal public works departments
- MDOT SHA

Resources Available:

- Maryland Fire and Rescue Training Institute
- MDOT Work Zone Traffic Control certification
- NACTO and the USDOT Volpe Center have published guidance for safety-informed large vehicle design in constrained areas.



Upgrade Safety Infrastructure on Rural Roads

Approximately 15% of vehicle miles traveled in the county are on roads in rural areas but more than 25% of serious injuries and deaths occur on them. This is because the types of crashes most characteristic of rural areas—single-vehicle roadway departures and head-on collisions—are more likely to result in serious injury or fatality than low-speed, congestion-related collisions in urban areas.

While excessive speed and inattention are the driver behaviors that most frequently lead to rural-road crashes, the County has a role to play too. The County should:

- Install advanced and enhanced warning signs, rumble strips, and guardrails to prevent or minimize the severity of crashes.
- Conduct reviews of roadway geometry, sight distance, clear zones, roadside objects, and crash history as it resurfaces each rural road segment, as well as for any rural road segment where a serious injury or fatality has occurred in the past five years.
- Develop and fund a prioritized list of rural road segments for safety improvements in the capital improvement program.

What's currently happening in Frederick County?

- Frederick County currently owns and maintains over 70 miles of guardrail and over 5,000 warning signs in rural areas.
- Frederick County offers an online DPW work request portal that allows residents to identify locations where safety upgrades such as guardrail repair are needed.
- MDOT SHA's ongoing safety and resurfacing program includes pavement marking reviews and guardrail repair as needed along each segment.

Key Players:

- County and municipal public works departments
- MDOT SHA



65 percent of rural-road crashes involve a single vehicle, but head-on collisions are also twice as likely to occur on rural roads as in the County at large.

Resources Available:

- The National Center for Rural Road Safety provides information and training about rural road safety.
- The Interactive Highway Safety Design Model (IHDSM) Crash Prediction Module is a free software provided by FHWA that automates safety assessments, primarily for rural roads.



Create a Comprehensive School Zone Safety Strategy

School zones have unique traffic safety challenges—mixing of school buses with general traffic and pedestrians during very concentrated peak periods. Schools are often characterized by chaotic on-site circulation and the presence of children whose ability to judge the speed and distance of the vehicles around them may not be fully developed. Therefore, school zones require a distinct traffic safety approach that reflects these concerns to ensure that students can travel to and from school safely.

Nearly 60% (approximately 1,000 miles) of all road mileage in Frederick County is within a ½ mile of a school – the distance designated in state law for school zones; approximately 90% of all school zones are on County or municipally-owned roads.

County agencies should develop a comprehensive school zone strategy that includes:

- Conducting periodic safety audits of school zones, especially those with a significant number of students who walk to school.
- Conducting a “back to school” refresh of crosswalks, traffic signs, and other visibility devices before each school year begins.
- Consideration of automated speed enforcement.
- Pursuit of Safe Routes to School funding from MDOT SHA where significant enhanced safety improvements are warranted.
- Increasing the extent of sidewalks along primary roadways within walking distance of schools.
- Including funds in the CIP to fill in missing sidewalk links concurrent with the construction of new schools.

What’s currently happening in Frederick County?

- Current school system policy has elementary and middle school students walking up to 1 ¼ miles, and high school students up to 1 ¾ miles but only where safe and suitable pathways exist.
- A few school zones throughout the County have enhanced safety infrastructure such as flashing beacons (e.g. Oakdale High School), in-pavement text warnings (e.g. Lewistown and Tuscarora Elementary Schools), and speed humps (e.g. Spring Ridge Elementary School).
- The City of Frederick and Frederick County Sheriff’s Office contract with a private company to provide crossing guards at approximately 20 schools.



More than 100 children under age 16 were pedestrians injured by vehicle crashes in Frederick County between 2010 and 2019.

Key Players:

- Sheriff’s Office, Maryland State Police, and municipal police departments
- County and municipal public works departments
- Frederick County Public Schools
- MDOT SHA

Resources Available:

- MDOT SHA provides grants for school zone safety programs and infrastructure improvements through the Safe Routes to School Program.
- www.saferoutespartnership.org provides educational tools for use in schools.



Increase Enforcement of Speed Limits

WITH CONVENTIONAL AND AUTOMATED ENFORCEMENT

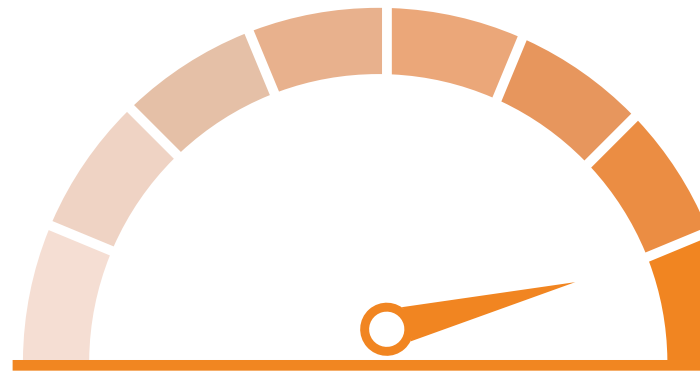
Speeding is a particularly pernicious crash factor because greater speed both increases the likelihood of a collision occurring and serious injury or fatality as an outcome. The record in Frederick County bears this out—speeding-related crashes have killed more than 40 people and injured more than 2,500 during the last decade in Frederick County. Enforcement is the most straightforward mechanism for reducing speeding.

Frederick County should therefore enhance its current enforcement posture by taking the following steps:

- Forming a speed enforcement task force comprised of the municipal and County agencies, and the Maryland State Police to agree on speed reduction strategies and develop a resource sharing agreement to implement them.
- Enacting a county ordinance to permit the use of automated speed enforcement in accordance with state law.
- Encouraging the Judiciary to strictly adjudicate the most egregious speeding cases.
- Advocating to the Maryland General Assembly for the ability to use handheld image-capture speed enforcement. This will protect deputies from having to make hazardous traffic stops to enforce speed limits without resorting to automated enforcement.

What's currently happening in Frederick County?

- State, County, and municipal law enforcement officers issue thousands of speeding citations every year within the County; the highest number in recent years was over 11,000 in 2017.
- The City of Frederick and Town of Thurmont have used automated speed enforcement within their limits since 2011 and 2019, respectively. Frederick has operated 15 to 25 cameras and averaged over 15,000 automated speed citations annually over the past five years (approximately ten violations per camera per day in operation), while Thurmont recorded nearly 300 citations during its single camera's first (partial) year in operation at a rate of more than one per day.
- The Frederick County Health Department disseminates MHSO-coordinated messages on Facebook and Twitter.



Two-thirds of drivers in speeding-involved collisions were male, and more than 30% were male drivers under 30.

Key Players:

- Frederick County Sheriff's Office, Maryland State Police, and municipal police departments
- Maryland Judiciary

Resources Available:

- Maryland Highway Safety Office provides grants to fund speeding enforcement and education activities



Take a Proactive Approach to Street Lighting

In Frederick County, the nighttime is a period of lower traffic volumes, but higher rates of serious injury and fatality crashes. Moreover, 40 percent of injury crashes and more than half of fatal crashes that take place in darkness occur where there is no lighting. Crashes during the dark hours at locations with no street lighting are 80% more likely to be fatal than crashes where there is lighting.

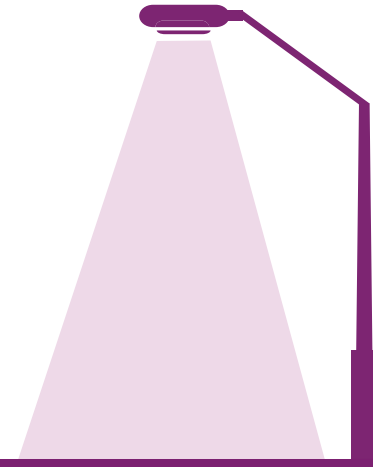
Frederick County does not have a comprehensive street lighting policy. Statewide, MDOT SHA has developed a standard checklist to screen potential locations for roadway lighting based on traffic volume, safety, and context factors. Other counties in Maryland have policies that range from permitting street lighting on local roads only in exceptional safety cases to requiring all new developments to provide lighting at specified intervals or to specified illumination levels.

Frederick County should:

- Develop a comprehensive street lighting policy that balances safety, light pollution, and cost. Consideration should be given to allowing more light “spillage” onto private property where there is a heightened safety concern such as intersections and along bicycle and pedestrian corridors.
- Conduct a GIS analysis to identify nighttime crash clusters and engineering analyses of lighting and roadway design factors at any identified clusters.
- Work with Potomac Edison on a plan to finance installation and operation of energy-efficient streetlights at safety-critical locations.

What’s currently happening in Frederick County?

- The County zoning ordinance has standards for on-site lighting that require lighting to be directed so as to prevent glare and light trespass, including onto roadways.
- Subdivision regulations do not require any street lighting, but new developments often include post-top lights along residential streets.
- The County administers lighting districts in Libertytown, Braddock Heights, and New Addition (near Brunswick) comprising approximately 100 lights. Property owners pay a street lighting tax of 1 cent per \$100 of assessed value to fund operating costs.



Only 21% of all travel occurs between 7PM and 6AM; however, 25% of all injuries and 45% of fatal crashes took place during that time.

Key Players:

- Department of Public Works
- Division of Planning and Permitting
- MDOT SHA
- Potomac Edison

Resources Available:

- MDOT SHA’s lighting checklist provides a template for determining lighting needs along state highways.
- *Relationship Between Roadway Illuminance Level and Nighttime Rural Intersection Safety*, Transportation Research Board publication
- *FHWA Lighting Handbook* (2012 edition)



Sources and Acknowledgments

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Consulting services for this project were provided by Mead & Hunt, Inc., a national planning, architecture and engineering firm.

Data Sources

Preparation of this plan relied upon the analysis of multiple data sets from municipal, county, and state agencies. Wherever possible, data was drawn from sources between 2017 – 2019. Data sources are described below for each of the action items.

Step Up Education & Enforcement Against Impaired Driving

"Nearly 60 percent of alcohol- and drug-involved crashes, injuries, and fatalities take place Friday through Sunday."
Maryland Highway Safety Office 2020 Benchmark Report

"... 140 serious crashes with serious injury or fatality annually."
Maryland Highway Safety Office 2020 Benchmark Report

"...rates of impaired driving are slightly lower than the statewide average,..."
Maryland Highway Safety Office 2020 Benchmark Report

"Fewer arrests for impaired driving per million vehicle miles traveled (MVMT) have taken place in Frederick County than in the state at large in each of the last three years."
Maryland Highway Safety Office 2020 Frederick County Problem ID Report

"Maryland State Police and the Frederick Police Department conduct periodic sobriety checkpoints at key locations leaving Downtown Frederick."
MDSP and FPD news releases

"... 14,000 low-cost rides home for intoxicated persons..."
<https://www.saferidefoundation.org/>

"...successfully prosecutes 150-200 impaired-driving cases to a guilty verdict annually with approximately 500 additional cases achieve probation before judgment."
<https://datadashboard.mdcourts.gov/>

"More than 950 Frederick County drivers currently participate in the Maryland Ignition Interlock Program."
<https://mva.maryland.gov/Documents/Interlock-Program-Status-Report.pdf#page=13>

"Maryland Highway Safety Office (MHSO) provides grants..."
<https://mva.maryland.gov/safety/Pages/mhso/grants-management.aspx>

Build a Network of Bicycle and Pedestrian Facilities

"85 percent of bicycle-involved crashes and more than 90 percent of pedestrian-involved crashes result in an injury or fatality."
Maryland Highway Safety Office 2020 Benchmark Report

"...averaging \$2 million for design and construction of trails through 2027."
Frederick County FY2022-27 Capital Improvement Program, pg. 97

"over \$500,000 from the Maryland Bikeways Program"
<https://www.mdot.maryland.gov/tso/pages/Index.aspx?PagelId=28>

"over \$10 million in Transportation Alternatives Program (TAP)"
Previous Frederick County and City of Frederick capital budget documents detail the funding

"MDOT provides grants through the Maryland Bikeways Program..."
<https://www.mdot.maryland.gov/tso/pages/Index.aspx?PagelId=28>

"...Transportation Alternatives Program (TAP)..."
<https://www.roads.maryland.gov/mdotsha/pages/Index.aspx?PagelId=144>

"...and Safe Routes to School program."
<https://roads.maryland.gov/mdotsha/pages/Index.aspx?PagelId=735>

Sources and Acknowledgments (CONT.)

Improve Data Collection, Analysis, and Sharing Among Agencies

"MHSO and the National Study Center for Trauma and Emergency Medical Systems (NSC)'s Maryland Center for Traffic Analysis (MCTA) provides data services to allied agencies throughout the state"

https://www.medschool.umaryland.edu/NSC_Trauma/Current-Research-Projects-/Grant-for-Maryland-Center-for-Traffic-Safety-Analysis-MCTSA/MCTSA---Data-Services/

"MDOT SHA makes location-specific crash data available, with privacy safeguards, upon request."

Contact the MDOT-SHA District 7 Assistant District Engineer for Traffic

Integrate Traffic Safety Considerations into Design Standards

"More than 5,000 housing units on more than 60 County-only subdivisions have been developed since 2018."

Frederick County development pipeline reports, January 2018 through April 2021

"FHWA Road Safety Audit guidelines..."

<https://safety.fhwa.dot.gov/rsa/guidelines/>

"Interactive Highway Safety Design Model..."

<https://www.ihsdm.org/>

Conduct High Profile Activities to Combat Distracted Driving

"In contrast to impaired driving, which heavily skews male, nearly as many distracted drivers in injury-or fatality-causing crashes are female as male."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police

"...nearly 10,000 injuries and 100 fatalities were caused by distracted driving in the past decade..."

Maryland Highway Safety Office 2020 Benchmark Report

"...1,500 to 2,000 distracted driving citations per year in Frederick County."

Maryland Highway Safety Office 2020 Frederick County Problem ID Report

"Maryland Highway Safety Office (MHSO) provides grants..."

<https://mva.maryland.gov/safety/Pages/mhso/grants-management.aspx>

"...social media toolkits..."

<https://zerodeathsmd.gov/digital-resources/>

Maintain Response Time and Capabilities for Emergency Responders

"DFRS reports a response time that meets standards 97 percent of the time."

<https://frederickcountymd.gov/4893/Monthly-Response-Statistics>

"Staffing for Adequate Fire and Emergency Response (SAFER) grant"

<https://frederickcountymd.gov/DocumentCenter/View/329105/SAFER-Grant-Awarded-091620?bidId=>

"constructing the Northgate Fire Station"

Frederick County FY2022-27 Capital Improvement Program, pg. 44

"Maryland Fire and Rescue Training Institute"

<https://www.mfri.org/>

"MDOT Work Zone Traffic Control certification"

<https://roads.maryland.gov/mdotsha/pages/index.aspx?PageId=404>

"...guidance for safety-informed large vehicle design in constrained areas."

<https://nacto.org/optimizing-large-vehicles/>

Upgrade Safety Infrastructure on Rural Roads

"65 percent of rural-road crashes involve a single vehicle, but head-on collisions are also twice as likely to occur on rural roads as in the County at large."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police. Rural road crashes inferred by selecting collisions outside municipalities that took place at non-intersection locations.

"...85% of Frederick County's land area is classified as rural..."

U.S. Census Bureau Urban Areas

"...only 25% of its residents are in rural areas..."

U.S. Census Bureau Urban Areas

"...slightly more than half of the County's roadway miles are classified as rural."

https://www.roads.maryland.gov/OPPEN/2020_Mileage_Reports.pdf#page=2

"Approximately 15% of vehicle miles traveled in the county are on rural roads..."

https://www.roads.maryland.gov/OPPEN/Vehicle_Miles_of_Travel.pdf

"...approximately 25% of serious injuries and deaths [are] on them."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police.

"...types of crashes most characteristic of rural areas—single-vehicle roadway departures and head-on collisions..."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police.

"...excessive speed and driver inattention are the driver behaviors that frequently lead to rural-road crashes..."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police.

"...owns and maintains over 70 miles of guardrail..."

https://fcgis.frederickcountymd.gov/server_pub/rest/services/DPW/Guardrail/MapServer

"...and over 5,000 warning signs in rural areas."

https://fcgis.frederickcountymd.gov/server_pub/rest/services/DPW/Warning_Signs/MapServer

Sources and Acknowledgments (CONT.)

Create a Comprehensive School Zone Strategy

"More than 100 children under age 16 were pedestrians injured by vehicle crashes."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police.

"Current school system policy has elementary and middle school students walking up to 1 ¼ miles."

Frederick County Public Schools, Office of Pupil Transportation

Increase Enforcement of Speed Limits

"the highest number of speed-related citations in recent years was over 11,000 in 2017."

Maryland State Police

"speed-related crashes have filled more than 40..."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police.

"two-thirds of drivers in speed-involved collisions were male."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police.

Take A Proactive Approach to Street Lighting

"...25% of all injuries and 45% of fatal crashes.."

Maryland Statewide Vehicle Crashes dataset, Maryland State Police.

"40 percent of injury crashes and more than half of fatal crashes that take place in darkness occur where there is no lighting."

National Highway Traffic Safety Administration, 2017 Traffic Safety Facts, Rural/Urban Comparison



TOWARDS ZERO DEATHS: 2021 PROGRESS REPORT					
Performance Measure	Baseline (2015-2019 Average)	2021	Interim Target (2030)	5-Year Trend	Goal (2040)
Vehicle Occupant Fatalities	19		10	↘	0
Bicycle/Pedestrian Fatalities	2		1	↘	0
Vehicle Occupant Serious Injuries	1516		750	↗	375
Bicycle/Pedestrian Serious Injuries	79		40	↗	20
ACTIONS TAKEN (2021)			ACTIONS PLANNED (2022)		
• Towards Zero Deaths Action Plan developed by Departments of Planning and Permitting, Public Works, and the Sheriff's Office. • The Complete and Green Streets policy manual is under development. • Northgate Fire Station located near the intersection of Monocacy Blvd and US 15, is under construction and will improve Fire/EMS response times.			• Prepare code amendment to require removal or relocation of sight distance or "clear zone" obstructions within or adjacent to the public right of way. (DPP) • Research options for rural street lighting improvements and update requirements for lighting at subdivision entrances. (DPP) • Update traffic impact statement requirements to include safety analysis. (DPP) • Review planned resurfacing projects for minor safety improvements. (DPW) • Develop a joint program among Department of Public Works and Frederick County Public Schools to audit roadway safety and pedestrian access at selected schools and complete a "back to school refresh" of signs, markings, etc. at one-third of all schools each year. (DPW/FCPS)		