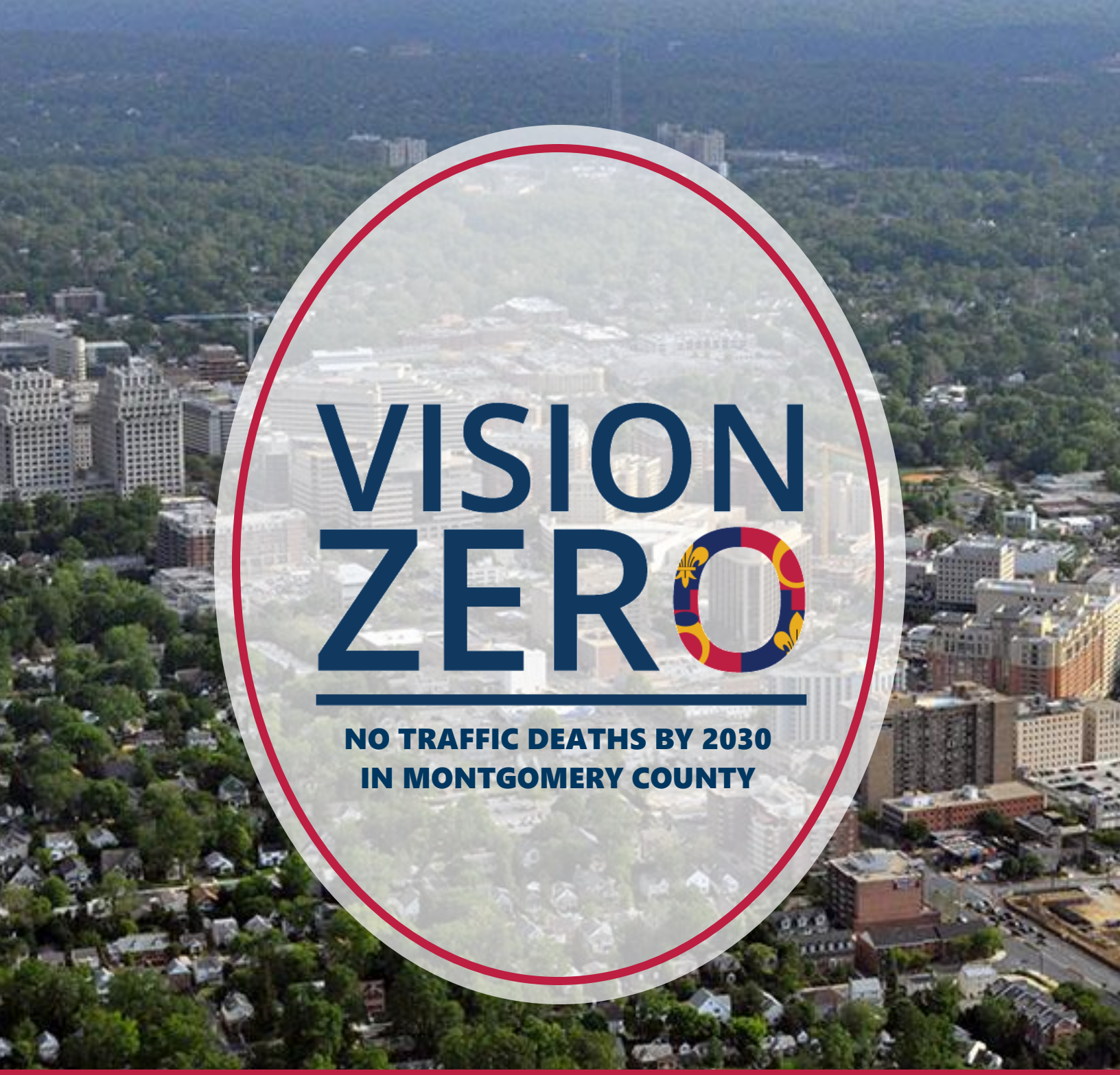


VISION ZERO

NO TRAFFIC DEATHS BY 2030
IN MONTGOMERY COUNTY

SUPPORTING DATA ANALYSIS

NOVEMBER 2017


MONTGOMERY COUNTY
17 76
GARDEZ BIEN
MARYLAND

ABOUT THIS DOCUMENT

This report is an addendum to Montgomery County's Vision Zero Two-Year Action Plan. It provides additional context to the data presented in the plan and offers additional analysis into the County's severe and fatal crashes and other trends shaping traffic safety in the County.

TABLE OF CONTENTS

Download and explore the data at https://montgomerycountymd.gov/visionzero/

2012-2016 COLLISION TRENDS

In developing the Two-Year Action Plan, collision data provided by the Montgomery County Police Department (MCPD) covering 2012 to 2016 were analyzed. There were 1,849 collisions that resulted in 1,996 severe injuries and 174 fatalities to drivers, passengers, pedestrians, and bicyclists.

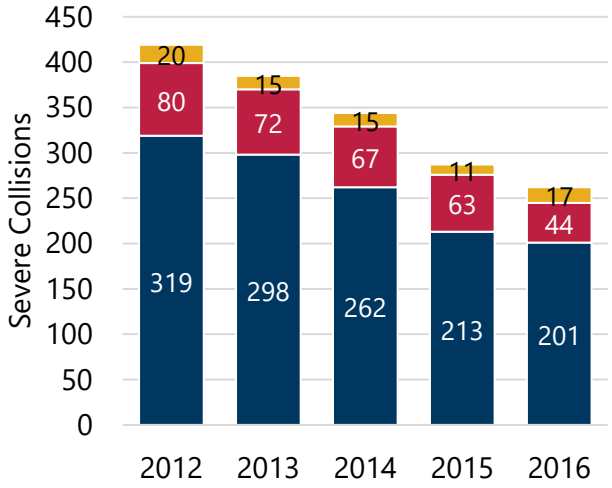
From 2012 to 2016, the number of severe collisions declined 37%.[i] Severe collisions declined every year for vehicle occupants and pedestrians, but remained around 16 a year for cyclists.

Fatal collisions increased 58% from 19 in 2012 to 30 in 2016. Vehicle occupants constituted the majority of the increase with 12 fatal crashes in 2012 and 19 in 2016. Pedestrian fatalities were above the 6 recorded in 2012 for the rest of the analysis period. The six fatalities in 2012 were the lowest recorded by MCPD going back to 1996. Three cyclists were killed in 2015 and 2016, which was above the prior county average of one a year.

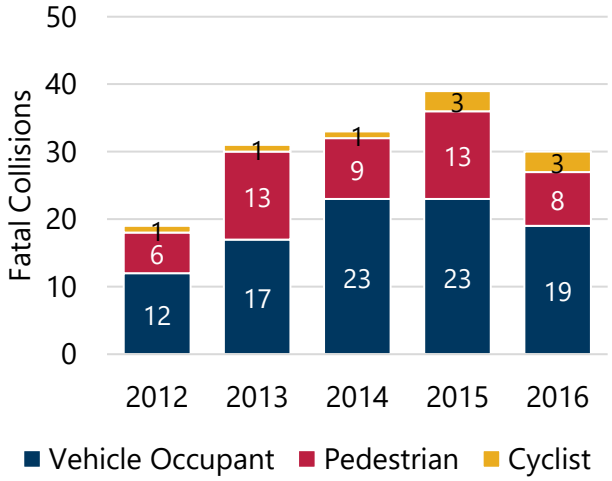
Note that the data presented does not include every severe and fatal collision that occurred in the county during the analysis period. The main areas excluded are the interstates, I-495 and I-270, and the City of Takoma Park. These areas were omitted for two reasons. First, MCPD's records did not include reports from all police departments operating within Montgomery County. Second, this action plan is designed to focus on areas where the County Government can best use its resources on roadways it maintains and perform engineering, education, and enforcement.

Reports Included	Reports Not Included
Montgomery County PD	MD State Police
Rockville PD	MD Transit Authority
Gaithersburg PD	Takoma Park
	M-NCPPC Park Police
	Chevy Chase Police

SEVERE COLLISIONS, 2012-2016



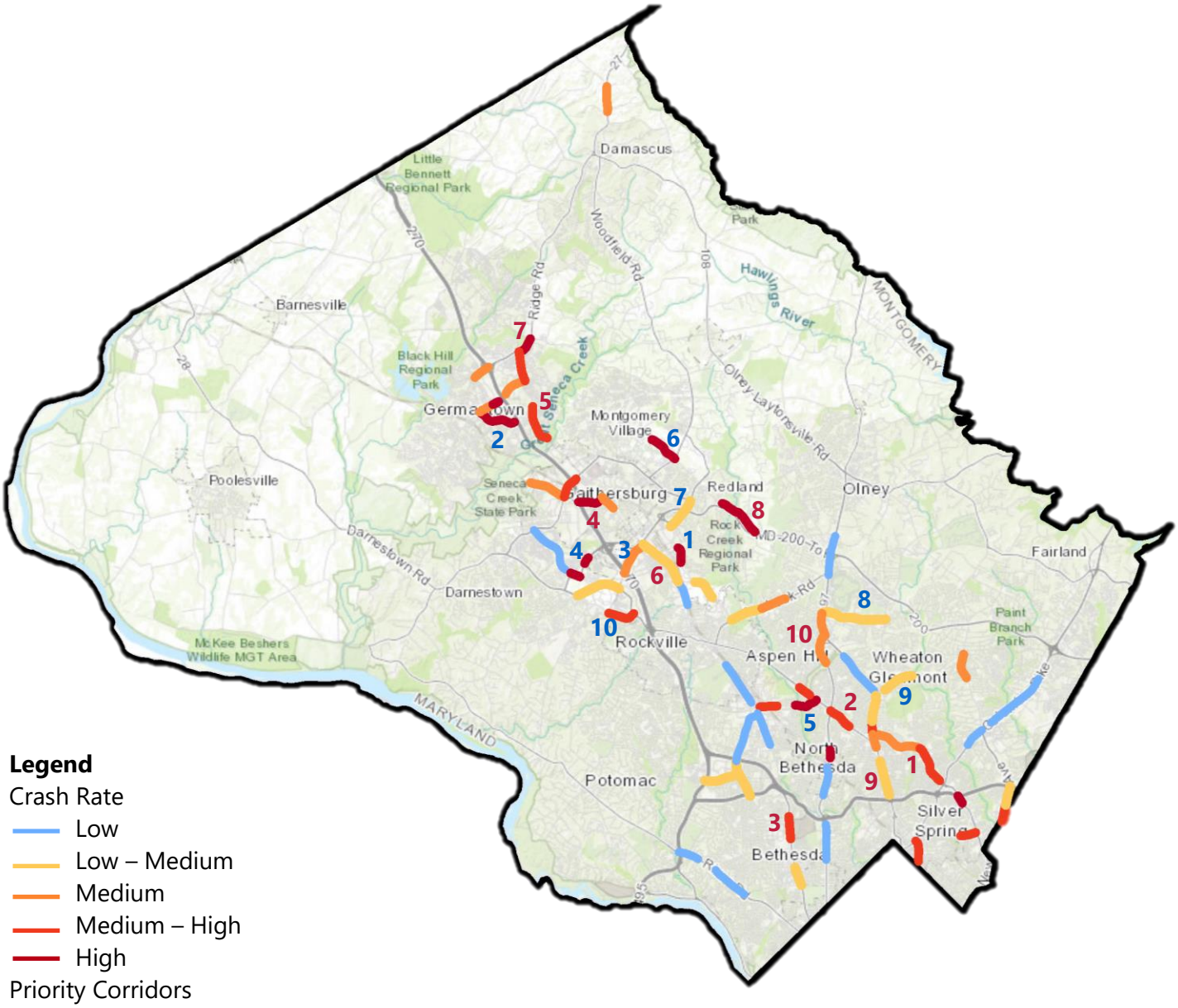
FATAL COLLISIONS, 2012-2016



[i] See the full definition of a serious/severe injury in the appendix.

HIGH INJURY NETWORK

The map below highlights the roadway segments with 5 or more severe or fatal collisions and one or more collisions per mile per year. Numbered segments display the highest risk road segments, which collectively account for 13% of non-interstate severe and fatal collisions, but only 0.7% of the entire roadway network. The next two pages have more detailed crash and roadway characteristic information for these highlighted segments. These high-risk roadways make up the County's high injury network and will be the first areas scrutinized for potential engineering improvements. High injury network roadways were concentrated in Mid-County (Wheaton, Glenmont, Aspen Hill) and UpCounty (Germantown and Gaithersburg) regions.



TOP 10 PRIORITY CORRIDORS FOR COUNTY-MAINTAINED ROADWAYS

	Roadway	Total Crashes	Injured or Killed	Injured or Killed	Injured or Killed	Crashes per Mile per Year	Crashes per 100M VMT**	Number of Travel Lanes	Speed Limit
1	**Crabbs Branch Way** From Reland Rd to Indianola Dr	9	7	2	0	3.8	51.9	4	35 MPH
2	**Middlebrook Rd*** From Germantown Rd to I-270	15	14	1	0	2.6	33.1	6	40 MPH
3	**Shady Grove Rd** From Frederick Rd to I-270	14	12	2	0	2.7	18.3	6	40 MPH
4	**Sam Eig Hwy** From Fields Rd to Diamondback Dr	5	4	0	1	4.9	42.8	8	50 MPH
5	**Randolph Rd*** From Veirs Mill Rd to Rock Creek Park	9	7	1	1	2.6	30.7	6	35 MPH
6	**Snouffer School Rd** From Woodfield Rd to Flower Hill Way	9	6	3	0	2.0	25.4	4	40 MPH
7	**Shady Grove Rd** From Metro Access Rd to Midcounty Hwy	11	11	0	0	2.3	12.9	6	45 MPH
8	**Bel Pre Rd*** From Layhill Rd to Georgia Ave	10	7	3	0	1.0	12.5	4	35 MPH
9	**Randolph Rd** From Kemp Mill Rd to Glenallan Ave	9	6	3	0	2.0	13.6	6	45 MPH
10	**Darnestown Rd** From W Montgomery Ave to Shady Grove Rd	6	5	1	0	1.5	20.4	4	40 MPH

*Roadway overlaps with High Incidence Area for Pedestrian Safety Initiative

**100M VMT = 100,000,000 Vehicle Miles of Travel

TOP 10 PRIORITY CORRIDORS FOR STATE-MAINTAINED ROADWAYS

	Roadway	Total Crashes	Injured or Killed	Injured or Killed	Injured or Killed	Crashes per Mile per Year	Crashes per 100M VMT**	Number of Travel Lanes	Speed Limit
1	**University Blvd W*** From Georgia Ave to Colesville Rd	30	24	6	0	2.2	18.5	6	40 MPH
2	**Veirs Mill Rd** From Connecticut Ave to Newport Mill Rd	12	11	1	0	3.3	24.5	6	40 MPH
3	**Rockville Pike** From Jones Bridge Rd to Cedar Ln	12	11	1	0	3.6	22.1	6	35 MPH
4	**W Diamond Ave** From I-270 to Water St	5	4	1	0	1.6	44.4	4	35 MPH
5	**Frederick Rd** From Middlebrook Rd to Wheatfield Dr	13	8	5	0	2.3	18.8	6	40 MPH
6	**Frederick Rd** From Gude Dr to Shady Grove Rd	15	12	2	1	1.9	11.9	6	40 MPH
7	**Ridge Rd** From Frederick Rd to Brink Rd	9	8	1	0	3.3	28.6	6	45 MPH
8	**Muncaster Mill Rd** From ICC (MD-200) to Olde Mill Run	10	10	0	0	1.5	24.7	2	40 MPH
9	**Georgia Ave** From Forest Glen Rd to Plyers Mill Rd	14	10	4	0	2.7	12.5	6	35 MPH
10	**Connecticut Ave*** From Matthew Henson Trail to Georgia Ave	11	7	4	0	2.4	18.0	6	45 MPH

*Roadway overlaps with High Incidence Area for Pedestrian Safety Initiative

**100M VMT = 100,000,000 Vehicle Miles of Travel

SEVERE AND FATAL COLLISIONS BY ROADWAY CHARACTERISTICS

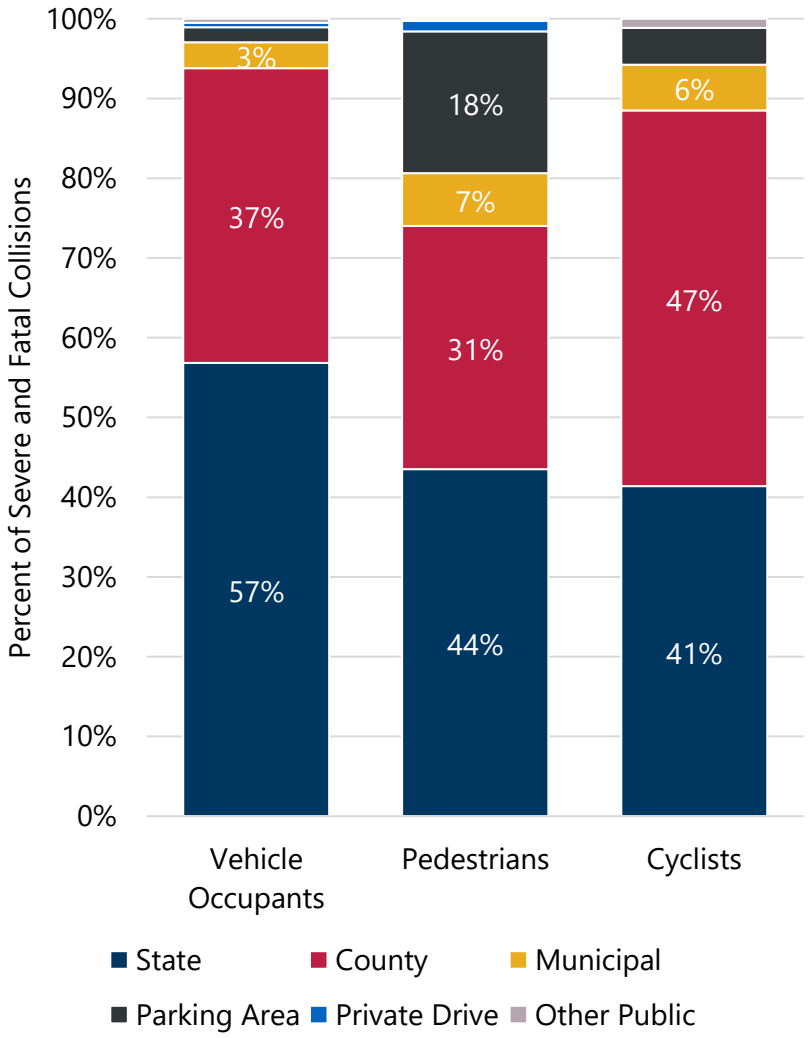
To determine if particular roadway engineering and policy changes are merited, severe and fatal crashes were compared to roadway characteristics. The majority of crashes were concentrated on the County's busiest, widest, and fastest roadways. The majority of these roadways are designed and controlled by State Highway Administration, making their partnership key in meeting reduction goals.

SEVERE AND FATAL COLLISIONS BY ROADWAY OWNER

Roadways in Montgomery County fall under five main categories: state, county, municipal, other public (National and Maryland Parks), and private. The State of Maryland has primary jurisdiction over 17% of non-interstate lane miles in the County and 52% of all non-interstate vehicle miles traveled, which accounted for 53% of the County's severe and fatal collisions.

Nearly two in 10 severe or fatal pedestrian collisions occurred in parking lots and garages. In the parking area collisions, 21% were the result of the vehicle backing, 18% were the result of the vehicle moving at a constant speed, and 13% were the result of the vehicle accelerating.

Cyclists had the highest rate of severe and fatal collisions on County maintained roadways at 47%. This should be expected given that State-maintained roadways are multi-lane highways that are stressful for cyclists and have less overall volume of cyclists compared to local roads.

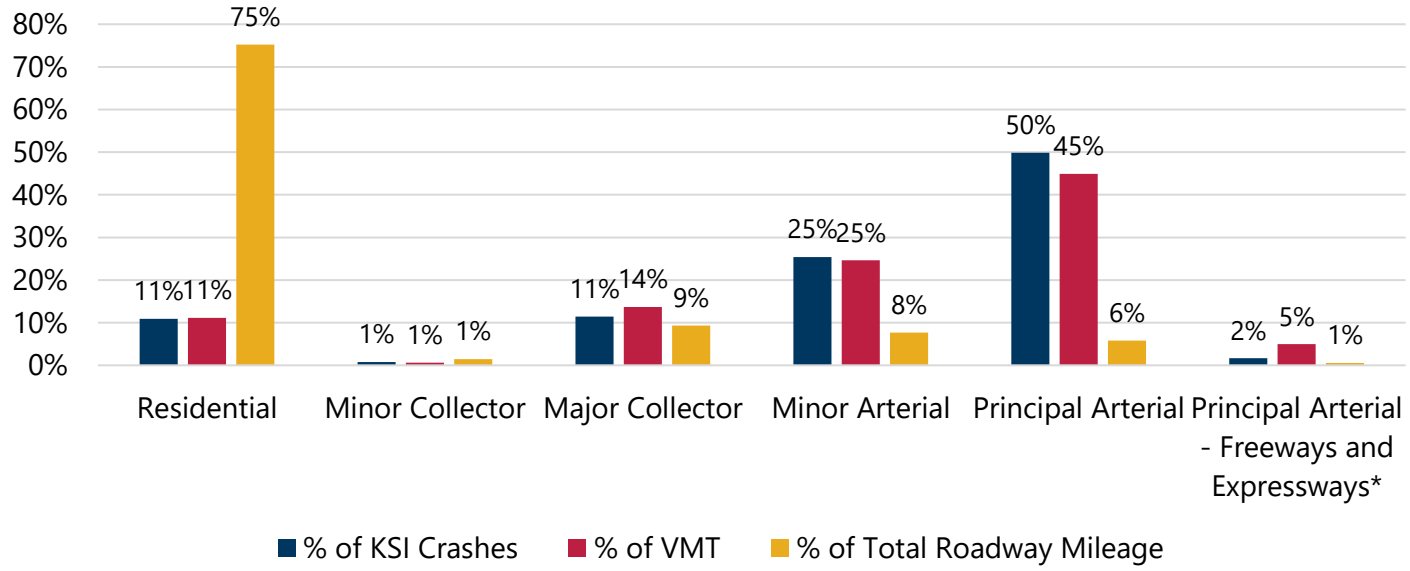


NON-INTERSTATE LANE MILES BY ROADWAY OWNER

	State	County	Municipal	Total
Lane Miles	1,167	4,877	773	6,817
Percent of Total	17%	72%	11%	100%

ROADWAY FUNCTIONAL CLASS AND SEVERE AND FATAL COLLISIONS[ii]

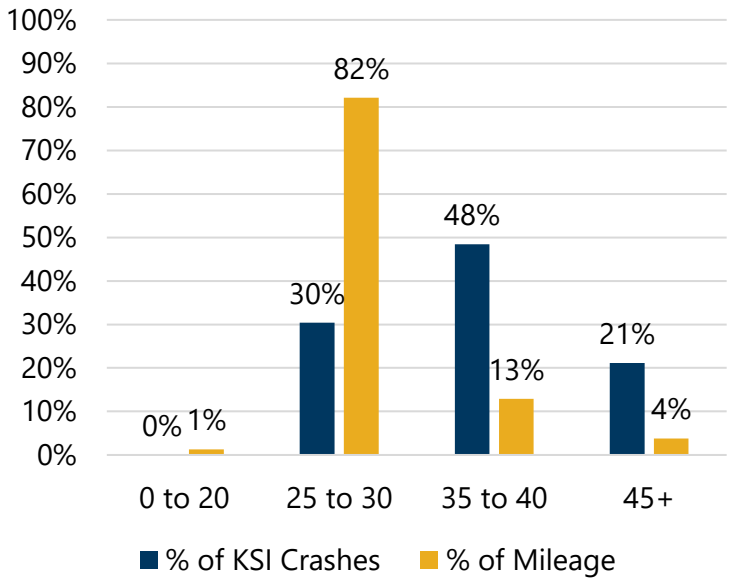
Arterial roadways, highways such as Rockville Pike, Georgia Avenue, Columbia Pike, and Randolph Road, comprised 15% of the County's non-interstate roadway mileage, 75% of the County's vehicle miles traveled, and 77% of severe and fatal crashes. Overall, the proportion of vehicle miles traveled correlated with the proportion of severe and fatal crashes in the County.



*Data shown excludes the Intercounty Connector (MD-200)

SPEED LIMIT AND SEVERE AND FATAL COLLISIONS

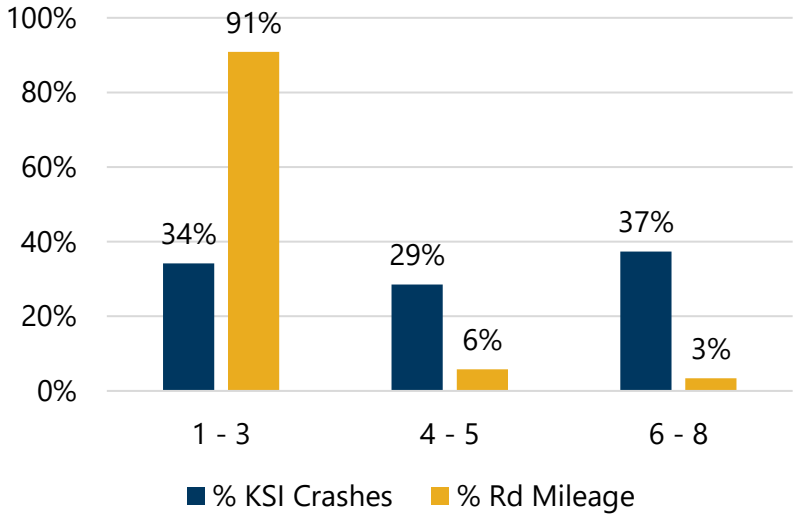
69% of severe and fatal collisions occurred on roadways with a speed limit of 35 MPH or greater. These roadways make up 17% of roadway mileage in the county. Vehicles may have been going slower or faster than the speed limit prior to the collision, but vehicle speed is estimated only for collisions investigated by the collision reconstruction team.



[ii] See roadway functional classifications in your neighborhood using the Maryland State Highway Administration's online explorer at https://arcg.is/1iurGC.

TRAVEL LANES AND SEVERE AND FATAL COLLISIONS

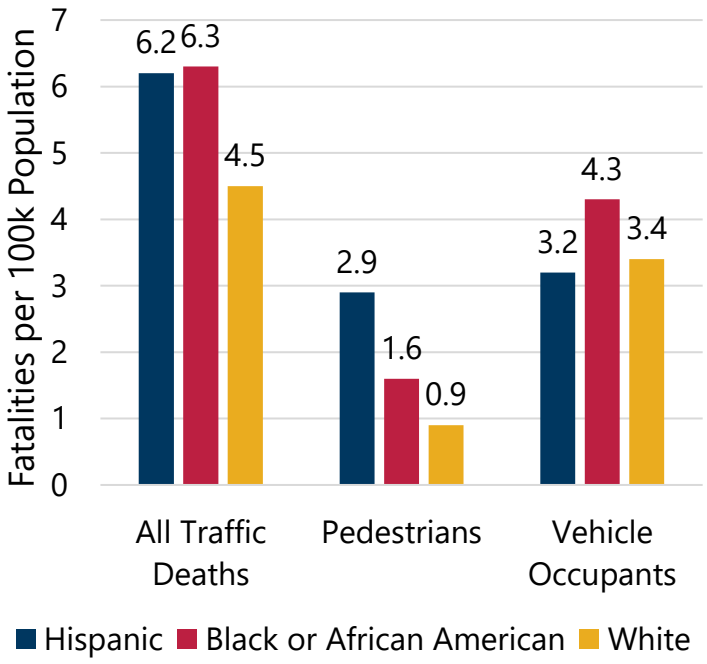
37% of severe and fatal crashes occurred on roadways with six or more travel lanes. Pedestrians had the highest rate of severe and fatal collisions on six lanes or more roads at 42% compared to 36% for motor vehicle occupants and 33% of bicyclists. A plurality, 43%, of severe and fatal cyclist collisions occurred on two lane roadways.



ETHNICITY AND RACE OF PERSON KILLED

Traffic fatalities were disproportionately higher for persons of color. Hispanic and Non-Hispanic Black/African American residents had a fatality rate 33% higher than Non-Hispanic White residents. For pedestrians, the Hispanic fatality rate was 105% higher than the Non-Hispanic White rate. Hispanics and Non-Hispanic Whites had similar fatality rates for vehicle occupants, but Non-Hispanic Black/African Americans were 23% higher.

Further analysis between ethnicity, race, and collision factors is not possible at this time. Race information was not collected in the County's records and 27% of fatalities had no information on ethnicity or race in the Fatality Analysis Reporting System for Montgomery County covering 2011 to 2015. Reliable data on race and motor vehicle collisions came from the Centers for Disease Control's database tracking the cause of death for County residents.

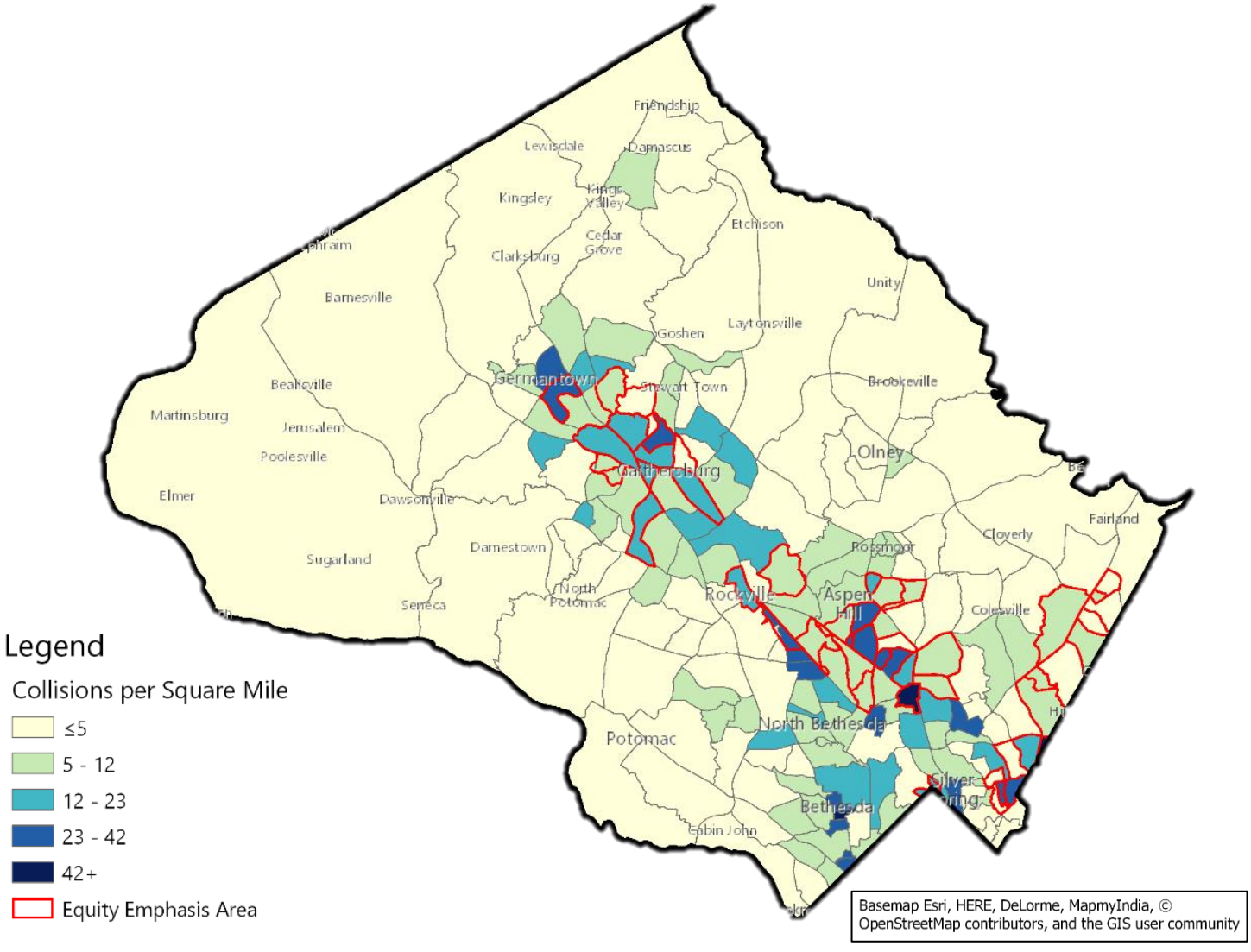


Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 2011-2015 on CDC WONDER Online Database, released December 2016.
Note: Rates for cyclists and Asian/Pacific Islander not shown due to rates that fell below the reporting threshold.

COLLISIONS AND EQUITY EMPHASIS AREAS

The Metropolitan Washington Council of Governments (MWCOG) analyzed Census data at the tract level to identify areas with significant concentrations of low-income and/or minority populations.[1] In Montgomery County, MWCOG found 46 neighborhoods met the criteria and are highlighted with a red boundary in the map below. These neighborhoods contained 6% of the County's land area, 22% of the population, and 31% of all severe and fatal collisions. These areas are adjacent to the County's busiest highways - Rockville Pike, Veirs Mill Rd, Georgia Ave, and Colesville Rd.

When comparing the demographics of all 215 Census tracts to severe and fatal collision locations, neighborhoods with higher rates of poverty, persons of color, and younger residents have more collisions per square mile. The relationship was determined by calculating the correlation between the demographics of the neighborhood and the crash density. The disparities between different racial and ethnic groups is not unique to Montgomery County. An analysis of nationwide pedestrian fatalities found disproportionate fatality rates in areas with higher poverty rates.[2]



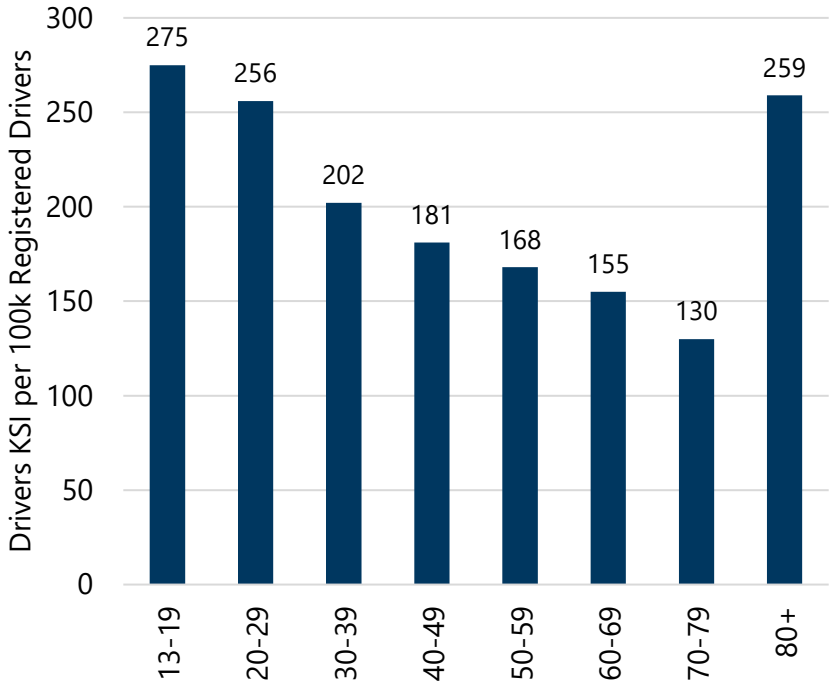
The table below shows various community characteristics from the American Community Survey compared to crash density for all Census tracts. The first column shows the community attribute, the second explains the correlation between the attribute and crash density, and the right column shows the correlation coefficient. To determine if there was a statistically significant relationship between crash density and the community attribute, the absolute value of the correlation coefficient had to be larger than 0.14. The larger the value of the coefficient, the stronger the relationship.

For these correlation tests, it is important to note that correlation does not equal causation. There are other external factors, such as historical differences in the design of neighborhoods and roadways, affecting the relationship between the variables that are not captured in this model.

Community Attribute	Relation to Crash Density	Correlation Coefficient
Percent of Civilian noninstitutionalized population with a disability	No relation	0.03
Percent of total population foreign born	Related – The more foreign-born population, the higher the crash density.	0.30
Percent of population 5 years and over that speak English less than "very well"	Related – The higher the population speaking English less than "very well," the higher the crash density.	0.31
Median household income	Related – The lower the household's median income, the higher the crash density.	-0.32
Percentage of families and people whose income in the past 12 months was below the poverty level	Related – The more families below the poverty level, the higher the crash density.	0.27
Median age	Related – The lower the median age, the higher the crash density.	-0.24
Percent of total population that identifies as Black or African American	No relation – However, mortality data show higher traffic fatality rates for Black or African Americans compared to Non-Hispanic Whites.	0.00
Percent of total population that identifies as Asian	No relation	-0.02
Percent of total population that identifies as Hispanic or Latino of any race	Related – Communities with a higher percentage of Hispanic or Latino population have more crashes per mile.	0.30

AGE OF PERSON SEVERELY INJURED OR KILLED

DRIVERS



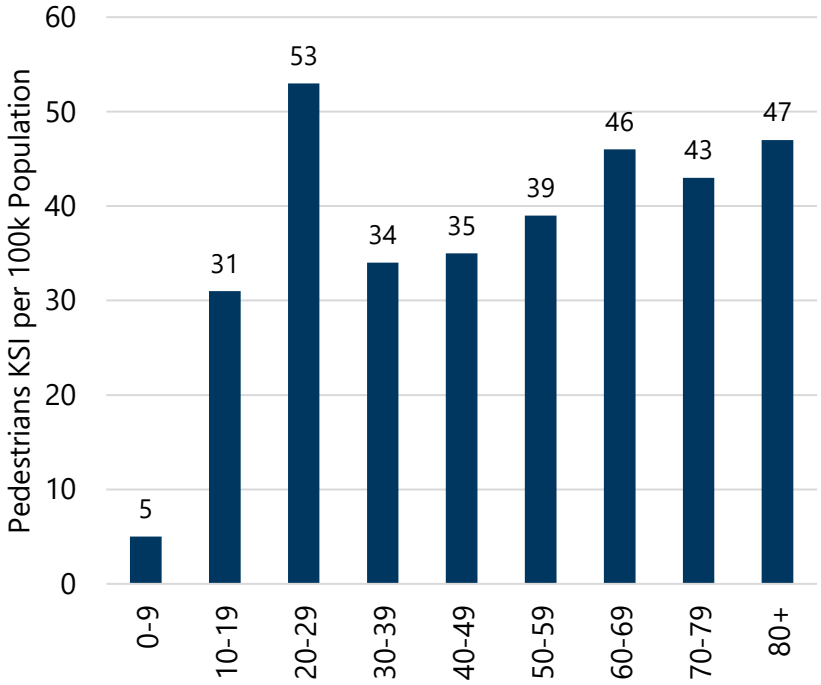
For drivers who were killed or severely injured (KSI), the highest rates were among the very youngest and oldest drivers. Drivers aged 13-29 and 80+ both share the same top three contributing factors of failing to give full time and attention, failing to yield the right of way, and driving too fast for conditions. A major difference was that younger drivers have higher rates of driving under the influence.

Strong outreach for the 80+ population is crucial as the 80+ population in Montgomery County is expected to grow by 116% by 2040 compared to only 6% for 15-29 year old residents.[3]

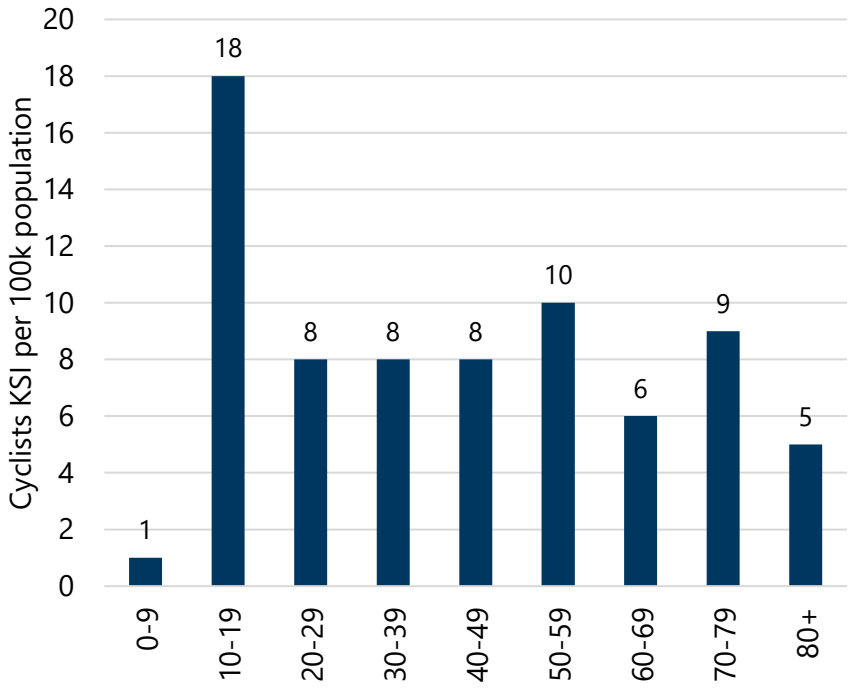
PEDESTRIANS

The age group with the highest number of killed or severely injured (KSI) were young adults ages 20 to 29. Within the 20 to 29 age group, the distribution leaned toward the older end with 63% of the age group falling between 25 and 29. This age group, and the 30 to 39 age group, were the most likely to have alcohol detected at the time of the collision.

When examining fatal pedestrian collisions, the opposite is true: the highest fatality rates were among the 60+ age group and the lowest per capita rate was among the 0 to 9 and 30 to 39 year old age group.



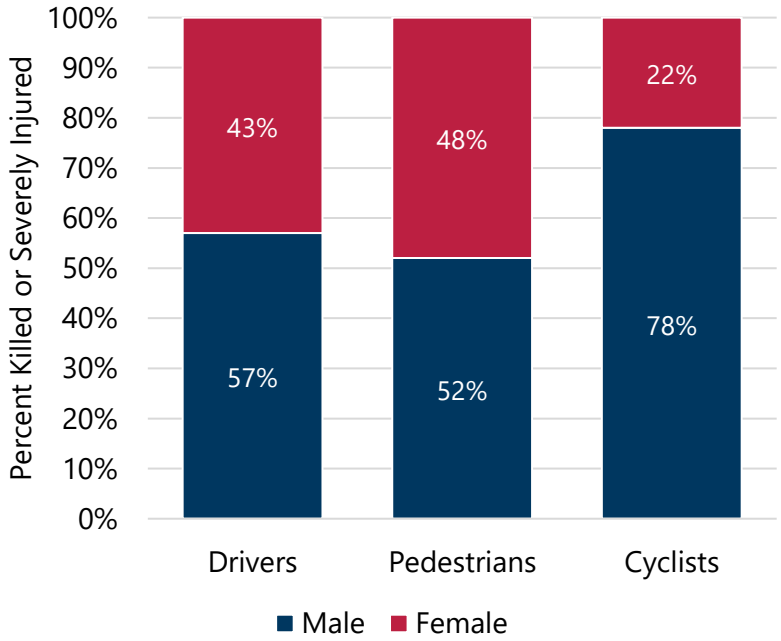
CYCLISTS



The killed or severely injured (KSI) rates for cyclists were highest among school-aged children ages 10 to 19. Within that age group, 78% were high-school aged (15–18 years old) and 78% were male.

With the eight fatal cyclist collisions between 2012 and 2016, there was no significant trend amongst the age groups. There were two in the 10 to 19 year old group, ages 17 and 19, and three were aged 60+.

SEX OF PERSON SEVERELY INJURED OR KILLED

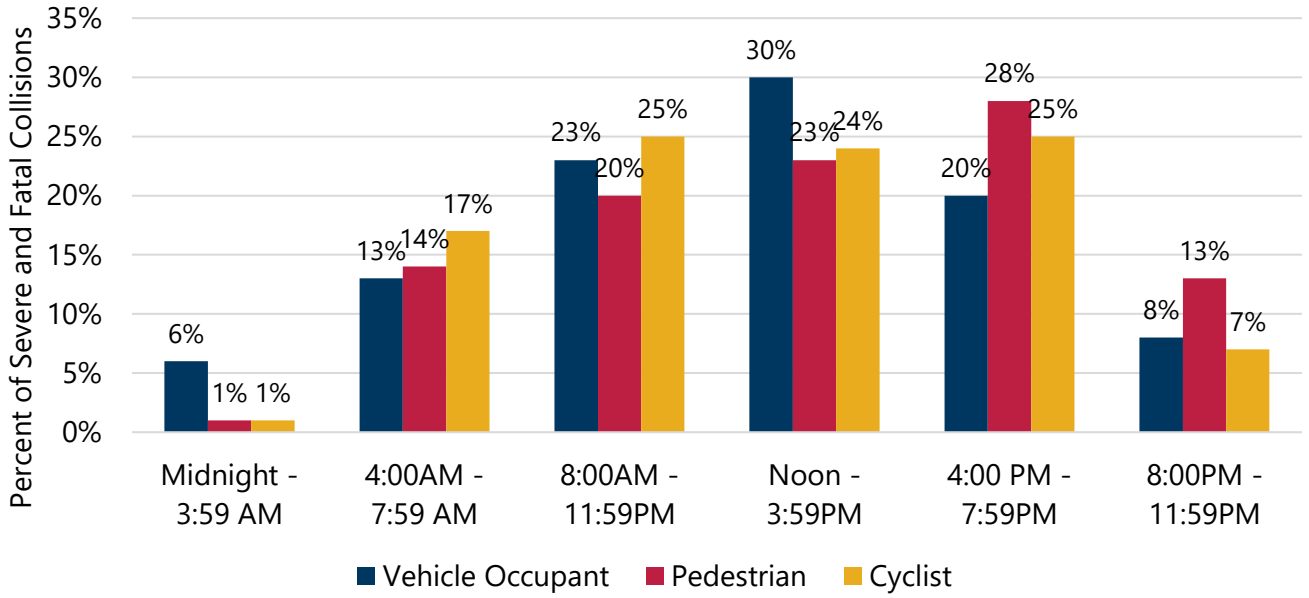


The County's overall population is 52% female and 48% male. However, males were the majority for those severely injured or killed. The largest imbalance was amongst cyclists with 78% being male. Males were more likely to engage in dangerous behaviors (intoxicated, not wearing seatbelt, speeding) compared to females.

For vehicle passengers severely injured or killed, the trend mirrors the County demographics with 52% female, 47% male, and 1% unknown.

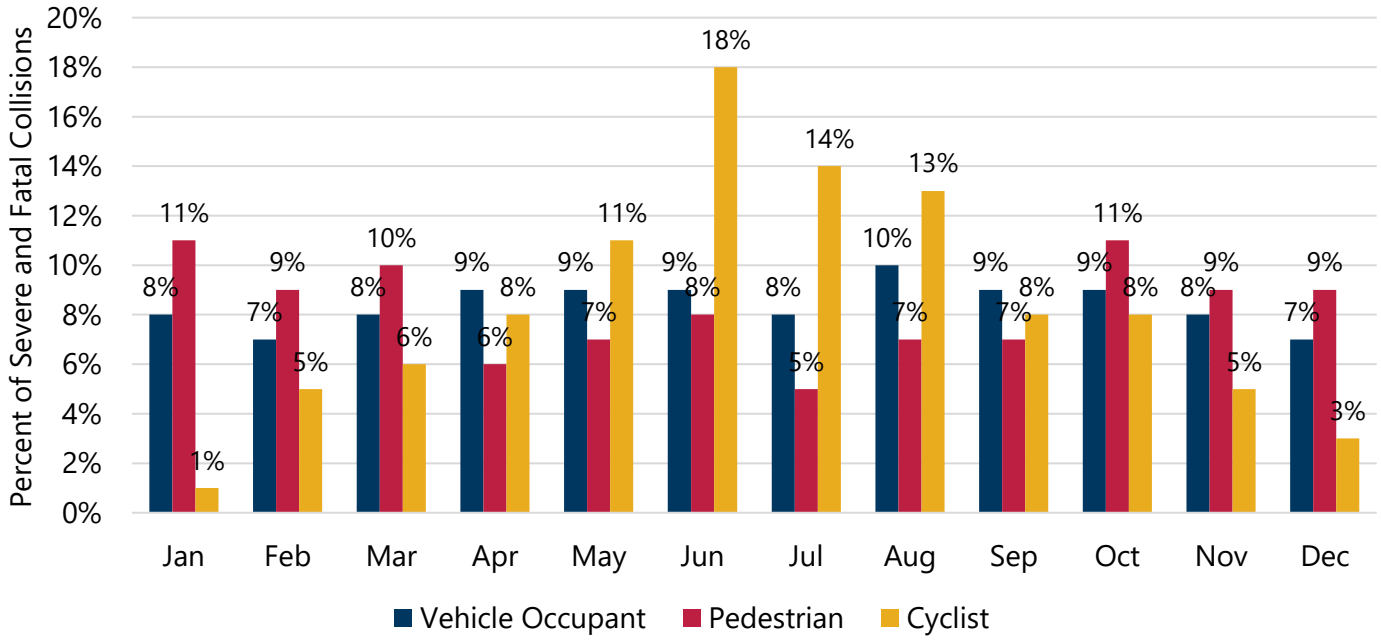
TEMPORAL ANALYSIS OF SEVERE AND FATAL COLLISIONS

COLLISIONS BY TIME OF DAY



NOTE: Total may not add to 100% due to rounding at each 4-hour period.

COLLISIONS BY TIME OF YEAR

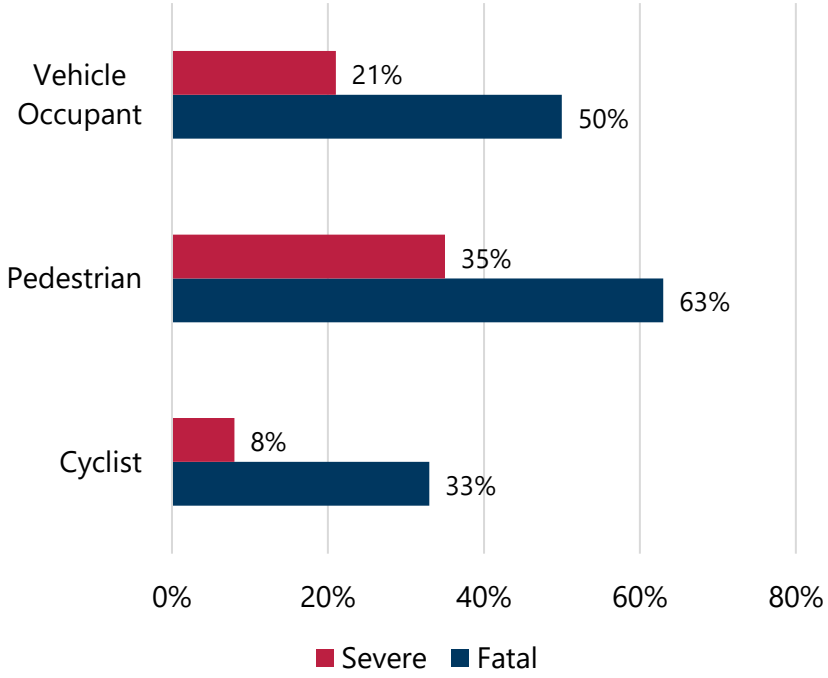


NOTE: Total may not add to 100% due to rounding at each month.

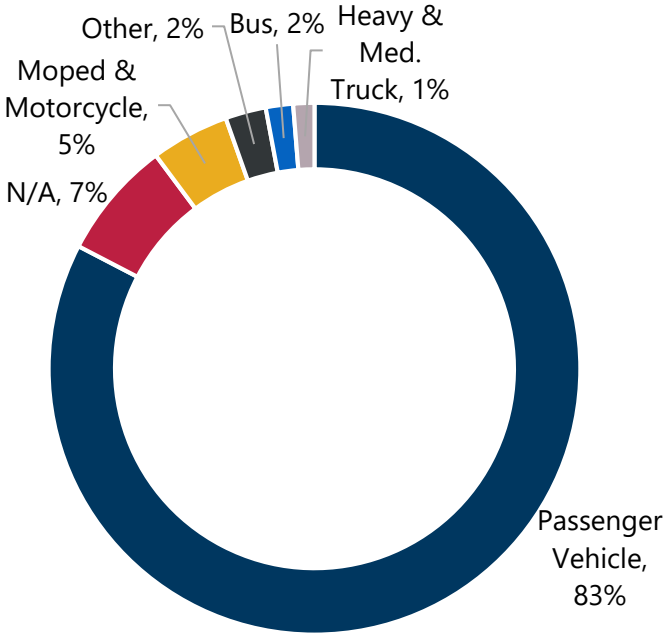
COLLISIONS OCCURRING BETWEEN DUSK AND DAWN

Nighttime was a factor for fatalities of all roadway users, with more fatalities happening between dusk and dawn compared to severe crashes. For pedestrians, a majority of fatal crashes occurred at night. Previous analyses conducted as part of the Pedestrian Safety Initiative found a negative correlation between the number of hours of daylight in a month and all of pedestrian collisions.[4]

Lighting conditions was not the only factor in the nighttime collisions. The majority of collisions where the officer detected alcohol occurred at night.



VEHICLE BODY TYPE INVOLVED IN COLLISION

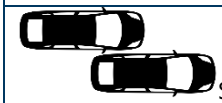


Passenger vehicles (cars, SUVs, and pickup trucks) were involved in 83% of severe and fatal collisions. This percentage was consistent across the injured persons type with 82% for vehicle occupants, 84% for pedestrians, and 89% for cyclists. Larger vehicles such as tractor trailers are a small piece of the total, but these data shown here exclude the freeways where there is more truck traffic.

Particularly important for local government are the number of collisions involving transit and emergency vehicles. There were 53 (2%) severe and fatal collisions involving buses and 22 (1%) involving police, fire, and emergency medical services vehicles. While the drivers of these vehicles are rarely at fault (the highest being 14% at fault for buses), local government must prioritize safe operations of its fleet.

MOTOR VEHICLE OCCUPANT COLLISIONS

COLLISION TYPE

Collision Type	% of Single or Vehicle-to-Vehicle Collisions	
	Severe	Fatal
 Same Direction Rear End	27%	3%
 Left Turn	19%	11%
 Straight Movement Angle	19%	15%
 Single Vehicle	18%	50%
 Head On	7%	12%
 Sideswipe	4%	3%
Other	3%	5%
 Right Turn	2%	1%
Unknown N/A	1%	0%

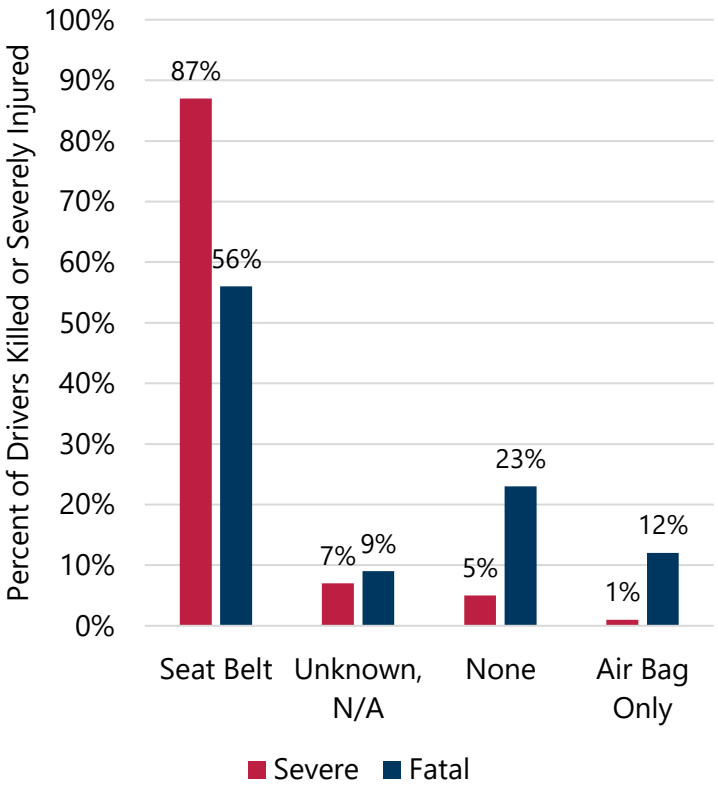
Same direction, rear end collisions were the primary collision type for severe vehicle occupant collisions, but make up only a small fraction (3%) of fatal collisions. The top contributing factors for the rear end collisions were failing to give time and attention, following too closely, too fast for conditions, and inattentiveness. Weather was not a major factor in rear-end collisions as 17% occurred when the roads were wet compared to 16% for all other collision types.

Half of the 47 vehicle occupant fatalities involved only one vehicle. In 91% of these fatal collisions, the vehicle struck a fixed object. The object struck in 48% of the collisions was a tree and 36% hit a pole. These collisions are much more likely to occur late at night and early morning: 49% of fatal single vehicle collisions occurred between 10PM and 4AM compared to 13% for other collision types.

Similar to national trends,[5] left turns are responsible for 18% of severe and fatal collisions while right turns account for only 2%. In 68% of left turn collisions, the driver at fault failed to yield the right of way, 46% failed to give full time and attention, and 15% failed to obey the traffic control device or officer. New York City's analysis noted that left turns are more dangerous than right turns because left turns can be taken at a wider turn radius which leads to higher turn speeds, visibility is slightly obscured by parked cars and the vehicle's A-pillar, and left turns are more complicated to navigate compared to right turns.[6]

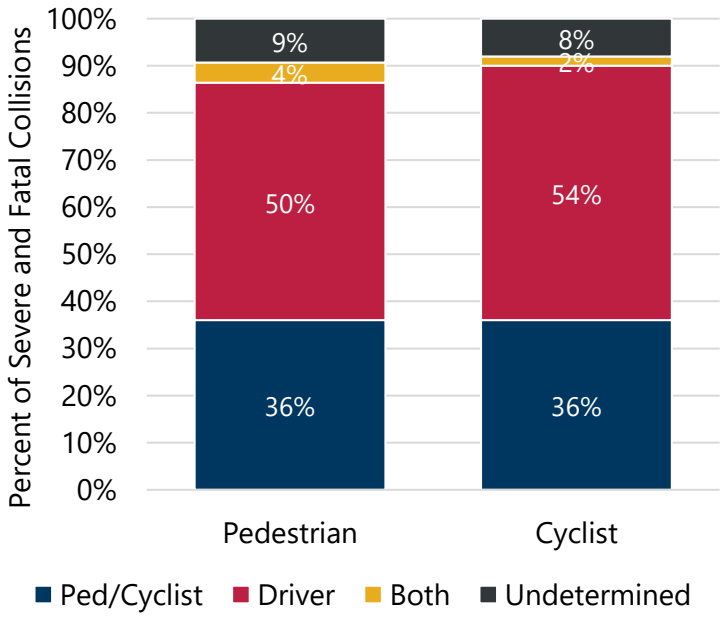
DRIVER SAFETY EQUIPMENT USED

Seatbelts are life savers. Drivers in Montgomery County killed in roadway collisions had significantly lower seatbelt utilization rates compared to those severely injured. The National Highway Traffic Safety Administration estimated seat belts saved 13,941 lives across the US in 2015 alone. Seatbelts also lower the risk of fatalities by 45% and moderate-to-severe injuries by 50% for occupants in the front seat. The State of Maryland and Montgomery County have higher seatbelt utilization rates than the national average, but getting to zero will require improving seatbelt usage even further.[7]



PEDESTRIANS AND CYCLISTS

PARTY AT FAULT



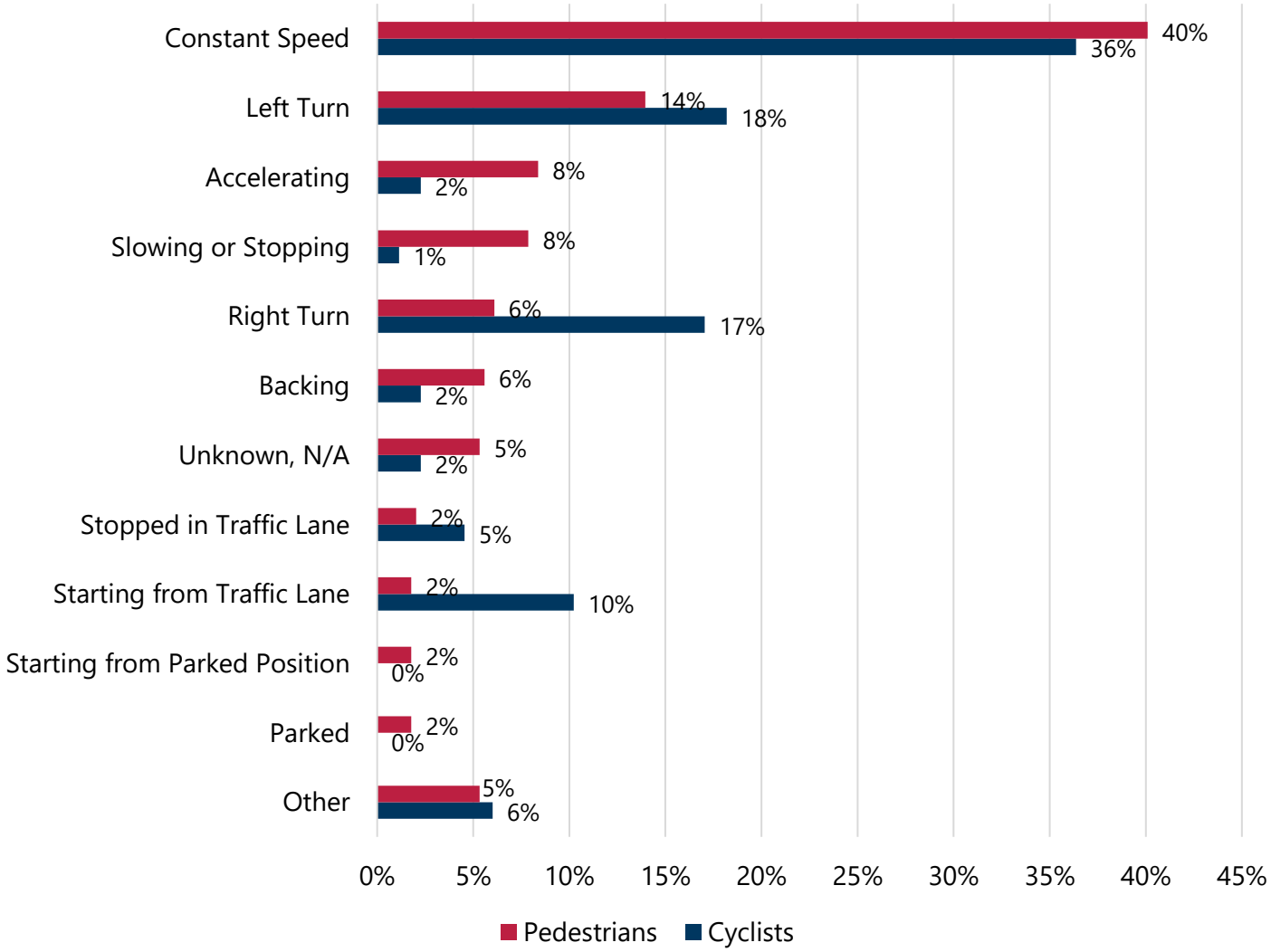
Drivers were found at fault when striking a pedestrian or cyclist 50% and 54%, respectively. Drivers failed to give full time and attention and failed to yield right of way in these crashes.

Thirty-six percent of pedestrians and cyclists were at fault in severe and fatal collisions. When pedestrians are at fault, the top contributing circumstances were illegally in roadway, failed to give time and attention, clothing not visible, and under the influence of alcohol. The top contributing circumstances for cyclists at fault were failed to yield right of way, illegally in roadway, bicycle violation, and failed to give full time and attention.

MOVEMENT OF MOTOR VEHICLES INVOLVED

In severe and fatal pedestrian and cyclist crashes, the top vehicle movements were moving in a constant speed, followed by left turns. While pedestrians were twice as likely to be severely injured or killed in a left turn collision compared with right turn, there was an even split between left and right turns for cyclists. When the pedestrian was struck by a vehicle moving at a constant speed, the pedestrian was crossing the road 69% of the time, with 53% of those crossing at an intersection and 47% not crossing at an intersection. For cyclists colliding with vehicles moving at a constant speed, there was an equal likelihood of colliding with the vehicle while crossing at an intersection as riding along with traffic.

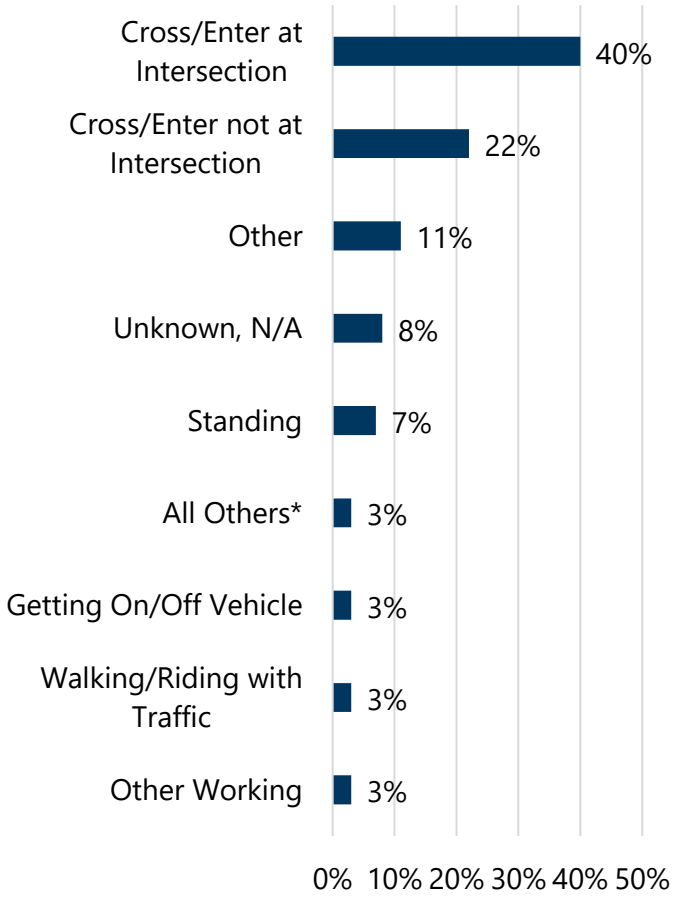
MOTOR VEHICLE MOVEMENT AT TIME OF COLLISION



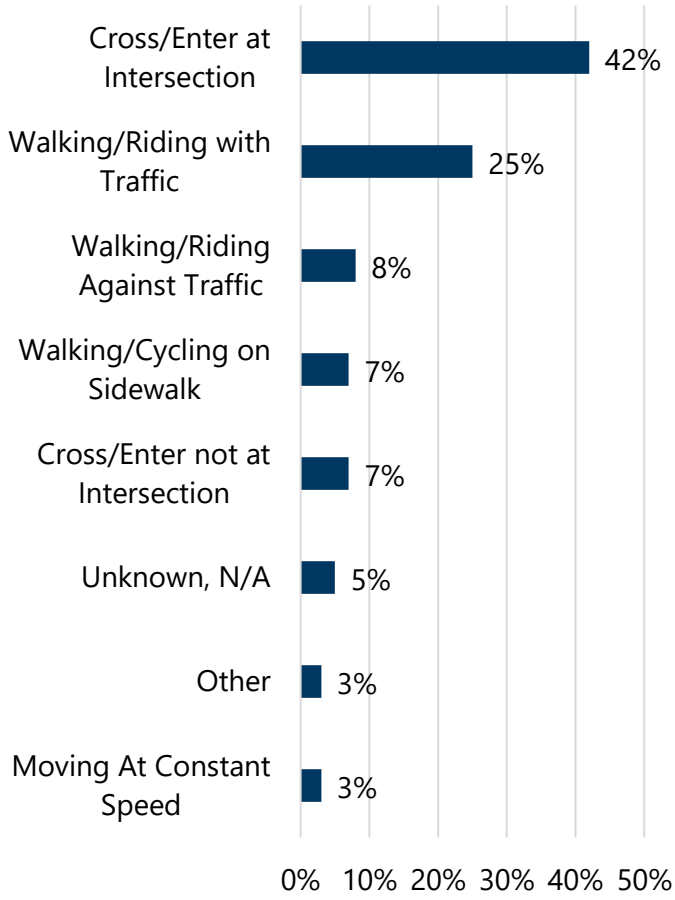
MOVEMENT OF PEDESTRIANS AND CYCLISTS INVOLVED

The danger for pedestrians and cyclists came from crossing or entering at an intersection; the most common area for conflicts between motor vehicles and pedestrians and cyclists to occur. This movement was linked to 40% and 42% of the severe and fatal collisions for pedestrians and cyclists, respectively. Overall pedestrians crossing not at an intersection was 22% of the total, but jumps to 43% in cases where the pedestrian was found to be at-fault. For cyclists, riding with traffic was second at 25% followed by riding against traffic at 8%.

PEDESTRIANS



CYCLISTS



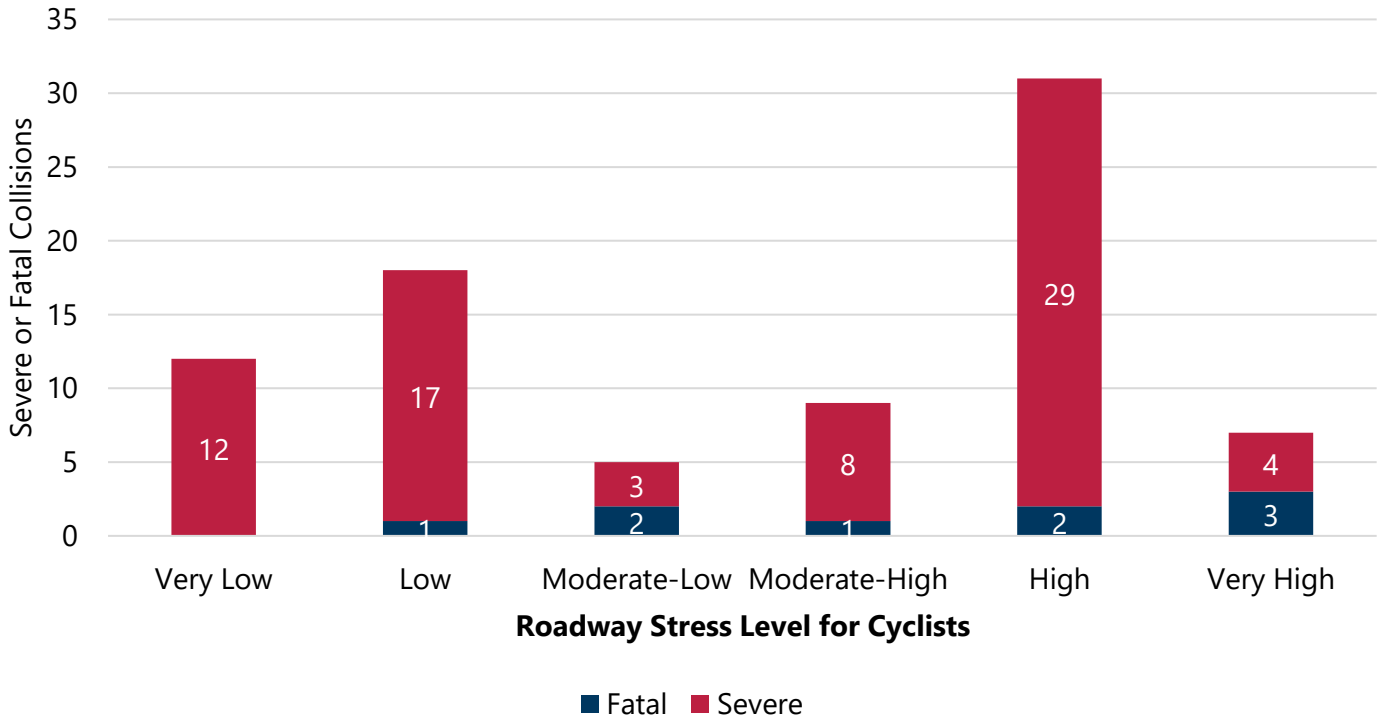
*Includes playing, walking to/from school, walking against traffic, push/work on vehicle, approaching/ leaving school bus, staring from parked position, and walking on sidewalk

CYCLISTS SEVERELY INJURED OR KILLED BY CYCLING STRESS LEVEL

The County's most stressful roadways for cyclists had a disproportionate rate of severe and fatal cyclist collisions. While severe and fatal collisions between motor vehicles and cyclists occurred across all levels of roadway stress, 56% of severe and 57% of fatal collisions occurred on roadways with moderate-high levels of traffic stress and above. Three out of four roads in the County where cycling was permitted were designated as very low or low stress whereas 23% were rated moderate-high or above.

While it may be surprising to see 37% of severe and fatal collisions on low stress roadways, there were still risks to cyclists. For example, Macarthur Boulevard has a sidepath for cyclists, two travel lanes, and a speed limit of 30 miles per hour that make it a low stress roadway. However, speeding motor vehicles, cyclists riding legally in the traffic lanes instead of the sidepath, no physical separation between the sidepath and the travel lanes, and cyclists having to cross intersections and driveways can create conflicts that lead to a severe collision. Using the cycling stress and collision data together can assist decision makers in when and where to build or update cycling facilities as conflicts between motor vehicles and cyclists can occur even in areas that provide some level of separation.

The roadway stress level for cyclists was calculated by the Montgomery County Planning Department as part of the update to the County-wide bicycle master plan. Level of stress relates to how a person that is "interested but concerned" about riding his or her bicycle more if they felt safer would feel about a road segment. It is estimated that 51% of cyclists fall into this category. Roads without a bikeway facility, more traffic lanes, higher speed limits, and more frequent parking turnover are higher stress roads.[8]



OTHER TRENDS SHAPING THE MONTGOMERY COUNTY CONTEXT

The collision data tell only part of the story concerning roadway safety in Montgomery County. The County must utilize demographic data to tailor its outreach efforts for the diverse population and unique conditions that exist throughout the County. In executing the Two-Year Action Plan, implementers of the high injury network safety audits will utilize demographic data to develop unique profiles for each area.

DEMOGRAPHICS

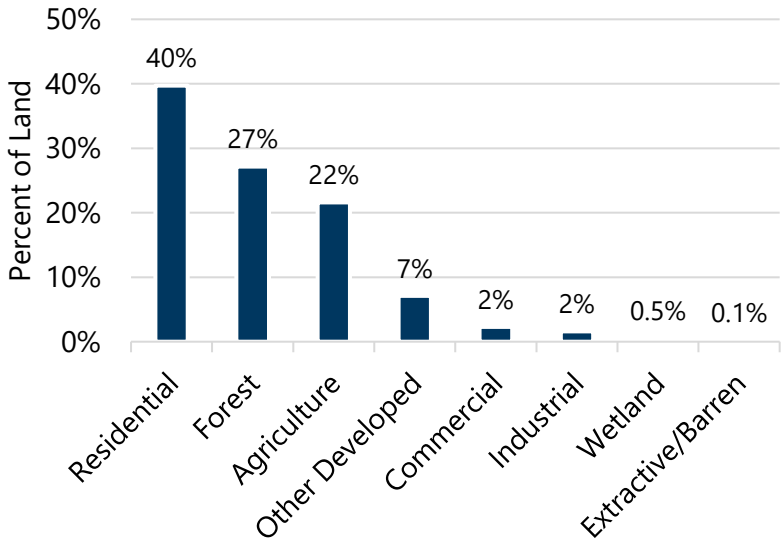
The County's 2016 population of 1,043,863 residents has increased 7.4% since 2010 and is projected to increase to 1,206,800 by 2040.[9,10] In 2010, the County flipped to a majority minority jurisdiction and is home to four of the top ten most diverse cities in America.[11] Despite being one of the wealthiest counties in the US, nearly 70,000 Montgomery County residents live below the poverty line.

SELECT CHARACTERISTICS FOR MONTGOMERY COUNTY COMPARED TO US

Characteristic	Montgomery County	United States
Median Household Income	$99,435	$53,889
Median Age	38.9	37.8
Limited English Speaking Households	7.0%	4.5%
Residents in Poverty	6.7%	15.5%
Foreign Born Residents	33.0%	13.0%
Population 25 Years and Older with Graduate or Professional Degree	31.3%	11.2%

Source: "Table S0501 – Selected Characteristics of the Native and Foreign-Born Populations: 2011–2015 American Community Survey 5-Year Estimates" *US Census Bureau*, 2015.

LAND USE



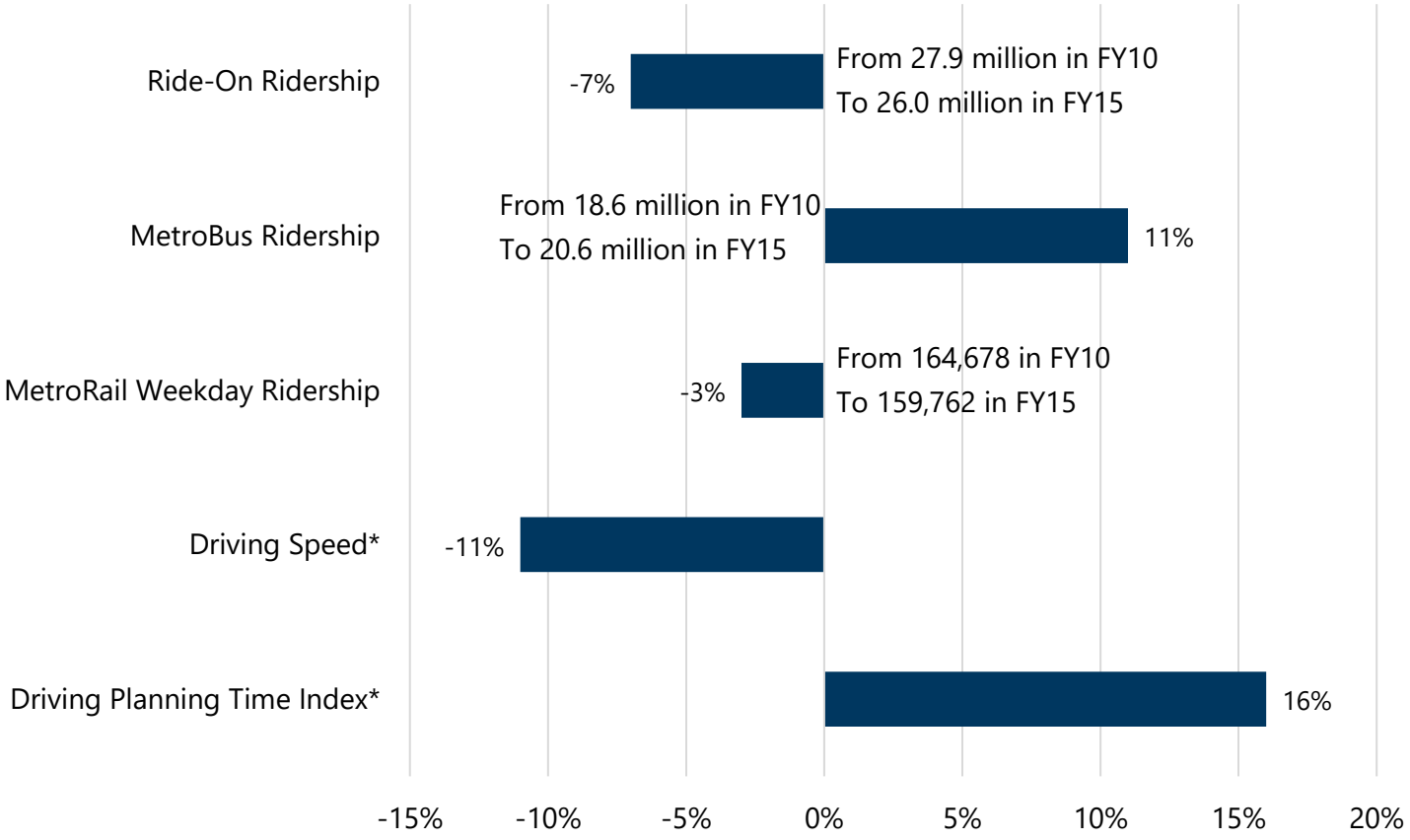
Montgomery County's 491.25 square miles cover a wide spectrum of different land uses. The pastoral 145 square mile Agricultural Reserve spans much of the northern tier of the county whereas communities inside the beltway like Bethesda and Silver Spring have neighborhoods of up to 31,073 persons per square mile. Forest and agriculture make up nearly half (49%) of land use in the county followed by residential areas.

Source: "Montgomery County", *Maryland Department of Planning*, 2010, http://planning.maryland.gov/PDF/OurWork/LandUse/County/Montgomery.pdf.

MOBILITY AND TRANSIT USE

Vision Zero must reconcile the paramount need for safe streets with the reality of growing traffic congestion and declining public transit ridership. The most recent county-wide resident survey in 2009 showed traffic congestion as one of the three most important issues the County should address.[12] Since that survey, traffic congestion has worsened in the County with planning time index (a measure of travel time reliability) growing 16% from 2011 to 2015. Ridership was down or steady for mass transit in the County, with Metrorail weekday entries and exits down 3% and bus boardings (Metrobus and Ride-On) steady between 2010 and 2015- despite population growth.[13] Tackling congestion and transit ridership are issues that must be acknowledged when transforming high injury areas and creating low risk transportation choices.

CHANGES FROM FY10 TO FY15



*Data are for calendar years 2011 to 2015

Source: "Mobility Assessment Report February 2017," (presentation to the Montgomery County Planning Board, February 14, 2017), http://montgomeryplanning.org/wp-content/uploads/2017/02/2017MARPresentation.pdf.

APPENDIX

SEVERE AND FATAL COLLISION DEFINITIONS

The State of Maryland's Automated Crash Reporting System (ACRS), used by all Maryland law enforcement to report traffic collisions, aligns its definition of injury severity with the National Highway Traffic Safety Administration's Model Minimum Uniform Crash Criteria. For a severe injury, or suspected serious injury as it is listed in ACRS, the person involved has one or more of the following injury criteria apply:

- 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
- Paralysis

A fatal injury is any injury that results in death within 30 days after the motor vehicle crash in which the injury occurred. In practice, however, Montgomery County Police will update records from a suspected serious injury to fatal within one year of the crash to support possible charges in court. Cases where the person was determined to have perished that were not related to the crash are excluded.

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