



OREGON VRU SAFETY ASSESSMENT

DATE: July 14, 2023

TO: All Partners Workshop Invitees and Attendees

FROM: Brian Chandler, Anders Hart | DKS Associates
Christina McDaniel-Wilson | Oregon Department of Transportation

SUBJECT: **16.6.2 | June 30 Partners Workshop Summary**

Project #20020-004-016

INTRODUCTION

All States are required to develop a Vulnerable Road Users Safety Assessment (VRU SA) as part of their Highway Safety Improvement Program (HSIP) in accordance with 23 U.S.C. 148(I). The initial VRU SA must be included in its Strategic Highway Safety Plan (SHSP), otherwise known as the Transportation Safety Action Plan (TSAP) in Oregon. The purpose of this project is to develop the initial VRU SA as an appendix to the 2021 Oregon TSAP.

The VRU SA is an assessment of the safety performance with respect to vulnerable road users and outlines the state's plan to improve the safety of vulnerable road users. It must be data-driven, incorporate the Safe Systems Approach (SSA), and comply with guidance issued by FHWA.

PURPOSE OF THE PARTNERS WORKSHOP SUMMARY

This memorandum provides a summary of the virtual roundtable workshop conducted on June 30, 2023, to solicit input from the project management team and safety partners. The consultant team gained local knowledge and perspective on the factors contributing to the safety concerns for vulnerable road users (VRUs), and the team shared upcoming activities related to the safety assessment (e.g., identification of high-risk areas; selection of potential projects or strategies).

WORKSHOP PARTICIPANTS

The following VRU safety partners joined the workshop event.

- Amy Schlappi (Hood River County Transportation District/Columbia Area Transit)
- Jenna Berman (ODOT Active Transportation Region 2)
- Beth Young (City of Newport, OBPAC)
- Doug Bish (ODOT)
- Chris Cheng (ODOT Region 4)
- Greg Fredericksen (NHTSA)
- Peter Geissert (Oregon EMS & Trauma Systems)
- Jessica Horning (ODOT)
- Izzy Armenta (Oregon Walks)
- Janelle Lawrence (Oregon Impact)
- Lake McTighe (Metro)
- Heidi Manlove (ODOT)
- Walt McAllister (ODOT)
- Christi McDaniel-Wilson (ODOT)
- Mary McGowan (ODOT)
- Terrence McTier (ODOT)
- Nick Fortey (FHWA)
- Traci Pearl (ODOT)
- Alyssa Pichardo (PBOT)
- Josh Roll (ODOT)
- Amanda Salyer (ODOT Region 2)
- Sarah Iannarone (The Street Trust)
- Shyam Sharma (ODOT Region 1)
- Logan Telles (City of Eugene)
- Tom Mills (TriMet)
- Tiana Tozer (ODOT Region 1)
- Clay Veka (PBOT)
- Vic Hoffer (Oregon Transportation Safety Committee)
- Robin Wilcox (ODOT)
- Anders Hart (DKS)
- Brian Chandler (DKS)

MEETING SUMMARY

Following is a summary of the materials shared by the consultant team and feedback provided by workshop participants. In most cases the individual attribution of questions and comments is NOT provided unless the team believes it to be necessary to provide relevant context to the input.

VRU SAFETY ASSESSMENT REQUIREMENTS AND COMPONENTS

VRUs, for the sake of this assessment, are defined as follows by USDOT:

“Pedestrian, bicyclist, other cyclist, and person on personal conveyance or an injured person that is, or is equivalent to, a pedestrian or pedalcyclist as defined in the ANSI D16.1-2007.”

The VRU SA is required to be completed and approved by November 15, 2023. After that, it must be updated alongside each update to the Strategic Highway Safety Plan (i.e., the Oregon Transportation Safety Action Plan). It may be updated more often, as desired by the State.

VRU SA COMPONENTS

- Safety Performance
- Quantitative Analysis
- Summary of consultation/engagement
- Program of projects or strategies
 - Note: This is not considered a list of project locations
- Safe System Approach (SSA): Feedback from participants
 - Shared responsibility is critical
 - System design affects behavior
 - People may cross mid-block because marked crossings are sparse
 - Speed is important for VRUs.
 - We need more protection for VRUs on higher-speed roads
 - Portland has developed neighborhood greenways where all modes share space; motor vehicle design speeds are 15-20 mph.
 - Europe takes a more holistic approach; you can't only do infrastructure; we need to focus on every part of the SSA
 - It's important to get out of silos as part of the SSA
 - SSA includes working with nontraditional partners
 - It's important to include people who have been left out of discussions, use culturally specific approaches

ANALYSIS METHODOLOGY

- The team will be leveraging previous related efforts
 - 2023 All Roads Transportation Safety (ARTS) Ped/Bike Analysis
 - 2021 Ped/Bike Safety Implementation Plan
- Data Analysis
 - 5-year Crash History Required (2017-2021)
 - For other risk factors (traffic volume, roadway inventory, etc.), data availability is inconsistent.
 - Some of these items are available on only a subset of the entire public road system. Examples include:
 - Roadway inventory data is only available on state highways
 - Lighting inventory data is only available in ODOT Region 1
 - Demographics/Equity
 - We will be using the Oregon Social Equity Index (SEI) for this purpose
- High Risk Areas
 - Defining terms:

- **Risk** could be defined as the likelihood of a future VRU-involved crash event occurring, or alternatively defined as the likelihood of a severe injury outcome when a collision occurs.
- **Areas** could be defined geographically (lat/long of high risks), or alternatively defined as facility types and land use (e.g., urban and suburban arterials)
- Challenging to assign crashes to Census tracts because roads are often the boundaries
- Feedback
 - It's important to include risk of fatality or serious injury if a crash occurs
 - Can analysts look at vehicle size/weight?
 - Response (Christina McDaniel-Wilson): Our team doesn't have vehicle make/model in the ODOT crash database; it's in Department of Motor Vehicle (DMV) data that is not shared with the CAR Unit. We need special permission to access.
 - We do have make/model for fatalities using FARS data
 - Response (Josh Roll): ODOT Research has VIN decoded (which gives us vehicle characteristics) data for the entire Oregon fleet for 13 years so a summary of that would be easy to produce. The agency economists are putting together some work on the role of vehicle design and injury severity so those involved should discuss and see what your timelines are and see what can be produced from that effort for the VRU.
 - Looking at data, Southeast Portland bears brunt of the risk
 - It's hard to understand the problem and level of VRU exposure without more data on pedestrian and bicyclist volumes, travel patterns
 - Many homeless people have been killed
 - Analysts and decision-makers need to understand all causal factors

PROGRAM OF PROJECTS AND STRATEGIES

- Projects and strategies must address factors contributing to VRU crashes
- The team will use a list of vetted countermeasures from the ARTS processes
 - Other non-ARTS treatments can also be identified and documented
- Behavior countermeasures are identified in the National Highway Traffic Safety Administration's (NHTSA) Countermeasures That Work document.
- Countermeasure Evaluation
 - Safe System principles
 - Equity
 - Potential to reduce GHG emissions
 - Feedback: How do GHG emissions factor in? There can be conflict between Safety and GHG goals
 - Response (Brian): I will investigate the FHWA guidance on this issue and report back

PARTNER CONSULTATION/ENGAGEMENT

Coordination activities have included and will include:

- Oregon Bicycle and Pedestrian Advisory Committee (OBPAC)

- March 2023 Oregon Safety Conference
- June 2023 Partners Workshop
- Summer/Fall 2023 Reviews
- OTSC and OTC
- Are there are other groups we should reach out to?
 - ODOT Mobility Advisory Committee
 - ODOT recently added a work zone near-miss committee
 - County Engineers: stretched thin, we need to reach out to them
 - Small Towns: These partners care about VRU safety, but they have a different perspective because they may move through more car-oriented transportation networks and decision processes.
- Jessica – I will coordinate additional outreach and engagement

PROJECT SCHEDULE

- Draft VRU Safety Assessment will be available for review in September
- Public comment period to be determined; if required, it could accelerate the production timeline
- Feedback
 - We need make sure marginalized voices are uplifted in comment periods—need to be very intentional, put in sufficient effort
 - Meaningful engagement relies on relationships; let the Project Management Team know how to use those relationships how to make connections with people/groups
 - Look at existing engagement efforts, like Metro RTP update (focus groups); that effort is showing that safety is a major concern
 - We need to support engagement with low-income people (pay for transportation/stipends, make it worth their time in some way)

SAFE SYSTEM APPROACH

Following is a topical discussion of each of the primary Safety System Approach areas as it relates to VRU safety. The consultant team shared the relevant questions used during the Oregon Safety Conference in March as discussion starters.

SAFER PEOPLE

- We need to think about what “safer people” means; exposure is higher for people without access to affordable housing, food
- PBOT focuses on cultural-specific approaches (personal, psychological safety for people of color); cultural-specific traffic safety projects; and outreach to specific community groups
- PBOT has many partnerships—police traffic division’s training using SSA and Equity
- Treatments
 - Bike detection signals that show people have been detected are helpful
 - Alcohol-detection devices in cars
 - Advocating lowering blood alcohol threshold
 - How do we encourage active transportation use? Wayfinding, placemaking, benches

SAFER VEHICLES

- We've supported the National Association of City Transportation Officials (NACTO) letters seeking a new car rating system nationally that includes safety of people outside the vehicle
- Jurisdictions can advocate for policy changes in that realm
 - New York City has installed speed limiters in city staff vehicles
 - Washington, D.C. started added vehicle weight to registration fee schedule
- This assessment can collate information from research, existing data on fleet composition change/VRU safety; various strategies related to vehicle speed and weight (carrots and sticks); graduated traffic fines based on vehicle speed
 - This work could create a research agenda for ODOT and/or federal agencies
- Legislature has gone the other way, not holding people accountable for unsafe vehicles (e.g., law enforcement cannot stop a vehicle for broken lights
 - There can be competing Equity vs. Safety considerations

SAFER SPEEDS

- In a small tourist town, limited law enforcement staffing is a significant issue.
- Safer Speeds and Safer Vehicles are linked
 - Exponential curve of impact force with speed
 - Linear curve of impact force with vehicle weight
 - Both speed limiters and size reduction are important
- Standards can stop us from making safety improvements
 - Volume-to-Capacity Ratio at traffic signals
 - Lane width requirements
 - Using 30th-highest hour volume as a standard
 - Restrictions on raised crossings
 - Concurrency requirements can be at odds with safety

TOPIC: POST-CRASH CARE

- California has a post-crash team to look at every fatal crash
- Portland Police has been pushing for something similar, including adding experts beyond just law enforcement
- Street Trust has recommendations: <https://thestreettrust.substack.com/p/what-odot-can-do-to-improve-pedestrian>
- Consider Equity in post-crash care, especially for people of color
- It would be nice to look at serious injuries that affect people's wellbeing, livelihood; challenges in looking at Equity data

2023 VULNERABLE ROAD USERS (VRU) SAFETY ASSESSMENT

PARTNERS WORKSHOP

JUNE 30, 2023

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WORKSHOP AGENDA

1. Introductions
2. Project Overview
3. VRU SA Components
4. Methodology
5. Schedule
6. Discussion Prompts



INTRODUCTIONS

OR VRU SAFETY ASSESSMENT TEAM

DKS Team

- Brian Chandler, Project Manager
- Lacy Brown, Lead Safety Analyst
- Houssam Ghandour, Safety Analyst
- Anders Hart, Staff Support

Oregon DOT

- Angela Kargel, State Traffic Services Engineer & Unit Manager
- Jessica Horning, Pedestrian and Bicycle Program Manager
- Heidi Manlove, Pedestrian and Bicycle Program Manager
- Traci Pearl, Transportation Safety Office Manager
- Walt McAllister, Safe Communities/Traffic Records Program Manager
- Doug Bish, Safety Emphasis Area Coordinator
- Christina McDaniel-Wilson, State Traffic Safety Engineer
- Jiguang Zhao, Traffic Safety Engineer
- Mary McGowan, Senior Transportation Planner/SAP Implementation Project Manager



PROJECT OVERVIEW

VRU SA OVERVIEW

Requirements

- Complete an initial VRU SA and include in the Strategic Highway Safety Plan (SHSP)
 - > **Oregon Transportation Safety Action Plan (TSAP)**
- Approved by Governor or designee
- Process approved by FHWA (like SHSP)
- Due November 15, 2023

Resources

- FHWA VRU SA [Guidance](#) (Oct 2022)
 - > Written guidance
 - > Webinars

Regulations

Pub. L. 117-58
23 U.S.C. 148(a)(9)
23 U.S.C. 148(a)(13)(G)
23 U.S.C. 148(a)(15)
23 U.S.C. 148(a)(16)
23 U.S.C. 148(l)
23 CFR 490.205
23 CFR 450.210
23 CFR 450.316
ANSI D16.1-2007

VULNERABLE ROAD USER DEFINITION

- Pedestrian
- Bicyclist
- On Personal Conveyance
- **Not motorcyclists**



VRU SA COMPONENTS

VRU SA COMPONENTS

Per FHWA Guidance Template

- Overview of VRU Safety Performance
- Summary of Quantitative Analysis
- Summary of Consultation/ENgagement
- Program of Projects or Strategies
- Safe System Approach



Metro Regional Transportation Safety Strategy

<https://www.oregonmetro.gov/regional-transportation-safety-plan>

FHWA Safe System Approach

<https://highways.dot.gov/safety/zero-deaths>



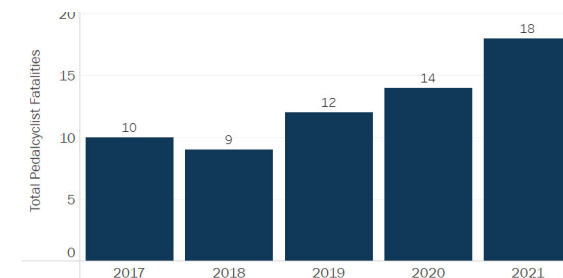
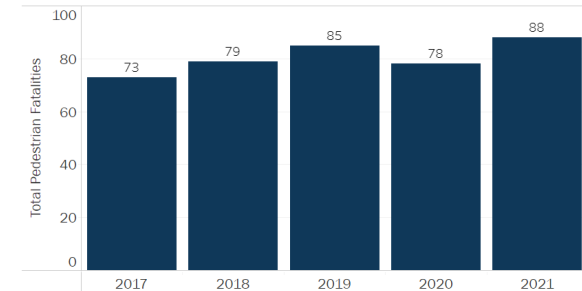
METHODOLOGY

VRU SA METHODOLOGY: ANALYSIS

- Data Analysis Summary
 - > Crash History (2017-2021)
 - > Other Risk Factors
 - Availability (State system, local roads)
 - Missing/limited data (VRU volumes)
 - > Demographics / Equity
 - Oregon Social Equity Index (SEI)
- High Risk Areas
 - > Defining Terms
 - Risk of what?
 - VRU crash occurrence
 - VRU crash severity
 - Areas
 - Geographic (lat/lon)
 - Facility Types

Previous & Current Related Efforts

- 2023 ARTS Ped/Bike Analysis
- 2021 Ped/Bike Safety Implementation Plan



VRU SA: PROGRAM OF STRATEGIES

- Address factors contributing to VRU crashes identified in High-Risk Areas
- Infrastructure Countermeasures
 - ARTS-listed Countermeasures (with CMFs)
 - > Non-ARTS (include CMF and source)
 - > Behavioral Countermeasures
 - > NHTSA Countermeasures That Work

Evaluate each Countermeasure

- Safe System Approach Principles
- Equity Considerations
- Potential to meet GHG Targets



VRU SA: PARTNER CONSULTATION/ENGAGEMENT

- OBPAC Coordination
- Partners Roundtable / Workshop
 - > Introduce Assessment
 - > Open Discussion
- Engagement Materials
- Partner Reviews
 - > Methodology
 - > Program of Strategies
 - > VRU SA Draft and Final
- OTSC and OTC Reviews



OBPAC: Oregon Bicycle and Pedestrian Advisory Committee
OTSC: Oregon Transportation Safety Committee
OTC: Oregon Transportation Commission



PROJECT SCHEDULE

PROJECT SCHEDULE

Milestone	Timeline
Partners Workshop	June 30
Final Technical Memos 1. VRU Analysis Summary 2. High-Risk Area Methods and Assumptions	Late-July
High Risk Area Identification	August-September
Program of Strategies	September
VRU Safety Assessment Drafts	1. Mid-August 2. Early-September 3. Late-September 4. Late-October
<i>Public Comment Period (potential)</i>	<i>TBD</i>
VRU Safety Assessment Final for Submittal	November
Amended 2021 Transportation Safety Action Plan (TSAP)	November-December



DISCUSSION PROMPTS

SAFER PEOPLE

1. What strategies has your agency used (or planned to use) to improve the human behaviors to reduce the risk of crashes and injuries?
2. Has your agency used (or planned to use) education and awareness campaigns in promoting safer driving habits, or used more comprehensive measures such as stricter law enforcement of traffic laws? Which is more effective?
3. What strategies have your agency adopted (or planned to adopt) for promoting safer user (driver, pedestrian, and bicyclist) behavior?
4. How does your agency encourage more people to use active transportation modes?



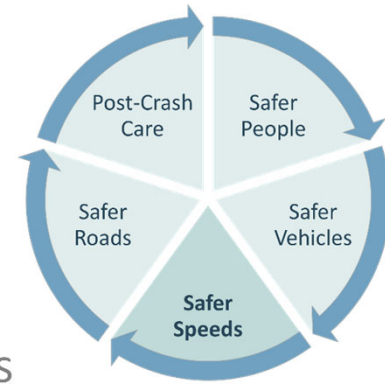
SAFER VEHICLES

1. How familiar are you with the concept of safer vehicle design and how important do you think it is in relation to overall safety?
2. In your opinion, what are some of the key features or technologies (for example, adaptive headlight beams (ADB), connected autonomous vehicles (CAV), Lane-keeping assist (LKA), Lane departure warning (LDW), cross-over mirrors etc.) that make a vehicle “safer” from a road safety perspective?
3. What do you think are some of the key challenges and barriers to implementing key features or safer vehicle technologies more widely and how do you think these could be addressed?
4. How should we incorporate safer vehicle features and technologies into the VRU assessment as well as into broader road safety strategies and initiatives?



SAFER SPEEDS

1. What does safer speeds mean to you when you think about the safety of vulnerable road users?
2. What kinds of strategies and factors (lower speeds, infrastructure such as road diets and roundabouts, technology such as speed feedback signs, public outreach & education/ awareness campaigns etc.) help achieve safer speeds?
3. What are the barriers (or potential barriers) to achieving safer speeds?



SAFER ROADS

1. Where is the greatest need for VRU safety improvements?

- > Local streets
 - > Urban collectors/arterials
 - > Rural highways
 - > Big cities
 - > Small towns
 - > Other
- If you could pick one roadway improvement that would have the biggest impact on VRU safety, what would it be?



POST-CRASH CARE

1. How do you think we can improve the coordination and communication between EMS and healthcare responders and other stakeholders involved in post-crash care?
2. What are some important factors that determine the effectiveness of post-crash care? How can we incorporate these into broader road safety strategies and ensure that they are prioritized?
3. How can we improve the availability and accessibility of post-crash care services for some special vulnerable road users such as children, disabled, and aging road users?



QUESTIONS

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