



U.S. Department  
of Transportation

Federal Highway  
Administration

# Memorandum

Subject: **ACTION:** Vulnerable Road User Safety  
Assessment Guidance (Due date:  
November 15, 2023)

Date: October 21, 2022

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In Reply Refer To:  
HSSP

To: Division Administrators

## Purpose

The purpose of this memorandum is to provide background and guidance to clarify the requirements for the Vulnerable Road User Safety Assessment as described in 23 U.S.C. 148(l), as amended by the Infrastructure Investment and Jobs Act (IIJA) (Pub. L. 117-58, also known as the “Bipartisan Infrastructure Law” (BIL)). All States are required to develop a Vulnerable Road User Safety Assessment as part of their Highway Safety Improvement Program (HSIP) in accordance with 23 U.S.C. 148(l).

This guidance also incorporates principles consistent with the Federal Highway Administration’s (FHWA) [Policy on Using Bipartisan Infrastructure Law Resources to Build a Better America](#), dated December 16, 2021.

*Except for the statutes and regulations cited, the contents of this document do not have the force and effect of law and are not meant to bind the States or the public in any way. This document is intended only to provide information regarding existing requirements under the law or agency policies.*

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## Definitions

The following terms are used throughout this guidance:

A **Safe System Approach** means a roadway design that emphasizes minimizing the risk of injury or fatality to road users; and that: takes into consideration the possibility and likelihood of human error; accommodates human injury tolerance by taking into consideration likely crash types, resulting impact forces, and the ability of the human body to withstand impact forces; and takes into consideration vulnerable road users. (23 U.S.C. 148(a)(9)).

A **Vulnerable Road User Safety Assessment** is an assessment of the safety performance of a State with respect to vulnerable road users and the plan of the State to improve the safety of vulnerable road users as described under 23 U.S.C. 148(l). (23 U.S.C. 148(a)(16)).

A **vulnerable road user** is a nonmotorist with a fatality analysis reporting system (FARS) person attribute code for 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. (See 23 U.S.C. 148(a)(15) and 23 CFR 490.205). A vulnerable road user may include people walking, biking, or rolling. Please note that a vulnerable road user:

- Includes a highway worker on foot in a work zone, given they are considered a pedestrian.
- Does not include a motorcyclist.

## Background

Vulnerable road users accounted for a growing share of all United States roadway fatalities in recent years.<sup>1</sup> An even larger number of vulnerable road users are injured each year in collisions involving motor vehicles.<sup>2</sup> On March 2, 2022, the National Highway Traffic Safety Administration (NHTSA) released its 2020 annual traffic crash data<sup>3</sup> showing that 38,824 lives were lost in traffic crashes nationwide that year. That number marks the highest number of fatalities since 2007. In addition, as compared with 2019 data, bicyclist fatalities were up 9.2 percent (from 859 to 938) and pedestrian fatalities were up 3.9 percent (from 6,272 to 6,516). NHTSA also published early estimates for 2021 roadway fatalities.<sup>4</sup> The total projected pedestrian fatalities increased by 13 percent from 2020 to 2021 and bicyclist fatalities increased by 5 percent from 2020 to 2021. Addressing the safety of vulnerable road users through a multifaceted, collaborative, and comprehensive approach allows people that walk, bike, and roll full and safe access to our transportation system.

## Prioritizing Vulnerable Road User Safety in All Investments and Projects

The United States Department of Transportation's (USDOT) [National Roadway Safety Strategy](#) (NRSS) (issued January 27, 2022) commits the USDOT and FHWA to respond to the current

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<sup>1</sup> <https://www-fars.nhtsa.dot.gov/Main/index.aspx>

<sup>2</sup> <https://cdan.dot.gov/query>

<sup>3</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813266>

<sup>4</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813298>

crisis in traffic fatalities by “taking substantial, comprehensive action to significantly reduce serious and fatal injuries on the Nation’s roadways,” in pursuit of the goal of achieving zero highway deaths. FHWA recognizes that zero is the only acceptable number of deaths on our Nation’s roads and achieving zero is our safety goal. FHWA therefore encourages States and other funding recipients to prioritize vulnerable road user safety in all Federal highway investments and in all appropriate projects.

At the core of the NRSS is the adoption of the [Safe System Approach](#), which addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes. It involves a paradigm shift to improve safety culture, increase collaboration across all safety stakeholders, and refocus transportation system design and operation on anticipating human mistakes and lessening impact forces to reduce crash severity and save lives. To achieve the vision of zero fatalities and to Build a Better America, vulnerable road user safety should be fully considered in a State’s transportation investment decisions, from planning and programming, environmental analysis, project design, and construction, to maintenance and operations. States should use data-driven safety analyses to ensure that safety is a key input in any decision made in the project development process for all project types and fully consider and improve the safety of all road users, especially vulnerable road users, in project development. FHWA encourages States to use the lessons learned from the Vulnerable Road User Safety Assessment process to also identify policies, rules, and procedures that may be barriers to safe travel by vulnerable road users, and take steps to change them.

Because of the role of speed in fatal crashes, FHWA is also providing new resources on the setting of speed limits and on re-engineering roadways to help encourage safer travel speeds through design. FHWA recommends that States use a Complete Streets Design Model on roadways where adjacent land use suggests that trips could be served by varied modes, and to achieve complete travel networks for various types of road users. A Complete Streets Design Model prioritizes safety, comfort, and connectivity for all users of the roadway, including but not limited to pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

## Equity

Fatalities impact communities differently, particularly for people not in a vehicle. Bicyclist and pedestrian fatalities are overrepresented for American Indians, Black or African-Americans, and Hispanic or Latinos compared to total bicyclist and pedestrian fatalities.<sup>5</sup> Therefore, States should ensure that Vulnerable Road User Safety Assessments address equity by considering the impacts to these communities. The BIL provides considerable resources to help States and other funding recipients advance projects that consider the specific circumstances affecting community members’ mobility and safety needs and allocate resources consistently with those needs, enabling the transportation network to effectively serve all community members. FHWA will work with States to ensure the inclusion of project elements that proactively address racial equity, access for elderly people and people with disabilities, workforce development, and economic development, and that remove barriers to opportunity and accessibility, including

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<sup>5</sup> [National Roadway Safety Strategy \(transportation.gov\)](#)

automobile dependence in both rural and urban communities, and which redress prior inequities and barriers to opportunity.

States are responsible for involving the public, including by seeking out and considering the needs of those traditionally underserved by existing transportation systems and underrepresented populations, in transportation planning and complying with participation and consultation requirements in 23 CFR 450.210 and 23 CFR 450.316, as applicable. *Underserved communities* means populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life. Underserved communities include Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders, and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.<sup>6</sup>

To assist with these public engagement efforts, FHWA expects the State to engage with all impacted communities and community leaders to determine which forms of communication are most effective.<sup>7</sup> These individuals can provide insight on the unique circumstances impacting various disadvantaged and underrepresented groups so that new channels for communication may be developed. State can then use this information to inform decisions across all aspects of project delivery including planning, project selection, and the design process. This is particularly relevant to the high-risk areas identified as part of the Vulnerable Road User Safety Assessment.

## **Climate Change and Sustainability**

The United States is committed to a whole-of-government approach to reducing economy-wide net greenhouse gas pollution by 2030. The BIL provides considerable resources—including new programs and funding—to help States and other funding recipients advance this goal in the transportation sector. In addition, the BIL makes historic investments to improve the resilience of transportation infrastructure, helping States and communities prepare for hazards such as wildfires, floods, storms, and droughts exacerbated by climate change.

FHWA encourages the advancement of projects that address climate change and sustainability. To enable this, recipients should consider climate change and sustainability throughout the planning and project development process, including the extent to which projects align with the

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<sup>6</sup> Executive Order 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, 86 FR 7009 (Jan. 25, 2021) <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/>. <sup>7</sup> USDOT has published guidance on promising practices that can help USDOT funding recipients meet the requirements of meaningful public involvement and participation. Promising Practices for Meaningful Public Involvement in Transportation Decision-Making (October 2022), [https://www.transportation.gov/sites/dot.gov/files/2022-10/Promising\\_Practices\\_for\\_Meaningful\\_Public\\_Involvement\\_in\\_Transportation\\_Decision\\_making.pdf](https://www.transportation.gov/sites/dot.gov/files/2022-10/Promising_Practices_for_Meaningful_Public_Involvement_in_Transportation_Decision_making.pdf).

<sup>7</sup> USDOT has published guidance on promising practices that can help USDOT funding recipients meet the requirements of meaningful public involvement and participation. Promising Practices for Meaningful Public Involvement in Transportation Decision-Making (October 2022), [https://www.transportation.gov/sites/dot.gov/files/2022-10/Promising\\_Practices\\_for\\_Meaningful\\_Public\\_Involvement\\_in\\_Transportation\\_Decision\\_making.pdf](https://www.transportation.gov/sites/dot.gov/files/2022-10/Promising_Practices_for_Meaningful_Public_Involvement_in_Transportation_Decision_making.pdf).

President's greenhouse gas reduction, climate resilience, and environmental justice commitments. In particular, FHWA encourages recipients to fund projects that reduce greenhouse gas emissions by encouraging increases in walking, bicycling, and rolling trips, and that support fiscally responsible land use and transportation efficient design. FHWA also encourages recipients to consider projects and strategies in the Vulnerable Road User Safety Assessment that address environmental justice concerns.

## Guidance

The purpose of this guidance is to clarify the requirements for a Vulnerable Road User Safety Assessment as described in 23 U.S.C. 148(l). Specifically, for the Vulnerable Road User Safety Assessment, this guidance addresses: (1) schedule and frequency, (2) statutory and regulatory requirements, (3) potential funding opportunities, and (4) the relationship between the Vulnerable Road User Safety Assessment and other HSIP and vulnerable road user activities.

Per 23 U.S.C. 148(l)(7)(B), FHWA consulted with various States and safety stakeholders in the development of this guidance. Consultation included listening sessions, outreach at meetings and conferences, and a request for information on the implementation of the BIL in the Federal Register.<sup>8</sup> Public comments received in response are available at [www.regulations.gov](http://www.regulations.gov) (Docket No. FHWA-2021-0021). FHWA considered all relevant feedback received in the development of the guidance that is presented below.

## Schedule and Frequency

### Initial Assessment

All States are required to complete an initial Vulnerable Road User Safety Assessment by November 15, 2023 (23 U.S.C. 148(l)(1)) and include it as part of their State Strategic Highway Safety Plan (SHSP) (23 U.S.C. 148(a)(13)(G)).

A State's initial Vulnerable Road User Safety Assessment should be included in its SHSP as an appendix. The outcomes from the Vulnerable Road User Safety Assessment quantitative analysis and program of projects or strategies should be incorporated into relevant SHSP emphasis areas, strategies, and actions, as appropriate, and implemented through State and local planning procedures.

If the State does not plan to publish its SHSP update until after November 15, 2023, the initial Vulnerable Road User Safety Assessment may be included as a separate document (e.g., an addendum) from the existing SHSP. If the initial Vulnerable Road User Safety Assessment is included as an addendum, it will still need to be approved by the Governor of the State or a responsible State agency official that is delegated by the Governor (23 CFR 924.9(a)(3)(iv)) and posted to the website along with the SHSP (23 U.S.C. 148(h)(3)).

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<sup>8</sup> 86 FR 68297 (Dec. 1, 2021).

## **Updates**

Each State must update the Vulnerable Road User Safety Assessment with subsequent SHSP updates. (23 U.S.C. 148(l)(5)). States are required to update their SHSP no later than 5 years from the previous approved version. (23 CFR 924.9(a)(3)(i)).

FHWA acknowledges that every State is on a different SHSP update cycle. After a State submits its initial Vulnerable Road User Safety Assessment, if its first subsequent SHSP update is published on or before November 15, 2024, the State can confirm that no substantive updates are needed because the information from the initial assessment is still current and then incorporate the initial 2023 Vulnerable Road User Safety Assessment as an appendix in their updated SHSP. If the first SHSP update after the completion of the initial Vulnerable Road User Safety Assessment is published after November 15, 2024, then FHWA expects the State to update the Vulnerable Road User Safety Assessment and include it as part of the SHSP update as an appendix. FHWA expects that Vulnerable Road User Safety Assessments will be an iterative process, where agencies will learn and develop a more sophisticated approach over time.

## **Review**

The State shall submit the initial Vulnerable Road User Safety Assessment to their respective FHWA Division Office no later than November 15, 2023, either as part of the SHSP update, or as an addendum to an existing SHSP. (23 U.S.C. 148(l)(1)). Per 23 CFR 924.9(a)(3)(iii), FHWA approves the process for the updated SHSP, which includes the Vulnerable Road User Safety Assessment. Therefore, the FHWA Division Office will review the initial Vulnerable Road User Safety Assessment to ensure it meets the applicable requirements and approve the process, consistent with SHSP update requirements. The FHWA Division Office may seek input on the Vulnerable Road User Safety assessment from the applicable NHTSA and Federal Transit Administration (FTA) Regional offices as part of the review process. In future years, the subsequent Vulnerable Road User Safety Assessment will be reviewed and approved as part of the regular SHSP update process approval.

## **Statutory and Regulatory Requirements**

As part of the Vulnerable Road User Safety Assessment, the State shall use a data-driven process to identify areas of high-risk for vulnerable road users. (23 U.S.C. 148(l)(2)(A)). The State must consult with local governments, metropolitan planning organizations (MPOs), and regional transportation planning organizations that represent a high-risk area (23 U.S.C. 148(l)(4)(B)) and develop a program of projects or strategies to reduce safety risks to vulnerable road users in areas identified as high-risk (23 U.S.C. 148(l)(2)(B)). Additional information about each of these requirements is provided below.

A template that outlines the suggested content and structure for the Vulnerable Road User Safety Assessment is included as an attachment.

## **Using a Data Driven Process**

A Vulnerable Road User Safety Assessment includes an assessment of the safety performance of a State with respect to vulnerable road users. (23 U.S.C. 148(a)(16)). To assess the safety



performance with respect to vulnerable road users, the State must perform a quantitative analysis of vulnerable road user fatalities and serious injuries that-

- (i) Includes data such as location, roadway functional classification, design speed, speed limit, and time of day;
- (ii) considers the demographics of the locations of fatalities and serious injuries, including race, ethnicity, income, and age; and
- (iii) based on the data, identifies areas as “high-risk” to vulnerable road users.  
(23 U.S.C. 148(1)(2)(A))

### *Use of Data*

As part of the State’s HSIP, a State shall have in place a safety data system with the ability to perform safety problem identification and countermeasure analysis and to differentiate the safety data for vulnerable road users from other road users. (See 23 U.S.C. 148(c)(2)(A)(vi)). The State shall use the safety data system, and any other relevant data, to perform the quantitative analysis of vulnerable road user fatalities and serious injuries using, at a minimum, data from the most recent 5-year period for which data is available. (23 U.S.C. 148(1)(3)). However, States may consider more years of data. This may be appropriate, for example, when the 5-year sample size is insufficient to distinguish patterns and the facility, adjacent land uses, and traffic volumes have not changed significantly during the longer time period.

The data analysis shall include data such as location, roadway functional classification, design speed, speed limit, and time of day. (23 U.S.C. 148(1)(2)(A)(i)). Data may also include indicators of where vulnerable road user fatalities and serious injuries are likely to occur, such as volume data, land use (generators of walking and bicycling trips, such as major activity centers, shopping centers, hotels, schools, residential areas near or adjacent to commercial establishment, transit/bus stops, or employers) and infrastructure indicators of people walking and bicycling (such as sidewalks, transit stops, transit corridors, worn paths that indicate pedestrians are in the area but lack adequate facilities, and bikeways).

States should use the best available data to understand the contributing factors related to vulnerable road user fatalities and serious injuries. FHWA recommends that States give special consideration to ensure Tribal areas are included in the data analysis. FHWA also encourages States to partner with other agencies to aggregate data sources and supplement existing data collection efforts. For example, partnering with the State Department of Public Health, Department of Emergency Medical Services, and Medical Examiner may provide additional insights on crash outcomes. Local agencies may also have additional data (e.g., travel patterns, pedestrian and bicyclist counts, and other data such as near miss events) that States can include in the quantitative analysis. Transit agencies may have data on transit ridership and facility inventories for pedestrian catchment areas. Transit ridership information is available from FTA’s [National Transit Database \(NTD\)](#) Program, which is the Nation’s primary source for information and statistics on the transit systems of the United States. States that have data integration capabilities will benefit from a more complete understanding of vulnerable road user safety issues.



### *Consideration of Demographics*

The quantitative analysis of vulnerable road user fatalities and serious injuries shall also consider the demographics of the locations of fatalities and serious injuries, including race, ethnicity, income, and age (23 U.S.C. 148(l)(2)(A)(ii)). In addition to demographics of locations, FHWA encourages States to also consider the demographics, including disability status, of the *people* that are killed and seriously injured in traffic crashes, if possible. There are various sources of demographic data, including but not limited to:

- [EJScreen: Environmental Justice Screening and Mapping Tool](#) (EPA)
- [FHWA - HEPGIS Maps: Socioeconomics and Equity Analysis](#) (FHWA)
- [Transportation Disadvantaged Census Tracts \(arcgis.com\)](#) (USDOT)
- [The Climate and Economic Justice Screening Tool](#) (CEQ)
- [Social Vulnerability Index](#) (CDC)

Many agencies take demographics into account by integrating equity factors in safety analysis. Examples of agencies that have considered equity in safety can be found in [FHWA's Noteworthy Practices Database](#) (search by topic "Equity in Safety").

### *Identification of High-Risk Areas*

The HSIP requires States to identify hazardous locations, sections, and elements that constitute a danger to vulnerable road users. (23 U.S.C. 148(c)(2)(B)(i)). In addition, as part of the quantitative analysis of vulnerable road user fatalities and serious injuries, States must identify areas as high-risk to vulnerable road users (23 U.S.C. 148(l)(2)(A)(iii)).

States use various data-driven safety analysis approaches to identify high risk areas for vulnerable road users. States can use their own methodology or adapt other approaches to best meet their needs. These approaches might include:

- [High Injury Network \(HIN\) analysis](#) which includes the mapping of corridors where high numbers of people have been killed and severely injured in traffic crashes. This methodology has been used by Vision Zero cities across the country. A State could also develop an HIN modal subset for vulnerable road users.
- [Predictive safety analysis](#)<sup>9</sup> which helps identify roadway sites with the greatest potential for improvement and quantifies the expected safety performance of different project alternatives. Predictive approaches combine crash, roadway inventory, and traffic volume data to provide more reliable estimates of an existing or proposed roadway's expected safety performance.
- [Systemic safety analysis](#)<sup>10</sup> or risk-based models, which use crash and roadway data in combination to identify high-risk roadway features that correlate with particular crash types.

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<sup>9</sup> <https://safety.fhwa.dot.gov/rsdp/ddsa.aspx>

<sup>10</sup> <https://safety.fhwa.dot.gov/systemic/>

Systemic analysis identifies locations that are at risk for severe crashes, even if there is not a high crash frequency at these locations.

Each State will identify high-risk areas based on the results of their quantitative analysis using the required data and demographics information, as well as consideration of the Safe System Approach. A high-risk area may be a geographic region (e.g., a county or region covered by an MPO), specific facility type (e.g., major arterial), specific location (e.g., a corridor or intersection) or other priority area (e.g., work zones and Tribal areas). The [FHWA Pedestrian & Bicycle Safety Website](#) includes a list of Data Tools and Resources that are available to help the State identify high-risk areas for vulnerable road users.

### **Consultation**

States are required to consult with local governments, MPOs, and regional transportation planning organizations that represent a high-risk area. (23 U.S.C. 148(1)(4)(B)). Local governments include counties, townships, municipalities, special districts, and other general purpose authorities that are under the jurisdiction of local governments. If a high-risk area is located within Tribal lands, FHWA recommends that States also engage with Tribal Governments. States should also consult with transit agencies if transit stops or stations are located within the high-risk area.

For purposes of a Vulnerable Road User Safety Assessment, FHWA encourages States to “consult” as provided in the planning process. Per the Transportation Planning and Programming definitions in 23 CFR 450.104, consultation means that one or more parties confer with other identified parties in accordance with an established process and, prior to taking action(s), considers the views of the other parties and periodically informs them about action(s) taken.

The purpose of the consultation requirement for the Vulnerable Road User Safety Assessment is to gain local knowledge and perspective on the factors contributing to the safety concerns at the high-risk areas and to identify potential projects or strategies to improve the safety of vulnerable road users, including their access to transit, in these areas. States may also consult with local governments, MPOs, and regional transportation planning organizations regarding local safety data that may be available to include the quantitative analysis required to identify high-risk areas. These parties may also have insights on policies, rules, and procedures that could be revised to better ensure the consistent consideration of the safety needs of vulnerable road users across all project types.

FHWA also encourages States to consult institutional, advocacy, and community groups, particularly those that represent populations that may be underrepresented based on the demographics of the locations of fatalities and serious injuries. These stakeholders will often have first-hand knowledge of challenges and barriers to walking, biking, and rolling in their communities, and insights for solutions that might work best to reduce vulnerable road user fatalities and serious injuries given their unique community characteristics.

Each State should establish a process to consult with the various entities that represent a high-risk area. States may leverage existing consultation efforts to gather input from the various government agencies, planning organizations, and stakeholder groups that represent high-risk

areas. This may include road safety audits (RSAs) or consultations performed as part of the regular transportation planning process.

RSAs are a proactive, formal safety performance examination of an existing roadway or future roadway project and its surrounding area. RSAs are performed by a multidisciplinary team independent of the project and use an established process. RSAs consider all road users, account for human factors and road user capabilities, document findings and recommendations in a formal report, and require a formal response from the road owner. RSAs are a tool that can be used to consult with government agencies, planning organizations, and other members of the community to determine contributing factors and potential solutions to address safety concerns in the high-risk areas.

Consultations involved in existing planning processes may also provide insights into contributing factors and potential solutions for high-risk areas identified via the Vulnerable Road User Safety Assessment. The State may have already identified a project or strategy to improve vulnerable road user safety in the identified high-risk areas. States should consult existing planning documents, such as the Statewide Transportation Improvement Program (STIP), Public Transportation Agency Safety Plan,<sup>11</sup> HSIP Implementation Plan, or local road safety plans, to determine if any of the projects in these documents could address the needs identified in the Vulnerable Road User Safety Assessment.

### **Program of Projects or Strategies**

The Vulnerable Road User Safety Assessment shall include a program of projects or strategies to reduce safety risks to vulnerable road users in areas identified as high-risk. (23 U.S.C. 148(l)(2)(B)). In developing the program of projects or strategies, the State shall take into consideration the input from the consultation described above, as well as the Safe System Approach. (23 U.S.C. 148(l)(4)). The State should also consider the Complete Streets Design Model, Americans with Disabilities Act (ADA) transition plans, and other requirements and expectations as they are developing their program of projects and strategies for the Vulnerable Road User Safety Assessment. Each of these considerations is described in more detail below.

### ***Safe System Approach***

Since the Vulnerable Road User Safety Assessment is part of the State's SHSP, FHWA recommends that States consider additional elements in their Safe System Approach beyond those specified in 23 U.S.C. 148(a)(9). The FHWA encourages States to view a Safe System Approach as –

- aiming to eliminate death and serious injury for all road users;
- anticipating and accommodating human errors;
- keeping crash impact energy on the human body within tolerable levels;
- proactively identifying safety risks in the system;

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<sup>11</sup> <https://www.transit.dot.gov/regulations-and-guidance/safety/public-transportation-agency-safety-program/small-bus-transit#SmallBusApp>

- building in redundancy through layers of protection so if one part of the system fails, the other parts provide protection; and
- sharing responsibility for achieving the vision zero goal of zero deaths and serious injuries among all who design, build, manage, and use the system.

Projects that separate users in time and space, match vehicle speeds to the built environment, and increase visibility (e.g., lighting) advance implementation of a Safe System Approach and improve safety for people that walk, bike, and roll. FHWA encourages States to prioritize countermeasures and strategies as follows to align with the Safe System Approach:

1. Separate users in space (e.g., separated bike lanes, walkways, pedestrian refuge islands)
2. Implement physical features to slow traffic (e.g., self-enforcing roads, road diets)
3. Separate users in time (e.g., leading pedestrian interval)
4. Increase attentiveness and awareness (e.g., crosswalk visibility enhancements, pedestrian hybrid beacons, lighting)
5. Implement speed enforcing strategies (e.g., speed safety cameras)

It is also important to note that issues may vary by area type (e.g., there may be different issues for rural, urban, or suburban areas). States should also consider these potential differences and apply appropriate strategies based on context.

The program of projects or strategies for the Vulnerable Road User Safety Assessment should take into consideration all road users, modes of travel and elements of a Safe System (Safe Roads, Safe Speeds, Safe Vehicles, Safe Road Users, and Post-Crash Care).

### *Complete Streets*

As detailed in FHWA’s recent Report to Congress: “Moving Toward a Complete Streets Design Model,”<sup>12</sup> FHWA encourages States and communities to adopt and implement Complete Streets policies that prioritize the safety of all users in transportation network planning, design, construction, and operations. Section 11206(a) of the BIL defines “Complete Streets standards or policies” as those which “ensure the safe and adequate accommodation of all users of the transportation system, including pedestrians, bicyclists, public transportation users, children, older individuals, individuals with disabilities, motorists, and freight vehicles.” A Complete Streets Design Model includes careful consideration of measures to set and design for appropriate speeds; separation of various users in time and space; improvement of connectivity and access for pedestrians, bicyclists and transit riders, including for people with disabilities; and addressing safety issues through implementation of safety countermeasures. Implementation of the model includes systematically changing policies, rules, and procedures to consistently prioritize safety for all users across all project types. By addressing Safer Streets and Safer Speeds, the Complete Streets Design Model serves as an implementation strategy of the Safe System Approach.

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<sup>12</sup> FHWA, Moving to a Complete Streets Design Model: A Report to Congress on Challenges and Opportunities, March 2022. <https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-03/Complete%20Streets%20Report%20to%20Congress.pdf>

## *ADA*

The ADA of 1990 and Section 504 of the Rehabilitation Act of 1973 prohibit discrimination against people with disabilities and ensure equal opportunity and access for persons with disabilities. The USDOT's Section 504 regulations apply to recipients of the Department's financial assistance. (*See* 49 CFR 27.3(a)). Title II of the ADA applies to public entities regardless of whether they receive Federal financial assistance. (*See* 28 CFR 35.102(a)). The ADA requires that no qualified individual with a disability shall, because a public entity's facilities are inaccessible to or unusable by individuals with disabilities, be excluded from participation in, or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any public entity. (28 CFR 35.149). A public entity's pedestrian facilities are considered a "service, program, or activity" of the public entity. As a result, public entities and recipients of Federal financial assistance are required to ensure the accessibility of pedestrian facilities in the public right-of-way, such as curb ramps, sidewalks, crosswalks, pedestrian signals, and transit stops in accordance with applicable regulations.

Federal-aid funds are available to improve accessibility and to implement recipients' ADA transition plans and upgrade their facilities to eliminate physical obstacles and provide for accessibility for individuals with disabilities. States should consider their ADA transition plans as they develop their program of projects or strategies as part of the Vulnerable Road User Safety Assessment. FHWA will provide oversight to State and local agencies to ensure that each public agency's project planning, design, and construction programs comply with ADA and Section 504 accessibility requirements.

## *Other Requirements and Expectations*

### *Transportation System Access*

The program of projects may not degrade transportation system access for vulnerable road users (23 U.S.C. 148(l)(6)). Safety risks to vulnerable road users should not be mitigated through efforts that reduce opportunities for, or the attractiveness of, walking, bicycling, rolling, or accessing transit. In addition, per the Manual on Uniform Traffic Control Devices (MUTCD) Section 6A.01<sup>13</sup> "the needs and control of all road users through a [Temporary Traffic Control] TTC zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents". Therefore, in carrying out projects States should also avoid temporary degradation of service for vulnerable road users during construction. Further, 23 U.S.C. 109(m) states that "the Secretary shall not approve any project or take any regulatory action under this title that will result in the severance of an existing major route or have significant adverse impact on the safety for nonmotorized transportation traffic and light motorcycles, unless such project or regulatory action provides for a reasonable alternate route or such a route exists."

### *Access to Transit*

Vulnerable road user safety issues are likely to arise near transit stations, bus stops, and other places where transit (bus or rail) operates.

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<sup>13</sup> <https://mutcd.fhwa.dot.gov/hfm/2009/part6/part6a.htm>

FHWA, working with FTA, seeks to help Federal-aid recipients plan, develop, and implement infrastructure investments that prioritize safety, mobility, and accessibility for all transportation network users, including vulnerable road users as well as transit riders, micromobility users, freight and delivery services providers, and motorists.<sup>14</sup> This includes the incorporation of data sharing principles and data management.

FHWA encourages States to consider transit access as they develop the program of projects or strategies for the Vulnerable Road User Safety Assessment. Regardless of how a person began their trip, they walk, bike, or roll to access transit. Transit agencies and roadway owners both play critical roles in improving the safety of pedestrians and bicyclists. There are a variety of actions that transit agencies and roadway owners can implement to improve safety for pedestrians and bicyclists when accessing transit. These actions include designing safe pedestrian and bicyclist routes to transit facilities, as well as locating and designing transit stops and stations to provide safe and accessible facilities for pedestrians and bicyclists. These treatments can be combined to maximize benefits to vulnerable road users. For instance, a curb extension can create a protected bicycle facility, reduce crossing distances, and calm traffic. Likewise, a Bus Rapid Transit facility in the center of a roadway can calm traffic, increase transit accessibility, create transit service that is faster, more comfortable, and more reliable, and reduce crossing distances for people crossing a roadway.

MPOs, transit agencies, and States should keep planning as a key element to understand where change and improvements are needed. Road owners such as State, city, and county governments can identify bicycle and pedestrian access to transit needs and potential improvements and document them in a plan or other official document, such as the Vulnerable Road User Safety Assessment. This allows the agencies to act quickly when funding opportunities arise, provide documented support for improvements, and include these improvements when larger projects are implemented.

### Projects

FHWA encourages States to consider use of FHWA's [Proven Safety Countermeasures](#) to address high risk areas for vulnerable road users. FHWA also encourages States to include innovative projects and strategies to improve the safety of vulnerable road users. Projects or strategies that include a new traffic control device or a different application of an existing device may require approval from FHWA to experiment with the device or its use. Additional information is available on the MUTCD Experimentation webpage.<sup>15</sup>

FHWA does not expect States to have a fully developed project for each identified high-risk area. The Vulnerable Road User Safety Assessment is a plan to improve the safety of vulnerable road users (23 U.S.C. 148(a)(16)) and must be included in the State SHSP (23 U.S.C. 148(a)(13)(G)). As such, FHWA recognizes that this is a planning level document and additional

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<sup>14</sup> FHWA, Improving Safety for Pedestrians and Bicyclists Accessing Transit, [https://safety.fhwa.dot.gov/ped\\_bike/ped\\_transit/fhwasa21130\\_PedBike\\_Access\\_to\\_transit.pdf](https://safety.fhwa.dot.gov/ped_bike/ped_transit/fhwasa21130_PedBike_Access_to_transit.pdf).

<sup>15</sup> <https://mutcd.fhwa.dot.gov/condexper.htm>



effort will be necessary to further develop the projects and strategies identified in the Vulnerable Road User Safety Assessment as part of the transportation planning process.

Projects or strategies to improve vulnerable road user safety for the identified high-risk areas will vary depending on the type of high-risk area identified. Examples of different projects or strategies for the various types of high-risk areas include, but are not limited to:

- Geographic Region – City or County - Develop Complete Streets Policy or Plan
- Facility Type – Major Arterial – Install center median island and Rapid Rectangular Flashing Beacons or Pedestrian Hybrid Beacons at mid-block crossings and ensure speed limits are set appropriately.
- Specific Location – Corridor – Implement RSA Recommendations
- Specific Location – Intersection – Implement protected intersection features
- Priority Area - Work Zones – Develop work zone safety and mobility policy to address vulnerable road users

## Potential Funding Opportunities

### Development

The development of the Vulnerable Road User Safety Assessment may be financed with HSIP or State Planning and Research (SP&R) funds, subject to that program's eligibility requirements and the cost allocation procedures of [2 CFR part 200](#). (See 23 CFR 924.9(b)).

### Implementation

Once the Vulnerable Road User Safety Assessment is complete, it is imperative that agencies implement the projects and strategies to realize their expected safety benefits. FHWA expects State and local governments to use the Vulnerable Road User Safety Assessment findings and recommendations to adjust project selection criteria and make other changes to guide investments to improve the safety of vulnerable road users.

The projects and strategies from the Vulnerable Road User Safety Assessment can be implemented through a combination of Federal, State, local, and private funding sources.

These projects may be eligible under the HSIP, either as a highway safety improvement project (23 U.S.C. 148(e)(1)) or specified safety project (23 U.S.C. 148(e)(3)). See the [HSIP eligibility guidance](#) for additional information about specific HSIP eligibility requirements.

States that are subject to the Vulnerable Road User Safety Special Rule under 23 U.S.C. 148(g)(3) may also leverage the funds required to be obligated under that special rule to implement eligible highway safety improvement projects from the Vulnerable Road User Safety Assessment. See the [HSIP Special Rules guidance](#) for additional information about this potential funding opportunity.

Transportation Alternatives Set-Aside funds can be used on activities in furtherance of a Vulnerable Road User Safety Assessment. (23 U.S.C. 133(h)(3)(C)). See the [Transportation Alternatives Set-Aside Implementation Guidance](#) for additional information. In addition, HSIP



funds may be credited toward the non-Federal share of the costs of a Transportation Alternatives Set-Aside project if the project is an eligible highway safety improvement project as described in 23 U.S.C. 148(e)(1) and is consistent with the State strategic highway safety plan. (23 U.S.C. 133(h)(7)(B)(i)). Using this provision, States can work with local governments to combine HSIP funds and funds that are set-aside for transportation alternatives projects to cover 100 percent of projects that address bicycle and pedestrian safety on public roads or publicly owned bicycle or pedestrian pathways or trails.

FHWA maintains a [Pedestrian and Bicycle Funding Opportunities](#) webpage<sup>16</sup> that indicates potential eligibility for pedestrian and bicycle projects under USDOT surface transportation funding programs.

There are also a variety of discretionary grant programs that may provide potential funding opportunities for projects and strategies from the Vulnerable Road User Safety Assessment, such as, the [Safe Streets and Roads for All](#) (SS4A) Program, or the [Reconnecting Communities Pilot Program](#). Additional information about these and other USDOT grant opportunities is available at <https://www.transportation.gov/grants>.

#### *Transit Flex*

Federal-aid funds can be “flexed” to FTA to fund transit projects for transit agencies. (23 U.S.C. 104(f)). A key goal of the use of Federal-aid funding on transit and transit-related projects is to provide an equitable and safe transportation network for travelers of all ages and abilities, including those from marginalized communities facing historic disinvestment. FHWA encourages recipients to consider using funding flexibility for transit or multimodal-related projects and to consider strategies that: (1) improve infrastructure for nonmotorized travel, public transportation access, and increased public transportation service in underserved communities; (2) plan for the safety of all road users, particularly those on arterials, through infrastructure improvements and advanced speed management; (3) reduce single-occupancy vehicle travel and associated air pollution in communities near high-volume corridors; (4) offer reduced public transportation fares as appropriate; (5) target demand-response service towards communities with higher concentrations of older adults and those with poor access to essential services; and (6) consider equitable and sustainable practices while developing transit-oriented development including affordable housing strategies and consideration of environmental justice populations.

Under 23 U.S.C. 104(f) funds eligible for transit projects or transportation planning may be transferred (flexed) to the FTA and administered in accordance with chapter 53 of Title 49, U.S.C., except that the Federal share requirements of the original fund category continue to apply (23 U.S.C. 104(f)(1)). Should a State choose to utilize funds for transit projects, States should work with the FHWA Division Office to flex the funds to FTA to be allocated and obligated to the desired project. Transit projects that are funded with funds made available under Title 23, U.S.C., and are not flexed to FTA, must be administered in accordance with Title 23 and meet all applicable FHWA requirements (23 CFR 1.9(a)).

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<sup>16</sup> [https://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/funding/](https://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/)

## **Relationship to other HSIP and Vulnerable Road User Activities**

The HSIP includes several requirements to develop various plans and reports. This section describes the relationship between these activities and the Vulnerable Road User Safety Assessment.

### **SHSP and Related Action Plans**

All States have an SHSP that identifies safety priorities and strategies for the State. Many States' SHSPs include an emphasis area for certain vulnerable road users such as pedestrians, bicyclists, or other nonmotorized users. These States may have a separate action plan to support implementation of the SHSP strategies for vulnerable road users. States that are an FHWA Pedestrian and Bicyclist Focus State may also have an existing Pedestrian Safety Action Plan. These action plans may serve as the Vulnerable Road User Safety Assessment if they meet all of the requirements in 23 U.S.C. 148(l), as described in this guidance.

### **HSIP Implementation Plan**

Some States may be required to develop an HSIP Implementation Plan if they do not meet or make significant progress toward meeting their safety performance targets. (23 U.S.C. 148(i)). The HSIP Implementation Plan is a look-ahead document and describes how the State will achieve safety performance targets and long-term safety outcomes in the future. Specifically, the HSIP Implementation Plan includes a summary of the State's available HSIP funding, programs, and anticipated projects for the next fiscal year. All programs, projects, or strategies from the Vulnerable Road User Safety Assessment that will be implemented through the HSIP must also be included in the HSIP Implementation Plan in the year the State will obligate HSIP funds for those projects or strategies. (23 U.S.C. 148(i)(2)(C)).

### **HSIP Annual Report**

All States are required to complete an annual HSIP report that describes the progress implementing HSIP projects over the past year, as well as the effectiveness of previously implemented projects. (23 U.S.C. 148(h)). Any program, project or strategy from the Vulnerable Road User Safety Assessment that is implemented through the HSIP must also be reflected in the subsequent year's HSIP annual report. (23 CFR 924.15(a)(1)(ii)(B)).

### **Local Safety Plans**

Local agencies or communities may have a local safety plan. Local safety plans come in all different shapes and sizes and might include, for example, a Local or Tribal Road Safety Plan, a Complete Streets Plan, a Pedestrian or Bicycle Master Plan, or a Comprehensive Safety Action Plan developed under SS4A. These local safety plans may address safety, facility plans for vulnerable road users, or both, and should be considered as part of the consultation required for areas identified as high risk for vulnerable road users under 23 U.S.C. 148(l)(4)(B).

Alternatively, if the high-risk area does not already have any such local safety plan, that may be a strategy to consider as part of the Vulnerable Road User Safety Assessment.

## **Questions**

If you have any questions or need additional information about Vulnerable Road User Safety Assessment or other HSIP requirements, please contact Tamara Redmon

([tamara.redmon@dot.gov](mailto:tamara.redmon@dot.gov) or 202-366-4077) or Karen Scurry ([karen.scurry@dot.gov](mailto:karen.scurry@dot.gov) or 202-897-7168).

## **Attachment**

- Vulnerable Road User Safety Assessment Template

## Vulnerable Road User Safety Assessment Template

FHWA encourages each State to use the Vulnerable Road User Safety Assessment Template provided below to ensure all requirements are met and provide all information necessary for FHWA to approve the process as part of the FHWA SHSP process approval. States can also provide additional information to reflect vulnerable road user safety needs and solutions as well.

### Overview of Vulnerable Road User Safety Performance

- *Present historical trends for vulnerable road user fatalities and serious injuries over the past five years (or longer).*
- *Disaggregate trends by user type*
- *Compare vulnerable road user safety performance to overall safety performance*
- *Describe progress towards meeting or making significant progress toward meeting safety performance targets for nonmotorized users.*

### Summary of Quantitative Analysis

- *Describe data, methodology and time-period of analysis used to identify high-risk areas to vulnerable road users*
- *Describe how demographics were considered as part of the quantitative analysis*
- *Provide a list of the high-risk areas to vulnerable road users identified based on the data and demographics information*

### Summary of Consultation

- *Describe the process used to consult with required entities and other stakeholders about high-risk areas*
- *Provide a summary of the outcomes (i.e., safety concerns and potential solutions) of the consultation for each high-risk area*

### Program of Projects or Strategies

- *Identify the program of projects and strategies to reduce the safety risks for vulnerable road users in the high-risk areas. States may consider developing an online interactive map identifying high-risk areas and proposed projects or strategies to address them.*

### Safe System Approach

- *Describe how the Safe System Approach was considered as part of the Vulnerable Road User Safety Assessment. Note: This could be a separate section of the Assessment or integrated throughout as appropriate.*