VISION ZERO

ZERO TRAFFIC DEATHS IN MoCo

OUR PLAN TO ELIMINATE FATALITIES AND SERIOUS INJURIES ON OUR ROADS BY 2030

2030 ACTION PLAN • FY22-23 WORK PLAN


MONTGOMERY COUNTY
17 76
GARDEZ BIEN
MARYLAND

MESSAGE FROM THE COUNTY EXECUTIVE

County Executive
Marc Elrich

In 2020, over 38,000 people in the United States and 41 in Montgomery County lost their lives in motor vehicle traffic crashes. These deaths occurred while people were going about their normal day-to-day business: taking trips to school, work, meeting friends, or running errands. These deaths are preventable and unacceptable. We need to work together to create a county where you can freely travel without the risk of serious injury or death. My Vision Zero 2030 Plan lays out a path for us to get there.

We have made progress since adopting the first Vision Zero plan in late 2017, but there is much more we can do. The County Government along with our city and state partners have installed new signals and pedestrian beacons to create safer and more frequent crossings; built the first protected intersection in the Mid-Atlantic region that provides dedicated crossing space for people walking, biking, and driving; and continued installing sidewalks and bikeways to make our streets more complete. However, the number of serious and fatal injuries remains higher than we can accept.

The Vision Zero 2030 Plan reflects our strong commitment to ending serious and fatal traffic crashes and identifies the partners and resources necessary to meet our goal. I have dedicated over $439 million in our six-year capital budget to bring these safety projects off the page and to our roads. Under this plan, we commit to creating streets made for everyone by building and expanding our sidewalk and protected bicycle network, improving safety to and from bus stops, and fixing dangerous intersections. As we construct the Purple Line and bus rapid transit systems, we will build the pedestrian and bicycle infrastructure along these routes to reimagine our dangerous highways into streets that accommodate everyone no matter how they choose to get around. The County Government will continue working with state and federal partners to ensure they are committing funds and prioritizing safety.

While the County puts resources in place to build safer roadways, I encourage you to do your part by putting your phone away while driving, buckling up for every trip and every seat, never drive impaired, and always obey the speed limit. Following the rules of the road keeps you and everyone around you safe.

Vision Zero is an audacious goal. It is one that we can all embrace and champion together to bring the number of heartbreaking deaths and serious injuries due to traffic collisions to zero. Together, we can reach Vision Zero by 2030.

County Executive Marc Elrich

ACKNOWLEDGEMENTS

Montgomery County Government thanks all the people who contributed their time and thoughts to develop the Vision Zero 2030 Action Plan. The 1,800+ county residents that participated in surveys, interviews, and listening sessions were crucial in developing the priorities for this plan. The dozens of municipal, county, and state government employees that examined the public's input and developed the action items and work plan. The consultant teams of Crash CORE and Brotman, Winter, Fried Consulting, Inc. that facilitated the plan development and outreach. The County looks forward to continuing this collaborative community effort to end all traffic fatalities and serious injuries in this decade.

IMAGES

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DEFINITIONS

The following list provides definitions of key terms used in this Plan.

Accessibility. The ability of all people, particularly those with disabilities, to access and use the transportation system.

Aggressive Driving. Maryland law states that a person is guilty of aggressive driving if the person commits three or more of the following offenses at the same time or during a single and continuous period of driving in violation of: failure to obey traffic lights with steady indication, overtaking and passing vehicles, passing on right, failing to obey traffic control device, following too closely, failure to yield right-of-way, or exceeding a maximum speed limit or posted maximum speed limit.

Autonomous or Automated Vehicle. A vehicle that is capable of sensing its environment and moving safely with little or no human input.

Bicyclist. A person on any type of pedal cycle, including bicycles, tricycles, unicycles, and any trailers or sidecars attached to these cycles.

Complete Streets. Roadways that are designed and operated to provide safe, accessible, and healthy travel for all users of our roadway system, including pedestrians, bicyclists, transit riders, and motorists. On a Complete Street, it is intuitive and safe to cross the street, walk to shops, and bicycle to school. Complete Streets function as a system, ensuring that the transportation network as a whole provides safe and efficient access for all roadway users and only provides designated spaces for each mode when needed.

Contributing Factor. Conditions of the environment (such as lighting, weather), vehicle (brakes, lights), road (debris, obstructions), or driver behavior (inattentiveness, driving under the influence of alcohol or drugs) that contribute to the occurrence of a crash or its severity.

Crash or Collision. A set of events that results in injury or property damage due to the collision of at least one motorized vehicle and may involve collision with another motorized vehicle, a bicyclist, a pedestrian, or a fixed object.

Crash Reduction Factor. The estimate of the percentage reduction in crashes after the implementation of a project or initiative.

Crash Severity Rate. The frequency of crashes weighted by the highest injury reported occurring between 2015 and 2019 based on the number of crashes and the vehicle miles of travel. The segment crash rate is calculated by taking the weighted total number of crashes in the 5-year period divided by the annual vehicle miles traveled.

Culture of Safety. “The shared belief system of a group of people, which influences road user behaviors and stakeholder actions that impact traffic safety.” (“Traffic Safety Culture Primer” 2019).[1]

Distracted Driving Related Crash. A crash where at least one driver in the crash was reported to be distracted. Distracted is defined by having values of either “failure to give full time and attention” or “cell phone in use” in any contributing circumstance fields, or any of the following values in the driver distracted by field: looked but did not see;

other electronic device (tablet, GPS, MP3 player, etc.); by other occupants; by moving object in vehicle; talking or listening on cellular phone; dialing cellular phone; adjusting audio and/or climate controls; using other device controls integral to vehicle; using device/object brought into vehicle (non-electronic); distracted by outside person, object, or event; eating or drinking; smoking related; other cellular phone related; lost in thought; or texting from a cellular phone.

Driver. Operator of a motor vehicle.

High Injury Network. Sections of roadway in the county that have the highest incidences of serious and fatal collisions.

Impaired Driving Related Crash. The Maryland definition of an impaired driving crash is: At least one driver in the crash is determined to be impaired by the investigating officer as indicated through the driver condition, blood alcohol content, substance use detected, and contributing factor fields on the Maryland crash report: person condition of "had been drinking," "using drugs," or "influenced by medications and/or drugs and/or alcohol", blood alcohol concentration (BAC) between 0.01 and 0.50, substance use of '"alcohol contributed," "illegal drugs contributed," "medication contributed," or "combination contributed", or contributing circumstance of "under the influence of drugs," "under the influence of alcohol," "under the influence of medication," or "under combined influence."

Injury Severity 01 – No Apparent Injury. A situation where there is no reason to believe that the person received any bodily harm from the motor vehicle crash. There is no physical evidence of injury and the person does not report any change in normal function.

Injury Severity 02 – Possible Injury. Any injury reported or claimed which is not a fatal, suspected serious, or suspected minor injury. Examples include momentary loss of consciousness, claim of injury, limping, or complaint of pain or nausea. Possible injuries are those that are reported by the person or are indicated by his/her behavior, but no wounds or injuries are readily evident.

Injury Severity 03 – Suspected Minor Injury. A minor injury is any injury that is evident at the scene of the crash, other than fatal or serious injuries. Examples include lump on the head, abrasions, bruises, minor lacerations (cuts on the skin surface with minimal bleeding and no exposure of deeper tissue/muscle).

Injury Severity 04 – Suspected Serious Injury. A suspected serious injury is any injury other than fatal which results in one or more of the following: Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood, Broken or distorted extremity (arm or leg), Crush injuries, Suspected skull, chest or abdominal injury other than bruises or minor lacerations, Significant burns (second and third degree burns over 10% or more of the body), Unconsciousness when taken from the crash scene, or Paralysis.

Injury Severity 05 – Fatal Injury. Any injury that results in death within one year after the motor vehicle crash in which the injury occurred. If the person did not die at the scene but died within one year of the motor vehicle crash in which the injury occurred, the injury classification is changed from the attribute previously assigned to the attribute "fatal injury." Note that this definition differs from Federal reporting, which counts fatal injuries within 30 days of the crash.

Intersection Crash. A crash that occurs within the limits of an intersection.

Intersection Related Crash. Crashes reported as occurring in an intersection or being intersection related. “Intersection related” is not a location type but a judgment about the effects of intersections and their traffic controls upon traffic and crash causation. If the crash is deemed to have occurred as a result of backed-up traffic from an intersection (presumably at a non-intersection location) the junction relationship is “intersection related.”

Micromobility. Travel over short distances using lightweight transportation devices such as bicycles and scooters that typically travel at low speeds and designed for a single occupant that do not require a driver’s license to operate.

Motorcycle Crash. A crash involving at least one motorcycle, defined as a “motorcycle” body type.

Motorist. Driver or passenger of a vehicle or motorcycle.

Multimodal. Having one or more options. In transportation, multimodal refers to having more than one travel option to go by car, walk, bike, bus, or train.

Older Driver Related Crash. A crash where at least one driver in the crash was reported to be between the ages of 65 and 110.

Pedestrian. Person on foot (using the ‘pedestrian’ person type and ‘pedestrian on foot’ pedestrian type), including a motorist who has exited a vehicle, and people on other conveyances such as wheelchairs, skateboards, roller skates, or roller blades.

Pedestrian Crash. Crash where at least one pedestrian is struck by a moving vehicle.

Police Crash Report Data. Reported, collected, and administered by the Maryland State Police.

Racial Equity and Social Justice. Changes in policy, practice, and allocation of County resources so that race or social justice constructs do not predict one’s success, while also improving opportunities and outcomes for all people.

Road System. All of the roads (local and/or highway) that are under the jurisdiction of a single agency (such as state, county, or municipality).

Roadway. A portion of land dedicated for travel by motor vehicles, bicycles, pedestrians, and other conveyances. This includes the general travel lanes and adjacent shoulders, sidewalks, and bike facilities.

Run-off-the-Road Crash. A crash where the first event was recorded as “striking a fixed object” or “running off the road” or the location of the crash was reported as “off-road” or “in the median.”

Safe System Approach. Under the safe system approach, road safety is a shared responsibility among everyone, including those that design, build, operate and use the road system. It takes a holistic view of the road transport system and the interactions among roads and roadsides, travel speeds, vehicles, and road users.

Speed Related Crash. A crash where at least one driver in the crash was reported to be speeding, defined by having values of either “exceeded speed limit” or “too fast for conditions” in any of the contributing circumstance fields.

Unrestrained Occupant. A passenger-vehicle (automobile, station wagon, van, SUV, pickup truck) occupant who is: less than eight years of age recorded as not using a “child/youth restraint,” eight years

of age or older recorded as not using a "lap and shoulder belt" or "air bag and belt," or where restraint use was recorded as using "none" or "air bag only."

Vehicle. A device in, upon, or by which a person or property is or may be transported upon a highway, except devices moved by human power or used exclusively on stationary rails or tracks.

Work-Zone Crash. Crashes occurring in a construction/ maintenance zone.

Young Driver Related Crash. A crash where at least one driver in the crash was reported to be between the ages of 16 and 20.

ACRONYMS

The following are acronyms used throughout this Plan.

Acronym	Definition
ABS	Alcohol Beverage Services
ACC	Accessibility
ADA	Americans with Disabilities Act
BiPPA	Bicycle-Pedestrian Priority Area
BRT	Bus Rapid Transit
CAP	Climate Action Plan
County	Uppercased "County" = Montgomery County Government
CEX	Office of the County Executive
CIP	Capital Improvements Program
CRF	Crash Reduction Factor
CSDG	Complete Streets Design Guide
DEP	Department of Environmental Protection
DGS	Department of General Services
HHS	Montgomery County Department of Health and Human Services
HIN	High Injury Network
HVE	High Visibility Enforcement
KSI	Killed or Seriously Injured
MCDOT	Montgomery County Department of Transportation
MCFRS	Montgomery County Fire and Rescue Service
MCPD	Montgomery County Police
MCPS	Montgomery County Public Schools
MDOT	Maryland Department of Transportation
MDTA	Maryland Transportation Authority
MHSO	Maryland Highway Safety Office
M-NCPPC	Maryland-National Capital Park and Planning Commission
MPOHT	Master Plan of Highways and Transitways
MSP	Maryland State Police
MWCOG	Metropolitan Washington Council of Governments
OHR	Office of Human Resources
OMB	Office of Management and Budget
OPI	Office of Public Information
Parks	Montgomery County Parks Department
PEPCO	Potomac Electric Company
Planning	Montgomery County Planning Department
REC	Department of Recreation
RESJ	Racial Equity and Social Justice
RSC	Regional Service Center
SHA	State Highway Administration
SHSP	Strategic Highway Safety Plan
UD	Urban Districts
VMT	Vehicle Miles Traveled
WMATA	Washington Metropolitan Area Transit Authority

REMEMBERING VICTIMS OF TRAFFIC CRASHES

Every life lost on our roads is more than a statistic. Each death represents a mother, daughter, father, brother, or dear friend that had their life cut short.

As we work together to build a county without traffic deaths, we remember the 163 people that lost their lives on our roadways over the past five years and share stories of two members of our community lost too soon.

In remembrance of the 163 people that lost their lives on our roadways between 2015 and 2019.

Noah Leotta

Noah had pulled over a suspected impaired driver while working as part of the Holiday Alcohol Task Force on December 3, 2015 when he was struck and killed by another impaired driver. He was 24 years old and survived by his mother, father, and sister.

In his memory, his family fought for "Noah's Law", which passed in the Maryland Legislature and became law in October 2016. Noah's Law requires interlock devices to be installed in the car of all convicted drunk drivers and increased suspension times.

Brett Badin

Brett Badin was only 32 years old when his life was cut short, hit by a car on Rockville Pike. Even though Brett lived with autism, he led a full and productive life. He worked for the Health and Human Services Department of the federal government, lived independently in a condo, and had many friends and a busy social calendar.

He was a gentle and kind soul, and he inspired all who knew him. He is greatly missed by his friends and family.

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THE VISION ZERO APPROACH TO ROAD SAFETY

The Vision Zero concept for roadway safety was created in Sweden during the 1990's and is widely credited for significant reductions in serious and fatal traffic collisions, despite increased driving, biking, and transit use.[2] The core Vision Zero principles are serious and fatal traffic crashes are unacceptable, preventable, and the design, construction, and maintenance of the roadway system can minimize the consequences of human error. Since Sweden's implementation, Vision Zero has been adopted across the world and as of April 2021 over 40 US jurisdictions.[3] Montgomery County adopted Vision Zero in 2016 and was one of the first county governments to implement a Vision Zero Action Plan in November 2017.

The Montgomery County Council adopted Resolution 18-390 in 2016 to make Montgomery County a Vision Zero community. The above photo with councilmembers, department directors, and civic group members was the County's kickoff for Vision Zero.

Vision Zero is a proven approach to road safety founded on the principle that no one should be killed or seriously injured as a price of mobility.

Vision Zero or Similar Approach	Traditional Approach
Sweden, Netherlands, New Zealand, Australia	United States
↓50-70% roadway fatalities 1994-2015	↓11% roadway fatalities 1994-2015

Vision Zero and Safe System

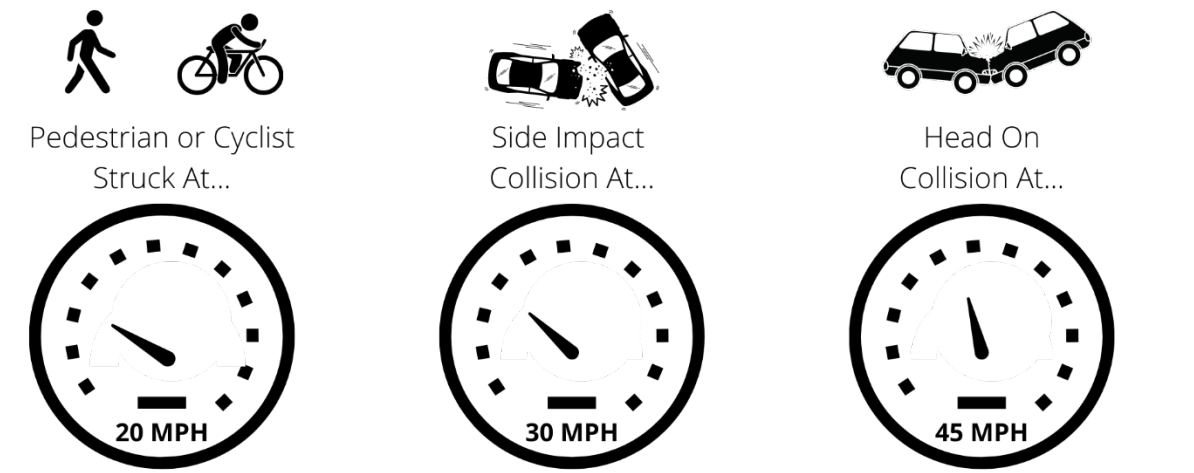
CRASH, NOT ACCIDENT

Traffic crashes are not inevitable accidents. Vision Zero communities study the environmental and behavioral factors that lead to serious and fatal collisions and use leading practices to create a safer system for all roadway users.

Utilizing the safe system approach to design and maintain the roadway system is how communities work towards their Vision Zero goal of eliminating serious and fatal crashes. Under the safe system approach, road safety is a shared responsibility between those that design, build, operate, and use the road system. It takes a holistic view of the road system and the interactions among roads and roadsides, travel speeds, vehicles, and road users.

Key to the safe system approach for mitigating serious and fatal injuries is reducing exposure through separation of roadway users, particularly when travel speeds exceed 30 MPH, and reducing vehicle speeds to lower the probability and severity of a crash. Whether walking, rolling, biking, or driving, the speed at the time of the collision has a strong effect on crash survivability. The graphic below shows the speed at which most people can survive the crash. As the speed increases beyond the critical speed, survivability rates drop exponentially.[4,5]

A pedestrian struck at 23 MPH has a 10% risk of fatal injuries, but only 50% chance of surviving at 42 MPH.



A Vision for Zero in Montgomery County

No one in our community should have to grieve the loss of a loved one as the result of a traffic collision. That is why Montgomery County is recommitting to its Vision Zero goal through the Vision Zero 2030 Action Plan. Over the next nine years, the County and its partners will advance projects and campaigns to create streets that are safe for everyone who walks, bikes, scoots, uses a wheelchair, or drives. By implementing evidence-based measures and maximizing resources to areas in critical need, more lives can be saved.

Using data-informed and equitable approaches, Montgomery County will systematically update the roadway network to create complete, safe streets and build a culture of safety through purposeful campaigns and engagement to eliminate serious and fatal collisions by 2030.

Vision Zero Guiding Principles

In reviewing other Vision Zero implementations, leading practices, and input from the Pedestrian, Bicycle, Traffic Safety Advisory Committee, Montgomery County will utilize seven guiding principles for implementing Vision Zero.

1. **Transportation–related deaths and serious injuries are preventable and unacceptable.**
2. **Human life takes priority over mobility and other objectives of the road system.** The road system should be safe for all users, for all modes of transportation, in all communities, and for people of all ages and abilities.
3. **Equitably prioritize funding, resources and outreach** to communities that experience a disproportionate burden of traffic-related fatalities and serious injuries.
4. People will make mistakes. The transportation **system should be designed so those mistakes do not lead to serious injury or death.**
5. People are inherently vulnerable, and **speed at the time of collision is a fundamental predictor of crash survival.** The transportation system should be contextually designed for speeds that protect human life.
6. **Policies and resources at all levels of government need to align**, making safety the highest priority for roadways.
7. **All road users have a responsibility to respect one another**, and to behave in a safe manner. Drivers have the potential to do the most harm and have a responsibility to be mindful and respectful of others on the public right of way.

Building A Complete, Safe Street

As one of the first county governments in the United States to adopt Vision Zero, a major question driving the creation and implementation of the first two-year action plan was "what does Vision Zero look like in a large county context?" To answer this question, the County built into the plan a complete update to road design standards and classifications. In February 2021, Montgomery County Departments of Transportation and Planning released Montgomery County Complete Streets Design Guide to maximize safety, enhance sustainability, and promote vital communities.[6] The updated designs and classifications have 12 street types that reflect both the transportation function of a street for all travel modes and the surrounding land uses. With this guidance in place, the County will use the guide to create streets that work for everyone no matter how they choose to travel.

Complete Streets are roadways that are designed and operated to provide safe, accessible, and healthy travel for all users of our roadway system, including pedestrians, bicyclists, transit riders, and motorists.

From Highways to Boulevards

The county's most dangerous roads are currently classified as major highways that connect and run through urban and town centers. Under the new Design Guide, the County and its partners will turn these highways into boulevards with dedicated space for people walking, biking, or driving. Some transformations will be done as part of dedicated safety projects while others will be completed in conjunction with new transit or maintenance projects.

Example from the Complete Streets Design Guide of a Town Center Boulevard.

VISION ZERO 2030 PLAN HIGHLIGHTS

The Vision Zero 2030 Action Plan lays out the County's work for rest of this decade to eliminate serious and fatal crashes. All 45 action items were developed to work towards Vision Zero while building a healthy, equitable, just, and resilient community. The full list of action items can be found starting on page 26.

Systematically Updating Road and Transit Networks. Like many US communities, Montgomery County was planned and built for 50-60 years with the goal of moving cars long distances at high speeds. With the Vision Zero goal and the new Complete Streets Design Guide developed under the 2018-19 Action Plan, the County will transform our dangerous highways into multimodal boulevards so no matter how residents choose to get around it can be done safely. The work includes using data to identify and remediate the most dangerous roads and intersections, building out a complete sidewalk and bike network, more frequent protected crossings, improving pedestrian and bike connections for existing and new rapid transit, and utilizing existing maintenance and transportation projects to proactively improve roadways.

Creating Safe Speeds on All Roads. Because of the prior focus on car movement, many roadways have design and posted speed limits that do not prioritize the safety of all roadway users. In all Vision Zero projects going forward, the County will evaluate and modify speed limits to align with the surrounding land use.

Elevating Racial Equity and Social Justice. Serious and fatal crashes happen across the county, but disproportionately impact neighborhoods where a majority of residents live in poverty or a majority of residents are people of color. The Plan calls for prioritizing these neighborhoods for infrastructure investments, improving outreach and two-way communication with impacted residents, and reimagining public safety to provide purposeful policing that addresses safety and past injustices.

Ending Impaired Driving Deaths. Drunk and drugged driving are a leading contributing factor for fatal crashes and curbing impaired driving takes more than police enforcement. The Plan calls for a public health approach to address substance abuse in our community and utilizing government and non-profit partners to implement the new strategy.

Montgomery County as a Leading Employer in Safety. Montgomery County Government as one of the county's largest employers has over 3,600 vehicles and 9,000 employees driving each day. The Plan calls for improving the safety of the vehicle fleet as they are replaced and implementing updated driver training to employees. These efforts not only improve safety, but potentially save taxpayer money through reduced crashes.

Prompt Emergency Medical Care. When crashes do occur, prompt care by first responders and hospital care are critical aspects of preventing serious injuries from becoming fatal. The Plan continues to prioritize safe and efficient response and care while assuring the safety of first responders on the scene.

2018-2020 VISION ZERO OVERVIEW

Montgomery County launched its first Vision Zero Action Plan in November 2017. Highlights from Vison Zero projects and campaigns since Vision Zero was adopted are shown below. Note that year 3 was during the COVID-19 pandemic, which affected all programs but particularly slowed outreach and enforcement campaigns. [a, b]

[a] Bikeways mileage includes all bikeways – conventional bike lanes, separated bike lanes, bike friendly shoulders, sidewalk bikeways, and paved off road trails.
[b] Automated speed enforcement citations and sidewalk mileage based on fiscal years 2018 to 2020.

CURRENT STATE OF ROADWAY SAFETY

Crash Frequency and Societal Costs

From 2015 to 2019, over 23,000 collisions each year were reported to Montgomery County's Emergency Communication Center. Below is a crash clock showing the frequency of certain crash types in Montgomery County and the economic and societal costs of those crashes.

Event	Occurrence[c]
Collision	**000** days, **00** hours, **23** minutes
Collision with Injuries	**000** days, **02** hours, **06** minutes
Collision with Person Walking	**000** days, **18** hours, **06** minutes
Collision with Serious or Fatal Injuries	**001** days, **06** hours, **53** minutes
Collision with Person Biking	**002** days, **15** hours, **53** minutes
Collision with Fatal Injuries	**012** days, **00** hours, **19** minutes
Person in Motor Vehicle Killed	**021** days, **17** hours, **43** minutes
Person Walking Killed	**030** days, **22** hours, **47** minutes
Person Biking Killed	**202** days, **21** hours, **20** minutes

A person was seriously injured or killed in a crash on average every 1.25 days.

[d]

[c] The event clock is designed to convey the frequency of crashes in Montgomery County but should not be taken to imply regularity in the commission of recorded vehicle collisions. The event clock represents the ratio of crashes to a fixed time interval.

[d] Economic and comprehensive costs were calculated based on the average cost by injury severity reported by the National Safety Council and the total count of injuries reported to county and municipal police from 2015-2019. Costs were in 2019 dollars.

Crash Trends

Serious and Fatal Collisions 2015-2019

In developing the 2030 Action Plan, collision data covering 2015 to 2019 were analyzed. There were 1,419 collisions that resulted in 1,461 serious injuries and 163 fatalities to drivers, passengers, pedestrians, and bicyclists.

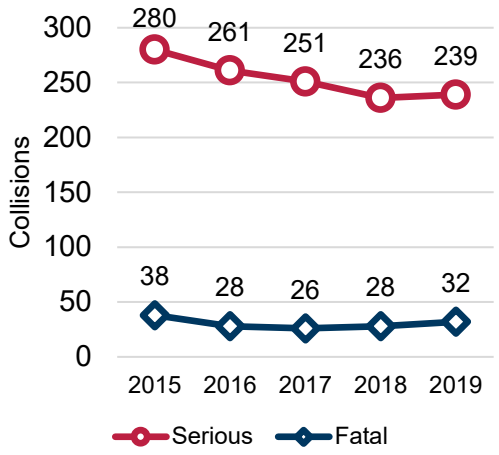
From 2015 to 2019, the number of serious collisions declined 15%, but from 2018 to 2019 were largely unchanged at 236 and 239, respectively.[e] The declines were attributed to improvements for motor vehicle occupants. The number of serious injury crashes for people biking and walking increased from 72 in 2015 to 80 in 2019.

The County averaged 30 fatal collisions a year from 2015 to 2019. Fatal collisions declined from 2015 to 2017 but increased since 2017. People biking and walking represented 45% of fatal collisions, which was significantly higher than the 14% of total injury collisions recorded during the five years.

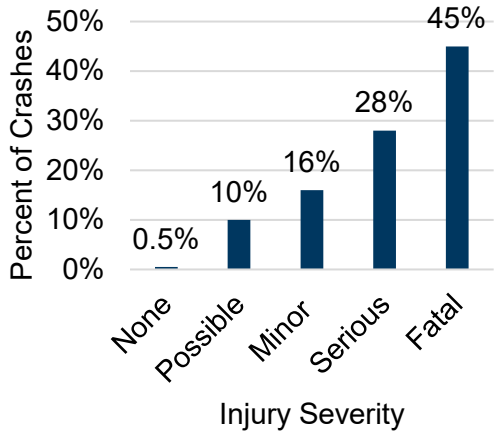
Note that the crash data presented do not include every collision that occurred in the county during the analysis period. The main areas excluded are the interstates (I-495 and I-270), the Intercounty Connector (MD-200), and roads maintained by the Federal Government. These areas were omitted for two reasons. First, MCPD's records did not include reports from all police departments operating within Montgomery County. Second, the action plan was designed to focus on areas where the County Government has some control over the roadway for design or enforcement.

Police Reports Included	Police Reports Not Included
Montgomery County	Maryland State
Rockville	Maryland Transit Authority
Gaithersburg	Chevy Chase
M-NCPPC Park	Federal Agencies
Takoma Park	

SERIOUS AND FATAL COLLISIONS

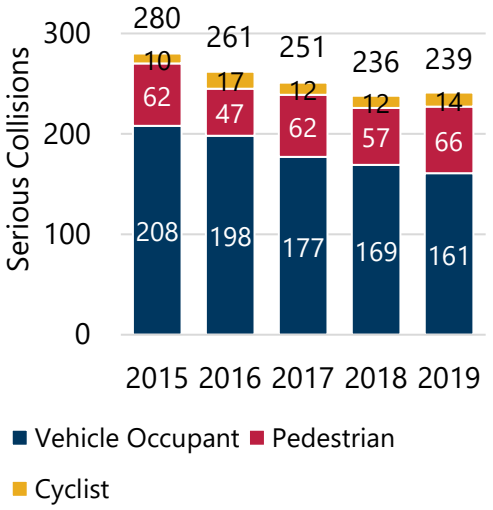


PEDESTRIANS AND CYCLISTS AS A PERCENTAGE OF INJURY CRASHES

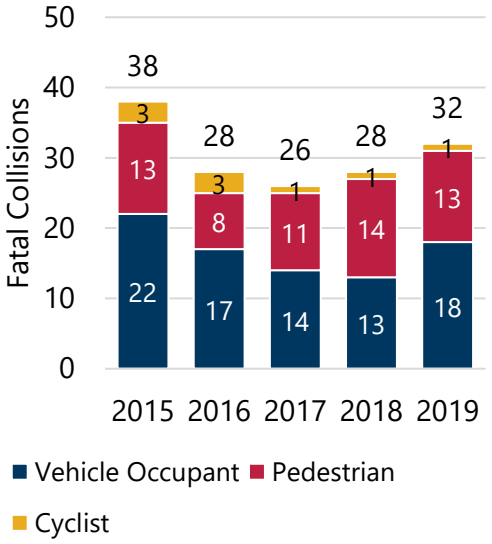


[e] See the full definition of injury severity levels in the definitions section.

SERIOUS COLLISIONS, 2015-2019[f]



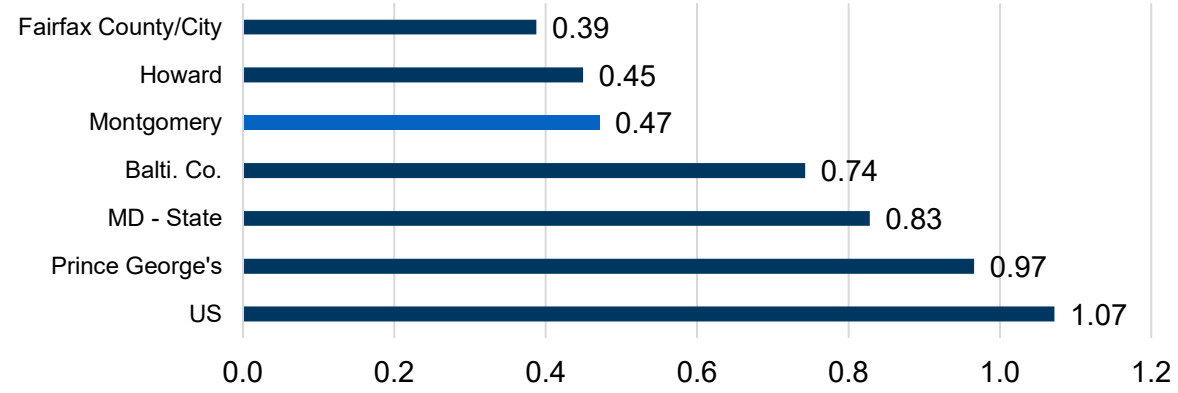
FATAL COLLISIONS, 2015-2019



Fatal Crash Rate Comparison

The National Highway Traffic Safety Administration (NHTSA) maintains a census of all motor vehicle crashes with a fatal injury in the United States.[g] Using NHTSA data combined with data on traffic volume allowed for comparing fatality rates across jurisdictions Montgomery County's fatal crash rate was well below national and state averages for 2015 to 2019. The County's fatal crash rate per 100 million vehicle miles travelled was 78% below the national and 55% below the state average.

2015-2019 FATAL CRASH RATE PER 100 MILLION VEHICLE MILES TRAVELED (VMT)

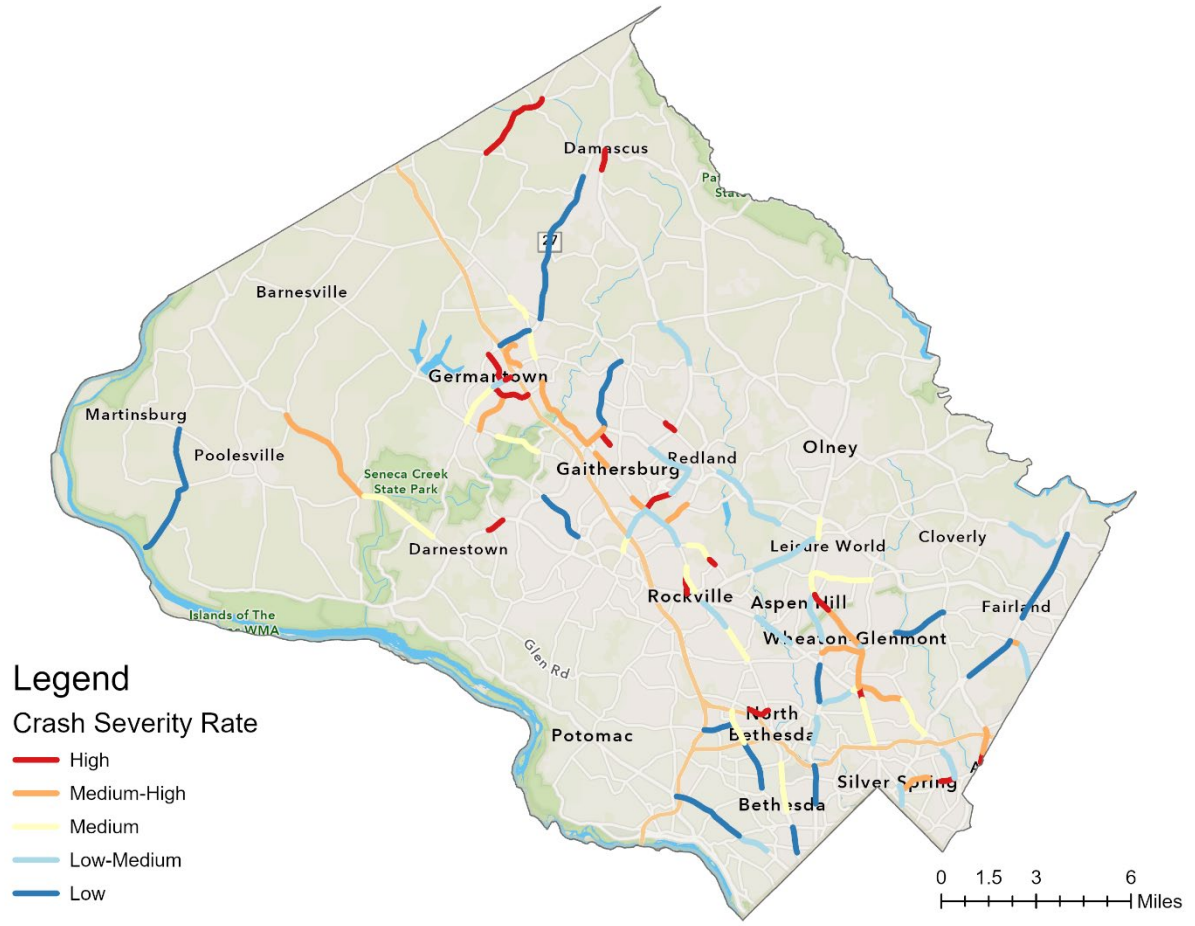


[f] Collisions with both fatal and serious injuries are shown in the fatal collisions chart to avoid double counting crashes. There were 1,267 serious crashes, but due to five crashes having more than one type of roadway user seriously injured, the total if adding up all road users was 1,272 serious crashes.

[g] To allow for comparisons across jurisdictions, the Montgomery County rates included all roads in the county (local roads and highways, interstates, and federal roads).

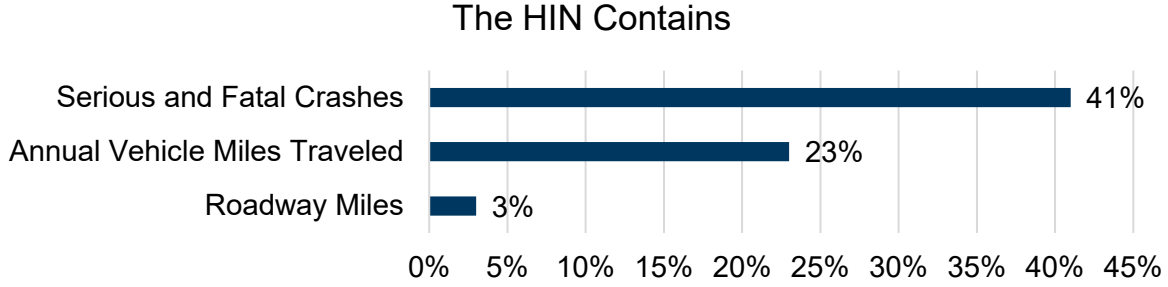
High Injury Network

The high injury network (HIN) highlights the roads with the highest serious and fatal crash rates. Each HIN segment had 4 or more serious or fatal crashes between 2015 and 2019. Prioritizing safety modifications at these high crash locations has the highest potential to move the county towards its ultimate Vision Zero goal. Areas of the county with the highest concentrations of serious and fatal crashes were in Wheaton, Aspen Hill, and Germantown.



High Injury Network

Service Layer Credits:City of Gaithersburg, Maryland, MNCPPC, VGIN, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA



PRIORITY CORRIDORS FOR COUNTY AND STATE MAINTAINED ROADWAYS

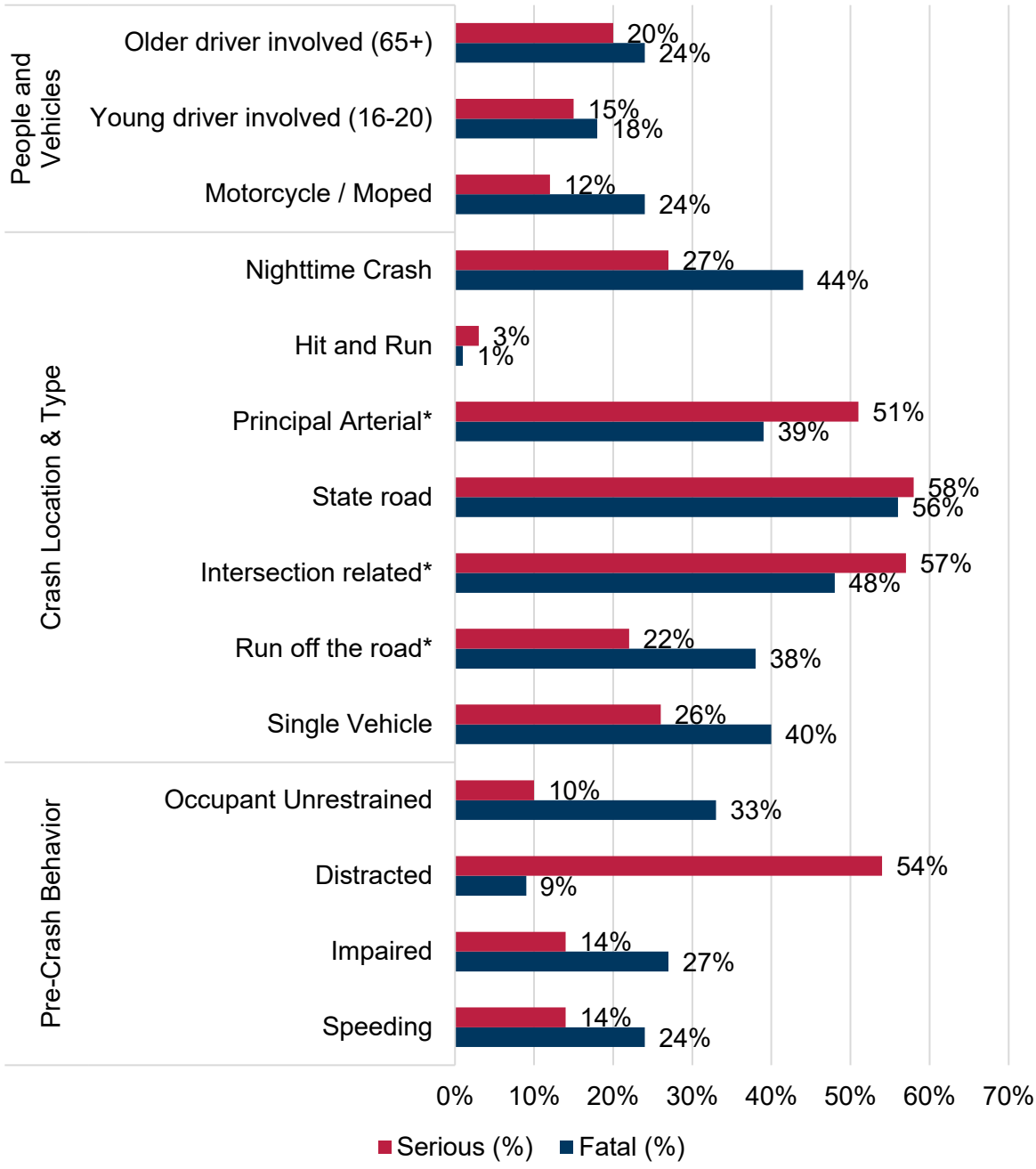
	Roadway	Serious and Fatal Collisions	Segment Length (Miles)	Serious and Fatal Collisions per Mile Per Year
County-maintained Roadways				
A	**East Gude Dr** from Crabbs Branch Way to Southlawn Ln	11	1.1	2.0
B	**Snouffer School Rd** from Cherry Laurel Ln to Woodfield Rd	4	0.4	2.0
C	**Lost Knife Rd** from Montgomery Village Ave to Odenhal Ave	4	0.5	1.6
D	**Shady Grove Rd** from Frederick Rd to Midcounty Hwy	14	2.0	1.4
E	**Randolph Rd** from Connecticut Ave to Georgia Ave	9	1.3	1.4
F	**Middlebrook Rd** from Germantown Rd to I-270	8	1.3	1.2
G	**Randolph Rd** from Kemp Mill Rd to New Hampshire Ave	7	1.7	0.8
H	**Crystal Rock Dr** from Father Hurley Blvd to Germantown Rd	4	1.0	0.8
I	**Bel Pre Rd** From Georgia Ave to Layhill Rd	6	1.9	0.6
J	**Montgomery Village Ave** from Snouffer School Rd to Midcounty Hwy	5	2.4	0.4
State-maintained Roadways				
1	**New Hampshire Ave** from I-495 to Northampton Dr	14	0.9	3.1
2	**Georgia Ave** from University Blvd W to Forest Glen Rd	28	1.9	2.9
3	**Germantown Rd** from Middlebrook Rd to I-270	8	0.6	2.7
4	**University Blvd W** from Georgia Ave to Arcola Ave	17	1.5	2.3
5	**Georgia Ave** from Aspen Hill Rd to Layhill Rd	22	2.2	2.0
6	**Rockville Pike** from Talbott St to Montrose Rd	11	1.2	1.8
7	**Old Georgetown Rd** from I-270 Spur to I-495	10	1.1	1.8
8	**Norbeck Rd** from Baltimore Rd to Georgia Ave	17	2.2	1.5
9	**Frederick Rd** from Middlebrook Rd to Watkins Mill Rd	15	2.0	1.5
10	**Connecticut Ave** from Georgia Ave to Weller Rd	12	1.6	1.5

Collision Factors Summary

The following three pages provide a high-level summary of some of the top contributing factors for serious and fatal crashes. For a deeper look at the data, see the data report.

Motor Vehicle Occupants

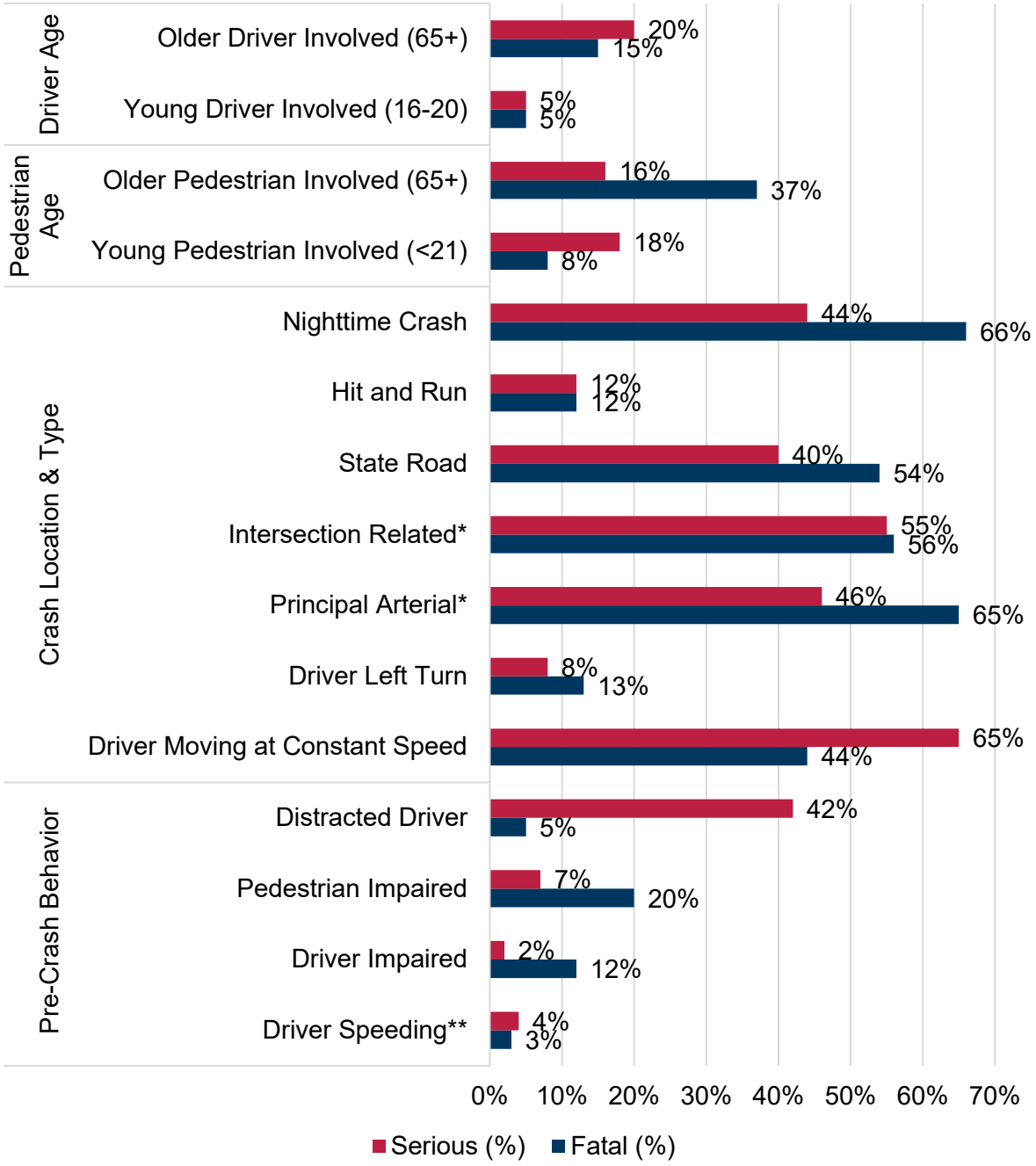
From 2015 to 2019, there were 997 crashes where a motorist was seriously injured or killed. There were 84 fatal crashes with 95 people fatally injured.



*Data shown exclude crashes that did not begin on a roadway (i.e., parking lot or private property crashes).

Pedestrians

From 2015 to 2019, there were 353 crashes where a pedestrian was seriously injured or killed. There were 59 fatal crashes with 59 pedestrians fatally injured.

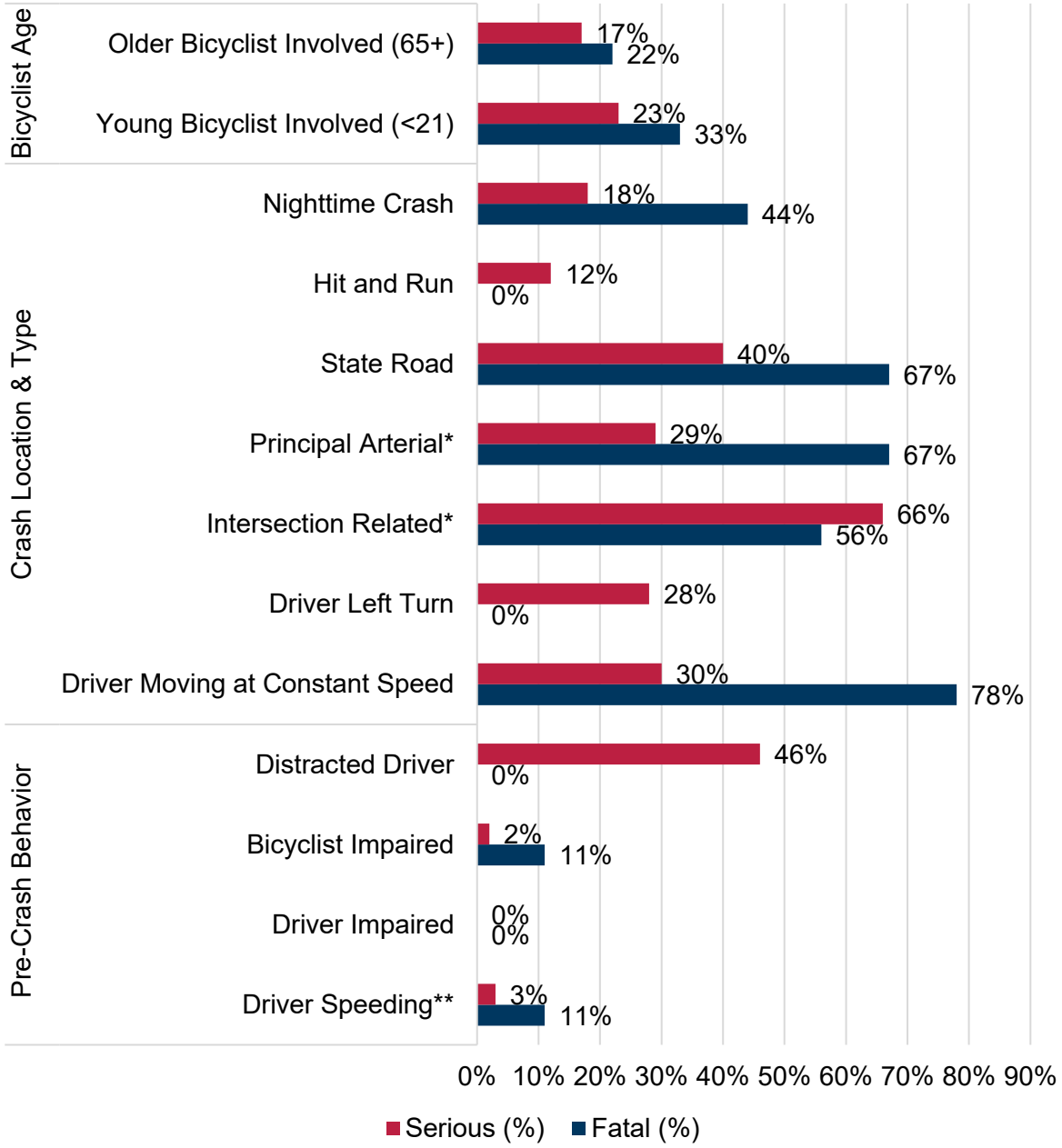


*Data shown exclude crashes that did not begin on a roadway (i.e., parking lot or private property crashes).

**Though a small percentage of drivers were reported exceeding the speed limit or driving too fast for conditions, a driver operating at the speed limit of 35 MPH or more can still seriously injure a pedestrian.

Cyclists

From 2015 to 2019, there were 74 crashes where a cyclist was seriously injured or killed. There were 9 fatal crashes with 9 cyclists fatally injured.



*Data shown exclude crashes that did not begin on a roadway (i.e., parking lot or private property crashes).

**Though a small percentage of drivers were reported exceeding the speed limit or driving too fast for conditions, a driver operating at the speed limit of 35 MPH or more can still seriously injure a cyclist.

Equity and Serious and Fatal Collisions

Reaching Vision Zero requires reckoning with and addressing past and present practices that have created disparate outcomes by ethnicity and race, age, and gender. Although anyone can suffer an injury on the roadway, crash, hospital, and vital records show that some neighborhoods and groups of people bear a larger share of the burden than others. Communities with higher proportions of Black, Indigenous, and People of Color suffer more serious injuries and death compared to White, non-Hispanic majority communities. Our youngest and oldest neighbors have higher injury rates compared to middle aged adults. Men have higher fatality rates than women, but women are more likely to visit the emergency room for injuries. Closing these gaps will be crucial to improving roadway safety.

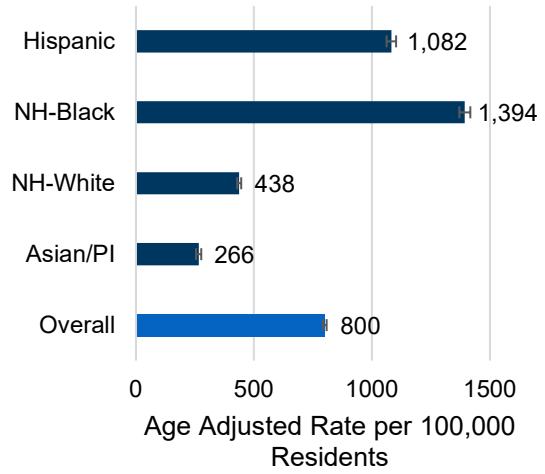
The Vision Zero program hosted an Equity Task Force in 2019 that made a series of recommendations for engineering, education, and enforcement actions to center equity in the development of the 2030 Plan. The task force's recommendations are available on the Vision Zero website.

Racial Equity and Vision Zero

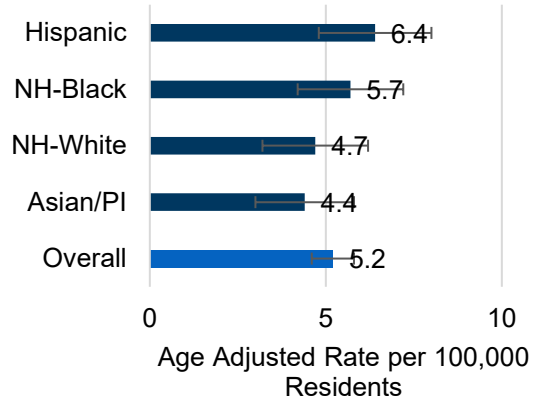
Current Disparities

Across the United States, there are disparate traffic fatality rates by ethnicity and race and Montgomery County mirrors the national trend. An analysis of pedestrian deaths nationwide by Smart Growth America found Black people were struck and killed by drivers at an 82 percent higher rate than White, non-Hispanic Americans.[7] Based on hospital and medical examiner records, there were clear disparities between ethnic and racial groups in Montgomery County. Black and African American Montgomery County residents had an emergency room admission rate for motor vehicle crashes 136% higher than Asian/Pacific Islander residents and 104% higher than White, Non-Hispanic residents.[h]

Emergency Room Visits for Motor Vehicle Crashes by Ethnicity/Race 2015-2019



Mortality Rate for Motor Vehicle Crashes by Ethnicity/Race 2015-2019



[h] Currently Maryland crash reports do not include a crash participant's ethnicity and race, but hospital and medical examiner records provide a proxy. Data exclude non-Montgomery County residents.

Structural racism in prior planning, housing, and transportation polices and investments play a large role in the racial disparities seen in roadway safety. For nearly 100 years, Black people were locked out of homeownership opportunities due to racially restrictive deed covenants and redlining Black neighborhoods from access to government loans and services. The explicit redlining and racial covenants shaped roads and transit networks. Communities with higher rates of poverty and minority populations, identified as Equity Emphasis Areas by the Metropolitan Washington Council of Governments, surround the County's busiest highways.[8] Living near busy highways coupled with higher transit use and lower car ownership compared to White, Non-Hispanic residents equates to more exposure and risk of being struck while crossing multilane highways on foot.[9] Studies on behavioral differences between ethnic and racial groups for roadway safety have mixed or inconclusive findings and tend to not account for intersections between race, socioeconomics, gender, age, land use, environment, an individual's risk tolerance, or rely on self-reported behavior.[10, 11, 12] Rectifying the explicit and implicit exclusion of Black, Hispanic, and People of Color communities will significantly improve safety outcomes for the whole county.

Addressing Disparities

While the County Government has taken steps to tackle the ethnic and racial disparities for traffic safety, the Vision Zero 2030 Plan seeks to eliminate the gap though the following activities:

Examining each action item's impact on racial equity. Each action item in the Plan was rated for how it addresses the gap and flags items that need additional consideration to avoid expanding the gap.

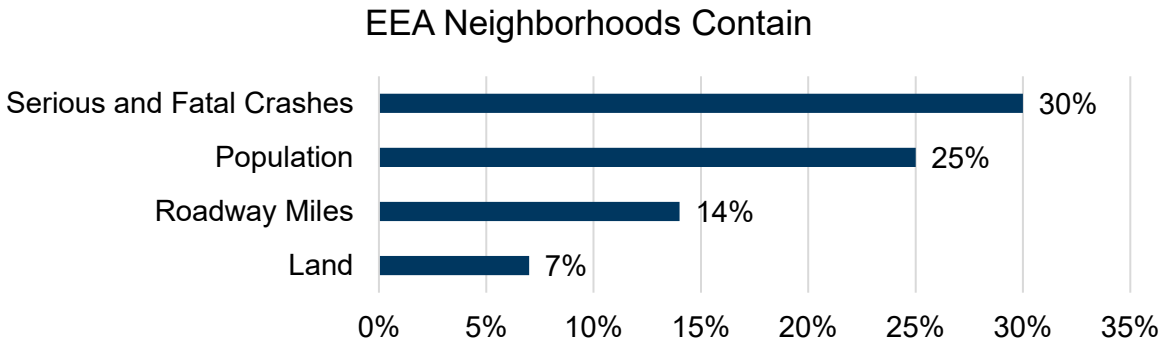
Project selection triage. A recommendation from the 2019 Vision Zero Equity Task Force was to improve the triaging of incoming project requests to ensure resources are being placed where the need is greatest and address historical disinvestment. The 2030 Plan continues to use a variety of data sources and leading practices to identify high-risk roads and intersections and will evaluate currently request-driven programs to redefine the balance between proactive and community request driven projects.

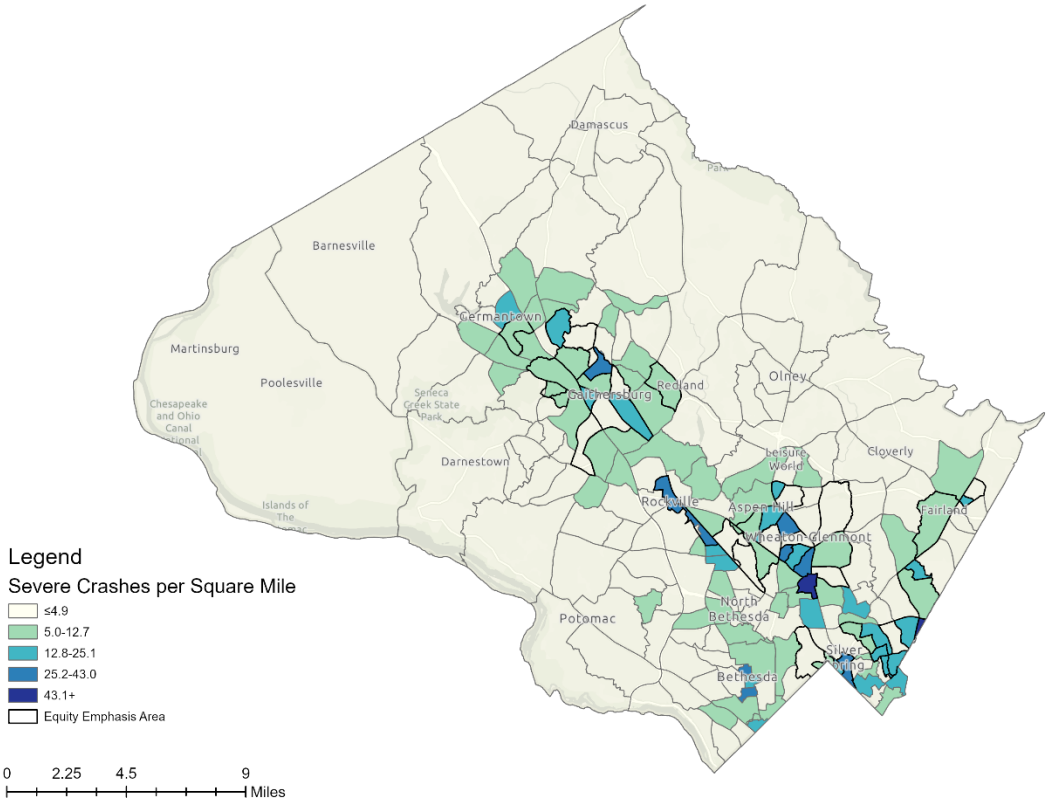
Focused engagement with traditionally underserved neighborhoods. The Plan identifies resources and opportunities to improve two-way communication between traditionally underserved neighborhoods and the County Government. The Plan includes expansions of our community ambassador program and Safe Routes to School, adding additional communication channels and feedback tools, and improving outreach to limited English-speaking residents.

Reimagining Public Safety. The County Government is overhauling its policies and procedures for public safety departments to address implicit bias and institutional racism. As part of this effort, the 2030 Plan continues to implement a recommendation from the Equity Task Force to create a "Focus on the Five" program to concentrate traffic enforcement efforts on dangerous behaviors, restructuring the Police's Traffic Division to improve communication and accountability, and utilizing automated enforcement.

Communities and Crashes

Serious and fatal crashes were concentrated in neighborhoods designated by the Washington Metropolitan Council of Governments as Equity Emphasis Areas (EEAs). Equity Emphasis Areas, neighborhoods outlined in the map below, have higher concentrations of low-income individuals and/or racial and ethnic minorities compared to the overall Washington-region average. These neighborhoods are only 7% of the land and 14% of roadway miles in the county, but contain 30% of serious and fatal roadway crashes.





Severe Crash Density

Service Layer Credits: City of Gaithersburg, Maryland, MNCPPC, VGIN, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA.

Age and Vision Zero

Current Disparities

The youngest and oldest people on our roads had higher serious and fatal injury rates compared to other age groups in the county. For drivers, the injury rate declined from the younger to older drivers until the 80+ age group. For pedestrians, the opposite trend emerged as injury rates increased with age, except for pedestrians aged 20-29 which had an injury rate closer to the 70+ groups. For cyclists, the differences in injury rates from ages 10 to 70 were relatively minor with the biggest difference being nine killed or seriously injured (KSI) collisions per 100,000 county residents between those age groups. Within the 10 to 19 age group, 67% were high-school aged (15–18 years old) and there were 3 fatalities, the most of any age group.

Injury rate disparities by age can be attributed to driving experience, ability to recover from crash injuries, and declines in perception/reaction times, vision, and mobility with age. A Governors Highway Safety Association report on teen driving fatalities found the proportion of fatal crashes involving speeding was higher for teen drivers at 43% compared to 30% for other age groups. Teen drivers were inexperienced and unable to recognize and quickly react appropriately to dangerous situations.[13] The human body's ability to withstand the impact of a crash declines with age as a 30-year-old pedestrian has a similar risk of serious injury or death at 35 MPH as a 70-year-old at 25 MPH.[14] Older adults have declines in vision, cognitive functioning, potential complications from medicines, and have slower walking speeds that impact their ability to navigate compared to younger adults.[15, 16] Accounting for older adults is critical for Vision Zero as their share of the population is projected to grow from 14% in 2015 to 21% in 2045.[17]

Addressing Disparities

To support our younger and older roadway users, the Vision Zero 2030 Plan will:

Context sensitive design. As safety projects are implemented, project designs will incorporate the surrounding community's needs such as the existence of a high-density senior population, school zone, or recreation center to set speed limits, roadway configurations, and signal timing to meet those needs.

On-bike education for kids. Teaching children to ride a bike demonstrates how to safely ride and introduces them to an active form of transportation they can use for a lifetime.

Partnering with local and national groups for outreach. Community and national organizations provide relevant experience and knowledge to help address youth and older adult safety.

Our youngest and oldest residents were most at risk for serious and fatal collisions.			
	1. **16-19**: 256 2. **80+**: 126 3. **20-29**: 139	1. **80+**: 48 2. **70-79**: 46 3. **20-29**: 42	1. **70-79**: 12 2. **10-19**: 11 3. **40-49**: 8

Key: Rates are total collisions per 100,000 registered drivers for drivers and per 100,000 residents for pedestrians and cyclists. Rates exclude people in crashes that lived outside Montgomery County.

Expansion of community ambassador programs. Building on the Vision Zero Youth Ambassador program will allow for more county residents regardless of age to champion Vision Zero in their community.

Alternative transportation options. The County offers numerous free and subsidized transportation programs for youth and older adults that residents may not be aware of when they are deciding if they need to have a car.

Gender and Vision Zero

Current Disparities

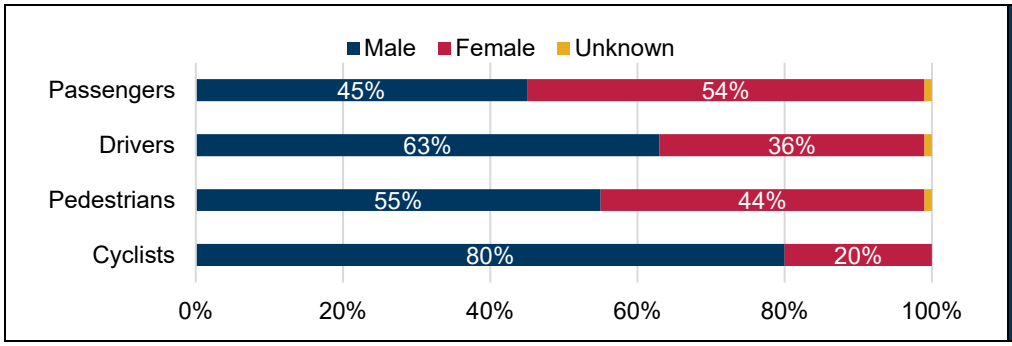
Males made up the majority (60%) of persons killed or seriously injured across all roadway users. By roadway user, men were the majority except for motor vehicle passengers where men were 45%. For fatal injuries, the breakdown was 65% male and 35% female. The gender gap in Montgomery County was similar to the nationwide totals where 71% of people fatally injured in a car crash were male. According to research by the International Institute for Highway Safety, "men typically drive more miles than women and more likely to engage in risky driving practices, including not using safety belts, driving while impaired by alcohol, and speeding."[18]

Addressing Disparities

While the 2030 Plan does not explicitly address the gender disparity in the action items, work on speed management and ending impaired driving deaths will tackle these majority male crash types. Safety campaigns will be designed to address risky behavior and use relevant messaging to reach an audience of young males where appropriate.

Racial Equity and Social Justice Act

In 2019, Montgomery County passed the Racial Equity and Social Justice Act. The act was implemented to eliminate racial disparities and inequities by mandating a racial equity and social justice impact statement for bills and budget proposals, created an Office of Racial Equity and Social Justice, and required a racial equity and social justice action plan to eradicate institutional racism from County policy and operations. Learn more by visiting the Office of Racial Equity's website.



Males made up the majority of people killed or seriously injured.

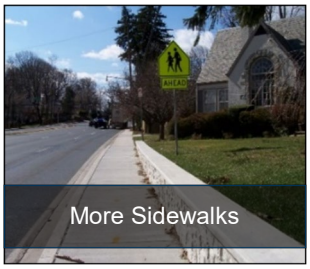
HIGHLIGHTS FROM COMMUNITY CONVERSATIONS

Over the summer and fall of 2020, the Vision Zero program within the Office of the County Executive sponsored a series of surveys, interviews, meetings, letters to community organizations, and listening sessions (focus groups). The goal was to hear from a diverse array of residents on the current state of road safety and what they would like to see happen over the next decade to make the county's roads safer. In total, there were 1,577 survey respondents, 208 residents interviewed or participated in a community listening session, and 12 community organizations returned priority letters. The community feedback was summarized and provided to the workgroups developing the Plan during the workgroups' third meetings in November 2020 to incorporate as they developed the Plan's action items.

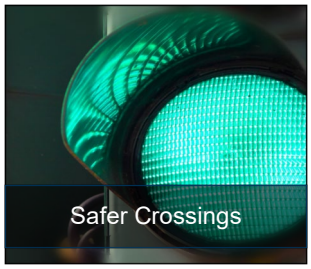
The Vision Zero Steering Committee released the first draft of the 2030 Action Plan for public comment on April 15, 2021 and announced five listening sessions and an opt-in survey available in seven languages. 109 people provided their feedback through the listening sessions and 94 through the online survey. The feedback was summarized and assigned to the lead reviewer for the relevant Plan section to incorporate into the final version of the 2030 Action Plan.

For further details and a full summary of the different outreach efforts and results, see the Public Outreach Summary report.

Community Priorities

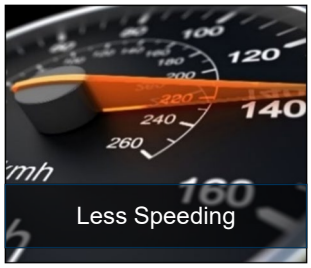

More Sidewalks


More Bike Lanes


Safer Crossings

Safe Bus Stop Access


More Communication



Less Speeding

Stopping for pedestrians

Across all outreach efforts, the following were identified as top priorities for Montgomery County residents to improve road safety.

Building new and improving existing sidewalks. Residents felt unsafe walking around the county because many neighborhoods lack sidewalks. For sidewalks along multi-lane roadways, residents felt unsafe walking on narrow sidewalks located adjacent to fast car traffic and having utility poles and other obstructions further shrinking space for pedestrians. Having more sidewalks with a buffer from car traffic was a common desire across communities, demographics, and outreach efforts.

Expanding the bikeway network. Residents felt biking in the county was the least safe travel mode compared to driving and walking. Those wanting to bike more, but currently felt unsafe to do so, mentioned that bicycle lanes separated from car traffic would encourage them to bike in the county. The expansion of bike lanes next to the curb was a concern for people with disabilities. In conversations with people with disabilities, their top concerns with the new bike lanes were accessibility to the curb and sidewalk and navigation to and from floating bus stops.

More safe crossing opportunities for pedestrians and cyclists. Community members noted that many parts of the county, particularly along highways, have long distances between crossings with a traffic signal or beacon present to stop cars as they attempted to cross. In listening sessions, participants mentioned they would cross outside crosswalks because the distance was too far to the nearest protected crossing.

Safer access to and from bus stops. Transit riders had concerns about access and amenities at bus stops around the county. Bus stops along busy roads are not always located near an intersection or with traffic control device, making access on foot difficult. Riders would like to see more shelters and trees near stops to provide respite from the elements, trash and recycling receptacles, and potentially cameras to address crime.

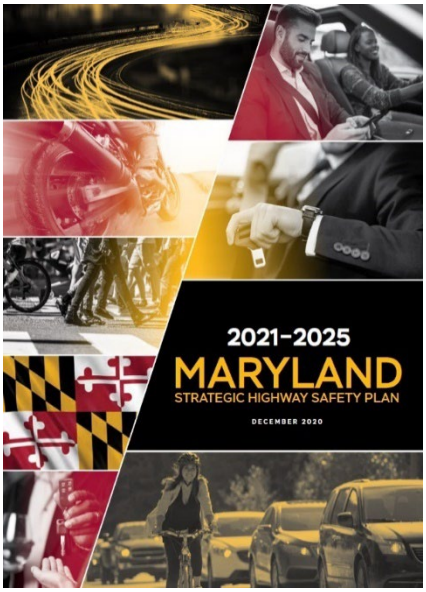
More proactive and intentional engagement from the County Government. In community interviews and listening sessions, participants mentioned they were not aware or concerned people in their community were not aware of on-going County Government planning efforts and ways to interact with the county to provide feedback or resolve an issue. The County needs to use multiple communication channels (websites, surveys, newsletters, town halls, etc.) and across multiple languages to ensure all voices are heard in the decision-making process.

Improving driver behavior for speeding and stopping for pedestrians. Residents frequently mentioned drivers speeding and not yielding to pedestrians as the top unsafe behaviors on county roads. When ranking priorities in the survey, respondents were more supportive of lowering speed limits than expansion of automated enforcement. There was more support for automated speed enforcement than against, but perceptions about more speed enforcement being about revenue than safety persist.

ALIGNING VISION ZERO WITH OTHER INITIATIVES

The Vision Zero 2030 Action Plan represents the County Government's plan to eliminate serious and fatal injuries from county roads and not designed to cover all aspects of the transportation system. The Plan was drafted to align with other County and State plans that will affect the future of the transportation network: the Maryland 2021-2025 Strategic Highway Safety Plan, functional master plans, and the Climate Action Plan.

Maryland Strategic Highway Safety Plan

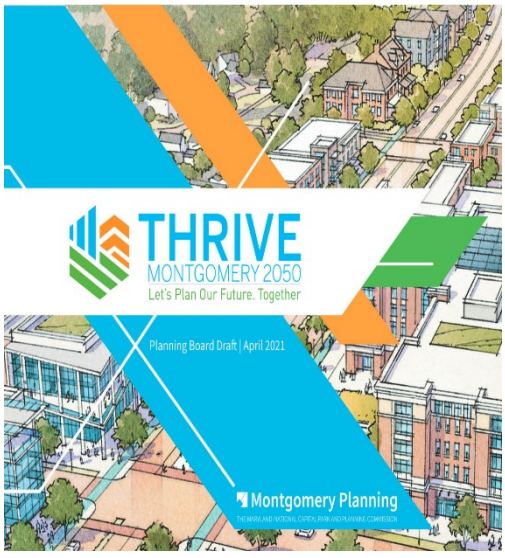


The Maryland Strategic Highway Safety Plan (SHSP) set the strategies and crash reduction targets for statewide roadway safety over the next five years. The 2021-2025 SHSP was the first update since the State adopted Vision Zero in 2019 and incorporated the safe system approach into its strategies. The implementation of the SHSP occurs across six emphasis area teams with Montgomery County employees serving on each statewide team.

The Vision Zero 2030 Plan serves as Montgomery County's local road safety plan under the SHSP. While the plans have different structures, there was significant overlap between the SHSP strategies and the 2030 Plan's action items. Montgomery County will not reach Vision Zero without a strong partnership and commitment from the State Government as 53% of the county's serious and fatal collisions were on State maintained roadways.

General Plan Update (Thrive 2050)

Thrive Montgomery 2050 is a general plan for the county with a 30-year horizon. It sets a vision for the county and encompasses broad, county-wide policy recommendations for land use, zoning, housing, the economy, equity, transportation, parks and open space, the environment, and historic resources. Thrive 2050's recommendations provide guidance for future master plans, county and state capital improvement processes, and other public and private initiatives that influence land use and planning in the county. Thrive 2050 is the first update to the General Plan since 1993. The transportation chapter of Thrive 2050 integrates Vision Zero into the policy and practice recommendations which call for prioritizing non-auto travel modes in the coming decades.



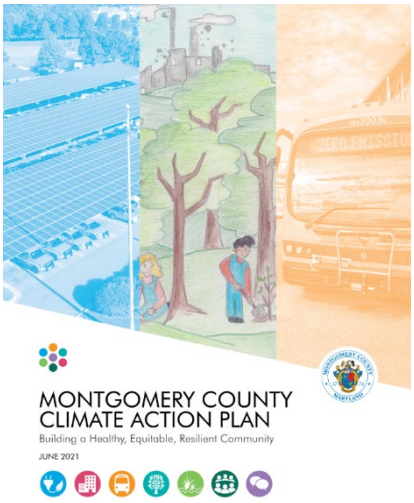
Functional and Community Master Plans

The Maryland-National Capital Park and Planning Commission (M-NCPPC) has multiple functional plans that provide countywide recommendations on bikeways and bicycle parking, sidewalks and shared use paths, transitways and transit stations, roadway classification, right-of-way widths, target speeds and number of through lanes. Local community sector plans incorporate the functional master plan recommendations and update the functional master plan during the detailed local planning process.

Three functional plans are directly related to Vision Zero implementation: Bicycle Master Plan, Master Plan of Highways and Transitways (MPOHT), and the forthcoming Pedestrian Master Plan. The Bicycle Master Plan lays out a vision for a world-class bicycle network and prioritizes the bicycle facilities to build-out the county's comfortable, safe, and connected bicycle network. The Master Plan of Highways and Transitways encapsulates all existing and planned transportation facilities and sets the roadway classification, target speeds and number of through lanes for county roads. The Pedestrian Master Plan, in-development, will prioritize needed infrastructure for pedestrian safety and comfort similar to the Bicycle Master Plan. The Bicycle and Pedestrian Master Plans were built with Vision Zero at the core of the plans and the MPOHT will be updated to reflect the new roadway classifications in the Complete Streets Design Guide that put safety at the forefront of street design.

Climate Action Plan

The Climate Action Plan (CAP) is Montgomery County's strategic plan to cut greenhouse gas emissions 80% by 2027 and 100% by 2035 compared to 2005 levels. The CAP also details the effects of a changing climate on Montgomery County and includes strategies to reduce climate-related risk to the County's residents, businesses, and the built and natural environment. The climate actions outlined in the CAP describe the path to meet the County's ambitious climate goals while building a healthy, equitable, and resilient community.



Transportation is a key action sector in the CAP because 42% of greenhouse gas emissions come from community transportation.[19] Like Thrive 2050, the CAP's transportation action items are focused on increasing active transportation options like biking, walking, and micromobility services by providing the necessary infrastructure to support the mode shift. The CAP also includes strategies to electrify private and public transportation options or use other zero emissions power sources by 2035. The County will need to support programs and resources, such as educational campaigns and financing tools, to support Electric Vehicle (EV) adoption. An expansive, accessible public EV charging infrastructure network will be needed to support widespread EV adoption.

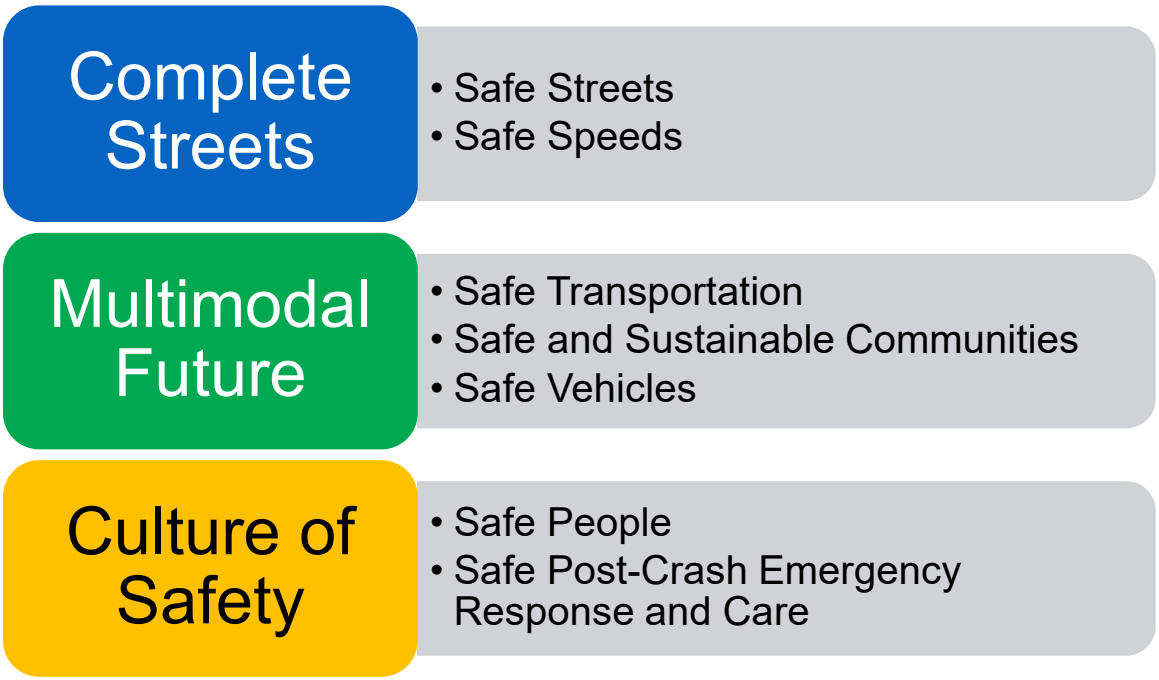
2030 ACTION PLAN AND FY22-23 WORK PLAN

Plan Organization – Pillars and Action Areas

The goal of zero serious and fatal injuries appears impractical, and yet no higher number is acceptable. The 2030 Vision Zero Action Plan sets out an ambitious agenda with 45 actions for the County Government to implement over the next 9 years and detailed work plans for the upcoming two fiscal years. The 2030 Plan includes items that will require new investments, but the real value of Vision Zero lies in the ability to reorient and refocus existing programs and projects with data-informed, systematic, and equitable approaches that make more effective use of current resources.

The Plan's action items and focus areas were based on the World Resource Institute's (WRI) "Sustainable and Safe: A Vision and Guidance for Zero Road Deaths" eight action areas for implementing the safe system approach.[20] The eight action areas were further clustered into three overarching groups based on the overlap between action areas and for assignment to the workgroups developing the action items. The departure from the traditional "3 E's" (engineering, education, and enforcement) approach for traffic safety planning was intentional to highlight the primary role roadway design and operation has on reducing traffic deaths. Enforcement and education remain a critical aspect of the safe system but work as compliments to safe street design.

From WRI's action areas, a new key action area hierarchy for implementing Vision Zero in Montgomery County was created. Safe was placed at the beginning of each action area to emphasize that the Plan places safety at the forefront of all transportation planning. The 2030 Action Plan was built around three pillars and seven action areas:



Plan Checkpoints

Acknowledging the need to balance between long-term planning, making immediate improvements, and adjusting as new opportunities and challenges arise, the 2030 Vision Zero Action Plan has multiple checkpoints to evaluate what is working, integrate new evidence and technologies, and adapt to changing budget and external factors. Implementation of Vision Zero for 2021-2030 will have the following schedule for updates:

- **Every even fiscal year (FY22, FY24, etc.)** the detailed, short-term work plan for the next two fiscal years will be updated. New funding requests will largely be in the second, odd fiscal year of the plan to align with the County's Capital Improvements Program (CIP) budgeting process.
- **Fifth year (2025) review action items.** During the year 2025, the County Executive's Office will convene workgroups to evaluate the implementation of Vision Zero and, as necessary, update the long-term action items based on evidence, leading practices, and budget. This update will also align with the update of Maryland's Strategic Highway Safety Plan.

Organizational Oversight and Partnerships

Many departments and agencies across all levels of government must work together to achieve Vision Zero. To facilitate the implementation of the 2030 Plan, the Vision Zero Coordinator or County Executive designee will continue to host regularly scheduled coordination and information sharing meetings.

a. Host a steering committee of key departments that will implement that plan and require coordination of efforts. The steering committee will be chaired by a representative of the County Executive's Office.
b. Hold larger Vision Zero Partners meetings between municipal, county, and state departments and agencies to ensure employees across the government are up to date on Vision Zero efforts and can provide on-going feedback.
c. The Pedestrian, Bicycle, Traffic Safety Advisory Committee will continue as the County Government's body to provide public involvement and input for Vision Zero programs. Implementing departments will also work with other boards, committees, and commissions across the county.
d. Annually present a comprehensive update to the County Council and submit a recommended budget for Council's consideration and adoption.
e. Update public tracking of the Action Plan quarterly on the Vision Zero website.

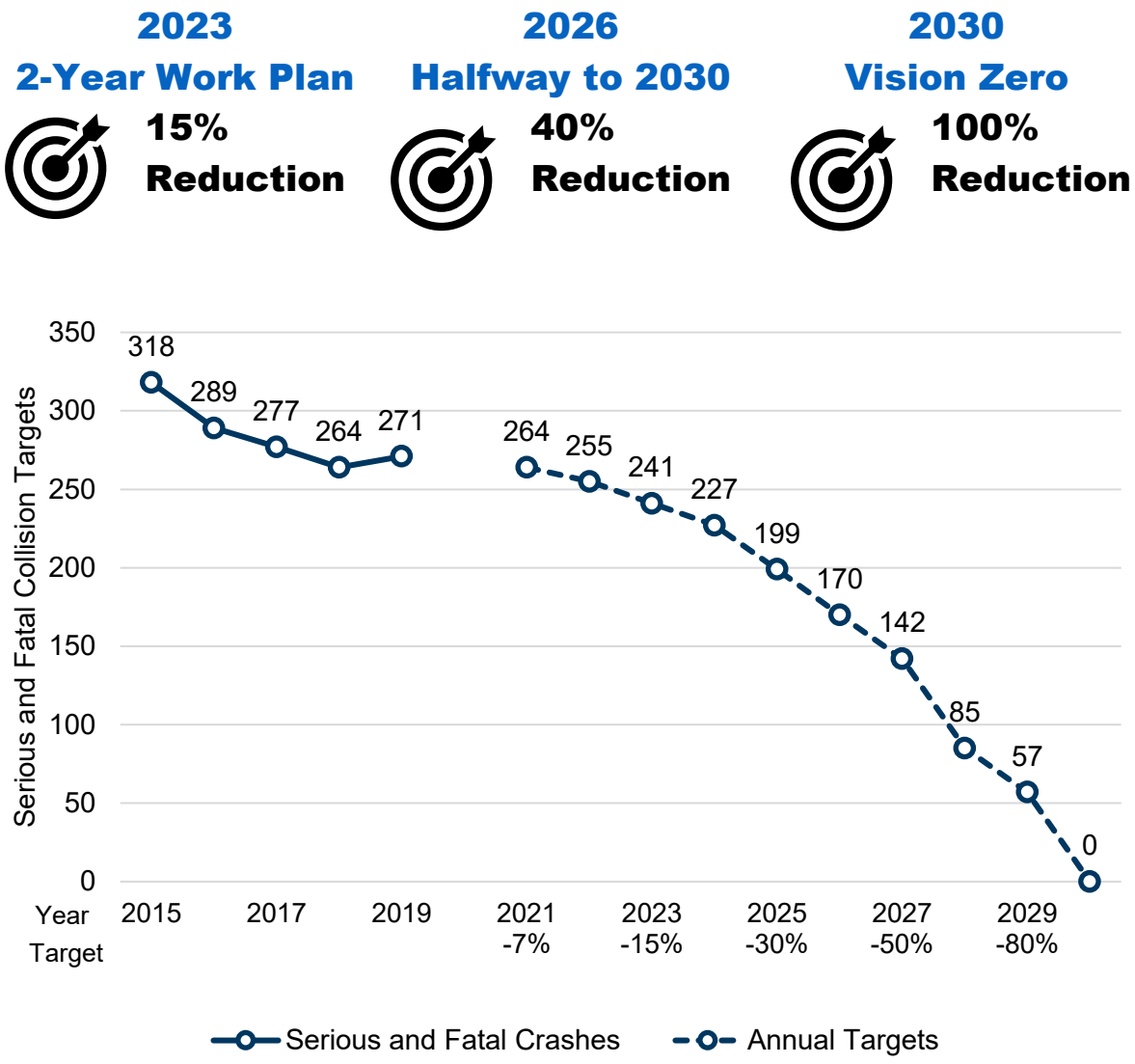
Beyond the County-sponsored meetings, representatives from County Government will participate on state and national planning efforts.

a. County employees will be active participants for the State Strategic Highway Safety Plan's Emphasis Area Teams.
   Partner with other Vision Zero communities and organizations like the Road to Zero Coalition to advocate for federal support and policy to achieve Vision Zero.

Collision Reduction Targets

To get to zero serious and fatal collisions on our roadways by 2030, the County has set ambitious interim targets. By the end of the first two-year work plan, serious and fatal collisions for all roadway users will be reduced by 15%. By 2026, serious and fatal collisions will be cut by 40%.

The reduction targets were set using the five-year average of serious and fatal collisions from 2015 to 2019 as a baseline. The targets were not adjusted for the COVID-19 pandemic as the full effect of the “new normal” were unknown and traffic volume may return or exceed pre-pandemic levels.



Road to Zero

January 2002
Blue Ribbon Panel Report on Pedestrian and Traffic Safety Released

December 2007
Pedestrian Safety Initiative Launched
(Full funding started in July 2009)

October 2015
MCDOT adopts "Moving Forward Together" vision document

February 2016
County Council adopts Vision Zero Resolution

June 2016
County Executive establishes Vision Zero Steering Committee

November 2017
Two-Year Action Plan Approved

January 2020
2020 Action Plan Approved

June 2020
Kickoff Community Meeting for the Vision Zero 2030 Action Plan

April 2021
Public Draft of Vision Zero 2030 Plan Released

July 2021
Vision Zero 2030 Action Plan Approved

2023 and Beyond
Biennial work plan updates

2025
Review and revise the long-term action items in 2030 Plan

2030
Zero traffic fatalities and serious injuries

2030 Plan Action Items

Priority Action Items

The 2030 Plan sets out an ambitious agenda with 45 recommended actions and funding to achieve Vision Zero over the coming decade. Priority actions listed below have the potential to have the highest impact on reducing serious and fatal injuries, can be applied across the transportation network, and support safe travel for all modes. As budgeting and implementation decisions are made, priority should be given to advancing these actions.

Action Item	Why a priority action?
S-1: High Injury Network Projects	Projects funded under S-1 are directly supporting improvements along known high-crash corridors and intersections.
S-3: Frequent, Protected Crossings	Providing safe, convenient crossings can improve safety for people walking, biking, and driving through intersections and mid-block crossings by providing clear right-of-way and controlling vehicle turning movements.
S-4: Signal Timing and Phasing	Signal phasing and timing changes have demonstrated safety impacts and can be implemented systematically where warranted.
S-7: Separated, Low-Stress Bicycle Facilities	Creating separated spaces for all users of the transportation network in dense, multimodal areas provides for enhanced safety, comfort, and predictability for movements.
S-11: Improved Lighting: Provide Safety Upgrades During Routine Maintenance	Utilizing planned roadway and tree maintenance projects provides opportunities to implement safety projects across the county.
S-13: Sidewalk Construction and Upgrades	The lack of sidewalks was a commonly mentioned safety issue from community interviews and surveys. Sidewalks provide separation for pedestrians from general travel lanes.
M-1: Examine Speed Limit on all Projects	Speed management is a fundamental factor in reducing serious and fatal injuries for all road users.
T-1: Pedestrian and Bicycle Infrastructure Improvements Along New Transportation Projects	As new transit along high crash highways is implemented, it presents a once-in-a-generation opportunity to redevelop highways into safer multimodal boulevards.
T-2: Transit Stop Safety	Many transit stops in the County lack a safe and convenient crossings. Pedestrians have been struck and killed when walking to and from bus stops in the County.
P-4: Ending Impaired Driving Deaths	Impaired driving is a leading contributing factor in fatal crashes in Montgomery County and across the world. 28% of fatal crashes in the county involve an impaired person.

How to Read the Action Item Descriptions

The action items in the 2030 Plan have the same structure to detail why the item is in the plan, its potential impact on safety, accessibility, equity, and budget, the short-term work planned, and the operating and capital budget programs that support that action item.

S-1: High Injury Network Projects: Implement safety countermeasures on identified high-risk road segments and intersections. The County must coordinate with the State for state-maintained portions of the network. (A)

Lead: Transport, State Highway Admin. (B) | **Contributor:** (C)

CRF: 3 (D) | **ACC:** 3 (E) | **RESJ:** 3 (F) | **INVEST:** 1 (G) | **Priority:** ☑ (H)

Why Do This? Vision Zero requires a proactive approach in order to place resources in areas with the highest return on safety and more equitable distribution compared to request-driven programming. Road safety audits can reduce crashes upwards of 60%. (I)

FY22 Work plan: (J)
Studies: Aspen Hill (Georgia Ave and Connecticut Ave), 2 High Injury Network corridors
Design: Randolph Rd, New Hampshire
Begin construction: Shady Grove Rd (signal modifications), Crabbs Branch Way, Sam Eig Hwy, and Bel Pre Rd (beacons).

FY23 Work plan: (K)
Studies: 3 High Injury Network corridor
Design: 2 High Injury Network corridors
Begin construction: Randolph Rd HIN

Budget Sources: P500333 - Pedestrian Safety (L)

A - Section Abbreviation Letter – Action Item Number: Action Item Short Name: 10-year action item description. This describes the ongoing work throughout the plan's lifetime to fully implement the action item.

B - Lead: Department(s) that will be directly involved and providing resources to implement the action item.

C - Contributor: Department(s) that have a minor or supporting role and work with the lead department(s) to implement the action item.

D – CRF (Crash Reduction Factor): Rating from 1 to 3, with three being highest, of the expected decrease in crashes based on leading practices and evidence from County or relevant studies.

- N/A – Enabling Step: The action itself will not reduce crashes but will aid the County in implementing Vision Zero.
- 1 - Limited evidence that the action has a direct impact on reducing crashes or existing evidence show low impact on crashes (<10%).
- 2 - Existing evidence show medium impact on crashes (11-45%).
- 3 - Existing evidence show high impact on crashes (>45%).

E – ACC (Accessibility Impact): Rating from 1 to 3, with three being highest, of the positive impact the action item would have on safe travel for people with disabilities in the County.

- N/A – Enabling Step: The action itself will not impact accessibility but will aid the County in implementing Vision Zero.
- 1 - Without careful consideration for accessibility, implementation could negatively harm accessibility for people with disabilities. This includes introduction of new designs to the County.
- 2 – Implementation would not largely affect accessibility compared to the current state.
- 3 – Implementation would positively affect accessibility compared to the current state.

F – RESJ (Racial Equity and Social Justice): Rating from 1 to 3, with three being the highest, of the positive impact the action item would have on reducing the disparate traffic safety outcomes between race and ethnic groups.

- N/A – Enabling Step: The action itself will not impact racial equity but will aid the County in implementing Vision Zero.
- 1 - Without careful consideration for racial equity, implementation could further the gap or planned expenditures do not address the existing gap.
- 2 – Implementation makes some efforts of closing the gap.
- 3 – Implementation addresses existing inequities and works to close the gap.

G – INVEST (New Investment Estimate): Rating from 1 to 3, with three being highest, of the estimated annual impact to the County budget above current funding to implement the action item over the next decade:

- 1 – Implementation can be done within current resources or additional costs are low (<$100k).
- 2 - Implementation would have a marginal increase in annual budgets ($100k to $1M).
- 3 - Implementation would require a substantial increase in annual budgets (>$1M).

H – Priority: If checked, the action item is a top ten action item for the Action Plan. Priority actions have the potential to have the highest impact on reducing serious and fatal injuries, can be applied across the transportation network, and support safe travel for all modes.

I – Why do this?: An explanation of why this action item is in the Plan and how it is expected to affect traffic safety in the county.

J and K – Year 1 and Year 2 work plans: List of work to be performed during the first and second fiscal years. Items in year one are typically within the current scope of existing resources. Year 2 is a full budget update year, so potential new funding requests are here.

L – Budget Sources: Programs and projects in the operating and capital budgets for the County that will provide resources to complete the action items for the two years of the Plan. If there are outside grant opportunities to support work in the action item, the grant source is listed.

Complete Streets

The new Complete Streets Design Guide developed in partnership by the Transportation and Planning Departments defined twelve street types to create complete streets that are compatible with the varying road and land use contexts across the county. These complete streets are “designed and operated to provide safe, accessible, and healthy travel for all users of our roadway system, including pedestrians, bicyclists, transit riders, and motorists. […] Complete Streets function as a system, ensuring that the transportation network as a whole provides safe and efficient access for all roadway users and only provides designated spaces for each mode when needed.” [21]

With the new Guide, the Vision Zero 2030 Action Plan set specific projects to make those designs come to life and create streets with frequent, protected crossings, adequate space accommodating those walking, biking, using assistive mobility devices, and roadway features to keep all vehicles traveling at safe speeds.

Tracking Implementation for Complete Streets

The following measures will be used to track progress on transforming the road network.

- Number of serious and fatal injury crashes along the High Injury Network.
- Percentage of serious and fatal injury crashes in Equity Emphasis Areas.
- Percent change in streets meeting the protected crossing spacing thresholds included in the Complete Streets Design Guide.
- Percent change in streets with target and posted speeds meeting the street type target speeds.
- Miles of roadway improved to “somewhat comfortable” or “very comfortable” for pedestrians as defined by pedestrian level of comfort.
- Miles of roadway improved and trails installed that are appropriate for most bicyclists’ level of comfort as defined by bicyclist level of traffic stress.
- Linear feet of sidewalk built.
- Miles of separated bicycle facilities built.

Designing Streets for Safe Speeds

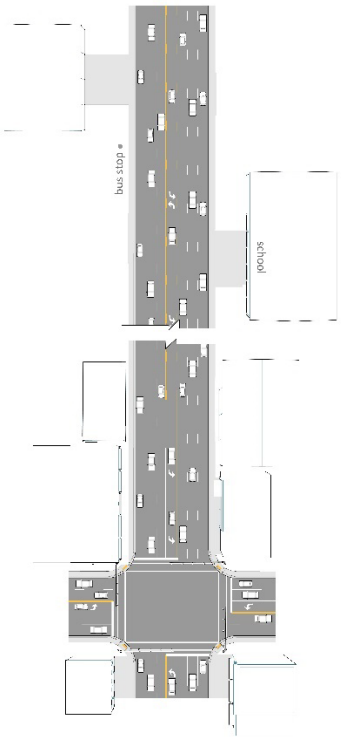
The prevailing travel speed on a stretch of roadway is governed by three speeds:

- **Posted speed limit**: the maximum legal speed a driver can travel on the roadway as set by the roadway owner.
- **Design speed**: The geometric criteria (width, curvature, banking) are oriented in a way to allow the driver to comfortably operate their vehicle at this speed.
- **Target speed**: The desired operating speed for a roadway facility.

Under Vision Zero, modifications to the posted and design roadway speeds will create self-enforcing roads where drivers operate safely. Where speed compliance remains a public safety issue, police will utilize officer and automated enforcement. Below is an example of transitioning a higher-speed road into an urban area to get operating speeds to the target speed.

Existing Conditions

- Long crossing distances
- Road design encourages higher driving speeds
- Pedestrian desire lines between transit stop and destinations



Potential Complete Street Conditions

- Lane reduction
- Varying-width curb extensions
- Signal timing allows continued green flow for vehicles traveling the design speed of 25 MPH
- Enhanced mid-block crossing

Complete Streets Action Items Summary

Action	Lead	Contributor	Priority Action	On Page #
S-1: High Injury Network Projects	MCDOT, SHA	N/A	Yes	32
S-2: Intersection Redesign	MCDOT, SHA	N/A	No	33
S-3: Frequent, Protected Crossings	MCDOT, SHA	Parks	Yes	33
S-4: Signal Timing and Phasing	MCDOT, SHA	N/A	Yes	34
S-5: Corridor Access Management	MCDOT, SHA	N/A	No	35
S-6: Roadway Departure	MCDOT, SHA	N/A	No	35
S-7: Separated, Low-Stress Bicycle Facilities	MCDOT, Parks, SHA	Planning	Yes	36
S-8: Safe Trail Crossings	Parks	MCDOT	No	37
S-9: Safe Routes to School Engineering Projects	MCDOT, MCPS, SHA, MCPD	Planning	No	37
S-10: Provide Safety Upgrades During Routine Maintenance	MCDOT, SHA	Utilities	No	38
S-11: Improved Lighting	MCDOT, Utilities	N/A	Yes	38
S-12: Sidewalk Repair and Clearance	MCDOT	SHA	No	39
S-13: Sidewalk Construction and Upgrades	MCDOT	SHA	Yes	39
S-14: High Visibility Equipment and Markings	MCDOT, SHA	N/A	No	40
S-15: Shared Streets	MCDOT, Parks, UD	Planning	No	40
S-16: Data Informed Decisions	MCPD, MCDOT, Planning, OMB	CEX, MHSO, MSP	No	41
S-17: Equitable Project Intake and Selection	MCDOT, OMB	CEX	No	42
M-1: Examine Speed Limit on all Projects	MCDOT, SHA	N/A	Yes	43
M-2: Speed Management Policy	MCDOT, SHA	N/A	No	43
M-3: Enforcement of Speed Limits	MCPD	MCDOT	No	44

Safe Streets

Montgomery County will utilize the safe system approach to upgrade roadways, sidewalks, and bike paths, with priority for projects in high crash risk areas, to prevent serious and fatal injuries.

S-1: High Injury Network Projects: Implement safety countermeasures on identified high-risk road segments and intersections. The County must coordinate with the State for state-maintained portions of the network.				
Lead: Transportation, State Highway Admin.			**Contributor:** N/A	
CRF: 3[22,23]	**ACC:** 3	**RESJ:** 3	**INVEST:** 3	**Priority:** ☑
Why Do This? Vision Zero requires a proactive approach to place limited resources in areas with the highest return on safety and equitable distribution compared to request-driven programming. Road safety audits can reduce crashes upwards of 60%.				
FY22 Work Plan: 1) Studies: Aspen Hill (Georgia Ave from Hewitt Avenue to Bel Pre Road and Connecticut Avenue from Georgia Avenue to Independence Street), New Hampshire Avenue from Oakview Drive to Southampton Drive, 1 additional High Injury Network corridor. 2) Begin design: Randolph Rd from Colie Drive to Hunters Lane, Sam Eig Highway from end of I-370 to Diamondback Drive. 3) Begin construction: Shady Grove Rd from I-270 to Frederick Road (signal modifications), Crabbs Branch Way from Shady Grove Road to Indianola Drive, and Bel Pre Road from Georgia Avenue to Layhill Road (beacons).				
FY23 Work Plan: 1) Studies: 3 High Injury Network corridors. 2) Design: 2 High Injury Network corridors. 3) Begin construction: Randolph Rd HIN, Sam Eig Hwy from I-370 to Diamondback Drive.				
Budget Sources: P500333 - Pedestrian Safety, P507017 – Intersection and Spot Improvements Grant opportunities – MWCOG Regional Safety Program (study and design only)				

BEFORE **AFTER**

Curb bump outs for pedestrian safety. Above is an example of a smaller scale change to the roadway made by MCDOT as part of a pedestrian road safety audit along Lockwood Drive to the west of New Hampshire Avenue. By bumping out the sidewalks, adding high visibility crosswalk markings, and signs, pedestrians now have less exposure to traffic and higher visibility for people driving.

S-2: Intersection Redesign: Shorten crossing distances for pedestrians and cyclists and slow down the turning speed of vehicles through intersection modifications. Utilize quick build materials where appropriate.

Lead: Transportation, State Highway Admin.			**Contributor:** N/A	
CRF: 3[24,25]	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? Reducing pedestrian exposure and slowing turning vehicles can prevent crashes and serious injuries. 56% of serious and fatal injuries occurred at or related to intersections.

FY22 Work Plan:

1) Inventory all free right turns/"porkchops" on County and State roadways. Identify priority intersections for safety upgrades (removal, install raised crosswalk, signing, etc.)
2) Utilize quick build materials (flex posts, quick curb, signing, and pavement markings) or full buildout (concrete curb and gutter bump-out) as appropriate for interim safety treatments that include vehicle speed reduction and warnings at motor vehicle and pedestrian conflict locations.
3) Design reconfiguration of Old Georgetown Road and Rockville Pike intersection with removal of hot right turn lanes.
4) Construct Old Georgetown Road & Tilden Lane intersection improvements.
5) Intersection redesigns for bike facilities installed under action S-7
    a) Complete construction of Bethesda Avenue and Woodmont Avenue (east and west legs) and Bethesda Avenue and Wisconsin Avenue as part of Capital Crescent Trail Phase 1 project.
    b) Complete construction of Bethesda Avenue and Woodmont Avenue (north and south legs) as part of Woodmont Avenue Cycle Track Phase 1.
    c) Complete construction of Montgomery Avenue and Wisconsin Avenue as part of Montgomery Lane/Ave bikeway project.
6) Complete construction of Rockville Pike and Center/South Wood Drive and Wisconsin Avenue and Woodmont as part of the Base Realignment and Closure project.

FY23 Work Plan:

1) Begin construction Randolph Road HIN intersection improvements.
2) Construct reconfiguration of Old Georgetown Road and Rockville Pike intersection with removal of hot right turn lanes.
3) Begin construction of Tower Oaks & Montrose Road intersection improvements.
4) Begin construction of Seneca Road & Esworthy Road intersection improvements.
5) Begin construction of Fenton Street and Philadelphia Avenue intersection improvements.

Budget Sources: P500333 - Pedestrian Safety, P507017 - Intersection and Spot Improvements, P502106 - White Flint Metro Station Access Improvements, P501903 – Beach Drive over Silver Creek (M-PK24), P500119 – Bethesda Bikeway & Pedestrian Facilities, P0501209 – MD 355 Crossing (BRAC)

S-3: Protected Crossings: Provide additional protected crossing locations by installing new traffic signals and beacons, with priority installations in high crash risk areas with infrequent crossing opportunities.

Lead: Transportation, State Highway Admin.			**Contributor:** Parks	
CRF: 3[26]	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:** ☑

Why Do This? Provide safe, convenient crossings to reduce crossing outside of crosswalks. Pedestrian hybrid beacons can reduce pedestrian-involved crashes by 55%.

FY22 Work Plan:
1) Three pedestrian hybrid beacons along Bel Pre Road between Georgia Avenue and Layhill Road.
2) Install pedestrian hybrid beacon at Westlake Drive & Lakeview Drive.
3) Install two pedestrian hybrid beacons along Fenton Street at Roeder Road and Whole Foods Driveway.
4) Install pedestrian hybrid beacon at Randolph Road & Randolph Village.
5) Install new traffic signal at Sangamore Road & Walhonding Road.

FY23 Work Plan:
Install at minimum five signals and beacons.

Budget Sources: P507154 - Traffic Signals, P500333 - Pedestrian Safety, P507017 - Intersection and Spot Improvements
Grant opportunities – MDOT SHA Highway Safety Improvement Program

S-4: Signal Timing and Phasing: Where appropriate, modify signal phasing and timing to provide protection for all road users.

Lead: Transportation, State Highway Admin.			**Contributor:** N/A	
CRF: 2[27,28]	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:** ☑

Why Do This? 56% of serious and fatal injuries occurred at or related to intersections. Signal phasing changes, such as providing pedestrians 3-7 seconds to cross roadways before vehicles can turn can lower pedestrian-vehicle crashes by 13% at intersections.

FY22 Work Plan:
1) Review and develop updated signal policy/guidelines for expansion of No Turn on Red, Lead Pedestrian Intervals, auto pedestrian recall, pedestrian/ vehicle detection equipment, overnight traffic signal flash operations, exclusive vs permissive phasing for left turns across more than two lanes, and priority corridors for new signals and beacons.
2) Signal phasing and timing changes along HIN corridors moving to construction in S-1.

FY23 Work Plan:
1) Begin implementation of new signal policy.
2) Signal phasing and timing changes along HIN corridors moving to construction in S-1.

Budget Sources: P507154 - Traffic Signals, P500333 - Pedestrian Safety, P507017 - Intersection and Spot Improvements

S-5: Corridor Access Management: Assess and remediate safety concerns created by uncontrolled turning movements to and from arterial and collector roads to neighborhoods and driveways with direct access with a specific focus on left turn safety issues.

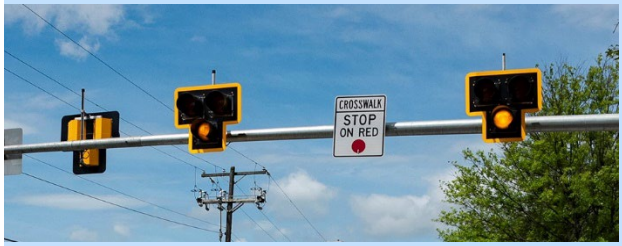
Lead: Transportation, State Highway Admin.		**Contributor:** N/A		
CRF: 2[29]	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? 20% of serious and fatal crashes that occurred at or was related to an intersection or interchange had no traffic control device or person present.

FY22 Work Plan:
Evaluate signalized and unsignalized left turns across more than two lanes for potential safety issues in High Injury Network corridors.

FY23 Work Plan:
1) Implement safety improvements to address identified left turn issues at 5 intersections.
2) Explore new grant and funding opportunities to support future work in this action item.

Budget Sources: P507154 - Traffic Signals, P507017 - Intersection and Spot Improvements



Pedestrian hybrid beacons are traffic control devices to stop vehicular traffic for pedestrians crossing at unsignalized locations where a full traffic signal may not be necessary. These devices are particularly useful for providing more mid-block protected crossings.

S-6: Roadway Departure: Improve roadways where run off the road crashes are prevalent, at curves and along country roads, utilizing repaving and safety programs. Prevent run-off-the-road events using higher friction road surface materials and guardrails, reduce serious collisions by removing fixed objects and using breakaway poles.

Lead: Transportation, State Highway Admin.			**Contributor:** N/A	
CRF: 2[30, 31]	**ACC:** 2	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? 24% of serious or fatal injury crashes for motor vehicle occupants involve running off the road and 34% of vehicle occupant fatalities occur at curves in the road.

FY22 Work Plan:
Identify road sections with high risk for run-off-the-road crashes and prioritize needed improvements.

FY23 Work Plan:
1) Utilize paving and safety programs to begin systematically upgrading dangerous roadway segments using proven countermeasures such as rumble strips, signage, high friction pavement, safety curb, etc.
2) Explore grant and funding opportunities to support work in this action item.

Budget Sources: P508113 - Guardrail Projects,
Explore grant and funding opportunities to support work in this action item.

S-7: Separated, Low-Stress Bicycle Facilities: Build bikeways identified within the Tier 1 network of the Bicycle Master Plan. Prioritization of any bike facility projects must also prioritize upgrading known high crash risk roads. Tier 2 and 3 should be considered when opportunities arise such as redevelopment, repaving, or would increase safety on a high crash risk road.

Lead: Transportation, Parks, State Highway Admin.		**Contributor:** Planning		
CRF: 2[32]	**ACC:** 2	**RESJ:** 2	**INVEST:** 3	**Priority:** ☑

Why Do This? Creating separated spaces for all users of the transportation network in dense, multimodal areas provides for enhanced safety, comfort, and predictability for movements.

FY22 Work Plan:

Design:

1) Capital Crescent Surface Trail (Phase II)
2) Fenton Street Cycletrack
3) Dale Drive Shared Use Path
4) Marinelli Road (Phase II)
5) Bradley Boulevard (MD-191) Improvements
6) Heritage Triangle Trail (Phase I)
7) Frederick Road (MD 355) Clarksburg Shared Use Path
8) Seven Locks Road Bikeway (begin facility planning)
9) Tuckerman Lane Sidewalk and Bikeway (reach 35% design phase)
10) BiPPA – Wheaton CBD

Construction starting or continuing on:

1) Capital Crescent Surface Trail (Phase I)
2) Capital Crescent Trail along Purple Line
3) Glenmont/Aspen Hill Neighborhood Greenway Pilot
4) Grove Street Neighborhood Greenway Pilot
5) Metropolitan Branch Trail
6) Marinelli Road (Phase I)
7) Beach Drive over Silver Creek (includes Rock Creek Trail relocation)
8) Emory Lane Shared Use Path
9) Cameron Street to Planning Place Bikeway
10) White Flint West Workaround
11) BiPPA – Grosvenor Rockville Pike Shared Use Path

FY23 Work Plan:

Design:

1) Bethesda Loop (Phase II & III projects)
2) Sandy Spring Bikeway
3) Seven Locks Road Bikeway (reach 35% design phase)

Construction starting or continuing on:

1) Capital Crescent Trail along Purple Line
2) Metropolitan Branch Trail
3) BiPPA - Purple Line
4) Marinelli Road (Phase II)
5) Bethesda Loop (Phase II)
6) Fenton Street and Philadelphia Avenue Intersection Improvements
7) MacArthur Blvd (Segment I)
8) Good Hope Road Shared Use Path
9) White Flint West Workaround

10) BiPPA – Grosvenor Rockville Pike Shared Use Path

Budget Sources: P502002 - BiPPA Improvements - Wheaton CBD, P507596 - Bikeway Program Minor Projects, P502003 - BiPPA Improvements - Veirs Mill/Randolph, P502004 - BiPPA Improvements - Purple Line, P501532 - BiPPA Improvements (Countywide), P500119 - Bethesda Bikeway and Pedestrian Facilities, P501316 - Capital Crescent Trail, P501110 – Metropolitan Branch Trail, P502001 – Fenton Street Cycletrack, P0501903 – Beach Drive over Silver Creek (M-PK24), P501733 – Bradley Boulevard (MD 191) Improvements, P502109 – Dale Drive Shared Use Path an Safety Improvements, P501902 – Good Hope Road Shared Use Path, P501744 – MD 355 Clarksburg Shared Use Path, P509337 – Facility Planning: Transportation, P501506 – White Flint West Workaround
Grant opportunities: MDOT Kim Lamphier Bikeways Network Program, MWCOG Transportation Land-Use Connections Program

S-8: Safe Trail Crossings: Systematically upgrade the 156 trail crossings for safety improvements and develop safe trail connections to neighborhoods. Create standalone CIP projects for larger improvements such as major signal improvements or bridges.

Lead: Parks			**Contributor:** Transportation	
CRF: 2[33]	**ACC:** 3	**RESJ:** 2	**INVEST:** 1	**Priority:**

Why Do This? Park trails cross 156 intersections in the County and create conflict points between trail users and cross traffic.

FY22 Work Plan:
Continue systematic upgrades of trail crossings at 8-12 crossings per year.

FY23 Work Plan:
Continue systematic upgrades of trail crossings at 8-12 crossings per year.

Budget Sources: P871905 - Vision Zero (Parks)

S-9: Safe Routes to School Engineering Projects: Evaluate the infrastructure safety needs and construct improvements near MCPS schools to improve access and encourage students to walk to school (sidewalks, protected crossings, crossing guards, appropriate speed limits, etc.)

Lead: Transportation, State Highway Admin., Public Schools, Police			**Contributor:** Planning	
CRF: 3[34]	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? Safety improvements made within a quarter mile of MCPS schools by MCDOT have lowered the number of pedestrians and cyclists struck by motor vehicles and create more opportunities for students to safely walk or bike to school.[35]

FY22 Work Plan:
1) Perform five walkability audits.
2) Construct short and mid-term recommendations for at minimum five school walksheds.
3) Construct three spot improvements within school walksheds.
4) Conduct a one-time study of prioritized sidewalk gaps and needs for County public schools outside of municipalities.

FY23 Work Plan:
1) Reduce speed limits on targeted roadways around priority schools.
2) Evaluate CSDG to consider how transit corridors, school zones and walksheds should be incorporated as an overlay for the new street types.

3) Perform five walkability audits.
4) Construct short and mid-term recommendations for at minimum five school walksheds.
5) Construct three spot improvements within school walksheds.
6) Seek changes to State law that will allow the County to implement new requirement for new construction or major reconstruction at school site to perform road safety audit.

Budget Sources: P509036 - Transportation Improvements for Schools, P500333 - Pedestrian Safety, Operating Budget Program – Community/Transportation Safety.

S-10: Provide Safety Upgrades During Routine Maintenance: Utilize repaving, tree pruning, and other maintenance schedules to provide lane widths, pedestrian and bicycle infrastructure, and other safety countermeasures as described in the CSDG that will bring the design speed closer to the speed limit and clear sightlines and walking paths from overgrowth.

Lead: Transportation, State Highway Admin.		**Contributor:** Utility companies		
CRF: 2[36]	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? Utilizing planned roadway and tree maintenance projects provides opportunities to implement safety projects across the county.

FY22 Work Plan:
1) Develop and implement a new project workflow and checklist to aid in coordinating projects for annual paving season.
2) Kensington Parkway shoulder improvements.

FY23 Work Plan:
1) Explore resources in MCDOT to assist in coordinating and implementing projects across government, development, and utilities.
2) Evaluate Primary/Arterial Roads Resurfacing Program for candidate projects.

Budget Sources: P508527 - Resurfacing: Primary/Arterial, P500511 - Resurfacing: Residential/Rural Roads, P500700 – Street Tree Preservation

S-11: Improved Lighting: Improve nighttime illumination utilizing leading practices for illumination and lighting, regular identification and replacement dark or dim streetlight luminaires, and installing lighting in areas with high crash risk and high pedestrian crossing locations.

Lead: Transportation, Utility Companies		**Contributor:** N/A		
CRF: 2[37]	**ACC:** 2	**RESJ:** 2	**INVEST:** 1	**Priority:** ☑

Why Do This? Two-thirds of pedestrian fatalities occurred in the dark.

FY22 Work Plan:
1) Update the County's streetlight policy with emphasis on improving safety at intersections and high pedestrian and bicycle traffic areas.
2) Encourage use of MC311 and streetlight apps to report burnt out lights.
3) Bethesda CBD upgrades thru FY24.
4) Infill lighting projects based on crash and safety data.

FY23 Work Plan:
1) Bethesda CBD upgrades thru FY24.
2) Infill lighting projects based on crash and safety data.

Budget Sources: P507055 – Streetlighting, P500512 - Streetlight Enhancements - CBD/Town Center

S-12: Sidewalk Repair and Clearance: Ensure sidewalks are in good repair, free from obstructions, and meet or exceed the Americans with Disabilities Act (ADA) requirements. Continue to update sidewalk survey to proactively address trip and other hazards from uneven or blocked sidewalks.

Lead: Transportation			**Contributor:** State Highway Admin.	
CRF: 1	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? Moving sidewalk repairs to a more proactive repair model will identify and fix problems without a community request, but will still allow for requests.

FY22 Work Plan:
Utilize sidewalk survey to prioritize fixes and repairs for critical maintenance issues.

FY23 Work Plan:
Utilize sidewalk survey to prioritize fixes and repairs for critical maintenance issues.

Budget Sources: P508182 - Sidewalk and Curb Replacement

S-13: Sidewalk Construction and Upgrades: Construct and reconstruct sidewalks with proper clearance and street buffer zones as recommended in the Complete Streets Design Guide. Leverage temporary measures, such as walking lanes, on low traffic volume roads.

Lead: Transportation			**Contributor:** State Highway Admin.	
CRF: 2[38]	**ACC:** 3	**RESJ:** 2	**INVEST:** 1	**Priority:** ☑

Why Do This? Providing separation between pedestrians and motor vehicles creates room for error (roadway departures and falls) and encourages active transportation options.

FY22 Work Plan:
1) Planning for Veirs Mill Rd BiPPA sidewalk improvements.
2) Grove St Walking Lane Pilot Treatment.
3) Construct sidewalk upgrades along MD355 in White Flint.
4) Construct Oak Drive Sidewalk.
5) Sidewalk program minor projects – construct 24,000 liner feet of sidewalk.
See action item S-7 for additional shared use path projects.

FY23 Work Plan:
1) Construct shared use path along Good Hope Rd.
2) Construct Franklin Avenue sidewalk.
3) Sidewalk program minor projects – construct 24,000 linear feet of sidewalk.
See action item S-7 for additional shared use path projects.

Budget Sources: P506747 - Sidewalk Program Minor Projects, P502106 - White Flint Metro Station Access Improvements, P501908 – Oak Drive/MD 27 Sidewalk, P501902 – Good Hope Road Shared Use Path, P501734 – Franklin Avenue Sidewalk

S-14: High Visibility Equipment and Markings: Continue using regular maintenance to upgrade traffic signals to have retroreflective borders and refresh/install new crosswalks with continental striping.

Lead: Transportation, State Highway Admin.		**Contributor:** N/A		
CRF: 2[39,40]	**ACC:** 3	**RESJ:** 2	**INVEST:** 1	**Priority:**

Why Do This? Improving visibility of traffic signals, signs, and crosswalks can improve driver compliance with stopping at crosswalks, stop signs, and stop lights.

FY22 Work Plan:
1) Refresh or install at minimum 500 crosswalks with continental striping.
2) Install at minimum 10 retroreflective borders at new / existing signalized / PHB intersections.

FY23 Work Plan:
1) Refresh or install at minimum 500 crosswalks with continental striping.
2) Install at minimum 10 retroreflective borders at new / existing signalized / PHB intersections.

Budget Sources: Operating Program – MCDOT - Community/Transportation Safety, P507154 - Traffic Signals

S-15: Shared Streets: Develop a permanent version of the Shared Streets program created in 2020 to rethink how public right-of-way is used that can prioritize non-motorist travel and provide benefits to businesses and residents.

Lead: Transportation, Parks, Urban Districts		**Contributor:** Planning		
CRF: 1	**ACC:** 2	**RESJ:** 2	**INVEST:** 1	**Priority:**

Why Do This? The Shared Streets program created during the COVID-19 pandemic provided a model to make quick changes to the roadway to benefit restaurants, retail, walking, and cycling.

FY22 Work Plan:
1) Continue Shared Streets programs during the public health emergency and explore future applications of lessons learned for permanent application.
2) Seek funding opportunities to develop a neighborhood greenway design toolkit to aid in converting existing temporary greenways to permanent treatments and future expansion.

FY23 Work Plan:
1) Update neighborhood block party permit to account for new shared streets when public health emergency is lifted.
2) Develop a strategic plan for the possible continuation and expansion of Shared Streets model.

Budget Sources: Operating Program – MCDOT – Community/Transportation Safety, P507596 - Bikeway Program Minor Projects (for greenways).
Grant opportunities: MDOT Kim Lamphier Bikeways Network Program, MWCOG Transportation Land-Use Connections Program.

S-16: Data Informed Decisions: Utilize and combine data sources regarding crashes, infrastructure, land use, traffic volume, etc. to identify high crash risk areas and potential countermeasures. Infuse data in the budget and decision-making process to improve safety and equitable outcomes.

Lead: Police, Planning, Transportation, Management and Budget	**Contributor:** Vision Zero Coordinator, Maryland Highway Safety Office, Maryland State Police

CRF: N/A	**ACC:** N/A	**RESJ:** N/A	**INVEST:** 1	**Priority:**

Why Do This? Vision Zero requires a proactive approach to place limited resources in areas with the highest return on safety and equitable distribution compared to request-driven programming.

FY22 Work Plan:

1) Planning Department will complete the predictive safety analysis that identifies corridors and intersections with the highest potential for certain crash types.
2) Vision Zero Coordinator along with MCPD will create fatal and serious crash dashboard on Vision Zero website to provide regular updates to the public.
3) MCDOT will develop staff training for developing standardized estimates for a project's safety impact.
4) MCPD will implement updated refresher training for Sergeants approving reports.

FY23 Work Plan:

1) The Office of Management and Budget will update the Pedestrian Safety Impact Statement for CIP projects to a new Vision Zero statement.
2) The Office of Management and Budget, Transportation, and Police will provide for all standalone CIP projects linked to Vision Zero past crash history and expected crash reduction from project implementation in its project description form.
3) MCDOT to explore implementation of changes to their current asset management system to allow for easier tracking of changes to the network and interoperability between divisions.

Budget Sources: Operating Program – Vision Zero Non-Departmental Account, Operating Program – MCDOT – Community/Transportation Safety

S-17: Equitable Project Intake and Selection: Regularly review program intake processes to ensure resources are being used equitably, meeting community needs, and working towards Vision Zero.				
Lead: Transportation, Management and Budget			**Contributor:** Vision Zero Coordinator	
CRF: N/A	**ACC:** N/A	**RESJ:** N/A	**INVEST:** 1	**Priority:**
Why Do This? Implementing Vision Zero requires all traffic safety programs to be data informed, proactive, and equitable, which may come from County identification of issues and resident requests. Improving the triage of incoming requests was a priority recommendation from the Equity Task Force.				
FY22 Work Plan: 1) Review program intake process to ensure resources are based on equity, safety, need, and data: sidewalk minor projects program. 2) Review program intake process to ensure resources are based on equity, safety, need, and data: requests to Traffic Engineering and Operations.				
FY23 Work Plan: Review program intake process to ensure resources are based on equity, safety, need, and data: bicycle minor projects program.				
Budget Sources: Operating Program – Vision Zero Non-Departmental Account				

Safe Speeds

Montgomery County will use planned projects to align the recommended safer speed limit for the roadway and land use context with the design of the roadway. The County will utilize outreach and enforcement efforts to explain the dangers of speeding and enforce the speed limit.

M-1: Examine Speed Limit on Transportation Projects: Use ongoing safety and maintenance projects as an opportunity to review potential modifications to roadway design, through geometric or lane width changes, to bring the design speed in line with the desired target and posted speed limit.				
Lead: Transportation, State Highway Admin.		**Contributor:** N/A		
CRF: 2[41]	**ACC:** 2	**RESJ:** 3	**INVEST:** 1	**Priority:** ☑
Why Do This? Speed management is a fundamental factor in reducing serious and fatal injuries for all road users.				
FY22 Work Plan: 1) Implement “20 is Plenty” pilot project. 2) Identify projects where a speed limit reduction should be considered.				
FY23 Work Plan: Implement speed limit reductions along roads receiving safety and maintenance treatments as appropriate.				
Budget Sources: P509523 – Neighborhood Traffic Calming, P509036 - Transportation Improvements for Schools, P500333 - Pedestrian Safety				

M-2: Speed Management Policy: Utilize leading, evidence-based practices for setting context sensitive speed limits that align with Vision Zero and the safe system approach.				
Lead: Transportation, State Highway Admin.		**Contributor:** N/A		
CRF: N/A	**ACC:** N/A	**RESJ:** N/A	**INVEST:** 1	**Priority:**
Why Do This? Speed management is a fundamental factor in reducing serious and fatal injuries for all road users.				
FY22 Work Plan: 1) Update internal policies for reviewing and setting speed limits and use tools such as USLIMITS2 and safe system to determine appropriate and context-sensitive speeds. 2) Begin update to County and State laws and policies to allow setting speeds as recommended.				
FY23 Work Plan: Continue review and update to County and State laws and policies to allow setting speeds as recommended.				
Budget Sources: Operating Program – MCDOT - Community/Transportation Safety				

M-3: Enforcement of Speed Limits: Utilize hybrid (automated and officer initiated) approach for keeping drivers of motor vehicles at or below the speed limit.				
Lead: Police		**Contributor:** Transportation		
CRF: 2[42]	**ACC:** 2	**RESJ:** 1	**INVEST:** 1	**Priority:**
Why Do This? High Visibility Enforcement is a proven countermeasure and universal traffic-safety approach designed to create deterrence and change unlawful and risky driving behaviors.				
FY22 Work Plan: Continue using County and MHSO funding for saturation patrols against speeding and aggressive drivers.				
FY23 Work Plan: Continue using County and MHSO funding for saturation patrols against speeding and aggressive drivers.				
Budget Sources: Operating Program – MCPD - Field Services Grant opportunity: MHSO Grants and Projects for Safety (GPS)				

Multimodal Future

The Montgomery County of the future will have many safe and efficient travel options including Metrorail, Purple Line, commuter rail (MARC), bus rapid transit, regional and local buses, and a network of sidewalks and bikeways. New technologies such as autonomous vehicles, improved telepresence options, and micromobility (e-scooters and e-bikes) emerge.[43] With the robust transit and cycling networks, the number of people required to drive to reach their destination will decline. The changes will aid in reaching Vision Zero with fewer drivers on the road and people taking safer transit options, upgraded bikeways and sidewalks are intuitive and low stress for most people to use, and vehicles have multiple crash avoidance technologies built in.[44]

The 2030 Vision Zero Plan does not repeat the many important land use actions recommended in Thrive 2050 and the Climate Action Plans necessary to build this multimodal future. The plan focuses on the safety aspects to ensure that the design, construction, and operation of existing or new travel options do not create hazards and work to remove existing ones.

Tracking Implementation for Multimodal Future

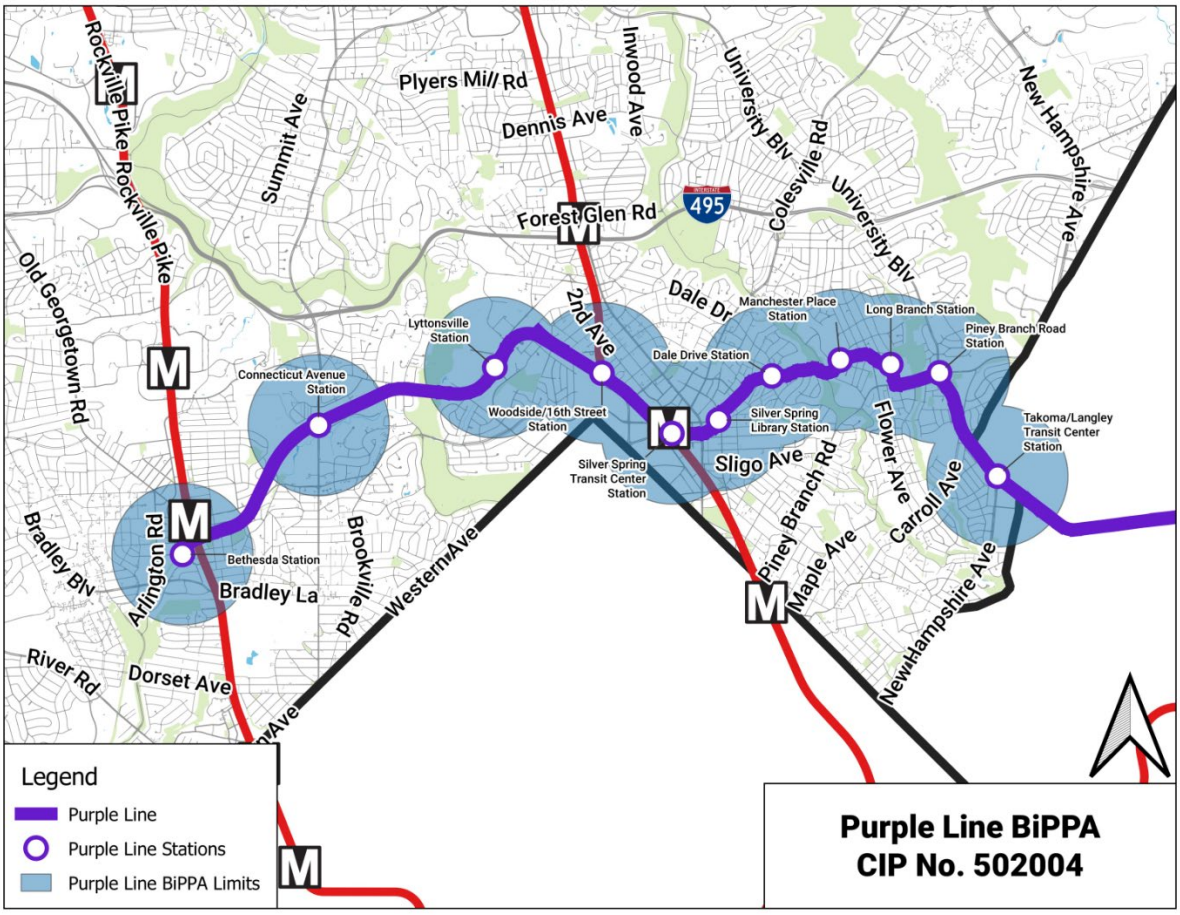
The following measures will help track progress on transforming the transportation network.

- Annual vehicle miles traveled.
- Travel mode split.
- Percentage of transit stops along multi-lane roads located at or near a protected crossing.

Advancing Multimodal and Safety Goals Together

Many planned rapid transit projects will run along roadways included in the High Injury Network such as the Rockville Pike and New Hampshire Avenue Bus Rapid Transit lines and the Purple Line. Because the roads will be reconfigured to accommodate the new transit options, the projects create a once-in-a-generation opportunity for the County and State to remake longer stretches of dangerous highways.

One example of multimodal and safety goals being advanced together in the near term is the Purple Line and the Purple Line Bicycle-Pedestrian Priority Area (BiPPA) projects. While the Purple Line team focuses on safety along the tracks and stations, the County Government's BiPPA project provides for the design and construction of high priority bicycle and pedestrian capital improvements in areas adjacent to future Purple Line Stations from Bethesda to Takoma Park within 1/2-mile radius of each station. Proposed projects include: area-wide improvements; bicycle lanes, cycle tracks, sidepath, or sharrows as needed and appropriate for each station's 1/2-mile area; signage and wayfinding improvements; sidewalk gap closure near Purple Line Stations; improved trail connections; and additional improvements to enhance purple line accessibility. By advancing both projects together, accessing and riding the Purple Line will be an easy and safe whether on foot or bike.



Multimodal Future Action Items Summary

Action	Lead	Contributor	Priority Action	On Page #
T-1: Pedestrian and Bicycle Infrastructure Improvements Along New Transportation Projects	MCDOT	SHA	Yes	48
T-2: Transit Stop Safety	MCDOT	WMATA, SHA	Yes	49
T-3: School Bus Stop Safety	MCPS	MCDOT	No	49
T-4: Eliminate Sidewalk Obstructions	MCDOT, SHA, DEP	N/A	No	50
T-5: Maintenance of Travel (MOT) during Sidewalk and Road Closures	DPS, MCDOT, SHA	N/A	No	50
T-6: Bike and Micromobility Parking	MCDOT	N/A	No	51
T-7: Curbside Management	MCDOT, Planning	N/A	No	51
T-8: Snow Removal from Bike Facilities, Sidewalks, and Transit Stops	MCDOT, Parks, SHA	DGS	No	52
T-9: Parking Lot Design and Construction	Planning	MCDOT	No	52
T-10: Safety Audit of County Owned Parking Lots and Garages	MCDOT	N/A	No	53
C: Transportation and Land Use Planning	Planning	MCDOT	No	54
V-1: Safer County Vehicle Fleet	DGS	MCDOT, MCPD, MCFRS	No	55
V-2: Prepare for Autonomous Vehicles	CEX	MCDOT, DGS, Planning	No	55

Safe Transportation

No matter how one gets around Montgomery County today or in the future, there must be safe ways to access transit, schools, businesses, and homes. Action items under Safe Transportation work to upgrade access to existing and future transit stops, prioritize uses for curbside space, and improve safe access and navigation in parking facilities.

T-1: Pedestrian and Bicycle Infrastructure Improvements Along New Transportation Projects: Build pedestrian and bicycle infrastructure and wayfinding for Purple Line and future Bus Rapid Transit (BRT) routes to create complete streets on transit corridors.				
Lead: Transportation			**Contributor:** State Highway Admin.	
CRF: 3[45]	**ACC:** 3	**RESJ:** 3	**INVEST:** 3	**Priority:** ☑
Why Do This? Implementation of new transit along high crash highways presents a once-in-a-generation opportunity to redevelop highways into safer multimodal boulevards.				
FY22 Work Plan: Continue design on: 1) Veirs Mill Road Bus Rapid Transit 2) MD 355 Bus Rapid Transit Construction starting or continuing on: 1) Capital Crescent Trail along Purple Line 2) Metropolitan Branch Trail				
FY23 Work Plan: Continue design on: 1) Veirs Mill Road Bus Rapid Transit 2) MD 355 Bus Rapid Transit Construction starting or continuing on: 1) Start construction of Purple Line BiPPA improvements 2) Continue Capital Crescent Trail along Purple Line 3) Continue Metropolitan Branch Trail Identify funding source to support developing wayfinding standards for navigating to new transit systems.				
Budget Sources: P502004 – BiPPA Improvements – Purple Line, P501316 - Capital Crescent Trail, P501110 – Metropolitan Branch Trail, P501318 - Bus Rapid Transit: System Development, P501913 – Bus Rapid Transit: Veirs Mill Road, P502005 - Bus Rapid Transit: MD 355 Grant opportunities: MDOT Kim Lamphier Bikeways Network Program, MWCOG Transportation Land-Use Connections Program				

T-2: Transit Stop Safety: Provide safe crossings to and from transit stops through auditing transit stops and implementing audit recommendations. Develop consistent bus stop infrastructure (poles, benches, shelters, etc.)				
Lead: Transportation		**Contributor:** WMATA, State Highway Admin.		
CRF: 3[46]	**ACC:** 3	**RESJ:** 3	**INVEST:** 2	**Priority:** ☑
Why Do This? Many transit stops in the county lack a safe and convenient crossing. Pedestrians have been struck and killed when walking to and from bus stops in the county.				
FY22 Work Plan: 1) Scope Ride On Bus Route Restructuring Study to incorporate leading practices for safe bus stop placement in developing recommended route changes. 2) Upgrades for 1-2 corridors along high crash risk routes.				
FY23 Work Plan: 1) Upgrades for 2-3 corridors along high crash risk routes. 2) Advance design of pilot program in Downtown Silver Spring for urban navigation for people with no and low vision.				
Budget Sources: P502107 - Ride On Bus Route Restructuring Study, P507658 - Bus Stop Improvements				

T-3: School Bus Stop Safety: Systematically review and upgrade school bus stop locations and pick up/drop off at schools to ensure student safety.				
Lead: Public Schools		**Contributor:** Transportation		
CRF: 1	**ACC:** 3	**RESJ:** 2	**INVEST:** 1	**Priority:**
Why Do This? Provide pickup and drop off locations that minimize the need to cross or wait for a bus along multi-lane roads.				
FY22 Work Plan: 1) Continue review of bus stops along major roadways and moving them to nearby local streets where possible. 2) In relation to work under actions S-9 and S-13, examine sidewalk gaps where there are currently bus routes surrounding MCPS school buildings.				
FY23 Work Plan: Continue review of bus stops along major roadways and moving them to nearby local streets where possible.				
Budget Sources: Montgomery County Public Schools – Student Transportation				

T-4: Eliminate Sidewalk Obstructions: Provide clearance space on sidewalks and consider restrictions or bans to ensure placement of signs, newspaper boxes, and trash bins do not block safe passage.				
Lead: Transportation, State Highway Admin., Environmental Protection			**Contributor:** N/A	
CRF: 1[47]	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:**
Why Do This? Two cyclists were killed in the past five years when they struck an object temporarily placed on the sidewalk and fell into the roadway.				
FY22 Work Plan: Develop pilot project along University Blvd W for pads along residential properties with no space to place receptacles outside of sidewalk.				
FY23 Work Plan: Finalize implementation and evaluate pilot project. If successful and funded, expand to similar corridors.				
Budget Sources: To be determined				

T-5: Maintenance of Travel (MOT) during Sidewalk and Road Closures: Ensure construction and other road closures do not create roadway safety hazards by utilizing County and State laws and policies to enforce the law and communicate with the public about closures and how to report violations.				
Lead: Permitting Services, Transportation, State Highway Admin.			**Contributor:** N/A	
CRF: 1	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:**
Why Do This? Short and long-term closures for construction can create unnecessary safety hazards, particularly for pedestrians and cyclists if their travel options are cut off.				
FY22 Work Plan: 1) Develop model regulations for construction and utility closures that accounts for maintenance of all travel modes where applicable. 2) Utilize Department of Permitting Services and other data sources to provide real-time notifications on an online map.				
FY23 Work Plan: Relevant departments need to identify options and resources for updated regulations to be enforced.				
Budget Sources: Operating Program – DPS – Zoning, Well, and Septic Code Compliance				

T-6: Bike and Micromobility Parking: Install micromobility corrals across the County, with priority in major activity centers, to provide safe and convenient parking for bikes and other micromobility devices (e.g., e-scooters) to keep the sidewalks, bike lanes, and roads clear.

Lead: Transportation		**Contributor:** N/A		
CRF: 1	**ACC:** 3	**RESJ:** 2	**INVEST:** 1	**Priority:**

Why Do This? The County is encouraging use of more transportation options and keeping bikes and e-scooters off the sidewalk and road helps to eliminate sidewalk obstructions.

FY22 Work Plan:
1) Seek funding opportunities to identify and prioritize public spaces across Red Policy Areas and Parking Lot Districts that will benefit from micromobility corrals.
2) Continue and expand efforts to encourage proper use and storage of micromobility devices.

FY23 Work Plan:
Evaluate effectiveness of corrals that have been installed.

Budget Sources: Grant opportunities: MWCOG Transportation Land-Use Connections Program

T-7: Curbside Management: Prioritize curbside space to meet the needs and policy goals for urban areas and ensure use reduces conflict amongst road users. This includes creating and expanding pick up/drop off zones, unloading, and short-term parking close to building entrances.

Lead: Transportation, Planning		**Contributor:** N/A		
CRF: 1	**ACC:** 3	**RESJ:** 2	**INVEST:** 1	**Priority:**

Why Do This? Curbside space, particularly in urban centers, has competing needs for transportation, parking, loading, and delivery which can create potential safety and accessibility conflicts between road users.

FY22 Work Plan:
Finalize Urban Loading and Delivery Management study on freight and parcel delivery.

FY23 Work Plan:
1) Develop curbside management strategies and regulations to include passenger loading.
2) Implement short term recommendations for pilot in Bethesda from Urban Loading and Delivery Management Study.

Budget Sources: To be determined

T-8: Snow Removal from Bike Facilities, Sidewalks, and Transit Stops: Clarify County Government's responsibility for snow clearance from sidewalks and bike lanes similar to how it is cleared from roadways.

Lead: Transportation, Parks, State Highway Admin.		**Contributor:** General Services		
CRF: 1	**ACC:** 3	**RESJ:** 2	**INVEST:** 3	**Priority:**

Why Do This? Provide equitable snow removal services for all transportation modes.

FY22 Work Plan:
Explore code modifications and other legal avenues needed to expand street snow removal procedures to minimize snow blockage in front of curb cuts, bus shelters, and transit stops as appropriate and applicable.

FY23 Work Plan:
Procure additional equipment or contractor service if need to ensure protected bike lanes can be cleared.

Budget Sources: Operating Program – MCDOT - Transportation Management, Operations and Emergency/Storm Response

T-9: Parking Lot Design and Construction: Redeveloped or newly constructed parking lots and garages are safe for pedestrians, cyclists, and people using assistive mobility devices to access and navigate.

Lead: Planning		**Contributor:** Transportation		
CRF: N/A	**ACC:** N/A	**RESJ:** N/A	**INVEST:** 1	**Priority:**

Why Do This? 16% of serious and fatal crashes involving pedestrians occur in parking lots and driveways.

FY22 Work Plan:
No year one item.

FY23 Work Plan:
1) Utilize mandatory referral process to prioritize parking lot safety improvements.
2) Update parking lot design standards to ensure new or rebuilt lots and garages prioritize and provide parking for people with disabilities, bikes, and micromobility devices.

Budget Sources: To be determined

T-10: Safety Audit of County Owned Parking Lots and Garages: Review and modify County owned parking lots and garages to eliminate conflicts when entering and navigating the facilities.				
Lead: Transportation			**Contributor:** N/A	
CRF: 1	**ACC:** 3	**RESJ:** 2	**INVEST:** 2	**Priority:**
Why Do This? Conditions exist that may result in pedestrians and cyclists being struck near the entrances and exits to County owned lots and garages.				
FY22 Work Plan: Conduct a safety analysis of existing county owned lots and garages to prioritize properties that may need modifications.				
FY23 Work Plan: Implement a safety upgrade program for County lots and garages based on the safety analysis.				
Budget Sources: P501312 – Facility Planning Parking: Wheaton Parking District, P501313 – Facility Planning Parking: Bethesda Parking Lot District, P501314 – Facility Planning Parking: Silver Spring Parking Lot District				

Safe and Sustainable Communities
To achieve Vision Zero, land use and roadway designs need to be compatible. The Vision Zero 2030 Action Plan will continue to sync up land use and roadways through integrating Vision Zero and its safe system approach into master planning for communities, transportation demand management programs, and roadway design guidelines.

The Montgomery County Planning Department supports Vision Zero implementation through community engagement, stakeholder facilitation, data analysis and a focus on long-term visioning:

- **Master Planning.** Through master planning, Montgomery Planning engages the community to re-envision our auto-oriented roadways as safe, complete streets for walking, bicycling, and driving.
- **Development and Capital Projects.** The Montgomery County Planning Board helps to implement the vision of master plans by reviewing proposed development and capital projects, including mandatory referrals.
- **Data Analysis.** The Planning Department has extensive data collection and analysis resources to identify roadway characteristics that create safety challenges and to propose proven changes to improve safety.
- **Community Support and Engagement.** The department provides support for building a Vision Zero constituency.

The below action item displays larger initiatives led by the Planning Department to shape land use and transportation planning. The Planning Department is also a joint lead or partner for other action items throughout the Plan. For the Planning Department's detailed Vision Zero Work Plan, visit the Planning Department's Vision Zero website at https://montgomeryplanning.org/planning/transportation/vision-zero/.

C: Transportation and Land Use Planning: Incorporate Vision Zero and a safe system approach into functional and area master plans, development review, and subdivision staging.				
Lead: Planning			**Contributor:** Transportation	
CRF: N/A	**ACC:** N/A	**RESJ:** N/A	**INVEST:** 1	**Priority:**
Why Do This? Land use planning is closely connected with the success of expanded mobility choices and lowering the distance and number of trips needed to be made by car.				
FY22 Work Plan: 1) Approval of updated General Plan (Thrive 2050). 2) Develop a framework for incorporating Vision Zero in Master Plans.				
FY23 Work Plan: 1) Approval of Pedestrian Master Plan. 2) Begin University Boulevard Corridor Plan.				
Budget Sources: Montgomery County Planning				

Safe Vehicles

Having safe vehicles on our roadways is crucial for our safety goals, but represents an area where the County Government has limited influence. Montgomery County will partner with peer Vision Zero jurisdictions, the Road to Zero coalition, and other stakeholders to push State and Federal rule makers to improve crash survivability for those in and outside of vehicles, improve vehicle technology, and prepare the county for vehicles that will become fully autonomous.

V-1: Safer County Vehicle Fleet: When replacing County fleet and emergency response vehicles, ensure the vehicles are equipped with life-saving crash avoidance technology and vehicles are right sized for the areas they serve.				
Lead: General Services			**Contributor:** Transportation, Police, Fire/Rescue Service	
CRF: 1	**ACC:** 2	**RESJ:** 2	**INVEST:** 2	**Priority:**
Why Do This? Vehicle technologies now available, such as automatic braking, lane assist, and pedestrian detection can reduce the probability of being involved in a crash.				
FY22 Work Plan: As part of the zero-emission fleet plan, include considerations for new safety features that may be part of the EV package from vehicle manufacturers.				
FY23 Work Plan: As vehicles are replaced, purchase vehicles meeting minimum safety packages defined by DGS.				
Budget Sources: Montgomery County Motor Pool Internal Service Fund				

V-2: Prepare for Autonomous Vehicles: Prepare the County's infrastructure for vehicles that will communicate with each other and the infrastructure.				
Lead: Vision Zero Coordinator			**Contributor:** Transportation, General Services, Planning	
CRF: N/A	**ACC:** N/A	**RESJ:** N/A	**INVEST:** 1	**Priority:**
Why Do This? Autonomous vehicles may not be a major percentage of the cars on the road by 2030, but investments and planning are needed to prepare for these vehicles.				
FY22 Work Plan: Continue connected infrastructure pilot and participation on Maryland Connected and Automated Vehicles Working Group.				
FY23 Work Plan: Establish a Future Technology Task Force to plan for connected autonomous vehicles, the increase in personal conveyances, and future uses for private and commercial drones.				
Budget Sources: Operating Program – Vision Zero Non-Departmental Account				

Culture of Safety

Vision Zero requires more than improved transportation infrastructure; it requires building a culture of safety. A safety culture not only reduces risky behaviors such as speeding and impaired driving, but grows protective behaviors such as wearing seatbelts or purchasing a vehicle with higher safety ratings.

Under Culture of Safety, these are the top dangerous behaviors for focused outreach:

- Impaired driving
- Exceeding the speed limit
- Distracted driving with emphasis on distractions from mobile devices
- Failure to yield right of way with emphasis on drivers failing to yield to people walking and biking
- Not wearing seatbelts or properly securing a child in age-appropriate seat

Tracking Implementation for Culture of Safety

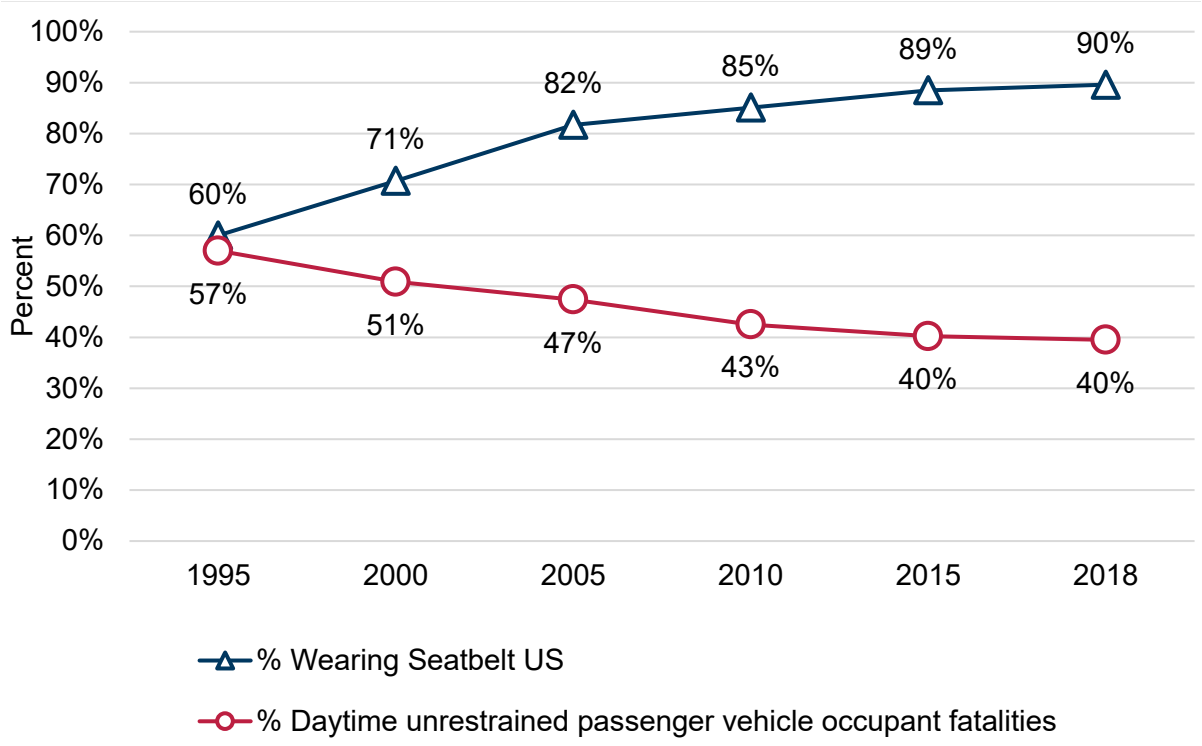
The following measures will help track progress on building a culture of safety.

- Community rating for ease of travel by bike, car, public transportation, and walking.
- Percentage of drivers in Montgomery County wearing seatbelt.
- Percentage of crashes with “big five” violations – speeding, impairment, distraction, occupant protection, and failure to yield right-of-way.
- Reduction in collisions involving County-owned vehicles.
- Percentage of County employees given safety awareness training.
- Maintain response times for traffic collisions with injuries based on department standards.

Saving Lives through "Click It or Ticket"

An example of effective cultural change that has saved thousands of lives is the focus on seatbelt use in the United States. Through education and enforcement campaigns like *Click It or Ticket*, states passing primary seatbelt laws, and vehicle manufacturers installing belt use reminders, seatbelt use has improved from 60% in 1995 to 90% in 2018. As a result, unrestrained passenger vehicle occupant fatalities decreased and nearly 15,000 lives are saved each year by seatbelts.[48] Using this and other proven examples will help Montgomery County curb the most dangerous behaviors on our roadways and build respect for everyone sharing the road.

Seatbelts save 15,000 lives in the US every year.



Culture of Safety Action Items Summary

Action	Lead	Contributor	Priority Action	On Page #
P-1: Outreach and Education to the Community	MCDOT, CEX	OPI, RSC	No	59
P-2: Collaboration with Community Partners and Ambassadors	MCDOT, CEX	RSC, OPI, MCPS, REC	No	60
P-3: Coordination of Campaigns	CEX	MCDOT, MCPD, OPI	No	61
P-4: Ending Impaired Driving Deaths	CEX, MCPD	MCDOT, OPI, HHS, ABS, MHSO	Yes	61
P-5: Expansion of Automated Enforcement	MCPD	MCDOT	No	62
P-6: Focused Enforcement Efforts	MCPD	MCDOT	No	62
P-7: Expand Safe Routes to School	MCDOT	MCPS	No	63
P-8: Bike Riding and Safety Courses	MCDOT, MCPS	N/A	No	63
P-9: County Employees using Fleet Vehicles	DGS, FIN, MCPD, MCFRS	N/A	No	64
P-10: Conspicuity for County Employee Uniforms	MCPD, MCDOT, MCFRS	CEX	No	64
R-1: Prompt Medical Service	MCFRS	MCPD	No	65
R-2: Planning and Coordination for Safe Traffic Incident Management	MCFRS, MCPD	CEX	No	65

Safe People

Culture of Safety actions are intended to improve two-way communication between the County Government and communities most impacted by serious traffic crashes, empower communities to speak up for safety, and vigilant use of officer and automated enforcement.

P-1: Outreach and Education to the Community: Improve project communication and outreach to a broader audience and on multiple communication channels utilizing County Government outreach staff on safety topics relevant to Montgomery County's identified safety problems and demographics.

Lead: Transportation, Vision Zero Coordinator	**Contributor:** Public Information Office, Regional Services Centers

CRF: 1	**ACC:** 2	**RESJ:** 3	**INVEST:** 2	**Priority:**

Why Do This? The Equity Task Force recommended the County take a more proactive approach to engage communities that may not be represented in the process and to prioritize vulnerable road users. This action item lays out how the County will be more proactive in its outreach.

FY22 Work Plan:

1) As part of the communication guide update, develop updated communication and outreach strategy for safety projects and campaigns.
2) Coordinate safety campaigns with regional, state, and federal agencies and continue seeking grant funding to support efforts.
3) Add motorcycle safety, "move over" law, and older adult safety to the annual safety campaign calendar.

FY23 Work Plan:

1) Identify resources to aid in developing communication and outreach plans for projects with particular focus on multi-lingual outreach.
2) Coordinate safety campaigns with regional, state, and federal agencies and continue seeking grant funding to support efforts.

Budget Sources: Operating Program – Vision Zero Non-Departmental Account, Operating Program – MCDOT - Community/Transportation Safety

P-2: Collaboration with Community Partners and Ambassadors: Work with existing community groups, County outreach staff, and community ambassadors to increase the amount of public feedback and raise awareness for traffic safety projects and campaigns.

Lead: Transportation, Vision Zero Coordinator	**Contributor:** Regional Services Centers, Public Information Office, Public Schools, Recreation

CRF: 1[49]	**ACC:** 2	**RESJ:** 3	**INVEST:** 2	**Priority:**

Why Do This? There are limited community outreach resources in departments, so utilization of community partners and ambassadors is necessary to reach more residents.

FY22 Work Plan:

1) Update Vision Zero communication guidelines and policy developed in 2018. The update needs to identify local groups (HOAs, PTAs, Condo Associations, etc.) that can be engaged in traffic safety messaging.
2) Continue annual youth ambassador program.
3) Partner with regional and national groups to create older driver and pedestrian campaigns to raise awareness of vulnerability at different ages, changes in reaction times, how to navigate new infrastructure such as protected bike lanes, and transit options for older residents.
4) Work with MCPS to add safety materials for students applying for school parking permits.
5) Work with fellow members of the State's Pedestrian Bicycle Emphasis Area Team (P-BEAT) to identify areas for improvement in MVA renewal questions and provide recommendations.

FY23 Work Plan:

1) Expansion of ambassador program to include adult component.
2) Continue to assess partnerships and establish new ones.
3) Reach out to local driving schools and provide materials about Vision Zero and sharing the road.
4) Work with REC summer camps and AAA Patrol Camp for safety outreach.

Budget Sources: Operating Program – Vision Zero Non-Departmental Account, Operating Program – MCDOT - Community/Transportation Safety

P-3: Coordination of Campaigns: Wrap around planned safety projects with education, encouragement, outreach, and enforcement.				
Lead: Vision Zero Coordinator			**Contributor:** Transportation, Police, Public Information	
CRF: 2[50]	**ACC:** 2	**RESJ:** 1	**INVEST:** 1	**Priority:**
Why Do This? Utilization of education, outreach, and enforcement before and after engineering treatments can improve safety beyond the engineering treatment and helps to engage the neighborhood.				
FY22 Work Plan: Create corridor project plans that account for education, outreach, and enforcement to bookend engineering projects under S-1.				
FY23 Work Plan: Create corridor project plans that account for education, outreach, and enforcement to bookend engineering projects under S-1.				
Budget Sources: Operating Program – Vision Zero Non-Departmental Account, Operating Program – MCDOT - Community/Transportation Safety, Operating Program – MCPD - Field Services				

P-4: Ending Impaired Driving Deaths: Implement a multifaceted program towards ending impaired driving deaths with focus on prevention and treatment.				
Lead: Vision Zero Coordinator, Police			**Contributor:** Transportation, Public Information, Health and Human Services, Alcohol Beverage Services, Highway Safety Office	
CRF: 2[51]	**ACC:** 2	**RESJ:** 2	**INVEST:** 2	**Priority:** ☑
Why Do This? Impaired driving is a leading contributing factor in fatal crashes in Montgomery County and across the world. 28% of fatal crashes in the county involve an impaired person.				
FY22 Work Plan: 1) Bring together stakeholders to develop an action plan focused on ending impaired driving deaths in Montgomery County. 2) Promote and increase number of joint operations with municipal and State Police as part of high visibility enforcement campaigns focused on interstates and major arterials.				
FY23 Work Plan: 1) Implementation of anti-drunk and -drugged driving program developed in FY22. 2) Expand driving under the influence of drugs (DUID) and advanced roadside impaired driving enforcement (ARIDE) training for all MCPD cadets at the academy.				
Budget Sources: Operating Program – Vision Zero Non-Departmental Account Grant opportunity: MHSO Grants and Projects for Safety (GPS)				

P-5: Expansion of Automated Enforcement: As technology advances and privacy concerns are addressed, update State law to remove barriers that limit the use of automated traffic enforcement and take advantage of new technologies available.

Lead: Police			**Contributor:** Transportation	
CRF: 2[52]	**ACC:** 2	**RESJ:** 2	**INVEST:** 1	**Priority:**

Why Do This? Automated traffic enforcement has proven to reduce injury crashes and removes potential for human bias. ATE reduces red light running and can lower serious and fatal injuries by approximately 14%.

FY22 Work Plan:
Expand deployment of red light and speed cameras to areas with known high crash risk and where allowed under State law.

FY23 Work Plan:
1) Support State legislation to expand automated enforcement for additional violations such as bus lanes, distraction, move over law, occupant protection, over height vehicles, and block the box if the technology has been proven effective, equitable, and protects drivers from unnecessary surveillance.
2) Support state legislation to expand location qualifications for automated speed enforcement to include areas identified as high crash risk and documented speeding problems and remove time limits for ATE around school zones.

Budget Sources: Operating Program – MCPD - Field Services

P-6: Focused Enforcement Efforts: Focus the efforts of MCPD officers on curbing the most dangerous behaviors (occupant protection, speeding and aggressive driving, not yielding right of way, impairment from alcohol or drugs, and distraction) and less on non-moving violations.

Lead: Police			**Contributor:** Transportation	
CRF: 2[53]	**ACC:** 2	**RESJ:** 1	**INVEST:** 1	**Priority:**

Why Do This? The 2019 Vision Zero Equity Task Force recommended adopting a program similar to San Francisco's "Focus on the Five" enforcement program to focus MCPD's enforcement efforts around known risky behavior and deemphasize non-moving violations.

FY22 Work Plan:
1) Move from pilot to permanent the reorganization that brings district motor units under the centralized Traffic Division for coordination and prioritization of enforcement efforts.
2) Continue roll-out of "focus on the five" high visibility enforcement (HVE) program in coordination with outreach. Develop a short explainer document on importance of "focus on the five" and equitable traffic enforcement.
3) To offset the financial impact of enforcement, work with State and County legislators, State's Attorney Office to provide alternatives to fines such as community service or attending classes.

FY23 Work Plan:
Continue "focus on the five" HVE and assess the initiative's impact on racial equity and social justice to determine if the execution of the program leads to inequitable outcomes.

Budget Sources: Operating Program – MCPD - Field Services
Grant opportunity: MHSO Grants and Projects for Safety (GPS)

P-7: Expand Safe Routes to School: Expand the County's Safe Routes to School (SRTS) activities and initiate comprehensive traffic safety education and age appropriate outreach for pedestrian, bicycle, and driver safety.

Lead: Transportation, Public Schools		**Contributor:** N/A		
CRF: 2[54]	**ACC:** 2	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? Through Safe Routes to School, the County Government and Public Schools can initiate targeted education and engineering projects to improve the pedestrian environment and encourage more students to walk or bike to their school.

FY22 Work Plan:
1) Develop additional virtual outreach training to expand train-the-trainer program.
2) Partner with additional PTA and Community Associations to increase engagements to parents.

FY23 Work Plan:
Explore opportunities for expanding staff or contractors to support Safe Routes to School outreach focused on outreach to limited English families.

Budget Sources: Operating Program – MCDOT - Community/Transportation Safety Grant opportunity: MHSO Grants and Projects for Safety (GPS)

P-8: Bike Riding and Safety Courses: Expand adult and child beginner biking courses through Commuter Services and Safe Routes to School. Incorporate micromobility device training (e.g., e-scooters).

Lead: Transportation, Public Schools		**Contributor:** N/A		
CRF: 1	**ACC:** 2	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? Bicycle safety courses introduce students to riding a bike and practicing safe behaviors.

FY22 Work Plan:
1) Expand multi-lingual outreach for adult training programs.
2) Host at minimum five bicycle rodeos at different schools.

FY23 Work Plan:
1) Implement on-bike education pilot program in County Schools.
2) Host at minimum five bicycle rodeos at different schools.

Budget Sources: Operating Program – MCDOT - Community/Transportation Safety Grant opportunity: MHSO Grants and Projects for Safety (GPS)

P-9: County Employees using Fleet Vehicles: Provide a safe driving program for all County employees that utilize County fleet vehicles.

Lead: General Services, Finance, Police, Fire/Rescue		**Contributor:** N/A		
CRF: 1	**ACC:** 2	**RESJ:** 2	**INVEST:** 2	**Priority:**

Why Do This? The County Government as an employer needs to keep its employees safe and a reduction in crashes involving County vehicles can save taxpayer dollars.

FY22 Work Plan:
1) For departments with driver training (Police, Fire/Rescue Service), include in practical driver training and tests about limiting distractions, seat belt use, and safe speeds similar to current “Arrive Alive” program in MCPD.
2) For non-public safety employees, provide defensive driver training using County Computer Based Training Program and programs similar to the Smith System.
3) Update MCPD policies and training for limiting distractions while driving such as limiting mobile data terminal use for Police Officers.

FY23 Work Plan:
Implement a collision review committee to review crashes involving County vehicles and resulting in injuries for departments currently without a review committee.

Budget Sources: Various department budgets

P-10: Conspicuity for County Employee Uniforms: Provide high visibility gear for employees working in or near roadways as uniforms are replaced or purchased for new employees.

Lead: Police, Transportation, Fire/Rescue		**Contributor:** Vision Zero Coordinator		
CRF: 1	**ACC:** 2	**RESJ:** 2	**INVEST:** 1	**Priority:**

Why Do This? County employees working on or near roadways can improve their visibility of passing drivers by wearing high visibility gear.

FY22 Work Plan:
1) Identify all county positions that require field work and work with County unions to upgrade uniform policies to include high visibility outer wear.
2) As uniforms are replaced or purchased for new employees, provide high visibility gear.

FY23 Work Plan:
As uniforms are replaced or purchased for new employees, provide high visibility gear.

Budget Sources: Various department budgets for uniforms

Safe Post-Crash Response and Care

Rapid response and care to car collisions is crucial, but cannot come at the expense of safety for first responders. Collisions are a leading cause of fatalities for both police and fire public safety employees. The County will ensure the protection of the public and its employees through safe responses and on-scene traffic management.

R-1: Prompt Medical Service: Ensure proper emergency medical care for crash victims through prompt response to incident and proper medical care.				
Lead: Fire/Rescue		**Contributor:** Police		
CRF: 1	**ACC:** 2	**RESJ:** 2	**INVEST:** 1	**Priority:**
Why Do This? Prompt emergency response, transport, and care from nearby trauma centers can decrease the morbidity and mortality of crash victims.				
FY22 Work Plan: Maintain time to scene and time to hospital response times that meet or exceed department standards.				
FY23 Work Plan: Maintain time to scene and time to hospital response times that meet or exceed department standards.				
Budget Sources: Operating Program – MCFRS - Operations				

R-2: Planning and Coordination for Safe Traffic Incident Management: Utilize leading practices, policies, and technology to eliminate secondary crashes that occur while first responders are on the scene.				
Lead: Fire/Rescue, Police		**Contributor:** Vision Zero Coordinator		
CRF: 1	**ACC:** 2	**RESJ:** 2	**INVEST:** 1	**Priority:**
Why Do This? Ensure safe and collaborative response to traffic collisions. Secondary crashes are often more severe than the primary crash.				
FY22 Work plan: Finalize updates to MCFRS and MCPD traffic incident management policies.				
FY23 Work Plan: Pilot project for temporary traffic control devices (e.g. truck mounted attenuators or arrow boards) and tow trucks similar to the State Highway Administration's CHART program on the interstates.				
Budget Sources: Seek grant funding or sponsorship for pilot.				

APPENDIX I: PLAN DEVELOPMENT PHASES

The initial Vision Zero 2018-19 Action Plan called for creating a long-term plan to reach Vision Zero by 2030. A project plan for creating the Vision Zero 2030 Action Plan started in February 2020 with the hiring of a full-time Vision Zero Coordinator. The initial plan set a nine month process to have a plan in place by the end of 2020. The COVID-19 pandemic caused the outreach and workgroup plans to be completely rewritten by March. After reconfiguring the development plan to account for COVID-19 related delays and desire for expanded time for public engagement, the project started in earnest on June 18, 2020 with a virtual community kickoff meeting featuring County Executive Elrich and Councilmember Hucker. During that meeting, a three phase development plan lasting a year was presented. Below were the initial phases and timelines for developing the plan.

Phase I: Fact finding

From June to October 2020, the Vision Zero Coordinator lead a series of outreach initiatives to gather county residents' priorities and desires for safer roads. At the kickoff meeting on June 18, a community survey was released to gather resident's input on what currently made them feel safe or unsafe while traveling in the county and what they would like to see in the future. Also in June, the Coordinator sent letters to community organizations with interests in community and traffic safety to gather their input. The Vision Zero and Climate Change Coordinators teamed up to create a youth ambassador and focus group program. Under the banner of "Resilient Montgomery," the youth ambassadors were trained and tasked with performing interviews with people in their communities while the focus groups (listening sessions) were recruited for participation. Overall, over 1,500 residents and 12 community organizations provided feedback during Phase I. The results from Phase I are summarized in the Public Engagement Supplement Report.

Phase II: Workgroups

From September 2020 to January 2021, 3 workgroups met monthly to develop the action items for the 2030 Action Plan. The Vision Zero Coordinator assembled 70 municipal, county, and state employees representing 19 agencies and departments for the workgroups. Each workgroup was tasked with developing action items for the specific topic areas assigned. The topic areas were based on the safe system approach.

- Complete Streets
    - Street Design and Engineering
    - Speed Management
- Multimodal Future
    - Land Use Planning
    - Improved Mobility Options
    - Vehicle Design and Technology
- Culture of Safety
    - Enforcement, Laws, and Regulations
    - Education and Capacity Building
    - Post-crash Emergency Response and Care

Each meeting had a specific purpose to make progress developing action items:

1. Baselining – overview of Vision Zero and the plan development process.
2. External factors – examine factors outside of the local and state government's control that may have an impact of traffic safety in the coming decade.
3. Community priorities and strategy development – workgroup members were given a summary of the community priorities received during Phase I and started brainstorming action items.
4. Prioritization – workgroup members reviewed proposed action items and prioritized items based on their impact and feasibility.
5. Review – workgroup members reviewed and finalized their recommendations.

After the last workgroup meeting in late January, departments listed as leads and contributors were given the workgroups' recommended action items and tasked with developing a year one and two work plan. The action items and work plan were finalized in April 2021 and the Plan was released for public review.

Phase III: Community Review

On April 15, 2021, the draft of the Vision Zero 2030 Action Plan and FY22-23 Work Plan was uploaded to the Vision Zero website along with translated summaries in six languages (Spanish, Chinese, Amharic, French, Korean, and Vietnamese), the Data Analysis

Supplement, and the Community Priorities Report. Upon release, an online survey and community review sessions were announced via press release and County social media channels to collect the community's thoughts on the draft plan.

The survey to collect resident's thoughts on the strengths, weaknesses, and missing pieces from the draft was open for two months. Throughout the open period, reminders were sent by social media and County newsletters. Ninety-four residents completed provided feedback through the survey with 93 responses in English and 1 in Chinese.

The community review sessions were five virtual meetings held weekly between April 28 and May 26. Each meeting lasted 90 minutes from 7 to 8:30 PM and followed the same format with an overview of the 2030 Plan followed by breakout sessions where moderators held a conversation with participants about the strengths, weaknesses, and missing pieces of the 2030 Plan. The meetings were geographically focused using the County's Service Regions to involve more voices from across the county and utilize the direct communications sent out by Regional Service Center Directors.

APPENDIX II: DATA ANALYSIS SUPPLEMENT

Additional analysis of crash and community data can be found in the supplemental document available at https://www.montgomerycountymd.gov/visionzero/Resources/Files/vz2030-data.pdf.

APPENDIX III: PUBLIC ENGAGEMENT SUPPLEMENT

Detailed information on the outreach performed to develop the 2030 Vision Zero Action Plan and summaries of each campaign is available at https://www.montgomerycountymd.gov/visionzero/Resources/Files/vz2030-community.pdf.

APPENDIX IV: FISCAL YEARS 22 AND 23 WORK PLAN BY COUNCIL DISTRICT

This appendix provides an alternative view of the fiscal years 2022 and 2023 work plan items by County Council districts as compared to by action item. If a project crosses Council districts, it is listed under all districts it crosses. The latest projects as well as the project's status can be viewed on the County's Vision Zero website.

Countywide Projects

Several FY22-23 work plan items have a countywide scope or have yet to be allocated to a specific roadway or intersection. Those projects are listed here.

Project	Location	Project Type	Action Item	Fiscal Year Start
Additional road safety audit for FY22	TBD	Road Safety Audit	S-1	FY22

Project	Location	Project Type	Action Item	Fiscal Year Start
3 road safety audits for FY23	TBD	Road Safety Audit	S-1	FY23
2 HIN corridor design projects	TBD	High Injury Network Project	S-1	FY22
Catalog all free right turns	Countywide	Intersection Redesign	S-2	FY22
Quick build intersection safety projects	Countywide	Intersection Redesign	S-2	FY22
5 new signal and beacon installations	Countywide	Protected Crossings	S-3	FY23
Updated signal policy and guidelines	Countywide	Signal Timing and Phasing	S-4	FY22
Evaluate Left turn conflicts	Countywide	Corridor Access Management	S-5	FY22
Implement at 5 intersections left turn safety improvements	Countywide	Corridor Access Management	S-5	FY23
Identify and prioritize locations with high risk for run-off-the-road crashes	Countywide	Roadway Departure	S-6	FY22
Maintenance projects to address run-off-the-road crashes	Countywide	Roadway Departure	S-6	FY23
Trail Crossing Upgrades	Countywide	Safe Trail Crossings	S-8	FY22
Walkability Audits	Countywide	Safe Routes to School	S-9	FY22
Infill lighting projects	Countywide	Improved Lighting	S-11	FY22
Sidewalk repairs	Countywide	Sidewalk repair and clearance	S-12	FY22
Sidewalk minor projects	Countywide	Sidewalk construction	S-13	FY22
Crosswalk refresh	Countywide	High visibility markings	S-14	FY22
Signals with retroreflective boarders	Countywide	High visibility equipment	S-14	FY22
Shared Streets	Countywide	Shared Streets	S-15	FY22

Project	Location	Project Type	Action Item	Fiscal Year Start
Data informed decision-making	Countywide	Data informed decisions	S-16	FY22
Equitable Project Intake and Selection	Countywide	Equitable Project Intake and Selection	S-17	FY22
"20 is Plenty" pilot	Countywide	Examine Speed Limits	M-1	FY22
Speed limit setting policies	Countywide	Speed Management Policy	M-2	FY22
Speed limit enforcement	Countywide	Enforcement of speed limits	M-3	FY22
Ride On route restructuring study	Countywide	Transit stop safety	T-2	FY22
Bus stop corridor studies	Countywide	Transit stop safety	T-2	FY22
School bus stop safety along major roadways study	Countywide	School bus stop safety	T-3	FY22
Maintenance of travel regulations and enforcement	Countywide	Maintenance of travel during sidewalk and road closures	T-5	FY22
Additional bike and micromobility parking	Countywide	Bike and micromobility parking	T-6	FY22
Curbside management policies	Countywide	Curbside management	T-7	FY22
Snow and debris removal	Countywide	Snow removal from bike facilities, sidewalks, and transit stops	T-8	FY22
Parking lot design	Countywide	Parking lot design and construction	T-9	FY22
Safety audit of County Lots and Garages	Countywide	Safety for County owned parking facilities	T-10	FY22
General Plan Update	Countywide	Transportation and Land Use Planning	C	FY22
Vision Zero in local master plans	Countywide	Transportation and Land Use Planning	C	FY22

Project	Location	Project Type	Action Item	Fiscal Year Start
Pedestrian Master Plan approved	Countywide	Transportation and Land Use Planning	C	FY23
County fleet vehicle safe replacements	Countywide	Safer County vehicle fleet	V-1	FY22
Future Technology Task Force	Countywide	Prepare for autonomous vehicles	V-2	FY23
Community outreach for safety	Countywide	Outreach and education	P-1	FY22
Building Community Partnerships	Countywide	Collaboration with Community Partners and Ambassadors	P-2, P-7	FY22
Project-based outreach	Countywide	Coordination of campaigns	P-3	FY22
Anti-impaired driving action plan	Countywide	Ending impaired driving deaths	P-4	FY22
Expansion of automated enforcement	Countywide	Expansion of automated enforcement	P-5	FY22
Centralized traffic safety unit	Countywide	Focused enforcement efforts	P-6	FY22
Bike riding safety training	Countywide	Bike riding and safety courses	P-8	FY22
County employee driver training	Countywide	County employees using fleet vehicles	P-9	FY22
Improving conspicuity for County uniforms	Countywide	Conspicuity for County employee uniforms	P-10	FY22
Prompt medical service	Countywide	Prompt medical service	R-1	FY22
Coordinated traffic incident management	Countywide	Planning and coordination for safe traffic incident management	R-2	FY22

District 1

District 1 includes the communities of Bethesda, Cabin John, Chevy Chase, Friendship Heights, Garrett Park, Glen Echo, Kensington, Martin's Additions, North Bethesda, Potomac, Poolesville, and Somerset. The district is currently represented by Councilmember Friedson.

Project	Location	Project Type	Action Item	Fiscal Year Start
Old Georgetown Road & Rockville Pike Intersection Safety	Old Georgetown Road & Rockville Pike	Intersection Redesign	S-2	FY22
Old Georgetown Road & Tilden Lane Intersection Safety	Old Georgetown Road & Tilden Lane	Intersection Redesign	S-2	FY22
BRAC MD-355	Rockville Pike and Center/South Drives, Wisconsin Avenue and Woodmont Avenue	Intersection Redesign	S-2	FY22
Seneca Road & Esworthy Road Intersection Safety	Seneca Road & Esworthy Road	Intersection Redesign	S-2	FY23
Westlake Drive & Lakeview Drive pedestrian hybrid beacon	Westlake Drive & Lakeview Drive	Protected Crossing	S-3	FY22
Sangamore Road & Walhonding Road traffic signal	Sangamore Road & Walhonding Road	Protected Crossing	S-3	FY22
Capital Crescent Surface Trail – Phase II	47th Street – Willow to new Capital Crescent Trail	Bike Facility	S-7	FY22
Marinelli Road Phase I Construction and Phase II Design	Marinelli Road from Rockville Pike to Nebel St	Bike Facility	S-7	FY22
Bradley Boulevard Improvements	Bradley Boulevard McLean Drive to Glenbrook Road	Bike Facility	S-7	FY22
Seven Locks Bikeway and Safety	Seven Locks Road from Tuckerman	Bike Facility	S-7	FY22

Project	Location	Project Type	Action Item	Fiscal Year Start
Improvements Design	Lane to Montrose Road			
Tuckerman Lane Sidewalk and Bikeway Design	Tuckerman Lane from Falls Road to Old Georgetown Road	Bike Facility	S-7	FY22
Beach Drive over Silver Creek	Rock Creek Trail relocation at Beach Drive over Silver Creek	Bike Facility	S-7	FY22
White Flint West Workaround Construction	Various roads in the Pike District of North Bethesda	Bike Facility	S-7, S-13	FY22
Bethesda Loop Phase II & III Project Designs	Bethesda Central Business District	Bike Facility	S-7	FY23
Capital Crescent Trail along Purple Line Construction	Build CCT along Purple Line from Silver Spring to Bethesda	Bike Facility	S-7	FY23
MacArthur Boulevard Bikeway Improvements Segment I Construction	MacArthur Boulevard from Stable Lane to the I-495 underpass	Bike Facility	S-7	FY23
Kensington Parkway shoulder improvements	Kensington Parkway from Saul Rd to Everett St	Bike Facility	S-10	FY22
Bethesda CBD Lighting	Bethesda Central Business District	Improved Lighting	S-11	FY22
MD 355 BRT Design	MD 355 from Bethesda Metro to Clarksburg Outlets	Improvements along new transportation projects	T-1	FY22

Project	Location	Project Type	Action Item	Fiscal Year Start
Short-term recommendations from Urban Loading study	Bethesda Central Business District	Curbside management	T-7	FY23

District 2

District 2 includes the communities of Germantown, Montgomery Village, Goshen, Barnesville, Boyds, Comus, Damascus, Hyattstown, and parts of Darnestown and North Potomac. The district is currently represented by Councilmember Rice.

Project	Location	Project Type	Action Item	Fiscal Year Start
Frederick Road Clarksburg Shared Use Path Design	Frederick Road from Snowden Farm Parkway to Clarksburg Road	Bike Facility	S-7	FY22
MD 355 BRT Design	MD 355 from Bethesda Metro to Clarksburg Outlets	Improvements along new transportation projects	T-1	FY22

District 3

District 3 includes the communities of Gaithersburg, Rockville, Washington Grove, Leisure World, and parts of Aspen Hill, Derwood, North Potomac, and Potomac. The cities of Gaithersburg, Rockville, and Washington Grove have city-maintained streets, so the County Government does not maintain roadways in these cities. The district is currently represented by Councilmember Katz.

Project	Location	Project Type	Action Item	Fiscal Year Start
Connecticut Avenue HIN Study	Connecticut Avenue from Independence Street to Georgia Avenue	Road Safety Audit	S-1	FY22
Sam Eig Highway HIN Design and Build	Sam Eig Highway from end of I-370 to Diamondback Drive	High Injury Network Project	S-1	FY22
Shady Grove Road Signal Modifications	Shady Grove Road from I-270 to Frederick Road	High Injury Network Project	S-1, S-4	FY22

Project	Location	Project Type	Action Item	Fiscal Year Start
Crabbs Branch Way HIN Design and Build	Crabbs Branch Way from Shady Grove Road to Indianola Drive	High Injury Network Project	S-1	FY22
Tower Oaks Road & Montrose Road Intersection Safety	Tower Oaks Road & Montrose Road	Intersection Redesign	S-2	FY23
Veirs Mill Road BRT Design	Veirs Mill Road from Wheaton to Rockville	Improvements along new transportation projects	T-1	FY22
MD 355 BRT Design	MD 355 from Bethesda Metro to Clarksburg Outlets	Improvements along new transportation projects	T-1	FY22

District 4

District 4 includes the communities of Wheaton, Randolph Hills, Kensington Heights, Aspen Hill (partial), Glenmont, Layhill Village, Colesville, Ashton, Sandy Spring, Olney, Sunshine, Etchison, Brookeville, and Laytonsville. The district is currently represented by Councilmember Navarro.

Project	Location	Project Type	Action Item	Fiscal Year Start
Georgia Avenue HIN Study	Georgia Avenue from Hewitt Avenue to Bel Pre Road	Road Safety Audit	S-1	FY22
Connecticut Avenue HIN Study	Connecticut Avenue from Independence Street to Georgia Avenue	Road Safety Audit	S-1	FY22
Randolph Road HIN Design and Build	Randolph Road from Colie Drive to Hunters Lane	High Injury Network Project	S-1	FY22
Randolph Road and Randolph Village pedestrian hybrid beacon	Randolph Road and entrance to Randolph Village	Protected Crossing	S-3	FY22
Bel Pre Road pedestrian hybrid beacons	Bel Pre Road between Georgia Avenue and Layhill Road	Protected Crossing	S-3	FY22
Heritage Triangle Trail Phase I Design	Dr. Bird Road and Norwood Road	Bike Facility	S-7	FY22

Project	Location	Project Type	Action Item	Fiscal Year Start
BiPPA – Wheaton CBD Design	Wheaton Central Business District	Bike Facility	S-7	FY22
Glenmont/Aspen Hill Neighborhood Greenway Pilot Construction	Connect the Glenmont Metro Station to the Aspen Hill Shopping Center and North Gate Shopping Center via a parallel route to Georgia Avenue	Bike Facility	S-7	FY22
Emory Lane Shared Use Path Construction	Emory Lane from Holly Ridge Road to Muncaster Mill Road	Bike Facility	S-7	FY22
Sandy Spring Bikeway Design	Olney Sandy Spring Road from Dr. Bird Road to New Hampshire Avenue	Bike Facility	S-7	FY23
Veirs Mill Road BiPPA sidewalk planning	Veirs Mill Road Bicycle Pedestrian Priority Area	Sidewalk Construction	S-13	FY22
Veirs Mill Road BRT Design	Veirs Mill Road from Wheaton to Rockville	Improvements along new transportation projects	T-1	FY22
University Boulevard Corridor Plan starts	University Boulevard	Transportation and Land Use Planning	C	FY23

District 5

District 5 includes the communities of Briggs Chaney, Burnt Mills, Burtonsville, Calverton, Cloverly, Colesville, Fairland, Four Corners, Hillandale, Lyttonsville, Silver Spring, Takoma Park, and White Oak. The district is currently represented by Councilmember Hucker.

Project	Location	Project Type	Action Item	Fiscal Year Start
New Hampshire Avenue HIN Study	New Hampshire Avenue from Oakview Drive to Southampton Drive	Road Safety Audit	S-1	FY22
Fenton Street and Philadelphia Avenue	Fenton Street and Philadelphia Avenue	Intersection Redesign	S-2, S-7	FY23

Project	Location	Project Type	Action Item	Fiscal Year Start
Intersection Safety				
Fenton Street pedestrian hybrid beacons	Fenton Street at Roeder Road and Whole Foods Driveway	Protected Crossing	S-3	FY22
Fenton Street Cycletrack Design	Fenton Street from Cameron Street to Gist Avenue	Bike Facility	S-7	FY22
Dale Drive Shared Use Path Design	Dale Drive from Georgia Avenue to Colesville Road	Bike Facility	S-7	FY22
Grove Street Neighborhood Greenway Pilot Construction	Grove Street from Sligo Avenue in the south to Bonifant Street	Bike Facility	S-7, S-13	FY22
Metropolitan Branch Trail Construction	Between Montgomery College – Takoma Park and Ripley Street	Bike Facility	S-7, T-1	FY22
Cameron Street to Planning Place Bikeway Construction	From Cameron and Fenton intersection to Spring Street	Bike Facility	S-7	FY22
BiPPA – Purple Line Projects Construction	Areas around Purple Line stations in Silver Spring	Bike Facility	S-7	FY23
Capital Crescent Trail along Purple Line Construction	Build CCT along Purple Line from Silver Spring to Bethesda	Bike Facility	S-7, T-1	FY23
Good Hope Road Shared Use Path Construction	Good Hope Road from Windmill Lane to Rainbow Drive	Bike Facility	S-7, S-13	FY23

Project	Location	Project Type	Action Item	Fiscal Year Start
Franklin Avenue Sidewalk Construction	Franklin Avenue from Colesville Road to University Boulevard	Sidewalk construction	S-13	FY23
University Boulevard W pilot	University Boulevard W from Arcola Ave to Lorain Ave	Eliminate sidewalk obstructions	T-4	FY22

ENDNOTES

[1] Nicholas Ward, Jay Otto, Kari Finley, "Traffic Safety Culture Primer," Center for Health and Safety Culture, Montana State University, 2019, https://www.towardzerodeaths.org/wp-content/uploads/2019/12/PRIMER.pdf.

[2] "Taking Safety to New Levels," Vision Zero Initiative, 2017, http://www.visionzeroinitiative.com/taking-safety-to-new-levels/.

[3] "Vision Zero Cities Map," Vision Zero Network, 2021, http://visionzeronetwork.org/resources/vision-zero-cities/.

[4] Brian Tefft, "Impact Speed and a Pedestrian's Risk of Severe Injury or Death," AAA Foundation for Traffic Safety, September 2011, https://aaafoundation.org/impact-speed-pedestrians-risk-severe-injury-death/.

[5] "Speed and Crash Risk," International Transport Forum, 2018, https://www.itf-oecd.org/sites/default/files/docs/speed-crash-risk.pdf.

[6] "Complete Streets Design Guide," Department of Transportation, Montgomery County Government, February 2021, https://www.montgomerycountymd.gov/dot-dte/projects/CSDG/index.html.

[7] "Dangerous by Design 2021," Smart Growth America, March 2021, https://smartgrowthamerica.org/dangerous-by-design/.

[8] "Equity Emphasis Areas for TPB's Enhanced Environmental Justice Analysis," Metropolitan Washington Council of Governments, June 2018, https://www.mwcog.org/transportation/planning-areas/fairness-and-accessibility/environmental-justice/equity-emphasis-areas/.

[9] "Racial Equity Profile for Montgomery County," Office of Legislative Oversight, Montgomery County Government, July 2019, https://www.montgomerycountymd.gov/OLO/Resources/Files/2019%20Reports/OLO2019-7-6_20_19.pdf.

[10] Katrina J Debnam and Kenneth H Black. "Driving while black: a comparison of the beliefs, concerns, and behaviors of black and white Maryland drivers," *Traffic injury prevention* 12, no. 6 (2011), 599–603, doi: https://doi.org/10.1080/15389588.2011.615354.

[11] Pedro Torres et al. "The relative risk of involvement in fatal crashes as a function of race/ethnicity and blood alcohol concentration," *Journal of Safety Research 48*, (2014): 95–101, doi: https://doi.org/10.1016/j.jsr.2013.12.005.

[12] Jacob Enriquez. "Occupant restraint use in 2018: Results from the NOPUS controlled intersection study (Report No. DOT HS 812 781)," National Highway Traffic Safety Administration, https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812781.

[13] "Teens and Speeding: Breaking the Deadly Cycle," Governors Highway Safety Association, January 2021, https://www.ghsa.org/sites/default/files/2021-02/GHSA_TeenSpeeding_Feb16.pdf.

[14] Brian Tefft, "Impact Speed and a Pedestrian's Risk of Severe Injury or Death," AAA Foundation for Traffic Safety, September 2011, https://aaafoundation.org/impact-speed-pedestrians-risk-severe-injury-death/.

[15] "Older Adult Drivers," National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, December 2020, https://www.cdc.gov/transportationsafety/older_adult_drivers/index.html.

[16] Michael Schimpl et al. "Association between Walking Speed and Age in Healthy, Free-Living Individuals Using Mobile Accelerometry—A Cross-Sectional Study," *PLoS ONE* 6, no.8 (2011): e23299, doi: https://doi.org/10.1371/journal.pone.0023299.

[17] "Total Population Projections by Age, Sex, and Race," Maryland State Data Center Maryland Department of Planning, December 2020, https://planning.maryland.gov/MSDC/Pages/s3_projection.aspx.

[18] "Fatality Facts 2019 Males and Females," Insurance Institute for Highway Safety, March 2021, https://www.iihs.org/topics/fatality-statistics/detail/males-and-females.

[19] "Montgomery County Community Wide Greenhouse Gas Emissions Inventory," Department of Environmental Protection, Montgomery County Government, July 2020, https://www.montgomerycountymd.gov/green/climate/ghg-inventory.html.

[20]Ben Welle et al, "Sustainable and Safe: A Vision and Guidance for Zero Road Deaths," World Resources Institute, January 2018, https://www.wri.org/publication/sustainable-and-safe-vision-and-guidance-zero-road-deaths.

[21] "Complete Streets Design Guide," Department of Transportation, Montgomery County Government, February 2021, https://www.montgomerycountymd.gov/dot-dte/projects/CSDG/index.html.

[22] "Road Safety Audits," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/road_safety_audit/.

[23]"Road Diets (Roadway Reconfiguration)," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/road_diets/.

[24] K. Schattler and T. Hanson, "Safety Impacts of a Modified Right Turn Lane Design at Intersections," Presented at the 95th Annual Meeting of the Transportation Research Board, Washington, DC, 2016, http://www.cmfclearinghouse.org/detail.cfm?facid=8431.

[25]"Left and Right Turn Lanes at Two-Way Stop-Controlled Intersections," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/left_right_turn_lanes/.

[26] "Pedestrian Hybrid Beacons," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/ped_hybrid_beacon/.

[27] "Yellow Change Intervals," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/yellow_xhg_intervals/.

[28] "Leading Pedestrian Intervals," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/lead_ped_int/.

[29] "Corridor Access Management," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/corridor_access_mgmt/.

[30]"Median Barriers," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/median_barrier/.

[31] "Enhanced Delineation and Friction for Horizontal Curves," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/enhanced_delineation/.

[32] Raul Avelar et al, *Developing Crash Modification Factors for Bicycle-Lane Additions While Reducing Lane and Shoulder Widths [tech brief]*, (McLean, VA: Federal Highway Administration, Research, Development, and Technology, June 2021), https://rosap.ntl.bts.gov/view/dot/57270.

[33] Li Chen, Cynthia Chen, and Reid Ewing, "The Relative Effectiveness of Pedestrian Safety Countermeasures at Urban Intersections - Lessons from a New York City Experience," Presented at the 91st Annual Meeting of the Transportation Research Board, January 22-26, Washington, DC, 2012, http://www.cmfclearinghouse.org/study_detail.cfm?stid=280.

[34]C.M. Richard, K. Magee, P. Bacon-Abdelmoteleb, J.L. Brown, *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Ninth Edition*, (Washington, DC: National Highway Traffic Safety Administration, April 2018), https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017v2_0.pdf.

[35] N. Carrizosa and C. Scruggs, *Impact of Montgomery County's Safe Routes to School Program, Report Number 2017-1*, (Rockville, MD: Office of Legislative Oversight, October 2016), https://www.montgomerycountymd.gov/OLO/Resources/Files/2017%20Reports/OLOReport2017-1-MontgomeryCountySafeRoutestoSchool.pdf.

[36] "Lane Width: Urban Street Design Guide," National Association of City Transportation Officials, accessed March 2021, https://nacto.org/publication/urban-street-design-guide/street-design-elements/lane-width/.

[37] National Academies of Sciences, "NCHRP Report 617: Accident Modification Factors for Traffic Engineering and ITS Improvements," The National Academies Press, 2008, doi: https://doi.org/10.17226/13899.

[38] "Walkways," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/walkways/.

[39] "Backplates with Retroreflective Borders," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/blackplate/.

[40] Li Chen, Cynthia Chen, and Reid Ewing, "The Relative Effectiveness of Pedestrian Safety Countermeasures at Urban Intersections - Lessons from a New York City Experience," Presented at the 91st Annual Meeting of the Transportation Research Board, January 22-26, Washington, DC, 2012, http://www.cmfclearinghouse.org/study_detail.cfm?stid=280.

[41] Bahar, G., Parkhill, M., Hauer, E., Council, F., Persaud, B., Zegeer, C., Elvik, R., Smiley, A., and Scott, B. "Prepare Parts I and II of a Highway Safety Manual: Knowledge Base for Part II". Unpublished material from NCHRP Project 17-27, May 2007.

[42] Richard Retting, Charles Farmer, Anne McCartt, "Evaluation of automated speed enforcement in Montgomery County, Maryland," International Institute for Highway Safety, October 2008, https://www.iihs.org/topics/bibliography/ref/1816.

[43] "Transportation: Thrive 2050," Montgomery Planning, Maryland-National Capital Park and Planning Commission, accessed April 2021, https://montgomeryplanning.org/planning/master-plan-list/general-plans/thrive-montgomery-2050/transportation-2050/.

[44] Reid Ewing, Shima Hamidi, James B Grace, "Urban sprawl as a risk factor in motor vehicle crashes," *Urban Studies* 53, no. 2 (2014): 247-266, doi: https://doi.org/10.1177/0042098014562331.

[45] "Road Safety Audits," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/road_safety_audit/.

[46]"Medians and Pedestrian Crossing Islands in Urban and Suburban Areas," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/ped_medians/.

[47] "Walkways," Federal Highway Administration, US Department of Transportation, October 2017, https://safety.fhwa.dot.gov/provencountermeasures/walkways/.

[48] "Seat Belts," National Safety Council, accessed April 2021, https://injuryfacts.nsc.org/motor-vehicle/occupant-protection/seat-belts/.

[49]C.M. Richard, K. Magee, P. Bacon-Abdelmoteleb, J.L. Brown, *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Ninth Edition*, (Washington, DC: National Highway Traffic Safety Administration, April 2018), https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017v2_0.pdf.

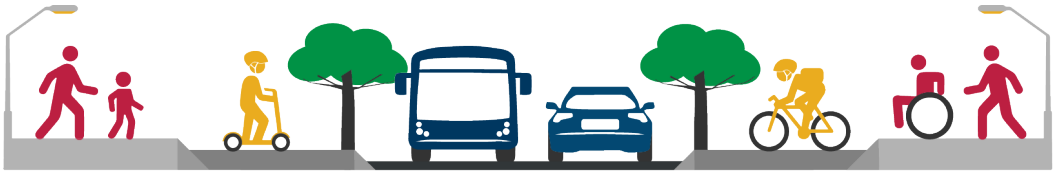
[50] Ron Van Houten, J.E. Louis Malenfant, "Effects of a Driver Enforcement Program on Yielding to Pedestrians," *Journal of Applied Behavior Analysis* 37, no. 3 (2004): 351-363, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1284509/pdf/15529891.pdf.

[51] C.M. Richard, K. Magee, P. Bacon-Abdelmoteleb, J.L. Brown, *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Ninth Edition*, (Washington, DC: National Highway Traffic Safety Administration, April 2018), https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017v2_0.pdf.

[52] Richard Retting, Charles Farmer, Anne McCartt, "Evaluation of automated speed enforcement in Montgomery County, Maryland," International Institute for Highway Safety, October 2008, https://www.iihs.org/topics/bibliography/ref/1816.

[53] Richard Retting, Charles Farmer, Anne McCartt, "Evaluation of automated speed enforcement in Montgomery County, Maryland," International Institute for Highway Safety, October 2008, https://www.iihs.org/topics/bibliography/ref/1816.

[54] C.M. Richard, K. Magee, P. Bacon-Abdelmoteleb, J.L. Brown, *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Ninth Edition*, (Washington, DC: National Highway Traffic Safety Administration, April 2018), https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478_countermeasures-that-work-a-highway-safety-countermeasures-guide-9thedition-2017v2_0.pdf.



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