

Integrating Safety into the TSP Development Process

The following provides strategies on how cities and counties can better integrate safety into each phase and step of the Transportation System Plan (TSP) development process without significantly increasing the scope of work and/or budget. These strategies reflect the most recent updates to Oregon Administrative Rule ([OAR 660-012](#), also known as the Transportation Planning Rules (TPR), and provides guidance that applies statewide, as well as to cities and counties within metropolitan areas and Metro. References to relevant sections of the TPR are provided within each section to highlight required elements, as applicable. Additional information on each of the steps to prepare a TSP are included in ODOT's [TSP Guidelines](#).

SCOPE PHASE

The first phase in the TSP development process is scoping. Local agencies can use the scoping phase to identify safety as a focus area and develop strategies to enhance safety throughout the planning process. Local agencies can also integrate safety-related strategies into the project statement of work and identify analysis tools and methodologies that should be used to identify and address safety issues. Finally, local agencies can use the scoping phase to identify the intended outcomes of the TSP, which could include safety-focused plans, programs, projects, and related policies.

PREPARE PHASE

The next phase in the TSP development process is preparing the TSP. This phase includes multiple steps as described below.

Step 1: Agency/Public Engagement Plan

Agency Coordination

Local agencies should coordinate with a variety of potential safety-related stakeholders throughout the planning process, including local traffic safety committees, local emergency service providers (fire, police, medical, etc.), and local health departments. These stakeholders can serve on advisory committees, be included in interviews, surveys, and briefings, or be invited to various public events to gain their input and support.

Community Engagement Plan

Local agencies should engage the community on safety-related issues throughout the planning process. The community engagement plan should indicate when and how the community will be engaged and identify strategies that enable the community to provide input. Often the community can provide insights into safety-related issues and concerns within the planning area that do not show up in historical crash data.

Equity Analysis

Local agencies should engage underserved communities throughout the planning process to expand their understanding of safety-related issues from their perspective. An equity analysis can provide valuable information about the location of concentrations of these communities within the planning area and inform development of public engagement strategies. Cities and counties in metropolitan areas are required to conduct either a major or minor equity analysis depending on the nature of the planning effort.¹

Step 2: Goals, Objectives, & Performance Tracking

The Approach (How you do it)

Local agencies may develop a **vision zero statement**, or other statements related to or incorporating safety into the planning process. Vision zero statements are becoming more common and often developed as part of Transportation Safety Action Plans (TSAP) or other safety-related plans. Vision zero statements show a commitment by jurisdictional leaders to reducing traffic-related fatalities and severe injuries by implementing various strategies focused on safe road design, traffic enforcement, education, and community engagement. These statements serve as guiding principles to prioritize human safety and create a more sustainable and equitable transportation system.

Local agencies may develop safety-related **goals and objectives** to guide the TSP planning process, including the evaluation of the existing transportation system and the development, evaluation, and prioritization of transportation improvement projects. Safety-related goals and objectives are a common part of a TSP and are often designed to address locations with a known history of fatal and serious injury crashes, pedestrian and bicycle-related crashes, and a variety of other safety-related issues. Examples of safety-related goals and objectives are provided in the TSP Guidelines.² The goals and objectives also often serve as the basis for updating comprehensive plan policies that help implement the TSP.

Evaluation and Prioritization Criteria

Local agencies may develop safety-related evaluation and prioritization criteria to ensure that planned improvements align with the goals and objectives of the TSP and represent the most significant needs of the community. Cities and counties in metropolitan areas, as well as Metro state agencies, are required to use the framework outlined in the TPR to develop and evaluate potential solutions and prioritize preferred solutions. The framework includes “improving safety, particularly reducing or eliminating fatalities and serious injuries” as a key prioritization factor.³

¹ OAR 660-012-0135 defines the requirements for major and minor equity analysis.

² Sample Goals and Objectives: <https://www.oregon.gov/odot/Planning/TSP-Guidelines/Documents/Sample-Goals-Objectives.pdf>

³ 660-012-0155 requires local agencies to prioritize transportation facilities and services based on a variety of factors, including safety.

Performance Measures for Reporting

Local agencies may establish safety-related **performance measures** (e.g., fatal/serious injury per capita) to monitor the performance of the transportation system over time. Cities and counties in metropolitan areas and Metro are required to include performance measures and targets from a regional scenario plan that supports achievement of greenhouse gas reduction, if existing, or those adopted consistent with [rule 0905](#). These cities and counties may also choose to include safety-related performance measures.

Performance Standards

Local agencies may establish safety-related **performance standards** to use as the basis for reviewing comprehensive plan and land use regulation amendments. Cities and counties in metropolitan areas and Metro are required to adopt two or more performance standards that collectively address more than one objective identified in [rule 0215\(3\)](#), one of which could be safety. The TSP must clearly establish how to apply multiple standards to a proposal that meets some, but not all, the standards. Examples of safety-related performance standards include bicycle and pedestrian crash risk, existing and predicted total crashes, and motor vehicle queuing.⁴

Step 3: Existing Conditions

Plans & Policy Review

Prior to conducting the existing conditions inventory and analysis, local agencies should conduct a comprehensive review of state, regional, and local safety plans and policies. The plans and policies review should include the Oregon Transportation Safety Action Plan (TSAP)⁵, the Oregon Bicycle and Pedestrian Safety Implementation Plan⁶, any regional or local TSAPs, and other safety-related plans that impact the planning area.

Existing Conditions Inventory

The existing conditions inventory must provide information on the five most recent years of crash data available for the planning area.⁷ The crash data may be obtained from ODOT's crash data system, which provides data for all state and local facilities by facility and/or jurisdictional boundary.⁸ The inventory must document, at a minimum, the location, type, and severity of all crashes in the planning area, highlighting fatal and serious injury crashes and pedestrian and bicycle-related crashes.

⁴ OAR 660-012-0215 requires local agencies to adopt transportation performances standards that meet a variety of objectives, including safety.

⁵ ODOT TSAP: <https://www.oregon.gov/odot/safety/pages/tsap.aspx>

⁶ ODOT BPSIP: https://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-44-13OR_Bike_Ped_Plan_Final_NoAppendices.pdf

⁷ OAR 660-012-0505, OAR 660-012-0605, and OAR 660-012-0805 require inventories to include crash data from the most recent five-year period.

⁸ ODOT Crash Data System: <https://tvc.odot.state.or.us/tvc/>

The existing conditions inventory must also provide information from ODOT's Safety Priority Index System (SPIS). The SPIS is a systemic scoring method that identifies potential safety problems on state highways. The SPIS score is based on three years of crash data and considers crash frequency, crash rate, and crash severity. SPIS sites within the top 5% and 10% of all sites are determined for each year of data and reported as locations for further investigation.⁹

Finally, the existing conditions inventory should provide the information necessary to develop pedestrian and bicycle crash risk scores for all inventoried facilities. ODOT's Bicycle and Pedestrian Safety Implementation Plan identifies the bicycle and pedestrian crash risk factors necessary to develop the scores, which relies on a mix of physical and operational characteristics of roadways as well as land use and demographic information.¹⁰

Existing Needs Determination

The existing conditions analysis may utilize a variety of methodologies from ODOT's Analysis Procedures Manual (APM) and the Highway Safety Manual (HSM) to evaluate the historic crash data obtained from ODOT.¹¹ Per the APM, the existing conditions analysis of a TSP must include, at a minimum:

- Development of intersection and segment crash rates per million entering vehicles (MEV) and comparison to ODOT rates in Exhibit 4-1 of the APM and Table II of the ODOT state highway crash rate tables.
- Development of intersection and segment critical crash rates and evaluation of excess proportion of specific crash types utilizing ODOT's critical crash rate and excess proportion of specific crash types calculator.¹²
- Review of the top 5% and 10% of safety priority index system (SPIS) sites and available reports.

The existing conditions analysis may also utilize HSM methodologies to evaluate historic crash data, identify systemic and site-specific trends and patterns, crash characteristics, contributing factors, and develop a high injury network (HIN) for the planning area.

Funding Review

There are a variety of potential funding sources available to public agencies to address transportation safety. Local agencies should review historic funding sources and identify any sources that have contributed to safety-related improvements in the planning area. The agency may also identify potential future funding sources, such as the Highway Safety Improvement

⁹ ODOT SPIS: <https://www.oregon.gov/ODOT/Engineering/Pages/Highway-Safety.aspx>

¹⁰ OAR 660-012-0505, OAR 660-012-0605 require pedestrian and bicycle crash risk factors for inventoried facilities, including but not limited to speed, volume, separation, and roadway width

¹¹ Chapter 4 of the Analysis Procedures Manual provides guidance on crash analysis methodologies: https://www.oregon.gov/odot/Planning/Documents/APMv2_Ch4.pdf

¹² ODOT Safety Analysis Tools: <https://www.oregon.gov/odot/planning/pages/technical-tools.aspx>

Program (HSIP), All Road Transportation Safety (ARTS) program, Safe Streets and Roads for All (SS4A) grant program, and others.

Step 4: Future Conditions

The future conditions analysis should identify future safety-related deficiencies and/or needs. These are typically the same deficiencies and/or needs identified in the existing conditions analysis or through a predictive crash analysis. Although the ODOT APM does not require predictive crash analyses for TSPs, local agencies can utilize HSM methodologies to estimate net changes in predictive crash frequency or predictive crashes and excess expected crash frequency.

Step 5: Solution Development & Evaluation

Solutions should be developed and evaluated to address all safety-related deficiencies identified in the existing and future conditions analyses. The solutions should reflect the characteristics of the facility and address the specific trends and patterns shown in the crash data. Local agencies can utilize ODOT's countermeasures and crash reduction factors (CRF) list to identify potential solutions.¹³ Local agencies may supplement ODOT's CRF list with information from the Crash Modification Factor (CMF) clearinghouse.¹⁴

Local agencies should identify solutions that address safety issues at intersections and roadway segments that exceed average crash rates and critical crash rates and those that have an excess proportion of specific crash types. Local agencies should also identify solutions to reduce or eliminate pedestrian and bicycle crash risk factors (e.g., reduce travel speeds). Finally, local agencies should develop policies and programs that integrate safety practices into all elements of transportation planning and design.

Enhanced Review of Select Roadway Projects

Per [OAR 660-012-0830](#), cities and counties in metropolitan areas must conduct an enhanced review of certain proposed facilities to be included as planned or unconstrained projects in the TSP. Safety-related projects are not subject to rule 0830. While the rule is silent on the type or scale of projects covered by this exception, it may include roundabouts, separate turn lanes or traffic signals and potentially additional improvements where there are safety related issues or deficiencies.¹⁵ Other projects that increase capacity but do not address a specific safety-related issue are subject to the enhanced review process, which requires consideration of alternatives that do not increase vehicle capacity and documentation of impacts on underserved populations and potential increases in vehicle miles traveled.

¹³ ODOT Countermeasure and Crash Reduction Factor List:

<https://www.oregon.gov/odot/Engineering/ARTS/CRF-Appendix.pdf>

¹⁴ Crash Modification Factor Clearinghouse: <https://www.cmfclearinghouse.org/>

¹⁵ OAR 660-012-0830 provides an exception for safety-related projects.

Selecting and Prioritization Preferred Solutions

Cities and counties in metropolitan areas, as well as Metro and state agencies, are required to consider safety when selecting and prioritizing preferred solutions, particularly those that reduce or eliminate fatal and serious injury crashes; projects that address safety-related issues at locations with a known history of fatal and server injury crashes or pedestrian and bicycle-related crashes must be prioritized over other projects.¹⁶

Step 6: Funding Program

There are numerous funding programs available for safety-related projects. Local agencies should identify safety-related funding programs and connect them to specific projects in the TSP. Local agencies can build on historical funding sources identified in the existing needs determination (Step 3) and identify new funding sources as they become available. Some examples of existing funding programs include:

- Highway Safety Improvement Project (HSIP),
- All Roads Transportation Safety (ARTS),
- Safe Streets and Roads For All (SS4A), and
- Safe Routes to School (SRTS).

Step 7: TSP Documentation

Per OAR 660-012-0020 and 660-012-0100, transportation safety is not a required element of a non-metropolitan or metropolitan area TSP. However, safety-related plans, programs, projects, and policies are typically included within each modal chapter of a TSP to address safety for each travel mode. TSPs may also include transportation safety toolkits as an attachment that can serve as a reference for local agencies seeking pre-approved safety treatments.

¹⁶ OAR 660-012-0520, OAR 660-012-0620 requires local agencies to prioritize projects that address ped/bike related crashes that resulted in fatal/server injuries