



Morgantown Improvements

March 21, 2024



What is a Vulnerable Road User?

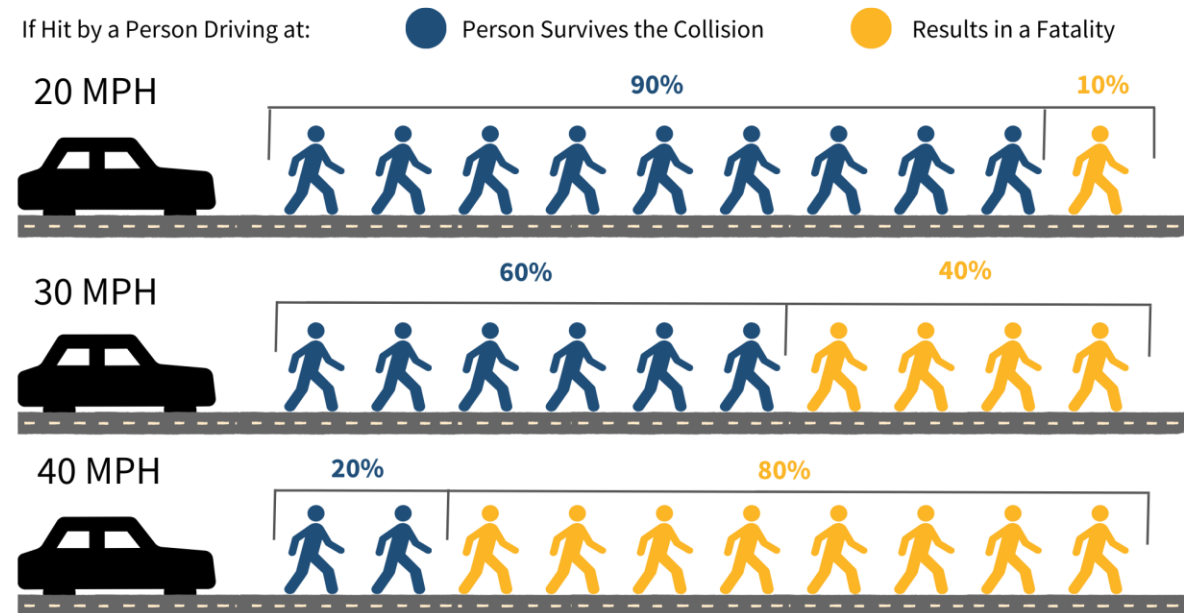
- A VRU is a **non-motorist** including a: pedestrian, bicyclist, other cyclist, or a person using a mobility assistance device (ex: wheelchair).
- This includes people walking, biking, or rolling, and also includes highway workers on foot.
- A motorcyclist is **not** considered a VRU.



“Vulnerable”

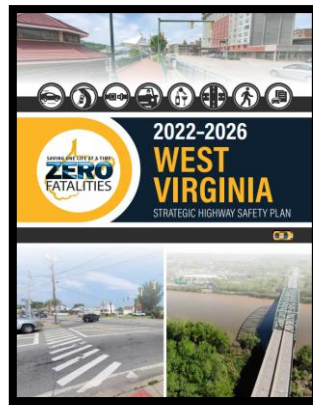
The term **vulnerable** road user is used mainly to describe those **unprotected by an outside shield**, as they sustain a **greater risk of injury** in any collision with a vehicle and are therefore highly in need of protection against such collisions.

Source: National Safety Council



What is a VRU Assessment?

- An assessment of the safety performance of a State with respect to VRUs and the plan of the State to improve the safety of VRUs.
- New requirement from the Federal Highway Administration (FHWA)
- The VRU Assessment is the SHSP Pedestrian Emphasis Area Plan



What is a VRU Assessment?

Quantitative Analysis of VRU Fatalities and Serious Injuries

- Crash data trends
- Demographics of locations of fatalities and serious injuries
- Identifies “high-risk” areas for VRUs



Program of projects or strategies to reduce safety risks to VRUs



Safe System Approach



- Death/Serious Injury is unacceptable
- Humans make mistakes
- Humans are vulnerable
- Responsibility is shared
- Safety is proactive
- Redundancy is crucial



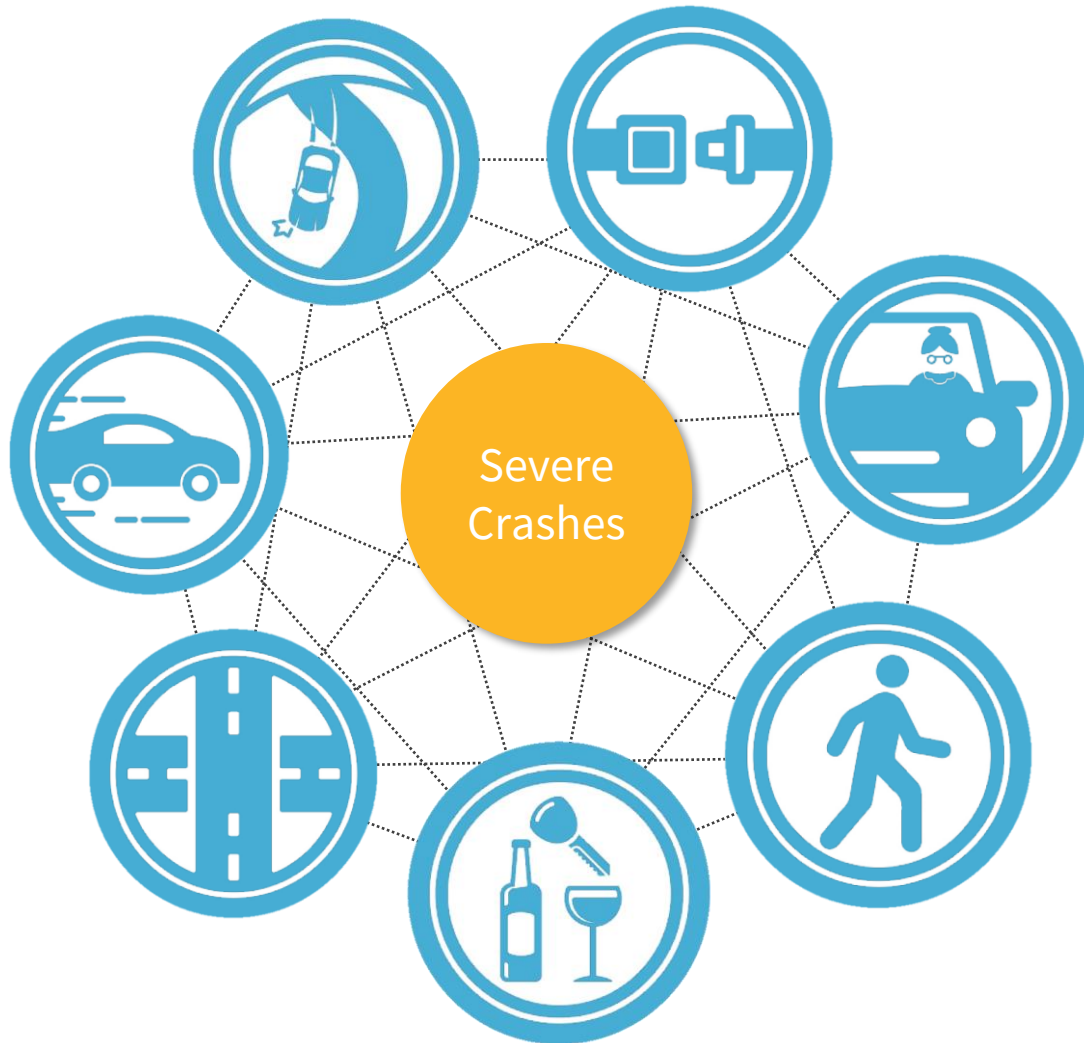
Safe System Approach



- **Safe Roads:** Determine ways to make roads safe for all users
- **Safe Road Users:** Ensure everyone is using the system correctly
- **Safe Speeds:** Match speeds with road context
- **Safe Vehicles:** Understand how innovation can enhance transportation safety
- **Safe Post-Crash Care:** Get emergency response to and from crash site quickly



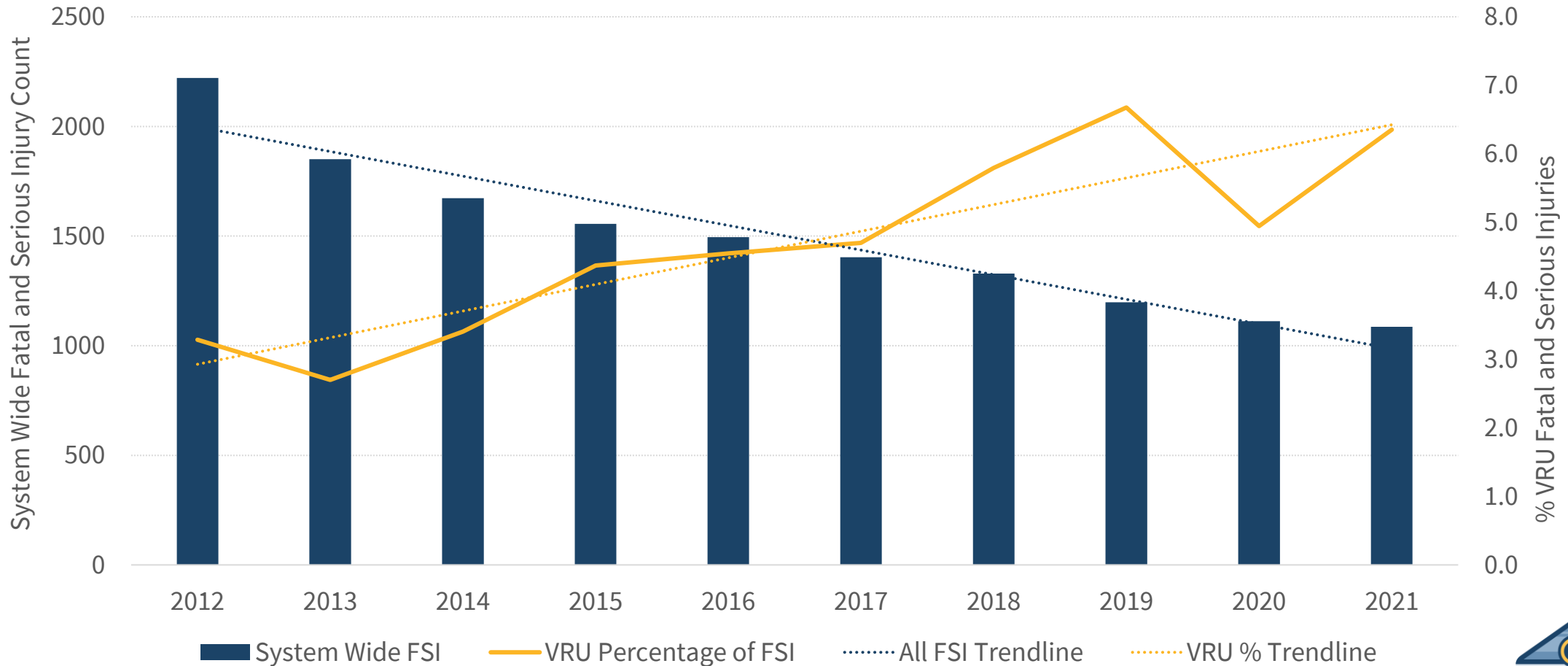
Multidisciplinary Approach



Severe crashes occur for a multitude of reasons. By collaborating with transportation and safety practitioners with diverse backgrounds and perspectives, we can think more holistically about solutions.

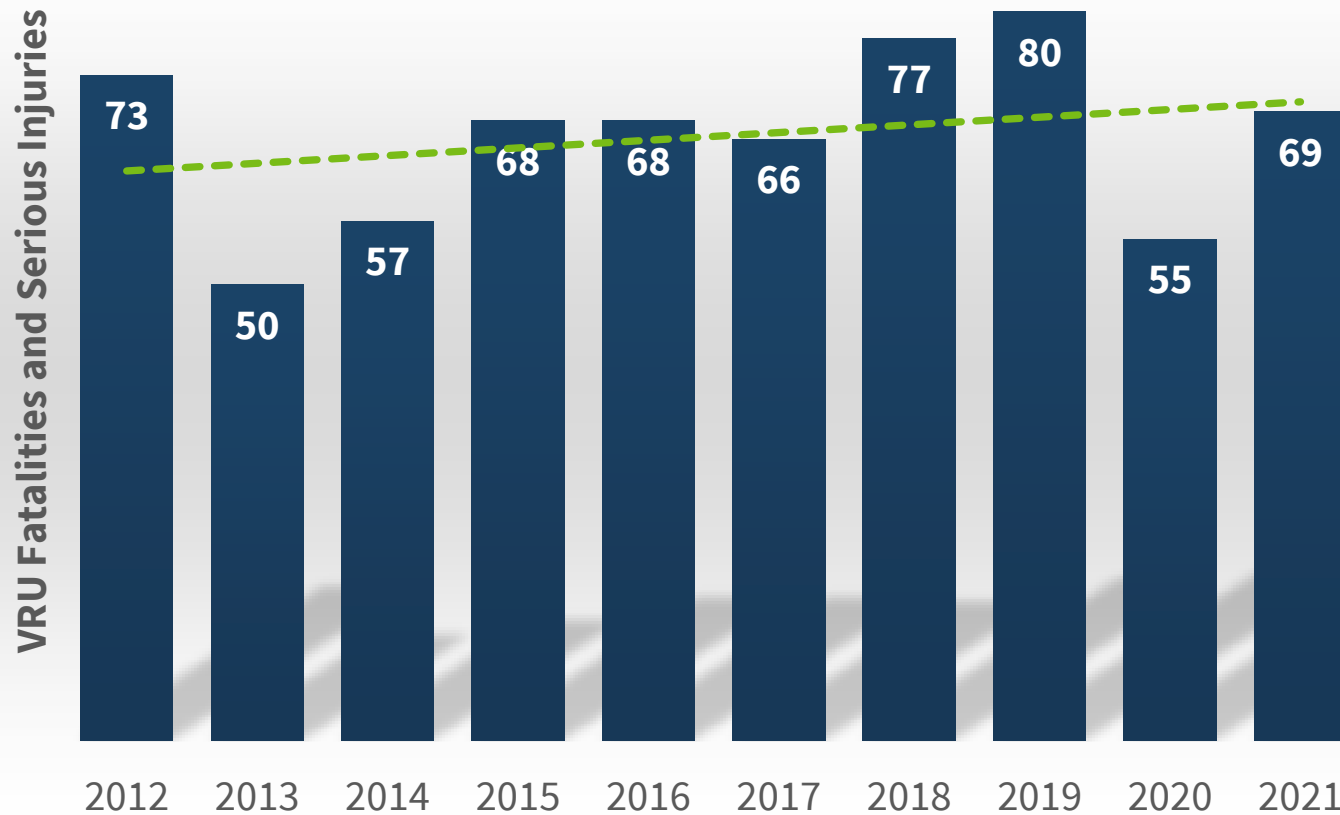


Why is it Important?

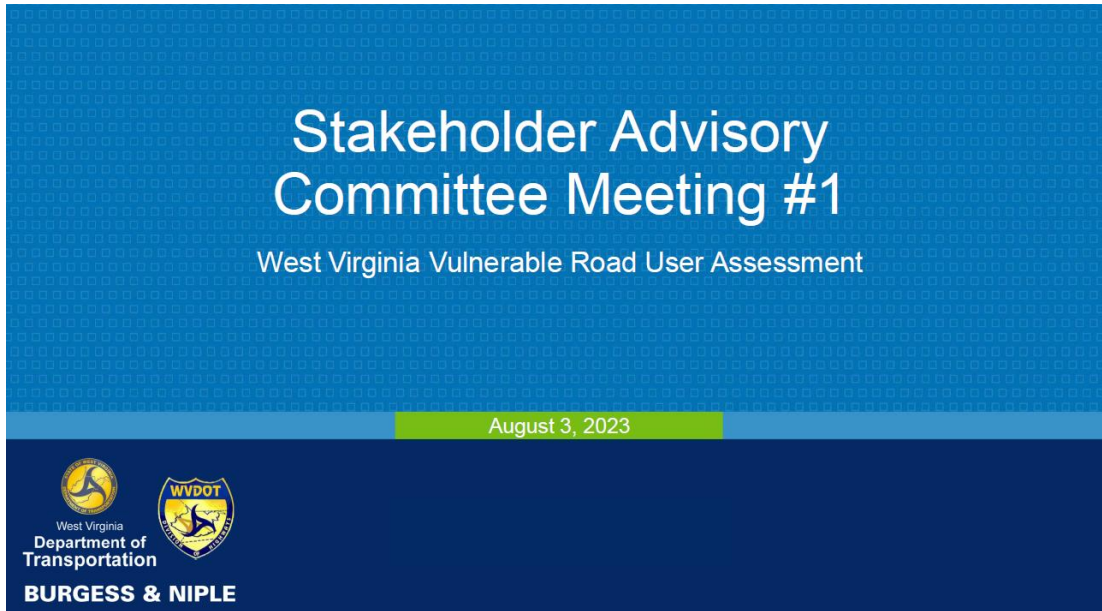


Why is it Important?

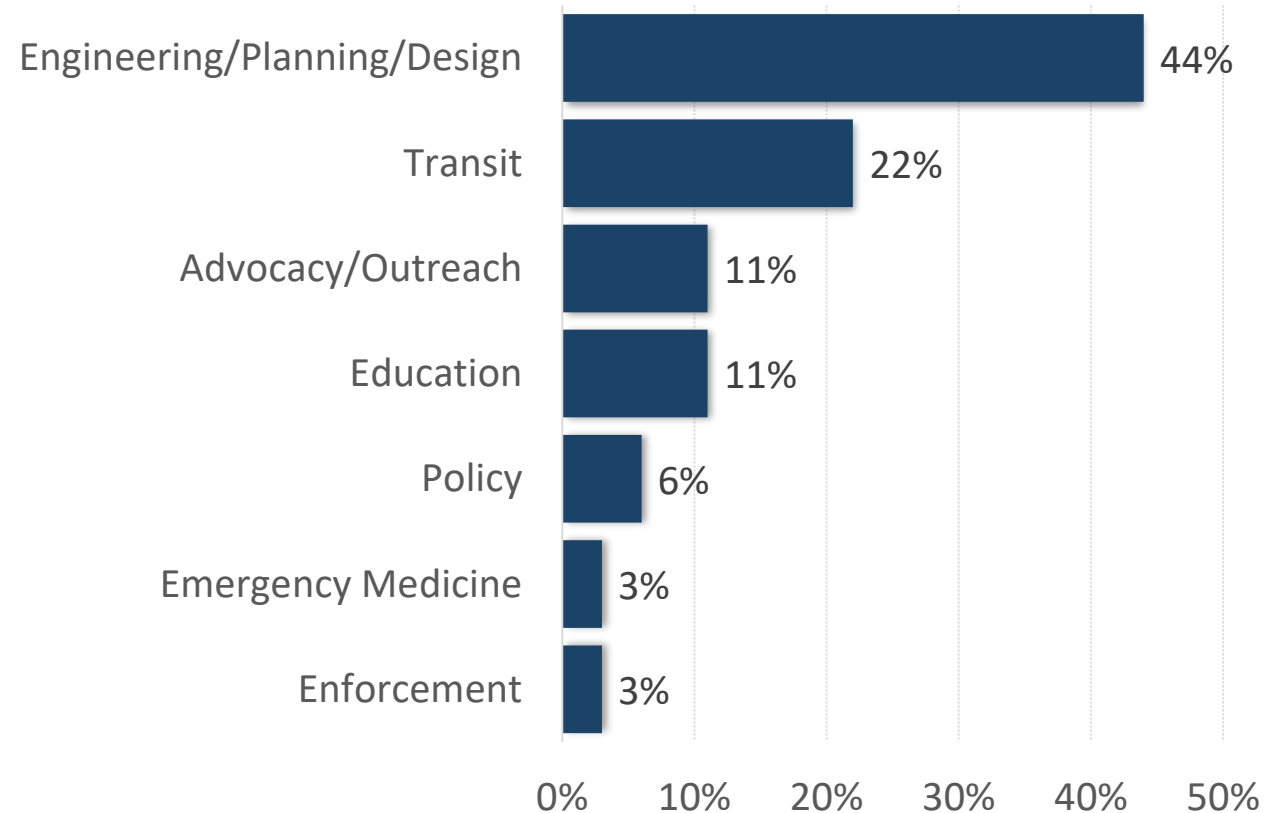
Annual average of **66** VRU fatalities and serious injuries in West Virginia



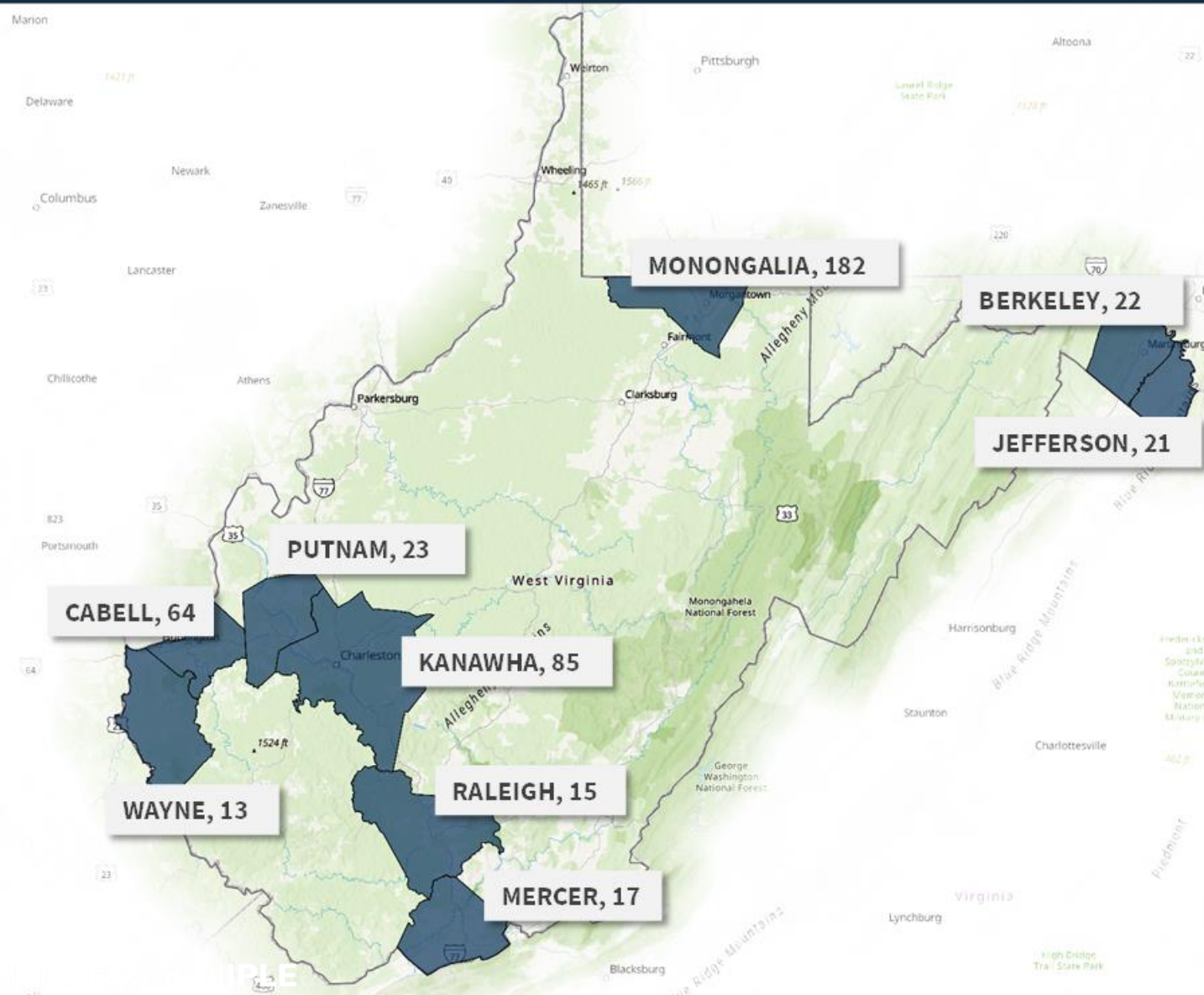
Outreach and Engagement



Stakeholder Meetings



Public Survey

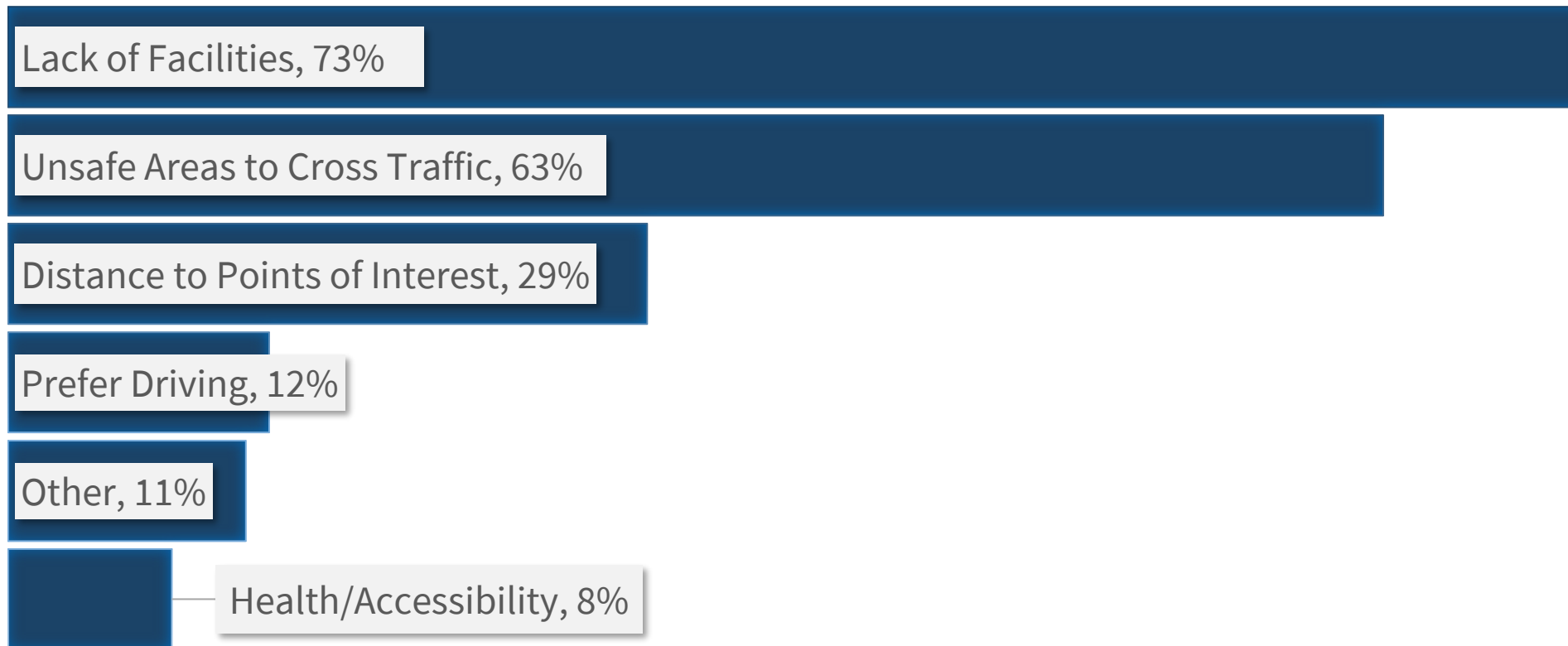


648 Respondents



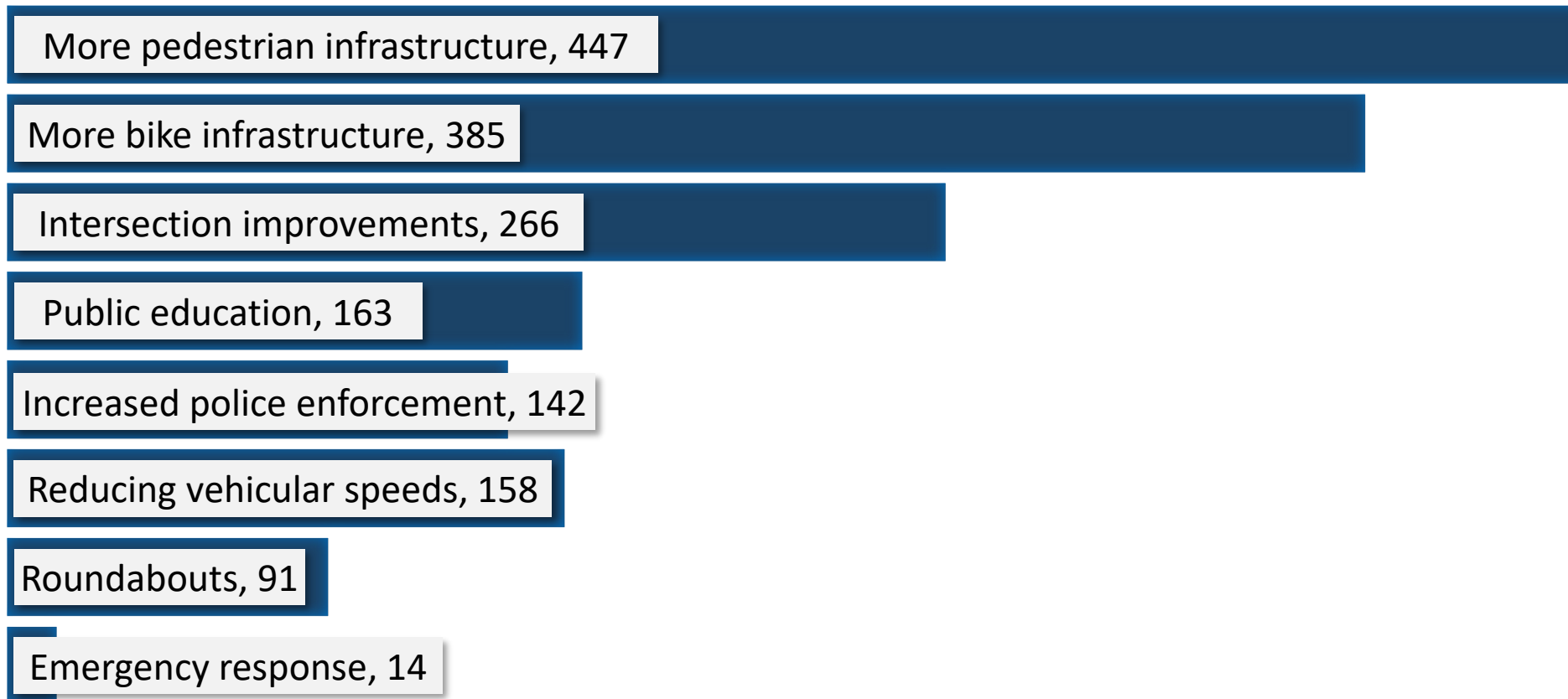
Public Survey

What Barriers Discourage You from Walking or Biking?

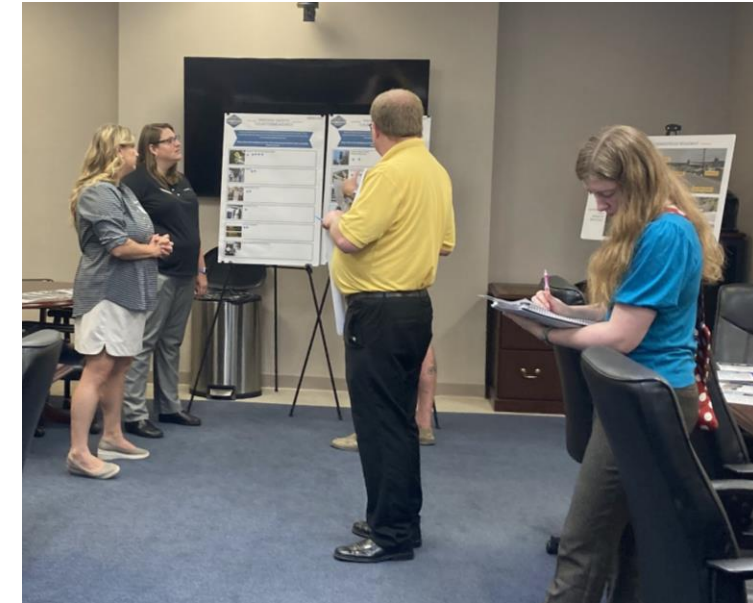
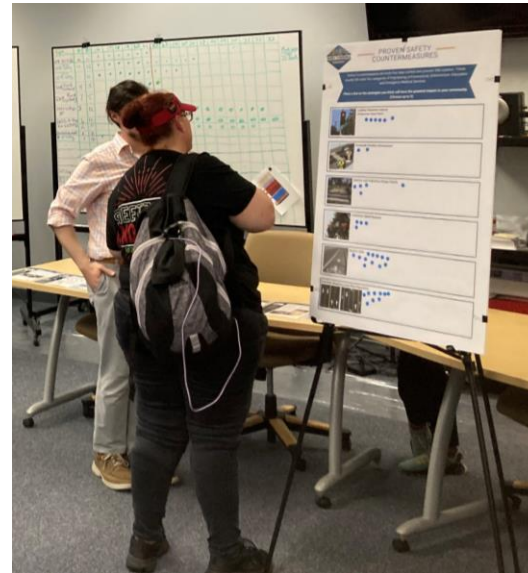


Public Survey

What Do You Think Are the Most Promising Investments for Road Safety?



Public Meetings

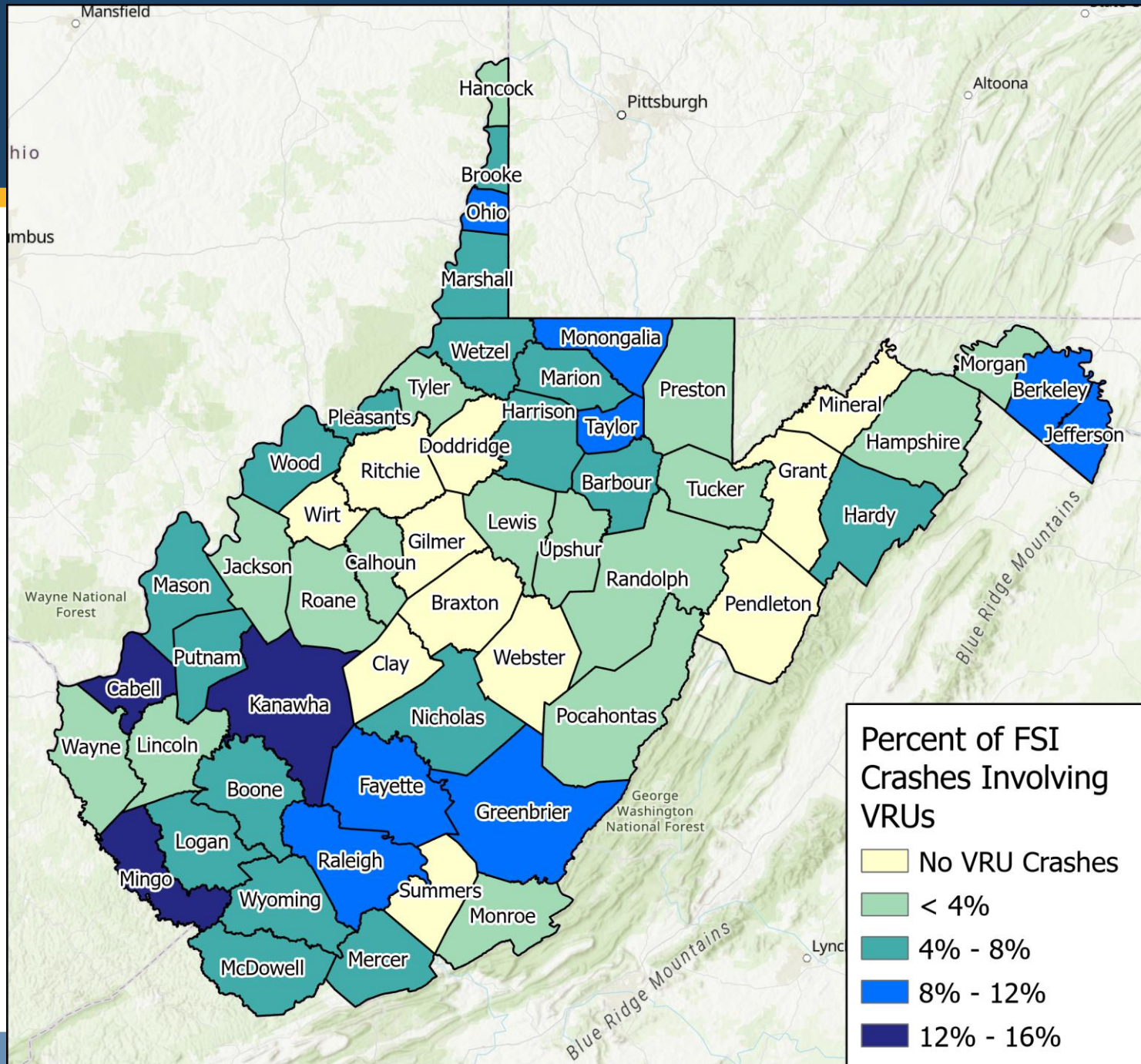


Morgantown
Martinsburg
Beckley
Charleston
Huntington



Crash Data

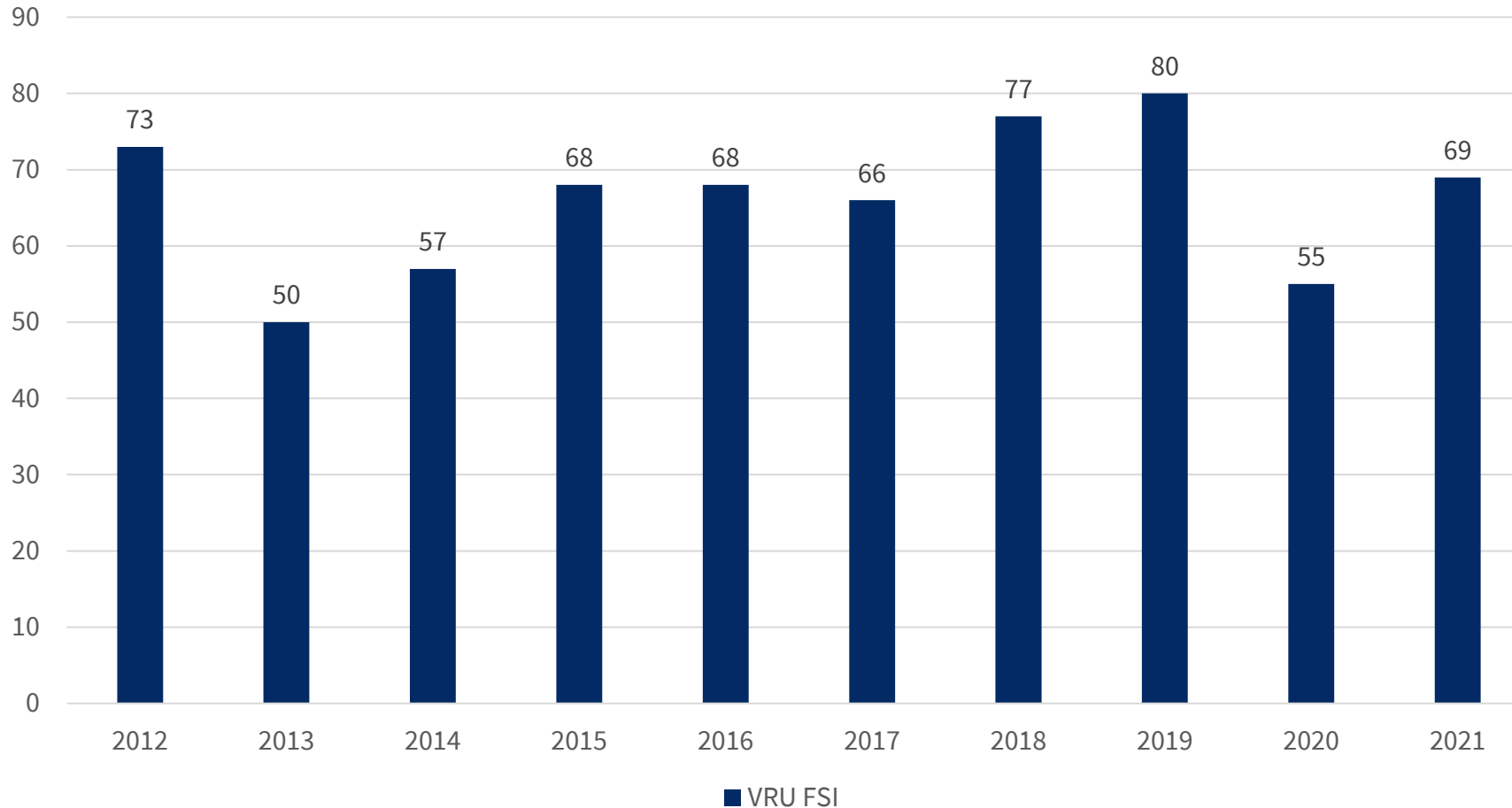




Where are VRU Crashes
Occurring?



VRU Fatalities and Serious Injuries by Year



663 VRU
Fatal and
Serious
Injuries

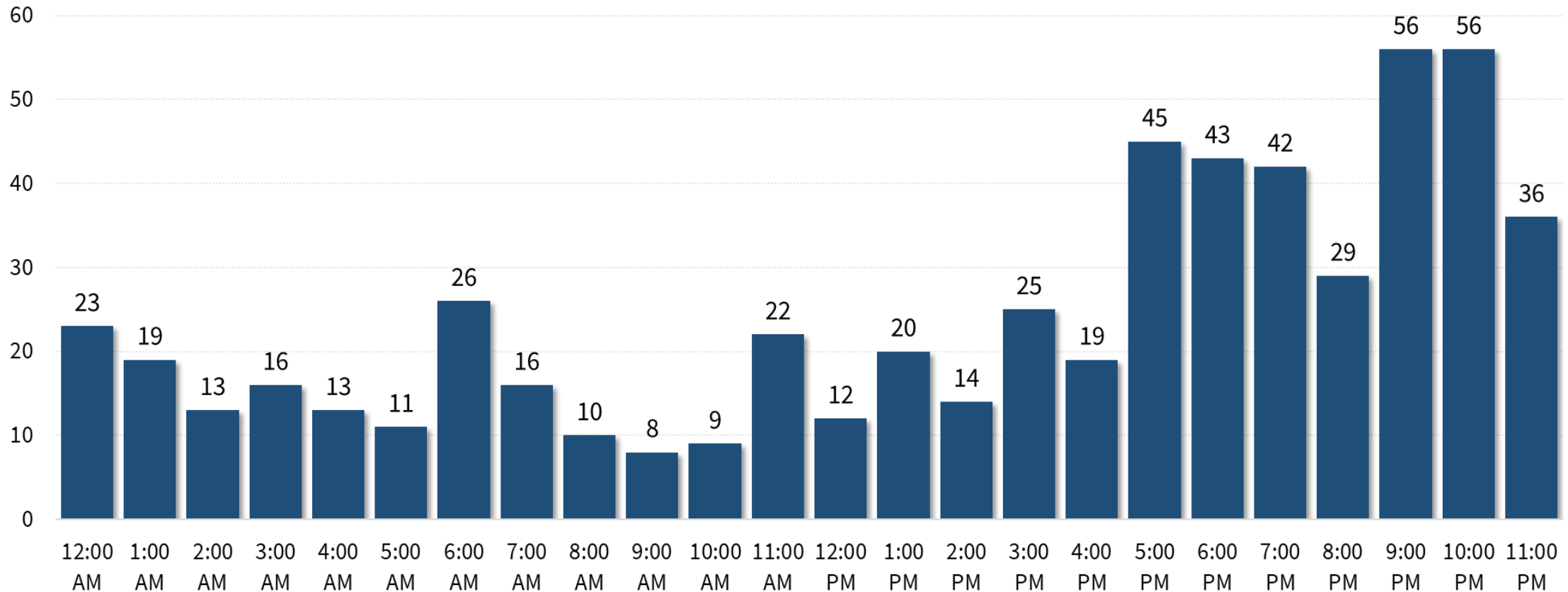


VRU Fatalities and Serious Injuries by Month and Day of Week

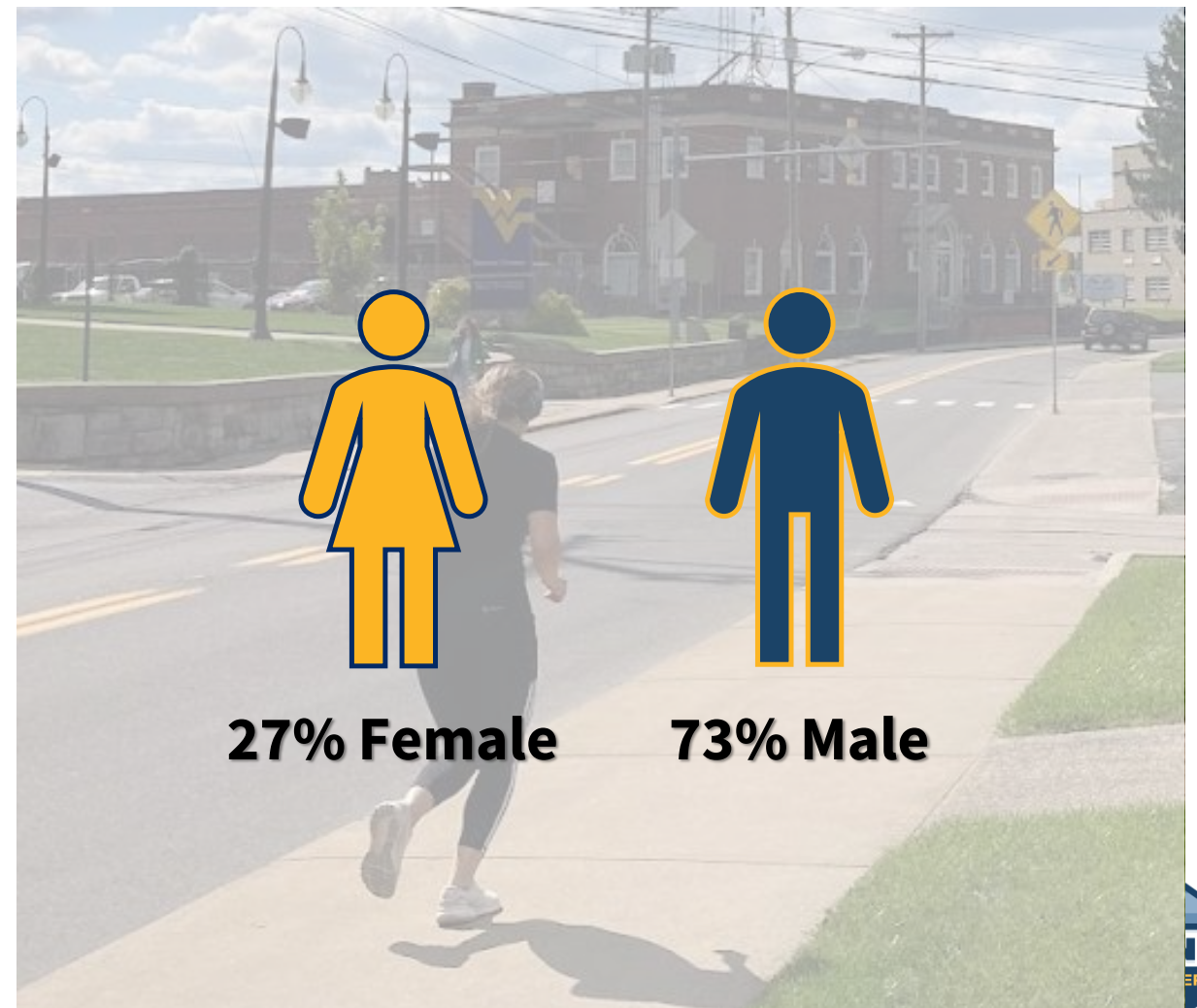
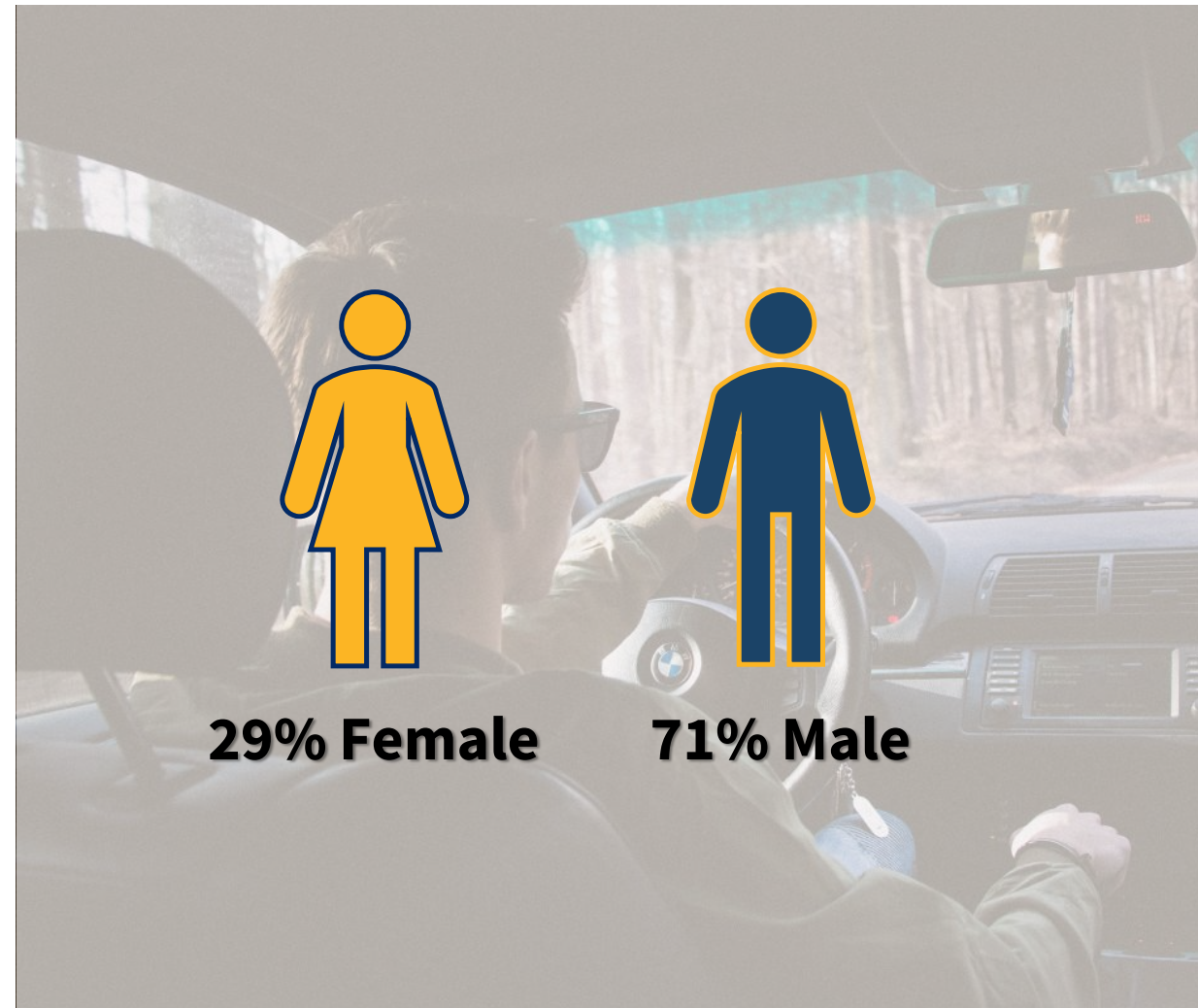
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
January	9	7	6	11	9	12	4	January	58
February	4	3	10	8	6	7	0	February	38
March	4	5	6	5	8	2	7	March	37
April	4	2	8	9	5	5	6	April	39
May	3	4	7	3	3	9	6	May	35
June	11	7	7	5	9	10	6	June	55
July	3	4	3	5	8	7	5	July	35
August	6	5	8	5	12	18	8	August	62
September	6	5	8	11	10	9	9	September	58
October	9	5	12	7	17	10	7	October	67
November	3	7	10	5	10	6	5	November	46
December	8	8	10	2	4	9	12	December	53
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
	70	62	95	76	101	104	75		



VRU Fatalities and Serious Injuries by Time of Day

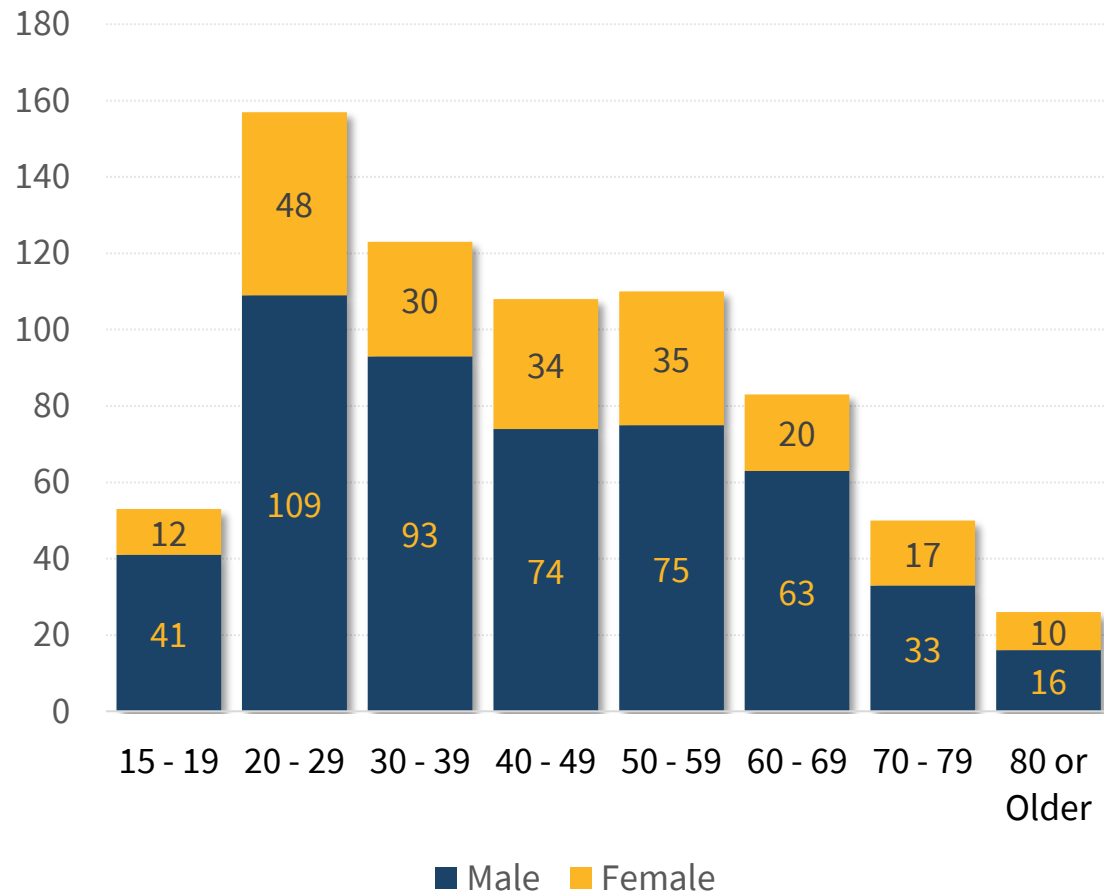


Driver/VRU Demographic

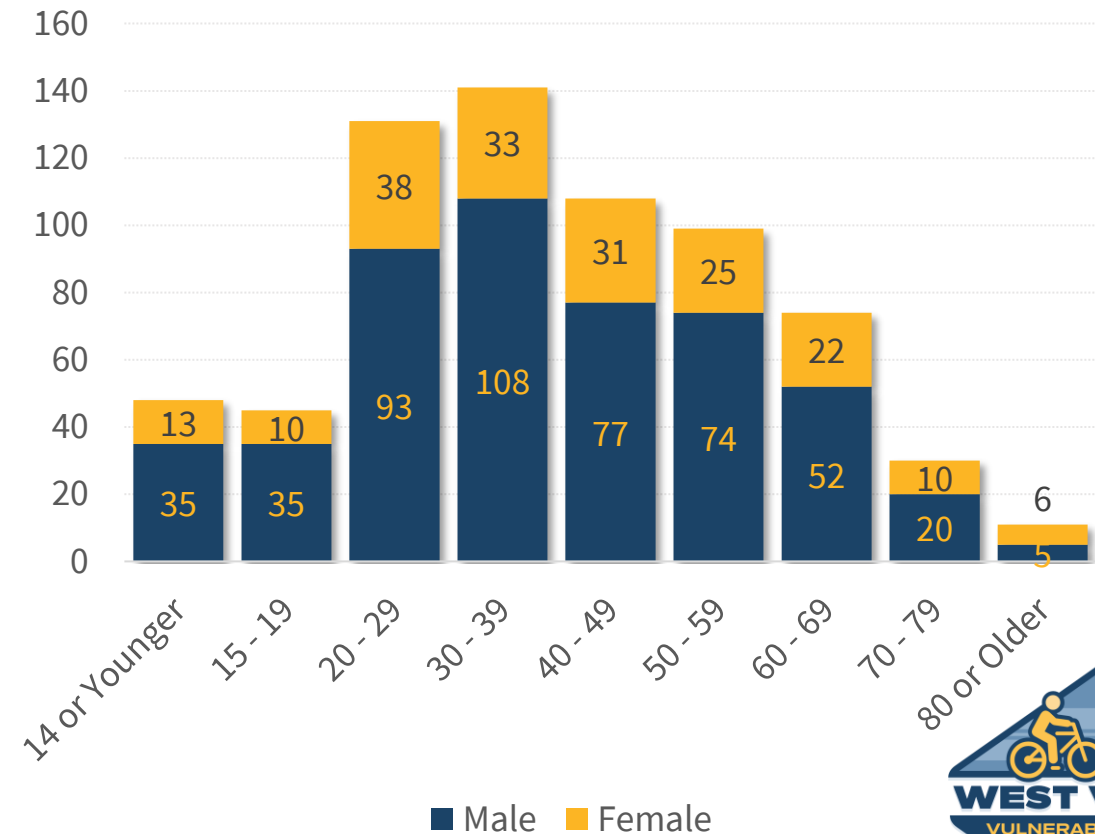


Driver/VRU Demographic

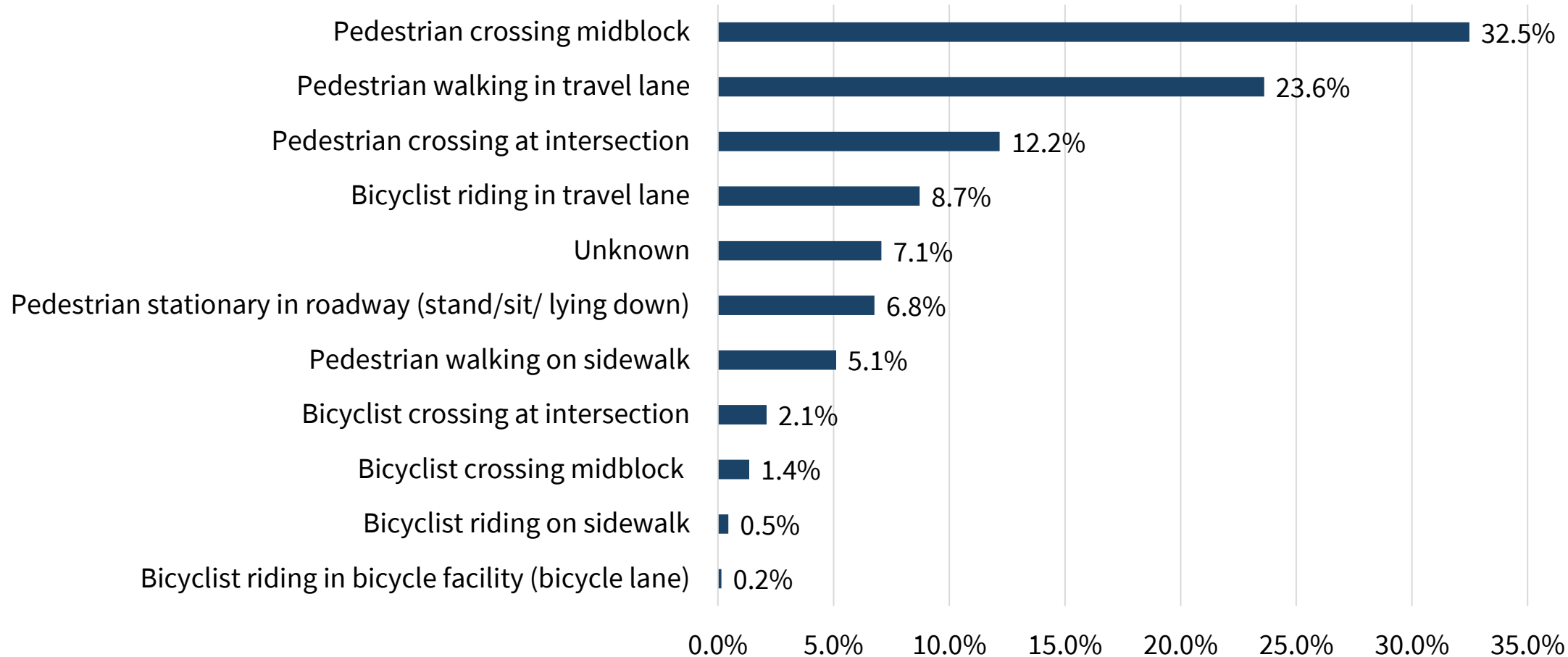
Driver Age and Gender



VRU Victim Age and Gender

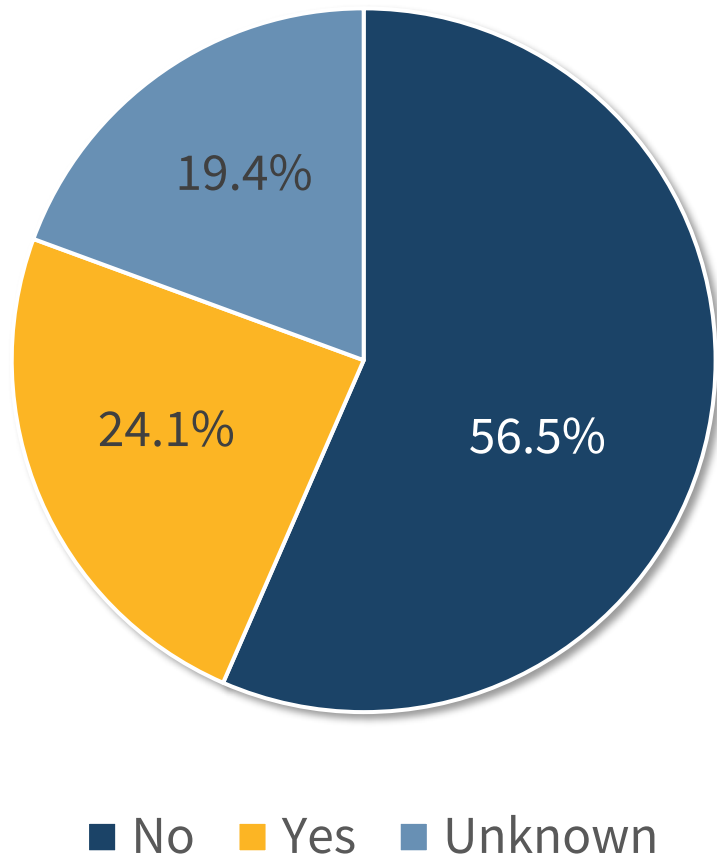


VRU Action in Fatal and Serious Injury Crashes

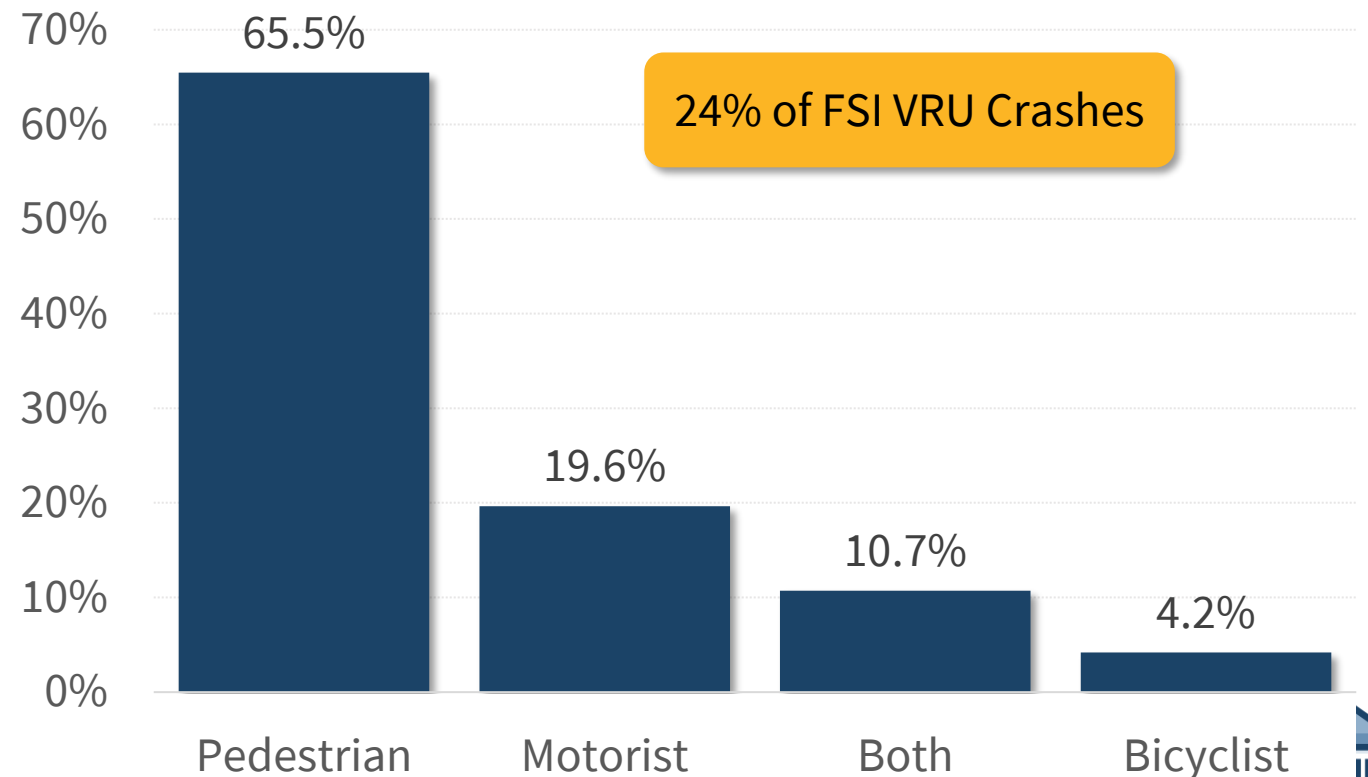


Impairment

Was Impairment Involved (FSI Crashes)?

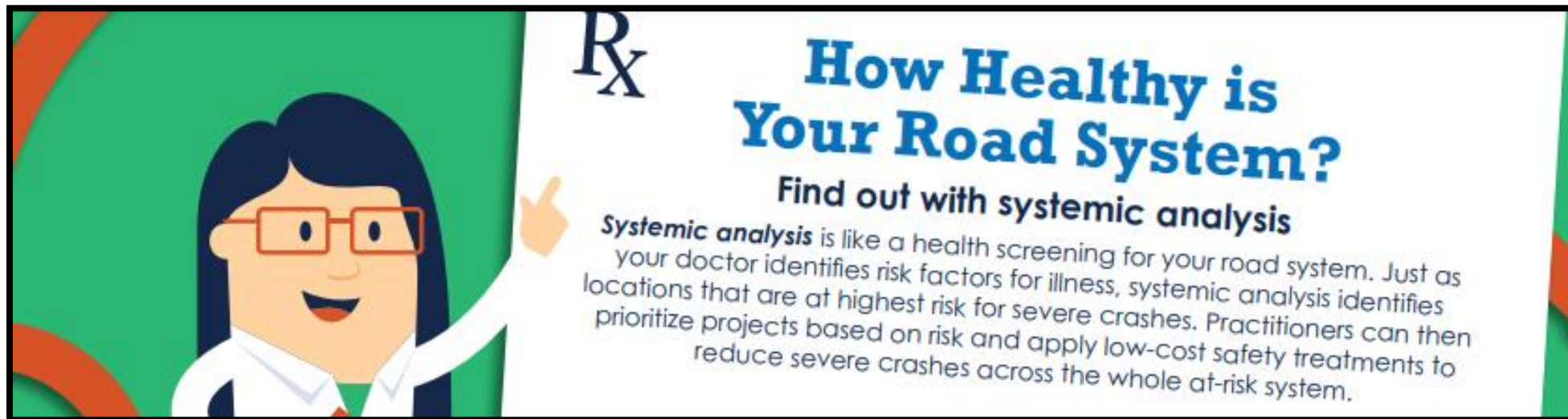


Who was Impaired?



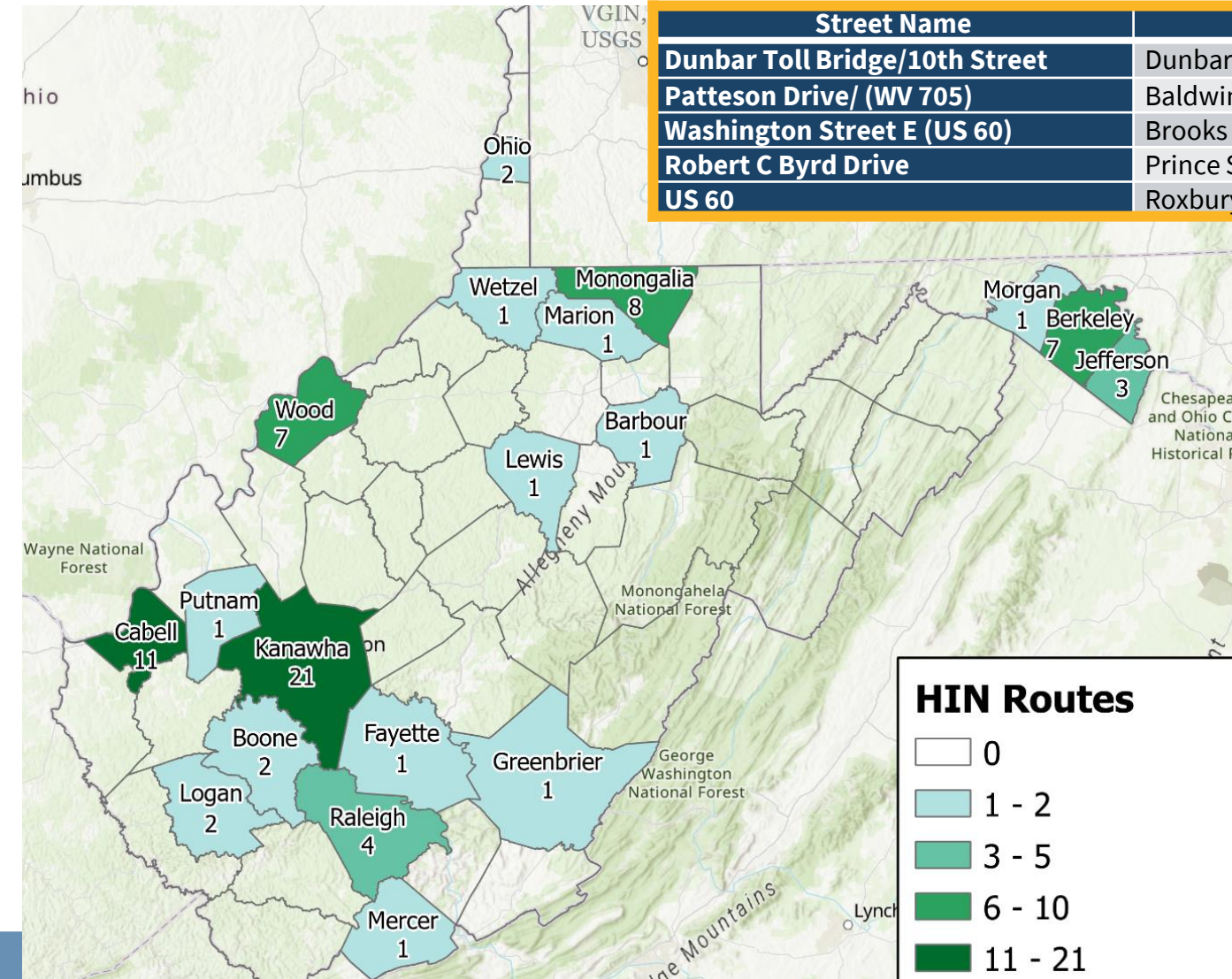
Network-Level Analyses

- **High-Injury Network (REACTIVE)**
 - Segments where crashes have occurred regardless of contributing factors
- **Systemic Analysis (PROACTIVE)**
 - Segments where factors contributing to crashes are present regardless of crash history



High Injury Network Results

Street Name	Approximate Limits	City	County	Rank
Dunbar Toll Bridge/10th Street	Dunbar Ave to Dunbar Toll Bridge	Dunbar	Kanawha	1
Patteson Drive/ (WV 705)	Baldwin St to Beechurst Ave	Morgantown	Monongalia	2
Washington Street E (US 60)	Brooks St to Ruffner Ave	Charleston	Kanawha	2
Robert C Byrd Drive	Prince St to City Ave	Beckley	Raleigh	4
US 60	Roxbury Ave to Rock Lake Dr	South Charleston	Kanawha	5



- Based on where crashes **HAVE OCCURRED**
- Used new AASHTOWare Safety tool to obtain routes



HIN Results Continued

Monongalia Sites

#2

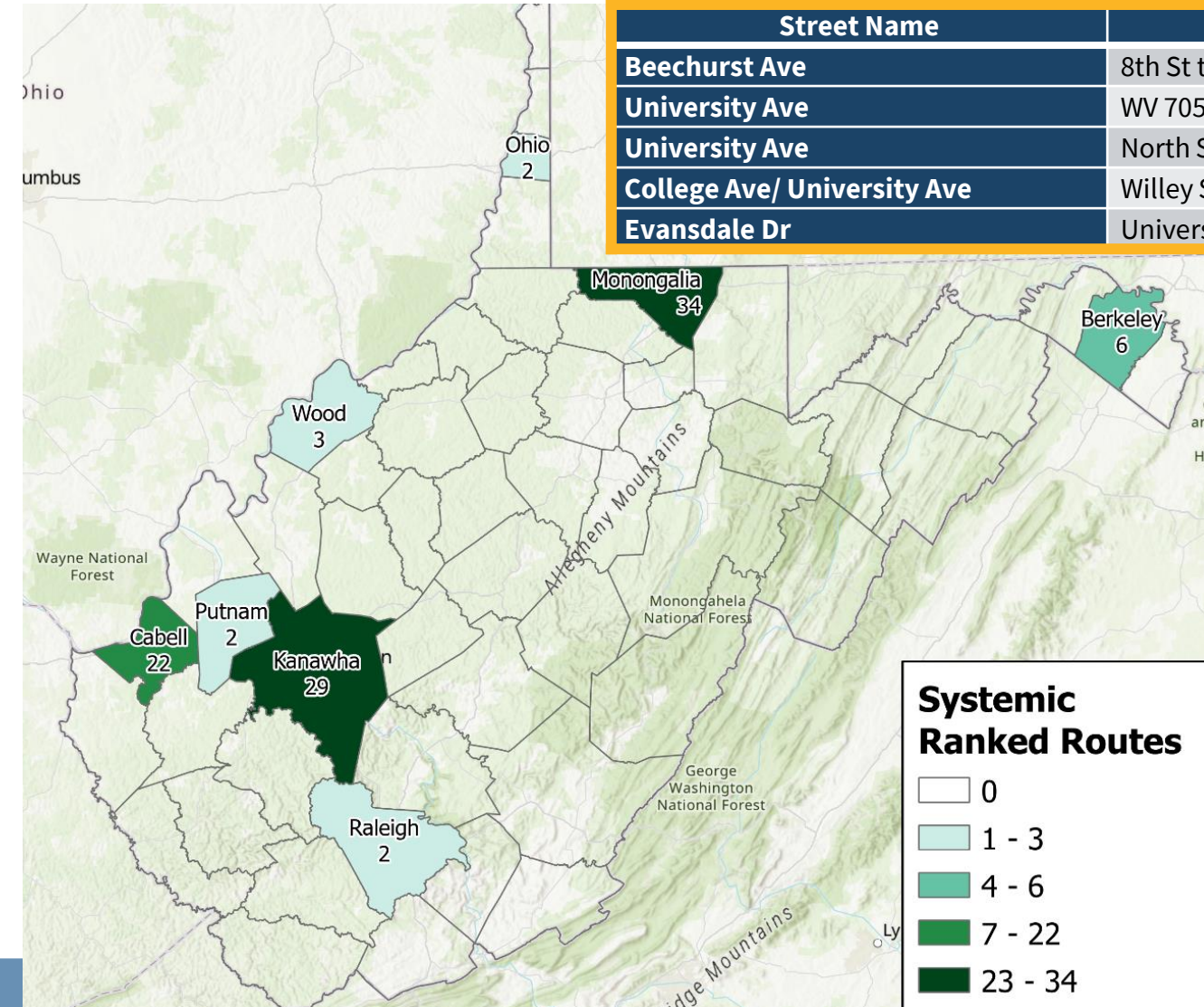
#11

Street Name	Approximate Limits	City	County	Rank
Dunbar Toll Bridge/10th Street	Dunbar Ave to Dunbar Toll Bridge	Dunbar	Kanawha	1
Patteson Drive/ (WV 705)	Baldwin St to Beechurst Ave	Morgantown	Monongalia	2
Washington Street E (US 60)	Brooks St to Ruffner Ave	Charleston	Kanawha	2
Robert C Byrd Drive	Prince St to City Ave	Beckley	Raleigh	4
US 60	Roxbury Ave to Rock Lake Dr	South Charleston	Kanawha	5
5th Avenue and 31st Street (US 60)	5th Ave to 7th Ave	Huntington	Cabell	6
US 60	River Rd to Martin Dr	Barboursville	Cabell	7
3rd Avenue	18th St to 20th St	Huntington	Cabell	8
Charleston Road	Etta St to Truett St	Poca	Putnam	9
Washington Street W (US 60)	6th Ave to Washington St W	Charleston	Kanawha	9
Rogers Avenue	Woodrow St to CR 857	Morgantown	Monongalia	11
Lee Street E (US 60)	Clendenin St to Court St	Charleston	Kanawha	12
Pond Fork Road	Hickory St to Spring St	Madison	Boone	13
US 340	Jefferson Terrace Rd to Somerset Village Rd	Charles Town	Jefferson	14
Williamsport Pike	Hinton Ct to Warm Springs Ave	Martinsburg	Berkeley	15
Robert C Byrd Drive	Trieste Ave to Hubbard St	Beckley	Raleigh	16
MacCorkle Avenue SW (US 60)	Broyles Blvd to Park Ave	South Charleston	Kanawha	16
Lee Street E	Summer St to Brooks St	Charleston	Kanawha	18
Grand Central Avenue	12th St to 16th St	Vienna	Wood	19
Washington Heritage Trail (US 522)	Market St to Union St	Berkeley Springs	Morgan	20



Systemic Analysis Results

Street Name	Approximate Limits	City	County	Rank
Beechurst Ave	8th St to University Ave	Morgantown	Monongalia	1
University Ave	WV 705 to 8th St	Morgantown	Monongalia	2
University Ave	North St to College Ave	Morgantown	Monongalia	2
College Ave/ University Ave	Wiley St to Jacob St	Morgantown	Monongalia	4
Evansdale Dr	University Ave to Rawley Ave	Morgantown	Monongalia	5



- Based on where crashes **MAY OCCUR**
- Determined by presence of “risk factors” contributing to VRU Crashes:
 - Roadway Width
 - Speed Limit
 - Rural vs. Urban
 - Traffic Volumes
 - Population
 - VRU Generators



Systemic Analysis Continued

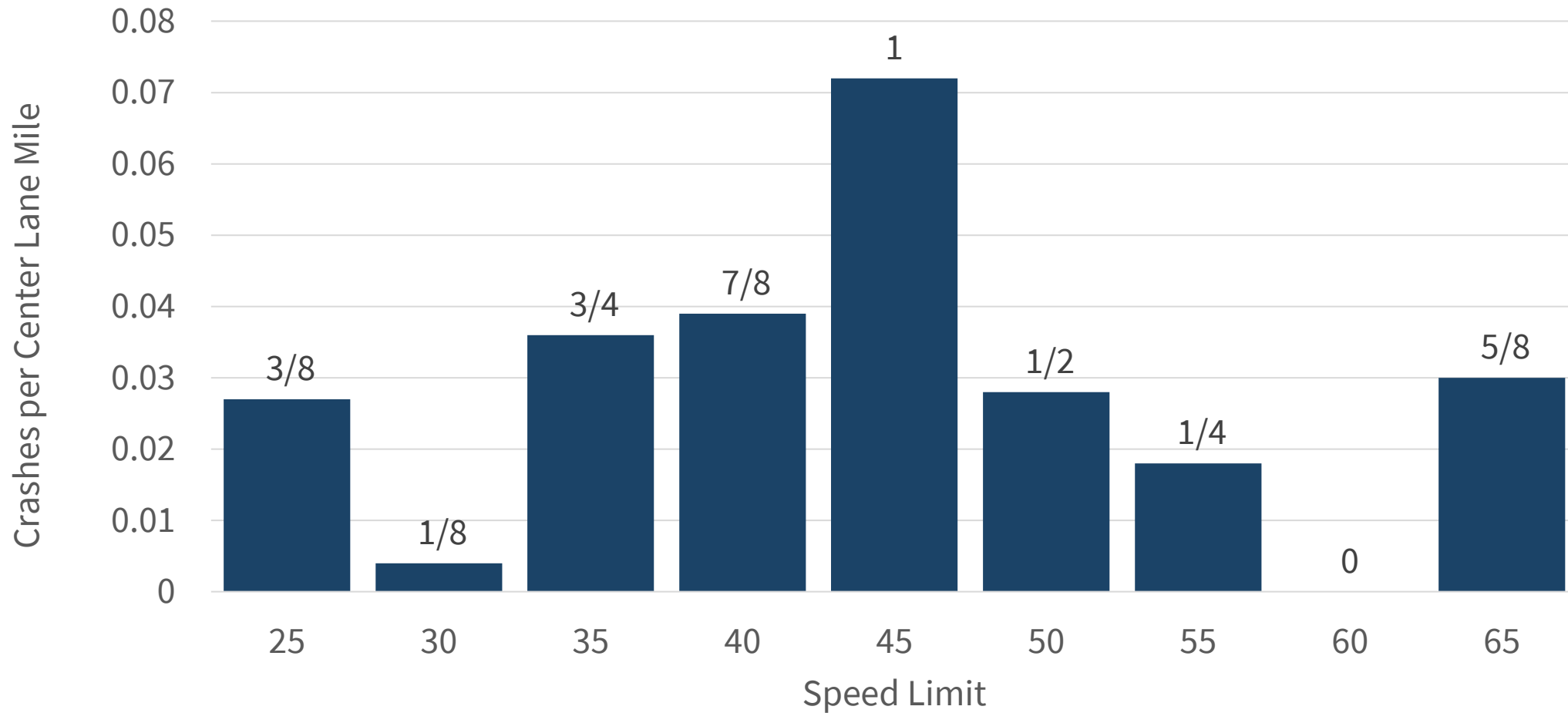
Monongalia County Sites

#1
#2a
#2b
#4
#5
#6
#8
#9
#11
#12
#14
#23

Street Name	Approximate Limits	City	County	Rank
Beechurst Ave	8th St to University Ave	Morgantown	Monongalia	1
University Ave	WV 705 to 8th St	Morgantown	Monongalia	2
University Ave	North St to College Ave	Morgantown	Monongalia	2
College Ave/ University Ave	Willey St to Jacob St	Morgantown	Monongalia	4
Evansdale Dr	University Ave to Rawley Ave	Morgantown	Monongalia	5
Campus Dr	Beechurst Ave to University Ave	Morgantown	Monongalia	6
8th Ave	8th St to 13th St	Huntington	Cabell	7
N Willey St (US 119)	Spruce St to Monongalia Ave	Morgantown	Monongalia	8
Willey St (US 119)	N High St to Spruce St	Morgantown	Monongalia	9
3rd Ave	Hal Greer Blvd to 22nd St	Huntington	Cabell	9
Evansdale Dr	Beechurst Ave to Rawley Ave	Morgantown	Monongalia	11
University Ave (US 119)	Pleasant St to Court St	Morgantown	Monongalia	12
5th Ave	10th St to 11th St	Huntington	Cabell	13
University Ave/ Beechurst Ave	Wall St to Fayette St	Morgantown	Monongalia	14
Court St	Virginia St E to Donnally St	Charleston	Kanawha	15
Kanawha Blvd E	Brooks St to Greenbrier St	Charleston	Kanawha	16
Virginia St E	Pennsylvania Ave to Dunbar St	Charleston	Kanawha	16
3rd Ave	22nd St to 24th St	Huntington	Cabell	18
3rd Ave	24th St to 29th St	Huntington	Cabell	19
8th Ave	6th St to 8th St	Huntington	Cabell	20
5th Ave	Hal Greer Blvd to 29th St	Huntington	Cabell	21
Grand Central Ave	9th St to Grand Central Mall	Parkersburg	Wood	22
Willowdale Rd	Northwestern Ave to Ira Errett Rodgers Dr	Evansdale	Monongalia	23
10th St	8th Ave to 11th Ave	Huntington	Cabell	24
6th Ave	8th St to 8th St	Huntington	Cabell	25

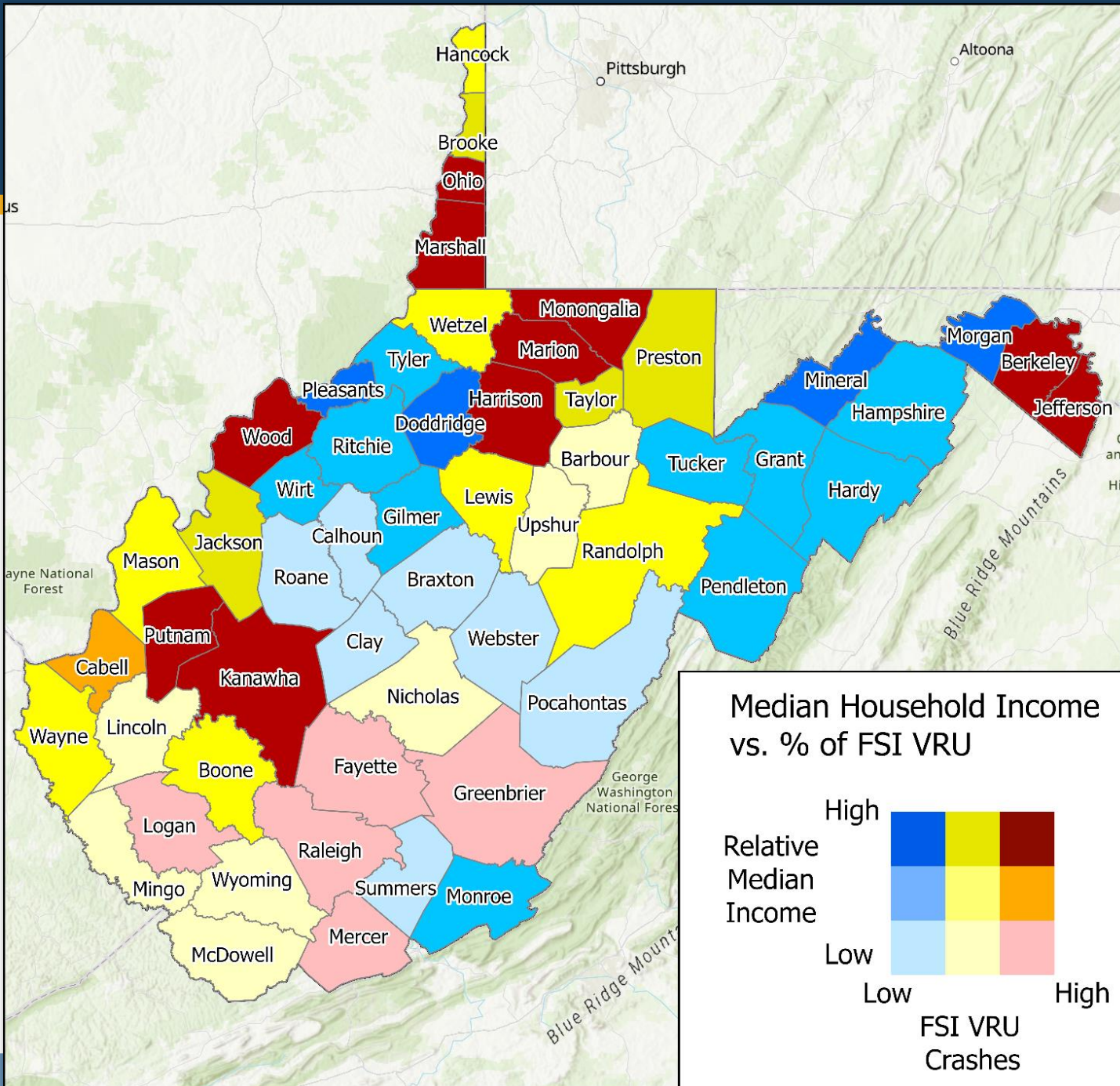


Systemic Analysis Scoring



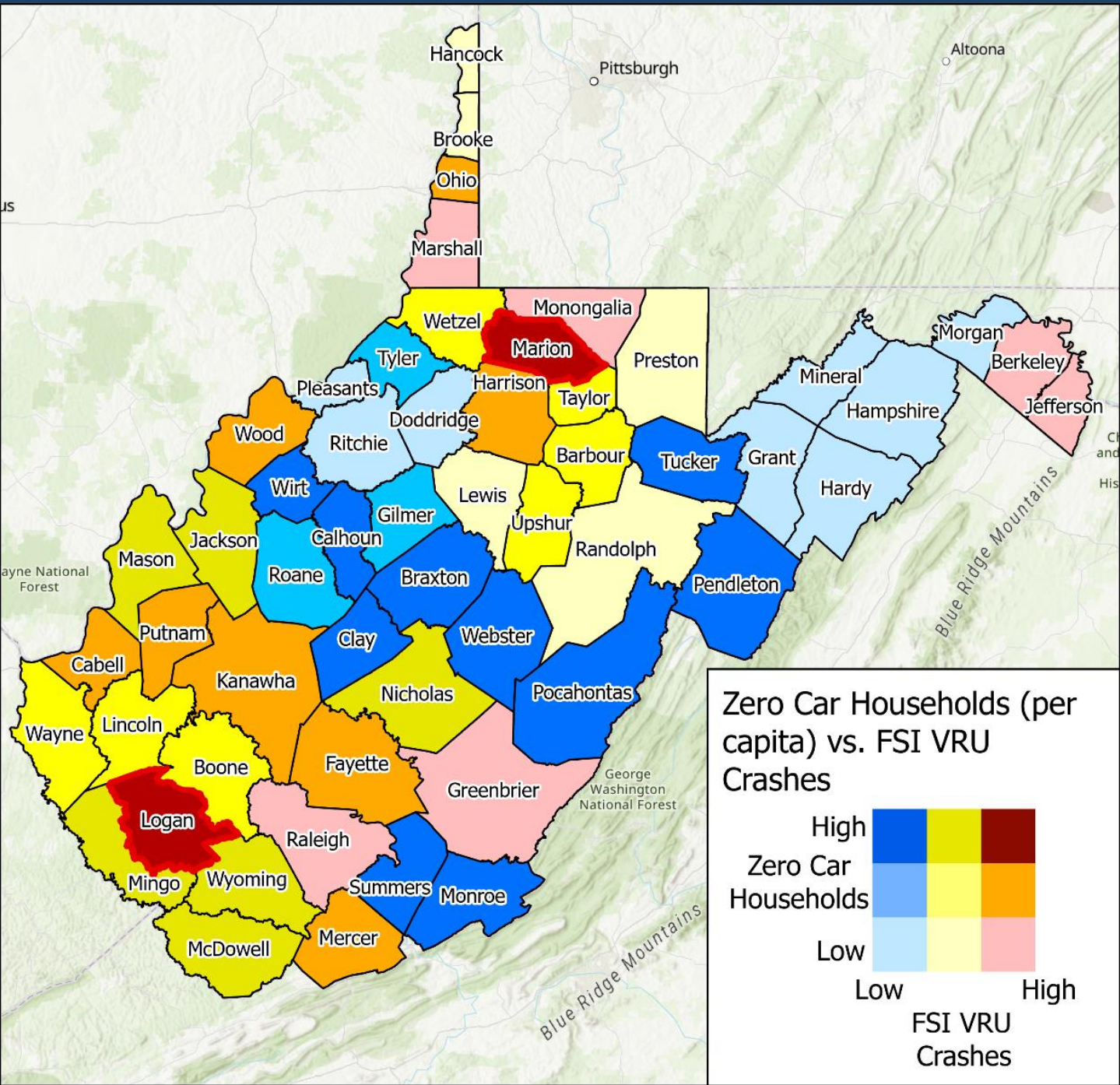
Equity Analysis





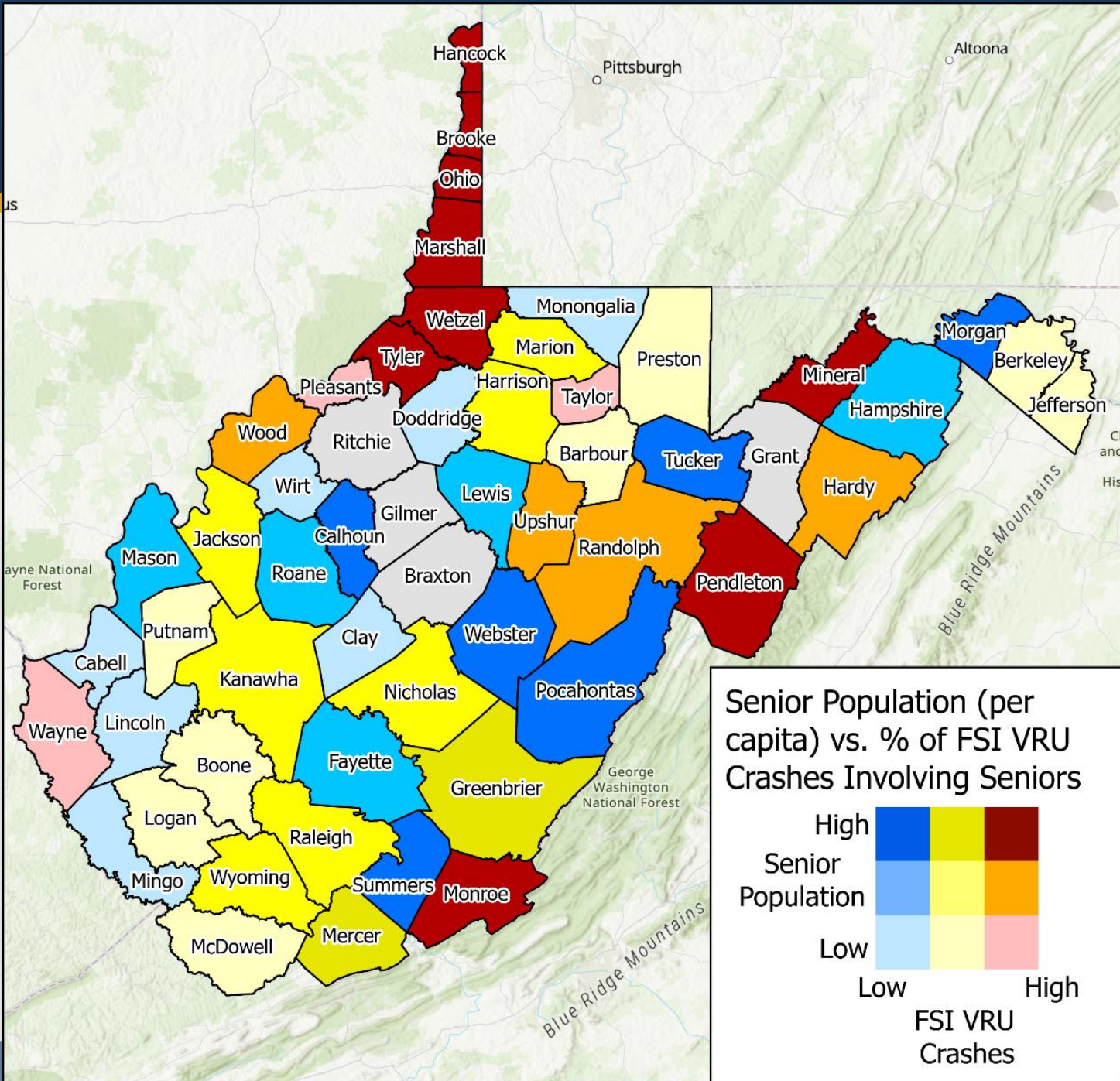
Median Household Income





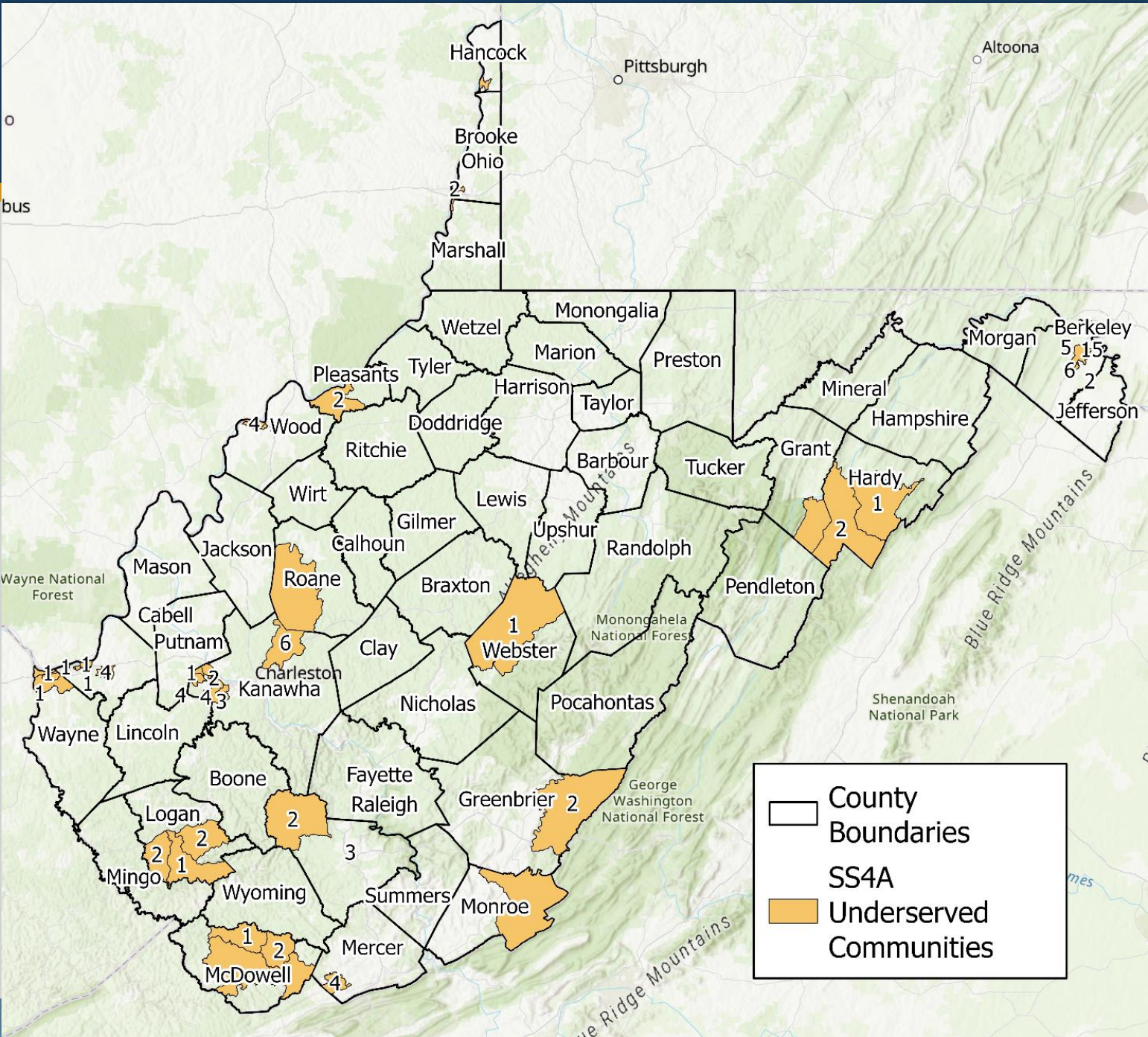
Zero Car Households





Elderly Population





Population	7.8%
Area	9.6%
VRU FSI	13.9%

Underserved Communities



Strategies and Next Steps



Strategies

- Provide VRU accommodations along the HIN and High-Risk Segments
- Educate road users on VRU safety
- Reduce vehicle speeds in areas with high VRU presence
- Update crash reports for more specific VRU details
- Bi-annual reviews of VRU crash data and the status of strategy implementation



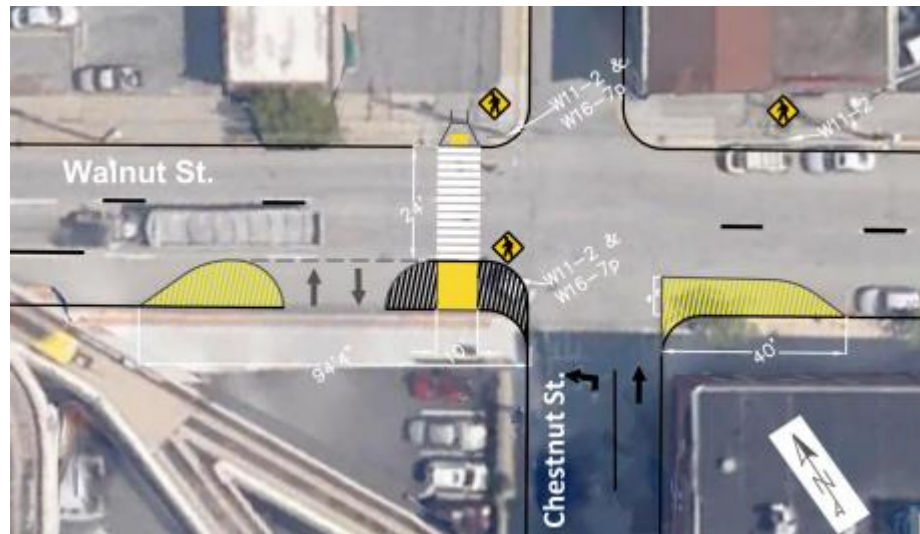
Morgantown HSIP Projects 2024

PROJECT NAME	STATE PROJECT NO.	COUNTY	PHASE	TOTAL PROJECT
MORGANTOWN PEDESTRIAN FACILITIES	U331-PED/FA-1.00	MONONGALIA	CN	\$500,000
WALNUT ST PEDESTRIAN MORGAN.	U331-119-0.31	MONONGALIA	CP	\$300,000
2024 D4 GUARDRAIL PROJECT	U384-50-0.00	DISTRICT 4	CP	\$20,000
INTERSTATE WARNING SIGNS	U399-64-0.00	STATEWIDE	CP	\$75,000
CHESTNUT RIDGE PEDESTRIAN MORG	U331-705-1.69	MONONGALIA	CP	\$300,000
I-79 LIGHTING	U331-79-148.01	MONONGALIA	CN	\$7,500,000
2023 INTERSTATE / APD CURVE SIGNAGE	U399-64-0.00	STATEWIDE	CN	\$500,000
SMITHTOWN ROAD TRAFFIC SIGNAL	U331-119-11.80	MONONGALIA	RW	\$100,000
SMITHTOWN ROAD TRAFFIC SIGNAL	U331-119-11.80	MONONGALIA	CN	\$1,200,000
VRU STUDY MONON WOOD +12	T299-19-11.44	DIST 3 AND 4	PR	\$450,000
VRU MORGANTOWN +1	U331-705-0.00	MONONGALIA	CP	\$50,000
TRUCK SIGNS STATEWIDE	U399-33-0.00	STATEWIDE	CN	\$500,000
CHESTNUT RIDGE PEDESTRIAN MORG	U331-705-1.69	MONONGALIA	CN	\$2,000,000
				\$13,495,000



Morgantown HSIP Projects 2025

PROJECT NAME	STATE PROJECT NO.	COUNTY	PHASE	TOTAL PROJECT
VRU MORGANTOWN +1	U331-705-0.00	MONONGALIA	CN	\$100,000
WALNUT ST PEDESTRIAN MORGAN.	U331-119-0.31	MONONGALIA	CN	\$2,000,000
2025 D4 RDWY DEPART +3	not assigned yet	DISTRICT 4	CN	\$1,026,904
D4 COUNTY RDWY DEPART +21	not assigned yet	DISTRICT 4	CN	\$1,488,509
			Total	\$4,615,412



Curve Warning Sign Projects

Curve Warning Signs were divided into 3 phases:

- **Phase 1: US and WV Routes that had an above average Road Departure Crash Rate (based on 2017 ranking) – Monongalia County didn't have any routes**
- **Phase 2: The rest of US and WV Routes and County Routes with an above average Road Departure Crash Rate - Currently in Design, should be fully completed in 2025.**
- **Phase 3: The remainder of all routes including Interstates and APD Corridors, all new US and WV Routes that came into system since 2017 and remainder of state maintained County Routes. We are negotiating now for design. Expect Construction to be complete in 2026.**



Other Projects of Interest

- Brookhaven Rd
 - Signal is programmed with CMAQ funding which includes turning lanes.
 - Submitted for CDS to include Ped Accommodations and review access to trail
- Exit 155 of I-79
 - TED is reviewing models in regard to operational concerns.
 - MMPO has offered to use Carbon Reduction funds to pay for signal
 - Possibly early fall for construction



Questions?

Donna J. Hardy, PE
Donna.j.hardy@wv.gov

