



2022-2026

WEST VIRGINIA

STRATEGIC HIGHWAY SAFETY PLAN



June 2022

One death, or one serious injury on a West Virginia road is unacceptable. It is expected that every West Virginian arrive home safely at the end of the day after traveling our roadways. It is also expected that every West Virginian do their part by driving sober, driving attentively, and by driving safely while the State's safety partners work to implement appropriate improvements to our roadways, provide safety education, and enforce laws to keep our roads safe. To this end, I am pleased to present the 2022-2026 West Virginia Strategic Highway Safety Plan (SHSP) and support the implementation of strategies to reduce fatalities and serious injuries on our roadways achieving the ultimate objective of zero fatalities by the year 2050.

Every year, more than 250 people are killed and more than 1,000 are seriously injured in motor vehicle crashes in West Virginia. We have made strides in reducing fatalities and serious injuries since the adoption of the first SHSP in 2007, but more is yet to be done. Speeding and aggressive driving contribute to more than half of the fatalities and serious injuries. Many crashes continue to involve roadway departures, and drivers and passengers are still not properly restrained. We face new challenges in an increasing older population as crashes involving older drivers contribute to more than 20 percent of fatalities and serious injuries. As areas within our state grow, we see new challenges emerge related to intersection and pedestrian safety. Our goal is to eliminate fatalities and serious injuries so that no family has to face the tragedy that too many families have already endured.

West Virginia is a beautiful state with many scenic views and access to abundant natural resources. With that beauty comes challenges. Our mountains can create unique problems for travelers. Many of our roadways leave little room for error so we are implementing innovative strategies to keep vehicles on the roadway and providing the necessary infrastructure to minimize the consequence if a vehicle does leave the roadway. We must continue to be vigilant in our enforcement practices to change the mindset that speeding and aggressive driving are acceptable. We must remind our drivers to drive sober and reduce in-vehicle distractions, focusing our attention on the roadway and the driving task at hand. Our drivers must be vigilant, watching for other road users, such as pedestrians and motorcyclists. While achieving zero fatalities by 2050 will be a challenge, I firmly believe that in true West Virginia fashion, we will not only meet this goal but will achieve it earlier than anticipated. Implementing safety strategies which focus on enforcement, education, emergency medical services, and engineering using the full strength of our multi-disciplinary approach is the path to realizing the vision of zero fatalities.

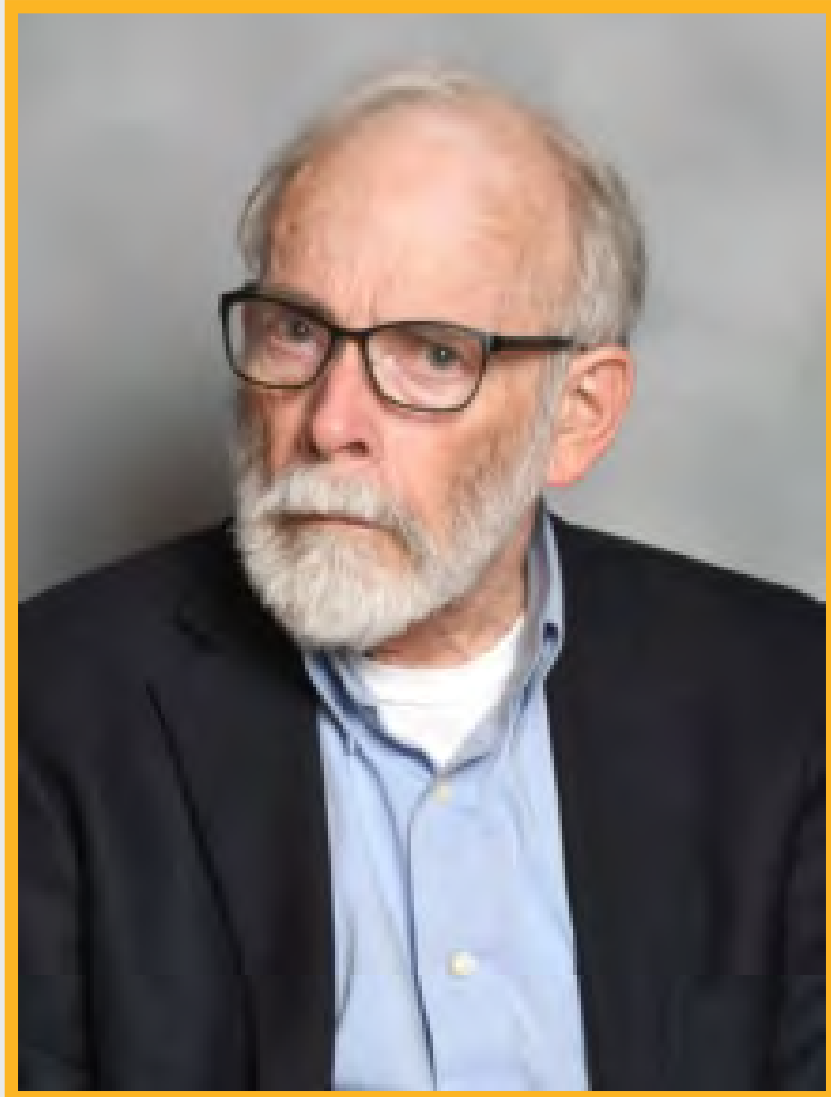
I implore the Safety Management Task Force to remain committed to implementing the strategies of this SHSP and working to achieve the objectives set out in this plan. The work that is performed over the next five years will lead us to our objective of zero fatalities.

On behalf of Governor Jim Justice, I approve the 2022-2026 West Virginia Strategic Highway Safety Plan.



Jimmy Wriston, P.E.

Secretary of Transportation / Commissioner of Highways



In memory of Charles Raymond Lewis II

The 2022-2026 West Virginia Strategic Highway Safety Plan is dedicated to the memory of Charles Raymond Lewis II who was the safety program's greatest champion in West Virginia. Ray was a proud 8th generation Kanawha Valley resident and had retired from the Traffic Engineering Division of the West Virginia Division of Highways after 46 years of service. He passed away December 8, 2021, of Parkinson's Disease after dedicating most of his life to highway and railroad safety. Among his proudest achievements was the work to improve railroad grade crossing safety which saved the lives of several hundred people over the decades. The state's dramatic decrease in crossing fatalities was unsurpassed in the nation.

Ray was a Life Member and Fellow of the Institute of Transportation Engineers. He was active with the Transportation Research Board for 33 years serving on or chairing committees with a focus on highway safety. Not content with these activities Ray also served for several years on committees of the American Railway Engineering and Maintenance of Way Association. He was the first person to bring Operation Lifesaver to West Virginia. It is our hope that this Strategic Highway Safety Plan helps us to further his highway safety legacy.

CONTENTS



5	Acronyms Used Throughout Document
6	Executive Summary
8	Introduction
10	SHSP Background and History
12	Safety Management Task Force
14	Statewide Crash and Demographic Statistics
17	Goal and Objective
<hr/>	
19	Emphasis Areas and Strategies
22	<i>Emphasis Area 1: Speeding and Aggressive Driving</i>
29	<i>Emphasis Area 2: Roadway Departure</i>
36	<i>Emphasis Area 3: Occupant Protection</i>
43	<i>Emphasis Area 4: Older Driver (65+) Involved</i>
50	<i>Emphasis Area 5: Alcohol and Drug Impaired Driving</i>
58	<i>Emphasis Area 6: Intersections – Regionally Focused</i>
65	<i>Emphasis Area 7: Pedestrians – Regionally Focused</i>
73	<i>Emphasis Area 8: Improving Highway Safety Data</i>
<hr/>	
75	Performance Measures
75	<i>SHSP Performance Measures</i>
76	<i>Federally-Required Performance Measures</i>
77	Special Rules
77	<i>High Risk Rural Roads</i>
78	<i>Older Drivers and Pedestrians</i>
78	<i>Vulnerable Road User Safety</i>
79	Implementation and Evaluation
79	<i>Implementation</i>
80	<i>Linkage to Transportation and Safety Planning</i>
80	<i>Evaluation</i>

Acronyms Used Throughout Document

AASHTO	American Association of State Highway Transportation Officials
ATV	All-Terrain Vehicle
BAC	Blood Alcohol Concentration
BIL	Bipartisan Infrastructure Law
CMV	Commercial Motor Vehicle
CVSP	Commercial Vehicle Safety Plan
EMS	Emergency Medical Services
FARS	Fatality Analysis Reporting System
FAST	Fixing America's Surface Transportation
FHWA	Federal Highway Administration
GHSP	Governor's Highway Safety Program
HARP	Home Access Roads Program
HRRR	High Risk Rural Road
HSIP	Highway Safety Improvement Program
HSP	Highway Safety Plan
IIJA	Infrastructure Investment and Jobs Act
L RTP	Long-Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21st Century
MPO	Metropolitan Planning Organization
NHTSA	National Highway Traffic Safety Administration
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act - A Legacy for Users
SHSP	Strategic Highway Safety Plan
SMTF	Safety Management Task Force
STIP	Statewide Transportation Improvement Plan
TIP	Transportation Improvement Plan
VMT	Vehicle-Miles Traveled
VRU	Vulnerable Road User

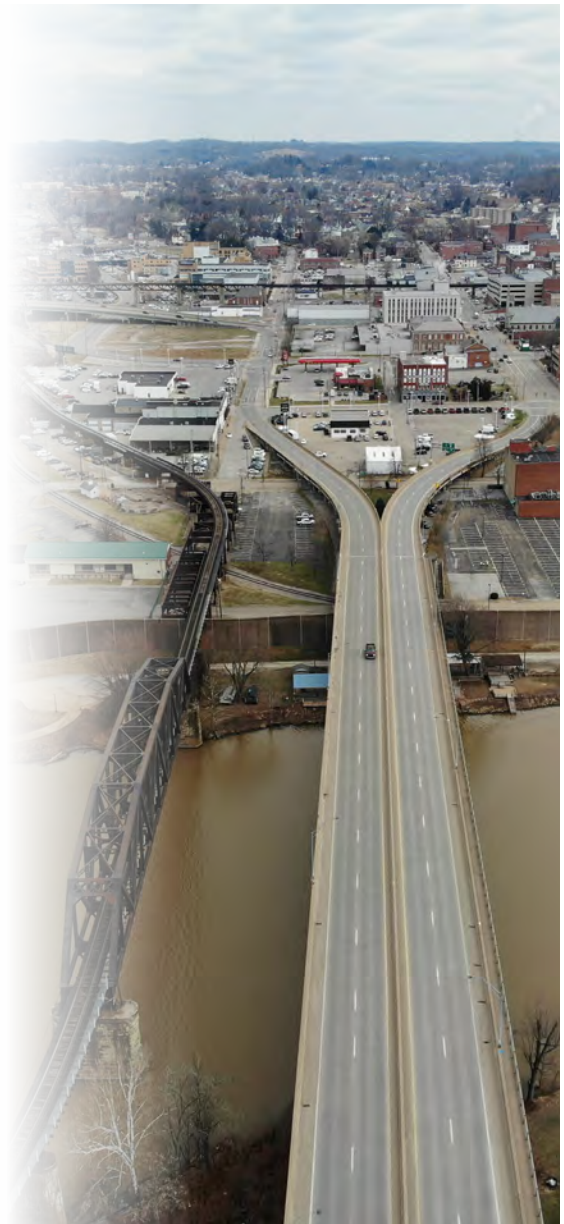


Executive Summary



Since 2009, more than 3,600 people have died and more than 17,400 people have been seriously injured as a result of a motor vehicle crash in West Virginia. The West Virginia Safety Management Task Force (SMTF) is committed to eliminating fatalities and serious injuries on West Virginia's roadways through a multi-disciplinary effort that incorporates enforcement, education, emergency medical services, and engineering-related strategies. As such, the SMTF developed the 2022-2026 West Virginia Strategic Highway Safety Plan (SHSP). An SHSP is a comprehensive transportation safety plan with a goal of reducing fatalities and serious injuries on all public roads which makes effective use of state, regional, and local safety data to establish consistent statewide goals, objectives, Emphasis Areas, priorities, and countermeasures. SHSPs require stakeholder input and coordination with other transportation plans. Federal transportation legislation requires states to develop, implement, and update an SHSP every five years.

The 2022-2026 West Virginia SHSP builds upon the successes and lessons learned of previous Plans and will serve as the state's safety Plan from 2022 through 2026. The SMTF, which is responsible for the development and implementation of the SHSP, met several times throughout the first half of 2022, reviewing fatality and serious injury crash trends, developing the goal and objective for this SHSP, and determining the Emphasis Areas and strategies that would provide for the foundation of reducing fatalities and serious injuries on West Virginia's roadways. The Plan was developed based on a review of 2016 through 2020 crash data. The Plan includes seven data-driven Emphasis Areas, one non-data driven Emphasis Area (Improving Highway Safety Data), and implementation strategies within each Emphasis Area that are designed to meet the Plan's objective. Performance measures relevant to the Emphasis Areas, as well as those required by federal transportation legislation, are included in the Plan.



This SHSP documents the process the SMTF used to update the plan. Emphasis Area fact sheets are included in this plan that identify various data elements for each Emphasis Area and the strategies that will be implemented. The document also includes information regarding how this SHSP will be implemented and evaluated over the next five years.

GOAL

The goal of the **West Virginia Strategic Highway Safety Plan** is to work cooperatively to improve roadway safety, eliminating fatalities and serious injuries through the coordinated efforts of enforcement, education, emergency medical services, and engineering.

2022-2026 WEST VIRGINIA SHSP EMPHASIS AREAS

1. Speeding and Aggressive Driving
2. Roadway Departure
3. Occupant Protection
4. Older Driver (65+) Involved
5. Alcohol and Drug Impaired Driving
6. Intersections - *Regionally Focused*
7. Pedestrians - *Regionally Focused*
8. Improving Highway Safety Data





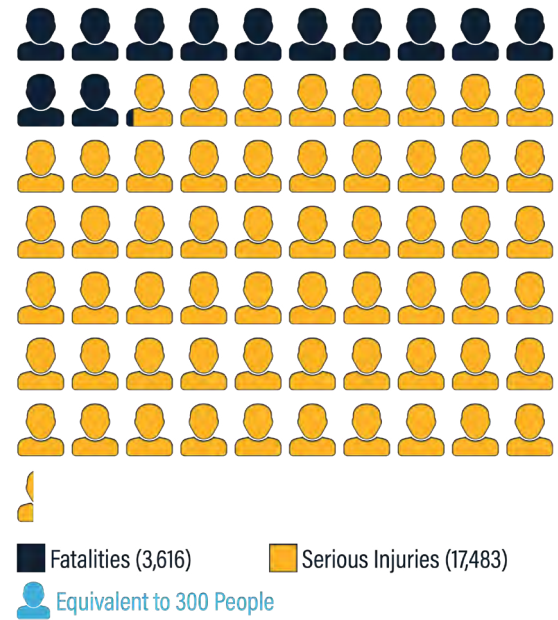
Introduction



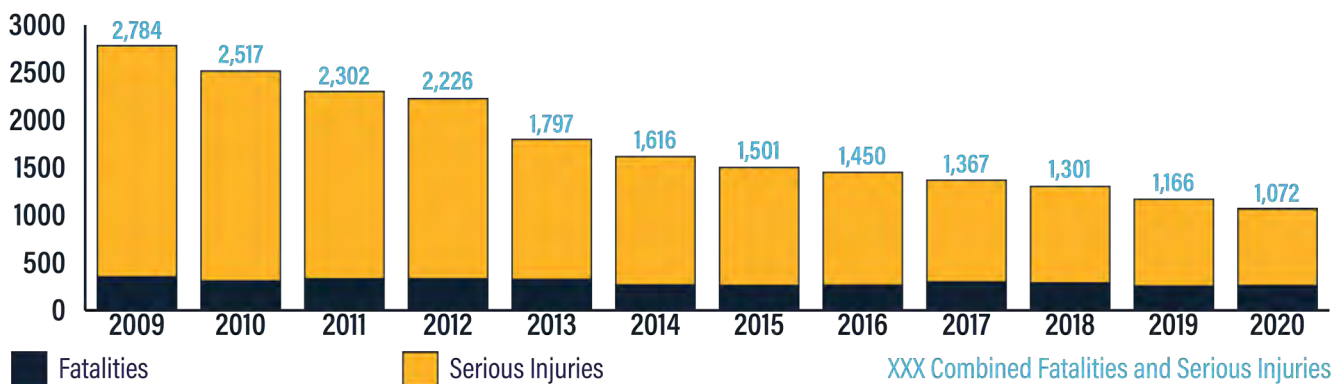
Since 2009, more than 3,600 people have died and more than 17,400 people have been seriously injured as a result of a motor vehicle crash in West Virginia. Many of these crashes were preventable incidents resulting from a combination of behavioral, environmental, and infrastructure-related factors. Many of these factors are well-known within the transportation industry, while other new challenges continue to emerge. To address all of these factors, a multi-agency approach that utilizes education, enforcement, engineering, and emergency medical services strategies is essential to eliminating these crashes.

Fatalities have decreased by 25%, and serious injuries have decreased by 69% since 2009. Although the number of fatalities and serious injuries have declined in recent years, public safety remains a top priority for officials in West Virginia. Since we cannot predict the future of transportation and highway safety with absolute certainty, we must continue efforts to meet today's challenges and mitigate new ones to achieve the long-term vision of eliminating fatalities and serious injuries. Through the development, evaluation, and implementation of this SHSP, the SMTF is committed to this challenge for all of West Virginia's road users.

PERSONS KILLED OR SERIOUSLY INJURED (2009-2020)



ANNUAL OBSERVED FATALITIES AND SERIOUS INJURIES



This Plan was developed in accordance with federal requirements as described below and in the following sections. The 2022–2026 West Virginia Strategic Highway Safety Plan will be effective for five years from 2022 through 2026.

Overview of the 2022–2026 SHSP Update Process

- Reconvened Safety Management Task Force
- Reviewed crash data
- Identified overall goal and performance-based objective
- Selected data-driven emphasis areas
- Identified performance-based objectives for each emphasis area
- Coordinated SHSP with other safety and transportation plans
- Employed a multidisciplinary approach
- Developed achievable strategies
- Evaluated past performance
- Considered Special Rules
- Obtained support of the Safety Management Task Force
- Obtained Secretary of Transportation approval



2022–2026 WEST VIRGINIA SHSP DEVELOPMENT TIMELINE





SHSP Background and History



Several federal laws and programs have supported a coordinated national highway safety program, beginning with the Highway Safety Act of 1966. The Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), adopted in 2005, established the requirement for each State to develop an SHSP in order to be eligible for full federal funding apportionments. This requirement has continued through three subsequent federal laws: Moving Ahead for Progress in the 21st Century (MAP-21) Act, adopted in 2012, the Fixing America’s Surface Transportation (FAST) Act, adopted in 2015, and the Bipartisan Infrastructure Law (BIL), adopted in 2021.



A **Strategic Highway Safety Plan** is a statewide coordinated safety plan that provides a **data-driven** and **comprehensive framework** for reducing fatalities and serious injuries on all public roads.

2007 SHSP EMPHASIS AREAS

1. Lane Departure and Minimizing its Effects
2. Impaired Driving
3. Speeding/Aggressive Driving
4. Occupant Protection
5. Crash Survivability and Emergency Medical Services
6. At Risk Driver and User Groups
7. Highway Safety Data Improvements
8. Commercial Motor Vehicles
9. Continuing Successful Safety Programs and Initiatives

West Virginia adopted its first SHSP in 2007 to meet the requirements outlined in SAFETEA-LU and to address an upward trend of fatalities in the state at that time. The first SHSP included nine specific emphasis areas, addressing many aspects of transportation safety; however, given limited resources, addressing so many initiatives was not achievable.



In 2009, the number of emphasis areas were reduced to provide strategic focus in the most needed areas. At that same time, the SMTF began oversight of the SHSP to ensure that a constant focus remained on the vision and goal. The SMTF established a process for the ongoing review of progress in implementing the strategies and actions in the plan.

West Virginia's SHSP was again updated in 2016, creating the 2017-2021 SHSP. The SMTF convened and developed a plan that included five emphasis areas, evaluated the progress of the previous plans, and developed strategies and action plans to continue reductions in fatalities and serious injuries. The 2017-2021 SHSP adopted the vision of zero fatalities and a goal to achieve a 50 percent reduction in fatalities by 2030 and a 66% reduction in serious injuries.

From 2009 through 2020, West Virginia experienced a 69% reduction in serious injuries and a 25% reduction in fatalities.

2009 SHSP EMPHASIS AREAS



Roadway Departure



No/Improper Occupant Protection Use



Impaired Driving



At-Risk Driver Age Groups



Improving Highway Safety Data

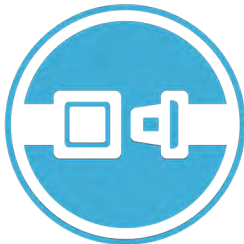
2017-2021 SHSP EMPHASIS AREAS



Roadway Departures



Alcohol and Drug Impaired Driving



Occupant Protection



Speeding and Aggressive Driving



Improving Highway Safety Data



Safety Management Task Force



Stakeholder involvement in the development and implementation of the West Virginia SHSP is conducted through the SMTF. This Task Force was created in the mid-1990s as a means of advancing highway safety within the state. The SMTF met regularly in the early 2000s to coordinate highway safety-related activities and programs and allow participants to speak with one voice for greater safety impacts. The Task Force assisted with the development of the 2007 SHSP and then revised its purpose to focus primarily on the implementation and evaluation of the Plan. The following mission was adopted by the SMTF and remains in effect today.



The mission of the *Safety Management Task Force* is to promote effective *cooperation, participation, communication, and coordination* among affected agencies, as well as to provide interagency support in the development and implementation of a statewide *Strategic Highway Safety Plan*.

The SMTF is comprised of highway safety partners from various federal, state, and local agencies that have a stake in improving highway safety. The SMTF includes 39 member agencies with more than 90 individual persons serving on the Task Force. Members of the SMTF represent the following agencies and organizations:

- AAA West Virginia
- AARP West Virginia
- Aeronautics Commission
- Alcoholic Beverage Control Commission
- Bel-O-Mar Regional Council
- Brooke-Hancock-Jefferson Metropolitan Planning Commission
- Department of Education
- Department of Health and Human Resources, Bureau for Public Health - Office of EMS
- Department of Health and Human Resources, Bureau for Public Health - Violence & Injury Prevention Program
- Division of Highways

Safety Management Task Force

Division of Motor Vehicles	Fayette/Raleigh Metropolitan Planning Organization
Federal Highway Administration	Federal Motor Carrier Safety Administration
Governor's Highway Safety Program	Hagerstown/Eastern Panhandle Metropolitan Planning Organization
Health Statistics Center, Behavioral Risk Factor Surveillance System	KYOVA Interstate Planning Commission
Morgantown Monogalia Metropolitan Planning Organization	Mothers Against Drunk Driving
National Highway Traffic Safety Administration, Region 3	Office of the Insurance Commissioner
West Virginia Parkway Authority	Public Service Commission of West Virginia
Public Transit Division	Regional Intergovernmental Council
Rural Emergency Trauma Institute	Sheriff's Association
State Firemen's Association	State Rail Authority
State Police	Students Against Destructive Decisions
Towing and Recovery Association	West Virginia Law Enforcement Professional Standards
West Virginia Prosecuting Attorneys Institute	West Virginia Public Service Training
West Virginia Truckers Association	West Virginia University - Local Technical Assistance Program
Wood-Washington-Wirt Interstate Planning Commission	

The SMTF membership represents the four E's of safety: enforcement, education, emergency medical services, and engineering.

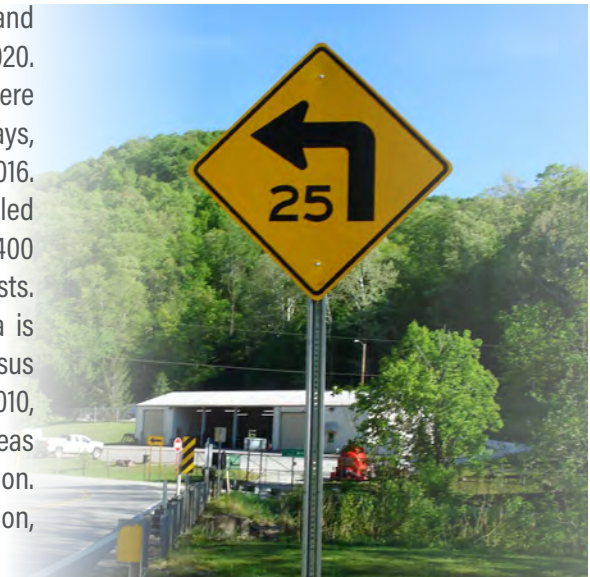
The SMTF met three times during the development of the 2022-2026 SHSP. A virtual kick-off meeting was held in February 2022 to reconvene the Task Force and to begin the process of updating the SHSP. The Task Force consists of several new members that were unfamiliar with the SHSP process. During the February meeting, the Task Force reviewed crash statistics and was provided an overview of the process under which the SHSP would be updated. The Task Force met again in early April 2022. At this meeting, an analysis of various trendlines was reviewed through which the SHSP's goal and objective statements were developed and more detailed crash data was reviewed to determine the Emphasis Areas that would be included in the 2022-2026 SHSP. In May 2022, individual Emphasis Area team meetings were held with members of the SMTF. During these meetings, crash data specific to each emphasis area was reviewed in order to understand specific trends and causal factors, and Emphasis Area strategies were developed that will be implemented over the next five years to further reduce fatalities and serious injuries. The SMTF met one final time in early June 2022 to review the draft plan, discuss any comments, and to approve the overall plan content.



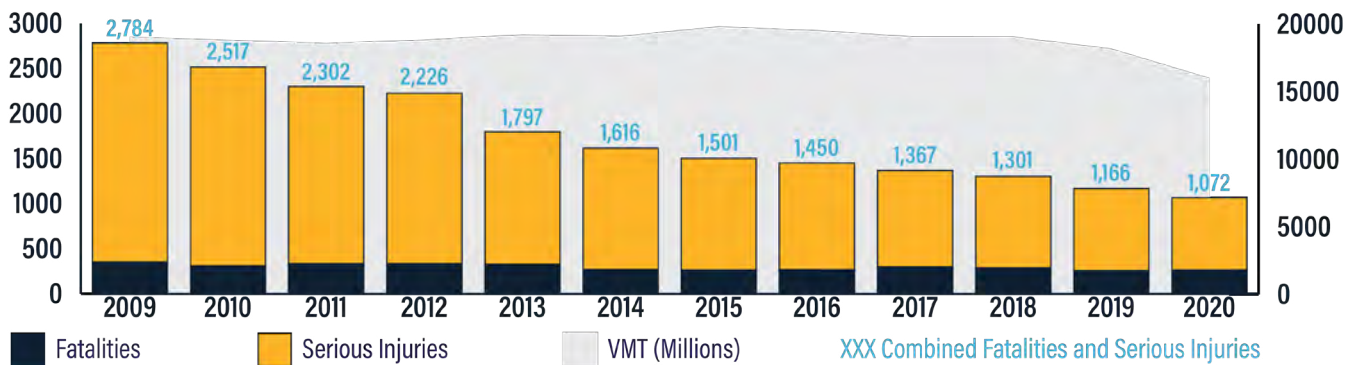
Statewide Crash and Demographic Statistics



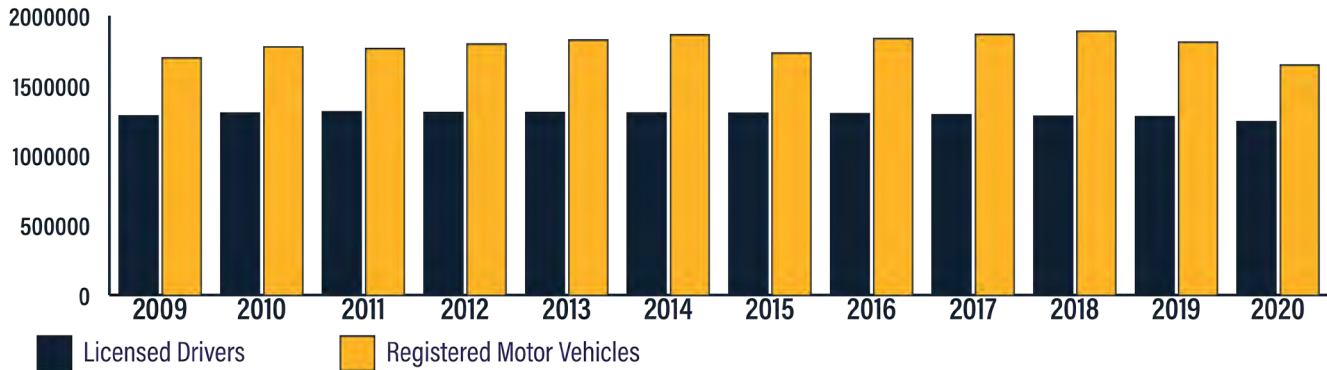
This SHSP was developed based on a review and analysis of fatality and serious injury crash data covering the period between 2016 and 2020. During this time frame, 1,395 people were killed and 5,083 people were seriously injured in crashes that occurred on West Virginia's roadways, while total vehicle-miles traveled have decreased annually since 2016. The predominate crash type were single vehicle crashes. Of those killed or seriously injured, more than 4,500 were drivers, more than 1,400 were vehicle passengers, 418 were pedestrians and 69 were bicyclists. According to the 2020 U.S. Census, the population of West Virginia is approximately 1,820,000 people, which is similar to the 2010 U.S. Census population estimate of approximately 1,840,000 people. However, in 2010, people 65 years old and older represented 16% of the population, whereas in 2020, people 65 years old and older represent 20% of the population. The following charts provide information regarding crashes, population, and vehicle-miles traveled (VMT) within West Virginia.



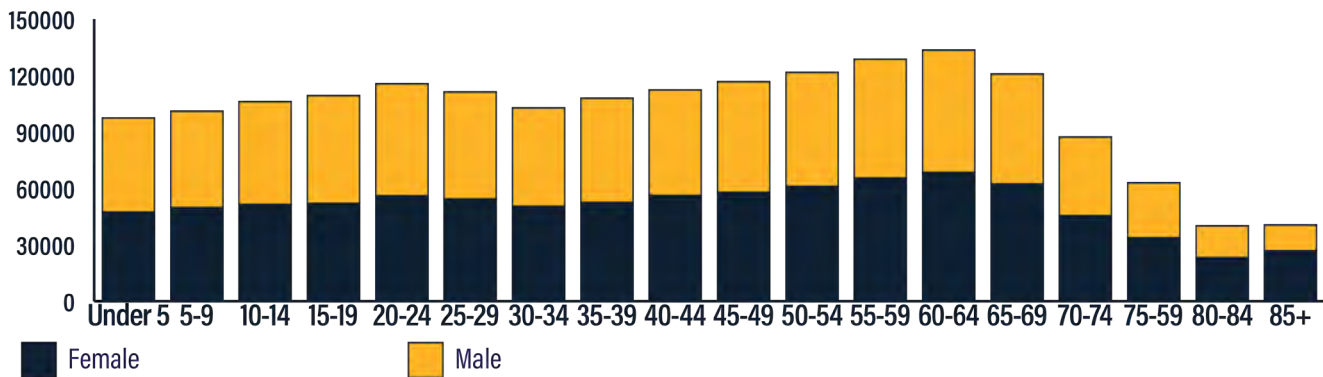
ANNUAL OBSERVED FATALITIES AND SERIOUS INJURIES AND VMT



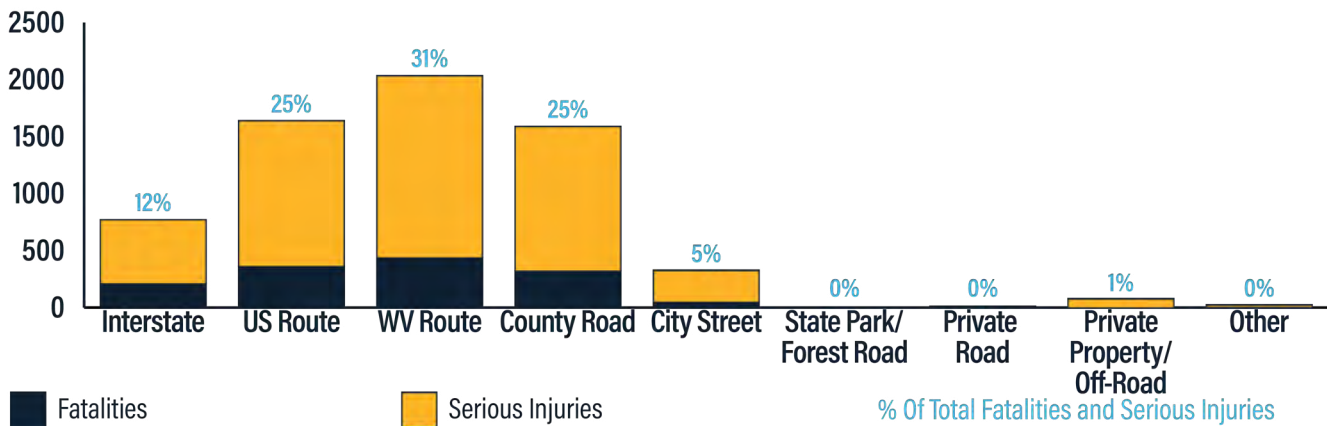
LICENSED DRIVERS AND VEHICLE REGISTRATIONS



POPULATION

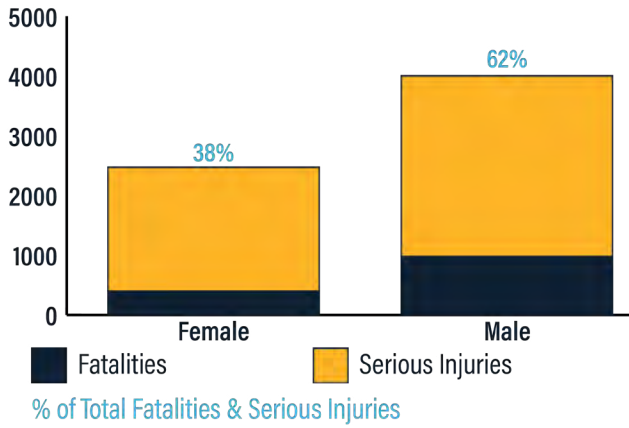


STATEWIDE FATALITIES & SERIOUS INJURIES BY HIGHWAY CLASSIFICATION

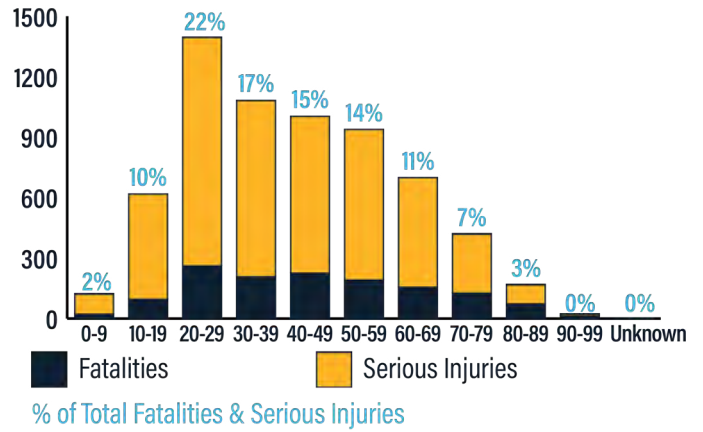


Statewide Crash and Demographic Statistics

STATEWIDE FATALITIES & SERIOUS INJURIES BY GENDER



STATEWIDE FATALITIES & SERIOUS INJURIES BY AGE





Goal and Objective



The goal of the 2022–2026 West Virginia SHSP encompasses the idea that there is not just one solution to eliminating fatalities and serious injuries on our roadways and that all stakeholders must work collaboratively to achieve further reductions in fatalities and serious injuries. This will be done through a multi-agency approach incorporating enforcement, education, emergency medical services, and engineering strategies. With the goal of eliminating fatalities and serious injuries in mind, the SMTF agreed upon a measurable objective to achieve zero fatalities by 2050 and ultimately zero serious injuries on our roadways. To achieve this long-term objective, the 2022–2026 SHSP establishes a 4% annual reduction of fatalities and serious injuries over the next five years. Several trendlines were reviewed to determine an aggressive, yet achievable, Plan objective, that aligns with an overall objective of zero fatalities by 2050. Based on an analysis of trendlines using historical fatality and serious injury data and projecting zero fatalities by 2050, the SMTF established a 4% annual reduction over the next five years as measured from the 2020 five-year rolling average. A five-year rolling average is the average of five individual, consecutive years of data that provides a better understanding of the overall data over time without eliminating years with significant increases or decreases. The 2020 five-year rolling average is the average of observed data for 2016 through 2020. This Plan objective served as the basis for establishing specific Emphasis Area objectives, which are documented within each Emphasis Area’s fact sheet within this Plan.

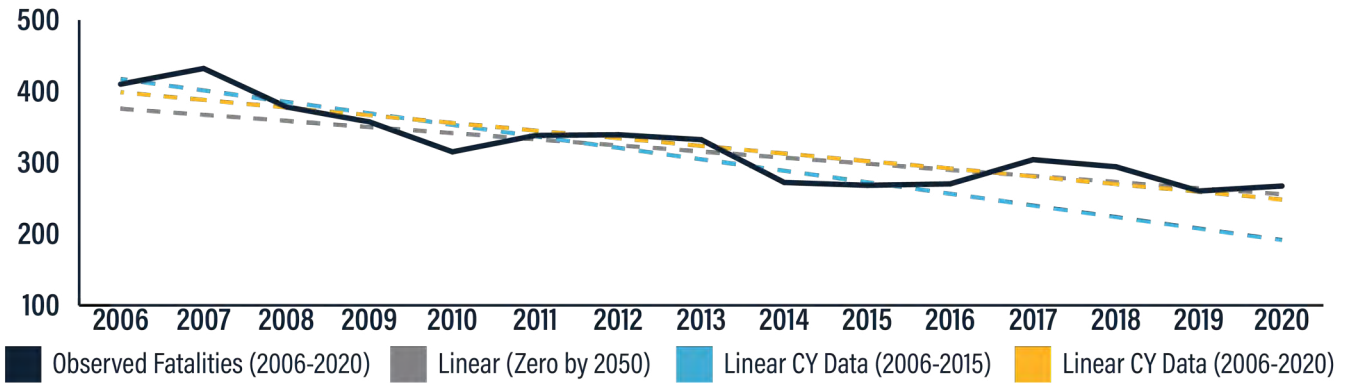
GOAL

The goal of the **West Virginia Strategic Highway Safety Plan** is to work cooperatively to improve roadway safety, eliminating fatalities and serious injuries through the coordinated efforts of enforcement, education, emergency medical services, and engineering.

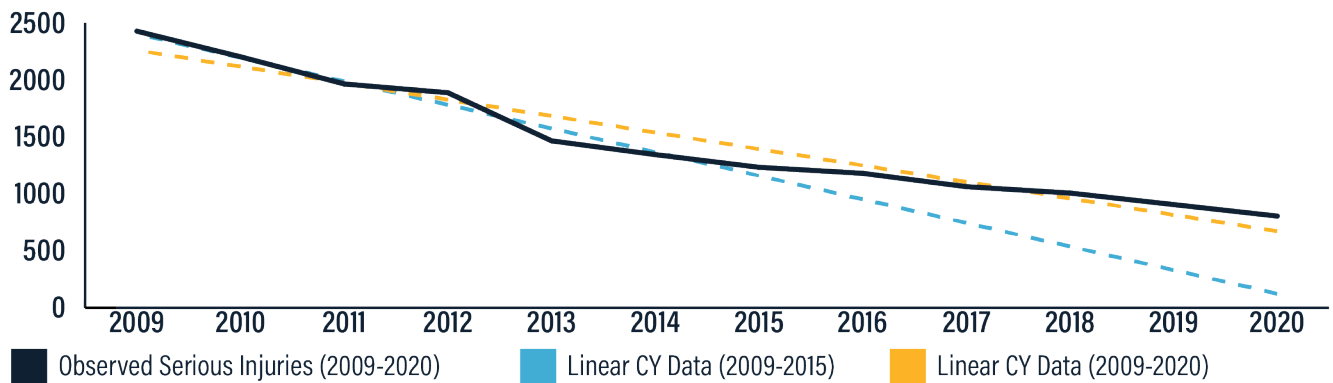
OVERALL OBJECTIVE

The objective of the **2022–2026 West Virginia Strategic Highway Safety Plan** is to achieve zero fatalities by 2050 and ultimately zero serious injuries on our roadways, by **reducing fatalities and serious injuries 4% annually** over the next five years.

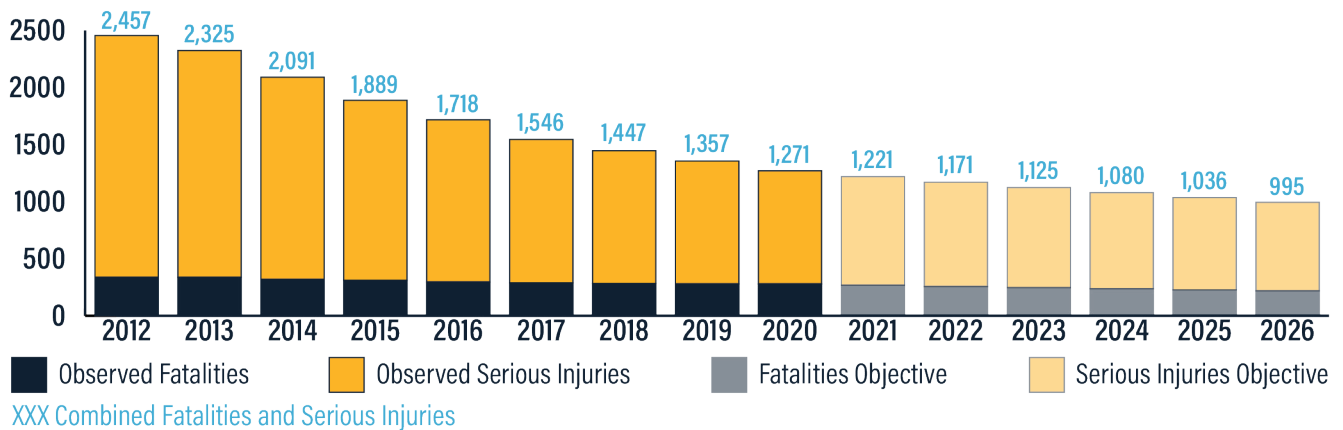
2006-2020 FATALITIES TRENDLINE ANALYSIS



2009-2020 SERIOUS INJURIES TRENDLINE ANALYSIS



STATEWIDE FATALITIES AND SERIOUS INJURIES (5-YEAR ROLLING AVERAGES)

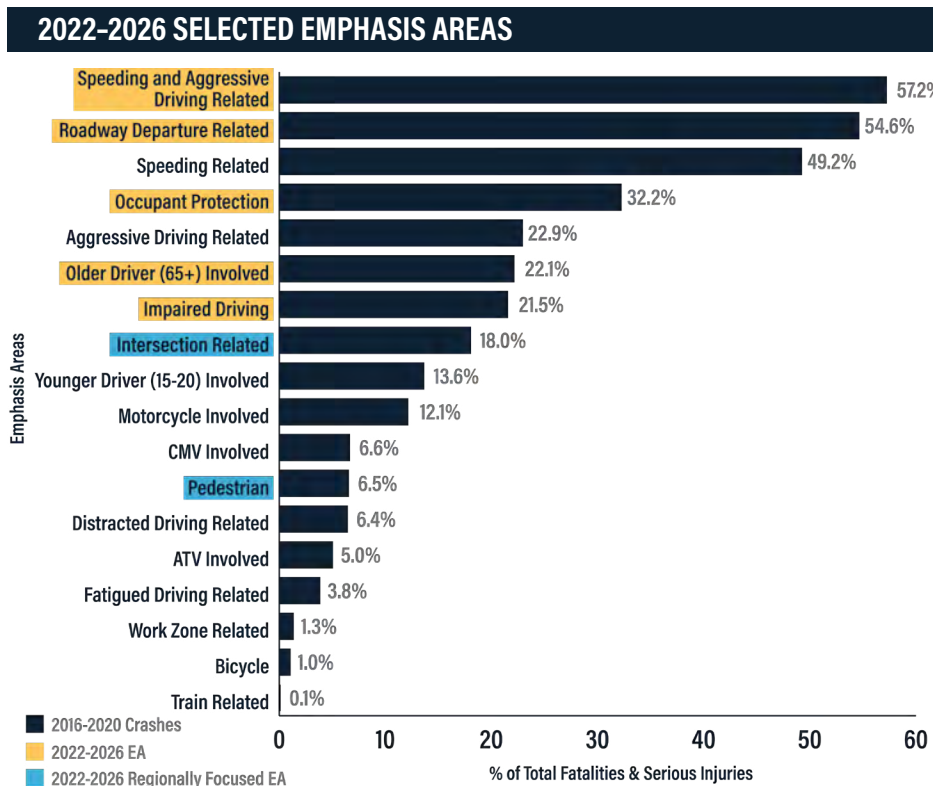




Emphasis Areas and Strategies



Emphasis Areas represent key factors contributing to crashes for which the development of strategies could have the greatest potential to reduce fatalities and serious injuries. Establishment of Emphasis Areas allows West Virginia to prioritize the use of limited funds and resources and ensure that safety efforts are targeted effectively to meet the objective of the SHSP. Fatality and serious injury crash data from 2016 through 2020 were analyzed to identify Emphasis Areas for inclusion in the SHSP. During this five-year period, 1,395 fatalities and 5,083 serious injuries occurred on West Virginia's roadways. These crashes were analyzed to determine causal factors from an infrastructure, behavioral, environmental, and road user perspective to identify risk factors correlating to 16 potential Emphasis Areas.



The potential Emphasis Areas considered were based on suggestions from the American Association of State Highway Transportation Officials (AASHTO) in their original national SHSP. Seven data-driven Emphasis Areas were selected: Speeding and Aggressive Driving, Roadway Departure, Occupant Protection, Older Driver (65+) Involved, Alcohol or Drug Impaired Driving, Intersections, and Pedestrians. One non-data-driven Emphasis Area, Improving Highway Safety Data, was also selected as continued data improvements are necessary for the development of a robust SHSP. The seven data-driven Emphasis Areas account for 98 percent of all fatalities and 95 percent of all serious injuries.

Speeding and aggressive driving were combined into one Emphasis Area. Speeding represents 49% of the combined fatalities and serious injuries, while aggressive driving represents 23% of the combined fatalities and serious injuries. Since speeding is a form of aggressive driving, the SMTF agreed that these similar dangerous behaviors should be targeted in order to make an effective impact on reducing fatalities and serious injuries.

Intersections and pedestrians are two areas where the state has observed an increasing trend in fatalities and serious injuries. Intersection-related fatalities and serious injuries account for 14% of all fatalities and 20% of all serious injuries. Pedestrian-related crashes account for 9% of all fatalities and 6% of all serious injuries. The SMTF decided to include these two Emphasis Areas as regionally-focused Emphasis Areas, meaning that strategies for these two Emphasis Areas will be employed in areas of the state where data indicates a need to address these particular crash types.

For example, strategies to reduce pedestrian-related crashes are more appropriate in areas of West Virginia where pedestrians are observed using the transportation facilities. These areas might include urbanized areas, areas around colleges or universities, or within certain metropolitan planning organization areas.

2022-2026 SHSP EMPHASIS AREAS

1. Speeding and Aggressive Driving
2. Roadway Departure
3. Occupant Protection
4. Older Driver (65+) Involved
5. Alcohol and Drug Impaired Driving
6. Intersections - *Regionally Focused*
7. Pedestrians - *Regionally Focused*
8. Improving Highway Safety Data

The seven data-driven Emphasis Areas account for **98%** of fatalities and **95%** of serious injuries.

Detailed crash data for each of the selected Emphasis Areas was reviewed to identify specific characteristics and risk factors that could yield more information regarding the contributing factors of each of the crashes. Specific objectives were developed for each Emphasis Area, based on the overall SHSP objective of reducing fatalities and serious injuries by 4% annually. To meet the objective of each Emphasis Area and the overall Plan and address the contributing factors identified through the data review, strategies were developed to address the 4 E's of transportation safety: Enforcement, Education, Emergency Medical Services, and Engineering. These strategies were based on current best practices from the Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA), other states, and continuation of the implementation of countermeasures that have proven to provide safety benefits in West Virginia. Strategies were also developed based on a review of other state's SHSPs and through ideas generated by the expertise of each Emphasis Area team. Strategies that reflect proven countermeasures are included as well as some new ideas that will be implemented to further meet the objective of the SHSP. Each proposed strategy is general, focusing on one of the 4 E's, data improvements, or policy updates. For each strategy, action plans will be developed by the Emphasis Area teams and this will occur immediately following adoption of the SHSP.



Many of the fatality and serious injury crashes have factors that would be addressed by multiple Emphasis Areas. For example, a roadway departure crash may involve an impaired, unrestrained, and speeding motorist. Proposed strategies for one Emphasis Area may contribute to reducing fatalities and serious injuries in another Emphasis Area.



Emphasis Area fact sheets are provided on the following pages for each of the *eight selected Emphasis Areas*. The fact sheets provide a *brief description* of the Emphasis Area, the Emphasis Area *objective*, a review of relevant *fatal and serious injury* crash data, and the strategies to achieve the objective.



Emphasis Area 1

Speeding and Aggressive Driving



Higher vehicle speeds and aggressive driving habits pose an inherent safety risk to all users of West Virginia's transportation system. Speeding has become a socially accepted behavior, and in some cases, it can even be encouraged by one's peers. Aggressive driving includes poor driving behaviors such as disregarding traffic signs, running a red light, exceeding the posted speed limit, driving too fast for conditions, improperly passing, following too close, operating a vehicle in an erratic, reckless, or careless manner; or operating a vehicle in an aggressive manner. Fifty-eight percent (58%) of fatalities and 25% of serious injuries from 2006 through 2015 were related to speeding or aggressive driving. From 2016 through 2020, 57% of fatalities involve speeding or aggressive driving. However, the percentage of serious injuries related to speeding or aggressive driving increased to 57%.



SPEEDING AND AGGRESSIVE DRIVING EMPHASIS AREA DEFINITION

Persons fatally or seriously injured in crashes that involved a speeding and aggressive driver.

Data Trends/Key Facts: 2016 to 2020 Speeding and Aggressive Driving Fatalities & Serious Injuries

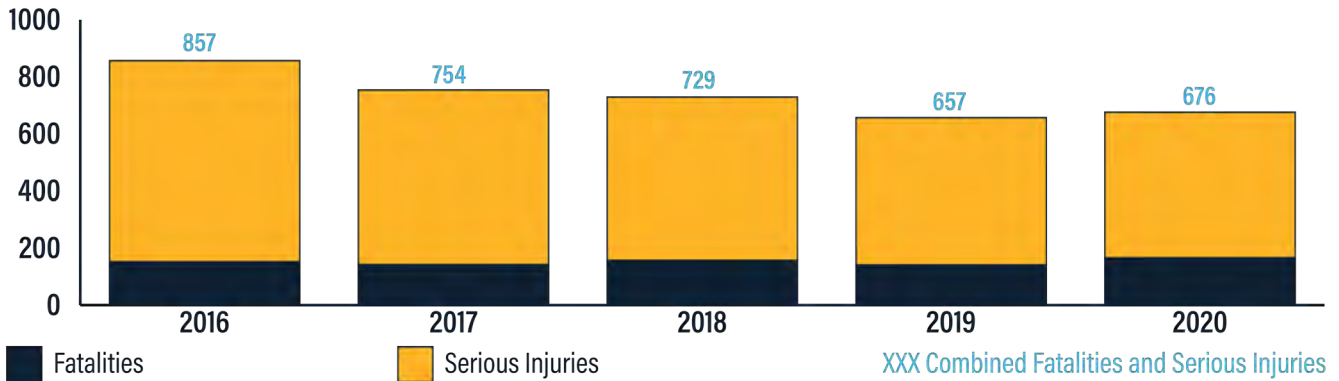
- 62% were roadway departure crashes
- 62% were male
- 56% occurred on West Virginia State Routes or County/HARP Routes
- 40% were ages 20 to 39
- 36% occurred between 2PM and 6PM
- 33% occurred on Thursday and Friday
- 28% were unrestrained vehicle occupants
- 25% occurred in dark/unlit conditions
- 24% involved impaired driving
- 20% involved Older Drivers (65+)
- 19% occurred on wet roadways
- 11% involved motorcycles



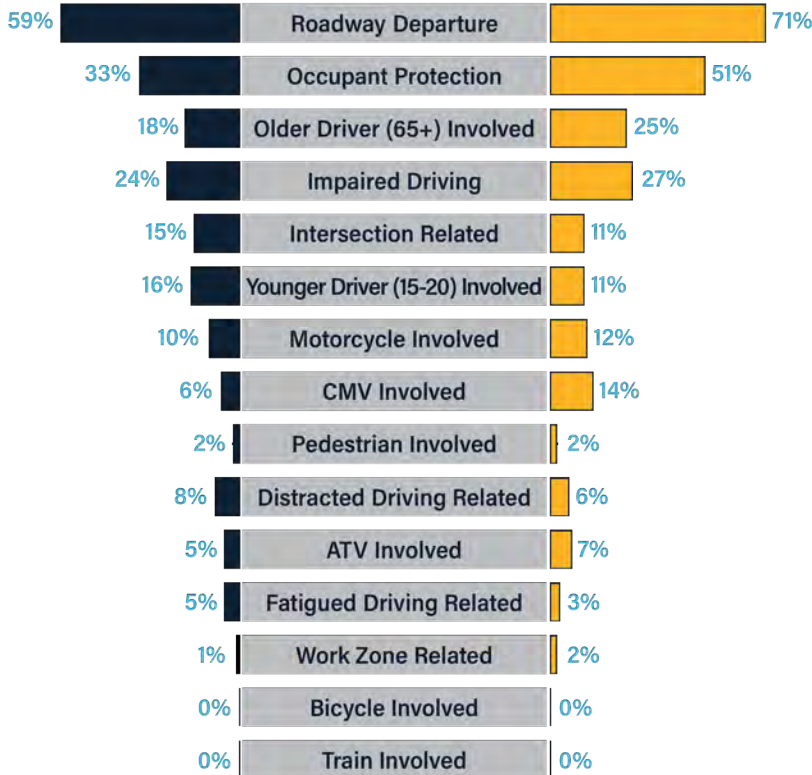
Speeding and Aggressive Driving

Speeding and Aggressive Driving-Related	2017-2021 SHSP '06-'15 Crashes	2022-2026 SHSP '16-'20 Crashes	Trend
% of total Fatalities	58%	57%	▼
% of total Serious Injuries	25%	57%	▲

SPEEDING AND AGGRESSIVE DRIVING: FATALITIES & SERIOUS INJURIES (2016-2020)



FACTORS IN SPEEDING AND AGGRESSIVE DRIVING RELATED CRASHES



REDUCE
Speeding and Aggressive Driving-Related
Fatalities & Serious Injuries by
4%
 annually over the next 5 years,
 from **741 to 580***

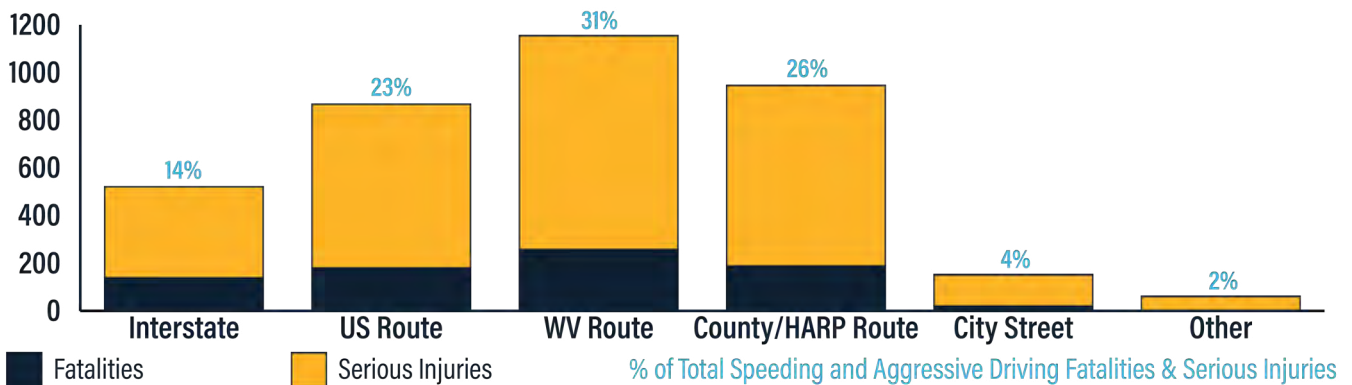
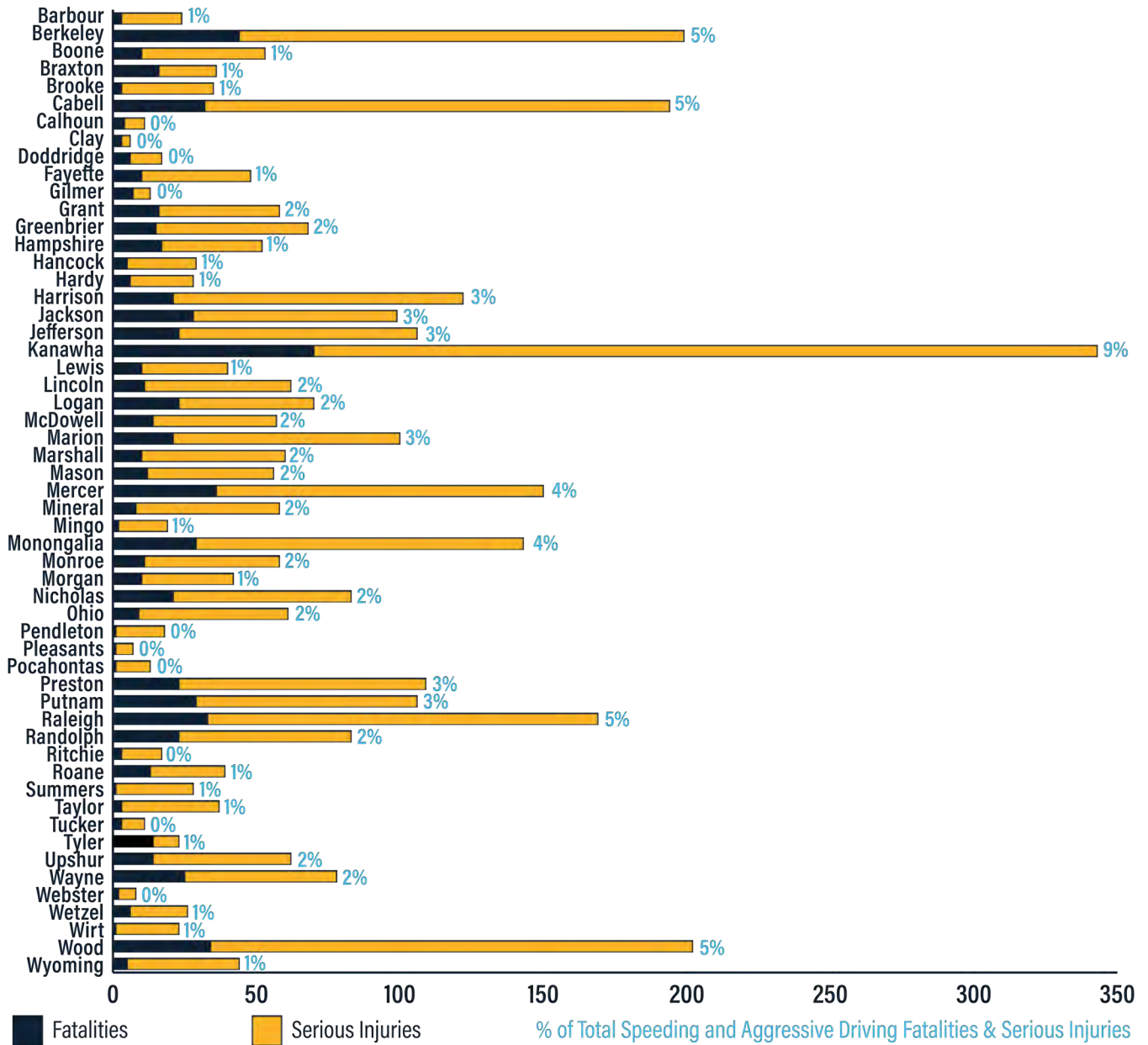
XX% of Total Speeding and Aggressive Fatalities/Serious Injuries

FATALITIES

SERIOUS INJURIES

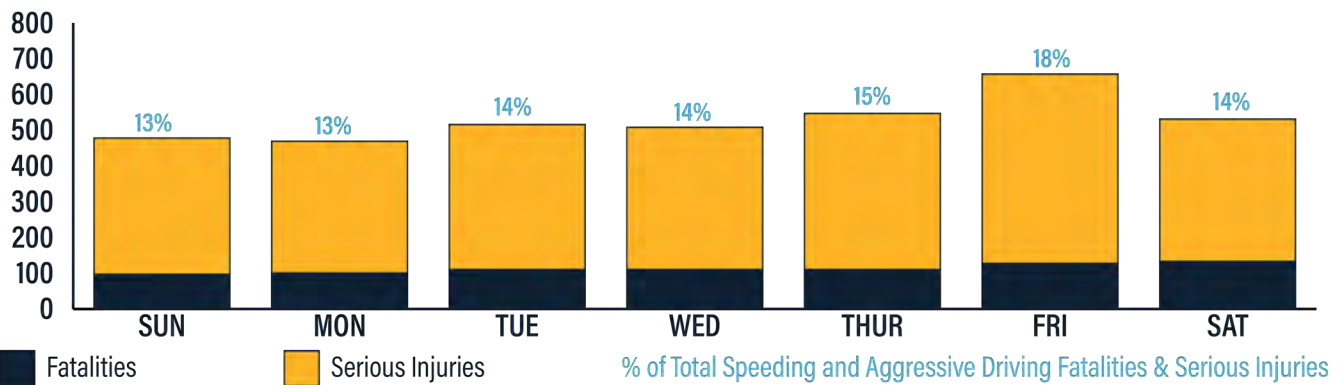
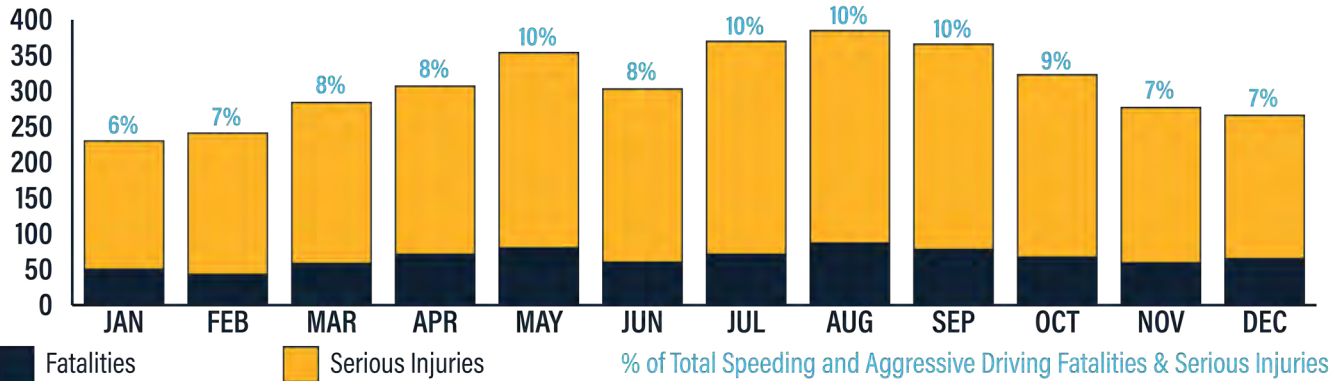
**based on 5-year rolling average*

WHERE?



Speeding and Aggressive Driving

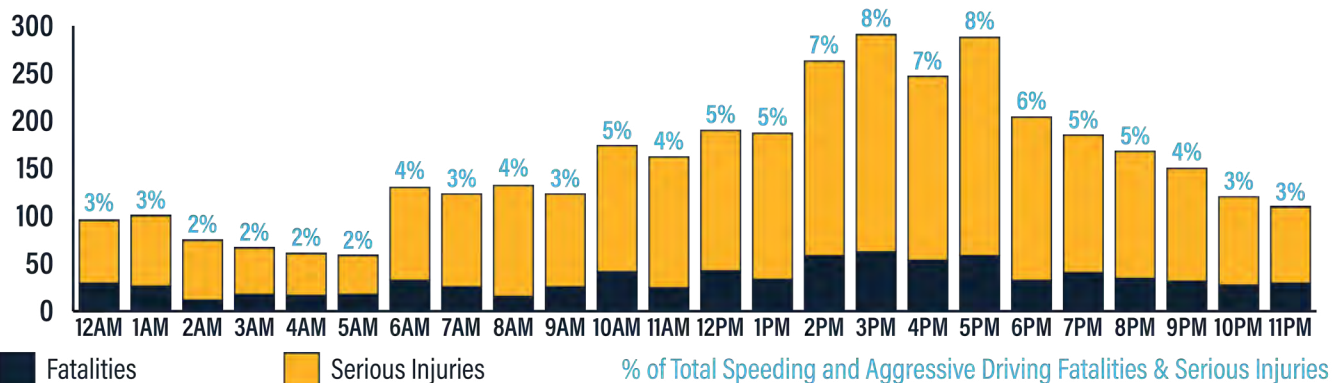
WHEN?



	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
Sunday	11	18	27	19	7	5	17	8	10	14	18	13	34	29	39	29	24	31	42	33	12	24	6	8	478
Monday	14	7	5	3	5	5	16	23	22	18	31	16	23	18	41	35	25	51	24	22	23	20	10	12	469
Tuesday	4	10	7	3	10	10	27	29	23	16	22	18	39	30	31	34	27	39	32	28	24	30	12	11	516
Wednesday	16	9	8	12	10	13	25	14	27	14	16	22	22	32	34	56	43	34	19	22	27	11	9	13	508
Thursday	15	16	11	5	4	11	14	21	27	34	31	31	19	26	44	36	28	42	23	33	31	19	17	9	547
Friday	15	12	3	11	14	9	20	18	13	19	41	35	32	33	37	60	54	53	38	22	28	31	28	31	657
Saturday	21	29	14	14	11	6	11	10	10	8	15	27	21	19	37	41	46	38	26	25	23	15	38	26	531
Total	96	101	75	67	61	59	130	123	132	123	174	162	190	187	263	291	247	288	204	185	168	150	120	110	3,706

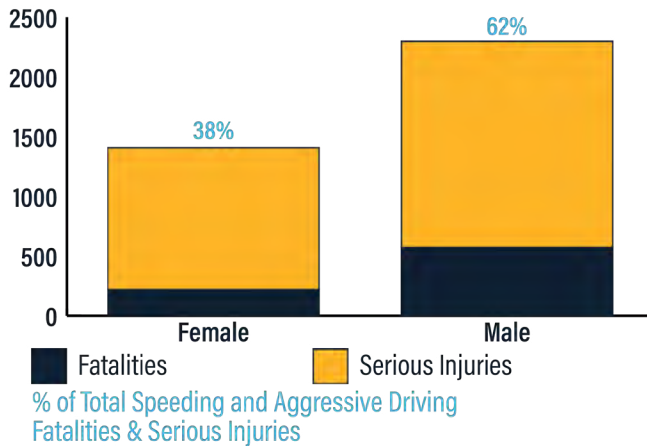
XX Speeding and Aggressive Driving Fatalities and Serious Injuries during Day of Week and Hour of Day

Lower Frequency Higher Frequency

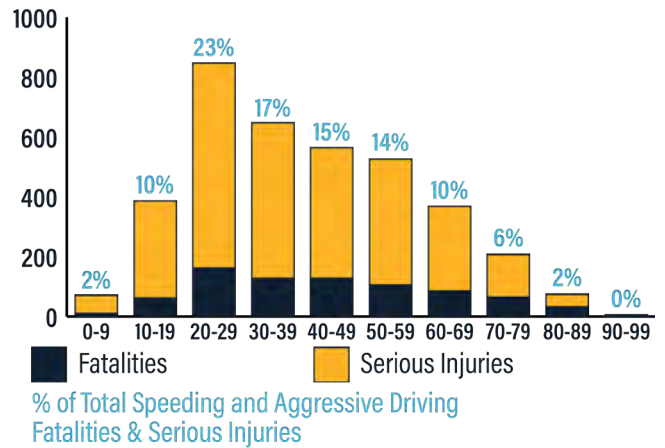


Speeding and Aggressive Driving

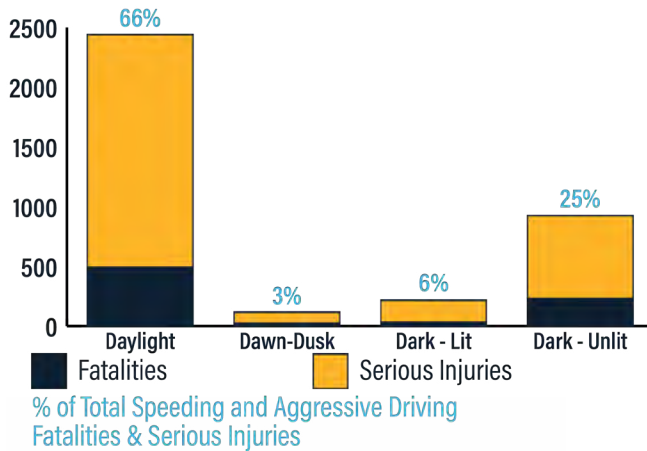
GENDER



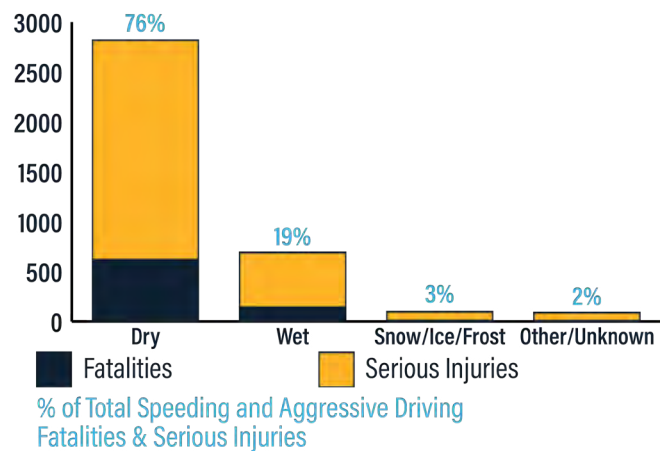
AGE



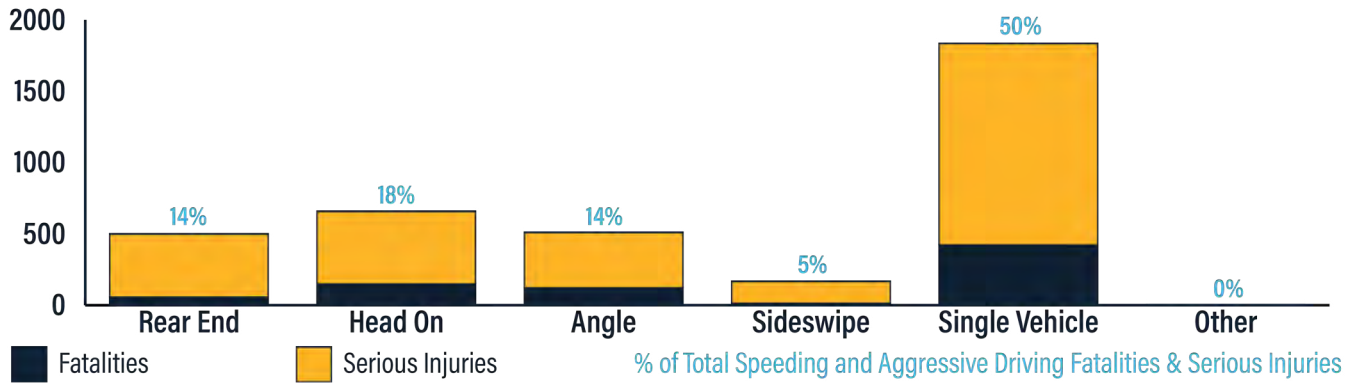
LIGHTING CONDITION



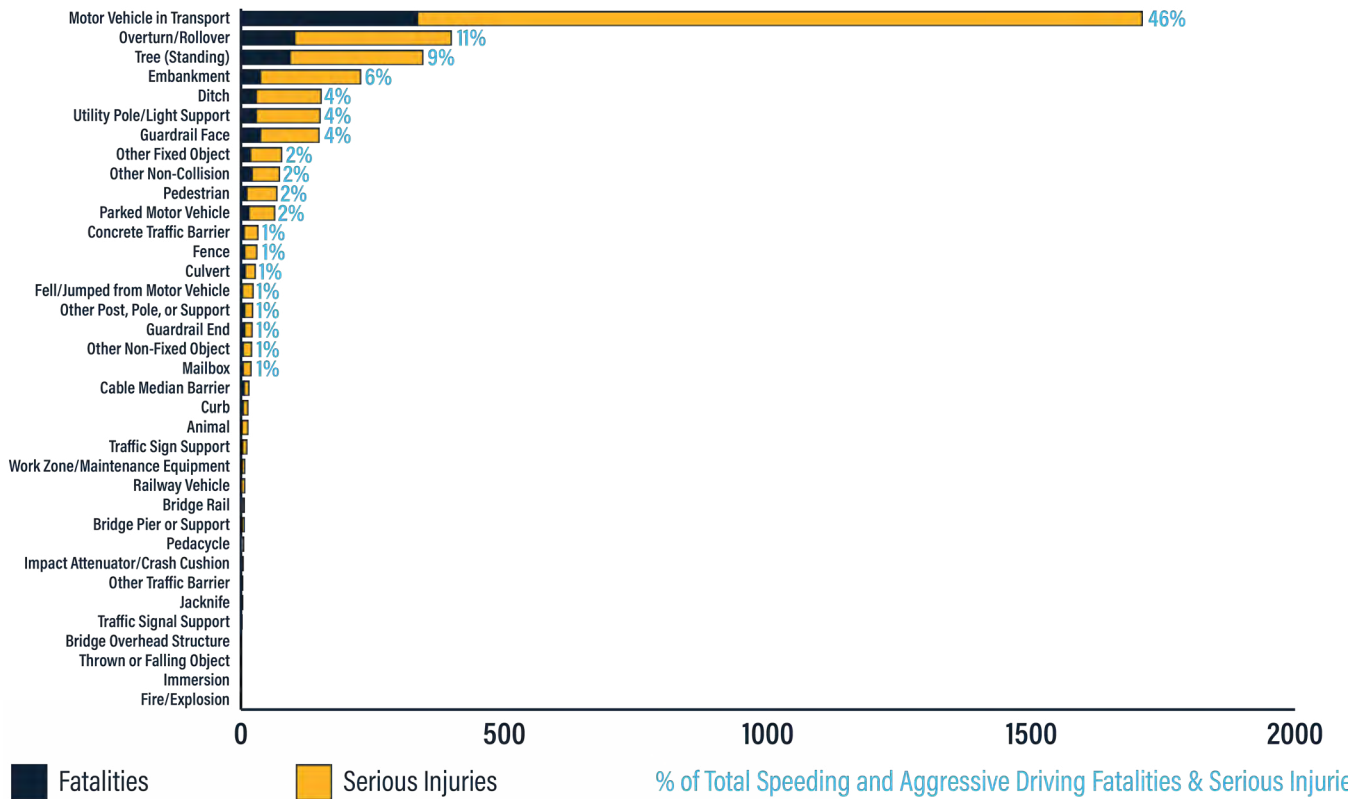
SURFACE CONDITION



MANNER OF IMPACT



FIRST HARMFUL EVENT





Emphasis Area Strategies: Speeding and Aggressive Driving

1. Conduct effective speeding and aggressive driving enforcement activities.

2. Explore the viability of implementing an automated speed enforcement program.

3. Develop and distribute consistent public information messages to increase public awareness of the consequences of speeding and aggressive driving.

4. Implement proven engineering countermeasures to effectively manage speeds.



Emphasis Area 2

Roadway Departure



Roadway departure occurs when a vehicle crosses an edge line, a center line, or otherwise leaves the traveled way of any roadway. A roadway departure crash occurs when that vehicle leaves the traveled way and strikes another vehicle, one or more fixed objects outside of the traveled way, overturns, or a combination of those actions. Often, roadway departure crashes involve a single vehicle; therefore, safety strategies typically first address keeping the vehicle on the roadway and secondly, address the consequences of leaving the roadway. West Virginia has made strides in addressing roadway departure crashes, which have historically accounted for the highest percentage of fatalities. Through the implementation of high friction surface treatments, safety edge, curve warning and delineation, guardrail improvements and rumble strips, West Virginia has seen a decline of roadway departure fatalities and serious injuries. However, there is a need for continual implementation of appropriate strategies to further reduce roadway departure crashes.



ROADWAY DEPARTURE EMPHASIS AREA DEFINITION

Persons fatally or seriously injured in roadway departure crashes during which a vehicle crosses an edge line, a center line, or otherwise leaves the traveled way of any roadway, and that vehicle strikes another vehicle, one or more fixed objects outside of the traveled way, overturns, or a combination of those actions.

Data Trends/Key Facts: 2016 to 2020 Roadway Departure Fatalities & Serious Injuries

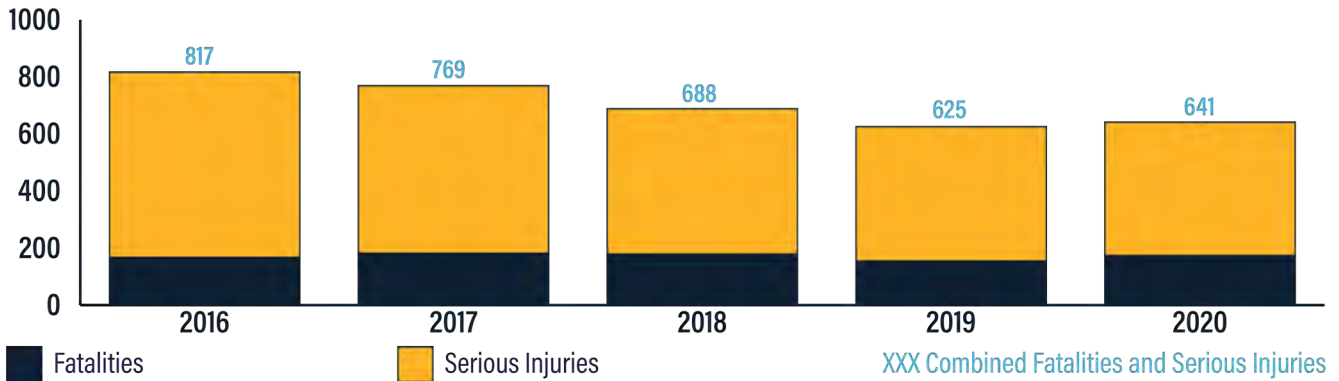
- 65% involved speeding and aggressive driving
- 64% were male
- 63% occurred on West Virginia State Routes or County/HARP Routes
- 48% occurred on Friday, Saturday, or Sunday
- 46% occurred on a horizontal curve
- 41% were ages 20 to 39
- 31% were unrestrained vehicle occupants
- 30% occurred in dark/unlit conditions
- 26% involved impaired driving
- 26% occurred between 2PM and 6PM
- 19% occurred on wet roadways



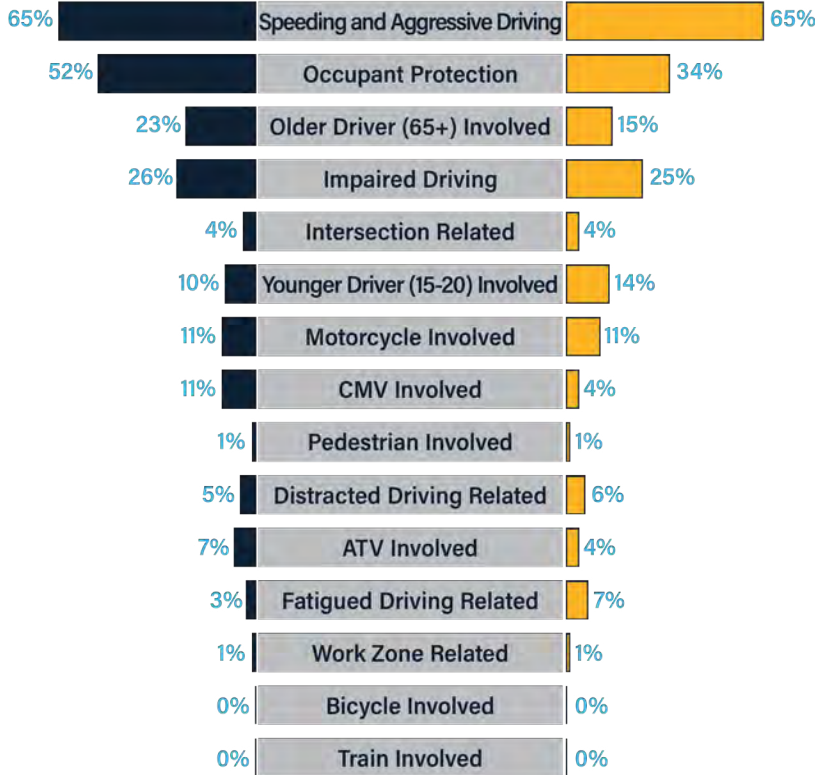
Roadway Departure

Roadway Departure	2017-2021 SHSP '06-'15 Crashes	2022-2026 SHSP '16-'20 Crashes	Trend
% of total Fatalities	65%	62%	▼
% of total Serious Injuries	56%	53%	▼

ROADWAY DEPARTURE: FATALITIES & SERIOUS INJURIES (2016-2020)



CAUSAL FACTORS



REDUCE
Roadway
Departure
 Fatalities & Serious Injuries by
4%
 annually over the next 5 years,
 from
708 to 554*

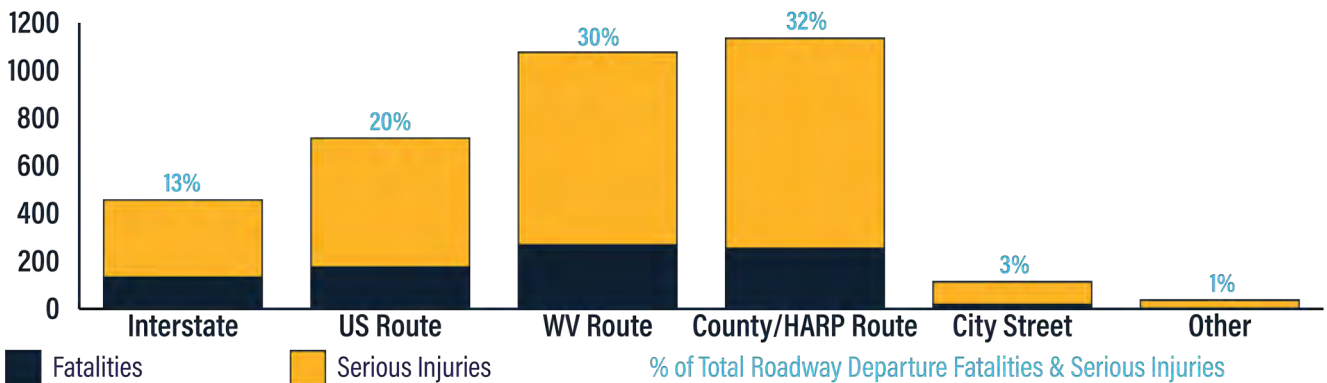
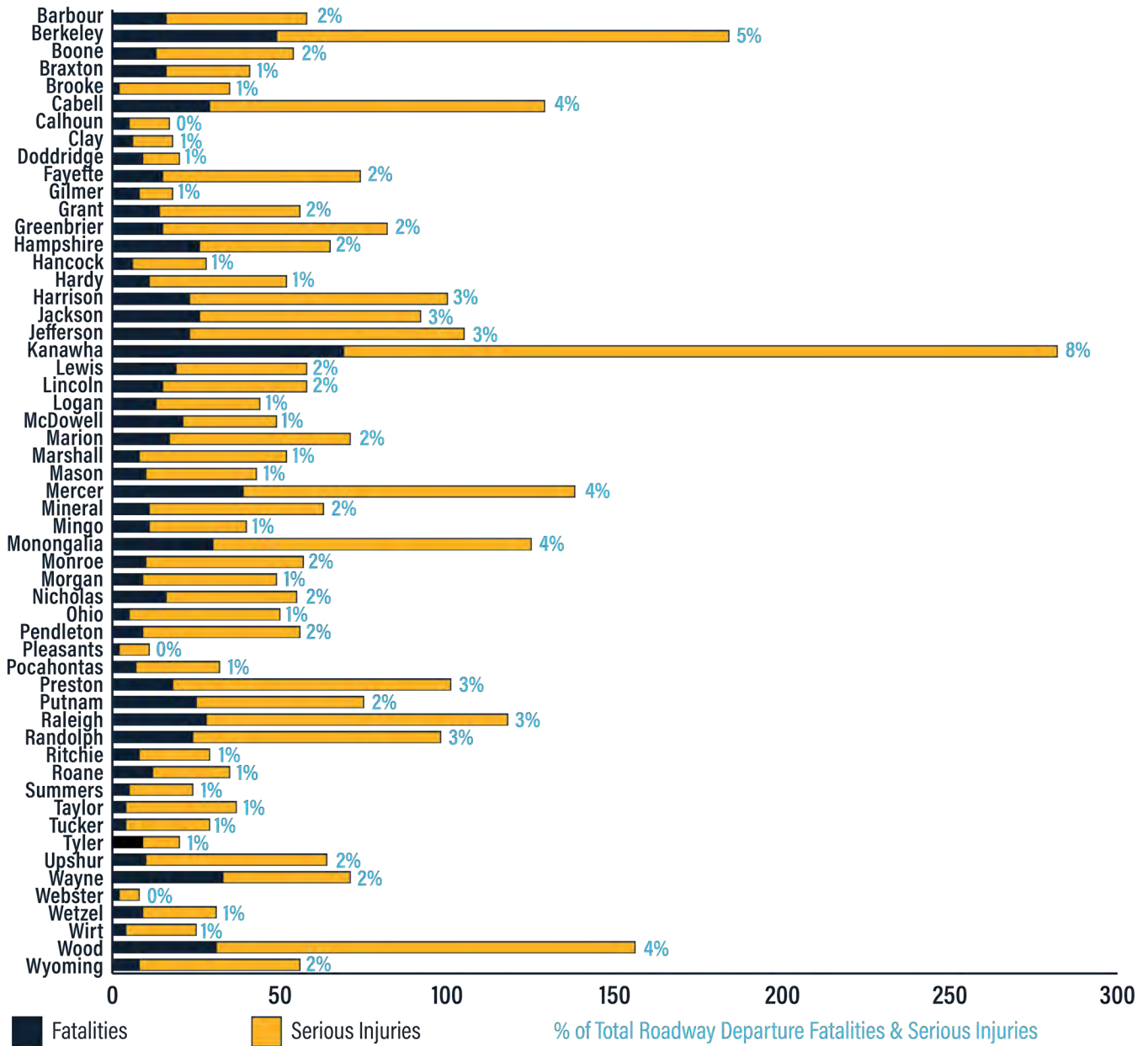
XX% of Total Roadway Departure Fatalities/Serious Injuries

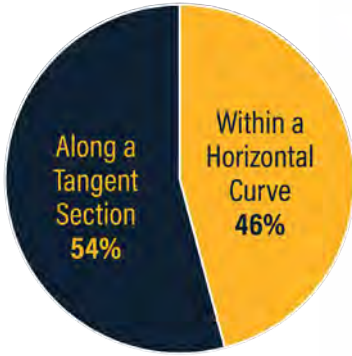
FATALITIES

SERIOUS INJURIES

**based on 5-year rolling average*

WHERE?

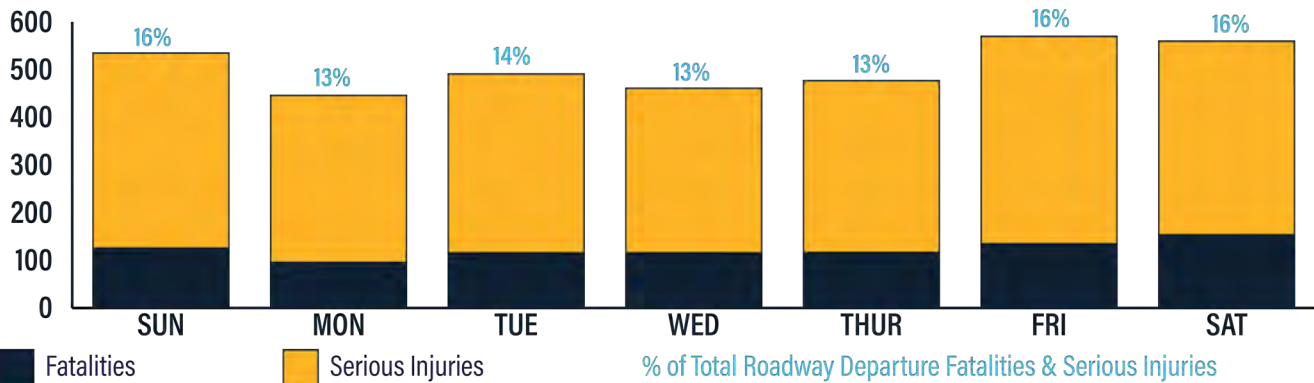
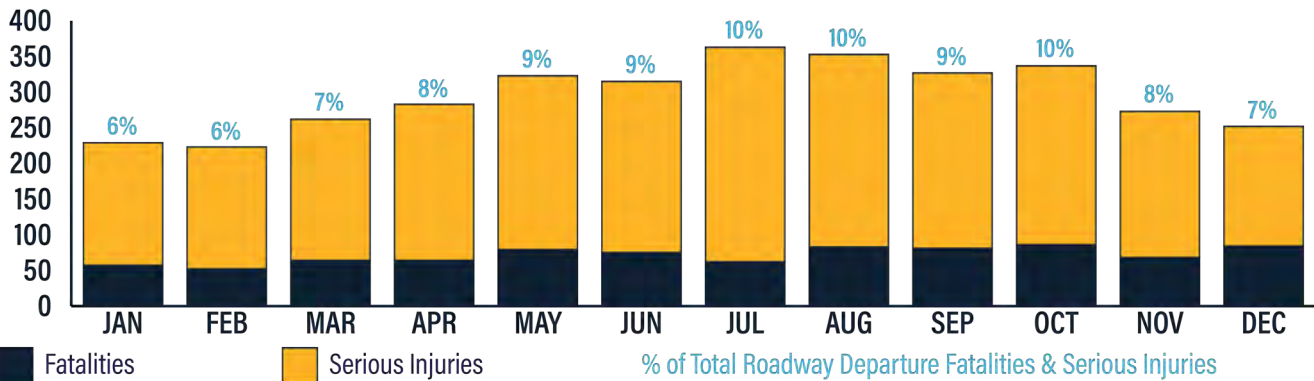




% of Total Roadway Departure Fatalities & Serious Injuries



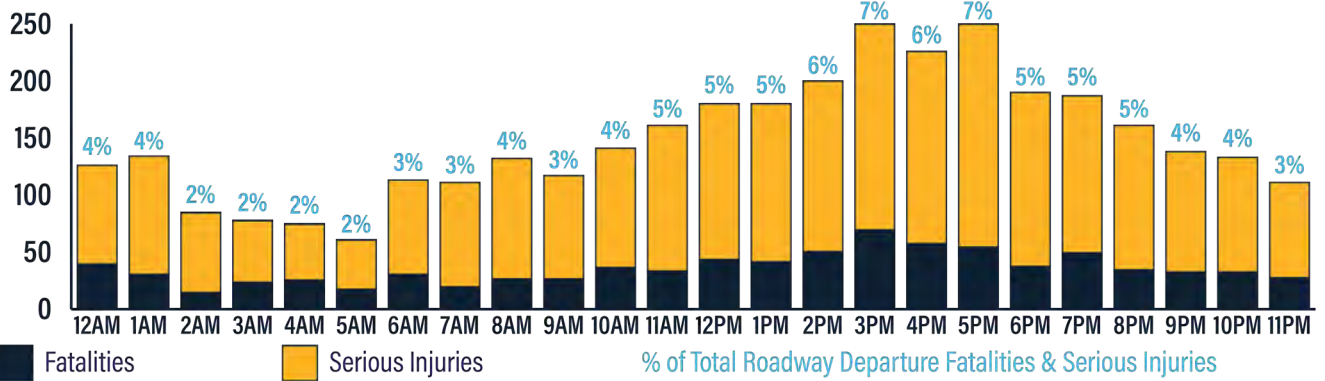
WHEN?



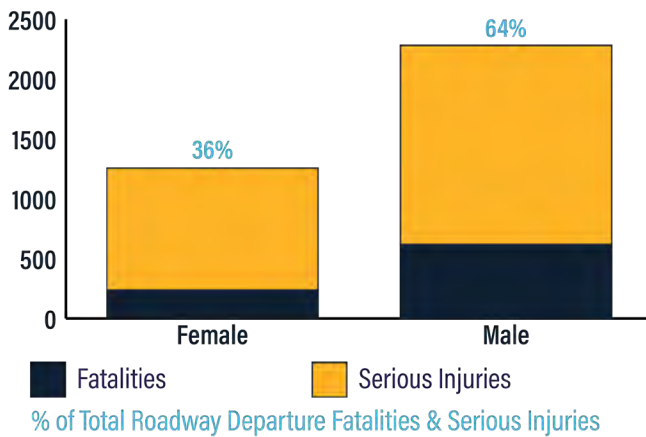
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Sunday	23	29	35	19	13	8	14	11	17	16	15	23	31	28	30	31	27	34	33	35	18	28	6	11	535
Monday	16	8	4	3	3	5	19	14	21	17	27	19	28	20	28	27	27	47	25	22	19	23	11	13	446
Tuesday	5	8	10	4	10	15	25	26	18	15	24	19	31	37	23	33	30	31	28	21	22	26	17	13	491
Wednesday	18	12	6	14	15	8	17	10	22	9	10	20	18	22	25	47	27	32	22	30	32	16	12	17	461
Thursday	15	23	11	6	5	10	14	20	26	30	20	23	20	22	40	35	28	26	11	27	28	10	17	10	477
Friday	17	17	4	13	14	10	16	21	16	22	31	28	25	35	29	47	41	37	34	23	19	22	27	22	570
Saturday	32	37	15	19	15	5	8	9	12	8	14	29	27	16	25	30	46	43	37	29	23	13	43	25	560
Total	126	134	85	78	75	61	113	111	132	117	141	161	180	180	200	250	226	250	190	187	161	138	133	111	3,540

XX Roadway Departure Fatalities and Serious Injuries during Day of Week and Hour of Day
 Lower Frequency Higher Frequency

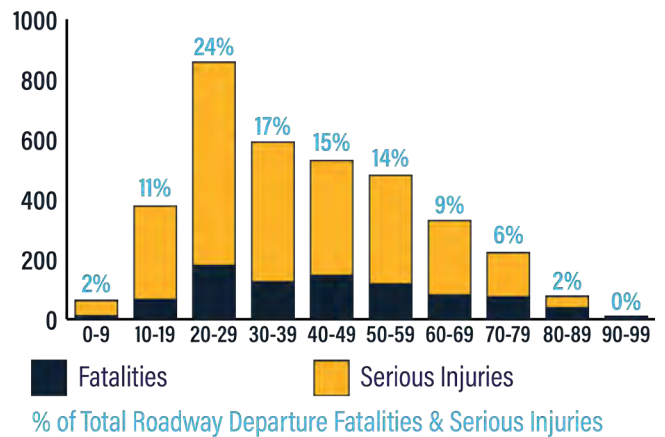
WHEN?



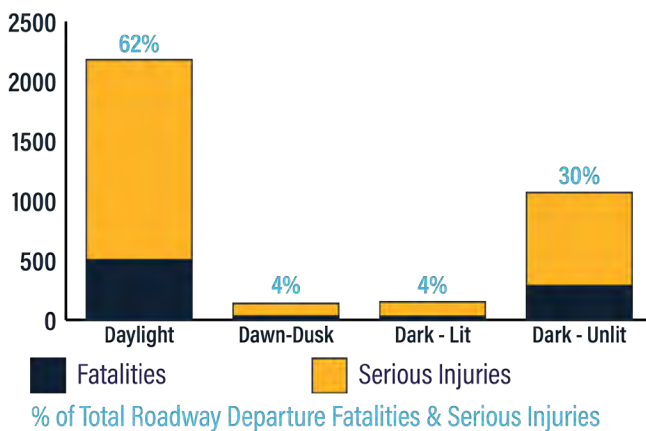
GENDER



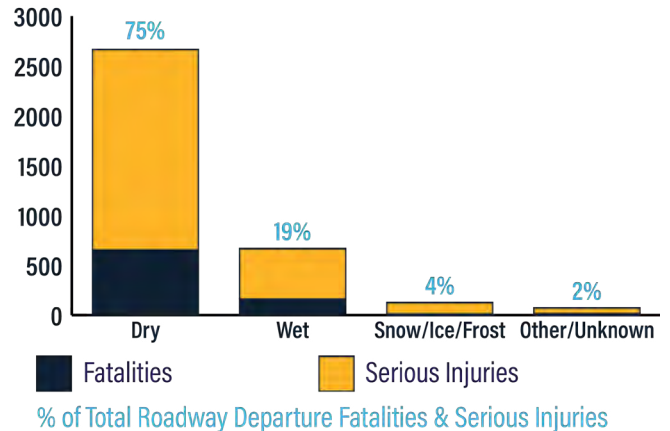
AGE



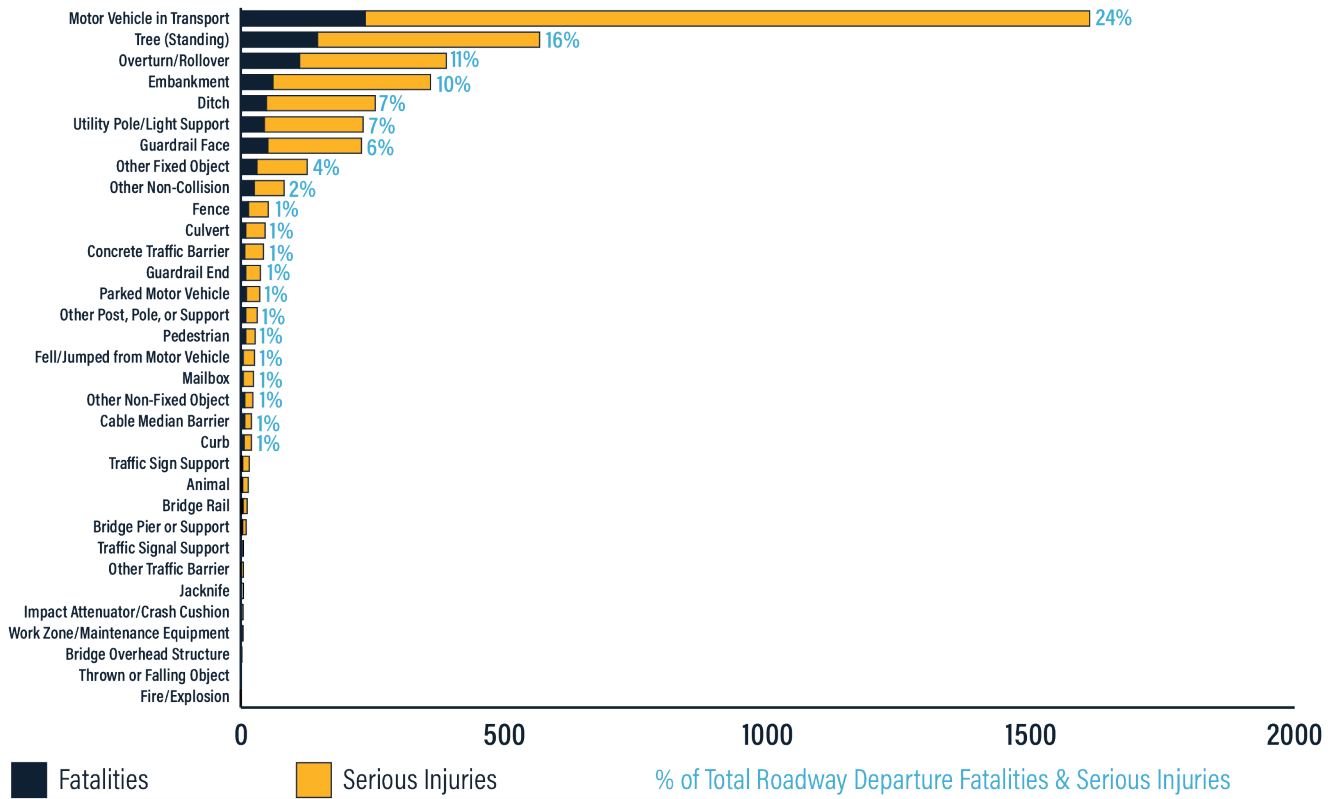
LIGHTING CONDITION



SURFACE CONDITION



FIRST HARMFUL EVENT





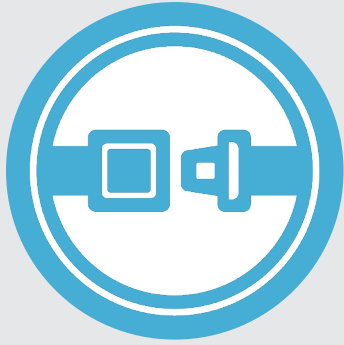
Emphasis Area Strategies: Roadway Departure

1. Implement proven engineering countermeasures to reduce the likelihood of vehicles leaving a travel lane.

2. Implement proven engineering countermeasures to improve the roadside environment, minimizing the consequences of leaving the roadway.

3. Develop and distribute consistent public information regarding implementation of new engineering treatments.

4. Improve incident management and response to incidents by improving data sharing and enhancing incident management training to improve incident clearance times and reduce the likelihood of secondary incidents.



Emphasis Area 3

Occupant Protection



West Virginia considers seat belts, child restraint systems, and motorcycle helmets occupant protection. Not using or improperly using this equipment is associated with 45% of all fatalities and 29% of all serious injuries in the state.

Seat belts and child restraint systems are the most effective in-vehicle safety devices to prevent serious injuries and death during a crash and saved more lives between 1960 and 2012 than all other vehicle technologies (air bags, etc.) combined. According to NHTSA, the risk of a fatal injury in a crash is reduced nearly by half by wearing a seat belt. Failing to wear a seat belt is not typically a contributing factor to a crash occurring; however, this poor pre-crash choice often overlaps with other poor driving characteristics (e.g., speeding, aggressive driving, and impaired driving). Continued educational and enforcement strategies are critical to maintaining and increasing the current rate of seat belt and child restraint system usage and ensuring their use becomes a habit for the next generation. Continued increases in occupant protection usage is of utmost importance to achieving a long-term reduction in fatalities and serious injuries.

OCCUPANT PROTECTION EMPHASIS AREA DEFINITION

Fatalities or serious injuries sustained in crashes where drivers or passengers of motor vehicles are not wearing or improperly wearing a seat belt, children in motor vehicles are not utilizing or improperly utilizing a child restraint system, or persons on motorcycles or ATVs are not wearing a helmet.

Data Trends/Key Facts: 2016 to 2020 Occupant Protection Fatalities & Serious Injuries

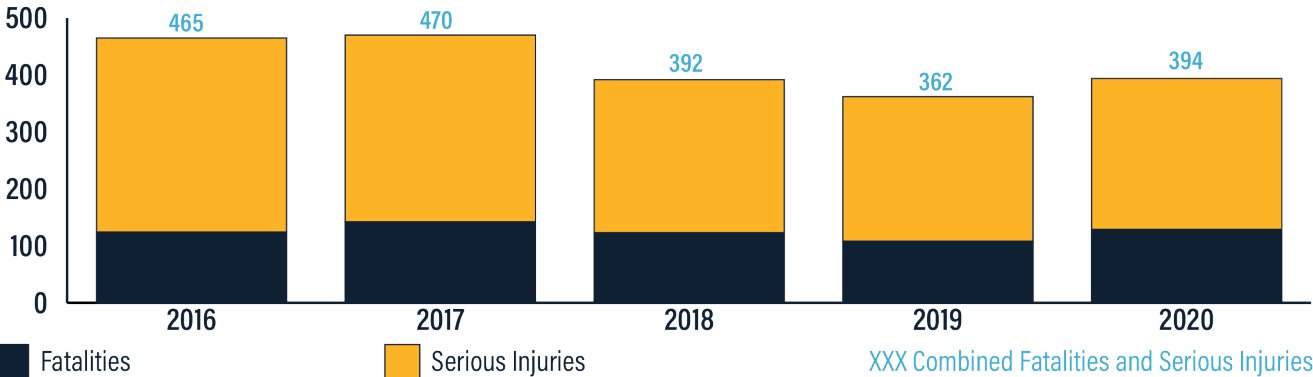
- 67% were male
- 66% occurred in roadway departure crashes
- 65% involved speeding and aggressive driving
- 61% occurred on a West Virginia State Route or County/HARP route
- 50% occurred on a Friday, Saturday, or Sunday
- 43% were age 20 to 39
- 30% occurred in dark/unlit conditions
- 26% occurred between 2PM and 6PM
- 25% involved impaired driving
- 15% occurred on wet roadways



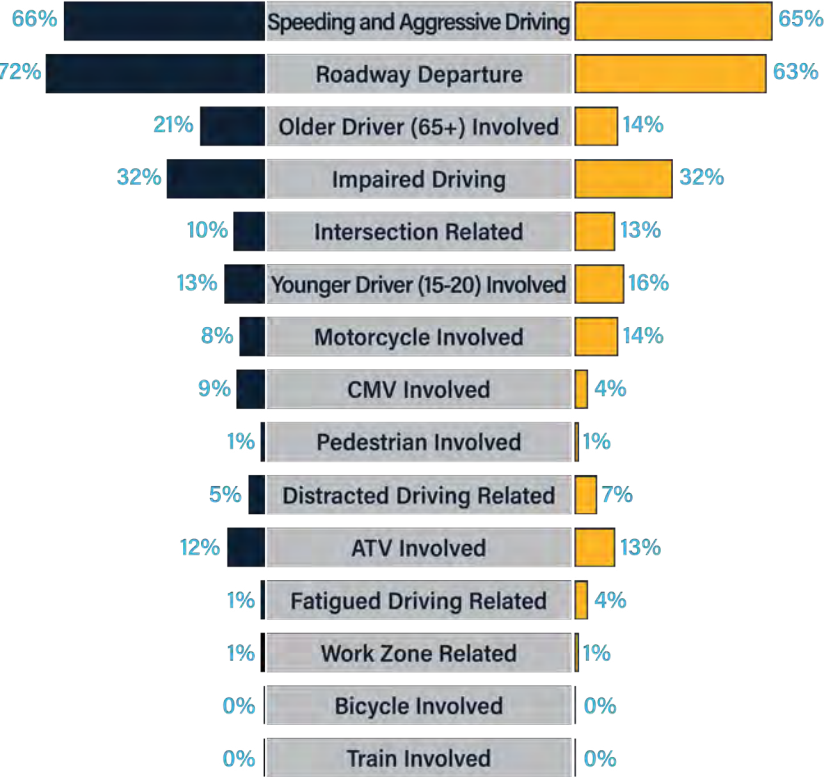
Occupant Protection

Occupant Protection-Related	2017-2021 SHSP '06-'15 Crashes	2022-2026 SHSP '16-'20 Crashes	Trend
% of total Fatalities	47%	45%	▼
% of total Serious Injuries	21%	29%	▲

OCCUPANT PROTECTION: FATALITIES & SERIOUS INJURIES (2016-2020)



CAUSAL FACTORS



EMPHASIS AREA OBJECTIVE

REDUCE
Occupant Protection-Related
Fatalities & Serious Injuries by
4%
 annually over the next 5 years,
 from **417** to **326***

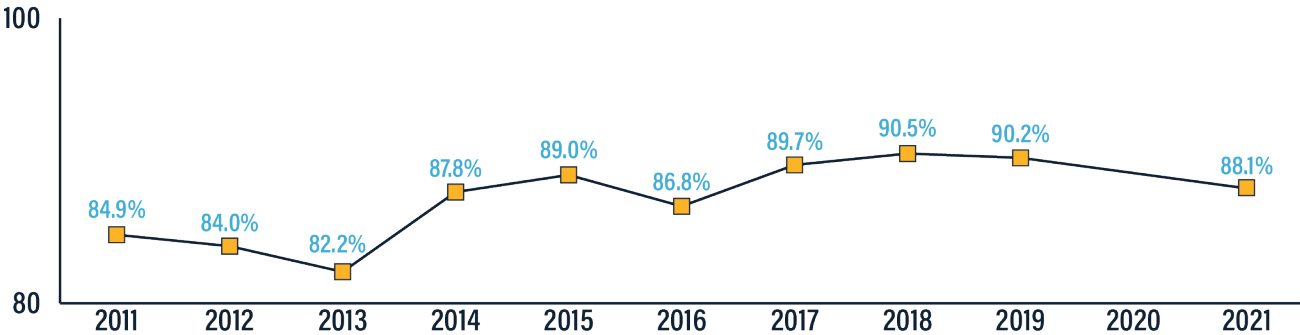
XX% of Total Occupant Protection Fatalities/Serious Injuries

FATALITIES

SERIOUS INJURIES

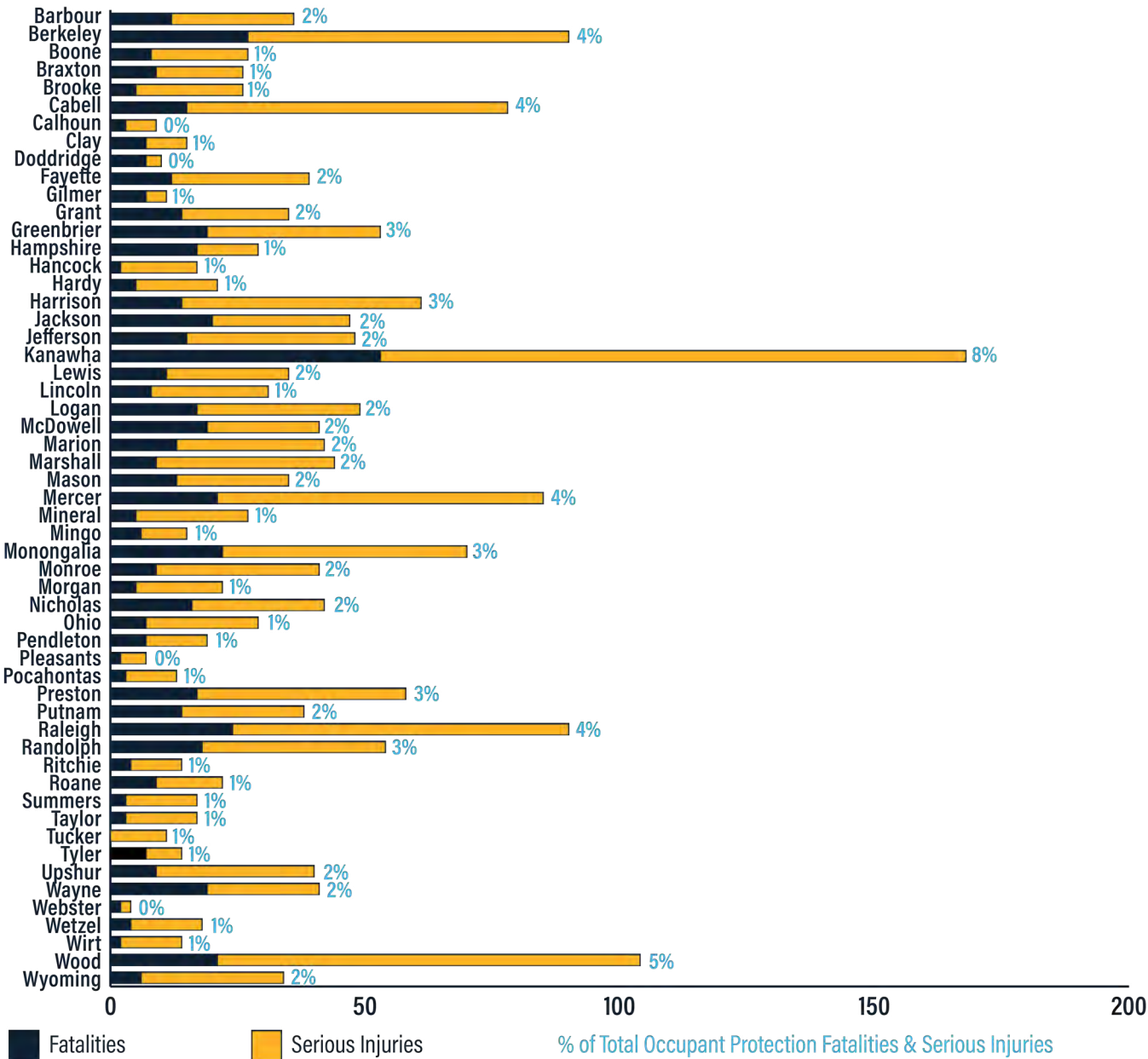
**based on 5-year rolling average*

WEST VIRGINIA SEAT BELT USAGE (2011-2021)

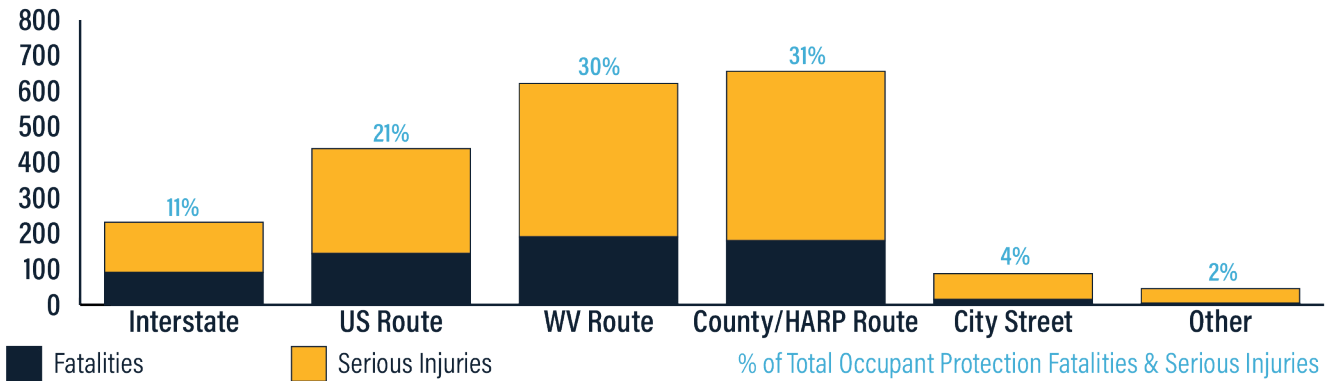


Source: West Virginia Governor's Highway Safety Program 2021 Observational Seat Belt Survey Report

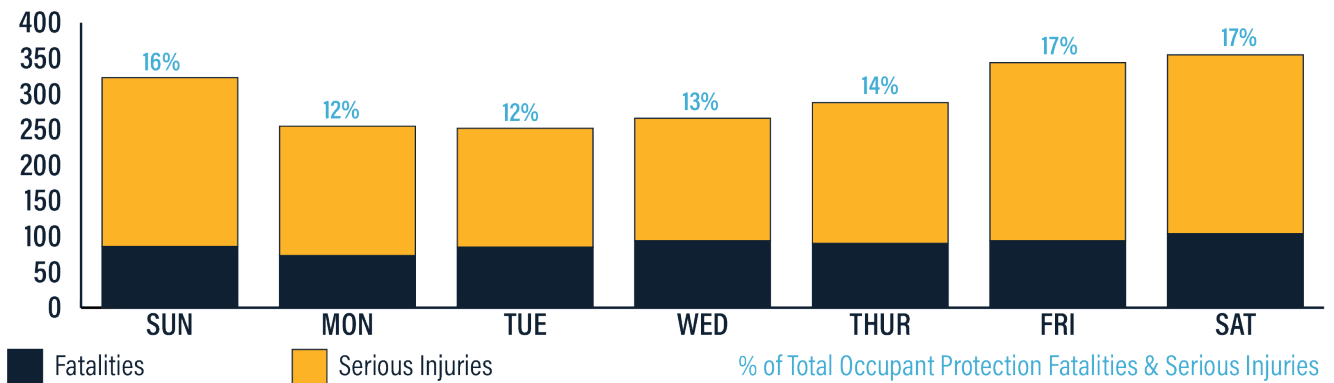
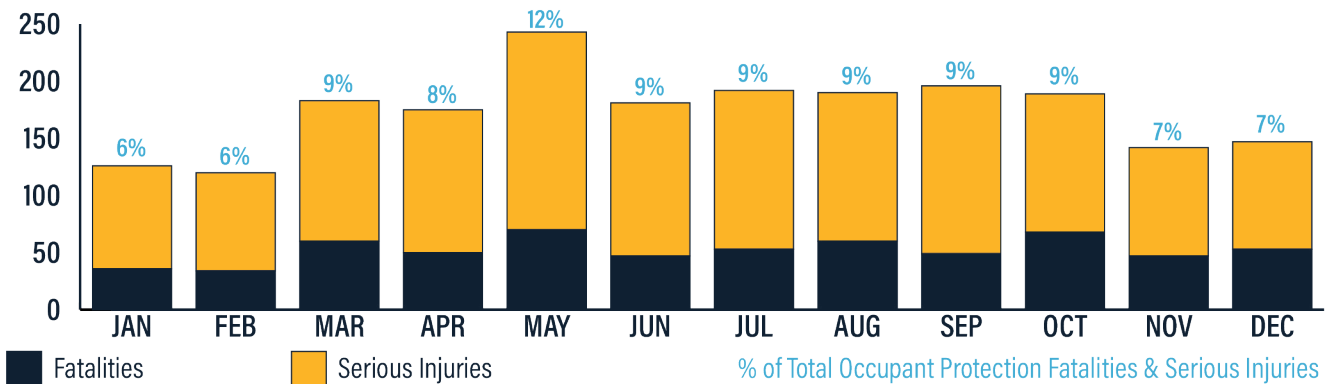
WHERE?



WHERE?



WHEN?



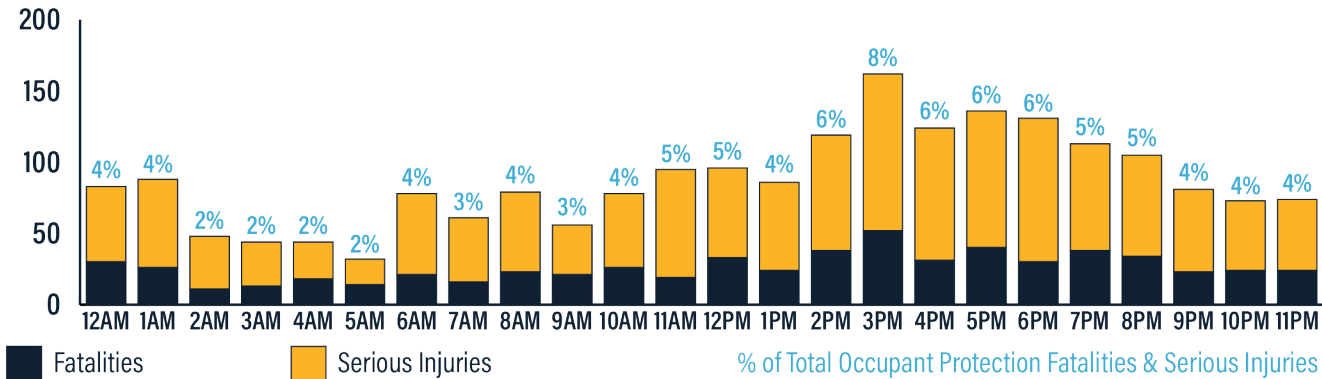
	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
Sunday	12	17	26	11	8	1	5	7	9	9	12	13	14	15	19	29	16	14	30	21	12	14	5	4	323
Monday	12	14	2	2	1	2	18	13	14	4	16	15	16	8	16	12	11	21	6	12	14	8	9	9	255
Tuesday	8	3	5	2	6	3	11	11	15	10	4	14	14	10	11	24	10	12	9	18	18	13	9	12	252
Wednesday	12	10	2	11	8	6	18	8	9	6	6	15	10	11	19	26	11	18	14	11	13	9	7	6	266
Thursday	9	7	3	3	2	8	5	14	19	10	13	12	17	11	15	21	14	19	20	18	21	10	9	8	288
Friday	12	14	3	7	8	6	12	5	6	13	13	13	9	18	21	34	22	28	32	10	12	17	16	13	344
Saturday	18	23	7	8	11	6	9	3	7	4	11	13	16	13	18	16	40	24	20	23	15	10	18	22	355
Total	83	88	48	44	44	32	78	61	79	56	75	95	96	86	119	162	124	136	131	113	105	81	73	74	2,083

XX Occupant Protection Fatalities and Serious Injuries during Day of Week and Hour of Day

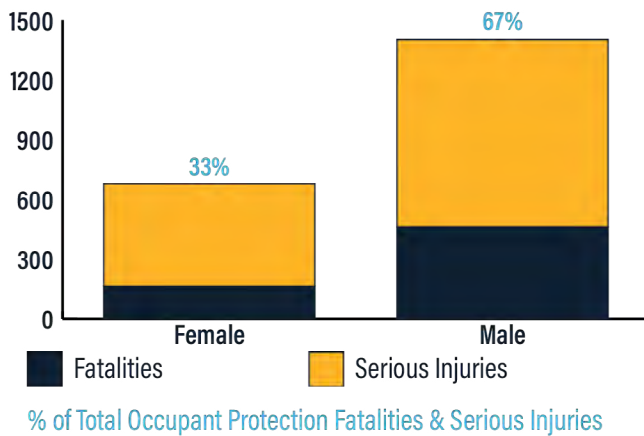
Lower Frequency

Higher Frequency

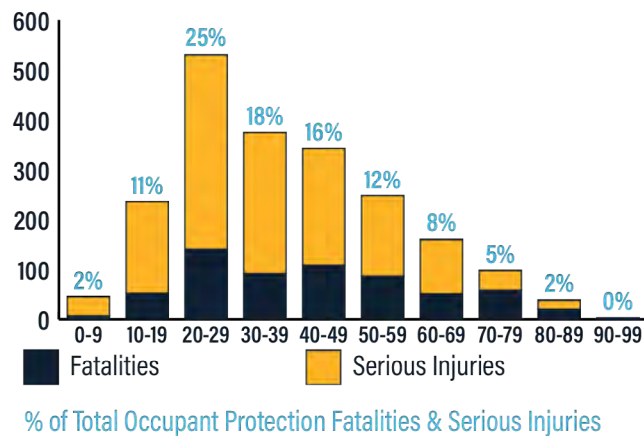
WHEN?



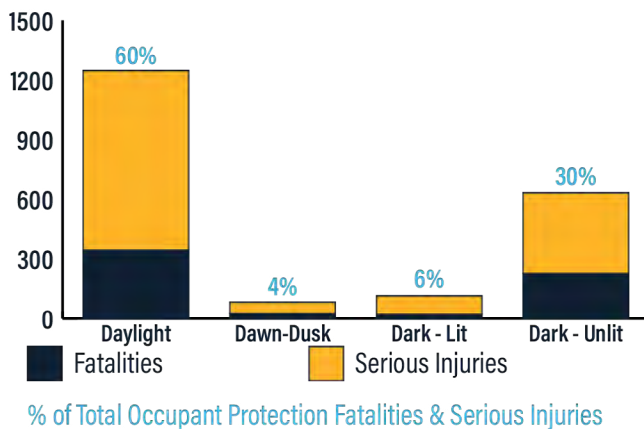
GENDER



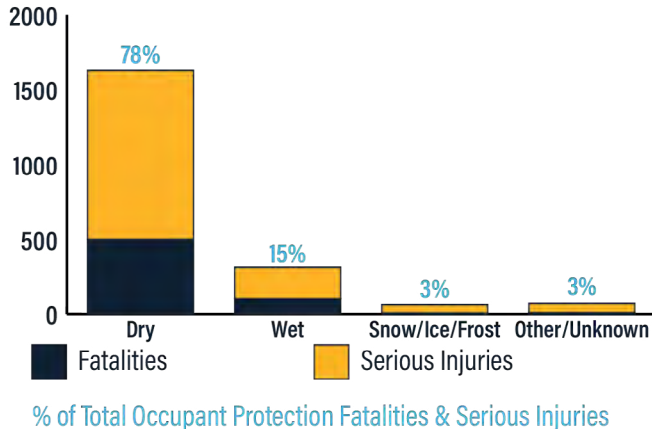
AGE



LIGHTING CONDITION



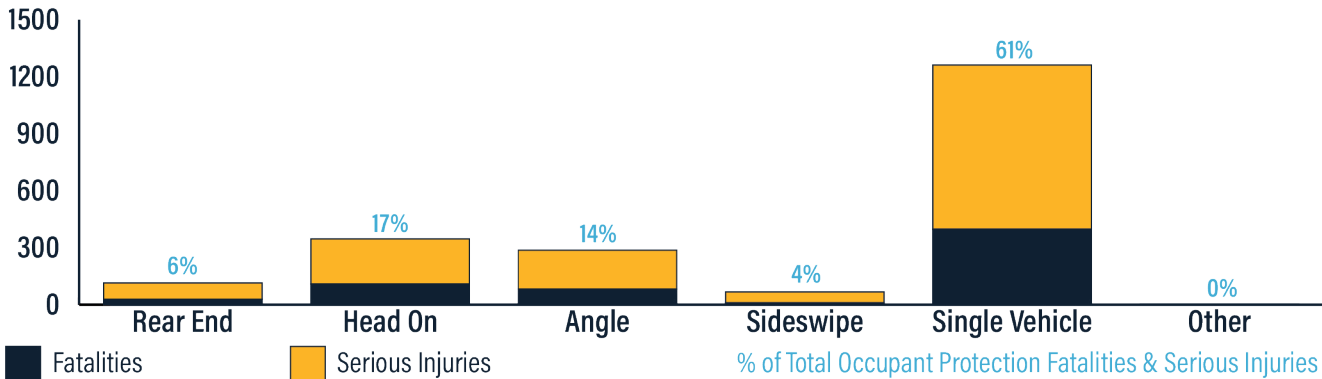
SURFACE CONDITION



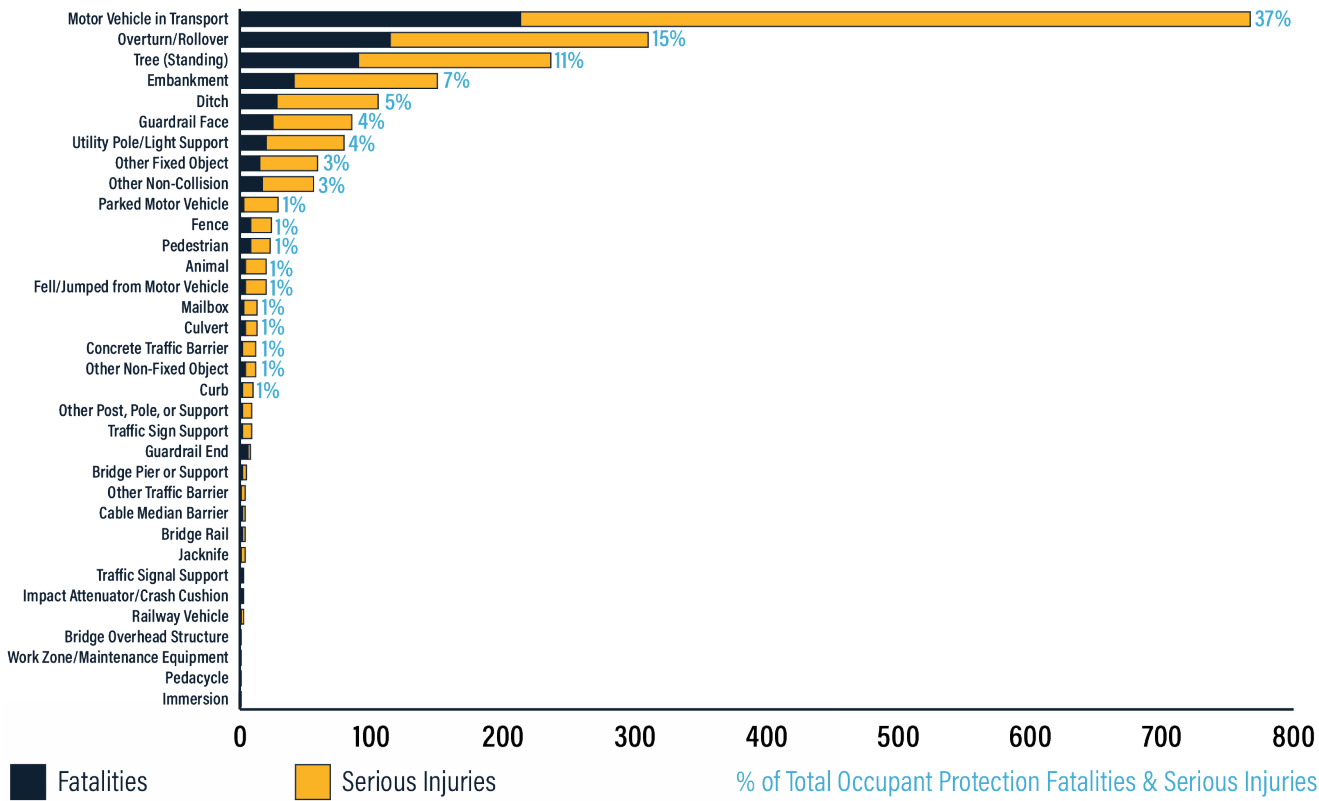
SEAT BELTS
SAVE LIVES.



MANNER OF IMPACT



FIRST HARMFUL EVENT





Emphasis Area Strategies: Occupant Protection

1. Develop and distribute consistent public information regarding the proper use of occupant protection equipment.

2. Establish a corporate outreach program to distribute information regarding occupant protection use to reach a broader audience.

3. Improve occupant protection use through effective and strategic enforcement practices.



Emphasis Area 4

Older Driver (65+) Involved



West Virginia's population is getting older. In 2010, the U.S. Census Bureau data indicates that 16% of West Virginia's population were persons 65 years old or older. The 2020 U.S. Census data indicates that 20% of West Virginia's population is persons 65 years old or older. In FY21, licensed drivers aged 65 and older represent 11% of all licensed drivers in West Virginia. Twenty-seven percent (27%) of all fatalities and 21% of all serious injuries on West Virginia roadways involved an older driver, even though the older driver was not necessarily the victim of the crash. Impaired vision and hearing and reduced cognition and reflexes often decrease driving abilities in older drivers, which increases the potential for a crash. Additionally, older drivers are at greater risk of being killed or seriously injured in a crash because of increased frailty and other medical issues associated with aging. Therefore, as the percentage of older persons in West Virginia's population continues to grow, strategies to address crashes and driving behaviors of older drivers becomes increasingly important.

A major concern for this emphasis area is older drivers who have been diagnosed with Alzheimer's or other similar degenerative disease but continue to drive for several more years. Some senior drivers will self-assess their driving abilities and voluntarily limit themselves to daylight and dry weather driving only, as needed; however, not all drivers recognize their decreased driving abilities and the safety risks.

OLDER DRIVER (65+) INVOLVED EMPHASIS AREA DEFINITION

Persons killed or seriously injured in crashes involving a driver 65 years of age or older. The older driver is not always the victim.

Data Trends/Key Facts: 2016 to 2020 Older Driver (65+) Involved Fatalities & Serious Injuries

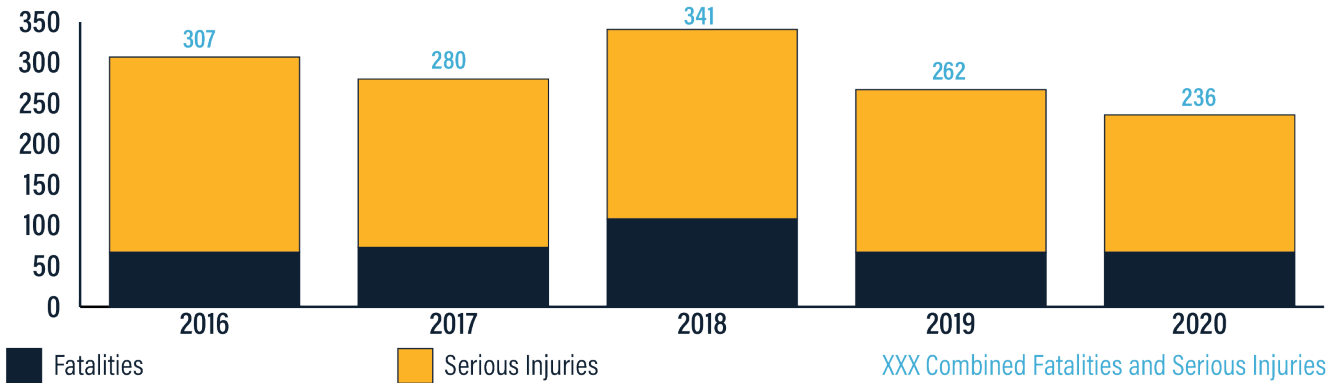
- 77% occurred on a weekday (Monday through Friday)
- 66% occurred on a West Virginia state route or County/HARP route
- 60% were male
- 52% involved speeding and aggressive driving
- 50% were ages 60 to 79
- 49% occurred between 10AM and 4PM
- 41% involved a roadway departure crash
- 28% were intersection related
- 23% were unrestrained vehicle occupants
- 16% occurred on wet roadways
- 12% occurred in dark/unlit conditions



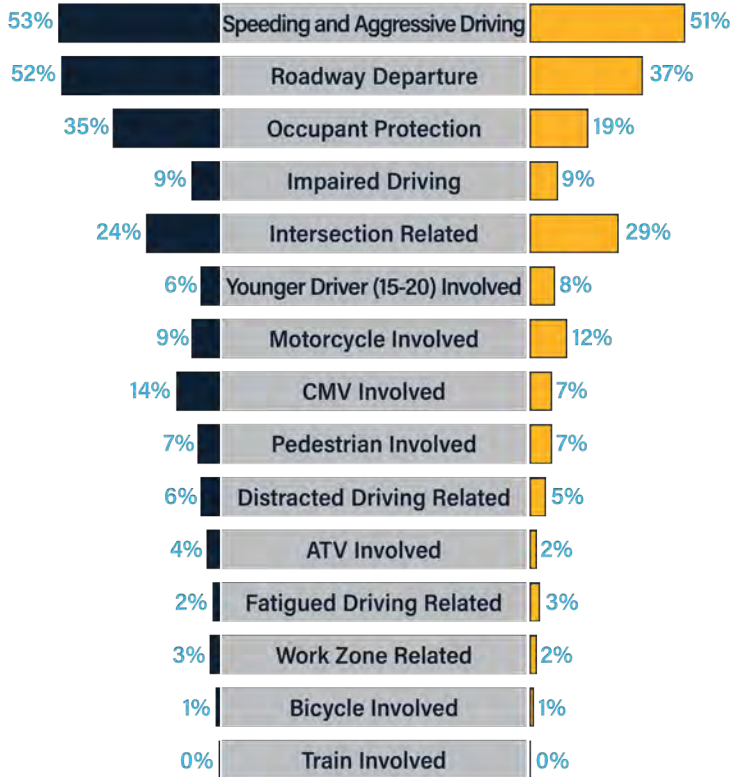
Older Driver (65+) Involved

Older Driver (65+) Involved	2017-2021 SHSP '06-'15 Crashes	2022-2026 SHSP '16-'20 Crashes	Trend
% of total Fatalities	19%	27%	▲
% of total Serious Injuries	14%	21%	▲

OLDER DRIVER (65+) INVOLVED: FATALITIES & SERIOUS INJURIES (2016-2020)



CAUSAL FACTORS



REDUCE
Older Driver (65+) Involved
 Fatalities & Serious Injuries by
4%
 annually over the next 5 years,
 from **286 to 224***

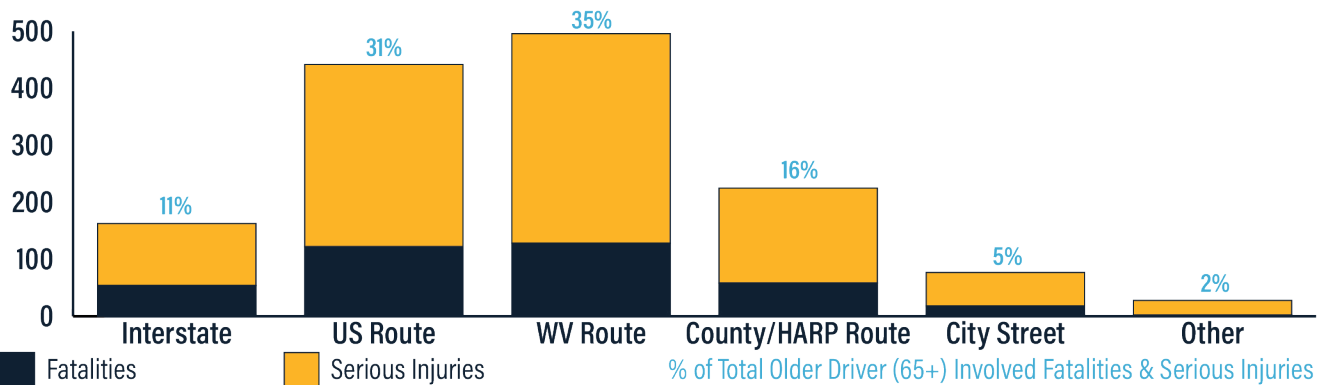
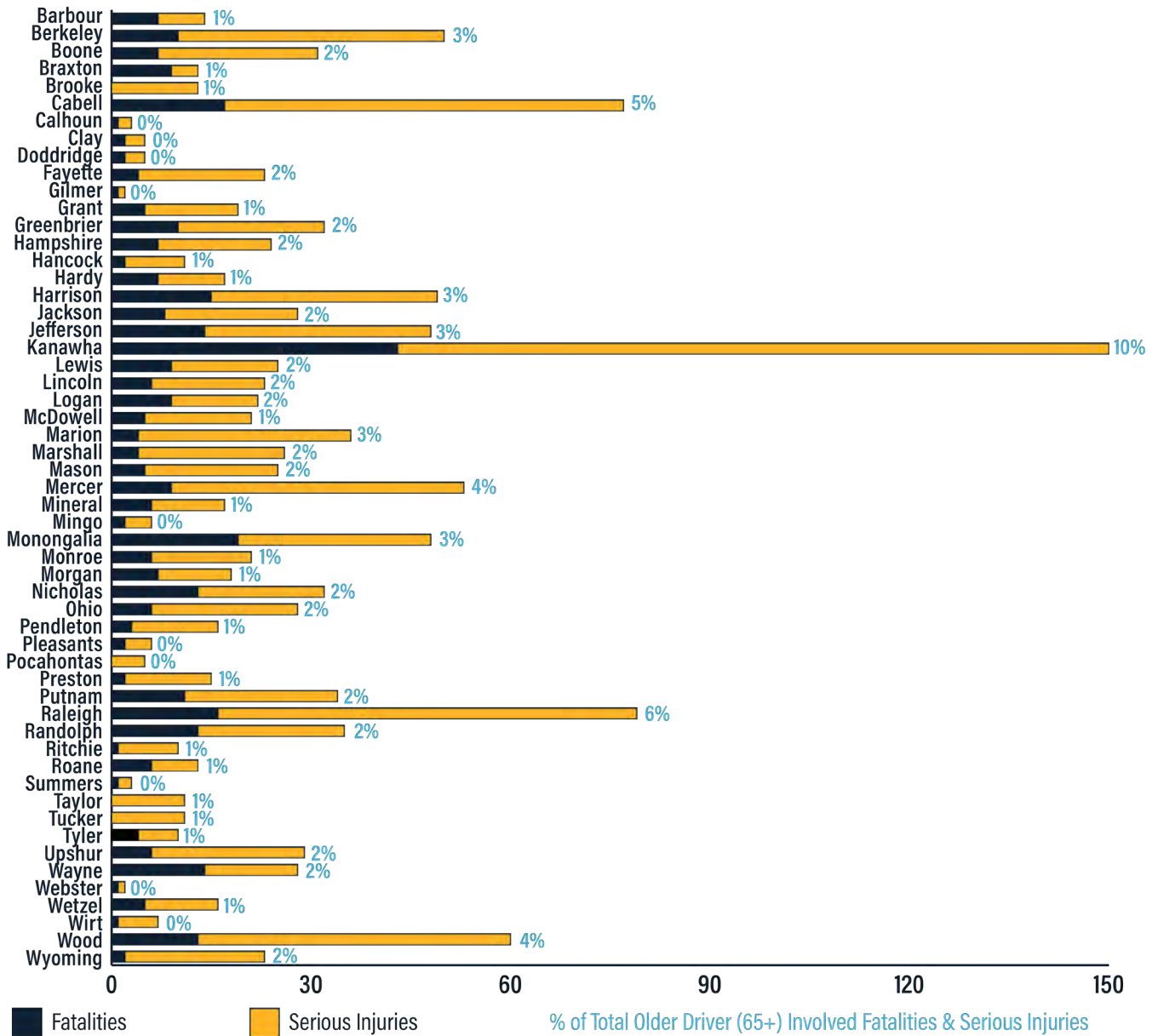
XX% of Total Older Driver (65+) Involved Fatalities/Serious Injuries

FATALITIES

SERIOUS INJURIES

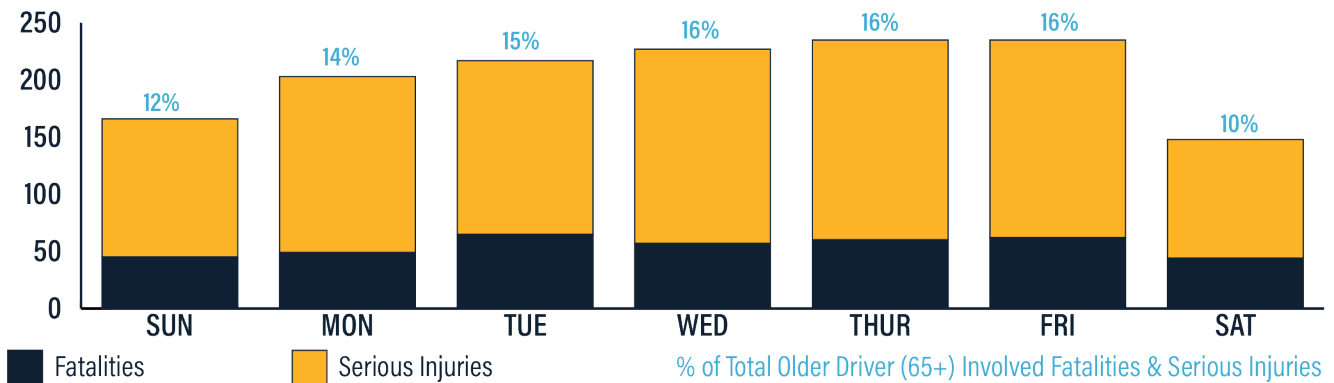
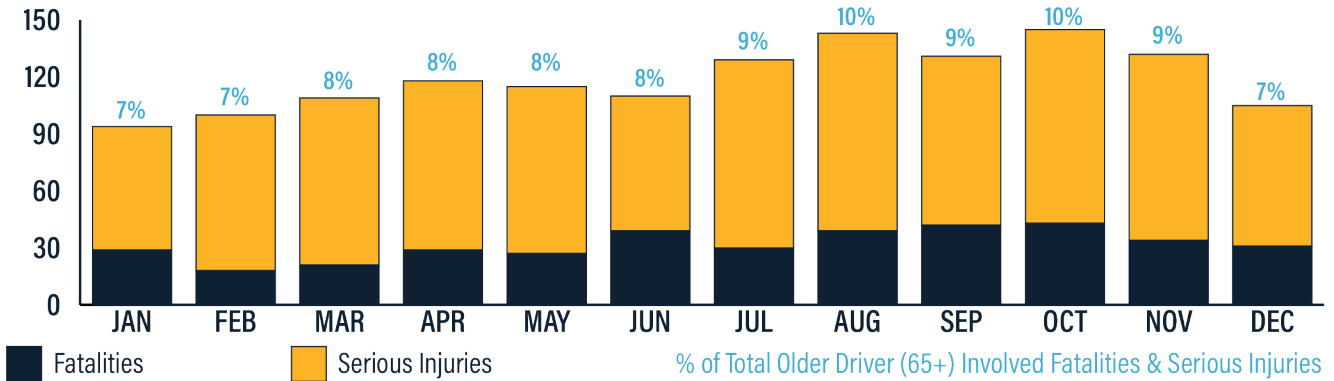
**based on 5-year rolling average*

WHERE?



Older Driver (65+) Involved

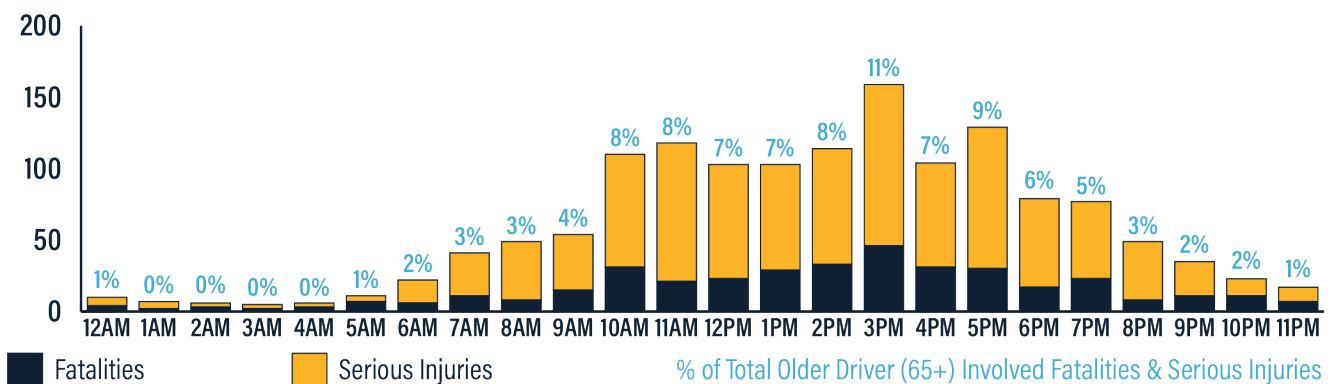
WHEN?



	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
Sunday	3	1	3	1		2	1	6	5	5	10	10	16	14	10	14	6	22	12	15	1	2	2	5	166
Monday	3	3	2			1	2	7	5	13	21	20	10	13	20	16	15	19	8	8	7	4	6		203
Tuesday	1				2		4	6	10	7	13	12	19	17	18	33	23	12	15	3	5	8	5	4	217
Wednesday		1			1	2	5	5	7	9	13	16	20	16	26	31	15	14	12	12	12	7	2	1	227
Thursday			1	2		2	1	5	14	9	20	21	17	22	19	27	14	15	14	15	11	3	2	1	235
Friday	3	1			2	2	3	9	6	8	26	25	15	16	10	20	16	27	13	14	7	5	1	6	235
Saturday		1		2	1	2	6	3	2	3	7	14	6	5	11	18	15	20	5	10	6	6	5		148
Total	10	7	6	5	6	11	22	41	49	54	110	118	103	103	114	159	104	129	79	77	49	35	23	17	1,431

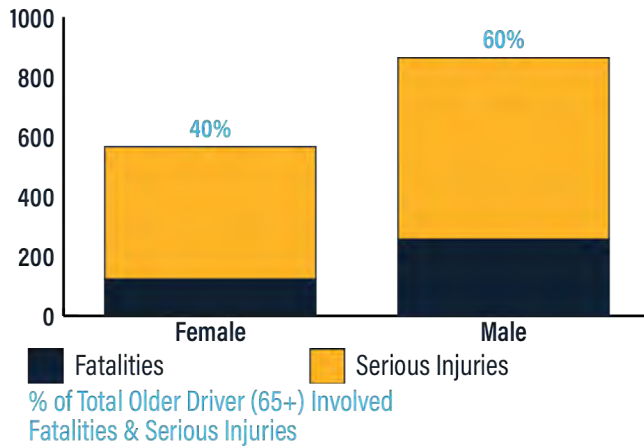
XX Older Driver (65+) Involved Fatalities and Serious Injuries during Day of Week and Hour of Day

Lower Frequency Higher Frequency

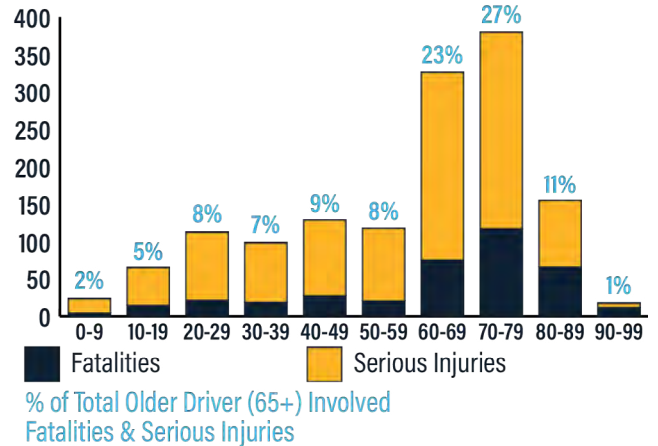


Older Driver (65+) Involved

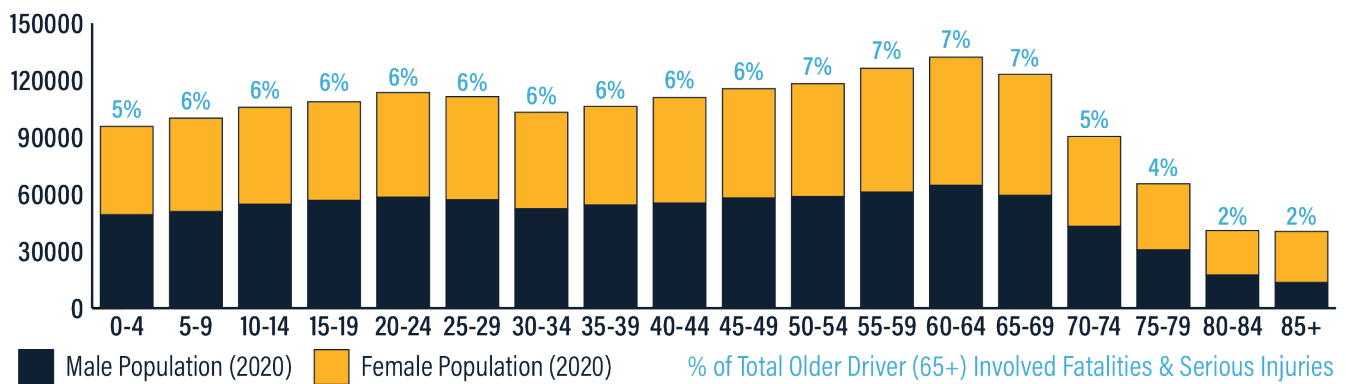
GENDER



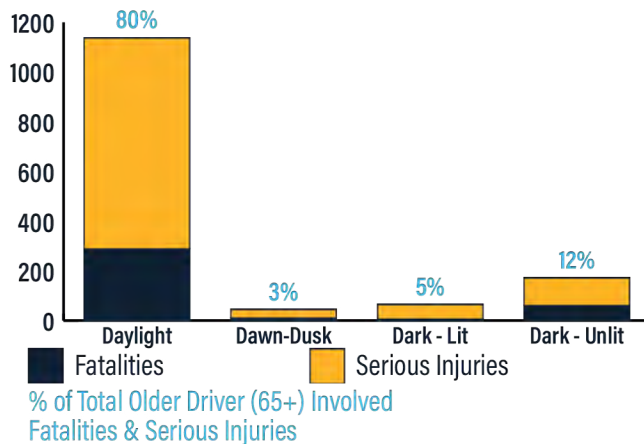
AGE



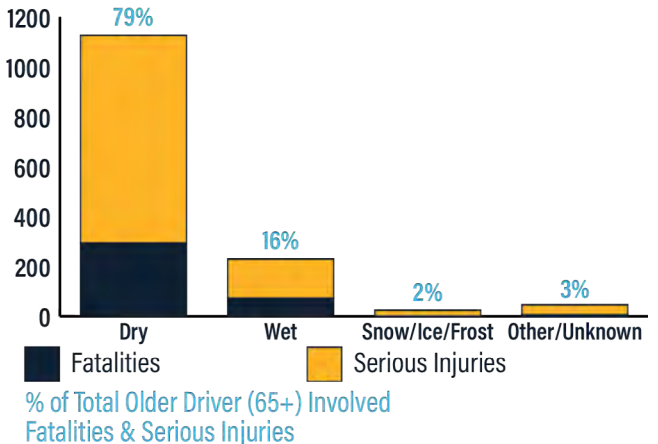
WV POPULATION (2020)



LIGHTING CONDITION

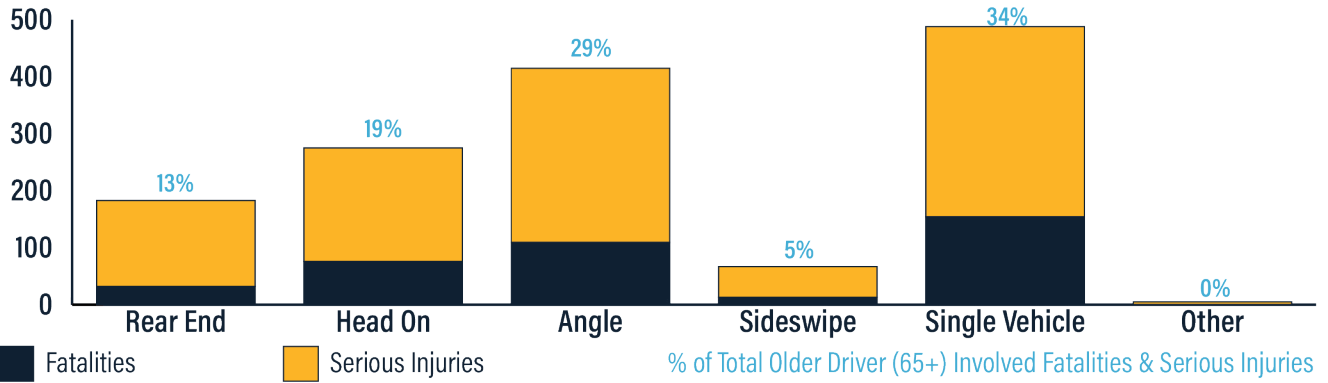


SURFACE CONDITION

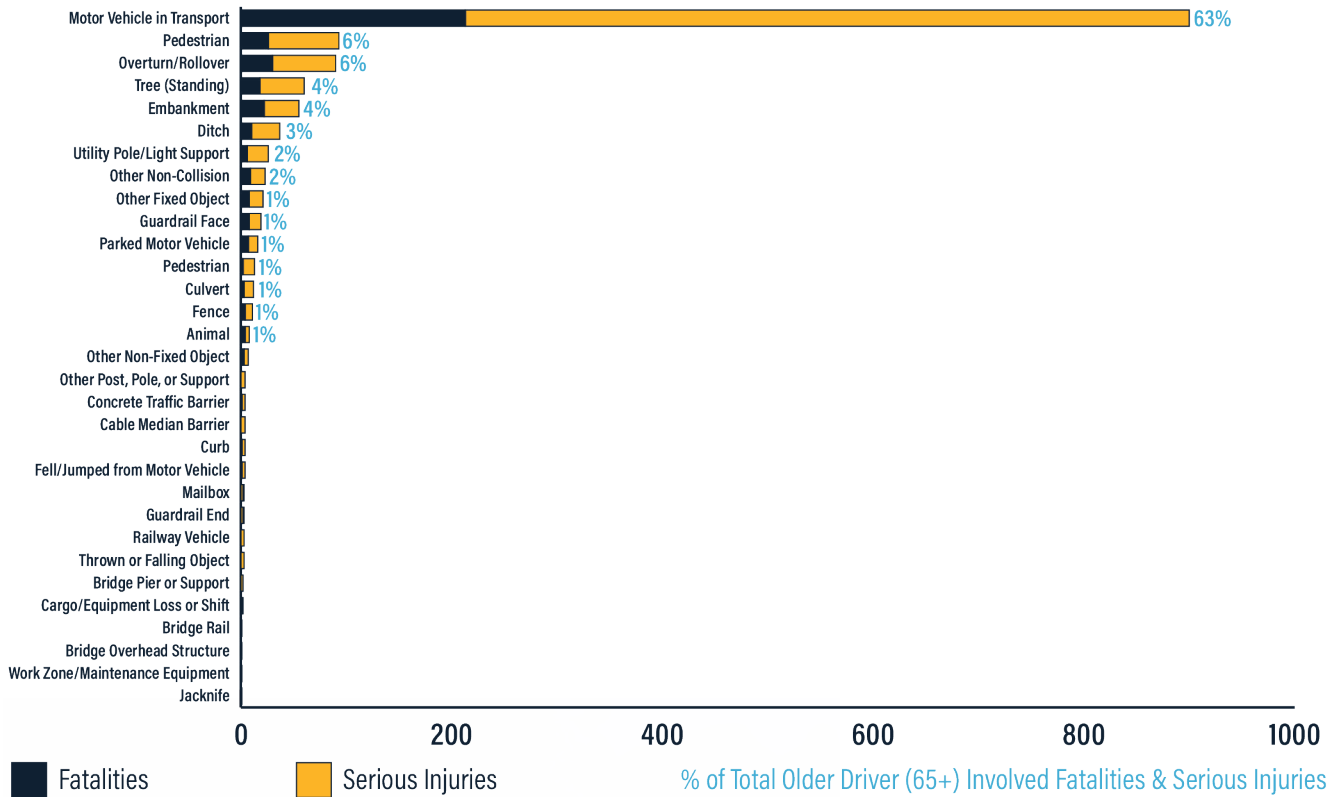


Older Driver (65+) Involved

MANNER OF IMPACT



FIRST HARMFUL EVENT





Emphasis Area Strategies: Older Driver (65+) Involved

1. Implement education programs that promote proficiency in the driving abilities of older drivers.

2. Evaluate the need for changes to driver's license testing requirements focusing on the proficiency of older drivers.

3. Implement proven engineering countermeasures to reduce the likelihood of older driver involved crashes.

4. Incorporate changes to engineering policies to adopt appropriate design standards that reduce the likelihood of older driver involved crashes.

5. Engage additional stakeholders to improve educational outreach to older drivers and their families.



Emphasis Area 5

Alcohol and Drug Impaired Driving



Drug or alcohol impairment has major effects on the cognitive abilities of a motor vehicle operator and is a contributing factor in many crashes resulting in fatalities and serious injuries. In West Virginia, a driver is considered legally impaired when their blood alcohol concentration (BAC) is 0.08 percent or greater or there is the presence of an illicit or recreational drug within the driver's blood. From 2016 through 2020, impaired driving was a factor in 24% of all fatalities and 21% of all serious injuries. The percentage of fatalities involving impaired driving has decreased since West Virginia's prior SHSP; however, the percentage of serious injuries involving impaired driving has increased. Seventy-one percent (71%) of alcohol and drug impaired driving-related crashes involve alcohol only, 15% involve drugs only and 6% involve both alcohol and drugs.



ALCOHOL AND DRUG IMPAIRED DRIVING EMPHASIS AREA DEFINITION

Persons fatally or seriously injured in crashes that involve a driver impaired by alcohol or drugs. Includes pedestrians or bicyclists that were impaired by alcohol or drugs.

Data Trends/Key Facts: 2016 to 2020 Alcohol and Drug Impaired Driving Fatalities & Serious Injuries

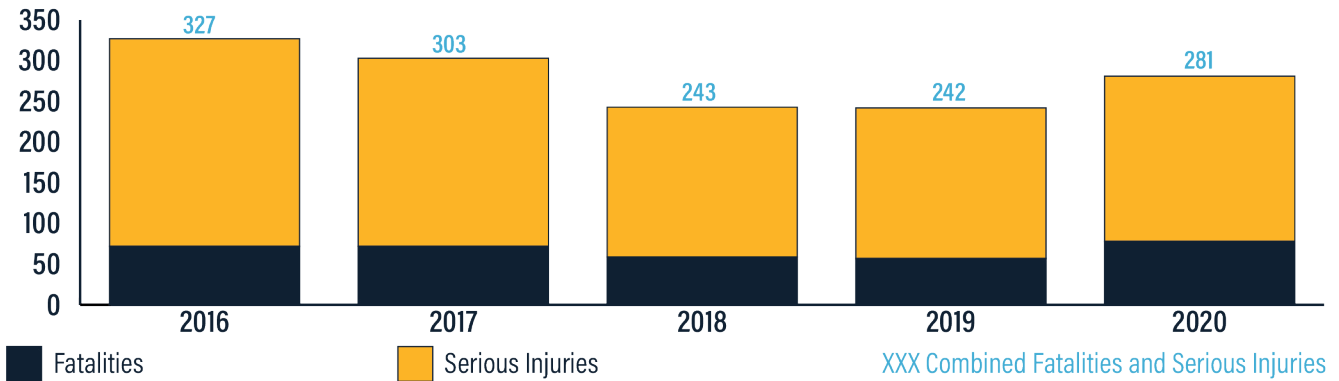
- 66% were male
- 65% were roadway departure crashes
- 64% involved speeding and aggressive driving
- 62% occurred on a West Virginia state route or County/HARP route
- 54% occurred on a Friday, Saturday, or Sunday
- 49% were ages 20 to 39
- 45% occurred between 7PM and 2AM
- 43% occurred in dark/unlit conditions
- 37% were unrestrained vehicle occupants
- 14% occurred on wet roadways



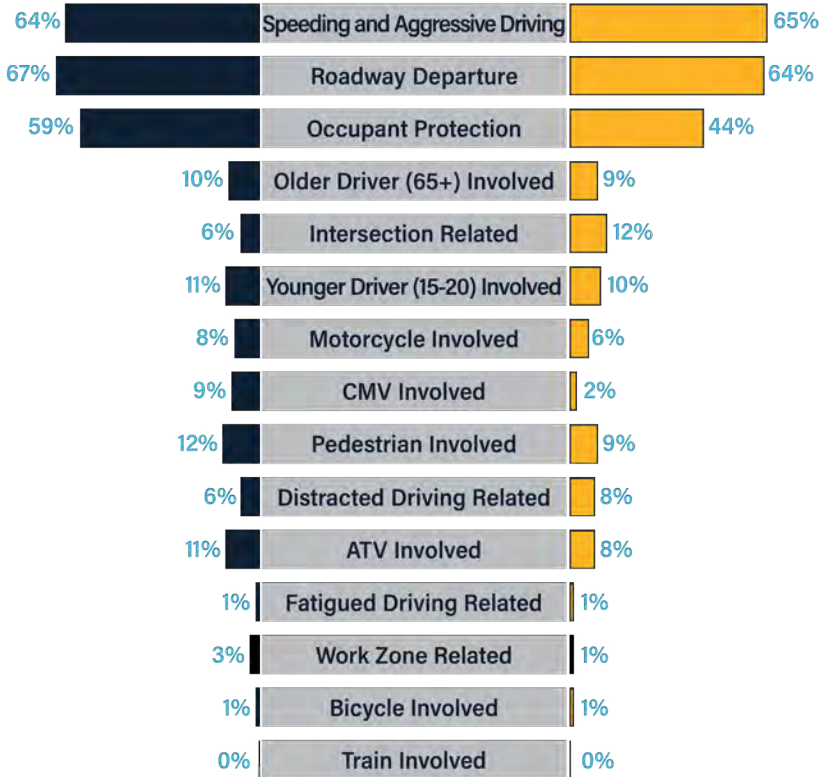
Alcohol and Drug Impaired Driving

Alcohol and Drug Impaired Driving	2017-2021 SHSP '06-'15 Crashes	2022-2026 SHSP '16-'20 Crashes	Trend
% of total Fatalities	53%	24%	▼
% of total Serious Injuries	13%	21%	▲

ALCOHOL AND DRUG IMPAIRED DRIVING: FATALITIES & SERIOUS INJURIES (2016-2020)



CAUSAL FACTORS



REDUCE
Alcohol and Drug Impaired Driving
 Fatalities & Serious Injuries by
4%
 annually over the next 5 years,
 from
279 to 219*

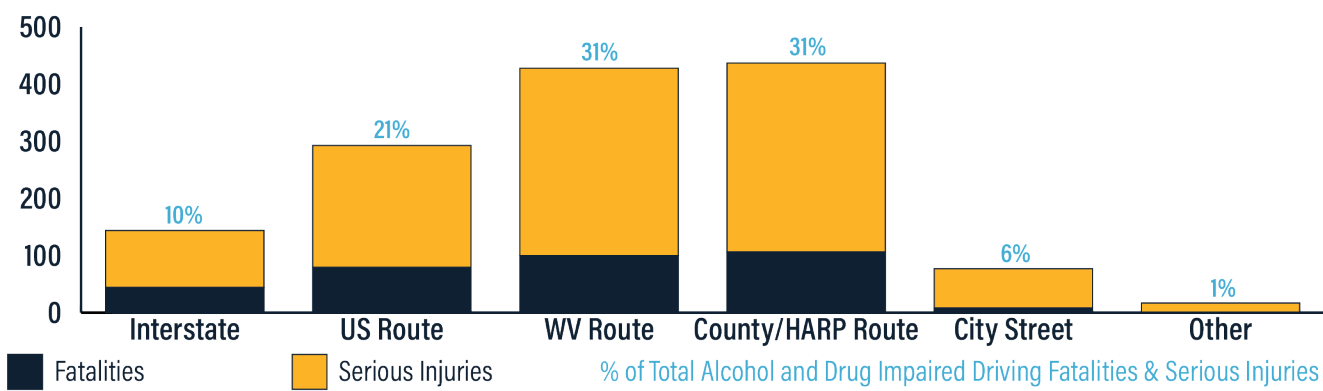
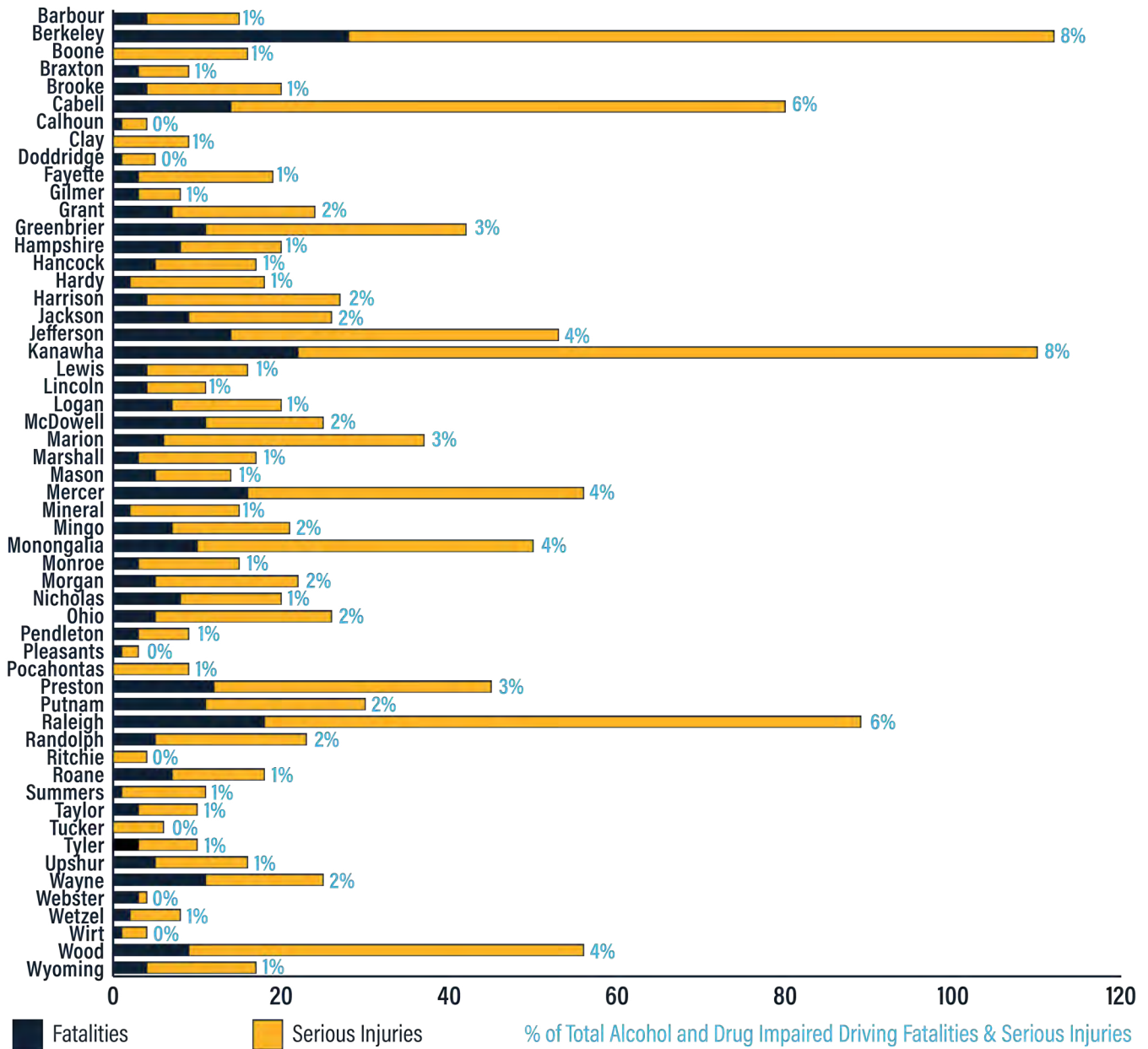
XX% of Total Alcohol and Drug Impaired Driving Fatalities/Serious Injuries

FATALITIES

SERIOUS INJURIES

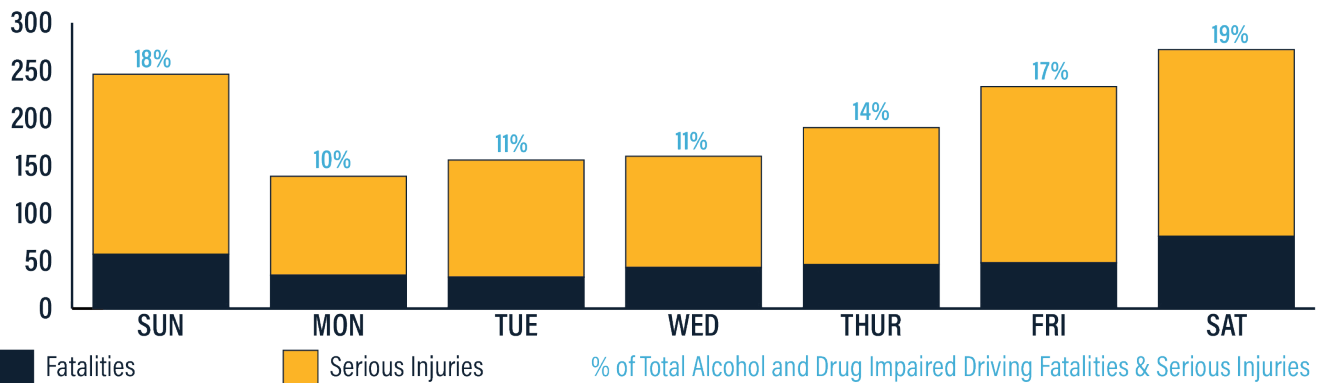
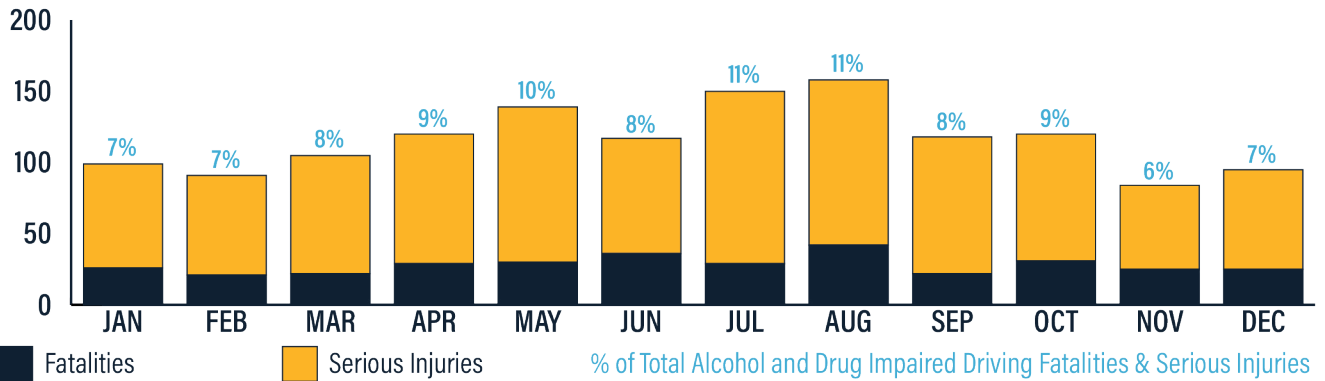
*based on 5-year rolling average

WHERE?



Alcohol and Drug Impaired Driving

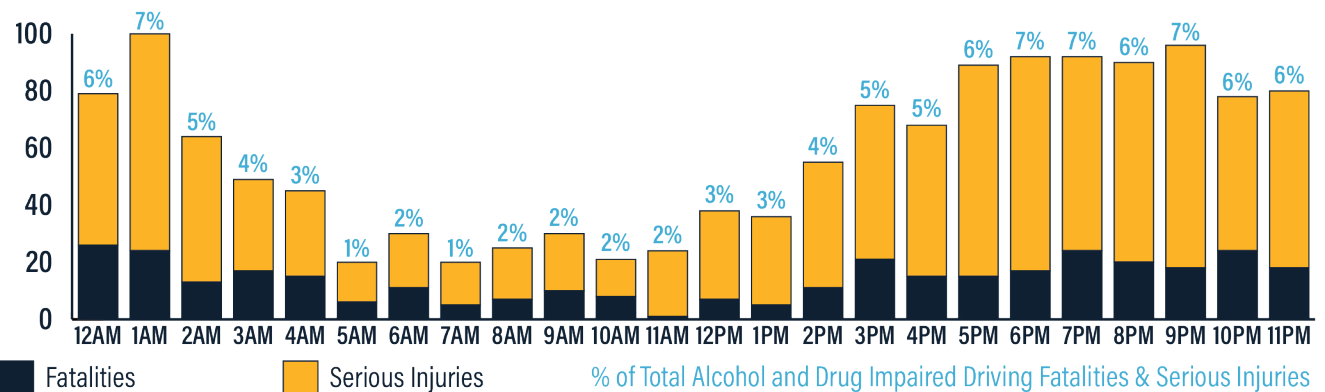
WHEN?



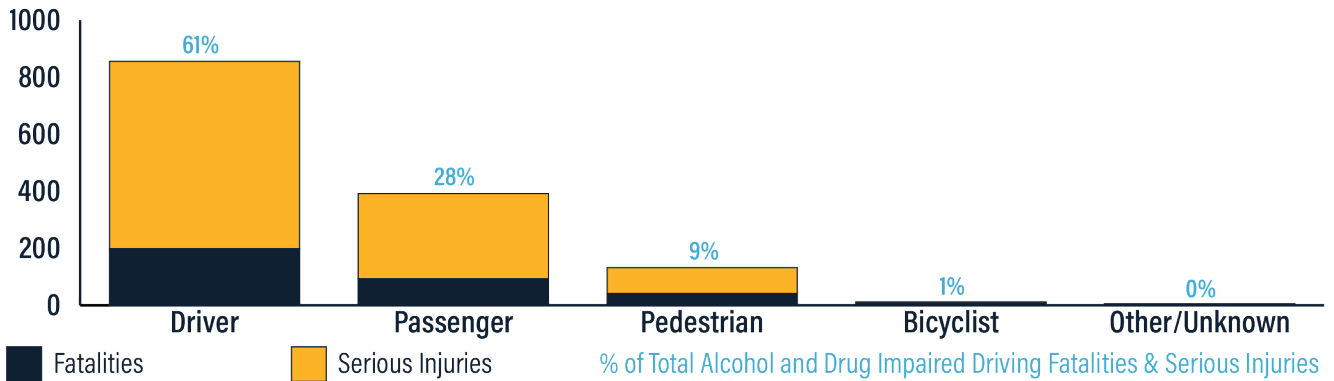
	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
Sunday	17	22	27	16	11	3	6	5	3	5	2	7	8	7	5	9	8	17	19	13	8	15	5	8	246
Monday	8	14	3	2	2	1	2	3	6	4	1	1	8	2	7	6	2	12	13	7	9	12	6	8	139
Tuesday	2	8	3	2	6	6	8	2	5	3	6	4	11	6	8	6	1	11	11	6	12	14	5	10	156
Wednesday	8	6	5	6	6	2	2	1	2		1	1	4	2	9	13	20	7	7	12	22	12	8	4	160
Thursday	9	9	10	3	3	1	7	2	6	9	6	1	2	5	12	9	5	9	11	21	10	23	8	9	190
Friday	13	13	4	9	5	1	3	4	2	9	5	6	1	11	5	17	16	14	16	17	10	13	19	20	233
Saturday	22	28	12	11	12	6	2	3	1			4	4	3	9	15	16	19	15	16	19	7	27	21	272
Total	79	100	64	49	45	20	30	20	25	30	21	24	38	36	55	75	68	89	92	92	90	96	78	80	1,396

XX Alcohol and Drug Impaired Fatalities and Serious Injuries during Day of Week and Hour of Day

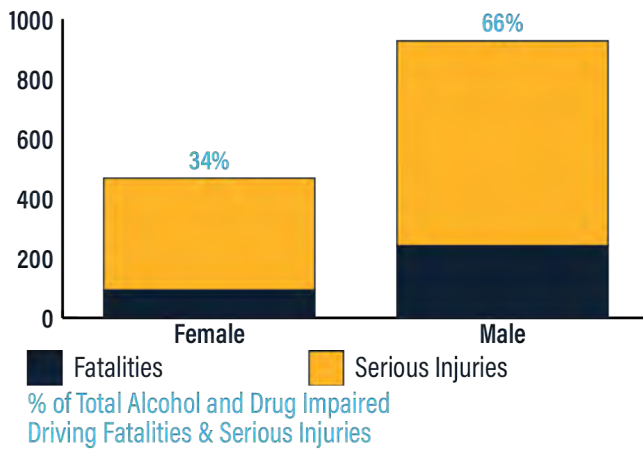
Lower Frequency Higher Frequency



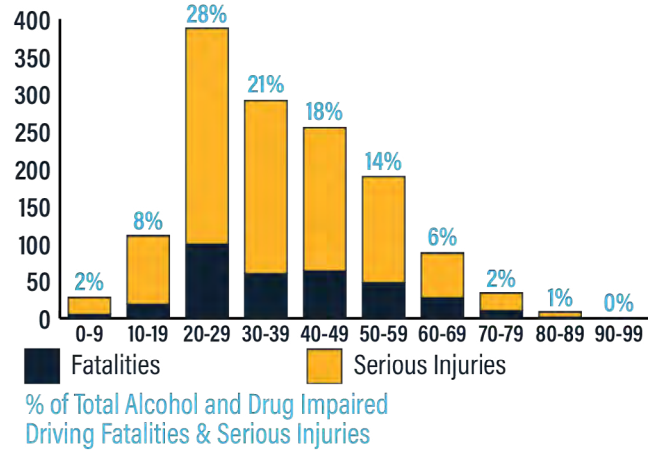
PERSON TYPE



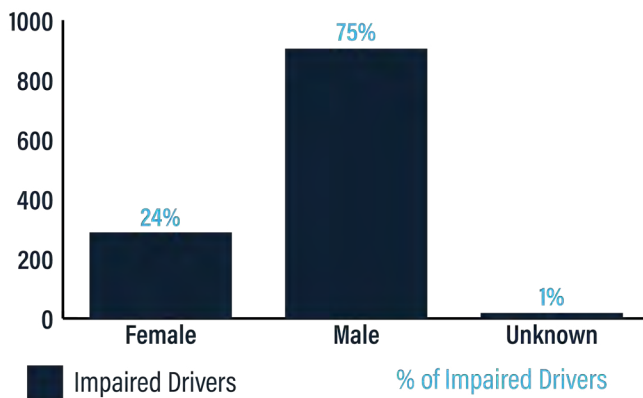
GENDER - VICTIMS OF IMPAIRED DRIVING CRASHES



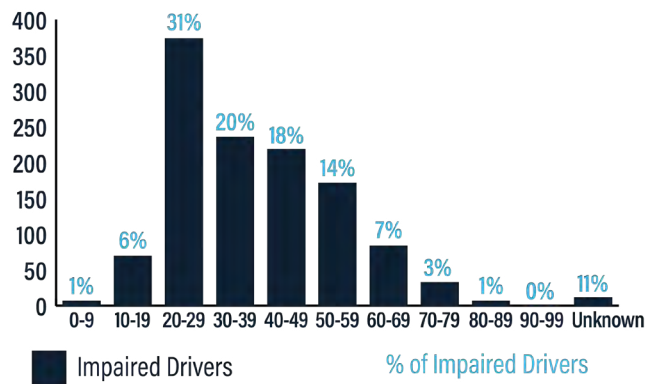
AGE - VICTIMS OF IMPAIRED DRIVING CRASHES



GENDER - IMPAIRED DRIVERS

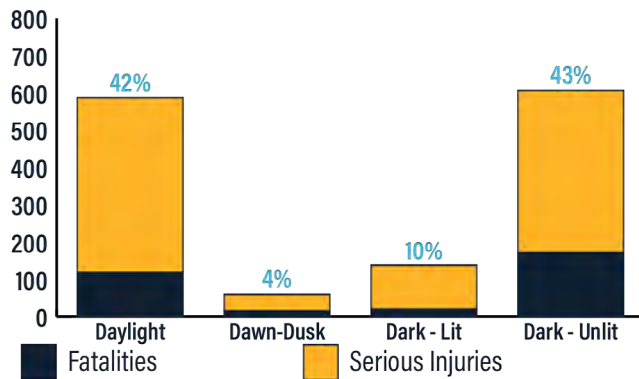


AGE - IMPAIRED DRIVERS



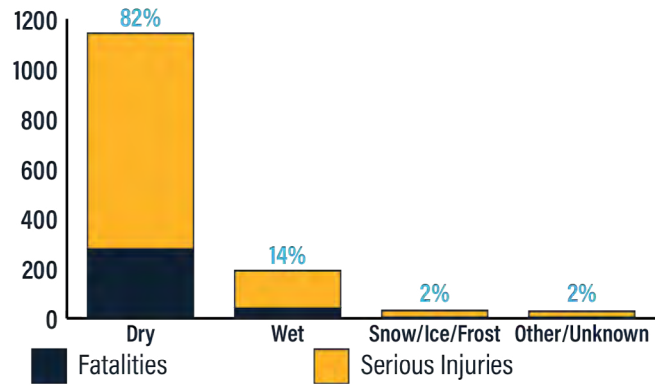
Alcohol and Drug Impaired Driving

LIGHTING CONDITION



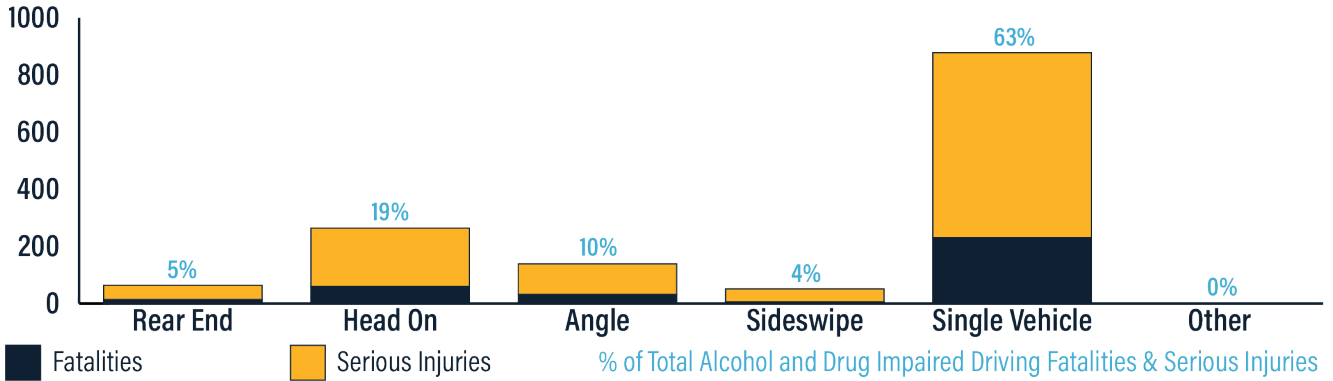
% of Total Alcohol and Drug Impaired Driving Fatalities & Serious Injuries

SURFACE CONDITION



% of Total Alcohol and Drug Impaired Driving Fatalities & Serious Injuries

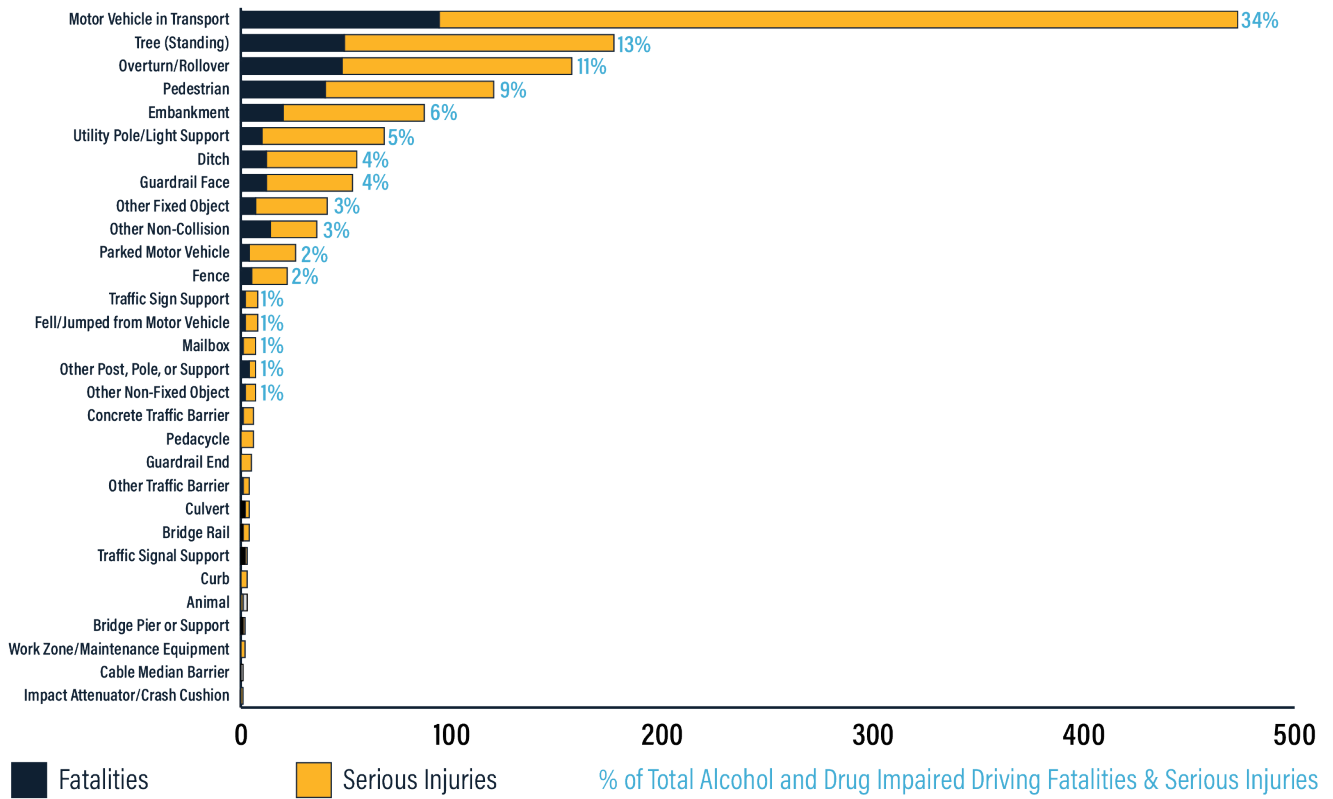
MANNER OF IMPACT



% of Total Alcohol and Drug Impaired Driving Fatalities & Serious Injuries



FIRST HARMFUL EVENT





Emphasis Area Strategies: Alcohol and Drug Impaired Driving

1. Conduct targeted high-visibility impaired driving enforcement activities.

2. Develop and distribute consistent public information messages to increase public awareness of the laws and dangers of impaired driving.

3. Evaluate the feasibility of re-instituting the Administrative Hearings for DUI cases.

4. Improve data collection and monitoring of impaired driving trends.



Emphasis Area 6

Intersections – Regionally Focused



Intersection fatalities and serious injuries are an increasing trend in West Virginia. From 2006 through 2015, 10% of fatalities and 18% of serious injuries occurred at intersections. From 2016 through 2020, intersection-related fatalities account for 14% of all fatalities statewide and intersection-related serious injuries account for 19% of all serious injuries in West Virginia. Intersections involve multiple turning and crossing maneuvers that create numerous conflict points and crash potentials between vehicles, pedestrians, and bicyclists – making intersections one of the most complex traffic situations that road users encounter. Many factors can contribute to an intersection crash, including impairment, distraction, speeding, aggressive driving, and overall driver ability.

The Intersections Emphasis Area is a regionally-focused Emphasis Area. Intersection crashes are more common in areas with higher traffic concentrations, typically suburban and urban areas. Strategies within this emphasis area will be applied to those areas within West Virginia with a data-driven need to reduce intersection-related fatalities and serious injuries. Locations will be determined by the SMTF and will be county or city based.

INTERSECTIONS EMPHASIS AREA DEFINITION

Persons fatally or seriously injured in crashes that occurred at an intersection or related to an intersection or crossover.

Data Trends/Key Facts: 2016 to 2020 Intersection Fatalities & Serious Injuries

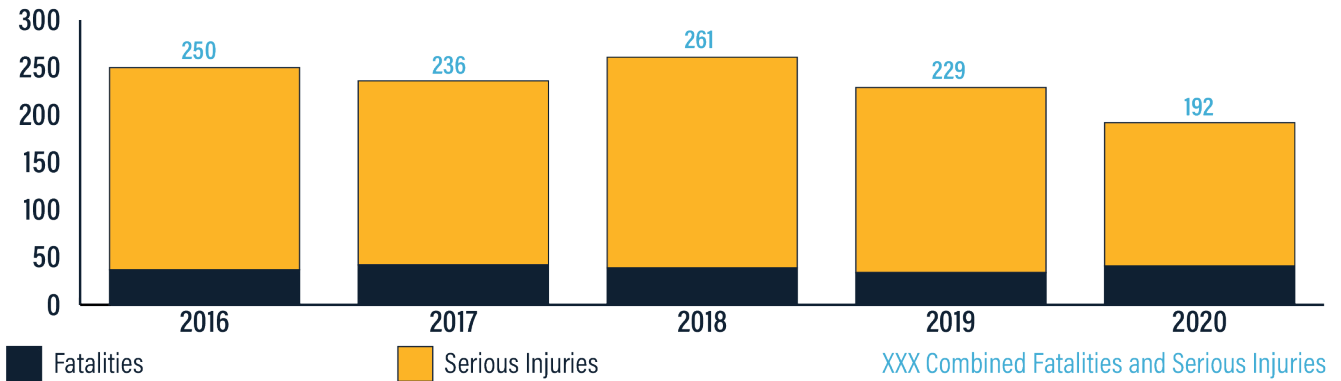
- 77% occurred on a weekday (Monday through Friday)
- 56% were male
- 53% were involved in angle crashes
- 49% occurred at T-intersections
- 45% involved speeding and aggressive driving
- 42% occurred between 2PM and 7PM
- 34% involved older drivers (65 years old or older)
- 22% were unrestrained vehicle occupants
- 15% occurred on wet roadways
- 14% involved motorcycles
- 12% occurred in dark/unlit conditions
- 6% involved pedestrians



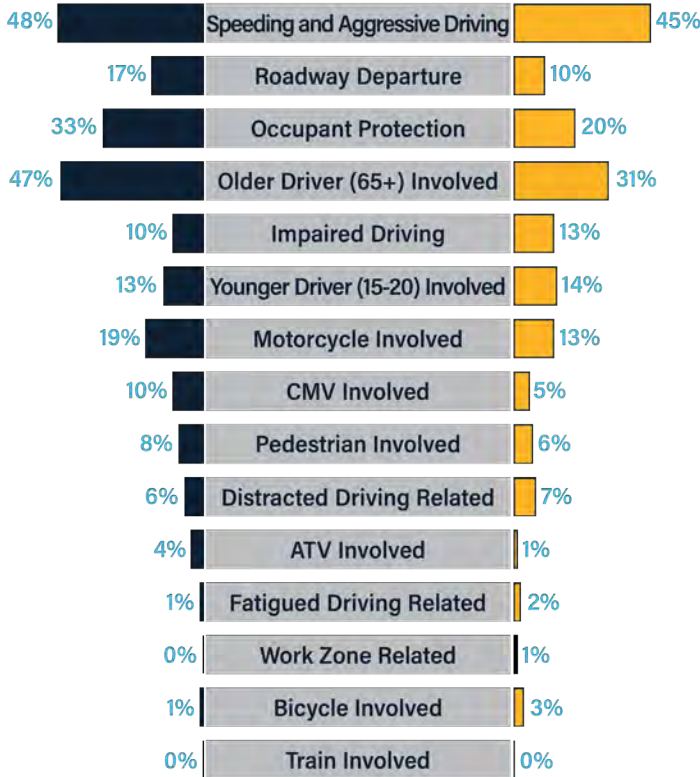
Intersections - Regionally Focused

Intersections	2017-2021 SHSP '06-'15 Crashes	2022-2026 SHSP '16-'20 Crashes	Trend
% of total Fatalities	10%	14%	▲
% of total Serious Injuries	18%	19%	▲

INTERSECTIONS: FATALITIES & SERIOUS INJURIES (2016-2020)



CAUSAL FACTORS



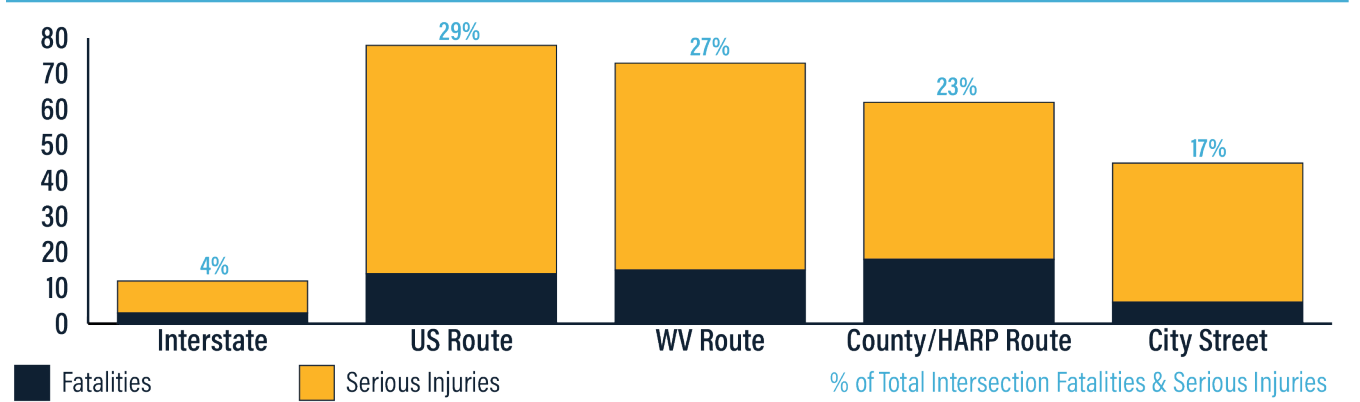
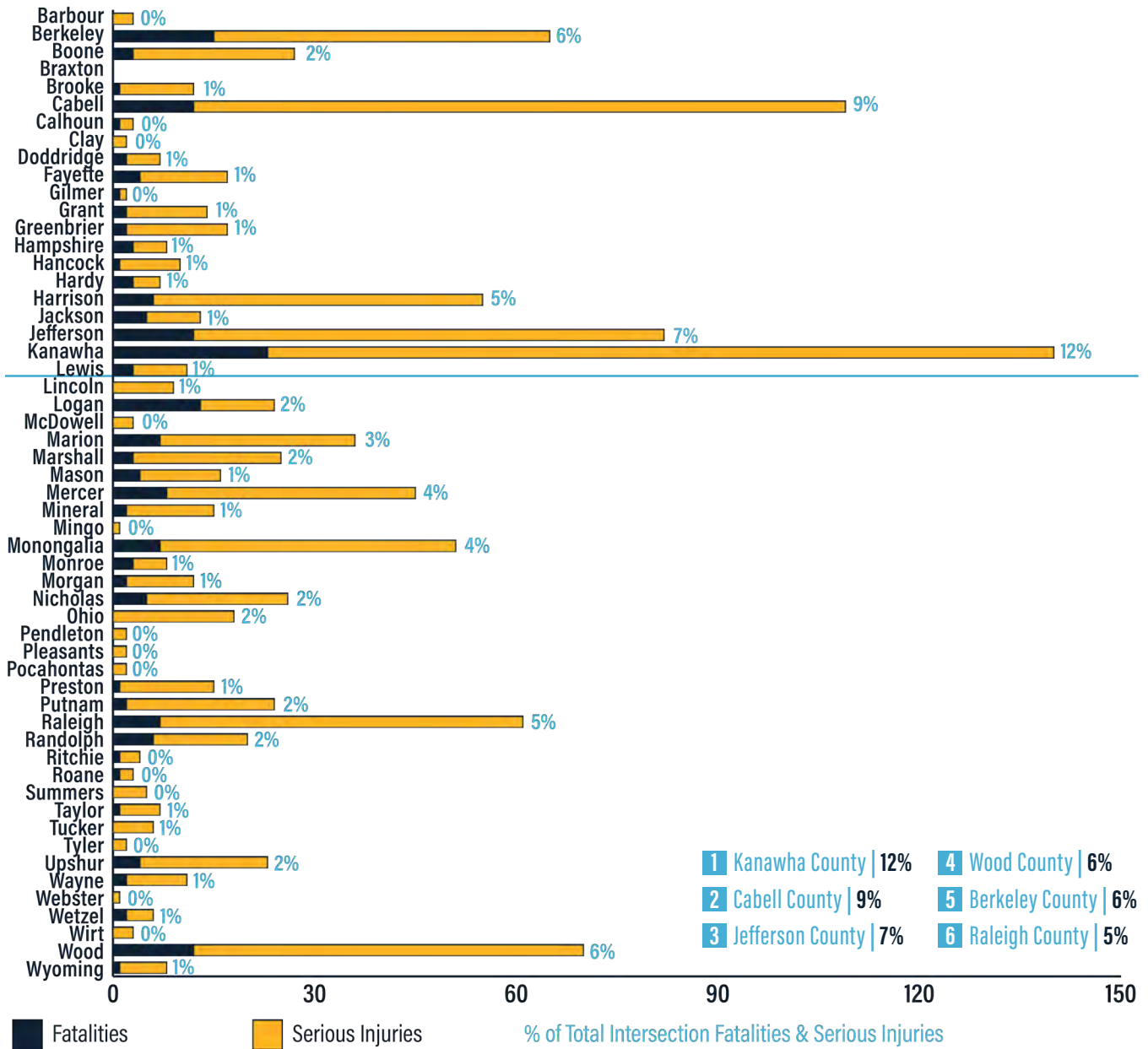
XX% of Total Intersection Fatalities/Serious Injuries

FATALITIES

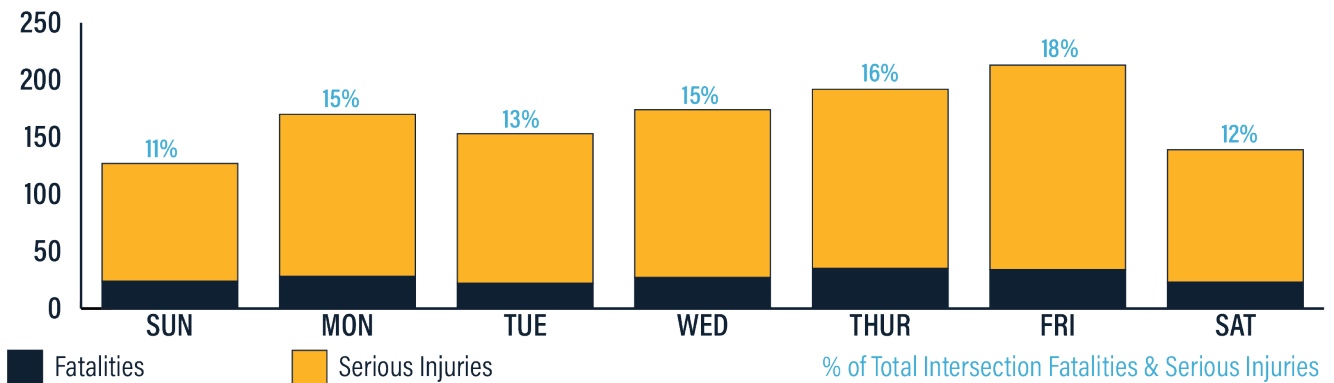
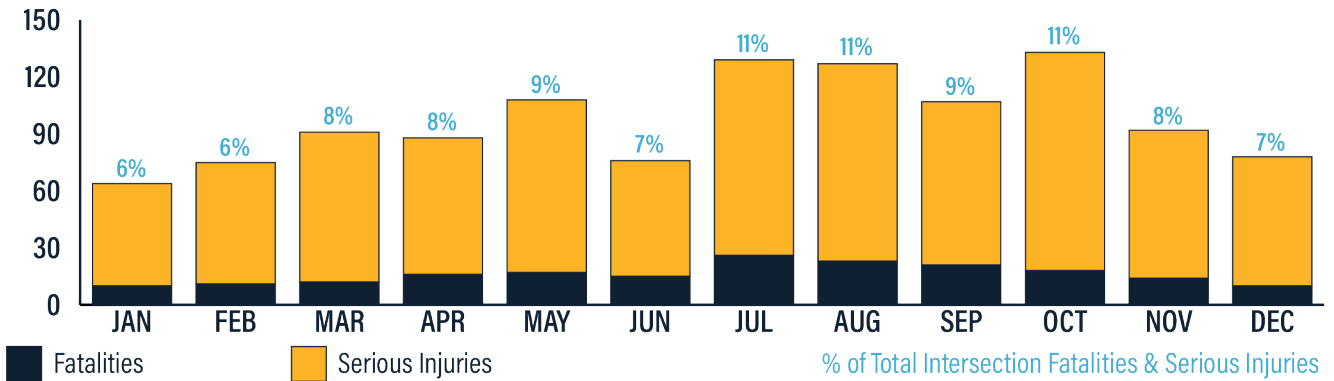
SERIOUS INJURIES

*based on 5-year rolling average

WHERE?



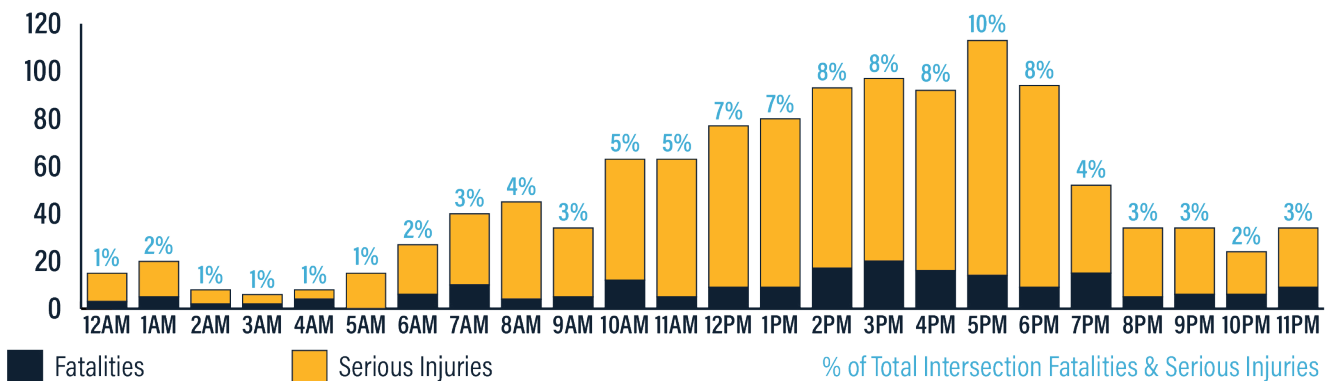
WHEN?



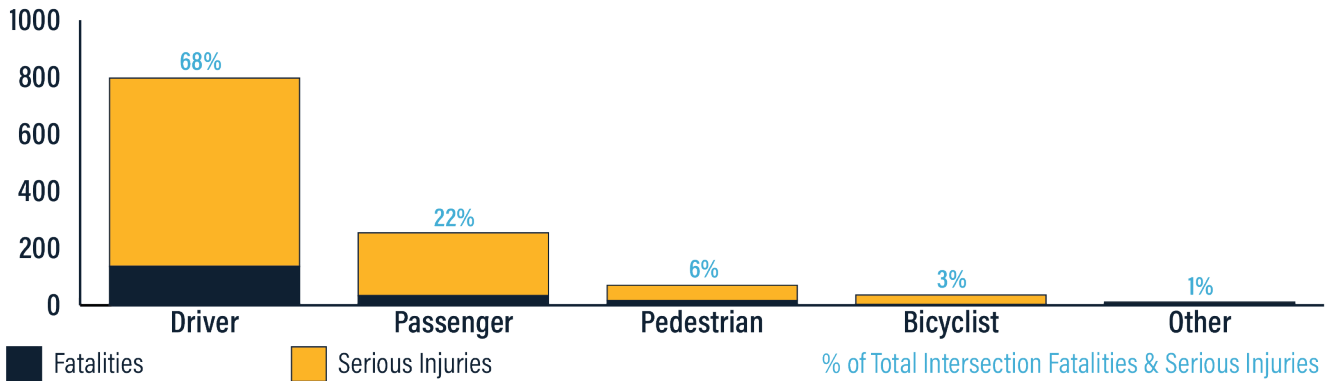
	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
Sunday	5	7	3		1	1	3	1	4	6	7	5	2	10	12	11	12	8	8	8	4	5	3	1	127
Monday	1	4				2	5	5	5	4	12	9	8	13	21	15	20	18	13	5	5	2	3		170
Tuesday	2	1	1				5	10	3	7	7	10	11	9	15	11	13	15	17	4	3	4	2	3	153
Wednesday		4		2			9	4	4	10	5	13	9	15	15	9	12	10	17	11	9	9	5	1	174
Thursday	1	3			1	3	2	8	15	5	10	15	7	16	13	22	10	18	18	7	6	6	4	2	192
Friday	3		1	2	4		6	10	3	4	11	13	21	9	11	15	20	20	16	11	5	8	6	14	213
Saturday	3	1	3	2	2		2	2	5	3	3	2	13	8	12	11	7	17	11	8	2	4	5	13	139
Total	15	20	8	6	8	15	27	40	45	34	63	63	77	80	93	97	92	113	94	52	34	34	24	34	1,168

XX Intersection Fatalities and Serious Injuries during Day of Week and Hour of Day

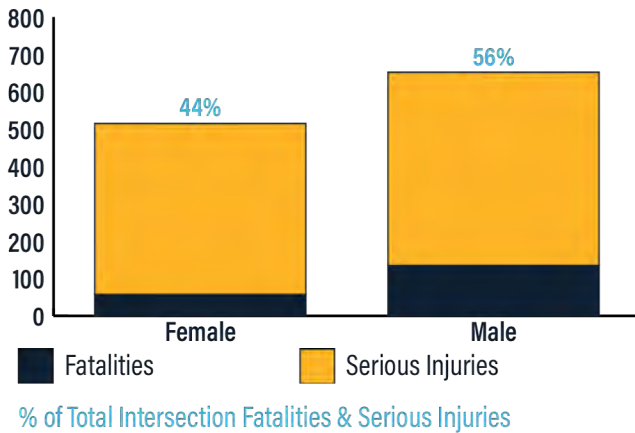
Lower Frequency Higher Frequency



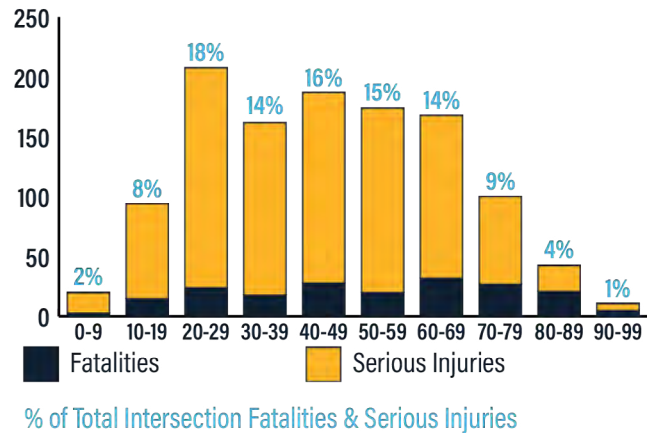
PERSON TYPE



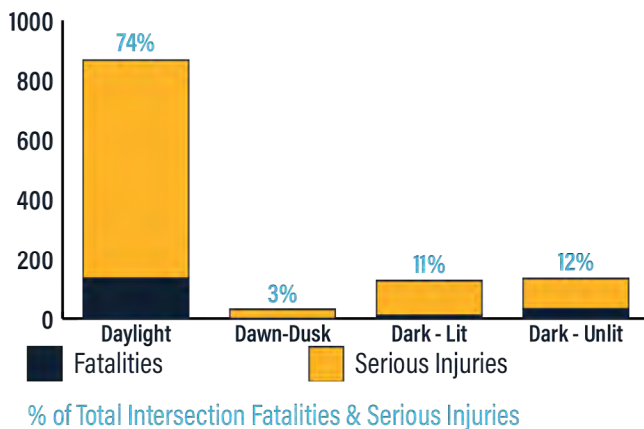
GENDER



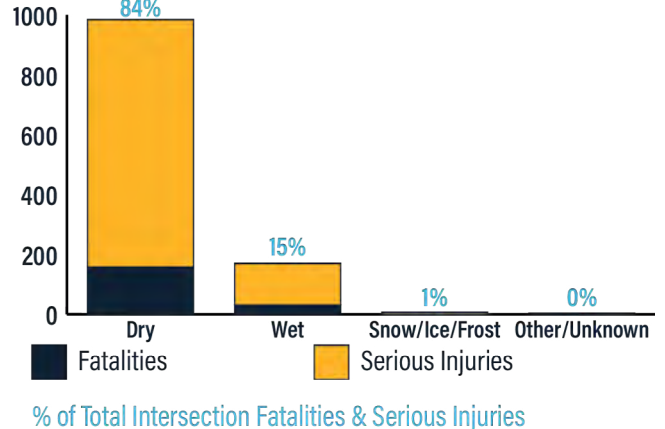
AGE



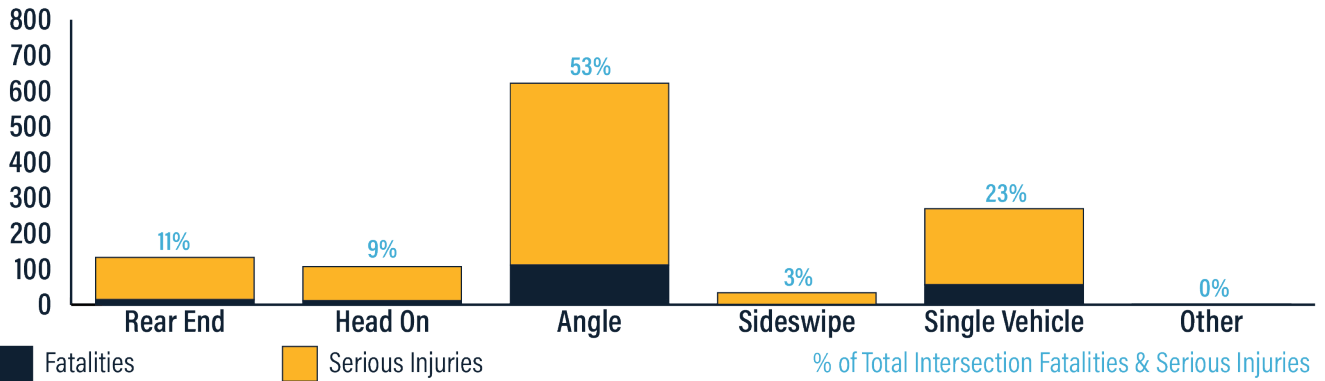
LIGHTING CONDITION



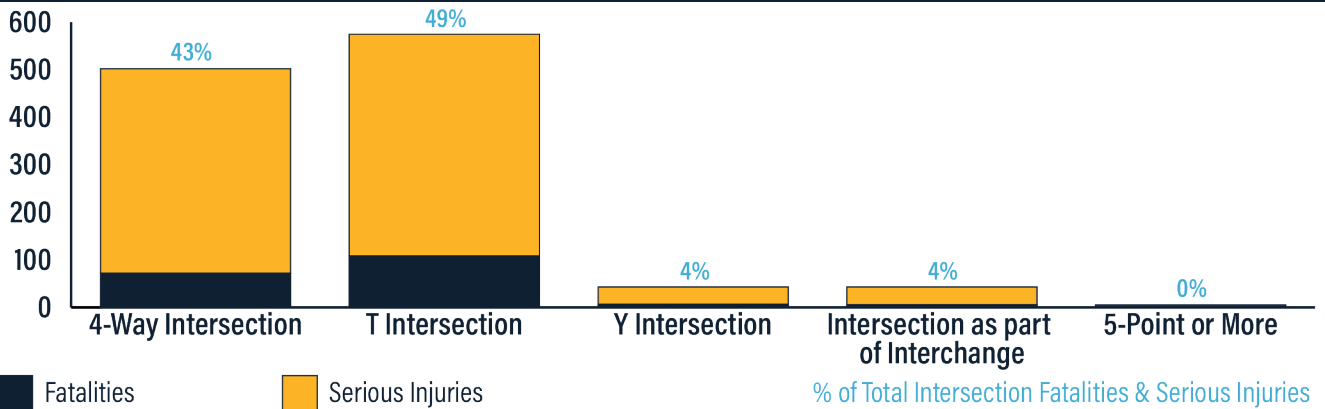
SURFACE CONDITION



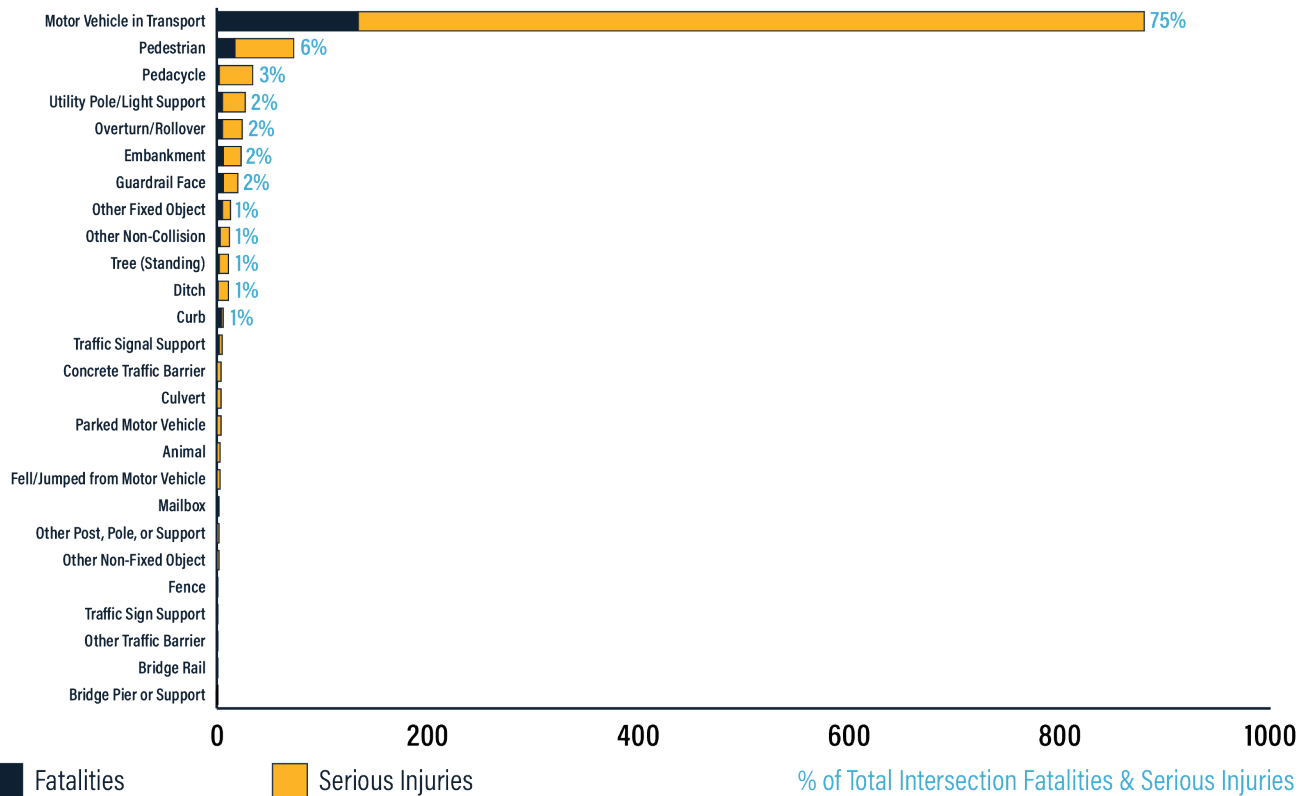
MANNER OF IMPACT



INTERSECTION TYPE



FIRST HARMFUL EVENT





Emphasis Area Strategies: Intersections - Regionally Focused

1. Implement high-visibility enforcement initiatives at locations identified as having intersection crash rates higher than the statewide average.

2. Explore the viability of implementing an automated red-light running enforcement program.

3. Develop and distribute consistent public information messaging to educate the public on traffic laws, new traffic control devices, and intersection safety.

4. Reduce the frequency and severity of intersection crashes through operational, geometric, and traffic control device improvements.

5. Implement policies and guidelines targeting safety improvements at intersections.



Emphasis Area 7

Pedestrians – Regionally Focused



All West Virginians are pedestrians for a portion of their daily travel. For some West Virginians, walking is a primary mode of transportation, and for others, walking is a form of recreation. Pedestrian fatalities accounted for 9% of all fatalities in West Virginia from 2016 through 2020. Compared to 2006 through 2015 data used to develop the 2017–2021 SHSP, pedestrian fatalities have increased by 3%. There has been a corresponding 3% increase in pedestrian-related serious injuries as well, with 6% of all serious injuries in West Virginia being pedestrian-related. While these percentages may seem low compared to other emphasis areas, pedestrian fatalities and serious injuries continue to trend in the wrong direction, and it is appropriate to begin focusing on pedestrian-related fatalities and serious injuries to achieve the overall objective of zero fatalities by 2050.

The Pedestrians Emphasis Area is a regionally-focused Emphasis Area. Pedestrian-related crashes are more common in areas with higher pedestrian traffic concentrations, typically suburban and urban areas. Strategies within this emphasis area will be applied to those areas within West Virginia with a data-driven need to reduce pedestrian-related fatalities and serious injuries. Locations will be determined by the SMTF and will be county or city based.

PEDESTRIANS EMPHASIS AREA DEFINITION

Pedestrians fatally or seriously injured.

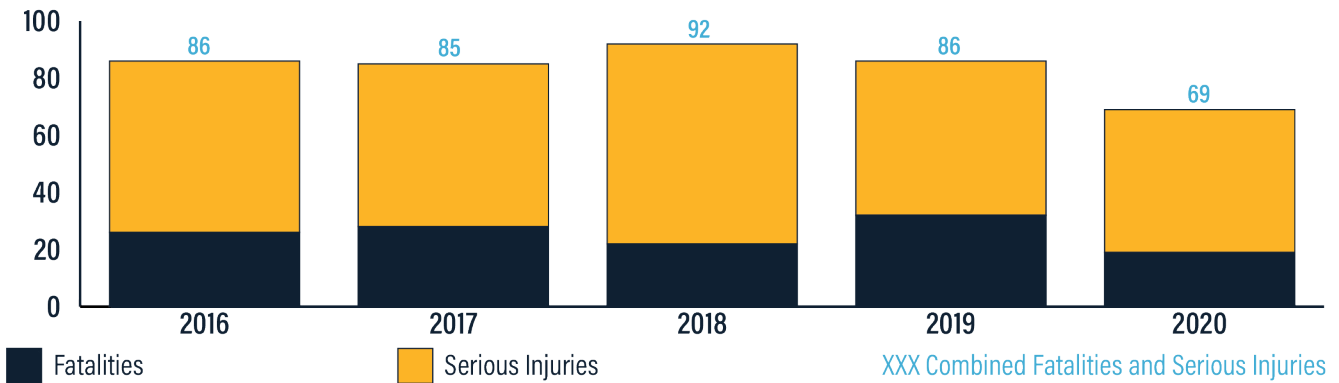
Data Trends/Key Facts: 2016 to 2020 Pedestrian Fatalities & Serious Injuries

- 90% were single vehicle crashes
- 65% were male
- 53% occurred on US or West Virginia state routes
- 47% occurred on a Tuesday, Wednesday, or Thursday
- 41% were ages 20 to 39
- 40% occurred between 5PM and 10PM
- 35% occurred in dark/unlit conditions
- 31% involved alcohol or drug impairment (driver or pedestrian)
- 19% occurred in Kanawha County
- 17% occurred at an intersection

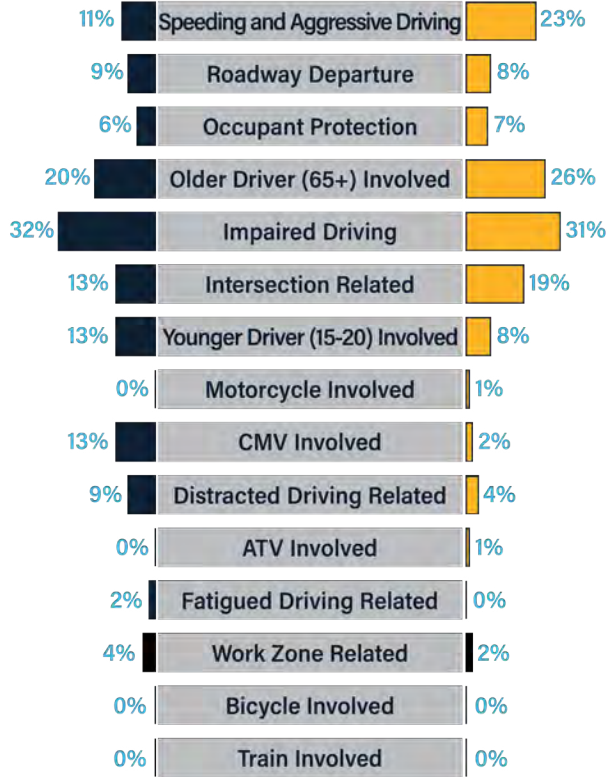


Pedestrians	2017-2021 SHSP '06-'15 Crashes	2022-2026 SHSP '16-'20 Crashes	Trend
% of total Fatalities	6%	9%	▲
% of total Serious Injuries	3%	6%	▲

PEDESTRIANS: FATALITIES & SERIOUS INJURIES (2016-2020)



CAUSAL FACTORS



REDUCE Pedestrian Fatalities & Serious Injuries by 4% annually over the next 5 years, from 84 to 65*

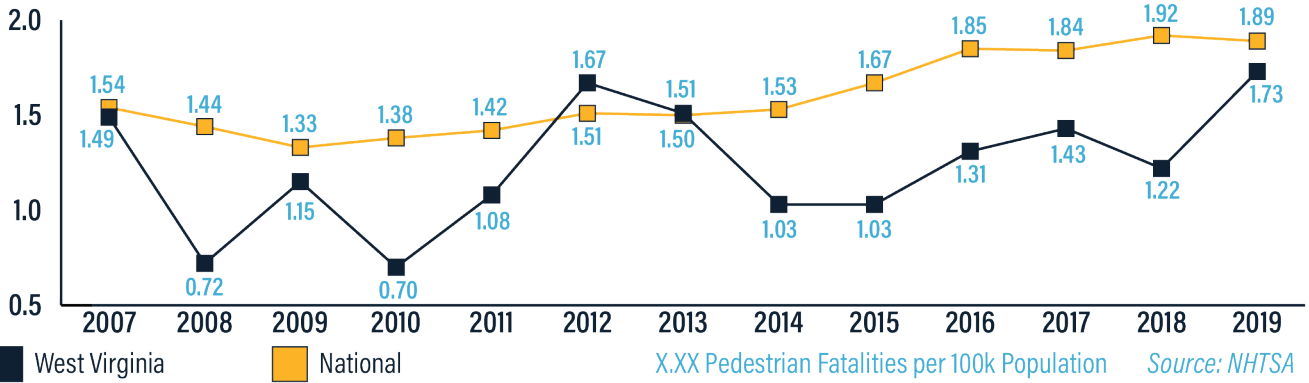
XX% of Total Pedestrian Fatalities/Serious Injuries

FATALITIES

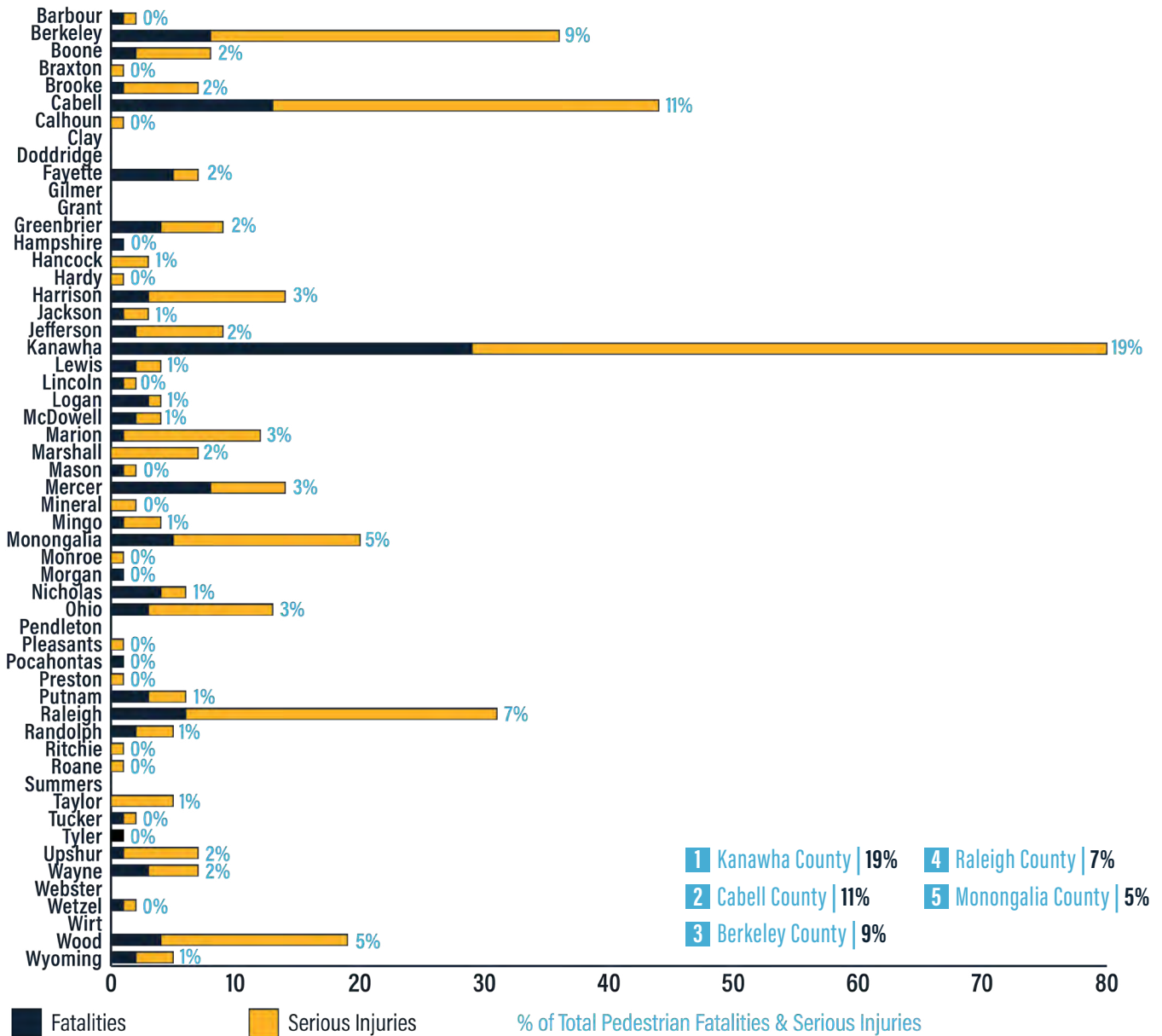
SERIOUS INJURIES

*based on 5-year rolling average

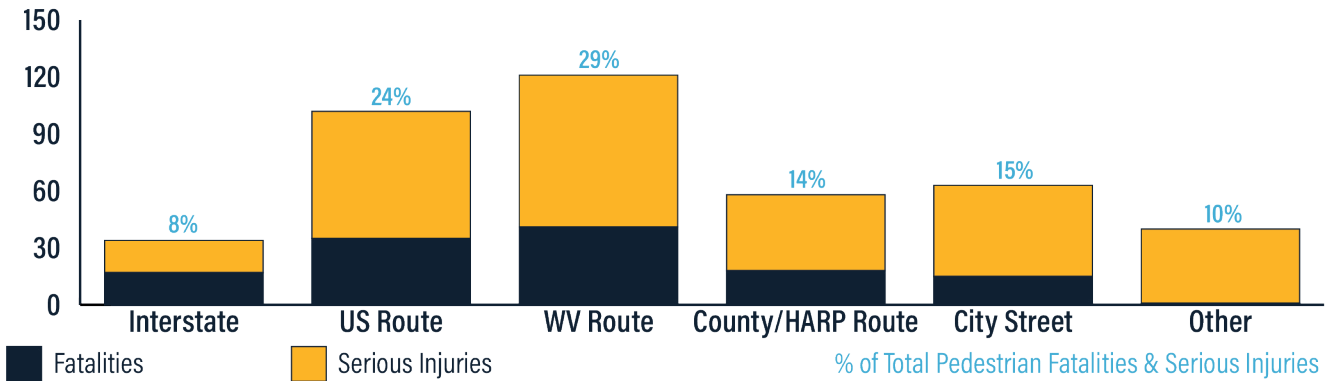
WEST VIRGINIA PEDESTRIAN FATALITY RATE (2007-2019)



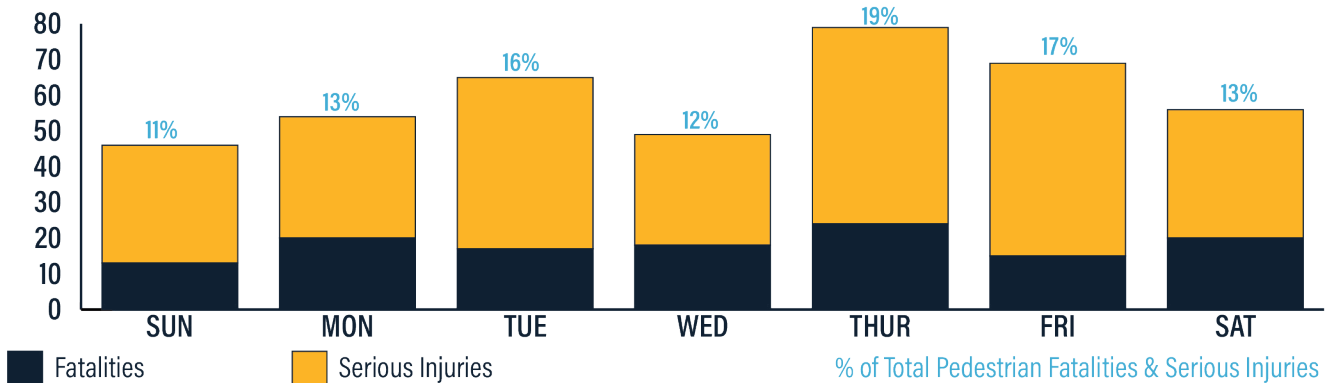
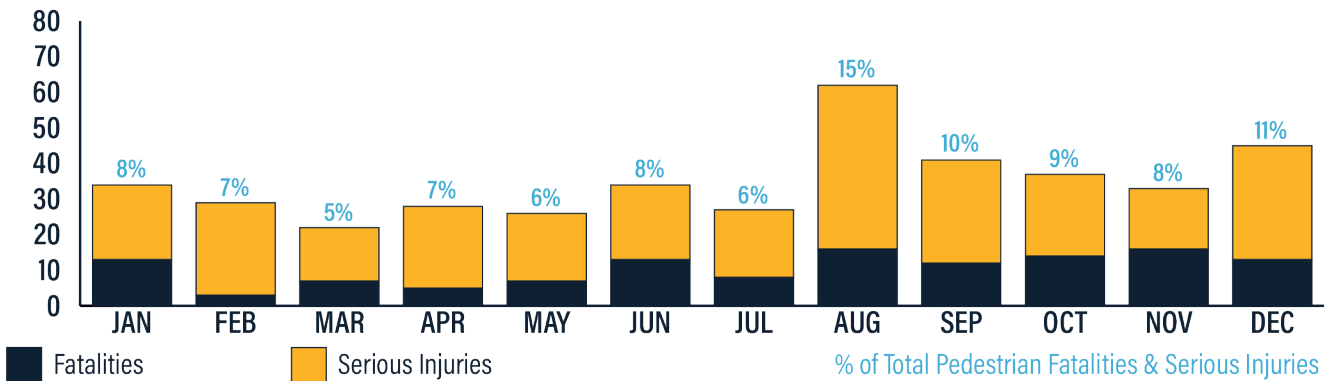
WHERE?



WHERE?



WHEN?

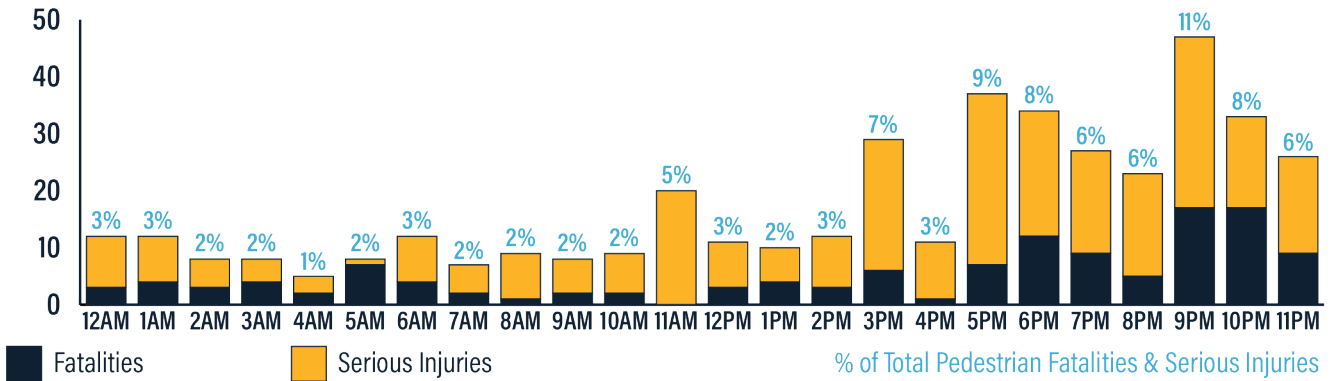


	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
Sunday	2	4	2	1		2			1		1	1			2	2	2	4	2	4	3	3	4	5	46
Monday	2	3	1	1			2			3		2	2	2	1	6	2	6	3	1	5	7	3	2	54
Tuesday	1	2	2	1			2	5		1	4		1	3	3	3	2	7	10	4	4	2	5	3	65
Wednesday	1	1			2	2	3	1	1	1	1		3	2	1	1	3	1	2	5	4	5	4	1	49
Thursday	2		1	1	2	2	3		4	1	1	6	1	2		8	1	7	7	6		17	2	5	79
Friday	1	1		1	1	1	1	1	2	2	2	3	2	1	5	4	2	6	7	6	3	8	4	5	69
Saturday	3	1	2	3		1	1		1			5	2	1	3	1	5		2	3	6	11	5		56
Total	12	12	8	8	5	8	12	7	9	8	9	20	11	10	12	29	11	37	34	27	23	47	33	26	418

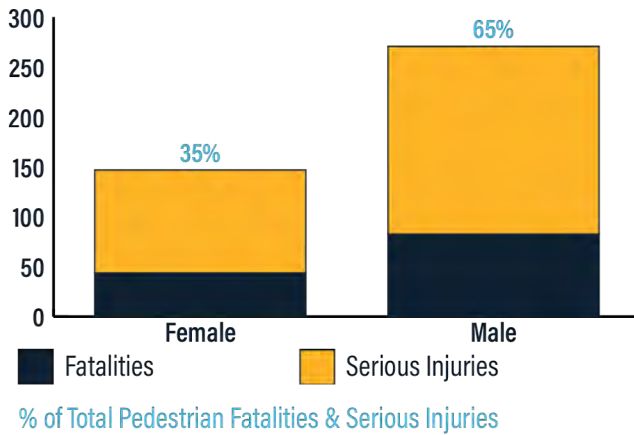
XX Pedestrian Fatalities and Serious Injuries during Day of Week and Hour of Day

Lower Frequency Higher Frequency

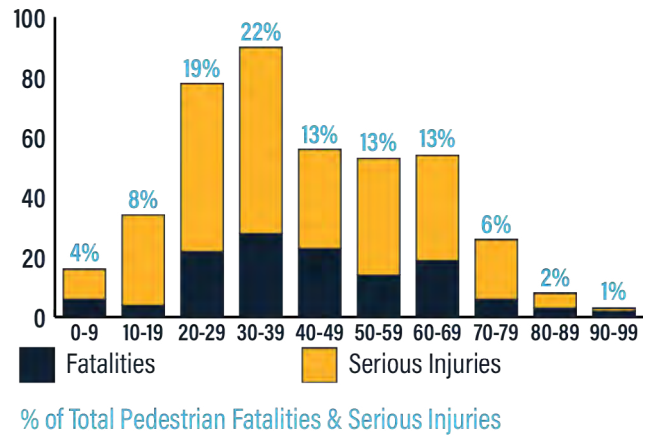
WHEN?



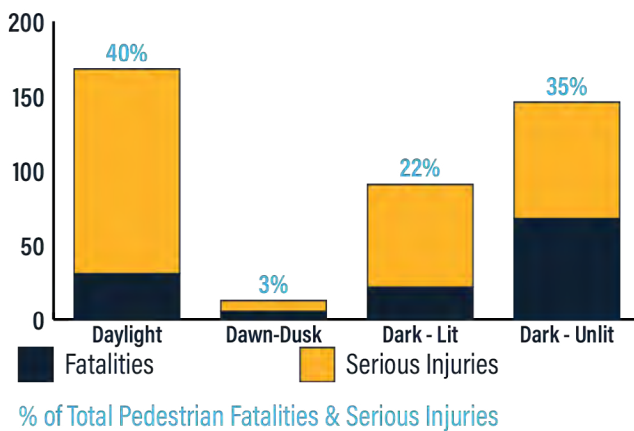
GENDER



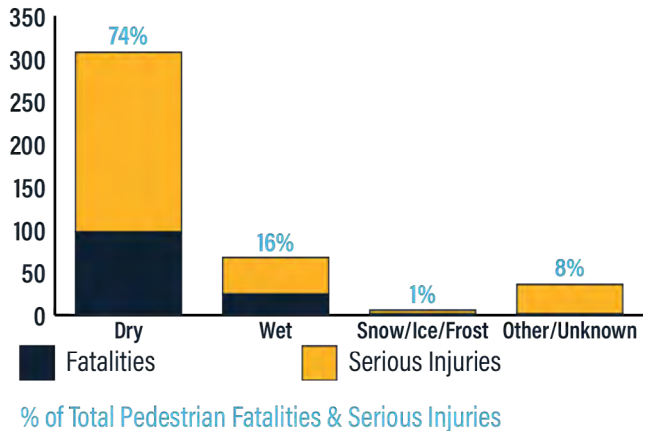
AGE



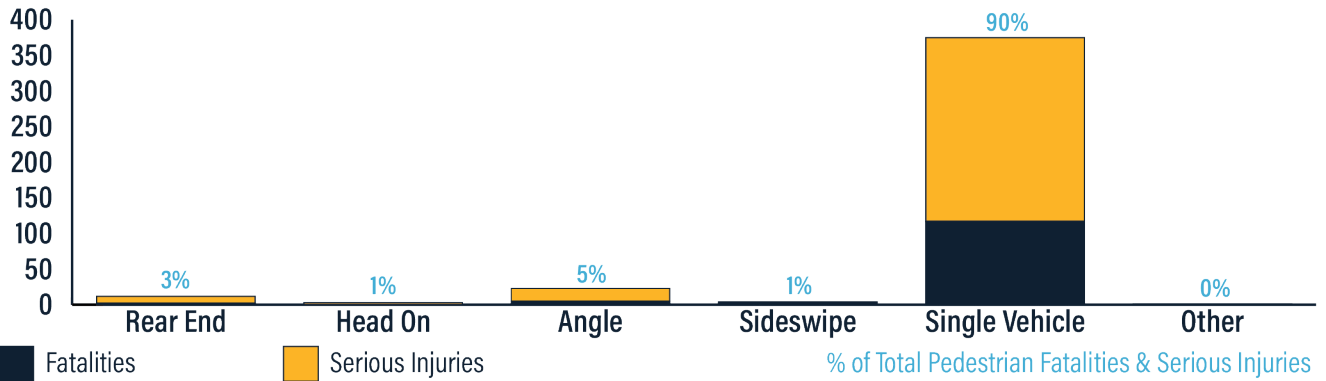
LIGHTING CONDITION



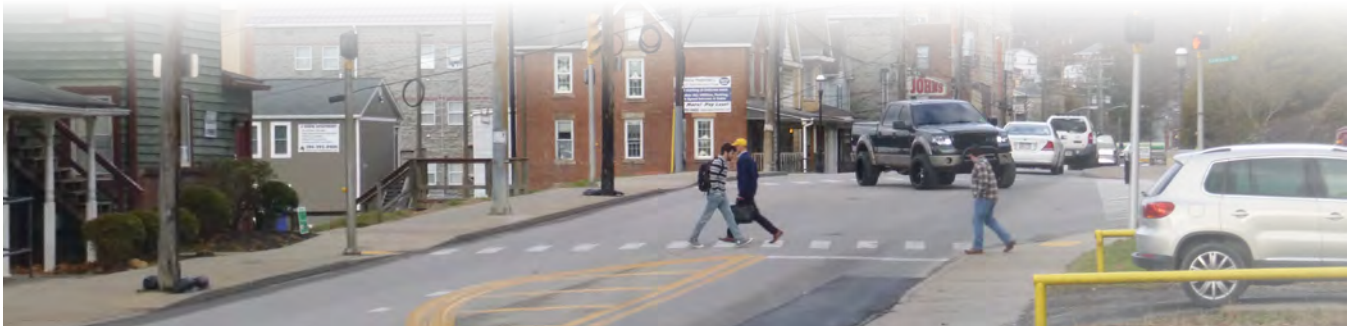
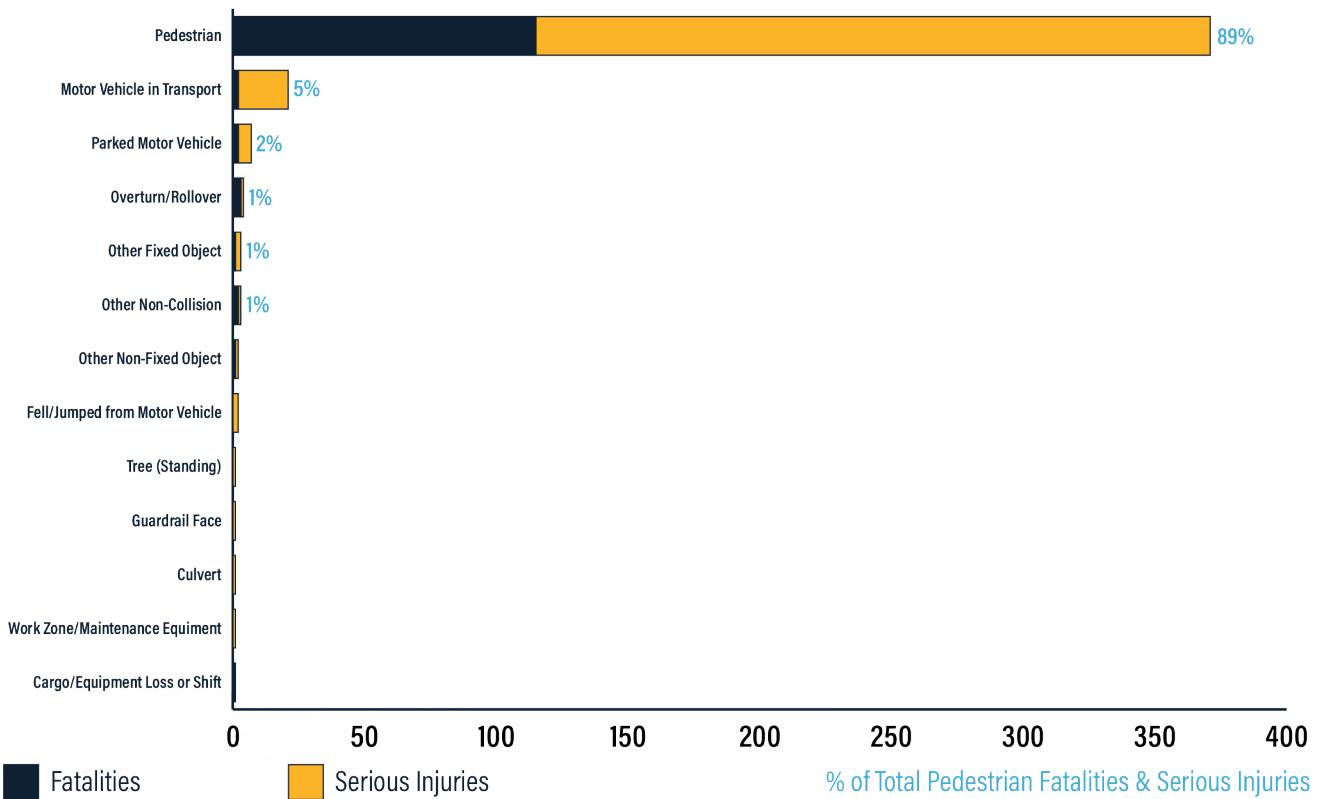
SURFACE CONDITION



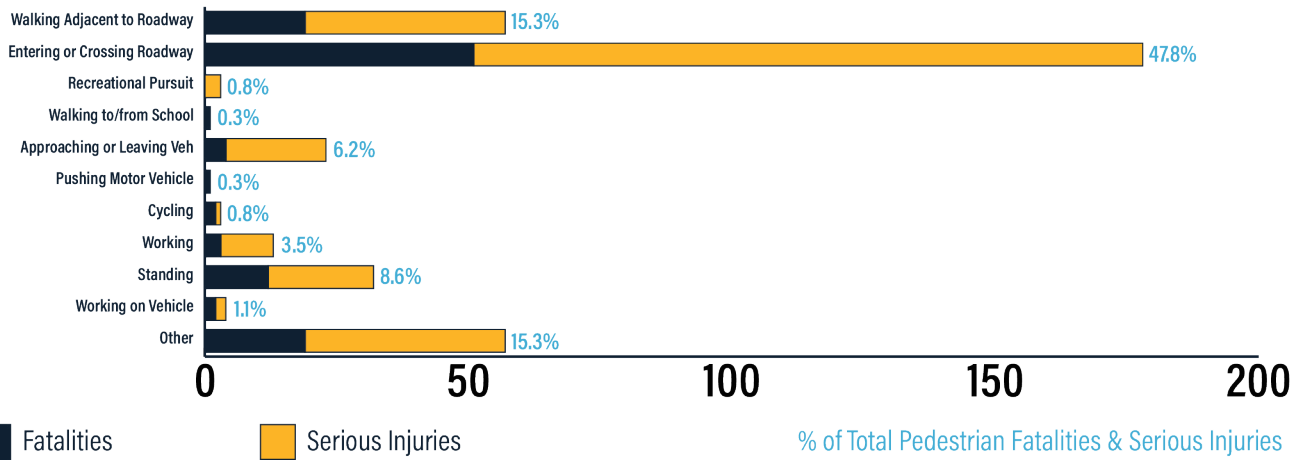
MANNER OF IMPACT



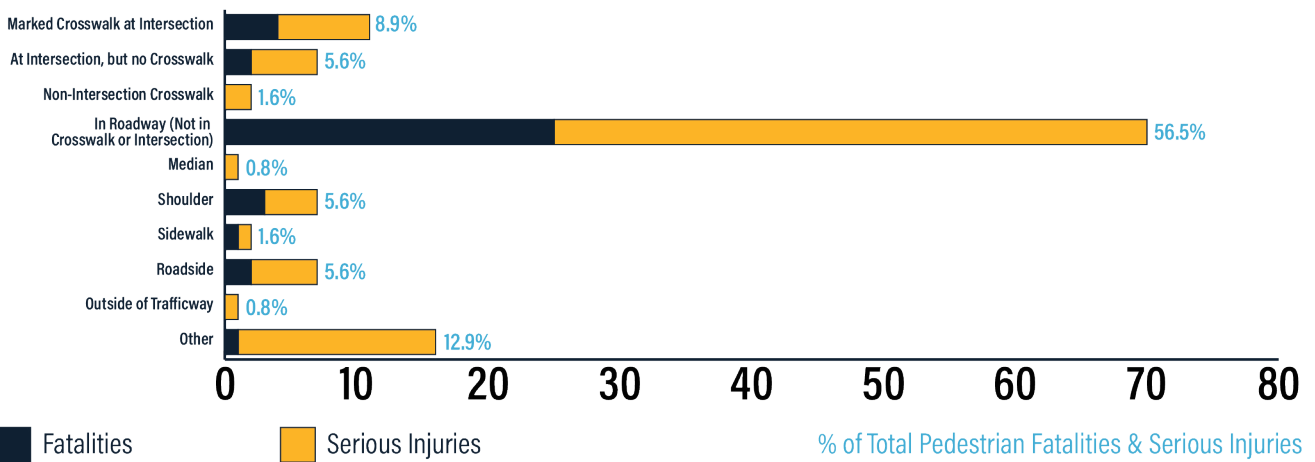
FIRST HARMFUL EVENT



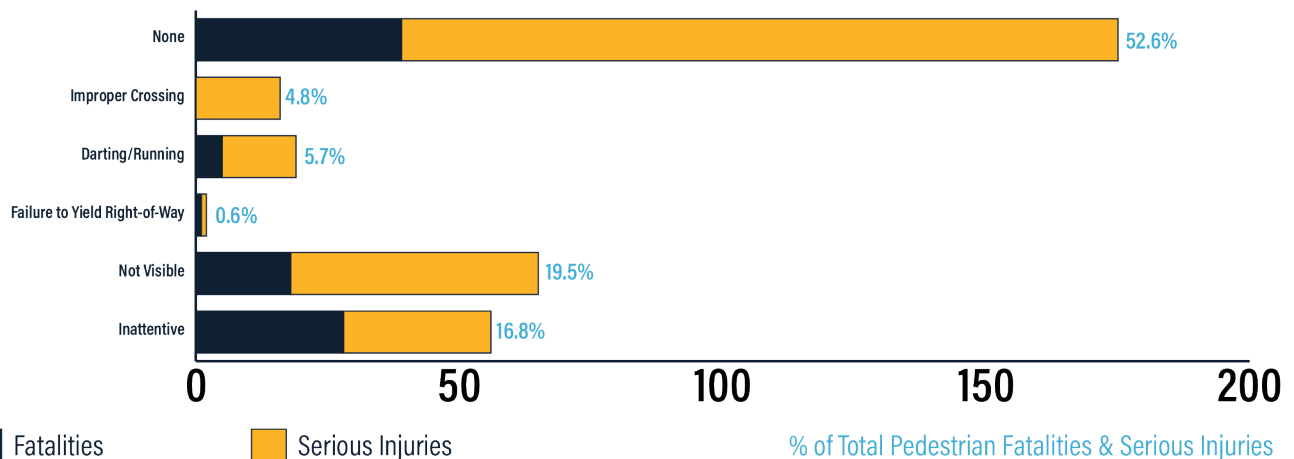
PEDESTRIAN ACTION PRIOR TO CRASH



PEDESTRIAN LOCATION AT TIME OF CRASH



PEDESTRIAN CONTRIBUTING ACTION





Emphasis Area Strategies: Pedestrians - Regionally Focused

1. Develop and distribute consistent public information messages to educate the public about pedestrian safety.

2. Develop educational training programs to improve pedestrian safety awareness.

3. Install proven engineering countermeasures to improve pedestrian safety.

4. Develop policies and/or guidelines to support pedestrian safety measures.



Emphasis Area 8

Improving Highway Safety Data



Highway safety data is the primary source of information used by practitioners to make informed decisions for identifying safety issues and programming resources to address those safety issues. To obtain a complete picture of the highway safety problem, evaluating data from many complex data systems is needed in order to make appropriate investment decisions. Highway safety data includes six elements: crash data, vehicle data, citation/adjudication data, driver data, roadway inventory and traffic data, and EMS/injury surveillance data. Improvements to highway safety data programs should focus on improving the timeliness, accuracy, completeness, uniformity, integration, and accessibility of data in these categories. West Virginia completed their latest Traffic Records Assessment in April 2022 which provides recommendations on improvements to the state's highway safety data systems. The strategies in this Emphasis Area support the implementation of the recommendations from the recent Traffic Records Assessment.





Emphasis Area Strategies: Improving Highway Safety Data

1. Enhance highway safety data analysis through improvements to crash data collection and analysis capabilities.
2. Enhance highway safety data analysis through improvements to citation and adjudication data collection and analysis capabilities.
3. Enhance highway safety data analysis through improvements to injury surveillance data collection and analysis capabilities.
4. Enhance highway safety data analysis through continued improvements to the Roadway Information Systems.
5. Enhance highway safety data analysis through improvements to the vehicle licensing and registration system.
6. Enhance highway safety data analysis through improvements to the driver licensing system.
7. Improve overall data analysis capabilities through enhanced integration and coordination of the various highway safety data systems.
8. Improve overall highway safety data collection and analysis capabilities by developing training programs that educate users and collectors of highway safety data to enhance data collection and analysis capabilities.
9. Investigate legislation and policy changes related to highway safety data including electronic reporting requirements.



Performance Measures



SHSP PERFORMANCE MEASURES

Incorporating a performance-based approach to assessing progress towards improving safety provides a means of understanding up-to-date fatality and serious injury trends. This approach ensures accountability and transparency of highway safety programs and informs planning, programming, and decision-making for the greatest possible reduction in fatalities and serious injuries.

Statewide fatality and serious injury crash data is reviewed and reported annually in West Virginia's Highway Safety Improvement Program (HSIP) Annual Report and Governor's Highway Safety Program (GHSP) Annual Highway Safety Report. These reports document the performance measures relevant to the specific agency's responsibility associated with the SHSP Emphasis Areas. The SMTF is able to utilize these annual reports and regular monitoring of crash trends to execute a multidisciplinary approach to consider modifications to highway safety programs that are consistent with changes in crash trends.

Several performance measures have been identified as part of this Plan. A performance measure for the combined number of fatalities and serious injuries is provided for the Plan's overall objective and there is a performance measure for each Emphasis Area objective. Each performance measure has a target that encompasses the five-year period covered by this Plan. Performance measures consider the combined number of fatalities and serious injuries to provide a more robust data set; however, every person killed in a motor vehicle crash is a painful reminder of the inherent risks associated with any mode of travel. Consistent with a Toward Zero Deaths vision, there is an underlying culture and commitment among the SMTF to emphasize the reduction of fatalities during the planning and implementation of its safety programs.

SHSP Performance Measures

- a.** Statewide fatalities and serious injuries
- b.** Fatalities and serious injuries in speeding and aggressive driving-related crashes
- c.** Fatalities and serious injuries in roadway departure crashes
- d.** Occupant protection-related fatalities and serious injuries
- e.** Fatalities and serious injuries in crashes involving older drivers
- f.** Fatalities and serious injuries in alcohol and drug impaired driving crashes
- g.** Fatalities and serious injuries in intersection crashes
- h.** Pedestrian fatalities and serious injuries



FEDERALLY-REQUIRED PERFORMANCE MEASURES

In addition to the aforementioned performance measures that the Safety Management Task Force will use to track progress of this SHSP, FHWA requires State Departments of Transportation and Metropolitan Planning Organization (MPOs) to establish and report the following five annual safety performance measure targets for all public roadways:

- **Number of Fatalities**
- **Rate of Fatalities per 100 Million Vehicle Miles Traveled (VMT)**
- **Number of Serious Injuries**
- **Rate of Serious Injuries per 100 Million VMT**
- **Combined Number of Non-motorized Fatalities and Serious Injuries**

Since the federally-mandated safety performance measures requirement began in 2017, West Virginia officials have established these safety performance measure targets and coordinated the targets with their safety partners. As required, these annual targets were established for consistency with the 2017-2021 West Virginia SHSP. This process will continue with the adoption of this Plan.





Special Rules



Two Special Rules were established as part of MAP-21 and continued with the passing of the FAST Act: High Risk Rural Roads and Older Drivers and Pedestrians. A third Special Rule was established as part of the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL), which was signed into law on November 15, 2021. This third Special Rule, under the Highway Safety Improvement Program is called the Vulnerable Road User Safety Special Rule. Crash rates (as defined by the Rules) for these crash types are reviewed on an annual basis and additional mitigation efforts are required if rates increase compared to prior years.

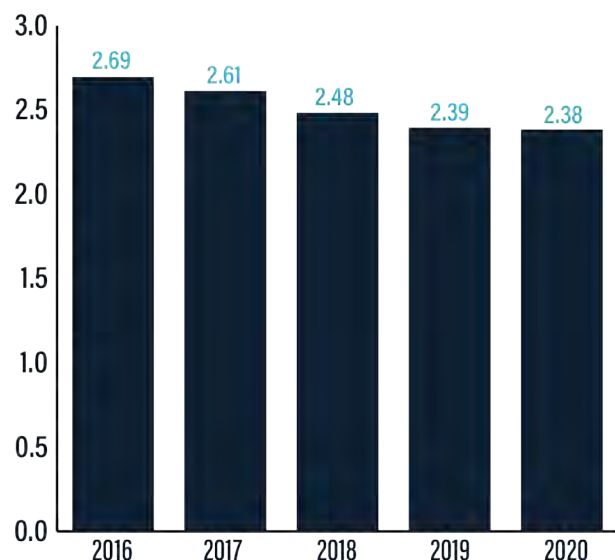
HIGH RISK RURAL ROADS

MAP-21 eliminated set-aside funds from the HSIP for High Risk Rural Roads (HRRR) and implemented a Special Rule that now requires states with an increase in fatality rates on rural roads to obligate a specified amount of HSIP funds to HRRR. If a state's fatality crash rate on HRRR increases over the most recent two-year period, states must obligate 200% of the amount of HRRR funds received in Federal Fiscal Year 2009.

Federal legislation defines a high risk rural road as "any roadway functionally classified as a rural major or minor collector or a rural local road with significant safety risks, as defined by a State in accordance with an updated State SHSP." As part of the SHSP update process, states must define its methodology to define a "significant safety risk." West Virginia defines a high risk rural road as "any roadway functionally classified as a rural major or minor collector or a rural local road that has fatal or serious injury crash rates above the statewide average for county routes."

Since 2011, the HRRR Special Rule has not applied in West Virginia. However, should the fatality rate on rural roads increase in the future, the state would be required to obligate approximately \$1.6 million to HRRR. Funds would be applied to those HRRR qualifying roads that exhibit the greatest needs based on a ranking process developed by the state. HRRR-funded projects will be consistent with the SHSP.

WEST VIRGINIA HRRR SPECIAL RULE PERFORMANCE
(5-YEAR ROLLING AVERAGE FATALITY RATE)

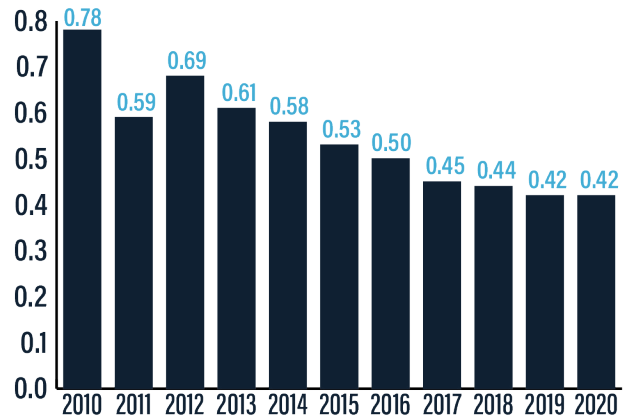


OLDER DRIVERS AND PEDESTRIANS

States are required to include strategies in their SHSP to improve safety for older drivers and pedestrians, defined as 65 years and older, if the state meets the Older Drivers and Pedestrians Special Rule. This Special Rule was enacted as part of MAP-21 and continued with the passing of the FAST Act and IIJA. According to FHWA's Older Drivers and Pedestrians Rule, the Special Rule applies to the state if the rate of traffic fatalities and serious injuries per capita for drivers and pedestrians 65 years of age and older increases during the most recent 2-year period.

In recent years, the crash rate for older drivers and pedestrians in West Virginia as defined by the Special Rule has not increased to the point of triggering this Special Rule. However, the percentage of fatalities and serious injuries in crashes involving Older Drivers has increased. From 2006 through 2015, 19% of all fatalities and 14% of all serious injuries occurred in older driver-related crashes. From 2016 through 2020, these values increased to 27% and 21%, respectively, and as such, this SHSP includes an Emphasis Area for Older Drivers. Strategies specifically addressing older drivers are included in this new Emphasis Area and strategies related to Pedestrians (Emphasis Area 7) are applicable to Older Pedestrians as well.

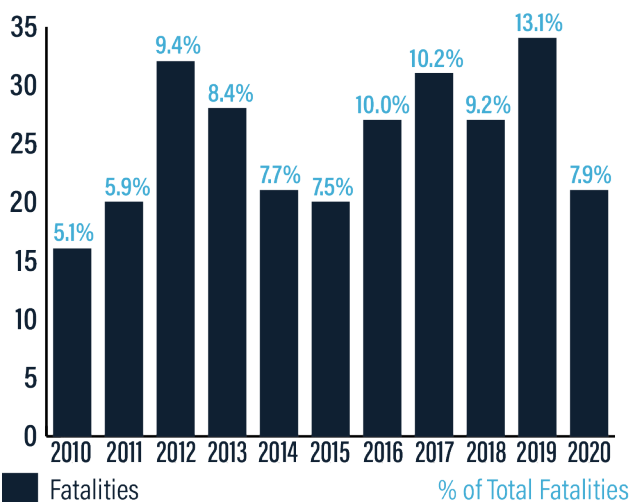
OLDER DRIVER AND PEDESTRIAN SPECIAL RULE
(5-YEAR ROLLING AVERAGE RATE PER CAPITA)



VULNERABLE ROAD USER SAFETY

The IIJA, also known as the BIL, incorporated a third Special Rule related to Vulnerable Road User Safety. This rule, called the Vulnerable Road User (VRU) Safety Special Rule, requires states to obligate not less than 15 percent of the State's HSIP funds for the next fiscal year HSIP projects that address the safety of vulnerable road users if the total annual fatalities of vulnerable road users in the State represents 15 percent or more of the total annual crash fatalities. The Special Rule defines "vulnerable road user" as "a non-motorist with a Fatality Analysis Reporting System (FARS) person attribute code of Pedestrian, Bicyclist, Other Cyclist, and Person on Personal Conveyance."

VULNERABLE ROAD USER SAFETY SPECIAL RULE



Application of the VRU Special Rule first applied in 2022, based on 2020 calendar year fatalities. The VRU Special Rule does not currently apply to West Virginia. If the VRU Special Rule applies, West Virginia would be required to obligate not less than 15 percent of its federal HSIP apportionment to HSIP projects that address the safety of vulnerable users. Emphasis Area 7, Pedestrians, identifies strategies to improve pedestrian safety on West Virginia's roadways. If the VRU Special Rule were to apply to West Virginia in the future, HSIP projects that address the safety of vulnerable users would be consistent with the SHSP.



Implementation and Evaluation



IMPLEMENTATION

Over the next five years, the 2022–2026 SHSP will be implemented. Strategies identified in each Emphasis Area will be prioritized by the Emphasis Area Teams, and action plans will be developed for each strategy. Those action plans will include detailed priorities that will be implemented addressing each strategy for the particular Emphasis Area. Emphasis Area Action Plan champions will oversee implementation of their respective strategies. Implementation will occur, in most cases, through existing funding sources under the HSIP, Highway Safety Plan (HSP), Commercial Vehicle Safety Plan (CVSP), and the State Traffic Records Strategic Plan. The SMTF will continue to meet and will oversee the implementation process as follows:

- Develop emphasis area action plans and update them on an annual basis
- Track implementation progress within each emphasis area
- Identify barriers to implementation
- Provide regular updates on SHSP-related projects, educational campaigns, initiatives, training, and other pertinent activities
- Provide annual assessments of progress towards achieving the overall and emphasis area specific objectives of the SHSP
- Work with agency leadership to obtain the necessary resources for effective SHSP implementation
- Prepare for future SHSP updates

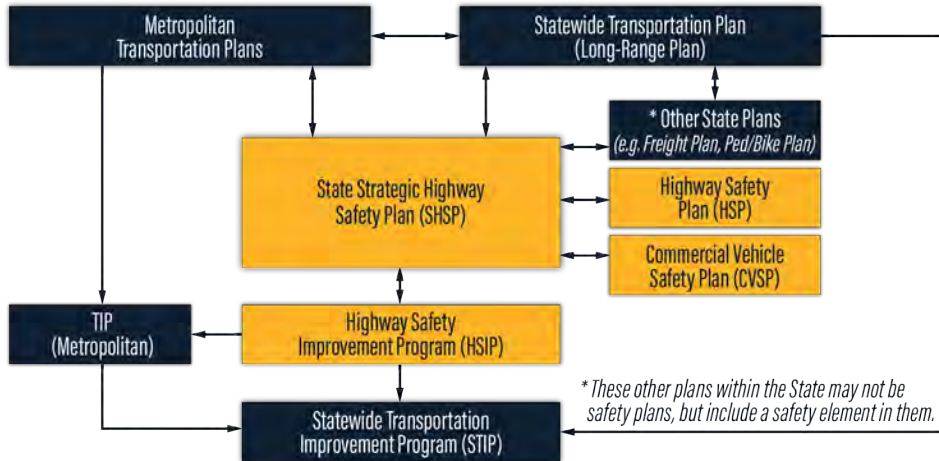


The SMTF will identify actions that are being effective and those that are either not effective or not achievable due to resource constraints. As needed, action plans will be updated to reflect what is working and remove those actions that are not effective. Through annual data updates, the SMTF will be able to modify action plans, as needed, to address fluctuations in fatalities and serious injuries in the various Emphasis Areas and will be able to identify trends in those areas that are not currently included in this SHSP. This is done to ensure the State continues to focus on those areas with the greatest safety need.



LINKAGE TO TRANSPORTATION AND SAFETY PLANNING

Effective SHSP implementation leverages the resources of other transportation planning and programming activities. Coordination of the SHSP with other transportation plans and other safety plans leads to a cohesive implementation of strategies and ensures that objectives align. For West Virginia and the SMTF to ensure the SHSP is successful in reducing fatalities and serious injuries, they must coordinate the emphasis areas and strategies of this plan with the state’s Long-Range Transportation Plan (LRTP),



the Transportation Improvement Programs (TIPs) developed by the State’s MPOs, the State Transportation Improvement Program (STIP) and the three plans that directly implement parts of the SHSP – the HSP produced by the West Virginia GHSP, the HSIP managed by the West Virginia DOT, and the CVSP managed by the Public Service Commission of West Virginia, as well as other state plans and programs. This integration is

important for improving overall safety coordination and linkages among State agencies leading to comprehensive transportation safety planning.

Projects identified within the LRTP, TIP, and STIP should be consistent with the Emphasis Areas and strategies outlined in this SHSP. From a safety perspective, those projects should address one or more of the SHSP Emphasis Areas, the safety benefit of alternatives should be evaluated, and once the project is complete, an analysis should be conducted to determine the benefit on reductions to fatalities and serious injuries.

The HSIP, HSP, and CVSP are all safety plans that should be developed in consultation with the SMTF and should be consistent with the Emphasis Areas and strategies of the SHSP. These safety plans should be used as the basis for developing the authority to fund safety improvements and safety programs that implement the identified strategies of the SHSP.

EVALUATION

Continued evaluation of the SHSP and progress towards achieving the stated objectives is key to ensuring effectiveness of the strategies included in the plan and to ensure that resources are being allocated most effectively. Annually, fatality and serious injury crash data will be reviewed with the SMTF. The data analysis will identify progress towards achieving overall and emphasis area specific objectives. Evaluation will also include a review of the previous year’s accomplishments and a determination of the current years anticipated work plan to ensure that strategies are continually being implemented and that the various Emphasis Area action plans are being completed. Progress will be reported annually within the SMTF as well as through annual federal reporting requirements such as the HSIP Annual Report, the HSP and GHSP’s Annual Report.



2022-2026

WEST VIRGINIA

STRATEGIC HIGHWAY SAFETY PLAN