



MEMORANDUM

DATE: Feb 6, 2023

TO: Chair Ramos and Transportation and Mobility Commission members

FROM: Kate Drennan, Principal Transportation Planner; Laurel Priest, Associate Transportation Planner, Community Development Department

RE: **Safe Systems Approach Background Materials**

CC: Rebecca Kennedy, Deputy Director, Community Development Department; Ryan Lopossa, Streets and Transportation Division Manager, Public Works

Introduction

A Safe Systems approach is federally initiated and supported, and implemented on a local, regional, and federal level. Safe Systems are a major initiative of the United States Department of Transportation (USDOT) Federal Highways Administration (FHWA). Using the Safe Systems Framework, the goal of the FHWA is to reduce transportation related fatalities and serious injuries across the transportation system.

The Institute of Transportation Engineers (ITE) and the Road to Zero Coalition's Safe Systems Framework articulate that to anticipate human mistakes, **a Safe System** should:

1. Separate users in physical space
2. Separate users in time
3. Alert users to potential hazards
4. Accommodate human injury tolerance through interventions that reduce speed or impact force.

This framework is informed by the tenets of a Safe System approach, which includes 6 statements that shape the program, projects and policies to support implementation of safe systems at a local level:

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

Overview

In pursuit of reducing transportation fatalities and serious injury, the FHWA collaborates with other USDOT agencies to implement the [National Roadway Safety Strategy](#) (NRSS). The NRSS outlines a comprehensive approach to reduce deaths and serious injuries to zero on roads throughout the US. The FHWA implements the Safety Strategy by running the performance-based [Highway Safety Improvement Program](#) (HSIP) which requires states to develop a Strategic Highway Safety Plan to reduce traffic fatalities and serious injuries on public roads through a data driven approach with a focus on performance. Washington State's Strategic Highway Safety Plan is 'Target Zero' -- a goal to reduce traffic fatalities and serious injuries on Washington's roadways to zero by year 2030.

To implement these policies and meet federal and state requirements, the City of Vancouver created a Local Roads Safety Plan that analyzes crashes citywide and determines which road segments and intersections within our transportation network have a disproportionate crash rate for the roadway or intersection type. On these identified roads and intersections, sometimes referred to as High Crash Corridors, FHWA recommends that evidence based, proven safety countermeasures be applied to address the aspects of the roadway that most frequently lead to crashes. Within the City of Vancouver, proven safety countermeasures project elements are often implemented through our Complete Streets Program, including projects that change the design of roadways.

The State of Washington also requires local jurisdictions to create a Complete Streets Program. The implementation of Safety and Mobility projects across the city, through this program, align with the Safe System Approach. The application of proven safety countermeasures on City-led safety and mobility projects help manage speeds, increase the attentiveness of roadway users, simplify the design and operation of the transportation system, and aim to separate road users in time and space. Each project contributes to building out an overall complete streets network across the city.



Safer People

One tenet of the Safe Systems Framework calls for Shared responsibility for road safety. Under this recommendation, road users are expected to follow the rules of the road, pay attention, adapt to changing road conditions, not drive under the influence, and drive without distraction. The Safe System approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes. The design of the roadway, in addition to education, enforcement, and vehicle technology are all important strategies to encourage road users to behave safely.

Safer Roads

The category of Safer Roads recommends that transportation agencies design roadways to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users. Within Safer Roads strategy, driver behavior is taken into consideration as a part of engineering design.

Proven Safety Countermeasures to design, operate and maintain Safer Roadways include:

- Limit conflict opportunities (pedestrian crossing phase, right turn on red (RTOR), shorten crossing distances, roundabouts)
- Increase visibility of crossings (clear zones)
- Medians and Pedestrian Refuge Islands
- Separate modes of travel (vertical and horizontal separation or delineation)
- Textured street markings (rumble strips)
- Harden turn radii

Safer Speeds

The Safer Speeds category of the Safe Systems Approach promotes safer speeds in all roadway environments through a combination of context-appropriate roadway design, targeted education, outreach campaigns, and enforcement. Because speeding increases the frequency and severity of crashes, managing vehicle speeds is one way to make all road users safer. Unsafe speeds are a well-documented and understood factor in death and injury, especially among people outside of a vehicle. Enforcing existing speed limits, including automated enforcement, and educating road users also play a role in contributing to driver compliance with speed limits.

Proven Safety Countermeasures to promote Safe Speeds:

- Road design (number and width of lanes, vertical and horizontal deflection)
- Speed limit setting
- Education
- Enforcement

Safer Vehicles

This refers to vehicle technology and design that helps prevent and minimize the impact of crashes on people inside and outside of a vehicle. The City of Vancouver, as part of its membership in the National Association of City Transportation Officials (NACTO), has called for reform of the Federal vehicle safety review process (NCAP) to consider impacts to other users from the vehicle when assessing vehicle safety.

Post-Crash Care

The Safe Systems Approach encourages redundancy within the system. If other interventions fail and a traffic collision occurs, Post Crash Care improvements recommend interventions that will improve post-crash outcomes for victims of traffic violence. These interventions include incorporating emergency services and medical care, crash reporting and investigation, traffic incident management, and the justice system into transportation system safety.

What does this mean for Vancouver?

The City's recently adopted 2024-2044 Transportation System Plan identifies Vision Zero as one of the top priority initiatives for the next two years. At the national level, a Safe Systems approach has been adopted and tied to many federal grants such as Safe Streets and Roads for All. Cities such as New York, Hoboken, and Jersey City are seeing reductions in deaths through Vision Zero initiatives. Understanding the trends in crash data and our local road safety plan helps the city prioritize when and where to make investments.

Action, Timeline, Next Steps

No action is required at this time. These materials are intended as capacity building for Transportation and Mobility Commissioners, to provide background information and education on best practices in transportation planning and design to inform your ongoing review and recommendations for transportation projects and programs.

Additional Information & Resources:

Implement Complete Streets:

<https://highways.dot.gov/complete-streets/implement-complete-streets-improvements>

Integrating the Safe System Approach with the Highway Safety Improvement Program:

<https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-08/fhwasa2018.pdf>

What is a Safe System Approach?

<https://www.transportation.gov/NRSS/SafeSystem>

Zero Deaths and a Safe System Approach: <https://highways.dot.gov/safety/zero-deaths>

Proven Safety Countermeasures: <https://highways.dot.gov/safety/proven-safety-countermeasures>

Shaping the narrative around traffic injury:

https://www.roadsafety.unc.edu/wp-content/uploads/2022/10/CSCRS_FGuide_v2.pdf

Attachment(s):

Compiled 1-pager Overview Sheets of FHWA Countermeasures

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