

MDT Vulnerable Road User Safety Assessment

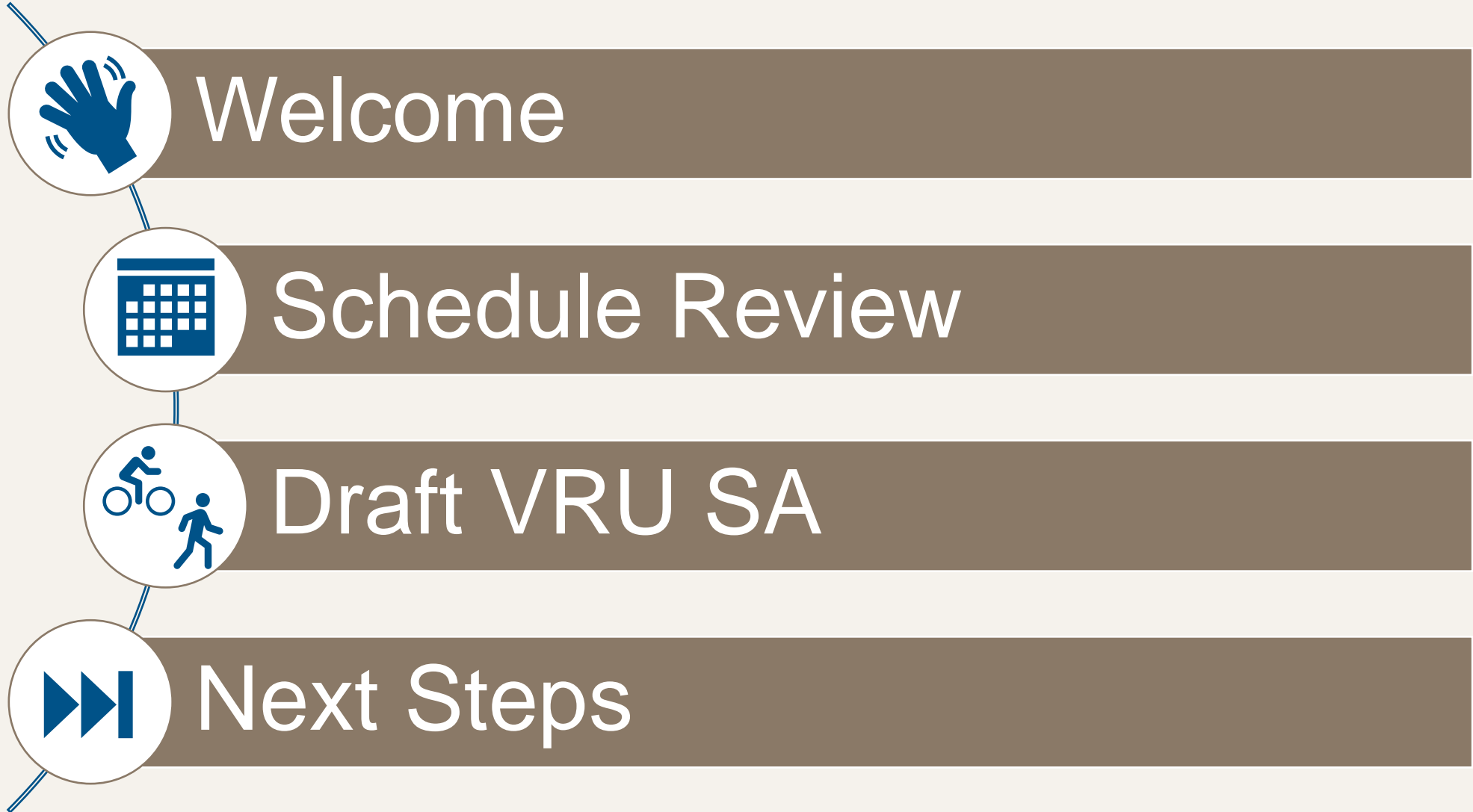


Advisory Committee Meeting #3

September 25, 2023



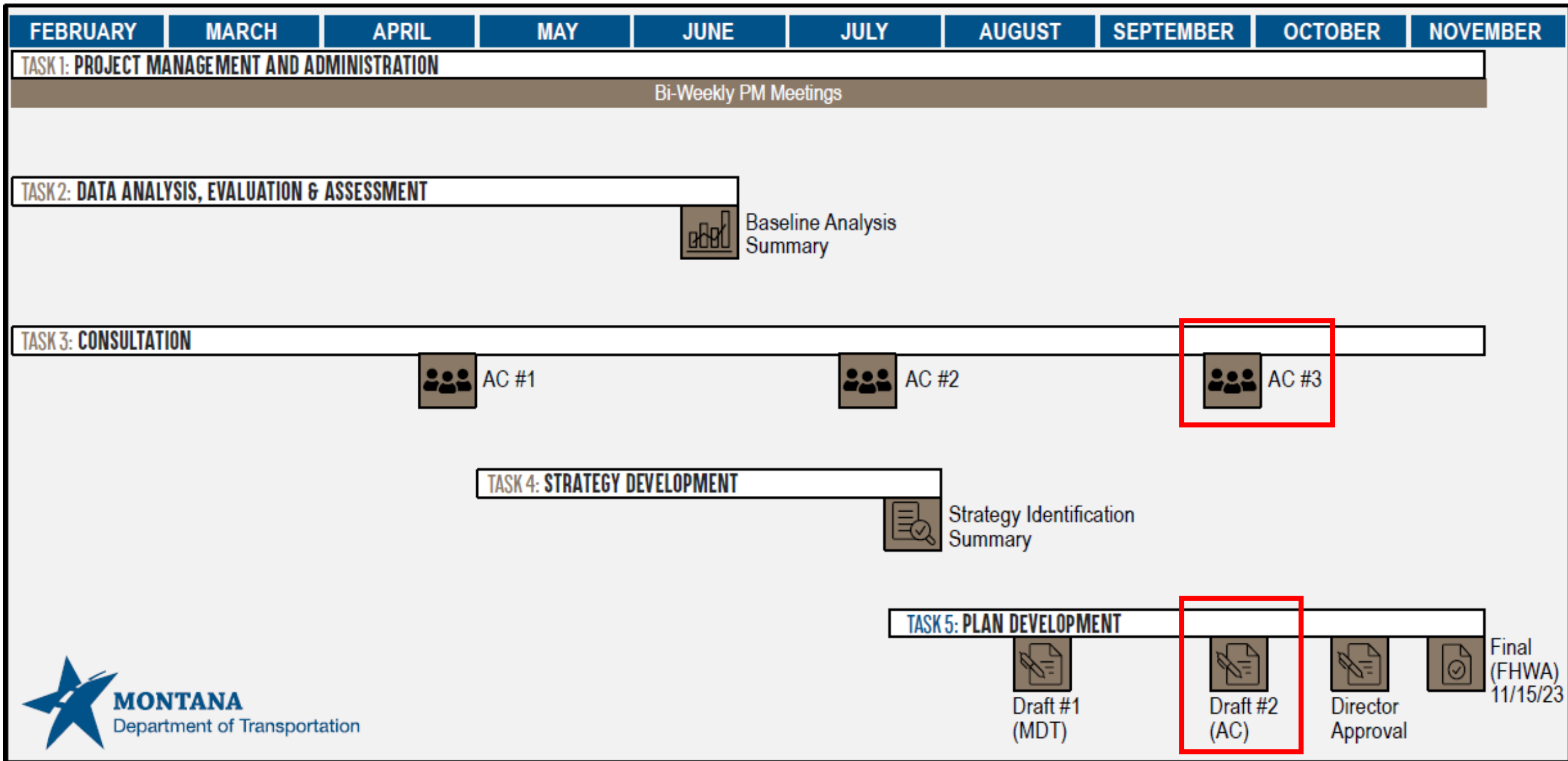
AGENDA



Schedule Review



VULNERABLE ROAD USER SAFETY ASSESSMENT SCHEDULE



Draft Vulnerable Road User Safety Assessment



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**Baseline Safety
Analysis Summary**

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**Baseline Safety
Analysis Summary**

Strategy Summary

**Future Updates, Coordination,
Funding, Implementation**

What is a Vulnerable Road User?

Non-motorist




- Fatality Analysis Reporting System (FARS) person attribute code:
 - (5) Pedestrian
 - (6) Bicyclist
 - (7) Other Cyclist
 - (8) Person on Personal Conveyance
 - Or equivalent






Federal Requirements for VRU SA

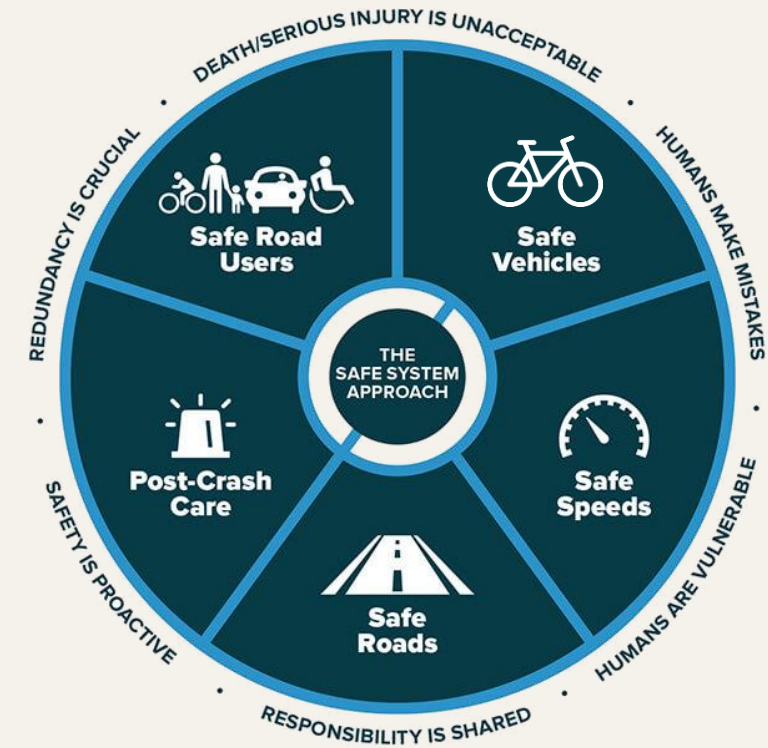
- Consider **Safe System Approach**
- **Quantitative analysis** of VRU fatalities and serious injuries

Must include:

-  Crash characteristics
-  Demographics of location
-  High-risk areas

May include:

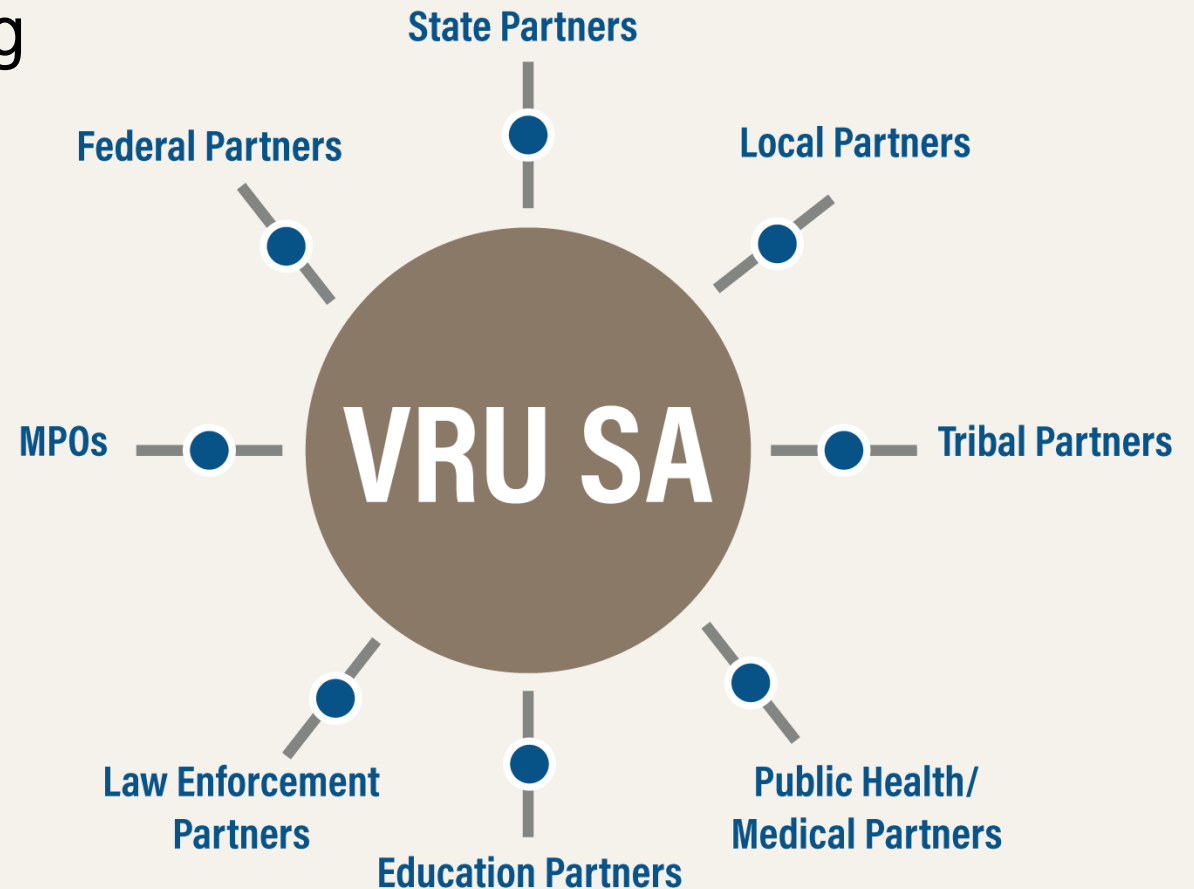
-  Indicators: volumes, land use, infrastructure
-  Demographics of individuals involved
-  Tribal areas



- Program of **projects or strategies** to reduce safety risks to VRU in **high-risk areas**

Consultation

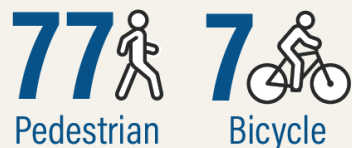
- **Required to consult** with local governments & MPOs representing high-risk areas
- Three virtual **AC** meetings plus review of deliverables
 - Collaborative efforts of MDT and federal, state, Tribal, and local community **safety partners**
- Follow up with **MDT Traffic & Safety** and **DPHHS** EMS and Trauma Systems



Data Set

- **Review Period:** 2017-2021 (5 years)
- **Data Source:** MDT database
- **VRU-Involved Crash Records:** 1,484

Fatalities



Suspected Serious Injuries





Crash Analysis Summary

Common Circumstances & Contributing Factors

- Pedestrian crashes > bicycle crashes
- Native Americans disproportionately represented (severe)
- Impairment
- No lighting/dark clothing
- Improper behavior
- Pedestrians not in transport



Crash Analysis Summary

Common Circumstances & Contributing Factors

- **URBAN**
 - Intersections
 - Lower speed
 - Local roads & multi-lane arterials
- **RURAL**
 - Non-junction
 - High-speed, two-lane highways
- **GENERAL**
 - Lack of, un-used, or misused ped/bike facilities
 - Maintenance/accessibility issues, convenience, comfort level

VRU Strategies

- Organized by the **Safe System Approach**
- Includes countermeasures targeting the “**E’s of Safety**”



EDUCATION



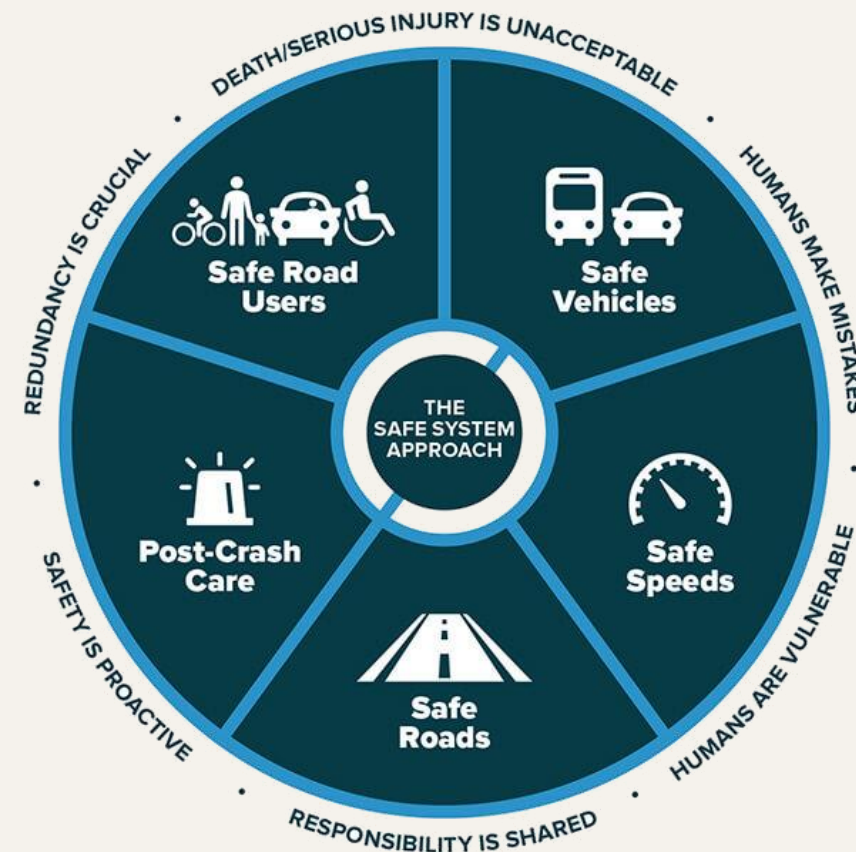
ENFORCEMENT



ENGINEERING



EMS



Summary of VRU Strategies

	Strategy	E's of Safety	Partners	Example Actions/Efforts
Safe Road Users	Reduce Driver and Non-Motorist Impairment	Education, Enforcement, EMS	Behavioral Health/Substance Abuse/Prevention Specialists, Bicycle Clubs, EMS Responders/Medical Providers, Individuals, Law Enforcement, Local Governments, MDT, Walking and Disability Groups	<ul style="list-style-type: none"> • Focused alternative transportation communication campaigns • Partnerships with behavioral health, substance abuse, and prevention specialists • Penalties for impaired driving and biking
	Reduce Driver and Non-Motorist Distraction	Education, Enforcement	City/County Public Health/Injury Prevention Specialists, Individuals, Law Enforcement, Local Governments, MDT, School Districts	<ul style="list-style-type: none"> • Education campaigns focused on safety awareness (e.g., avoidance of texting, headphones, ear buds) • Distracted driving/biking/rolling/walking laws • Penalties for distracted driving/biking/rolling/walking
	Increase Pedestrian Visibility	Education, Enforcement	City/County Public Health/Injury Prevention Specialists, Individuals, Law Enforcement, Local Governments, MDT, School Districts, Walking and Disability Groups	<ul style="list-style-type: none"> • Education campaigns & incentives <ul style="list-style-type: none"> • Light/white/bright clothing • Reflective gear and personal lighting (flashlights, headlamps) • Safety awareness (e.g., avoidance of texting, headphones, ear buds) • Rules of the road • Walking buses, crossing guards
	Increase Bicyclist Visibility and Protection	Education, Enforcement	Bicycle Clubs and Bike Shops, City/County Public Health/Injury Prevention Specialists, Homeless Shelters/Pre-Release Centers, Individuals, Law Enforcement, Local Governments, MDT, School Districts	<ul style="list-style-type: none"> • Education campaigns & incentives <ul style="list-style-type: none"> • Light/white/bright clothing • Reflective gear and personal lighting (flashlights, headlamps) • Safety awareness (e.g., avoidance of texting, headphones, ear buds) • Rules of the road • Helmet laws
Safe Vehicles	Enhance Bicycle Visibility and Function	Education	Bicycle Clubs and Bike Shops, City/County Public Health/Injury Prevention Specialists, Individuals, Local Businesses/Community Groups, Local Governments, MDT, School Districts	<ul style="list-style-type: none"> • Education campaigns & incentives <ul style="list-style-type: none"> • Bicycle lamps/reflectors • Functioning brakes • Regular bicycle maintenance • Tool kits
Safe Roads	Reduce Crossing Distances	Engineering	Local Governments, MDT	<ul style="list-style-type: none"> • Roadway reconfiguration • Curb bulbouts/extensions • Pedestrian refuge islands • Roundabouts

	Strategy	E's of Safety	Partners	Example Actions/Efforts
Safe Roads	Increase Crosswalk Visibility and Accessibility	Engineering	Local Governments, MDT	<ul style="list-style-type: none"> • Accessible curb ramps • High-visibility pavement markings • Rectangular Rapid Flashing Beacons (RRFBs) • Pedestrian Hybrid Beacons (PHB)/High-intensity Activated crossWalks (HAWK) • Intelligent Transportation Systems (ITS)
	Enhance Signalized Crossings	Engineering	Local Governments, MDT	<ul style="list-style-type: none"> • Accessible curb ramps • High-visibility pavement markings • Pedestrian push buttons, audible/visual cues • Leading Pedestrian Intervals (LPI) • Increased pedestrian walk phase
	Increase Roadway Visibility	Engineering	Local Governments, MDT	<ul style="list-style-type: none"> • Street lighting • High-visibility pavement markings • Signage • Vegetation management • Daylighting intersections • Snow removal management
	Enhance On-Road Bicycle Facilities	Engineering	Local Governments, MDT	<ul style="list-style-type: none"> • Bike lanes • Sharrows, bike route signage • Widened shoulders • Appropriately placed shoulder rumble strips • Maintenance of facilities (i.e., street sweeping, snow removal, vegetation management, etc.)
	Enhance Off-Road VRU Facilities	Engineering	Local Governments, MDT	<ul style="list-style-type: none"> • Separated bike lanes • Shared-use paths • Sidewalks with curb ramps • Boulevards, raised curbs, planters, concrete barriers between travel lanes and VRU facilities • Overpasses, underpasses, pedestrian bridges • Maintenance of facilities (i.e., street sweeping, snow removal, vegetation management, etc.)
	Designate Non-Motorized Corridors	Education, Engineering	Local Governments, MDT	<ul style="list-style-type: none"> • Low-volume/low-speed walking/rolling/bicycle routes • Connected facilities – businesses, neighborhoods, schools, parks • Signage, striping • Educational and wayfinding materials • Maintenance of facilities (i.e., street sweeping, snow removal, vegetation management, etc.)
Safe Speeds	Review Posted Speed Limits	Enforcement, Engineering	Law Enforcement, Local Governments, MDT, School Districts	<ul style="list-style-type: none"> • Speed studies • Variable speed limit trailers • Special speed zones (schools, high-use areas, work zones) • Jurisdiction-wide speed limits

Summary of VRU Strategies

	Strategy	E's of Safety	Partners	Example Actions/Efforts
Safe Speeds	Reduce Vehicular Travel Speeds	Enforcement, Engineering	Business Districts, Law Enforcement, Local Governments, MDT, School Districts	<ul style="list-style-type: none"> • Traffic calming • Speed bumps/humps/speed tables/raised crosswalks • Visual friction (paint, art, vegetation, objects) • Narrowed roadways/curb extensions • Roundabouts/traffic circles • Horizontal roadway shifts (chicanes) • ITS/dynamic speed feedback signage • Speed enforcement
Post-Crash Care	Improve Post-Crash Care for Injured VRUs	Education, Enforcement, EMS	Department of Health and Human Services (DPHHS), EMS Responders, Law Enforcement, Local Governments, MDT	<ul style="list-style-type: none"> • Bystander training and education • Dispatch training • Post-crash arrival/transport and continued EMS/trauma care • On scene and hospital/clinic care • Database enhancements • Policy development and Legislative action
	Enhance Emergency Responder Safety	Education, Enforcement, EMS	City/County Public Health/Injury Prevention Specialists, Emergency Responders, Individuals, Law Enforcement, Local Governments, MDT	<ul style="list-style-type: none"> • ITS – portable, dynamic signage • Construction cones, reflective striping, signage • Reflective strips/clothing/personal protective equipment (PPE) • Traffic Incident Management (TIM) training • Educational campaigns • Enforcement
	Improve Data Collection and Reporting Strategy	Education, Enforcement, EMS	DPHHS, EMS Responders, Hospitals/Healthcare Facilities, Law Enforcement, MDT, State Agencies	<ul style="list-style-type: none"> • Officer web-based crash reporting training • Crash records management • Crash, injury, and traffic citation data integration • Interagency coordination • Legislative action requiring crash reporting training for all law enforcement

AC Comments on Strategies

- **Comment: VRU Definition**
 - **Response:** Modified discussion on scooters, rideable toys, and e-bikes
- **Comment: Bike head lights vs. lamps**
 - **Response:** MCA = bike lamps emitting light, also headlamps/flashlights/personal lighting
- **Comment: Homeless Shelters/Pre-Release Centers**
 - **Response:** Added as a partner under Increase Bicyclist Visibility & Protection
- **Comment: MUTCD minimum pedestrian intervals**
 - **Response:** Clarified difference between minimum clearance time & calculated clearance time based on crossing speed

AC Comments on Strategies

- **Comment: Daylighting**
 - **Response:** Added as an action item under Increase Roadway Visibility
- **Comment: Sharrows**
 - **Response:** Added NACTO commentary (not a substitute for bike lanes), may be appropriate on low-speed/low-volume routes
- **Comment: Trauma Centers**
 - **Response:** Billings Clinic is now a Level 1 Trauma Center; not all CAHs are trauma centers; modify locations of Level 3 Trauma Centers
- **Comment: DPHHS**
 - **Response:** Added as a partner under Improve Post Crash Care and Improve Data Collection and Reporting

Implementation



VRU SA Implementation

- **Funding:**
 - Combination of federal, state, local, Tribal, and private funding sources
 - Examples: HSIP, TA, other federal ped/bike funding
- **Coordination:**
 - Continue to work with **AC** & support from **E's of Safety**/other **partners**
 - **Shared responsibility** (funding, resources, expertise, and personnel)
- **Future Updates**
 - Included as addendum to **CHSP**
 - Updated with CHSP **(5 years)**
 - Continue to gather **data**, refine **analysis**, identify **high-risk areas**, document **progress**

Next Steps

- Director Approval
- Final VRU SA
- FHWA Submission

