



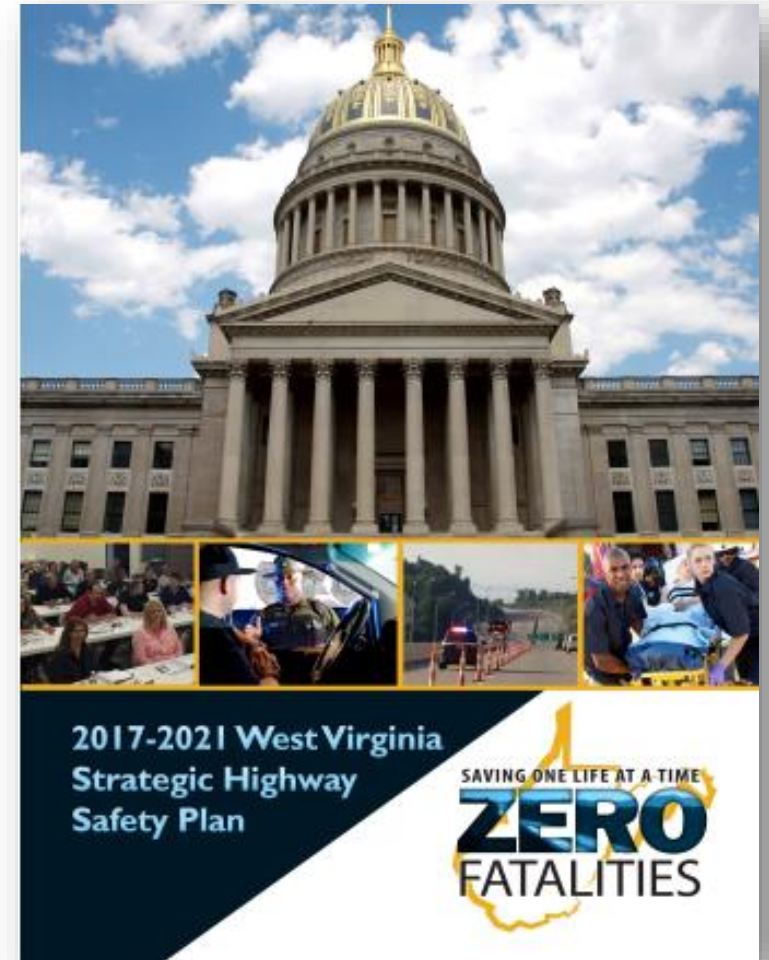
# Morgantown Pedestrian Safety Study

Planning Conference 2022



# WV Strategic Highway Safety Plan

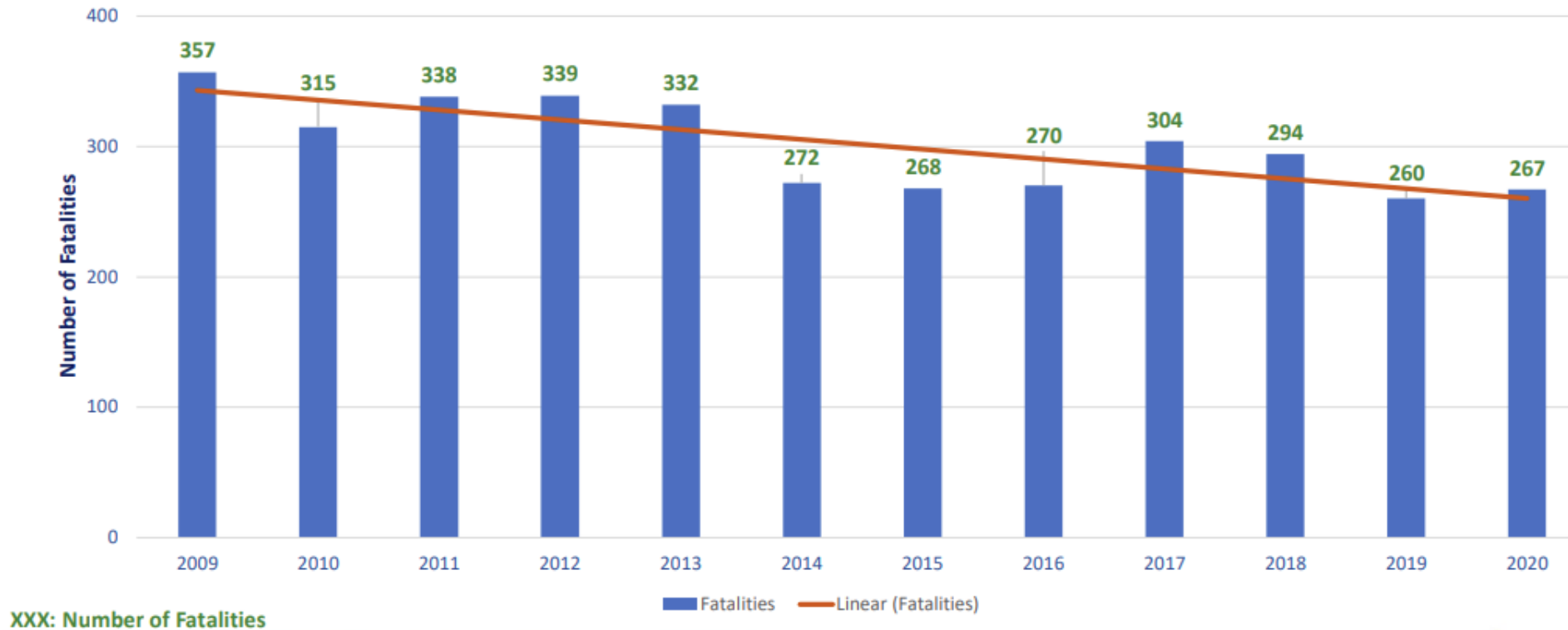
- First Strategic Highway Safety Plan (SHSP) was developed in 2007 using the 1997 – 2006 data. This plan included 9 emphasis areas
- The second plan was updated in 2017 using 2006-2015 data. This SHSP focuses on 5 emphasis areas.
- The current plan is being updated now using 2009-2020 data. The draft SHSP has 5 emphasis areas and 2 regional emphasis areas.





# Why is SHSP so important?

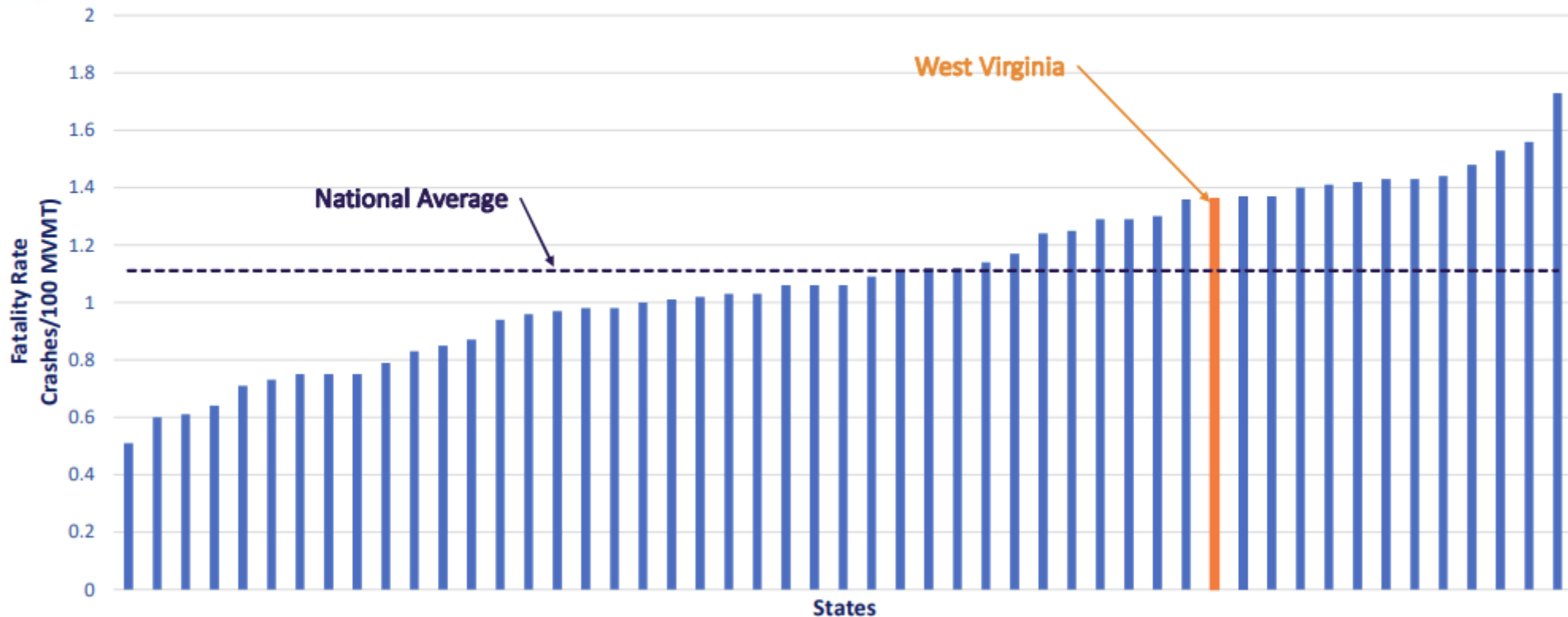
## Fatalities (2009 – 2020)





# Where Does WV Rank?

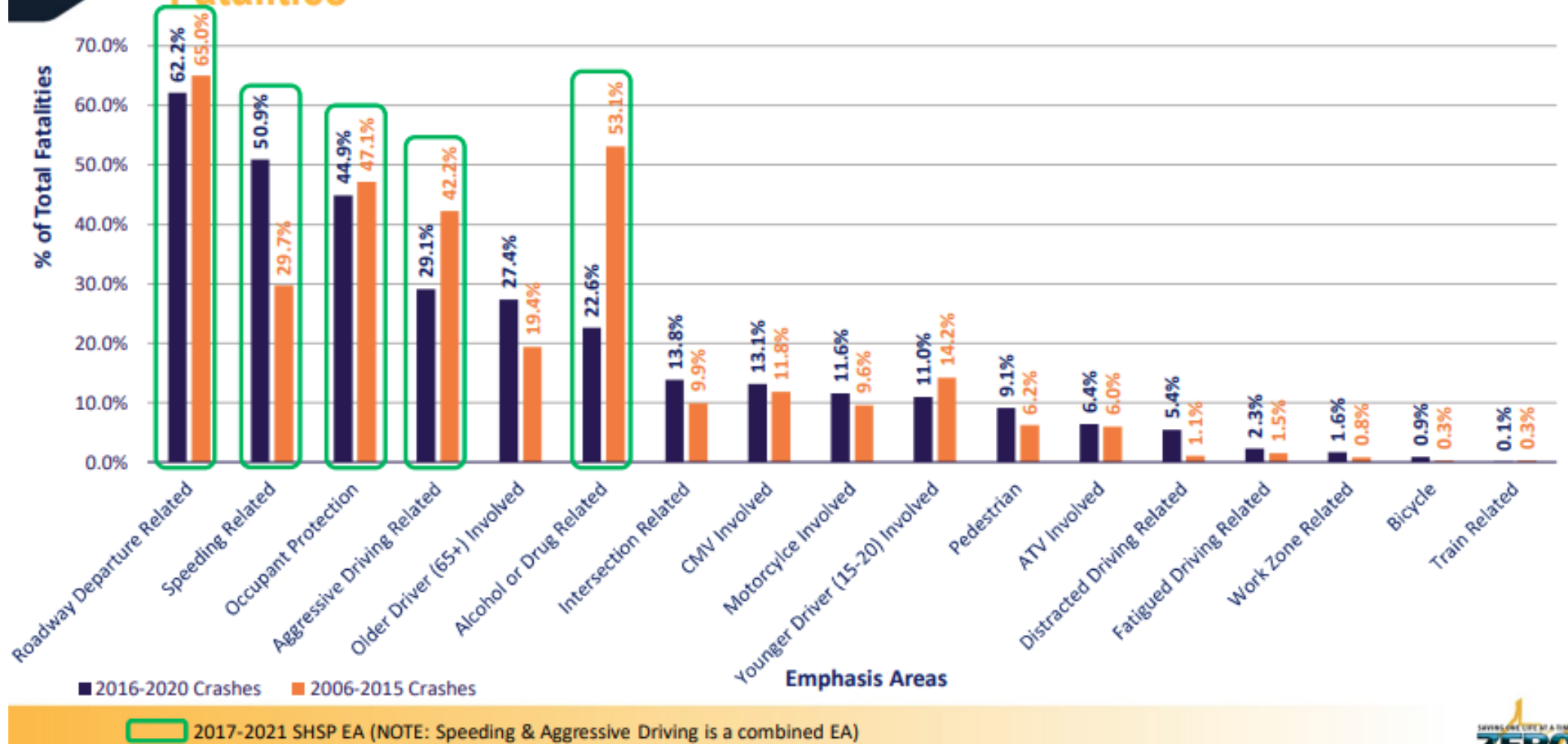
## 2019 Fatality Rates per 100 Million Vehicle Miles Traveled



Source: Fatality Analysis Reporting System



# Potential Emphasis Area Ranking: Fatalities



■ 2016-2020 Crashes ■ 2006-2015 Crashes

□ 2017-2021 SHSP EA (NOTE: Speeding & Aggressive Driving is a combined EA)

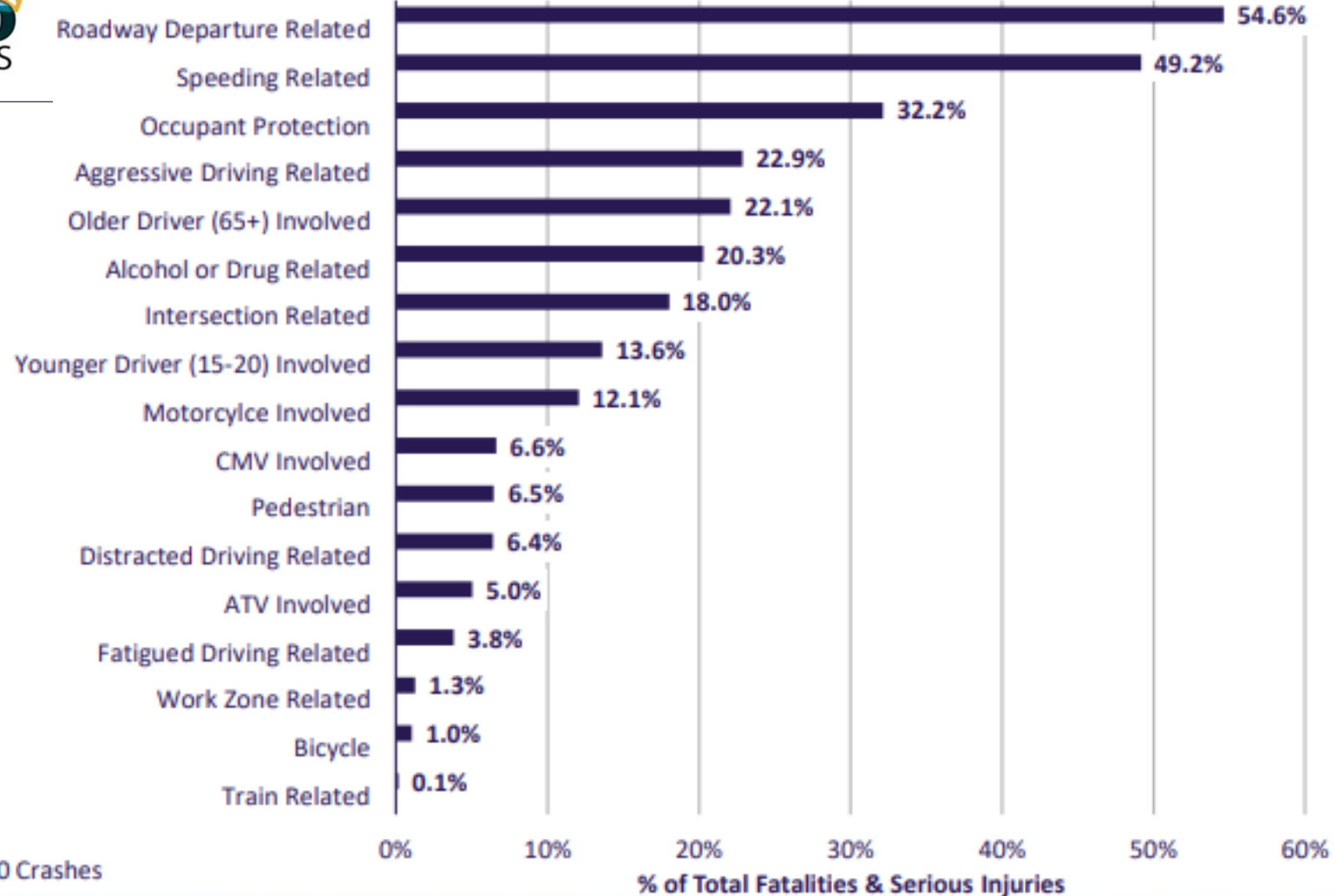




# Emphasis Areas



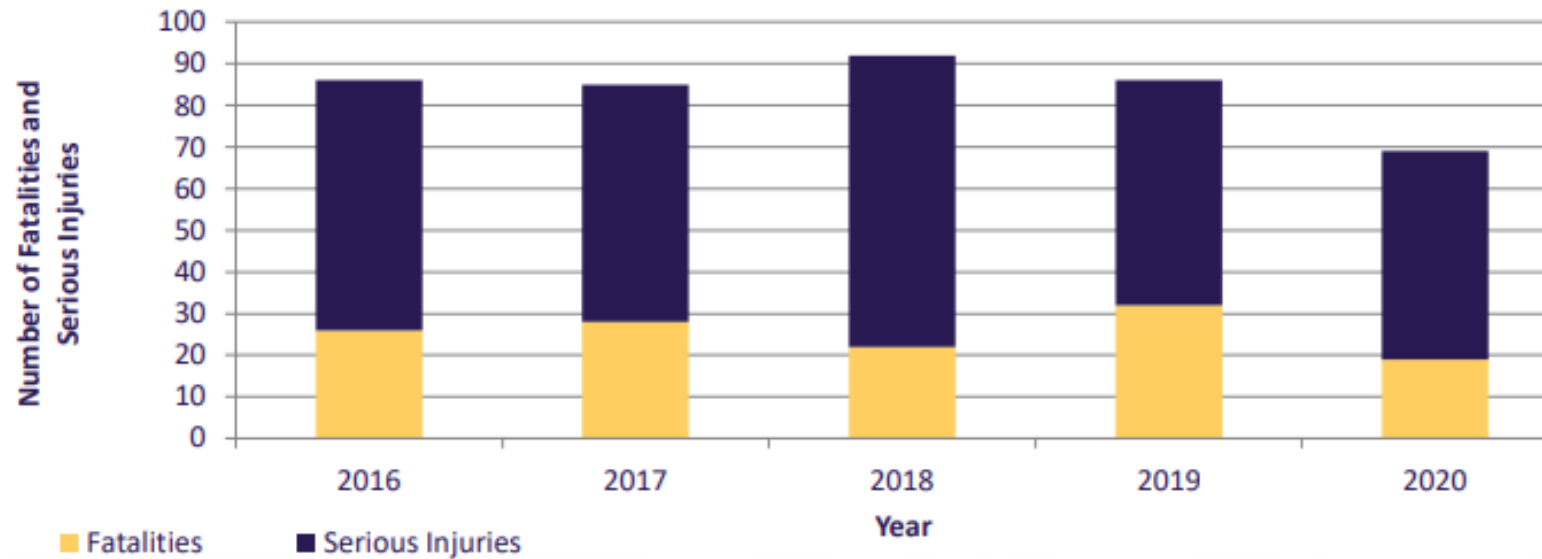
Emphasis Areas





## Potential Emphasis Area Trends: Pedestrians

Pedestrians	2017-2021 SHSP '06-'15 Crashes	2022-2026 SHSP 15-'19 Crashes	Trend
% of total fatalities	6.2%	9.1%	↑
% of total serious injuries	2.8%	5.7%	↑
% of total fatalities & serious injuries	%	6.5%	↑





# Morgantown Pedestrian Crash Summary

Crash data covers January 1, 2014 – December 31, 2019 (6 years)

- 134 pedestrian crashes, involving 134 pedestrians (i.e., there were no crashes involving multiple pedestrians)
- 23 (17%) pedestrians involved in crashes were under the influence of alcohol or drugs
- 77 (57%) pedestrians were involved in crashes during daylight hours
- 57 (43%) pedestrians suffered incapacitating injuries or non-incapacitating injuries (Type A injuries / Type B injuries)
- 6 (4%) pedestrians died of injuries related to crashes
- 20 (15%) of all Morgantown pedestrian crashes during the study period resulted in serious injuries



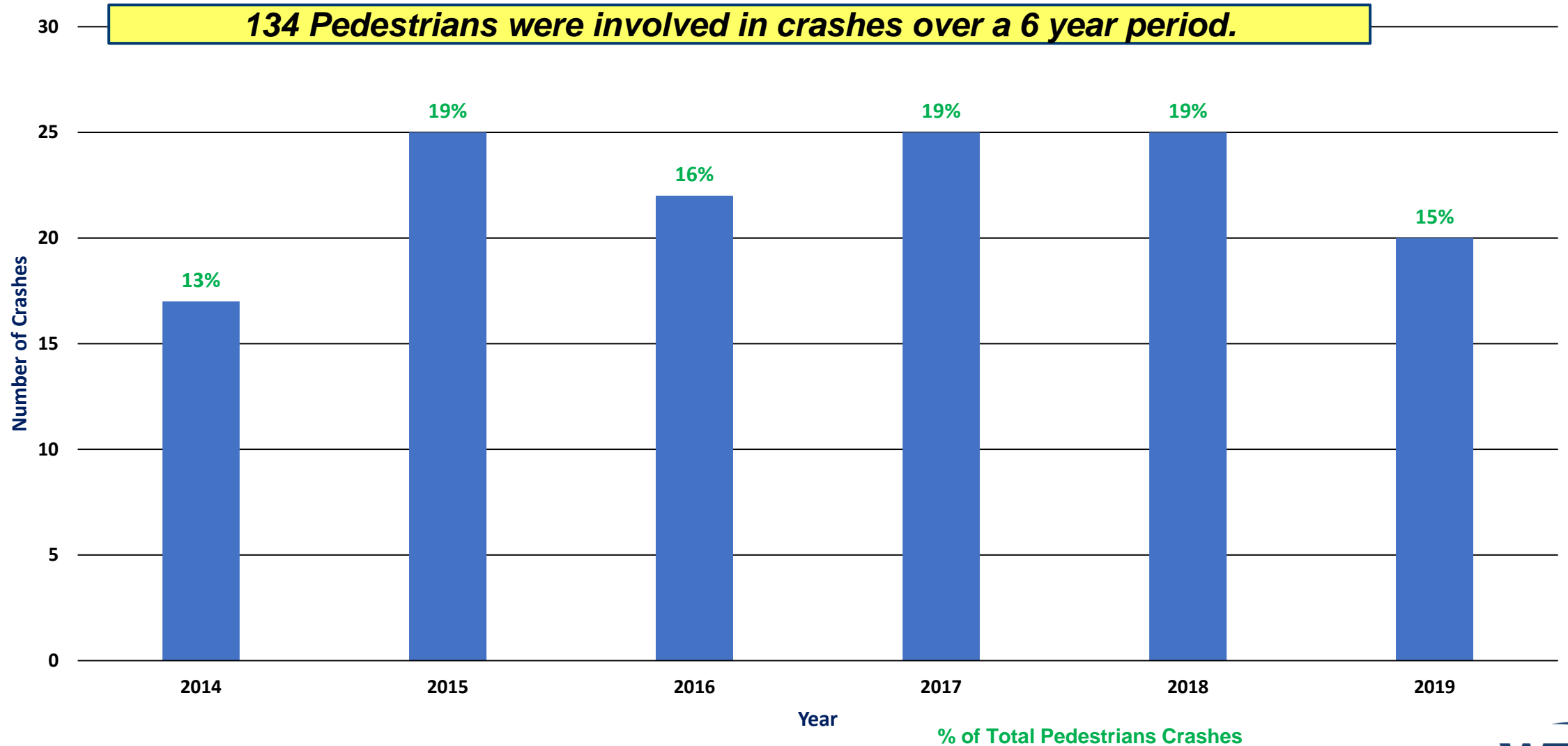


# Huntington Pedestrian Crashes

- Crash data covers January 1, 2016 – December 31, 2021 (6 years)
- 27 pedestrian crashes, involving 29 pedestrians
- 2 (7%) pedestrians involved in crashes were under the influence of alcohol or drugs
- 23 (85%) crashes took place during daylight hours
- 9 (31%) pedestrians suffered incapacitating injuries or non-incapacitating injuries (Type A injuries / Type B injuries)
- 1 (3%) pedestrian died of injuries related to the crash

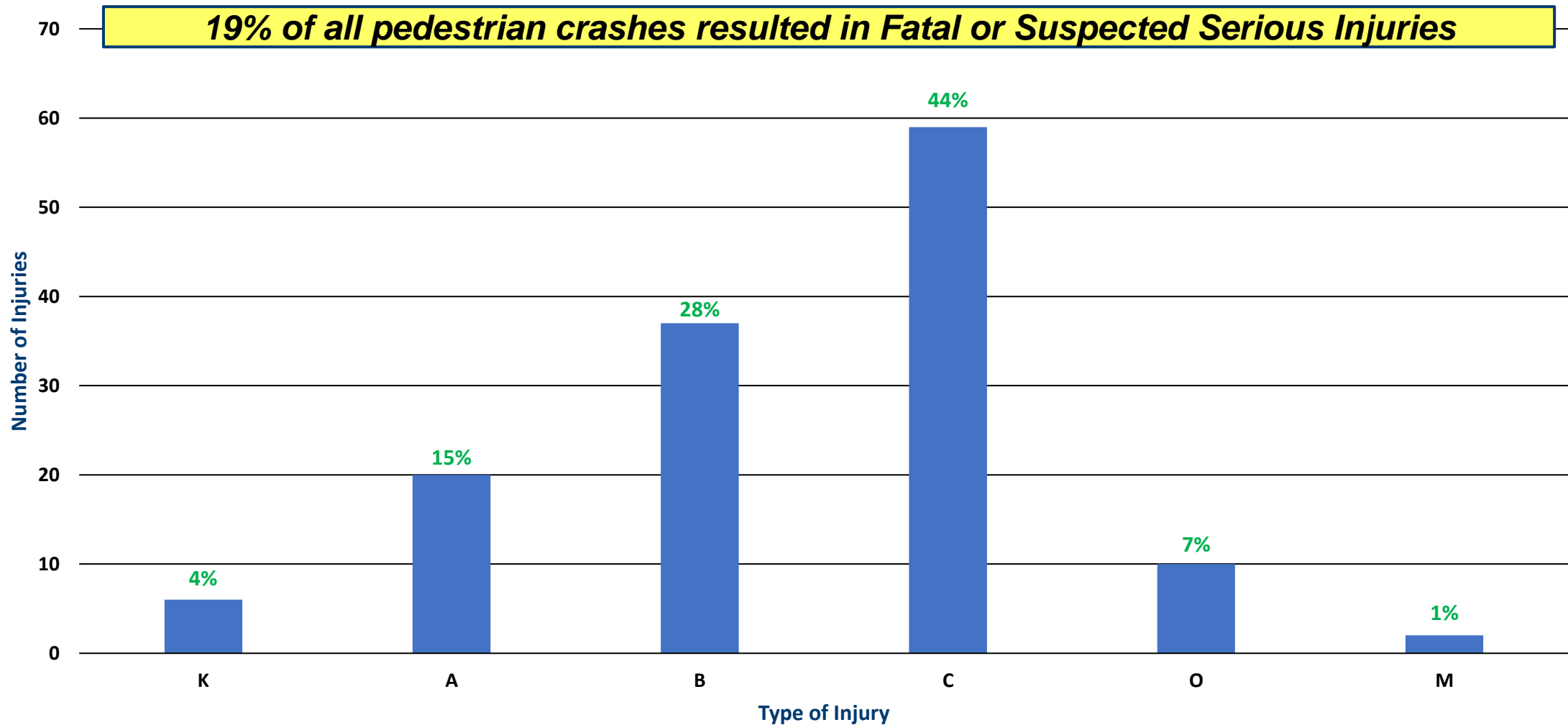


# Morgantown Pedestrian Crashes





# Pedestrian Crashes by Severity



% of Total Pedestrians Involved in Crashes

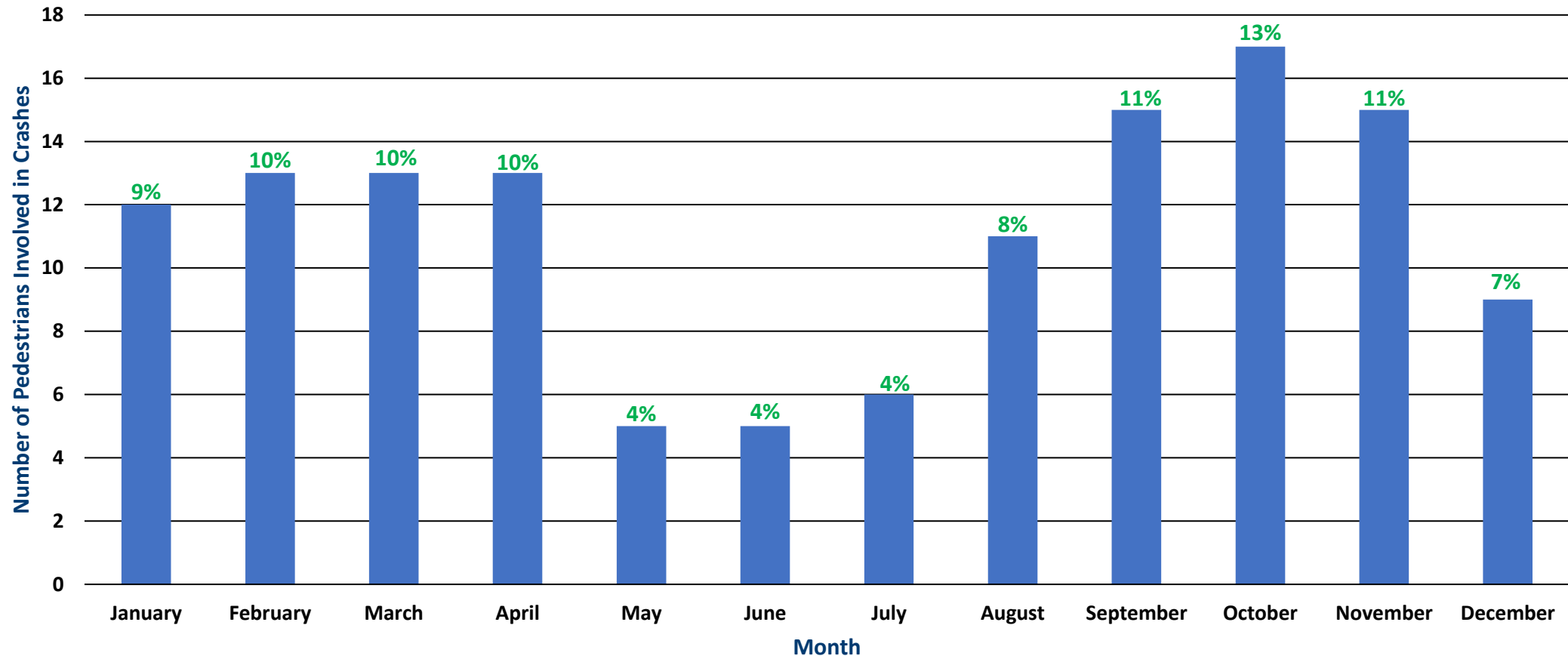


*M = Medical Condition: Non-Crash Related Death or Injury*



# Pedestrian Crashes by Month

*The majority of crashes occurred during the academic fall and spring semesters with 88% of crashes occurring during the months of August – April (Primary Months of WVU Classes/Activities).*

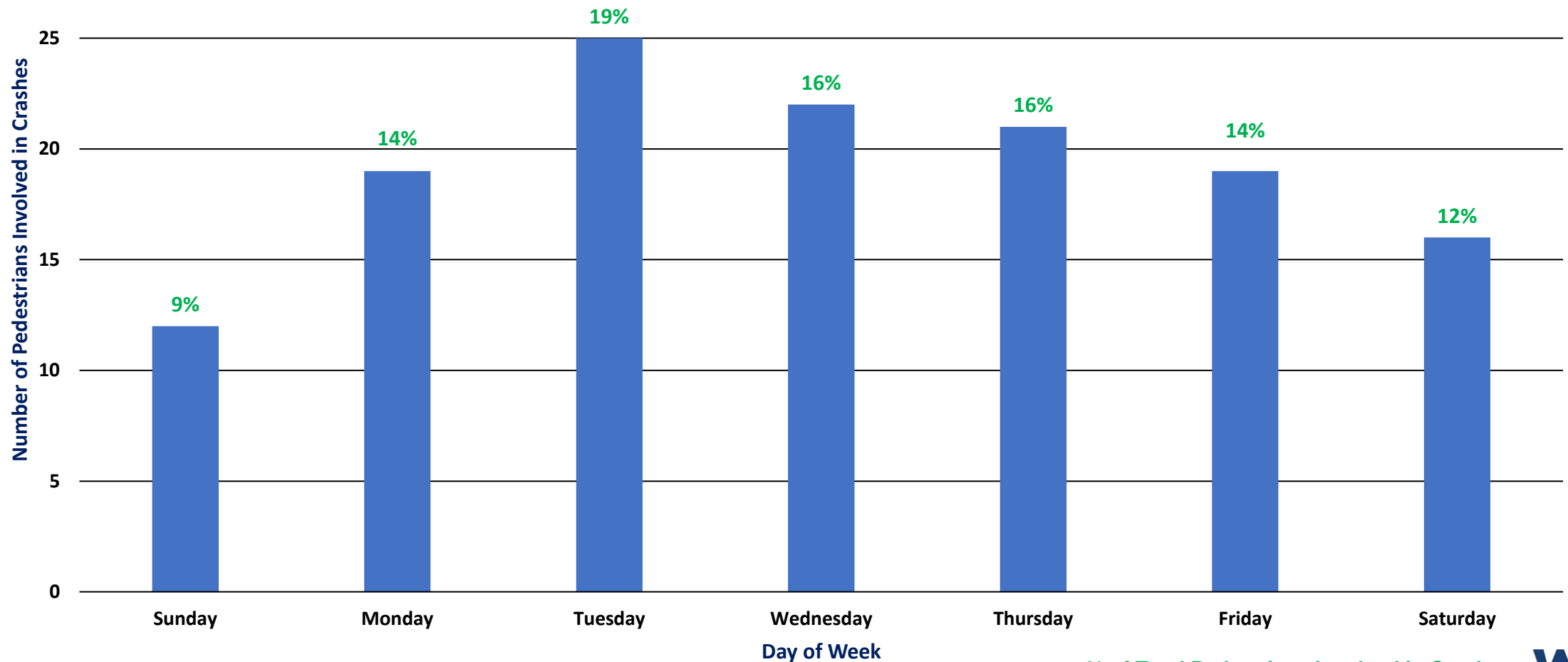


% of Total Pedestrians Involved in Crashes



# Pedestrian Crashes by Day of Week

**Weekdays were the most common days for pedestrian crashes with 79% of all crashes occurring between Monday and Friday.**

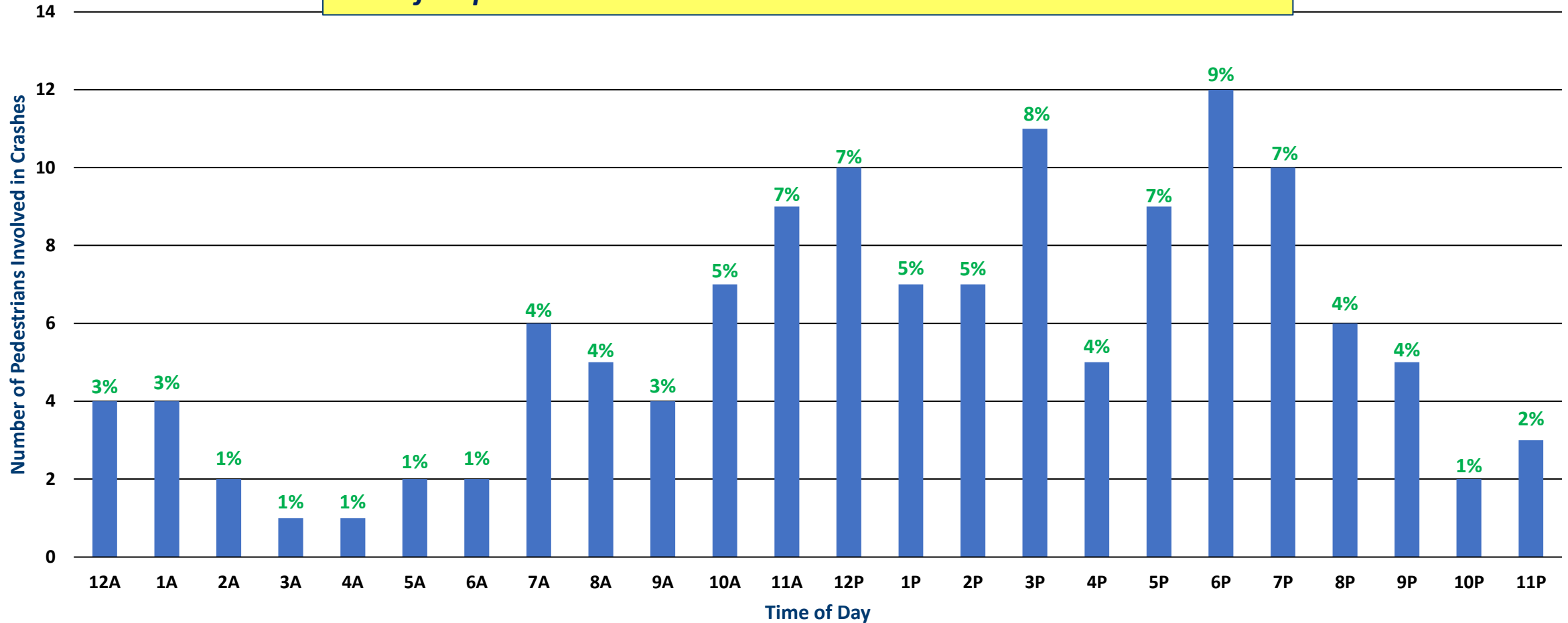


% of Total Pedestrians Involved in Crashes



# Pedestrian Crashes by Time of Day

**53% of all pedestrian crashes occurred between 12:00 PM and 8:00 PM**

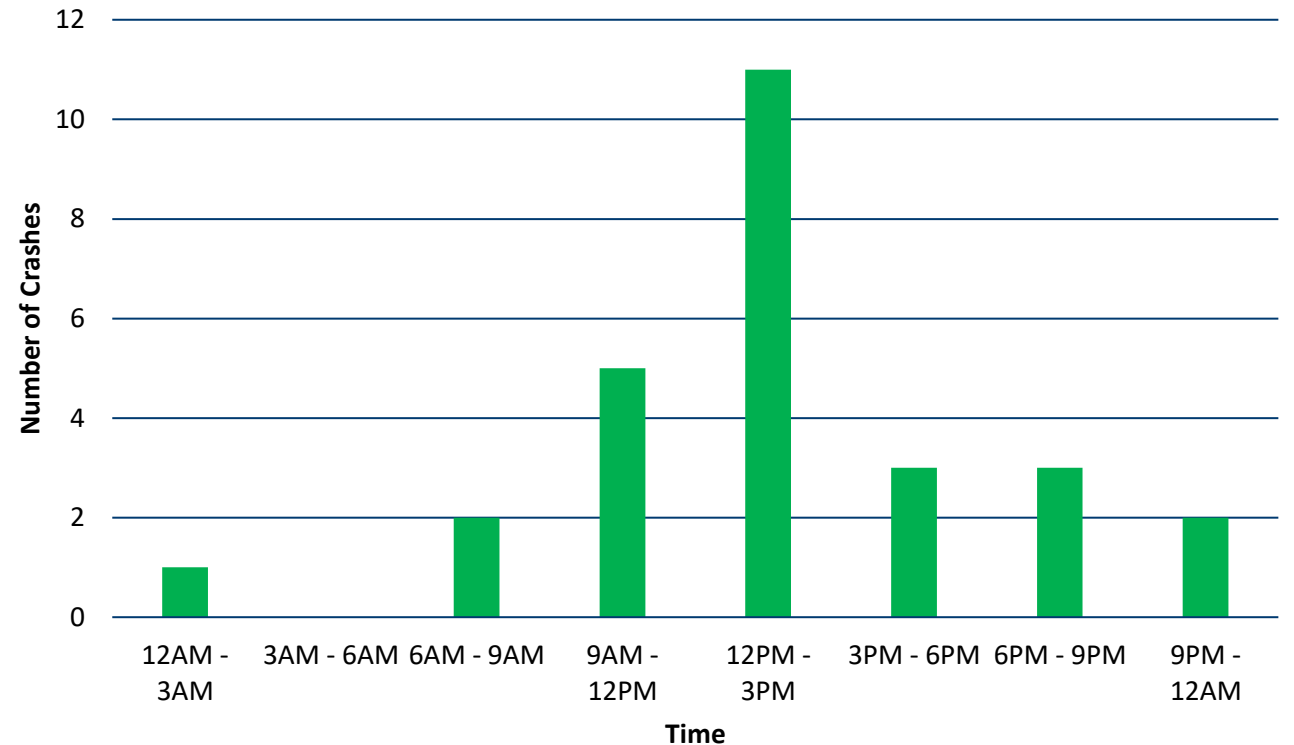
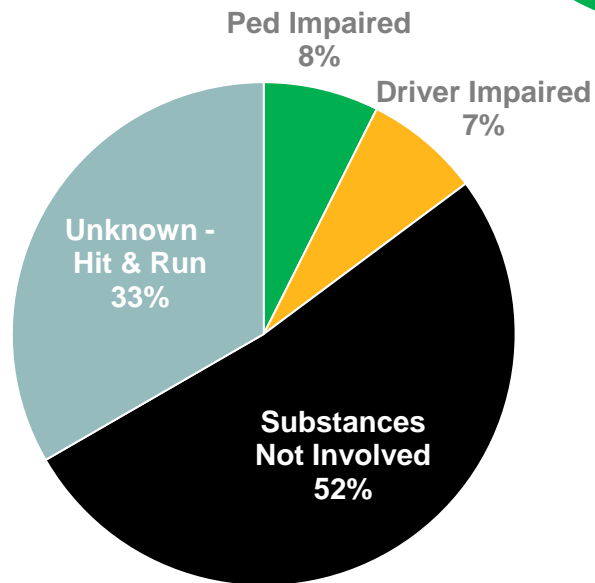
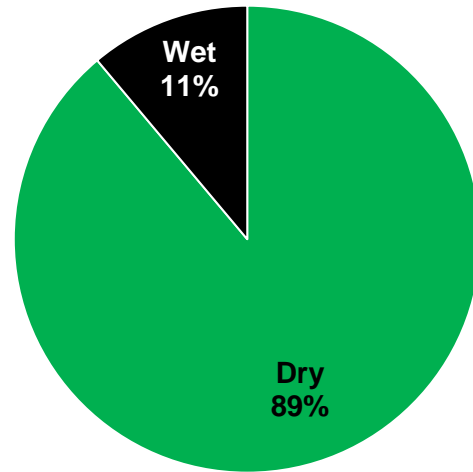


% of Total Pedestrians Involved in Crashes





# Huntington Pedestrian Crashes



**15% of all pedestrian crashes involved pedestrians or drivers under the influence of drugs or alcohol**



# Pedestrian Crashes by Time of Day

## All Crashes

	12A	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	12P	1P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P	Totals
Sunday		2	2	1		1									3	2			1						12
Monday									1		1	2	2	1	1	1	2	2	1	3	1	1			19
Tuesday							1	2	1	1	1	1	3	1		2	2	2	1	2	3	1	1		25
Wednesday	1				1			3			1	2	1	2	1	2			3	2	1	1		1	22
Thursday	1							1	2		2	2	1	1	1	2	1	2	4	1					21
Friday	1	1					1		1	1	2	2	3		1			1	1	1		1	1	1	19
Saturday	1	1				1				2				2		2		2	1	1	1	1		1	16
<b>Totals</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>7</b>	<b>9</b>	<b>10</b>	<b>7</b>	<b>7</b>	<b>11</b>	<b>5</b>	<b>9</b>	<b>12</b>	<b>10</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>134</b>

## November - February

	12A	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	12P	1P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P	Totals
Sunday		1	1			1										1									4
Monday																1	2	1		1		1			6
Tuesday											1		2	1		1	1	1	1	1	2				11
Wednesday					1			2			1	1							1				1		7
Thursday									2									1	3	1					7
Friday							1				1	1	1					1	1			1			7
Saturday		1				1								1				1		1		1		1	7
<b>Totals</b>		<b>2</b>	<b>1</b>		<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>		<b>3</b>	<b>2</b>	<b>3</b>	<b>2</b>		<b>3</b>	<b>3</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>49</b>

Lower Frequency Higher Frequency XX Number of Pedestrians Involved in Crashes

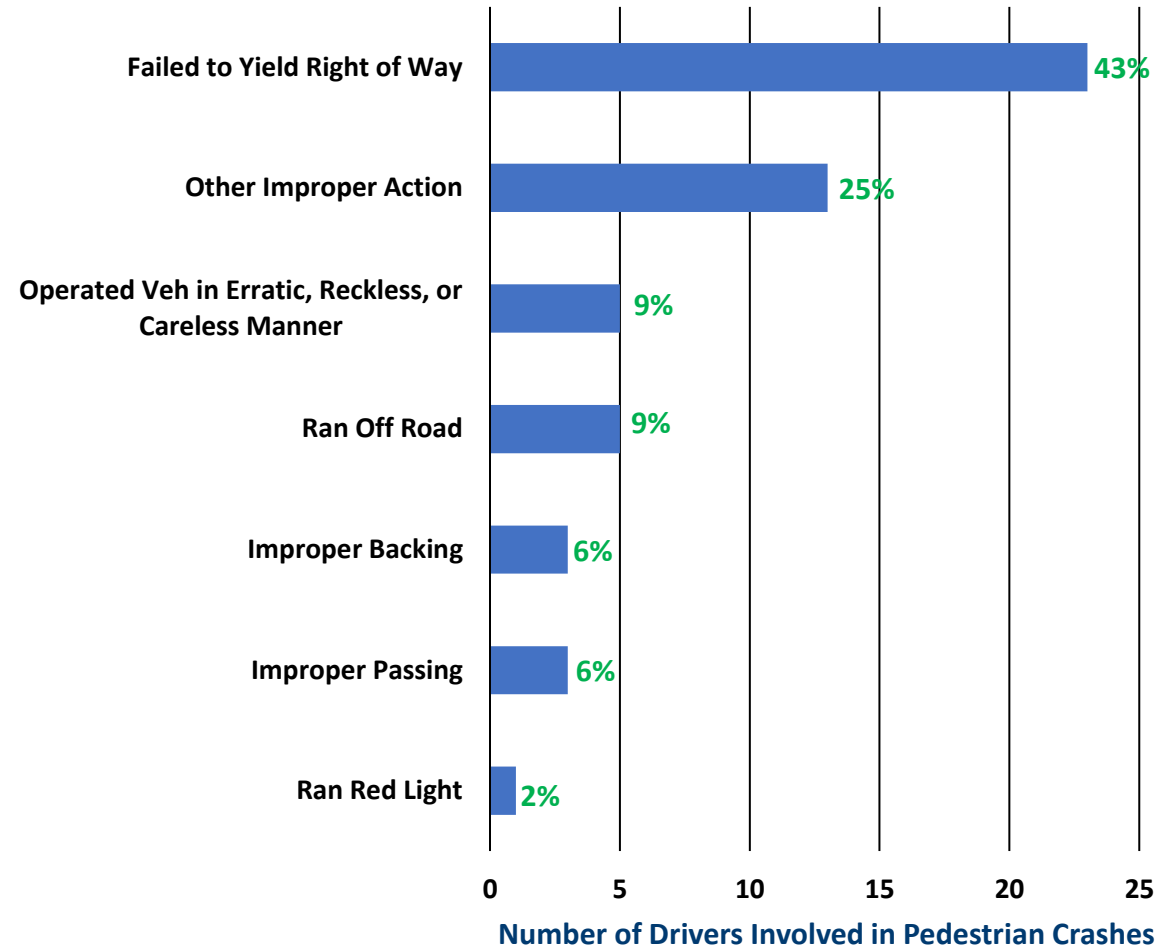






# Driver Action Contributing to Crash

- Drivers were **not** found to be at fault for the majority of pedestrian crashes.
- Many of the pedestrian crashes resulted from people attempting to cross roads **away from a designated crosswalk.**
- The most common driver action that contributed to pedestrian crashes was failing to yield the right of way.

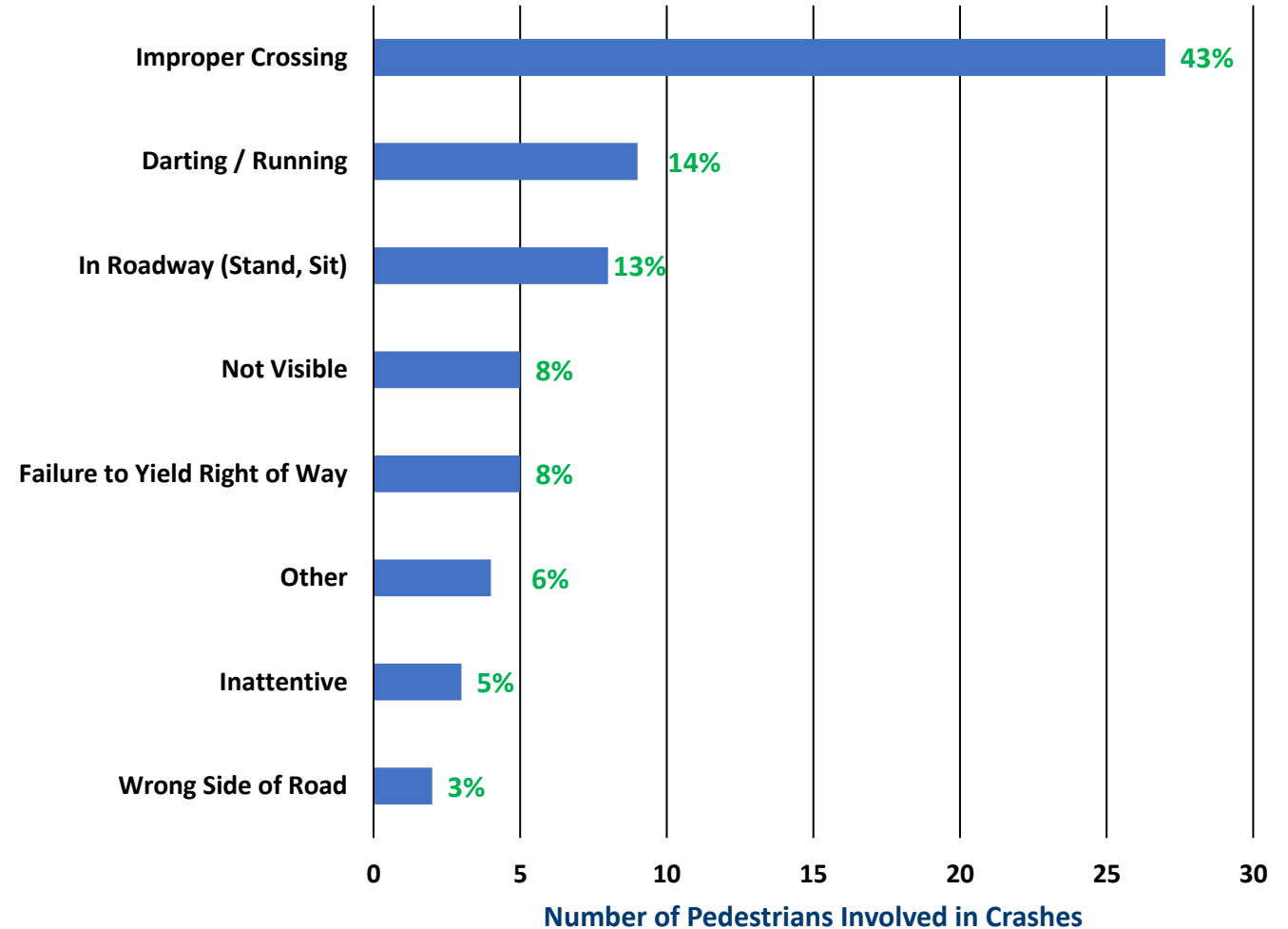


% of Total Drivers Involved in Pedestrian Crashes



# Pedestrian Contributing Actions

- The most frequently cited contributing pedestrian action for pedestrian crashes was **“Improper Crossing”**.
- From the crash report narratives, college students crossing local streets away from the designated crosswalk was a frequent factor in pedestrian crashes.

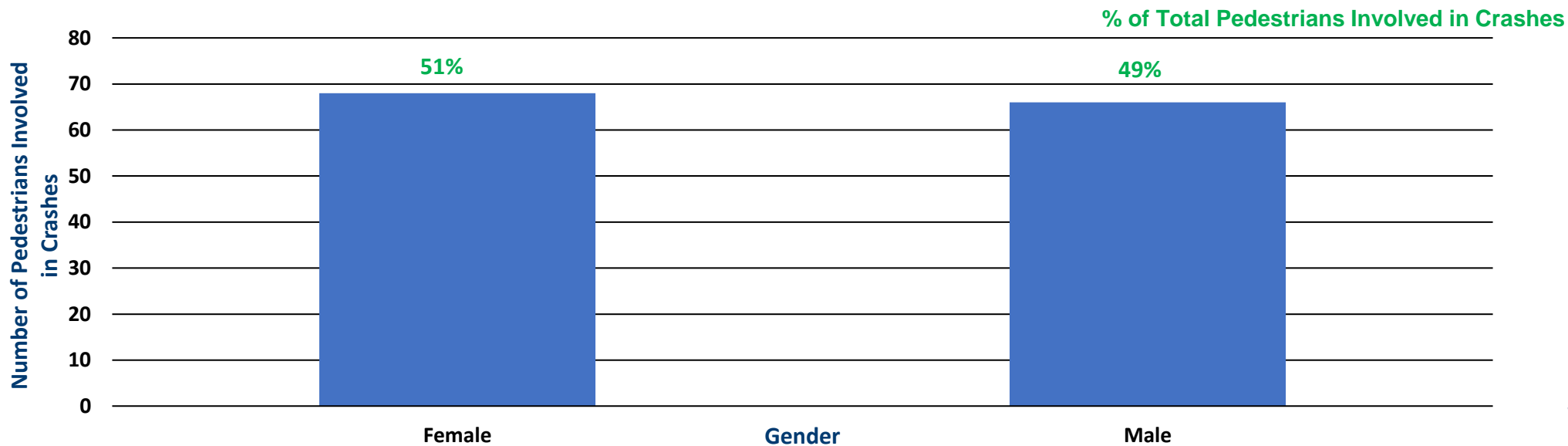
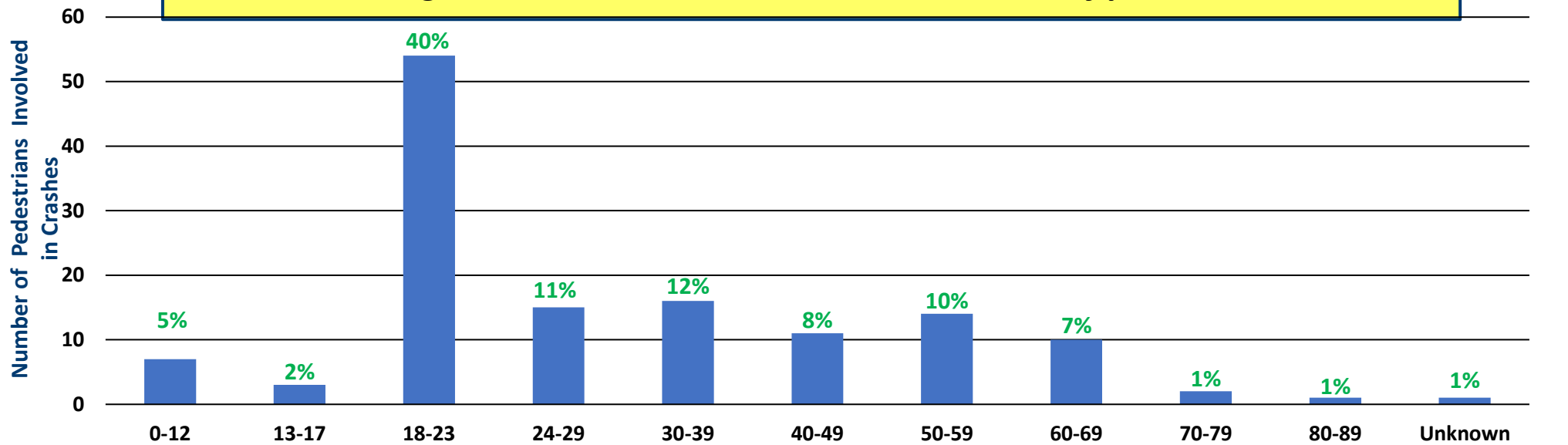


% of Total Pedestrians Involved in Crashes



# Pedestrian Age & Gender

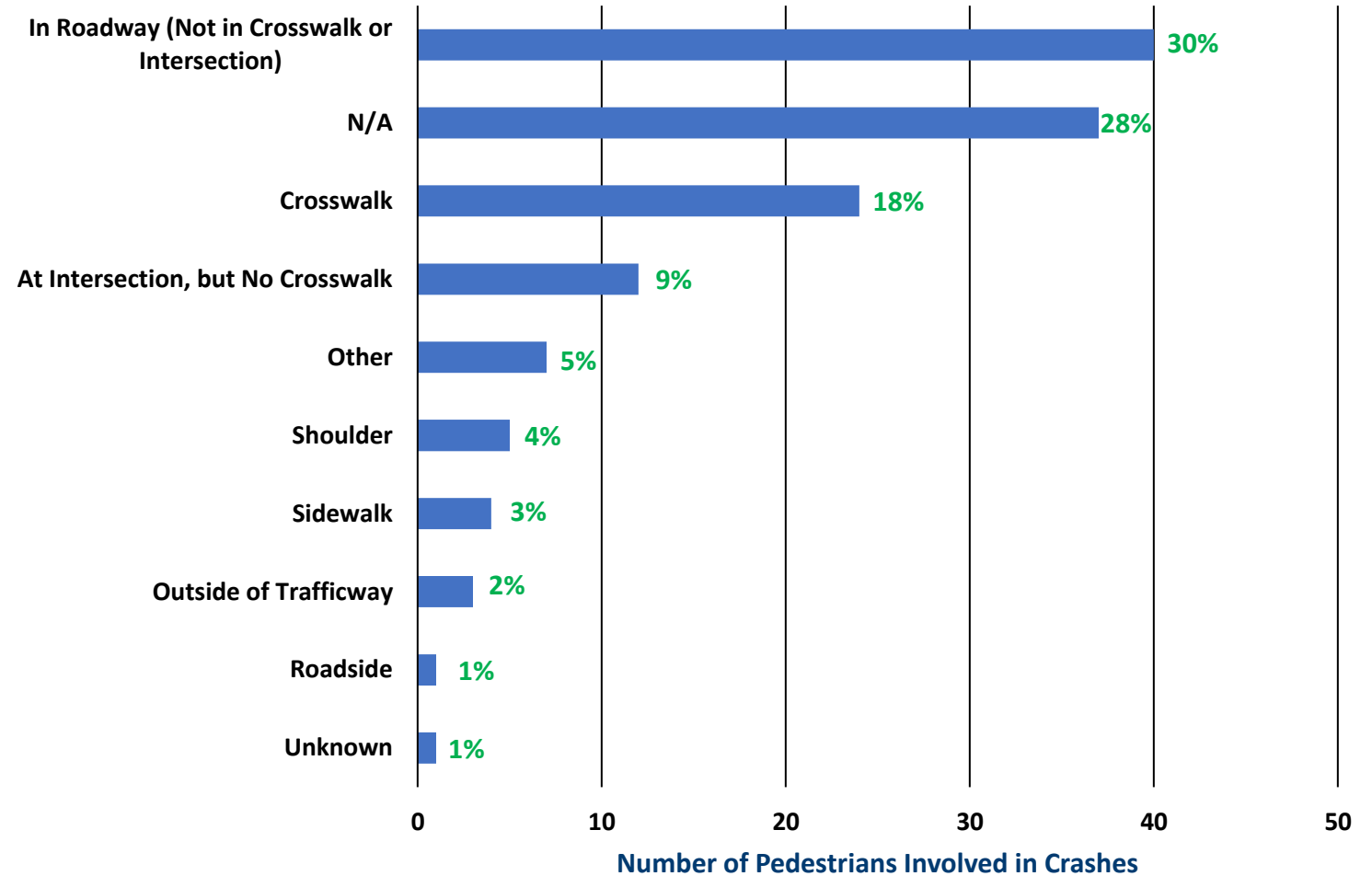
*Pedestrians aged 18-23 were the most common victims of pedestrian crashes.*





# Pedestrian Location at Time of Crash

- 24 (18%) pedestrians were located in a crosswalk at the time of the crash
- 57 (43%) pedestrians were in the roadway but not at a crosswalk at the time of crash

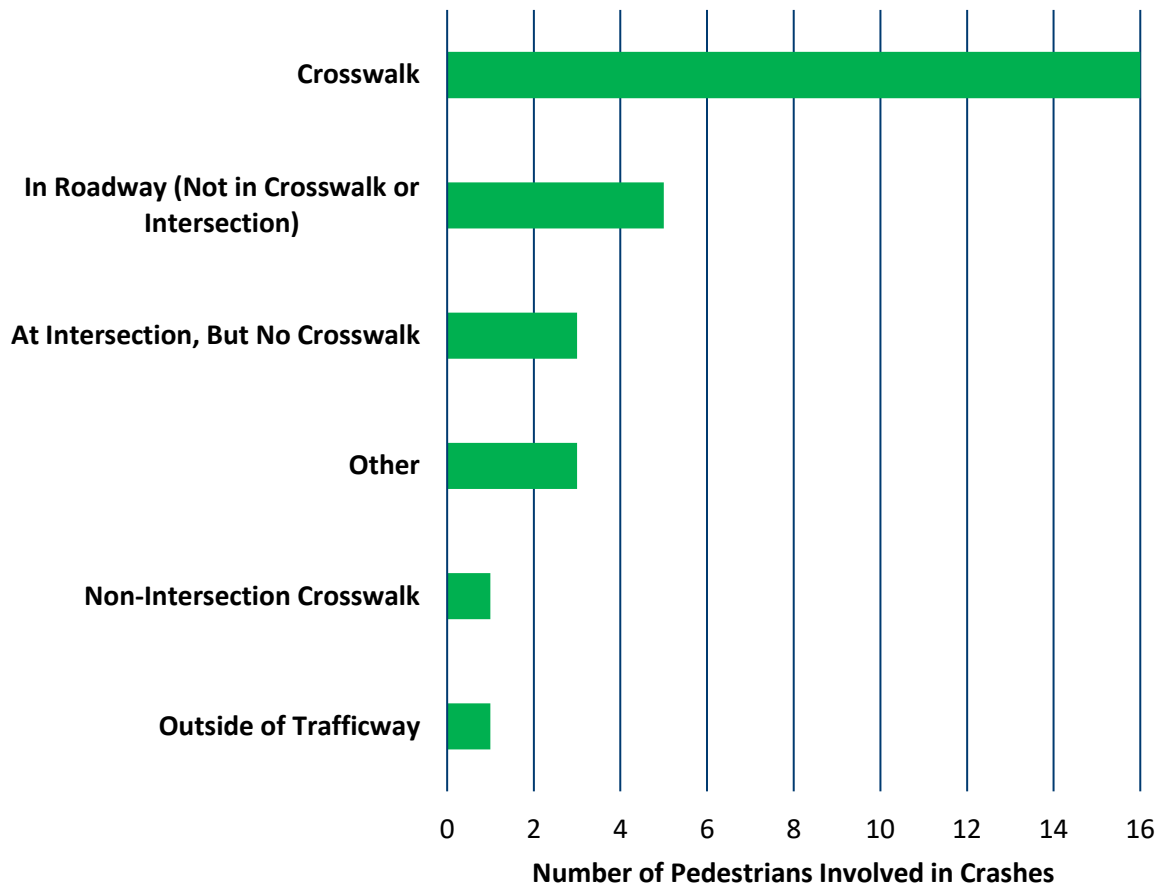


% of Total Pedestrians Involved in Crashes

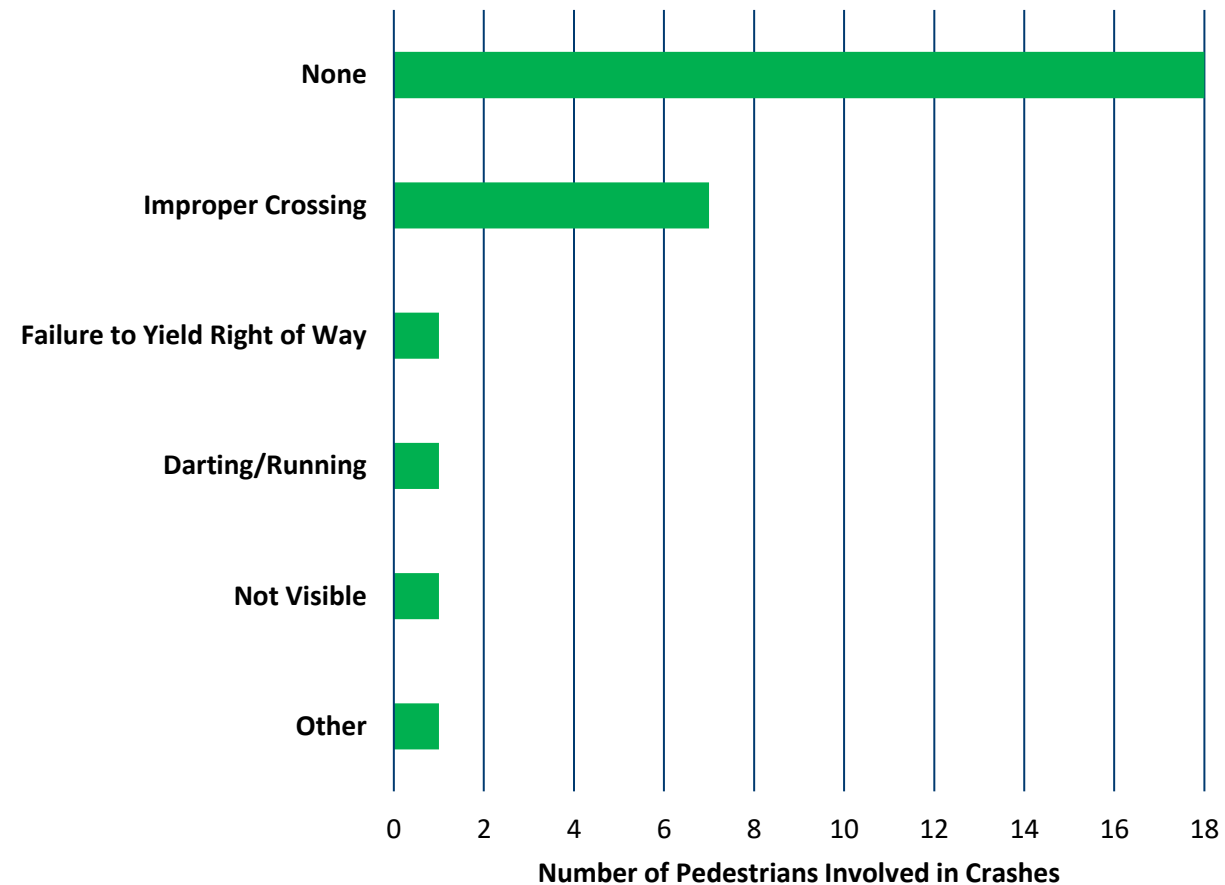


# Huntington Pedestrian Crashes

Pedestrian Locations



Pedestrian Contributing Actions

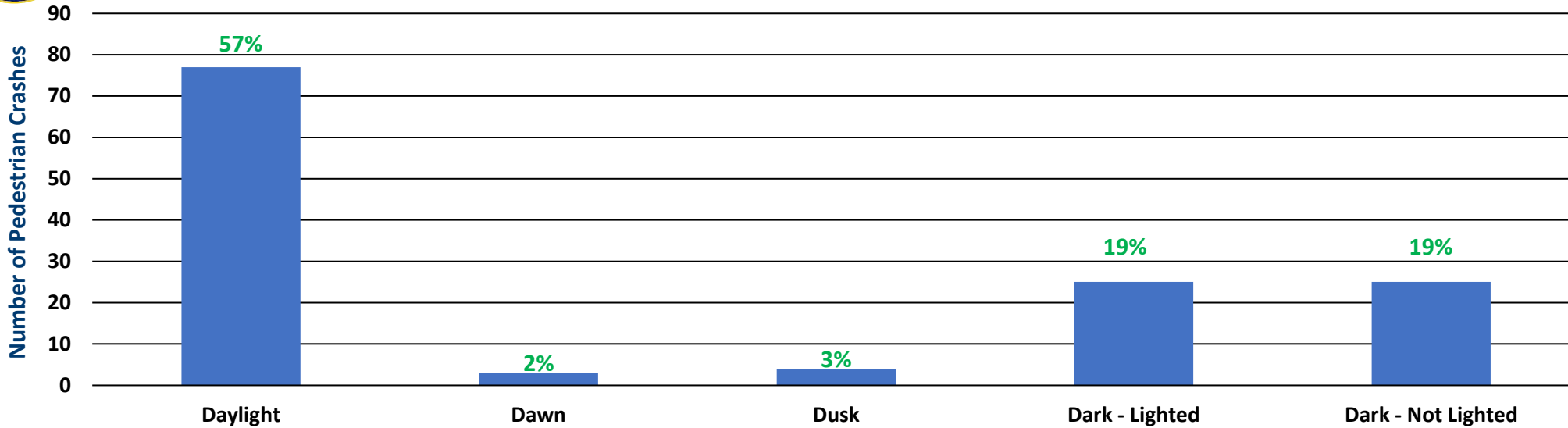


Many of the pedestrian crashes resulted from pedestrians crossing at a designated crosswalk

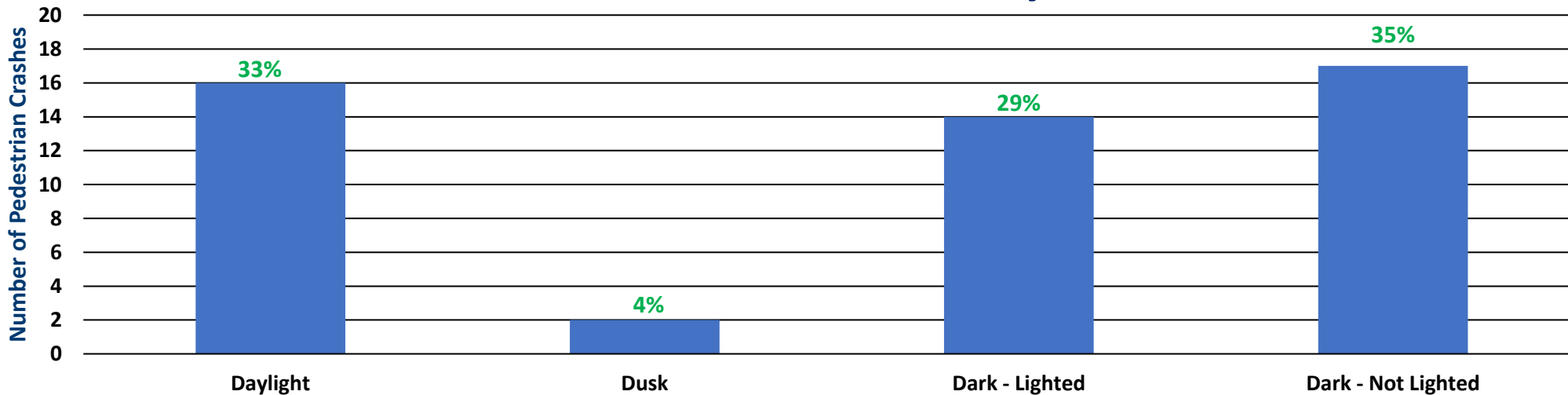


# Lighting Conditions

**Of the 134 pedestrian crashes, 50 (38%) occurred at night.**



## November - February



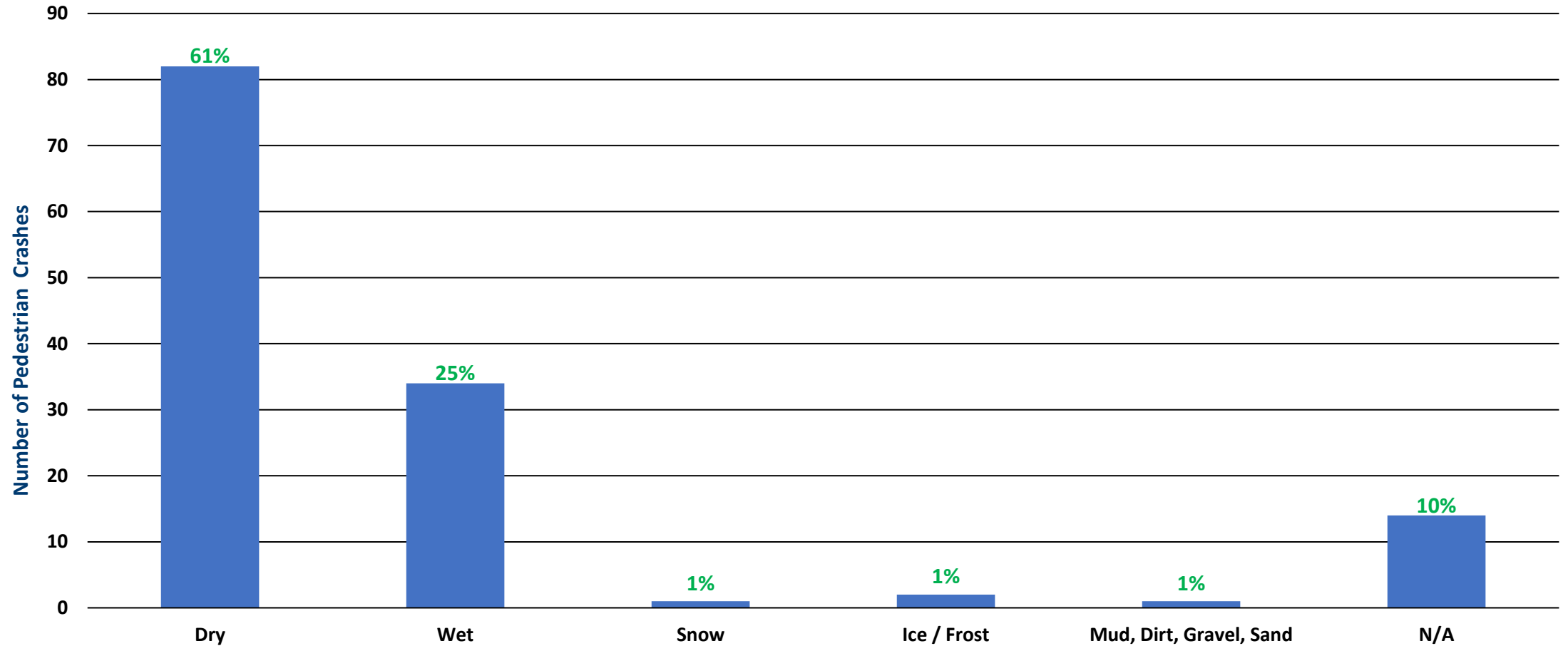
% of Total Pedestrians Involved in Crashes





# Surface Conditions

*Of the 134 pedestrian crashes, 37 (27%) occurred with wet, snow, or icy roadways.*

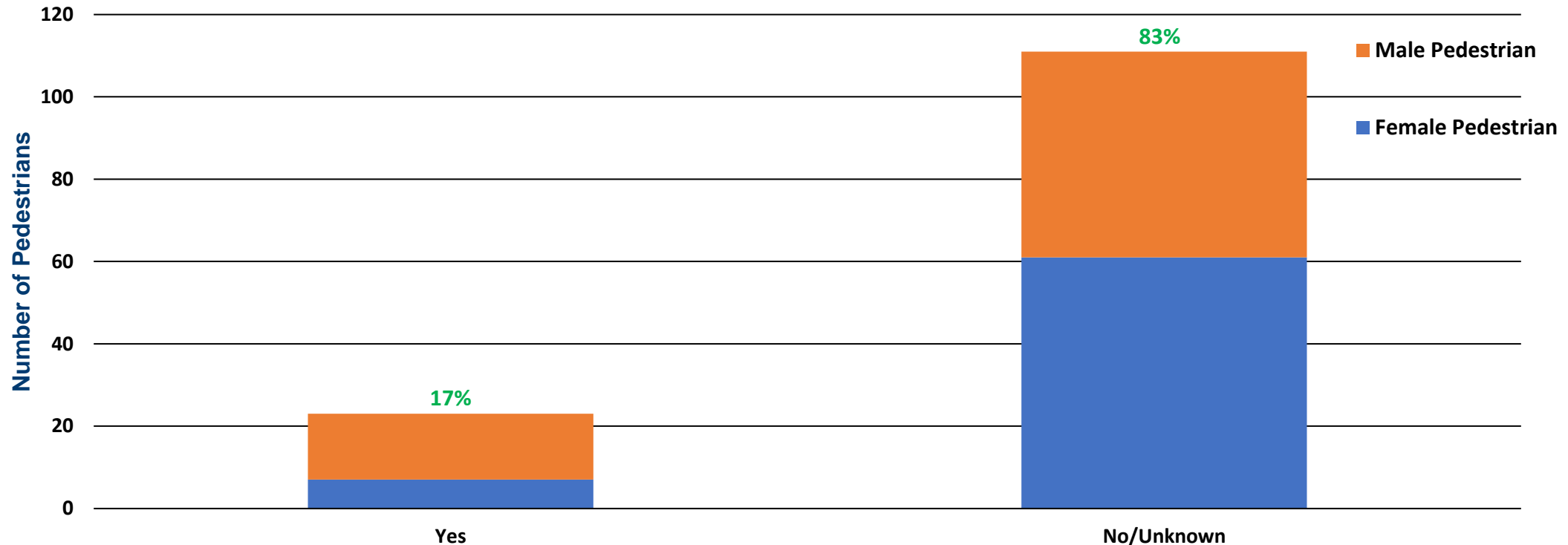




# Impaired Pedestrians

***17% of all pedestrian crashes involved pedestrians who were under the influence of either drugs or alcohol.***

***Of the 23 impaired pedestrians involved in crashes, 16 were male and 7 were female.***

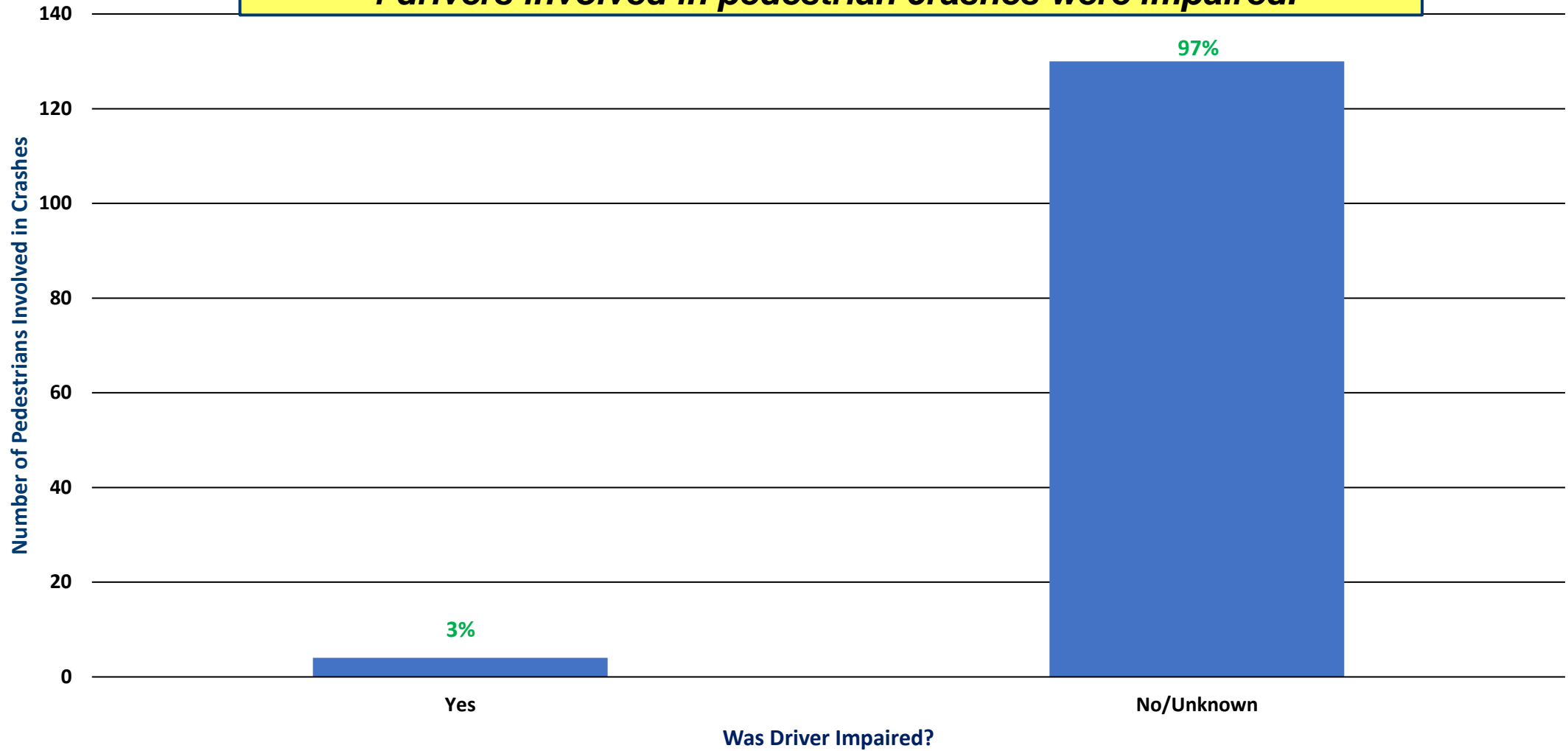






# Impaired Drivers

**4 drivers involved in pedestrian crashes were impaired.**



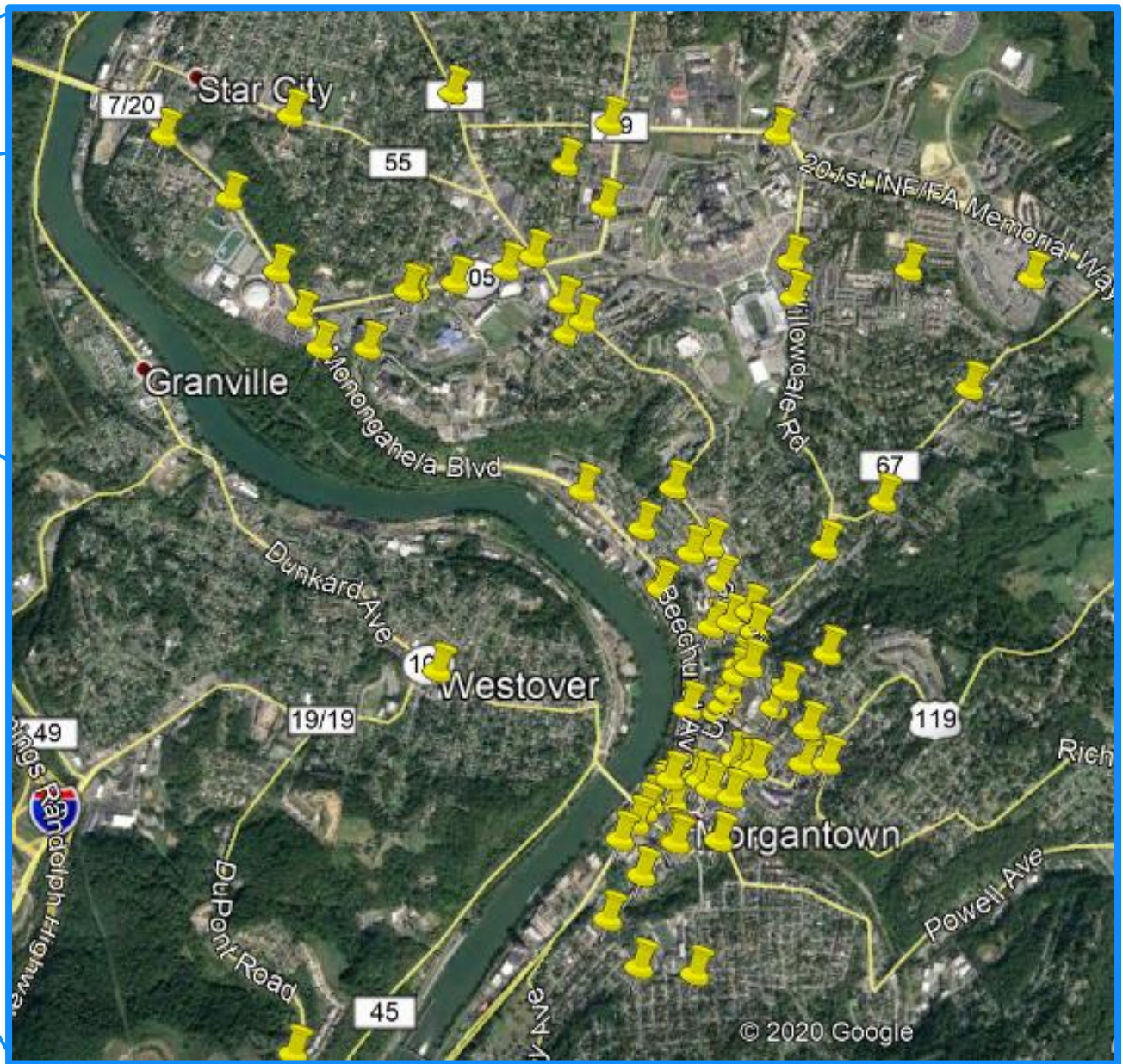
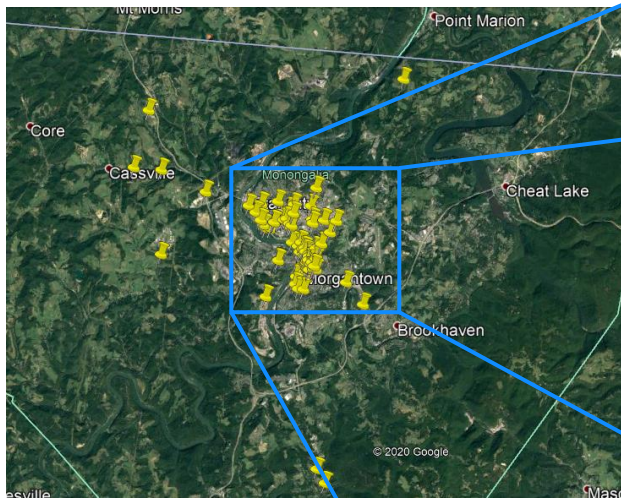


# Morgantown Pedestrian Crash Trends

- 88% of all pedestrian crashes occurred during the primary school months of August through April
- 79% of all pedestrian crashes occurred between Monday and Friday
- 47% of all pedestrian crashes resulted in Type A, Type B, or Fatal Injuries
- 40% of all crashes involved pedestrians between the ages of 18-23
- 38% of all pedestrian crashes occurred at night
- 27% of all pedestrian crashes occurred in wet, snow, or icy roadways
- 17% of all pedestrian crashes involved pedestrians who were under the influence of either drugs or alcohol



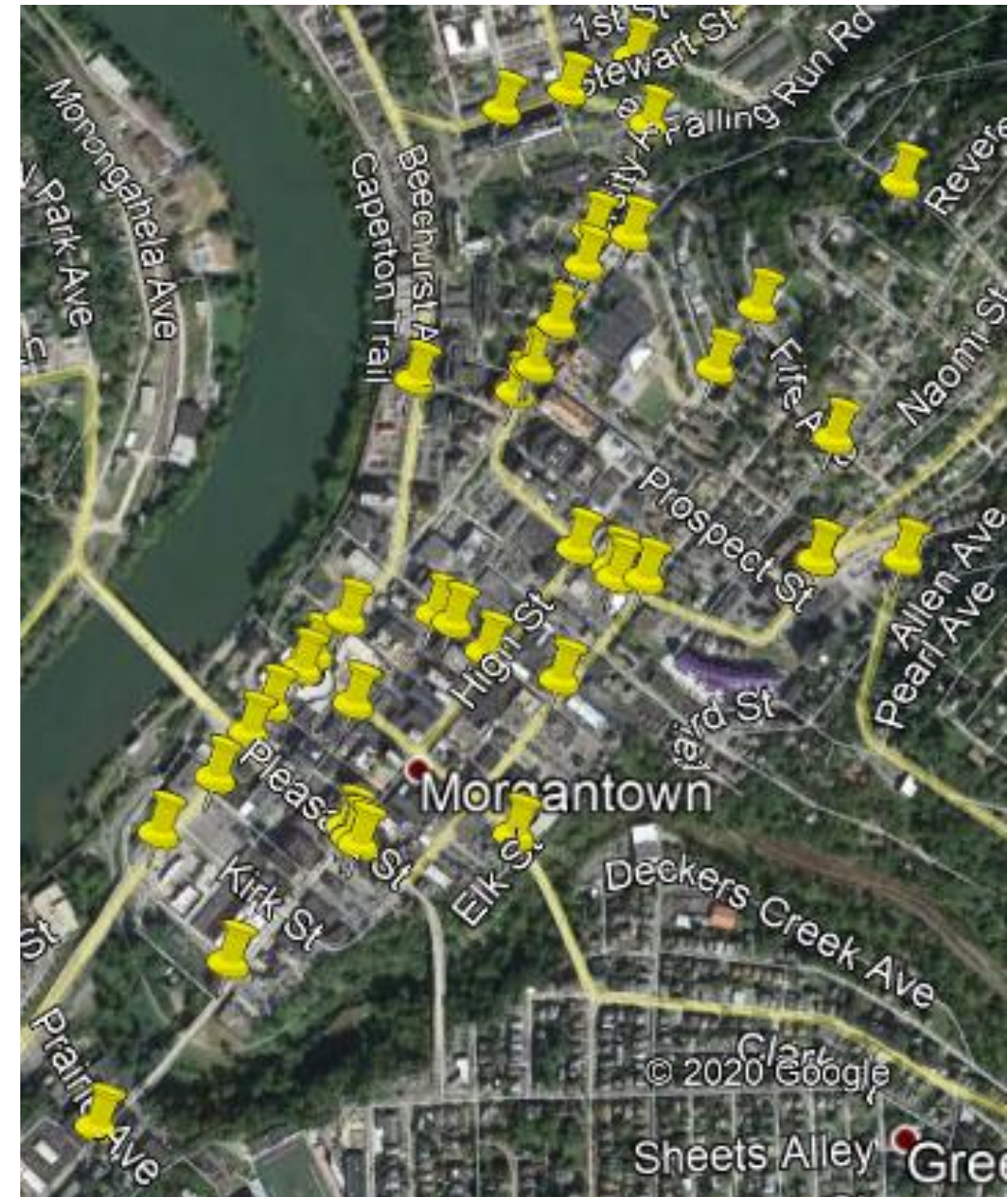
# Pedestrian Crash Locations





# Pedestrian Crash Locations

- Roadways of concern
  - University Ave.
  - Monongalia Blvd.
  - Patteson Dr.
  - Don Knotts Blvd.
  - Willey St.
  - Fayette St.
  - Pleasant St.





# Suggested Next Steps

- Proposed Scope of Work

- Select up to 10 high pedestrian crash locations for further study based on crash data review

- University Ave. from Falling Run Rd. to Beechurst Ave.
- Monongalia Blvd. from Patteson Dr. to Evanston Dr.
- Patteson Dr. from Monongalia Blvd. to University Ave.
- Don Knotts Blvd. from Fayette St. to Sturgis St.

***High Priority Corridors***

- Willey St. from N. High St. to Spruce St.
- Fayette St. from Chestnut St. to N. High St.
- Pleasant St. @ N. High St.

***Medium Priority Corridors***

- Recommend high priority corridors for Pedestrian Road Safety Audits
- Medium priority corridors reviewed for low-cost pedestrian improvements

***Field work and data collection delayed due to COVID-19. Students need to be present to capture true field conditions and observations***



# Suggested Next Steps

- Pedestrian Road Safety Audits
  - Develop corridor base mapping with existing conditions information and pedestrian crash locations
    - Will need to observe pedestrian movements within each corridor
  - Develop audit team
  - Evaluate the following:
    - Pedestrian phasing at signalized intersections
    - Right Turn on Red restrictions
    - Sign and pavement marking improvements at established pedestrian crossings
    - Speed limits and speed studies
    - Lighting inventories
    - Need for pedestrian barriers to prevent undesirable mid-block crossings
    - Obtain traffic counts as needed
    - Incorporate recommendations from other studies where appropriate



# Pedestrian Safety Audit Process

- Review location-specific pedestrian crash history at selected sites
- Perform pedestrian observations & counts
- Compile existing data
  - Pedestrian facilities: sidewalk, pedestrian signals, etc.
  - Bus stop locations and ridership data
  - Roadway facilities: channelization, lighting, etc.
  - Vehicular and pedestrian volumes
- Conduct walking tour with stakeholders (*may have to do virtually*)
- Perform additional analysis to evaluate potential improvements (short and long-term)
- Present improvements to stakeholders for concurrence



# Sample Existing Conditions Map

March 2021

## Existing Conditions

### University Avenue

Beechurst Avenue/  
Fayette Street  
to  
Falling Run Road  
Morgantown, WV

-  Traffic Signal
-  Existing Bus Stop
-  Daily Bus Board/Alight
-  Existing Luminaire
-  Existing Sidewalk/  
Mixed Use Path
-  Pedestrian  
Non-Injury Crash
-  Bicycle  
Non-Injury Crash
-  Pedestrian  
Injury Crash
-  Bicycle  
Injury Crash
-  Pedestrian  
Fatal Crash
-  Bicycle  
Fatal Crash
-  Nighttime Crash
-  Direction of Pedestrian/  
Bicyclist
-  Weekday Hourly  
Ped Volume  
(highest recorded  
hour of 3 peaks)

Crash study period - January 2008  
through December 2018

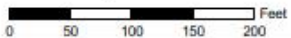


Figure 1



Figure 2





# Typical Audit Field Meeting

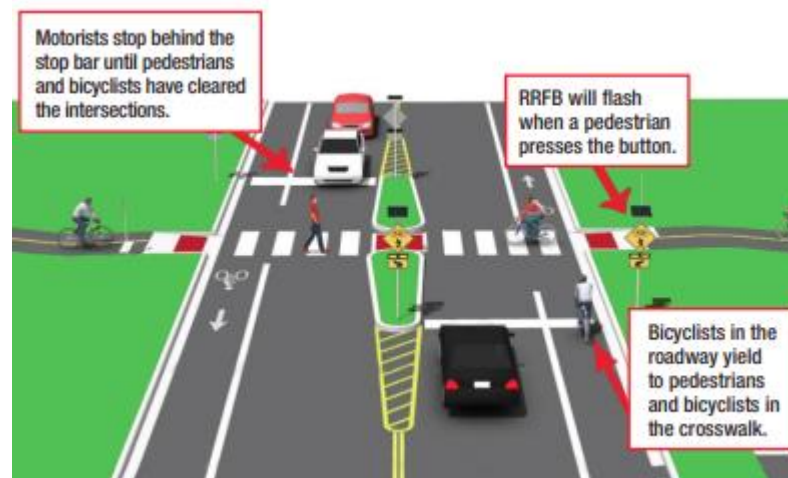
- Stakeholders would likely include:
  - WVDOH
  - WV State Police
  - City of Morgantown Police
  - West Virginia University Police
  - West Virginia University Administration
  - City of Morgantown
  - FHWA
  - Morgantown-Monongalia MPO
  - West Virginia LTAP
- Identify potential pedestrian improvements at focus areas based on a review of Existing Condition figures and field conditions
- Field meeting outcomes used to guide the study's detail safety and operational assessments





# Potential Infrastructure Upgrades

- Sidewalks, Side Paths, Trails
- Crosswalks, Pedestrian Signals
- New Traffic Signals
- ADA Upgrades
- Roadway Lighting
- Bus Stop Relocations
- Rectangular Rapid Flashing Beacons
- Barriers
- Road Diets
- Refuge Islands
- Bumpouts
- Pedestrian signal phasing upgrades
- Traffic signal phasing upgrades
- Speed limit modifications





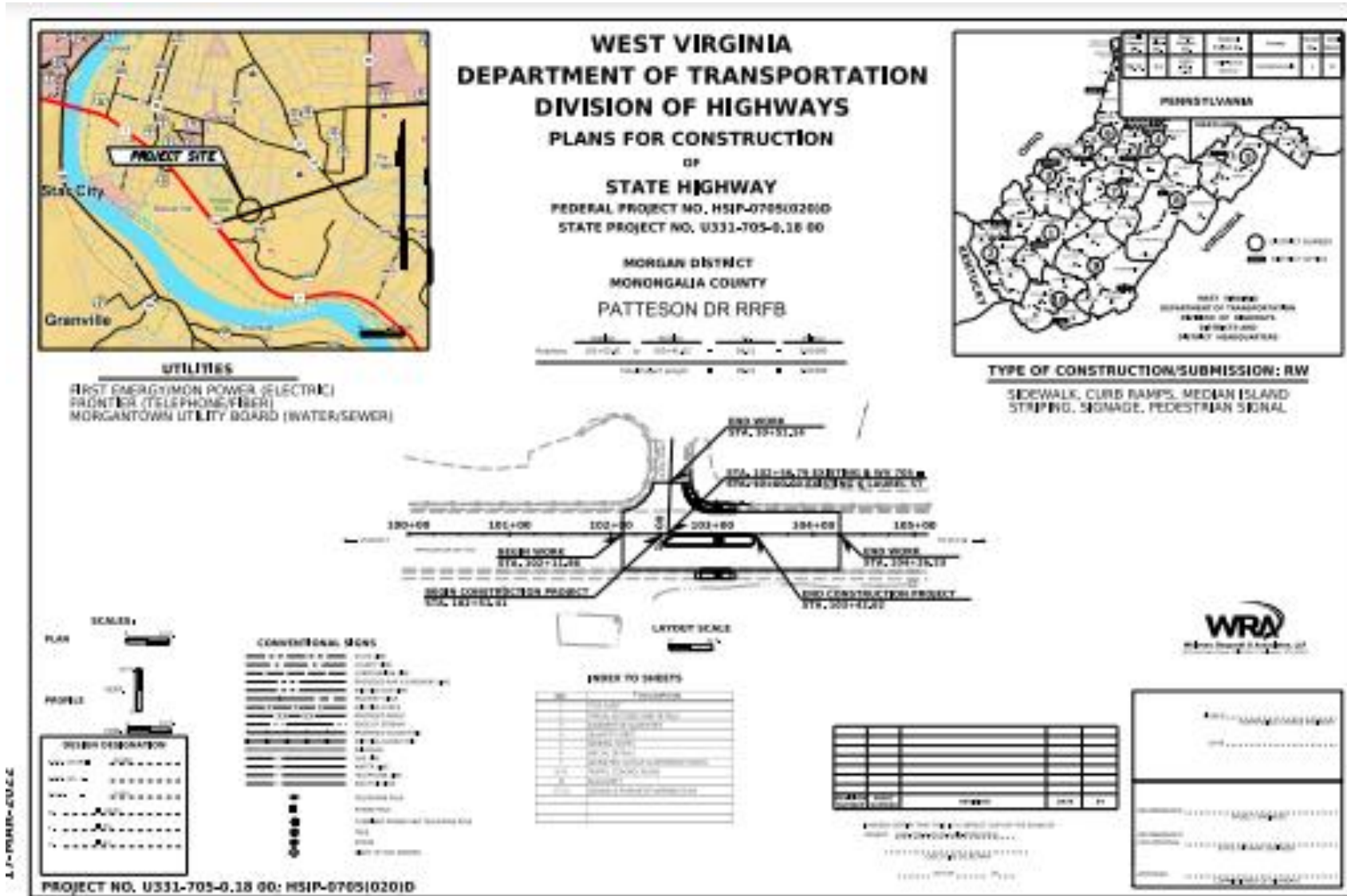
# Beechurst Avenue @ Hough Street

- 12 hour turning movement county was completed on December 5, 2019 by WRA.
- Field observations of pedestrian movements were conducted on December 6, 2019 by WRA.
- Traffic signal warrant analysis was performed by WRA and intersection did not meet warrants for a signal.
- Additional pavement markings and signing were recommended and incorporated into widening project.





# Results from RSA





# Next Steps

- Develop data collection needs and begin field data collection
  - Delayed due to COVID-19
- Compile existing field data and develop existing condition mapping
- Complete detailed evaluations where appropriate based on field audit recommendations
- Compile audit report and present to stakeholders



# QUESTIONS?

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