

Status Update: Vulnerable Users

March 20, 2024

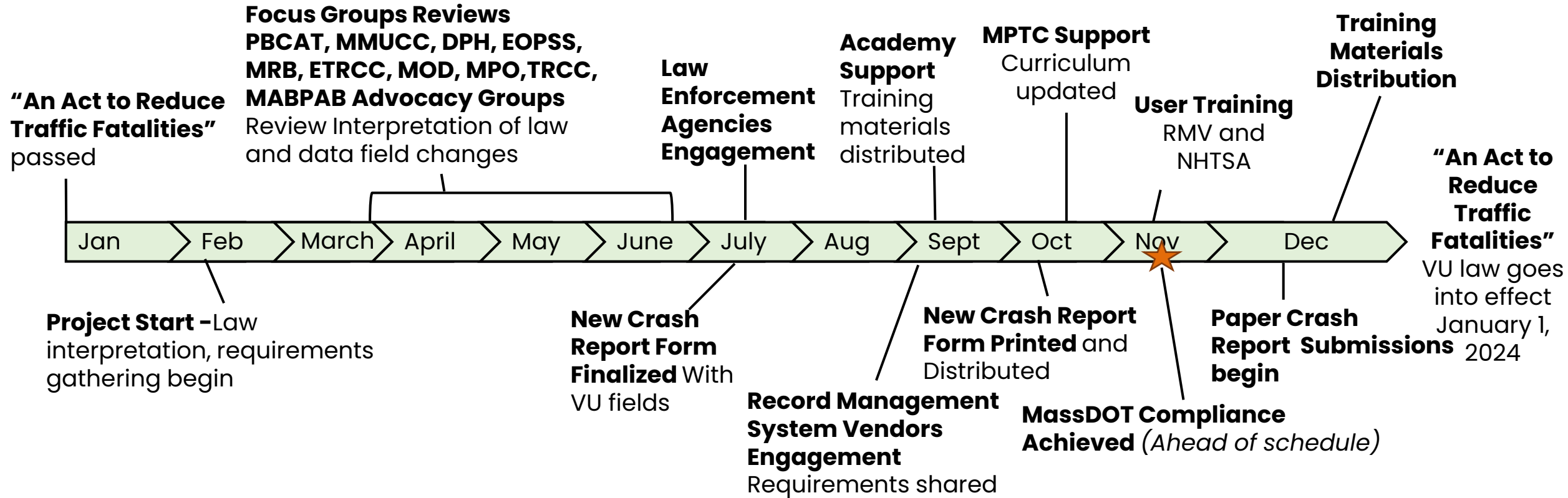
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Timeline and Milestones

Passage of *An Act to Reduce Fatalities* through December 31, 2023

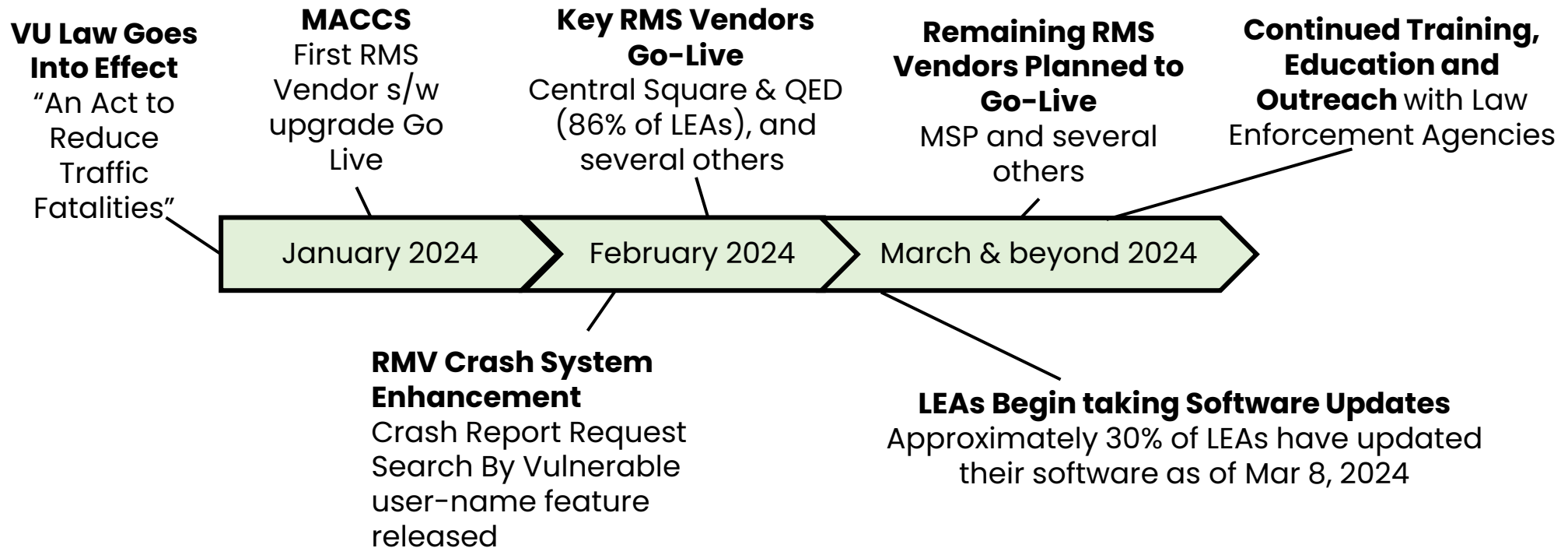
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Timeline and Milestones

January 1, 2024 onwards

4



What Fields Changed

Vulnerable User Fields

5

Please complete a section for each vulnerable user involved in the crash.

Vulnerable User	Type <input type="text" value="VT11"/>	Action <input type="text" value="VT12"/>	Location <input type="text" value="VT13"/>					
<p>VU: <input type="text" value="Last"/> <input type="text" value="First"/> <input type="text" value="Middle"/></p> <p>Address <input type="text"/></p> <p>City <input type="text"/> State <input type="text"/> Zip <input type="text"/></p> <p>License # <input type="text"/> St <input type="text"/> DOB/Age <input type="text"/></p> <p>Traffic Control Device <input type="text" value="VT14"/></p> <p>Origin/Destination <input type="text" value="VU5"/></p> <p>Contact Point: <input type="text" value="VU6"/></p> <p>Primary Injury Area: <input type="text" value="VU7"/> <input type="text" value="99"/></p> <p>Event Sequence <input type="text" value="VU8"/> <input type="text" value="VT18"/> <input type="text" value="VT12"/> <input type="text" value="VU8"/></p> <p>Contributing Code <input type="text" value="VU9"/> <input type="text" value="VU9"/></p> <p>Distracted by <input type="text" value="VT110"/> <input type="text" value="VT110"/></p> <p>Test Status: <input type="text" value="VU11"/></p> <p>Type of Test: <input type="text" value="VT112"/></p> <p>BAC Test Result: <input type="text" value="VU13"/></p> <p>Susp. Alcohol: <input type="text" value="VU14"/></p> <p>Susp. Drug: <input type="text" value="VT115"/></p> <p>Diagram for VU6</p> <p>Overhead bicyclist illustration Source: Anne C. Lusk et al. Inj Prev doi:10.1136/ijip-2014-041317.</p>								
	Sex	VU16 Seat Pos.	VU17 Safety Equipment	VU18 Eject Code	VU19 Trap Code	VU20 Injury Status	VU21 Transp. Code	Medical Facility
Vulnerable User								

- Some fields previously existed but additional data attributes were added (example: vulnerable user type)
- Some fields added to mimic those of the driver (example: event sequence)
- Some fields are new (example: origin/destination)

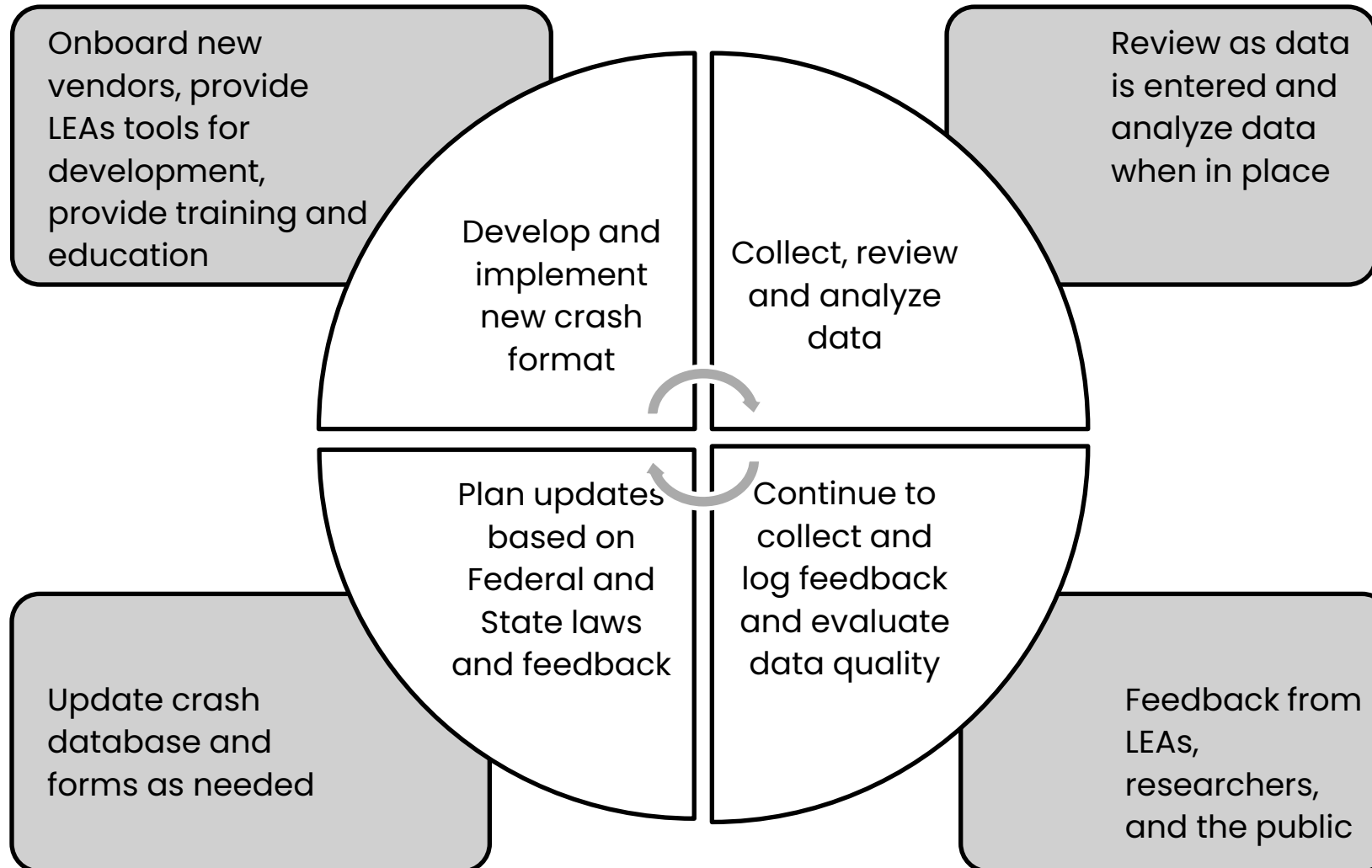
Highlights and Strategies to drive success

6

- Early reviews of law interpretation and new data fields with Focus Groups with a wide range of stakeholders.
- MassDOT Compliance was achieved well ahead of time with both RMV Crash and Highway IMPACT systems going live in November.
- Proactive outreach and continuous communications with Law enforcement agencies and respective Record Management System vendors to allow more than enough time for them to make and adopt changes.

Next Steps – Cycle of Crash Data Changes

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Thank You



Appendix

Pedestrian Fatalities Distribution by Age

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76 pedestrian fatalities on average per year

Year	# of Pedestrian Fatalities
2015	79
2016	78
2017	72
2018	78
2019	77
2020	54
2021	77
2022	99
2023	69

Incidence of fatalities that are 75+ are 3X, and those aged 55+ are 1.7X the population incidence

Distribution of Pedestrian Fatalities by Age Group Over time

Year/Age	Under 21	21-35	35-55	55-75	75+
2015	4%	24%	23%	33%	16%
2016	15%	5%	23%	42%	14%
2017	15%	15%	26%	32%	11%
2018	12%	18%	18%	26%	27%
2019	4%	17%	21%	45%	13%
2020	2%	15%	24%	44%	15%
2021	4%	10%	22%	45%	18%
2022	2%	15%	23%	40%	19%
2023	9%	10%	32%	28%	22%
Population	23%	22%	25%	23%	7%

Training / Education / Outreach

June 2023 through February 2024

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Outreach focused on promoting awareness of the new vulnerable user law, and the adoption of the new vulnerable user fields on the police crash report.

Stakeholders	Description	Frequency
Merit Rating Board Department of Public Health Executive Office of Public Safety & Security Traffic Records Coordinating Committee	Awareness of the law and definition of vulnerable user, progress implementing the law, and receipt of amended police crash reports.	Quarterly June 2023 – February 2024
Advocacy Groups Metropolitan Planning Organization UMass Safe	Awareness of the law and definition of vulnerable user, progress implementing the law, and receipt of amended police crash reports.	Quarterly June 2023 – February 2024
Law Enforcement Agencies Law Enforcement Training Academies	<ul style="list-style-type: none"> Awareness of the law and definition of vulnerable user, and the police crash report amendments. Provided training material to the academies and each agency. 	Monthly August 2023 – February 2024
Record Management System Vendors	Awareness of the law and provided support as each vendor updated their software for Law Enforcement.	Weekly Fall 2023 – ongoing
Federal Motor Carrier Safety Admin National Highway Traffic Safety Admin Independent Living Centers	Informed of the law and definition of vulnerable user, and receipt of the amended police crash reports.	Once February 2024

Outreach Samples

The outreach samples include a presentation slide titled "Changes to Motor Vehicle Police Crash Report (CR-45)" and a form titled "New Vulnerable User Section: VU1 – VU Type".

The presentation slide, featuring the rmv logo, explains the "An Act to Reduce Traffic Fatalities" effective January 1, 2024. It defines a vulnerable user as a pedestrian, bicyclist, or person operating a bicycle, handcycle, trike, skateboard, roller skates, in-line skates, non-motorized scooter, wheelchair, electric personal assistive mobility device, horse, horse-drawn carriage, motorized bicycle, motorized scooter, or other motorized mobility device, or a farm tractor or similar vehicle designed primarily for farm use or other such categories that the registrar may designate by regulation. It also states that the RMV Police Crash Report will be amended to collect additional data for motor vehicle crashes that involve a vulnerable user.

The form, titled "New Vulnerable User Section: VU1 – VU Type", provides a structured way to report a vulnerable user involved in a crash. It includes fields for the user's name, address, city, state, and zip code, as well as a dropdown menu for the user type. The form also includes a section for "Motor Vehicle" details and a "Motor Vehicle" section. Below the form, there is a list of 17 categories for "Vulnerable User" types, including Pedestrian, Bicyclist, Skateboarder, Trike/Trikelet/Tricycle, Roller Skater, Hand Cycle, Trike/Trikelet/Tricycle, Motorized Scooter Rider, Electric Personal Assistive Device User, Other Micro-mobility Device User, Utility Worker - Outside of Vehicle, Roadway Worker - Outside of Vehicle, Emergency Responders - Outside of Vehicle, and Other.

Below the form, there is a section titled "13 - Electric Personal Assistive Mobility Device User (Examples)" with two images: a person using a Segway and a person using a BLSI power wheelchair. The text below the images states: "Popular manufacturers include: • Segway • BLSI power wheelchair".

Examples of Vulnerable Users

January 2024



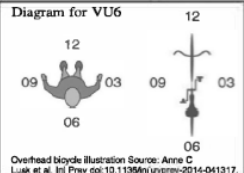
Massachusetts law defines 'vulnerable users' as:

- Pedestrians
- Roadside workers
- Bicyclists
- People riding horses or horse drawn carriages
- People using:
 - Wheelchairs
 - Personal mobility devices
 - Motorized bicycles
 - Motorized scooters
 - Non-motorized scooters
 - Skateboards
 - Roller skates



The Police Crash Report has been revised to include vulnerable users. Included in the presentation are definitions and examples of the vulnerable user types that may be used when completing the police crash report.

Please complete a section for each vulnerable user involved in the crash.

Vulnerable User		Type <input type="text" value="VT11"/>	Action <input type="text" value="VT12"/>	Location <input type="text" value="VT13"/>
<p>VU: Last First Middle Primary Injury Area: <input type="text" value="VU7"/></p> <p>Address _____</p> <p>City _____ State _____ Zip _____</p> <p>License # _____ St _____ DOB/Age _____</p> <p>Traffic Control Device <input type="text" value="VT14"/></p> <p>Origin/Destination <input type="text" value="VU5"/></p> <p>Contact Point: <input type="text" value="VU6"/></p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>Event Sequence <input type="text" value="VU81"/> <input type="text" value="VT18"/> <input type="text" value="VT19"/> <input type="text" value="VU81"/></p> <p>Contributing Code <input type="text" value="VU9"/> <input type="text" value="VU9"/></p> <p>Distracted by <input type="text" value="VT110"/> <input type="text" value="VT110"/></p> </div> <div style="margin-left: 10px;"> <p>Test Status: <input type="text" value="VU11"/></p> <p>Type of Test: <input type="text" value="VT112"/></p> <p>BAC Test Result: <input type="text" value="VU13"/></p> <p>Susp. Alcohol: <input type="text" value="VU14"/></p> <p>Susp. Drug: <input type="text" value="VT115"/></p> </div> </div>				
	Sex	VU16 Seat Pos.	VU17 Safety Equipment	VU18 Eject Code
		VU19 Trap Code	VU20 Injury Status	VU21 Transp. Code
Vulnerable User				Medical Facility

VU1 - Vulnerable User Type


- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
- 10 Hand Cyclist
- 11 Tricyclist
- 12 Motorized Scooter Rider
- 13 Electric Personal Assistive Mobility Device User
- 14 Horse Rider
- 15 Horse-drawn Carriage Driver
- 16 Farm Equipment operator
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown

1 – Pedestrian (Definition)

Any person who is not an occupant. Inclusions:

- Person on foot
- Person standing, walking, running, jogging, hiking, sitting, or lying within the trafficway or on private property, etc.
- A person assisted with a cane or walker
- Person pushing a baby carriage/stroller or carrying a baby.
- Baby being carried.
- A person ejected from a transport vehicle who has come to rest in the trafficway during a prior unstabilized situation and struck in a second or subsequent unstabilized situation.

VU1 - Vulnerable User Type

- 1 Pedestrian 
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
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- 97 Other
- 99 Unknown

1 – Pedestrian (Examples)



2 – Bicyclist (Definition)


Any occupant of a two-wheeled road vehicle propelled by pedaling and **may include an electric motor** of 750 watts or less. It includes bicycles solely propelled by human power and those that can be propelled by human power and/or an electric motor. This includes all people (operator and passengers) on bicycles and a person being pulled by a bicycle (e.g., in a wagon or bike trailer).

Per M.G.L. c. 90, § 1, an e-bicycle can have one of two classes:

"Class 1 electric bicycle", an electric bicycle or tricycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.

"Class 2 electric bicycle", an electric bicycle or tricycle equipped with a motor that may be used exclusively to propel the bicycle and that is not capable of providing assistance when the bicycle reaches the speed of 20 miles per hour.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist 
- 3 Skateboarder
- 4 Train/Trolley Passenger
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- 7 Non-Motorized Scooter Rider
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- 99 Unknown

2 – Bicyclist (Examples)



Popular brands include:


- Trek
- Specialized
- Cannondale
- Santa Cruz
- Scott
- Schwinn



3 – Skateboarder (Definition)

A person riding on a board mounted on wheels whether manual or e-powered.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder 
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
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- 97 Other
- 99 Unknown

3 – Skateboarder (Examples)



Popular brands include:


- Baker
- Girl
- Element
- Zero



4 – Train/Trolley Passenger (Definition)

A passenger of a land vehicle that is designed primarily for, or in use for, moving people or property from one place to another on rails and not in use on a trafficway other than a railway.

VU1 - Vulnerable User Type


- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger 
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
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4 – Train/Trolley Passenger (Examples)



A person riding on roller skates that have a wheel on each “corner” of the skate.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
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- 99 Unknown

5 - Roller Skater (Examples)



Popular brands include:


- Impala
- Moxi
- Roller Derby



6 – In-line Skater (Definition)

A person riding on in-line skates consisting of a single line of wheels along the bottom.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater 
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
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- 99 Unknown

6 – In-line Skater (Examples)



Popular brands include:


- K2
- Bauer
- CCM
- Impala



7 – Non-motorized Scooter Rider (Definition)

A footboard mounted on two wheels with a long steering handle propelled manually by resting one foot on the footboard and pushing the other against the ground.

VU1 - Vulnerable User Type

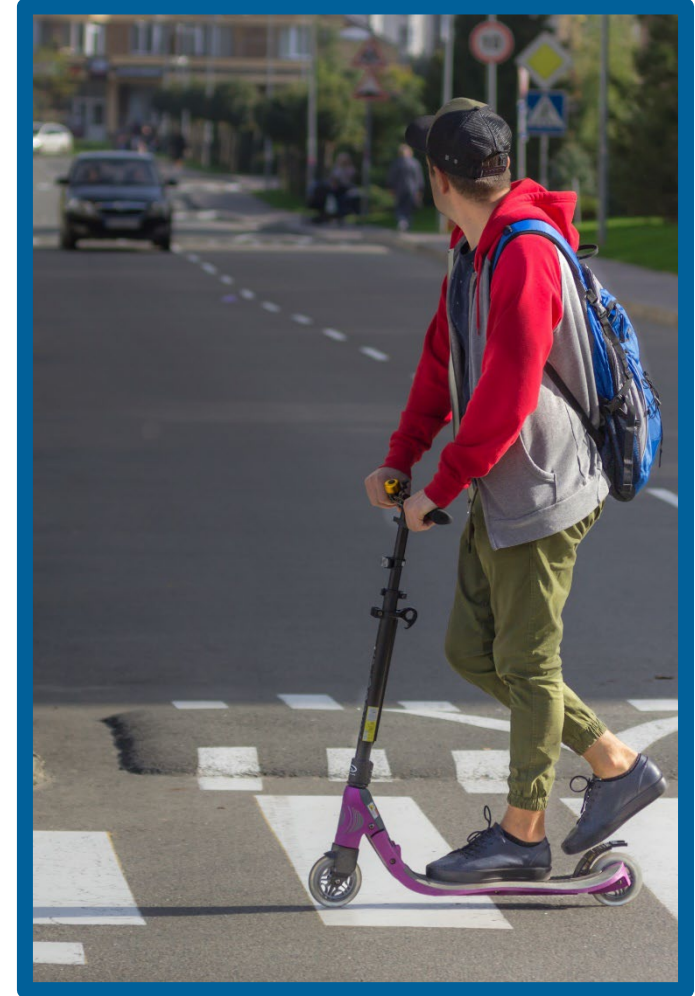
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- 99 Unknown

7 – Non-motorized Scooter Rider (Examples)



Popular brands include:


- Razor
- Mongoose
- Cityglide



8 – Non-motorized Wheelchair User (Definition)

A person riding on a manually propelled wheelchair. (For **motorized wheelchair** see ***Electronic Personal Assistive Mobility Device.***)

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
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8 – Non-motorized Wheelchair User (Examples)



Popular manufacturers include:

- Invacare
- TiLite
- Permobil




9 – Motorized Bicyclist (Definition)

According to MGL c. 90, s. 1: "*Motorized bicycle*", a pedal bicycle which has a helper motor, or a non-pedal bicycle which has a **motor**, with a cylinder capacity not exceeding fifty cubic centimeters, an automatic transmission, and which is capable of a maximum speed of no more than thirty miles per hour; provided, that the **definition of "motorized bicycle" shall not include an electric bicycle.**

- A "**motorized bicycle**" is typically referred to as a **moped** and is a Registered Vehicle that should be captured in the Vehicle Section of the crash report. If the motorized bicycle is NOT registered, it should be reported in the Vulnerable User section of the crash report.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
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9 – Motorized Bicyclist (Examples)




Popular brands of motorized bicycles include:

- Tomos
- TaoTao
- Yamaha
- Zhen



A person riding a type of human-powered land vehicle powered by the arms rather than the legs, as on a bicycle. Most handcycles are tricycle in form, with two coasting rear wheels and one steerable powered front wheel. Despite usually having three wheels, they are also known as ***hand bikes***.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
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- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
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- 16 Farm Equipment operator
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown

10 – Hand Cyclist (Examples)



Popular manufacturers include:

- Invacare
- AmTryke



11 – Tricyclist (Definition)


Any occupant of a three-wheels road vehicle propelled by pedaling **and may include an electric motor** of 750 watts or less. It includes tricycles solely propelled by human power and those that can be propelled by human power and/or a motor. This includes all people (operator and passengers) on tricycle and a person being pulled by a tricycle (e.g., in a wagon or bike trailer).

Per M.G.L. c. 90,§ 1, an e-bicycle can have one of two classes:

"Class 1 electric bicycle", an electric bicycle or tricycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.

"Class 2 electric bicycle", an electric bicycle or tricycle equipped with a motor that may be used exclusively to propel the bicycle and that is not capable of providing assistance when the bicycle reaches the speed of 20 miles per hour.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
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- 18 Utility Worker - Outside of vehicle
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- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown

11 – Tricyclist (Examples)



Popular brands include:


- Schwinn
- Radio Flyer
- Liberty Trike



12 – Motorized Scooter Rider (Definition)

A person riding a motorized scooter consisting of any two wheeled tandem or three wheeled device that has handlebars, designed to be stood or sat upon by the operator, powered by an electric or gas-powered motor that is capable of propelling the device with or without human propulsion. The definition of "motorized scooter" shall NOT include a motorcycle or motorized bicycle, a moped or a three wheeled motorized wheelchair.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
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- 99 Unknown

12 – Motorized Scooter Rider (Examples)



Popular brands include:

- Niu
- Roadrunner



An individual who is riding on a self-balancing, two non-tandem wheeled device or 4-tandem wheeled device designed to transport only one person, with an electric propulsion system whose maximum speed on a paved level surface is 12.5 miles per hour or less.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
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- 20 Emergency Responder - Outside of vehicle
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13 – Electric Personal Assistive Mobility Device User (Examples)




Popular manufacturers include:

- Segway
- BEST Power Wheelchair

An individual riding on a horse for use of transportation.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
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14 – Horse Rider (Examples)



15 – Horse-Drawn Carriage Driver (Definition)

A person driving any wheeled device similar to, but not limited to, wagons, carriages, carts, or similar devices in, upon, or by which any living person may be transported; designed to be drawn by one or more horse(s), hold passengers, and be driven for hire.

VU1 - Vulnerable User Type


- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
- 10 Hand Cyclist
- 11 Tricyclist
- 12 Motorized Scooter Rider
- 13 Electric Personal Assistive Mobility Device User
- 14 Horse Rider
- 15 Horse-drawn Carriage Driver 
- 16 Farm Equipment operator
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown

15 – Horse-Drawn Carriage Driver (Examples)



Any person operating a farm tractor or irrigation equipment having a per unit purchase price of at least one thousand dollars (\$1,000.00). Farm Equipment also includes, regardless of purchase price, attachments and baling wire, binders' twine and surface wrap used primarily and directly in any farm operation; aircraft designed or adapted to undertake agricultural applications; dairy equipment.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
- 10 Hand Cyclist
- 11 Tricyclist
- 12 Motorized Scooter Rider
- 13 Electric Personal Assistive Mobility Device User
- 14 Horse Rider
- 15 Horse-drawn Carriage Driver
- 16 Farm Equipment operator 
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown

16 – Farm Equipment Operator (Examples)



Popular brands include:

- MTZ
- John Deere
- New Holland



Any person operating a small, low-speed, electric-powered transportation device, lightweight, wheeled electric-powered conveyances.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
- 10 Hand Cyclist
- 11 Tricyclist
- 12 Motorized Scooter Rider
- 13 Electric Personal Assistive Mobility Device User
- 14 Horse Rider
- 15 Horse-drawn Carriage Driver
- 16 Farm Equipment operator
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown




17 – Other Micromobility Device User (Examples)



A person outside of a vehicle whose job it is to perform general maintenance, repair, and construction work assignments in support of public works projects; and to operate light and moderately heavy maintenance and construction equipment.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
- 10 Hand Cyclist
- 11 Tricyclist
- 12 Motorized Scooter Rider
- 13 Electric Personal Assistive Mobility Device User
- 14 Horse Rider
- 15 Horse-drawn Carriage Driver
- 16 Farm Equipment operator
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle 
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown

18 – Utility Worker – Outside of Vehicle (Examples)



19 – Roadway Worker – Outside of Vehicle (Definition)

Any employee of a railroad, or of a contractor to a railroad, whose duties include inspection, construction, maintenance or repair of railroad track, bridges, roadway, signal and communication systems, electric traction systems, roadway facilities or roadway maintenance machinery on or near track or with the potential of fouling a track, and flagmen and watchmen/lookouts.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
- 10 Hand Cyclist
- 11 Tricyclist
- 12 Motorized Scooter Rider
- 13 Electric Personal Assistive Mobility Device User
- 14 Horse Rider
- 15 Horse-drawn Carriage Driver
- 16 Farm Equipment operator
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown

19 – Roadway Worker – Outside of Vehicle (Examples)



A person whose job it is a paramedic, police officer, or firefighter who is among those responsible for going immediately to the scene of an accident or emergency to provide assistance.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
- 10 Hand Cyclist
- 11 Tricyclist
- 12 Motorized Scooter Rider
- 13 Electric Personal Assistive Mobility Device User
- 14 Horse Rider
- 15 Horse-drawn Carriage Driver
- 16 Farm Equipment operator
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other
- 99 Unknown




20 – Emergency Responder – Outside of Vehicle (Examples)



A person who does not meet the definition of the other vulnerable user categories such as an individual working at a toll booth or a person who is inside of a store.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
- 9 Motorized Bicyclist
- 10 Hand Cyclist
- 11 Tricyclist
- 12 Motorized Scooter Rider
- 13 Electric Personal Assistive Mobility Device User
- 14 Horse Rider
- 15 Horse-drawn Carriage Driver
- 16 Farm Equipment operator
- 17 Other Micromobility Device User
- 18 Utility Worker - Outside of vehicle
- 19 Roadway Worker - Outside of vehicle
- 20 Emergency Responder - Outside of vehicle
- 97 Other 
- 99 Unknown

97 – Other (Examples)



Used when it cannot be determined which attribute describes the non-motorist at the time they became involved in the crash. This would occur in situations where the details to make the determination are missing in the case materials or are reported as unknown. An example would be if it is unknown if the person was on foot or on a skateboard at the time they were struck.

VU1 - Vulnerable User Type

- 1 Pedestrian
- 2 Bicyclist
- 3 Skateboarder
- 4 Train/Trolley Passenger
- 5 Roller Skater
- 6 In-Line Skater
- 7 Non-Motorized Scooter Rider
- 8 Non-Motorized Wheelchair User
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