Agenda

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Meeting:	**RTP Safety work group meeting #7**
Date:	Thursday, October 19, 2017
Time:	9:30-11:30 a.m.
Place:	Metro Regional Center, Room 401
Purpose:	Review DRAFT Regional Transportation Safety Strategy (RTSS)
Outcome(s):	Work Group provides input on draft strategy and understands next steps and further opportunities for input

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9:30 a.m. **Welcome and introductions**
- *Meeting purpose and desired outcome*
- *Name and organization*

9:40 a.m. **Project update**
- *Update on 2018 RTP process*
- *July 27 meeting re-cap and work group comments on strategies and actions*

9:50 a.m. **DRAFT 2018 Regional Transportation Safety Strategy**
- *Organization of the strategy*
- *Work Group discussion of draft strategy*
- *Summary of 2018 RTP safety projects*

11:20 a.m. **Next steps**
- *Oct. 30: Provide additional input on draft strategy*
- *Nov 15 and 17: MTAC and TPAC review of draft strategy*
- *Updated draft strategy available for public review in 2018*

11:30 a.m. **Adjourn**

Meeting Packet	Next Meeting
1. Agenda	**No further meetings of the work group**
2. DRAFT Regional Transportation Safety Strategy	
3. July 27 meeting summary (mtg. #6) and additional comments	
4. Summary of 2018 RTP safety projects (provided at meeting)	

Directions, travel options and parking information
Covered bike racks are located on the north plaza and inside the Irving Street visitor garage. Metro Regional Center is on TriMet bus line 6 and the streetcar, and just a few blocks from the Rose Quarter Transit Center, two MAX stations and several other bus lines. Visit our website for more information: http://www.oregonmetro.gov/metro-regional-center

Meeting minutes

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Work Group Attendees	**Organization**
Luke Pelz	City of Beaverton
Jay Higgins	City of Gresham
Brendon Haggerty	Multnomah County – Public Health
Andrea Hamberg	Multnomah County – Public Health
Amanda Owings	City of Lake Oswego
Kari Schlosshauer	Safe Routes to School National Partnership
Stacy Shetler	Washington County
Clay Veka	City of Portland
Stephanie Noll	The Street Trust
Jeff Owen	TriMet
Noel Mickelberry	Oregon Walks
Eileen Cunningham	Multnomah County – Transportation Planning
Katherine Burns	ODOT
Lidwien Rahman	ODOT
Joseph Marek	Clackamas County
Nick Fortey	Federal Highway Administration
Interested Parties	
Luis Ornelas	Shared Vision Consulting

Metro Staff
Lake McTighe, Work Group Lead
Tom Kloster, Planning Manager
Anthony Buczek
Tim Collins
Jamie Snook

Action Items

- ✓ Work group members provide follow up comments by October 30
- ✓ Nov 15 and 17: MTAC and TPAC review of draft strategy
- ✓ Nov – Dec – RTP Findings and Recommendations report
- ✓ Jan-Feb – Online public comment on RTP project list and key findings
- ✓ Feb 6 – Draft RTSS to Metro Council
- ✓ March 14 & 15 – Draft RTSS to MPAC & JPACT
- ✓ Spring 2018 – 45-day public review and comment on the Draft RTSS as part of the 2018 RTP public comment period

Welcome & introductions

The meeting was called to order at 9:30 a.m. by Tom Kloster. Lake McTighe provided an overview of the purpose of the meeting.

Project update

Lake McTighe noted that at the work group's last meeting, July27, 2017, where work group members provided input on the draft strategies and actions and draft State of Safety Report. At that meeting input on the draft strategies was provided and is reflected in the strategies and actions table. She noted that the work group has developed many of the components of the safety plan. Lake also provided an update on the 2018 RTP and noted that the public review draft of the RTP and safety strategy would be ready for public comment in June 2018. She noted there would be more opportunities for input

Discussion - DRAFT 2018 Regional Transportation Safety Strategy

Lake walked through the organization and content of the DRAFT 2018 Regional Transportation Safety Strategy, and Work Group members provided input.

General organization and structure

- Like overall structure.
- Structure good, and would like to see more reference to victims of crashes. Check with Families for Safe Streets.
- Like consistent approach in RTP topical and modal plans. '
- Ch 3 and 4: reorder to start with Vulnerable Users, then Roadway Characteristics/ Design, then Speed, etc.. therefore starting with injury rates and then moving on to contributing factors
- Some plans use a positive culture framework, concern and hope. Celebrate what we are doing well.
- Prefer plan to strategy. the plan is a set of strategies and actions.

Foreword

- No comments

Executive Summary

- No need to include summary of RTP projects. Does not seem like the right place for it.

Chapter 1

- Define vulnerable users on pg. 8
- Pg. 5 local TSPs – there is an opportunity to include a TSAP in the update of TSPs.
- TSP guidelines are being updated, perhaps there is an opportunity to add guidance around safety planning? This needs to be changed in the TPR, and is an action in the strategy.
- Pg. 5 keep terms consistent, use term action, not element
- Pg. 5 State Safety Plan – add language to describe iterative process and that regional plan can shape update of state plan, and how regional plan informs state investments in safety
- Vision Zero framework – describe different approaches - VZ, Toward Zero deaths and Road to Zero and how there are efforts to merge
- Policy context – saving lives is not expensive – add reference to annual $1 billion costs
- Policy context - Data driven – Identify specific data sources, what is looked at, what is missing.

Chapter 2

- 2.4 –RTP safety policies – it would be good if work group could review ahead of going to TPAC [staff: we will identify ways for the work group to weigh in]
- 2.4 - address emerging technologies and implications for safety

Chapter 3

- Is regional MPO crash data available for different modes? Bike and Ped? [staff: not at this time, but should be once MPOs start reporting out on federal performance measures]
- Chart - roadway fatalities by urban region – without context chart makes it look like there is no problem, when we know there is. Either delete or add other charts for context
- Reiterate any crash is too many. Bring in international comparison.
- Pg. 19-20 – crashes by age and gender – calculate by proportion of the population
- Why use term vulnerable users? Negative term.
- Vulnerable users is used by WHO, Sweden, nationally. Not ideal term but good to be consistent.
- Focus less on places outside the region and more on intraregional comparisons

Chapter 4

- Tie back to public health as much as possible. Use public health lens.
- Societal issues, problems play out on the roads. The more we can tie in all the different partners the better.
- Add OLCC to list of partners
- Good work on precision of language
- Pg. 27 – add something that describes that Vision Zero framework, Protect Vulnerable Users, etc is a lens/ guidepost applied to the actions.
- Is there a timeline attached to the actions? Add something about timing.
- Speed – add action about 85th percentile – not always the best way to set speed limits – need design speed too
- 2.5 – in addition to truck sideguards, add other truck safety features such as high-visibility cabs, technology, etc.
- 3.7 – include sidewalks in lighting guidance
- 3.9 – clarify if the criteria are and, or and/or
- 4.2 - Portland purposefully did not include any actions related to enforcement or penalties because of the equity concerns
- 4.2 – some monetary impact is needed – though we need flexibility.
- 4.2 – San Francisco is starting to implement 'ability to pay.
- 4.2 Multnomah County report should racial bias in fines. (The High Costs of Disparities for People of Color in Multnomah County, 2017, highlights the immense disparities citizens of color in Multnomah county face compared to white citizens. This is compounded with the fact that people of color are paying a higher median fine for crimes monetarily punishable and are receiving more citations.
- 4.2 – giving time in place of money is not always equitable either.
- Texas A&M cost of getting to zero report would be good to cite.
- Partners – we are all in it together, all have a part

- Problem – speed limits and basic rule. Challenging for enforcing speed limit.
- 5.6 – pair messaging with other activities – only successful when paired with other types of investments such as outreach, projects
- 6.7 – have police been involved in the planning? Clarify who is taking this action on and that it is a recommendation
- 6.10 - add funding – this is an opportunity to re-emphasize the need for funding from the state.
-

Chapter 5 – Implementation

- Describe how communities, advocates can help implement, how they can weigh in on project lists
- Add update of plans, including RTFP, not just adopted plans, with strong words of encouragement to include safety in TSPs (add as action in RTSS)
- Add discussion of what is working well, and what needs more work

Chapter 6

- No comments

Acronyms

List of Partners

- Add OLCC

Glossary

- Update definitions for SRTS and TPR

Appendices

- No comments

Summary of 2018 RTP safety projects

- RTP has $1 million threshold which leaves off smaller cost safety projects, reflected in TSPs and safety plans
- No all jurisdictions, state have planned safety projects identified
- Shouldn't RTP have a strong focus on safety
- Add footnote that in addition to RTP safety projects there are local and state safety projects in other plans

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Meeting adjourned at 11:30 a.m.

2018 Regional Transportation Safety Strategy

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Foreword

The 2018 Regional Transportation Safety Strategy (RTSS) updates the region's first Regional Transportation Safety Plan (RTSP), completed in 2012. Safety was one of eight policy focus areas for the 2018 Regional Transportation Plan (RTP). Throughout the update of the 2018 RTP, safety has continued to remain a critical concern with elected and community leaders and the public. The 2018 RTSS updates the safety goals, objectives, policies, targets and performance measures of the 2018 RTP.

With the federal surface transportation legislation TEA-21 in 1998, safety and security appeared as planning factors for metropolitan planning organizations (MPOs) to address in transportation planning. SAFETEA-LU, adopted in 2005, placed a greater emphasis on addressing safety and established the Highway Safety Improvement Program (HSIP) as a core Federal- aid program. Signed into law 2012, MAP-21 required states and MPOs to adopt safety performance measures and targets. This requirement was maintained in the most recent federal surface transportation legislation the Fast-Act, signed into law in 2015.

Since early 2016, Metro has been working with a regional transportation safety work group and the regional transportation technical and policy advisory committees the Joint Policy Advisory Committee on Transportation (JPACT), Metro Policy Advisory Committee (MPAC), Transportation Policy Alternatives Committee (TPAC) and Metro Technical Advisory Committee (MTAC), to update the 2012 RTSP. Development of the RTSS benefitted from the development of recent state, county and city transportation safety action plans.

Transportation safety is influenced by multiple factors, from laws and regulations, to safety education and training, to cultural and societal norms and behaviors, to roadway design. Tackling all of these issues comprehensively in a single plan is impossible. Rather, the purpose of the 2018 RTSS is to provide a specifically urban-focused overarching data-driven framework for increasing traffic safety in the Portland metropolitan region. The plan focuses on a few strategies and actions drawn from best-practices and proven to reduce traffic related deaths and serious injuries.

The 2018 RTSS does not mandate adoption or implementation of the safety strategies and actions described in the plan; transportation elements required to be included in local transportation system plans by cities and counties are described the Regional Transportation Functional Plan.

23 U.S. Code 409 states that crash and safety data, including reports, surveys, schedules, and lists, compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing federal-aid highway funds, shall not be subject to discovery or admitted into evidence in a federal or state court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

Executive Summary

Traffic related deaths and serious injuries is a critical and preventable public health and equity issue in the Portland metro region. Nationwide, crashes kill an average of 33,700 people each year. [1] Traffic crashes are the leading cause of accidental deaths in the United States, the leading cause of deaths of all kinds for ages 5-24, and the second leading cause of death for people ages 25-44.[2]

In Oregon, between 2009 and 2013, there were more than 230,000 crashes, resulting in 1,675 deaths and 7,191 people severely injured. An average of 335 people die annually and1,438 are severely injured in traffic crashes in Oregon.[3]

The Portland metro region, with a population of about 1.5 million, comprises almost 40 percent of the state's population. Between 2011 and 2015, there were more than116,398 traffic crashes resulting in 311 deaths and 2,102 people severely injured. On average, 62 people die each year on the region's roadways and 420 people experience a life changing injury. This represents 43% of the state's crashes, 14% of its fatalities, and 36% of its serious injury crashes. The annual economic cost to the region of these crashes is estimated at $1 billion.[4]

Today, our elected and community leaders acknowledge that the high number of tragedies on our roadways is largely predictable and preventable. And they are stepping up to declare that "enough is enough" and to devise plans and policies for a safe future on our roadways. Just as we expect the right to safe water to drink and clean air to breathe, so too should we expect the right to move about safely.

The region is employing a Vision Zero framework with an adopted goal to eliminate deaths and serious injuries for all users of the transportation system by 2035.

To achieve this ambitious goal the region has adopted annual targets to monitor progress and developed a strategy involving data collection and monitoring, community engagement and education, designing streets for safety, and ongoing coordination among all partners. Actions are grouped into six strategies.

1. Reduce Speeds and Speeding
2. Protect Vulnerable Users
3. Design Roadways for Safety
4. Address Dangerous Behaviors
5. Address Impairment
6. Ongoing Engagement and Coordination

[1] Centers for Disease Control and Prevention, Key Injury and Violence Data, 2014.
[2] Centers for Disease Control and Prevention, Ten Leading Causes of Death and Injury, 2015 https://www.cdc.gov/injury/wisqars/LeadingCauses.html
[3] Oregon Transportation Safety Action Plan, 2009-2013(this data does not reflect the uptick in serious crashes seen nationally and regionally in 2015 and 2016)
[4] xxx

Strategies and actions are data-driven and were identified in response to key findings from analysis of 2011-2015 crash data.

- People walking and bicycling experience higher crash rates.
- A majority of high injury corridors and pedestrian fatalities are in areas with higher concentrations of people of color, people with low incomes and limited-English proficiency.
- Speeding and aggressive driving are the leading contributing factors toward fatal and serious crashes.
- Arterial roadways have the highest serious crash rate for all modes - 60% of all serious crashes occur on only 6% of the region's roadways.
- Roadeways with more traffic lanes have particularly high serious pedestrian crash rates per mile and per vehicle miles traveled.
- Alcohol and drugs are primary contributing factor to fatal crashes.
- Pedestrian fatality rates are increasing and are higher than any other group.

ADD summary of Vision Zero framework

ADD summary of 2018 RTP project and program investments

[Executive Summary will be a 2-4 page document with graphics for data.]

Chapter 1: Introduction

The 2018 Regional Transportation Safety Strategy (RTSS) sets regional transportation safety policy and provides a framework for working towards zero traffic related deaths and severe injury crashes in the region. This Introduction provides context for the RTSS, including the role of regional government in transportation safety planning, existing federal, state, regional and local policies related to transportation safety, a description of the Vision Zero framework and the organization of the RTSS.

1.1 Metro's Role

As the region's metropolitan planning organization (MPO), Metro has a variety of roles in transportation safety planning, including:

- setting regional transportation safety goals, objectives, policies, targets, and performance measures;
- reporting on annual safety targets and performance measures;
- convening jurisdictions and agencies to achieve better coordination;
- collecting, maintaining and disseminating data;
- encouraging best practices in transportation safety and roadway design;
- supporting and introducing transportation safety legislation;
- leading efforts to highlight safety in materials, messaging and campaigns;
- supporting local and state efforts;
- allocating federal transportation funding.

The 2018 RTSS provides the transportation safety plan for the Portland metro region, defined as the area within the Metropolitan Planning Area (MPA). The MPA is slightly larger than the region's Urban Growth Boundary.

1.2 Relationship to Other Plans

Transportation safety is an essential element of the region's desired outcomes, to ensure people have safe and reliable transportation choices, and it is achieved through the implementation of state, regional and local land use and transportation plans, in addition to safety action plans.

The 2018 RTSS is a topical plan of the **2018 Regional Transportation Plan** (RTP) and updates the transportation safety elements. The RTP lays out the region's transportation concepts and policies to support a complete and interconnected transportation system that supports all modes of travel and implementation of the **2040 Growth Concept**. Chapter 2 describes transportation safety goals, objectives, policies and targets for the 2018 RTP.

Local **transportation system plans**, or TSPs, developed by cities and counties in the region must be consistent with the RTP. The **Regional Transportation Functional Plan (RTFP)** is the implementing plan of the RTP and specifies what local TSPs are required to include. The 2018 RTSS includes a recommendation to update the safety elements of the RTFP to be consistent with the 2018 RTSS.

Transportation safety is a component in all of the **RTP's topical and modal plans**, including the Climate Smart Strategy, Regional Freight Plan, Regional Transit Plan, Regional Travel Options Plan, Transportation System Management and Options Plan, and the Regional Active Transportation Plan. Implementing these plans helps achieve Vision Zero. Additionally, Metro's regional street and trail design guidelines emphasize engineering and design treatments to achieve Vision Zero streets.

Oregon adopted an updated **State Transportation Safety Action Plan** in 2016 with a Vision Zero target, and cities and counties in the region are adopting transportation safety action plans. Clackamas County was the first county in the state to adopt a TSAP in 2012. The plan uses the Toward Zero Deaths framework. Portland adopted the first Vision Zero Plan in the region, Hillsboro adopted a TSAP in 2017 with a Vision Zero target, and Washington County completed a TSAP in 2017. Coordinating implementation of these plans is an important element of achieving Vision Zero.

1.3 Policy Context

Existing policies at all level of government form the context in which the 2018 RTSS was developed. A review of current federal, state, regional and local policies related to transportation safety reveal a continuing and growing emphasis on transportation safety for all modes.[5] In particular, several themes emerged from the policy review:

1. Setting **ambitious transportation safety goals** for zero deaths and serious injuries.
2. Growing use of the Towards Zero Deaths and **Vision Zero frameworks** and targets to achieve better safety results.
3. Use of data, performance measurement, and evaluation to develop **data-driven** safety plans, strategies and actions and monitor progress towards goals.
4. Recognition of **vulnerable users** and the need to take additional actions to protect them.
5. Integration of **equity and public health** perspectives into safety plans Public health and equity are also being tied more explicitly to transportation safety policies.

Setting Ambitious Goals

Setting ambitious transportation safety goals is increasingly used as a policy tool because of the severity of the safety issues and because ambitious goals are resulting in better outcomes.

The federal government has continued to elevate safety and recently announced a goal to end traffic fatalities in the next 30 year. ADD detail

Oregon has been successful compared to many other states and the overall rate of fatal and severe crashes has been declining. Building on that success, ODOT updated its transportation safety action plan and adopted a Vision Zero target for 2035.

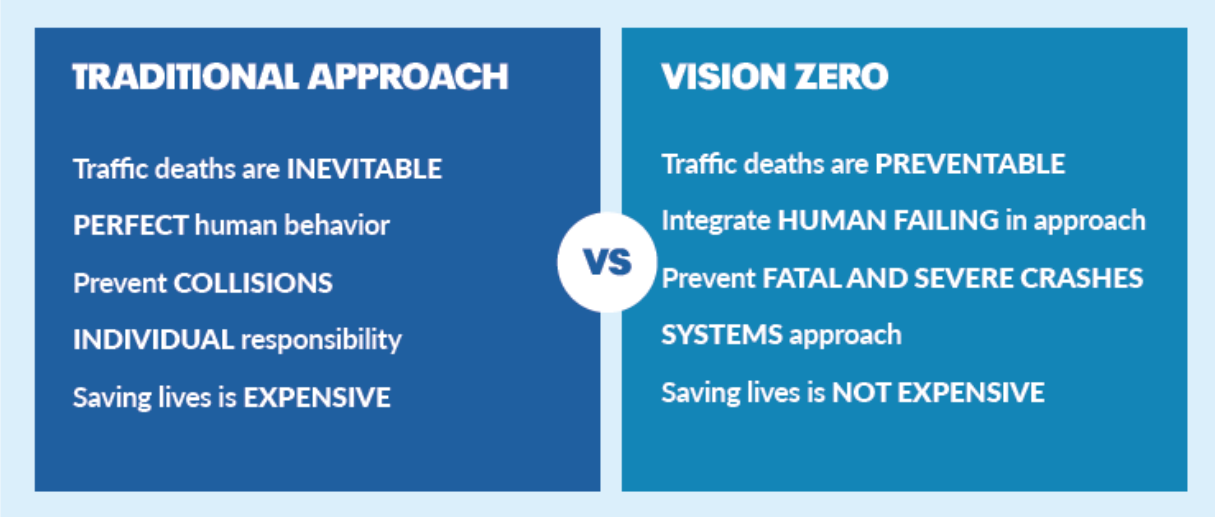
In the region, Clackamas County has been a leader in setting aggressive safety targets. The county was the first in the state to develop a safety action plan. It uses the Toward Zero Deaths framework.

[5] Refer to the July 2016 Regional Transportation Safety Plan Policy Framework Report in Appendix X

Over 40 cities in the U.S. have adopted Vision Zero plans and have identified themselves as Vision Zero cities, including the City of Portland. And, in 2016 the City of Hillsboro adopted a safety action plan with a target of zero by 2035. Washington County has completed a plan with a vision of moving towards zero deaths.

Vision Zero Framework

Vision Zero originated in Sweden and is a multi-national road traffic safety project with the goal to achieve a transportation system with no fatalities or serious injuries involving motor vehicle traffic.[6] Vision Zero requires a shift in the way we think about transportation safety, and therefore a shift in the policies and programs.



A Vision Zero framework is being adopted at all levels of government in the U.S. In 2016, the U.S. Department of Transportation and the National Safety Council launched the Road to Zero Coalition, which has the goal of ending fatalities on the nation's roads within the next thirty years.[7] More than 40 U.S. states have incorporated a Toward Zero Deaths approach into their safety work and are increasingly supporting local Vision Zero efforts.

- First and foremost Vision Zero states that **traffic deaths and severe injuries are preventable.**
- Second, **human life and health are prioritized within all aspects of the transportation system.**
- Vision Zero recognizes **that people make mistakes and can make bad decisions, and the transportation system should be forgiving.** Impairment, speeding, distracted driving, aggressive behavior – these are behaviors to be discouraged through policies, education and programs and enforcement. But, we must also design roadways that enable

[6] Learn more about Vision Zero at the Vision Zero Network http://visionzeronetwork.org/
[7] "U.S. DOT, National Safety Council Launch Road to Zero Coalition to End Roadway Fatalities" https://www.transportation.gov/briefing-room/us-dot-national-safety-council-launch-road-zero-coalition-end-roadway-fatalities

and encourage safe behaviors. Roadways should discourage dangerous behaviors by design.

- Strategies and actions should f**ocus on systems level-changes above influencing individual behavior.**
- **Saving lives is not expensive.** The annual cost of crashes to the region is $1 billion. Investing in and implementing safety plans is cost effective and humane.

Governments are increasingly using the Vision Zero framework as a policy starting point because it is proving to be effective in the countries where it has been in place for decades.

Data Driven

Policies at all levels of government emphasize collecting and tracking data on crashes, crash risks, and countermeasures to crashes to inform plans and investments. Understanding why crashes occur and who is most vulnerable is used to direct limited investments and to develop policies and actions to reduce fatal and severe crashes.

ADD discussion of Federal performance measures, Highway Safety Improvement Program, ODOT programs and policies (ARTS); state of safety report,

Equity and Public Health

A review of current policies shows that equity and public health are being more explicitly linked to and integrated in transportation safety plans because of the direct relationship of crashes to health, and the growing recognition that some populations, including people of color, with low incomes and older adults, can be disproportionately impacted by crashes. EXPAND

Vulnerable Users

To be completed
Federal – bike and ped safety initiative

State

- Emphasis area, bicycle and pedestrian plan

Region

- Complete streets policy

Local plans

1.5 Process and Public Engagement

[To be completed]

1.6 Document Organization

The 2018 RTSS is organized into six chapters, with a foreword, executive summary, and back matter such as a glossary and list of acronyms. Supporting documents are provided as stand-alone appendices. This section provides an overview of the different parts of the document.

Foreword
Introduces the genesis, purpose, limitations, and scope of the plan.

Executive Summary
Provides a short summary and key elements of the plan.

Chapter 1: Introduction
Provides and introduction to and context for understanding the plan.

Chapter 2: Regional Transportation Safety Policy
Describes adopted regional safety goals, objectives, targets and policies.

Chapter 3: Key Findings from Crash Data
Provides key findings from analysis of the crash data used to identify the strategies and actions.

Chapter 4: Strategies and Actions
Describes data-driven strategies and actions to help achieve Vision Zero.

Chapter 5: Implementation
Outlines how the 2018 RTSS will be implemented.

Chapter 6: Measuring Progress
Describes performance measures to monitor progress towards achieving Vision Zero.

List of Partners
Agencies, organizations, non-profits, private entities, industry and the public who will play a role in implementing the 2018 RTSS.

Acronyms
Defines acronyms used in the document.

Glossary
Defines terms used in the document.

Appendices
Appendices are stand-alone documents that provide additional technical information for the 2018 Regional Transportation Safety Strategy.

- **2017 Metro State of Safety Report**
  Describes the data used in the analysis, the attributes of the data, and any data limitations. Describes the process Metro used to analyze the data. The 2017 State of Safety report

presents the findings, identifying trends and relationships of serious crashes with environmental factors including roadway and land use characteristics and serves as the foundation for the 2018 RTSS.

- **Regional High Injury Corridors and Intersections Report**
  Provides information and link to the Metro Crash Map and High Injury Corridors online map.

- **Transportation Safety Policy Framework Report**
  Developed prior to the 2018 RTSS, provides an overview of pertinent polices that guided the development of the 2018 RTSS. Includes profiles of local agency plans, actions and programs for transportation safety.

- **Safety Performance Measures Report**
  Developed prior to the 2018 RTSS, outlines the transportation safety related performance measures and targets for the update of the 2018 Regional Transportation Plan.

Chapter 2: Regional Transportation Safety Policy

This chapter describes adopted regional policies related to transportation safety, including vision, goals, objectives, targets and performance measures. Chapters 4 and 5 describe the strategies and actions to take to achieve regional goals and targets.

The information in this chapter is included in Safety Policy section of the policy chapter of the 2018 Regional Transportation Plan.

2.1 RTP Transportation Vision

The 2018 Regional Transportation Plan (RTP) provides a vision for the transportation system. Transportation safety is a crucial element of the vision.

In 2040, everyone in the Portland metropolitan region will share in a prosperous, equitable economy and exceptional quality of life sustained by a safe, reliable, healthy, and affordable transportation system with travel options.

2.2 Safety Goal and Objective

The 2018 RTP has ten goals for the regional transportation system. Goal 5 is the transportation safety and security goal.

Goal 5: Increase Safety and Security
Multimodal transportation infrastructure and services are safe and secure for the public and goods movement.

Objective 5.1 Transportation Safety
Eliminate fatal and severe injury traffic crashes for all modes of travel.

2.3 2035 Vision Zero Target

The 2018 RTSS updates the regional transportation safety target in the 2018 RTP with a Vision Zero target.

By 2035 eliminate transportation related fatalities and serious injuries for all users of the region's transportation system, with a 16% reduction by 2020 (as compared to the 2015 five year rolling average), and a 50% reduction by 2025.

The target year of 2035 will not change in subsequent RTP updates and progress towards meeting the target will be monitored each year. Refer to Chapter 6 for a description of how progress towards meeting the 2035 target, and the 2020 and 2025 interim targets, will be tracked.

The RTP Vision Zero target is consistent with 2016 Oregon Transportation Safety Action Plan target of "no deaths or life changing injuries on Oregon's transportation system by 2035."

2.4 RTP Safety Policies

Chapter 2 of the 2018 RTP includes policies for each of the regional transportation network components. [Note: Metro is considering adding new sections to Chapter 2 on safety, equity and emerging technologies. Each of the new sections could include a set of policies consistent with the existing policies for the network components, e.g. freight, transit. Proposed safety policies would be vetted through TPAC and MTAC.]

2.5 Regional High Injury Corridors

Using 2010-2014 crash data, the 2018 RTSS identifies regional roadways and intersections where majority of fatal and severe injury crashes for all modes are occurring. Sixty percent of fatal and severe injury crashes for motor-vehicle occupants, pedestrians and bicyclists occur on just six percent of the roadway miles in the region. A majority of high injury corridors are in communities with higher concentrations of people of color, people with low incomes and people with low-English proficiency.

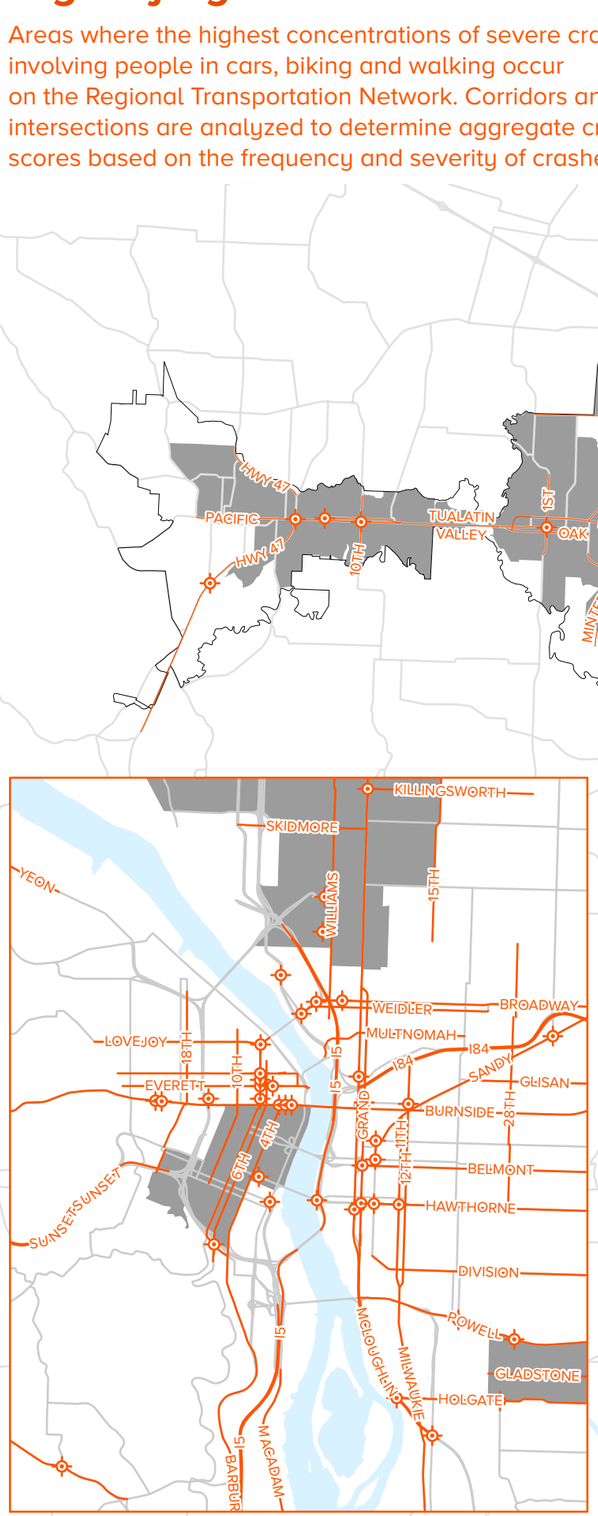
The following map illustrates the High Injury Corridors and Intersections in the Portland metro region. Safety policies, strategies and actions in the 2018 RTSS target these locations.

High Injury Corridors and Intersections in Greater Portland

DRAFT

Areas where the highest concentrations of severe crashes involving people in cars, biking and walking occur on the Regional Transportation Network. Corridors and intersections are analyzed to determine aggregate crash scores based on the frequency and severity of crashes.

- High injury intersections
  *Intersections with weighted crash scores**
- High injury corridors - combined modes
  *Corridors with weighted crash scores**
- Historically marginalized communities
  Concentrations of people with lower incomes, of color and/or limited English proficiency
- Metropolitan Planning Area



Date: 4/19/2017

These High Injury Corridors and Intersections represent 60% of all fatal and serious crashes involving people in cars, biking and walking. Intersections with crash scores higher than 80 and corridors with crash scores higher than 39 are featured on this map. Crashes on this map are weighted by severity, corridors are normalized by length and subject to refinement.

Data: 2010-2014 ODOT Crash data, RLIS, RTP Networks

Metro

Chapter 3: Key Findings from Crash Data

This chapter summarizes key findings from the analysis of five years of crash data, 2011-2015. [8] Refer to the 2017 Metro State of Safety Report. Data and findings from other national and state data sources and studies are also referenced.

Using data to identify trends and understand the underlying contributing factors in fatal and serious injury crashes is the first step in identifying the data-driven strategies and actions described in the next chapter.

3.1 Overview

Data from the National Highway Traffic Safety Administration (NHTSA) were compiled and analyzed along with population data from the U.S. Census to identify trends in national, state, regional, and city crashes described in section 3.1. Five years of data between 2005 and 2009 were considered for this analysis.

Roadway fatalities have been increasing since 2010.

- Travel patterns in the US have changed in the last decade due to a variety of external factors. While the population has continued to increase, VMT per capita and absolute VMT have declined. Roadway fatality rates declined after 2005. However, since 2010 there has been a significant increase in roadway fatalities nationally, in Oregon and in the Portland metro region.
- Nationally, the number of people dying in a crash increased 7.2% in 2015, the largest increase in nearly 50 years.[9]
- Between 2011 and 2015, there were 304 fatal crashes in the Portland metro region, killing 311 people, and an additional 2,102 crashes resulting in incapacitating injury.

Crash rates in the region are rising.

- Crash rates in the region are higher per million residents and per 100 million vehicle miles traveled (VMT) for 2011-2015, compared to 2007-2009. There were 407 fatal/incapacitating crashes per million residents and 8.1 per 100 million VMT in 2011-2015 compared to 359 and 5.7 in 2007-2009.

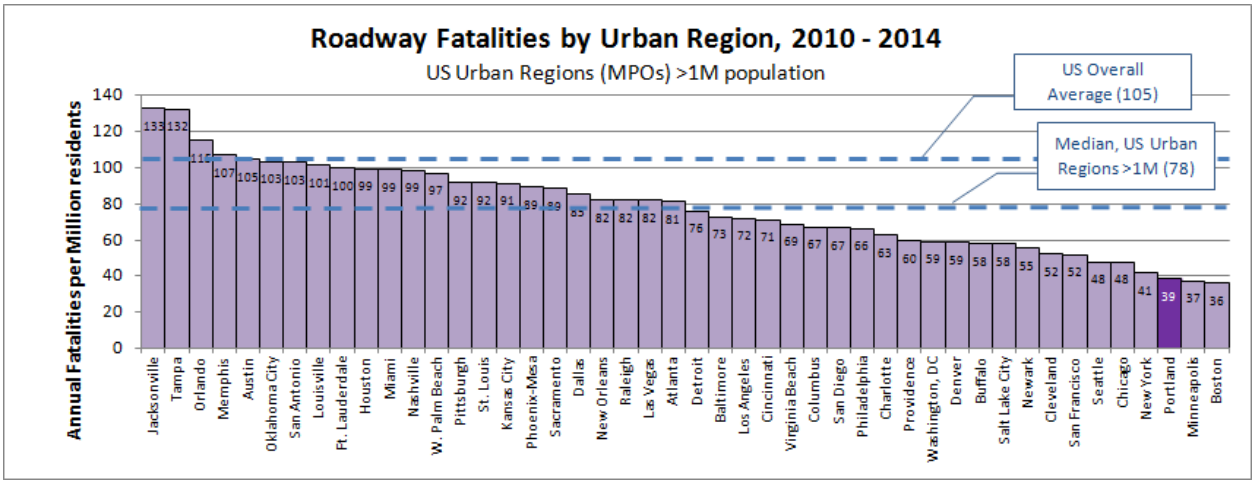
Fatality rates are lower in the Portland metro region, compared to other regions and Oregon.

- Roadway fatalities per capita in the Portland metro region are nearly a third the U.S. average and more than half Oregon's average.
- Out of forty-seven MPOs with populations over 1 million, in the U.S., Portland ranked third to last for annual fatalities per million people. The Portland region had 39 fatalities per million people, 2010 to 2014. Boston was the lowest with 36 fatalities and Jacksonville, Florida was the highest with 133 per million people.
- The worst regions in the nation for overall fatality rates are concentrated in Florida and the Sun Belt, where driving is the completely dominant mode of travel. The safest regions

[8] Data is from the Oregon Department of Transportation, 2011-2015. Refer to 2017 Metro State of Safety Report and 2017 Metro High Injury Corridors and Intersections Report for regional crash analysis.
[9] Traffic Safety Facts, 2015 Motor Vehicle Crashes: Overview, National Highway Traffic Safety Administration

in the nation for overall fatality rates are Boston, Minneapolis-St. Paul, Portland, New York, and Chicago. In general, the safest urban regions are those that exhibit dense urban environments and higher usage of non-auto travel modes.

- Seat belt use in the region as reported exceeds 99%.



Compared to European countries fatality rates are higher in the U.S.

- Of the 28 EU countries, 22 of them exhibit lower rates of roadway fatality per capita than the US average. On a per-VMT basis, 19 of them exhibit lower fatality rates than the US average.

2011-2015	Population (2015)	Annual VMT (2015)	Annual injury crashes		Annual serious crashes	
			per million residents	per 100M VMT	per million residents	per 100M VMT
Metro	1,603,229	10,437,000,000	7,181	110.3	300	4.6

2011 - 2015	Avg. Annual Fatalities	Estimated Population (2015)	Annual VMT (2015)	Annual Fatality rate per million residents	Fatality rate per 100M VMT
Metro	62.2	1,603,229	10,437,000,000	39	0.60
City of Portland	31.8	620,540	4,303,000,000	51	0.74
Oregon	356.4	4,028,977	36,000,000,000	88	0.99
Median, cities >300,000 pop.	-	-	n/a	72	n/a
US	35,092	321,418,820	3,095,373,000,000	109	1.13
UK*	2,123	64,128,226	520,600,000,000	33	0.41
EU – 28*	32,463	506,592,457	4,322,500,000,000	64	0.75

* All data for UK and EU is for year 2013

The City of Portland, the Portland Metro region, and the State of Oregon all have fatality rates below the national average. The United Kingdom and European Union data are included for reference as international best practice.

There is a strong correlation between fatality rates and annual per capita VMT.

- States with higher VMT typically also have higher per capita fatality rates, as the typical exposure to risk is increased.
- The District of Columbia has the lowest per capita VMT at 5,610, and exhibits one of the lowest annual fatality rates of 65 per million residents – less than one-third of the national average. Wyoming, with the highest per capita VMT of 17,900, also has the highest annual fatality rate at 310 per million residents – 235% of the national average.
- The national average is 9,500 VMT per capita and 109 fatalities per million residents.
- Oregon statistics are 8,650 VMT per capita (91% of the national average) and 85 fatalities per million residents (81% of the national average).

With the highest population and VMT, Portland has the largest share of the region's serious crashes

- Portland has the highest rate of serious crashes per capita, while Multnomah (excludes Portland) has the highest rate of serious crashes per VMT. Washington County has the lowest rate of serious crashes per capita while Clackamas County has the lower rate of serious crashes per VMT.

Sub-Region	Population (2015)	Annual VMT (2015)	Annual injury crashes		Annual serious crashes	
			per 1M residents	per 100M VMT	per 1M residents	per 100M VMT
Clackamas	290,630	2,101,852,699	6,234	86	226	3.1
Portland	620,540	4,303,322,834	8,867	128	387	5.6
Multnomah (excl. Portland)	152,611	744,473,489	6,623	136	296	6.1
Washington	539,448	3,287,341,693	4,030	75.4	210	3.9
METRO	1,603,229	10,436,990,715	7,181	110	300	4.6

Overall, fatality rates per capita in cities are generally less than the national average for all areas.

- The city of Portland's average annual fatality rate of 49 fatalities per million residents is much less than the national average of 105 and the Oregon statewide average of 85.
- Twelve of the 64 cities included in the analysis exhibited crash fatality rates above the overall national average, with 52 exhibiting crash fatality rates below the national average. This is likely due to a number of factors including fewer miles driven per capita due to the proximity of services, and the lower speeds of urban streets compared to rural highways, resulting in lower crash severity.

3.2 Speeds and Speeding

Speed is a fundamental contributing factor in crash severity. Reducing speeds and speeding saves lives.

Crashes involving higher speeds will tend to increase the severity of the crash and likelihood of death. On average, 1,000 Americans are killed every month in speed-related crashes. In Oregon, speeding is the most common behavioral issue associated with fatal and serious injury crashes.[10]

Crash severity increases with the speed of the vehicle at impact. Inversely, the effectiveness of restraint devices like air bags and safety belts, and vehicular construction features such as crumple zones and side member beams decline as impact speed increases. The probability of death, disfigurement, or debilitating injury grows with higher speed at impact.

Pedestrians, bicyclists and motorcyclists are more vulnerable to dying or being seriously injured in a speed related crash. Nine out of ten pedestrians will survive being hit by a vehicle traveling 20 mph, whereas only one out of ten pedestrians will survive being hit by a vehicle traveling 40 mph.

Excessive speed is defined as speed too fast for conditions; driving in excess of posted speed; speed racing; failed to decrease speed for slower moving vehicle. Fatal and severe crashes

[10] 2016 Oregon TSAP

occurring at higher speeds, but not fitting these definitions, are not counted as speed-related crashes.

Alone or in combination with other factors, excessive speed is a major factor in fatal and severe injury crashes.

- While 7.5% of all crashes involve speed as a factor, sped is a major factor in 33% of fatal and severe crashes.[NOTE: additional analysis of the crash data to include data in the error field will likely result in this % changing, likely increasing.]
- 97% of serious speed related crashes involved aggressive behavior, and 38% involved alcohol.
- 79% of fatal freeway crashes involve excessive speed.
- Aggressive behavior, defined as either excessive speed or following too close, is the most common contributing factor to fatal and severe crashes. 41% of all serious crashes involve aggressive behavior.

A majority of excessive speed related serious crashes occur on arterial roadways.

- 55% of serious excessive speed related crashes occurred on an arterial roadway, and 71% occurred at a non-intersection.

3.3 Vulnerable Users

Vulnerable users have higher fatality rates. Increasing safety for vulnerable users increases safety for all transportation users.

Vulnerable users are groups of people that are more vulnerable to being killed or seriously injured in crashes. Vulnerable users are pedestrians, bicyclists, motorcycle operators, children, older adults, construction workers, people of color and people living in lower income areas.

Traffic crashes are the leading cause of unintentional deaths in the U.S., and the leading cause of deaths of all kinds for ages 5-24, and the second leading cause of death for people ages 25-44.[11]

Nationally, traffic related deaths are a more common leading cause of death for American Indians, Alaska Natives, Hispanics or Latinos, Black or African Americans and Asians and Pacific Islanders than Whites.[12] There is evidence suggesting that race and ethnicity play important roles in shaping the prevalence of health-related disparities such as those associated with impaired driving. Yet it is important to note that there are large variations in culture, norms, and behaviors within each racial/ethnic group that are larger than the differences between groups.[13]

ADD additional equity and safety information

Pedestrian crashes are the most common type of fatal crash.

- 36% of all fatal crashes involve a pedestrian, and 16% of all severe injury crashes involve a pedestrian; for context, 10% of all trips are pedestrian trips.

Crashes involving people on motorcycles, people walking and people riding bicycles tend to be more serious compared to auto-only crashes.

- 91% of all crashes are auto-only, and 1.45% of auto-only crashes are serious.
- 1.7% of all crashes involve motorcycles, and 18% of crashes involving motorcycles are serious.
- 2% of all crashes involve pedestrians, and16% of crashes involving pedestrians are serious.
- 2.2% of all crashes involve bicycles, and 7% of crashes involving bicycles are serious.

The proportion of fatal and severe injury crashes for older drivers is double the regional average.

- For male drivers age 70-79 and female drivers age 80-84 the serious crash rate is double the regional average.
- In Oregon, 15% of the population is over 65, and account for 20% of pedestrian deaths.

A majority of fatal and severe injury pedestrian crashes occur in areas with above average concentrations of people of color, people with low incomes and people with limited English proficiency.

[11] Centers for Disease Control and Prevention, Ten Leading Causes of Death and Injury, 2015 https://www.cdc.gov/injury/wisqars/LeadingCauses.html

[12] NHSTA 2006

[13] National Highway Traffic Safety Administration, "Alcohol and Highway Safety: A Speical Report on Race/Ethnicity and Impaired Driving," November 2010

- 61% of pedestrian deaths and 66% of severe injury pedestrian crashes occur in these areas, while only 39% of the region's population lives in these areas. Data is not available on the race and ethnicity of the people killed or severely injured.

A majority of high injury corridors are in communities with higher concentrations of people of color, people with low incomes and people with low-English proficiency.

- 56% of the high injury corridors are in areas with higher concentrations of people of color, people with low incomes and people with low English proficiency.
- For context, in Oregon, American Indians/Alaska Natives have the highest average rate of vehicle related deaths (5.9 per 100,000) 1.8 times the rate among whites (3.3 per 100,000) (2008-2014 crashes), and American Indians/Alaska Natives and Black or African American had the highest hospitalization rate -52.2 and 46.2 per 100,000, compared to 45.5 for whites and 20.8 Asian Pacific Islander (2012-2014) – for traffic related injuries.

Fatality rates for pedestrians are more than three times as high in neighborhoods where more than a quarter of the population lived in poverty.

- There were 12.8 pedestrian deaths per 100,000 residents, compared to 3.5 pedestrian deaths per 100,000 residents, in areas with poverty rates below the national rate of fifteen percent.[14]

For young people below the age of 25, motor vehicle crashes are the leading cause of death.

- Statewide, young drivers (age 15-25) are involved in the highest proportion of fatal and serious injury crashes, followed by older drivers (age 65+). [note: fatality rates by age have not been calculated for the region]

3.4 Roadway Characteristics

Arterial roadways have the highest serious crash rate per road mile and per VMT. Prioritizing and standardizing safety in street design for all modes can prevent dangerous behaviors and save lives.

[14] America's Poor Neighborhoods Plagued by Pedestrian Deaths, August 2014, Governing States and Localities Research report. Crash data 2008-2012

Roadway design influences behavior and can contribute to whether a crash is fatal or not. Characteristics such as number of lanes, level of physical separation between modes, level of access management, intersection and crossing treatments, median treatments, and number of vehicle miles traveled can impact crash rate and severity.

Analysis of the crash data provide information on the type of roadways where most fatal and severe crashes are occurring. The majority of fatal and severe crashes are occurring on roadways with more lanes, high traffic volumes, higher levels on vehicle miles traveled (VMT), higher travel speeds, less access management, less enhanced crossings for people walking and bicycling, and less protection between different modes.

Arterial roadways have the highest serious crash rate per road mile and per VMT.

- **73%** of the region's serious crashes, **77%** of the serious pedestrian crashes, and **65%** of the serious bike crashes occur on arterial roadways (arterial roadways comprise 12% of the roadway network).

A majority of fatal and severe injury crashes occur on a small fraction of the region's roadways.

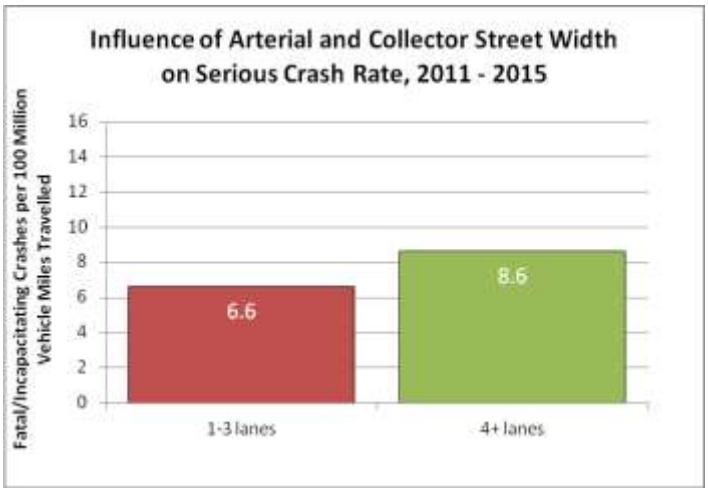
- 60% of all fatal and severe injury crashes occur on just 6% of the region's roadways. These roadways are identified as regional high injury corridors and intersections. Many of these roadways also have the characteristics of high risk corridors, and a majority of these roadways are frequent transit corridors.

A majority of high injury corridors are in communities with higher concentrations of people of color, people with low incomes and people with low-English proficiency.

- 56% of the high injury corridors are in areas with higher concentrations of people of color, people with low incomes and people with low English proficiency.

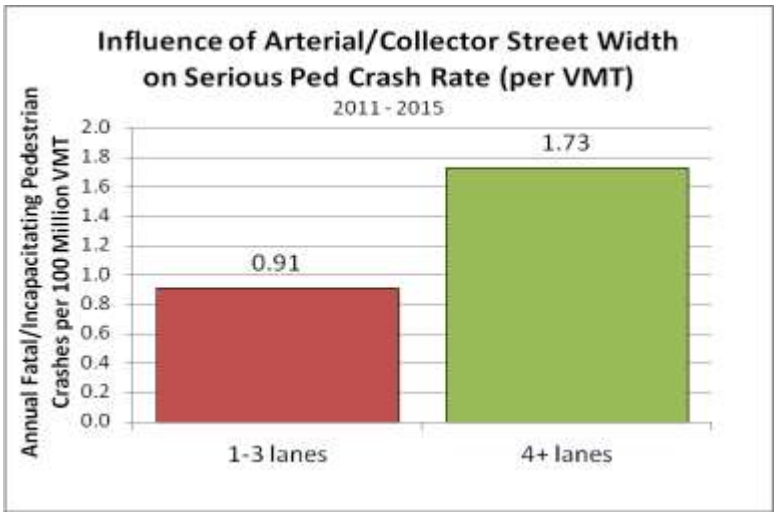
Higher levels of VMT correlate with more fatal and severe injury crashes.

- Wider roadways are the location of a disproportionate number of serious crashes in relation to both their share of the overall system and the vehicle-miles travelled they serve.



Streets with more traffic lanes have higher fatal and severe injury crash rates per mile.

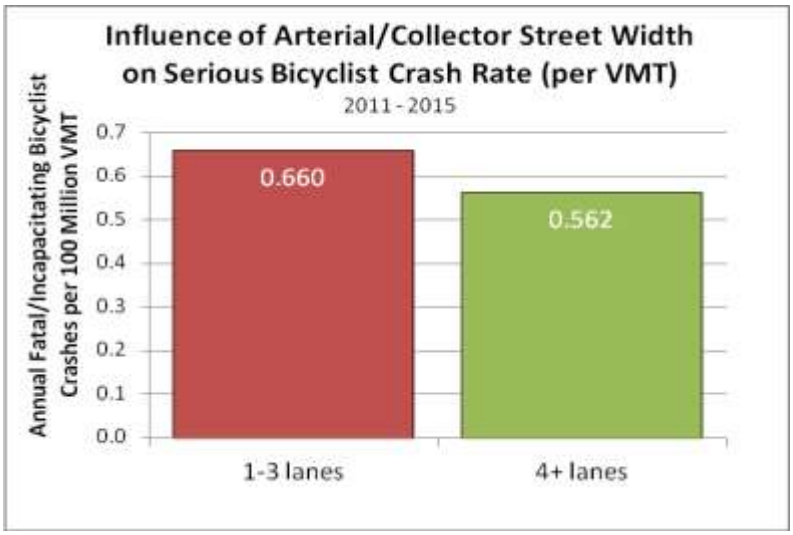
- 54% of fatal and severe crashes occur on roadways with 4 or more traffic lanes. Roadways with 4 or more traffic lanes comprise 19% of the regional roadway network.



Roadways with more traffic lanes have higher fatal and severe injury pedestrian crash rates per mile and per VMT.

- Wider roadways are particularly hazardous to pedestrians. The serious pedestrian crash rate increases dramatically for roadways with 4 or more lanes. Even when normalized by motor vehicle traffic volume, the serious pedestrian crash rate on wider roadways is still substantially higher than on narrower roads.

- This follows trends documented in AASHTO's Highway Safety Manual. Roads with more lanes have an especially high serious crash rate for pedestrians, producing higher crash rates per mile and per VMT as compared to other modes.



Roadways with more traffic lanes have higher fatal and severe injury bicycle crash rates per mile, but not per VMT.

- The serious bicycle crash rate per road mile increases dramatically for roadways with 4 or more lanes. This is a concern, given that in many parts of the region designated bicycling routes often follow arterial roadways with 4 or more lanes.
- When normalized by motor vehicle traffic volume, the serious bike crash rate on narrower roads is higher than on wider roads. While the reason for this is not clear from the data, it may be related to a higher use of narrower roads by cyclists relative to traffic volume as compared to multi-lane roadways.

A majority of fatal and severe injury bicycle crashes occur at an intersection.

- 73% of serious bicycle crashes occurred at an intersection, compared to 49% for all serious crashes.

The most common serious crash types on surface streets were rear end and turning. For fatal crashes, the most common types were pedestrian and fixed object.

- 35% of all fatal crashes are pedestrian, and 16% are fixed object.
- 26% of fatal and severe injury crashes are turning, and 17% are rear-end (16% are pedestrian).

Serious pedestrian crashes are disproportionately represented after dark.

- While 39% of all serious crashes happen at night, 64% of serious pedestrian crashes happen at night.

3.5 Aggressive and Distracted Driving

Dangerous behaviors include those that arise from aggressive or distracted driving and can lead in an instant to injury or death. Systems and policies can reduce and minimize the impact of dangerous behaviors.

Dangerous behaviors arising from aggressive and distracted driving include failing to yield the right of way, following too close, and excessive speed.

Distracted driving is any activity that diverts attention from driving, including talking or texting on the phone, eating and drinking, talking to people in the vehicle, fiddling with the stereo, entertainment or navigation system—anything that takes attention away from the task of safe driving. Texting is the most alarming distraction. Sending or reading a text takes your eyes off the road for 5 seconds. At 55 mph, that's like driving the length of an entire football field with your eyes closed.

Cell phone use while driving is a growing concern in transportation safety. Drivers use their cell phones 88 out of 100 trips (analysis of 570 million trips in US).[15] On average, more than 8 people are killed and 1,161 more are injured in crashes involving a distracted driver each day in the U.S. [16] In 2015, the number rose to 10 people every day.

[15] ZenDrive analysis
[16] U.S. Department of Health and Human Services' Centers for Disease Control and Prevention

Based on limited data, Oregon appears to have the lowest rate of driving and cell phone use in the country; states with hands free cell phone laws have lower rates of cell phone use while driving and it can be assumed lower distracted driving related crashes.[17] However, it is still a

According to a survey conducted by ODOT and Oregon State University, 75% of drivers drive distracted when alone, and 44% when driving with passengers.[18] On average, a crash involving a distracted driver occurs every 2.5 hours in Oregon.[19]

ADD general information on aggressive driving stats

Dangerous behaviors are a major contributing factor in fatal and severe injury crashes.

- Aggressive driving is a factor in 36% of fatal crashes.
- 40% of serious crashes are fail to yield right of way involved.

Aggressive behavior is a major contributing factor in auto only crashes, compared to other modes.

- 41% of auto-only serious crashes involved aggressive behavior, compared to 9% of pedestrian involved crashes and 8% of bicycle involved crashes.
- 64% of serious freeway crashes involved aggressive behavior.

Aggressive behavior is a major contributing factor in rear end crashes, the second most common type of serious crashes.

- Rear end crashes account for 21% of serious crashes, and 73% of those crashes involved aggressive behavior.

Failure to yield by a driver is a contributing factor in 82% of fatal and severe injury bicycle crashes.

- Alcohol or drugs and aggressive driving are also common contributing factors. The data do not specify whether the driver, the bicyclist, or both were under the influence of alcohol.

3.5 Alcohol and Drugs

Crashes involving alcohol and drugs have a much higher likelihood of being fatal than other crashes. Providing options to people using the roadways while drunk or intoxicated saves lives.

ADD intro paragraphs, general trends on alcohol and drugs.

Nationally, the percentage of fatally injured drivers who were drinking was highest for Native Americans (57%) and Hispanics or Latinos (47%).[20]

[17] ZenDrive Analysis
[18] Add source
[19] ODOT crash data, 2011 through 2015.
[20] NHSTA, 2006

Crashes involving alcohol and drugs have a much higher likelihood of being fatal than other crashes.

- 57% of fatal crashes involved alcohol or drugs

The majority of serious alcohol and drug involved crashes are auto only crashes.

- 56% of serious alcohol involved, and 57% of serious drug involved crashes are auto-only crashes

Pedestrian crashes have a high likelihood of involving alcohol or drugs

- 38% of serious pedestrian crashes are alcohol and/or drug involved
- 27% of serious alcohol involved, and 29% of serious drug involved crashes are pedestrian involved

The majority of serious alcohol and drug involved crashes occur at night

- 77% of serious alcohol involved, and 56% of serious drug involved crashes occurred at night

Excessive speed and serious drug and alcohol related crashes are correlated.

- 36% of serious alcohol and drug involved crashes also involve excessive speed.

Chapter 4: Strategies and Actions

Data-driven transportation safety strategies and plans identify strategies and actions to address the most common causes of fatal and serious injury crashes identified through analysis of crash data. The strategies are of equal importance and represent a multi-pronged approach to reducing fatal and severe crashes in the region.

Strategies and actions for the 2018 RTSS were developed with the recognition of existing city, county and state transportation safety plans as the foundation for reaching regional safety targets, goals and objectives. The 2018 RTSS strategies and actions are not mandated and implementation is contingent on the availability of funding and political will.

Strategies are broad areas of action designed to achieve an overall aim. The strategies identified respond to the most common causes of fatal and severe crashes in the region.

Actions are specific steps that a variety of partners can take to address specific safety problems. Actions in the 2018 RTSS were identified from multiple sources, including state and local transportation safety action plans, research of current best practices to address the primary factors in fatal and serious crashes.

Vision Zero Framework

In addition to being data-driven, the strategies and actions are identified by their consistency with the Vision Zero framework, outlined in Chapter1. The Vision Zero framework emphasizes an upstream "safe systems" approach, focused on policies and street designs that most affect people's behavioral choices, versus an approach aimed at influencing individual behavior.

Protect Vulnerable Users

Consistent with the policy context outlined in Chapter1, the strategies and actions focus on vulnerable users, with the understanding that increasing safety for vulnerable users increases safety for all users.

Equity and Public Health

Equity and public health considerations form umbrella under which the strategies and actions fall. Each strategy and action must be viewed with an understanding of the racial and other forms of equity and public health impacts (positive or negative). People of color and people living in low-income areas can be disproportionally impacted by traffic crashes and by actions to address safety. EXPAND to address impacts from enforcement and Vision Zero framework perspective on equity and public health

Partners

Transportation safety and achieving zero deaths and serious injuries is everybody's business. Government alone cannot achieve the broader changes needed to reach Vision Zero. In addition to national, state, regional and local agencies, multiple organizations, private entities and the public play a role in achieving Vision Zero. Engineers, emergency medical service providers,

law enforcement, educators, public health professionals, the media, industry and business, research and academic institutions, and users of the transportation system all have a role.[21]

Key partners who are likely to play a critical role in advancing each of the actions are identified in the strategies and actions table. Many of the types of partners described above will play some role.

4.1 Reduce Speeds and Speeding

Speed is a fundamental contributing factor in crash severity. Reducing speeds and speeding saves lives. This strategy is focused on reducing the prevalence of speeding as well as reducing motor-vehicle speeds on arterial roadways to survivable speeds. A comprehensive approach to reducing speeds and speeding is necessary and typically involves multiple countermeasures. For example, NHTSA states that "no single strategy will be appropriate for all locations, and combinations of treatments may be needed to obtain speed limit compliance and achieve crash reduction goals."

ADD summary of National Transportation Safety Board recommendations on speed

ADD Vision Zero Network focus on speed and reference Portland's Vision Zero Plan speed focus

Actions to reduce speeding (exceeding the posted speed limit or driving to fast for conditions) are focused on proven countermeasures such as designing roadways that result in slower speeds, lowering posted speeds, and increasing the use of automated speed enforcement. The focus is on the arterial roadways and high injury corridors.

4.2 Protect Vulnerable Users

Vulnerable users have higher fatality rates. Increasing safety for vulnerable users increases safety for all transportation users. This strategy is focused on protecting users of the transportation system who are more vulnerable to dying or being seriously injured. These groups have higher fatality rates.

Vulnerable users are groups of people that are more vulnerable to being killed or seriously injured in crashes. Vulnerable users are pedestrians, bicyclists, motorcycle operators, children, older adults, construction workers, people of color and people with lower incomes.

Research and practice has shown that increasing the safety of vulnerable users makes the system safe for all users. EXPAND with data points.

Actions for this strategy are focused on proven and recommended programs and education and data collection and monitoring that result in roadways that are safe for the youngest, oldest and most vulnerable users of the transportation system. These actions compliment the other strategies, especially the reduce speeds and speeding and designing roadways for safety strategies.

[21] Refer to Appendix X for a list of organizations and entities with a possible role in directly or indirectly implementing the 2018 RTSS.

4.3 Design Roadways for Safety

Arterial roadways have the highest serious crash rate per road mile and per VMT. Prioritizing and standardizing safety in street design for all modes can prevent dangerous behaviors and save lives.

This strategy is focused on designing the transportation system, especially arterial roadways, to enable and encourage safe behaviors and reduce the severity of crashes when they do occur, primarily through greater separation and slower speeds. Designing roadways to be safe for children, older adults and people walking and bicycling makes the system safe for all users.

Arterial roadways have the highest serious crash rate for all modes, and should be the primary focus of regional safety efforts. Safety interventions that match solutions to the crash pattern and street and neighborhood context are needed. Many of the region's high injury corridors meet or largely meet adopted design standards so simply bringing roadways up to adopted standards does not fully address the needed safety improvements.

The safest roadways slow down traffic, provide separation between modes, and provide intuitive visual cues that make it clear that people using different modes share the space. These roadways keep all people safer – even when they make mistakes.

Actions for this strategy focus on designing for safe auto speeds and include engineering solutions for arterial roadways, providing more separation and protection between users.

Example of a Vision Zero Street[22] *(1)ADA Accessibility, (2)Public Amenities, (3) Protected Bike Lanes, (4) Narrow Vehicle Lanes, (5) Pedestrian Islands, (6) Wide Sidewalks, (7) Dedicated Mass Transit Facilities, (8) Signal Protected Pedestrian Crossings, (9) Dedicated Unloading Zone, (10) Signal Retiming*

[22]Vision Zero Streets, The Vision Zero Street Design Standard https://www.visionzerostreets.org/

4.4 Address Dangerous Behaviors

Dangerous behaviors include those that arise from aggressive or distracted driving and can lean in an instant to injury or death. Systems and policies can reduce and minimize the impact of bad decisions.

This strategy is focused on reducing and minimizing the impact of dangerous behaviors. ADD additional context and information on what works to address dangerous behaviors and overall societal issues ADD Equity implications of enforcement.

Actions for this strategy focus on changing overall systems, using education and technology, to reduce the prevalence of dangerous behaviors in the first place. Targeted high-visibility enforcement is included with an emphasis on taking actions to reduce the disproportionate impacts on people of color and people with low incomes.

4.5 Address Impairment

Crashes involving alcohol and drugs have a much higher likelihood of being fatal than other crashes. Providing options to people using the roadways while drunk or intoxicated saves lives.

This strategy is focused on upstream solutions to reduce the prevalence of people using the roadways while intoxicated. ADD additional context and information on what works to address impairment and overall societal issues ADD Equity implications of enforcement.

Actions for this strategy focus on changing overall systems, using education and technology, to reduce the prevalence of drunk driving in the first place. Targeted high-visibility enforcement is included with an emphasis on taking actions to reduce the disproportionate impacts on people of color and people with low incomes.

4.6 Ongoing Engagement and Coordination

Many partners will implement Vision Zero. Ongoing engagement and coordination among all partners is essential.

This strategy focuses on the need to increase and maintain coordination and engagement among partners.

Actions in this strategy focus on convening, planning, messaging and campaigns, data collection and maintenance and community engagement.

4.7 Strategies and Actions Table

Actions for each of the six strategies are listed in the following table. The effectiveness of each action to reduce fatal and severe injury crashes, based on research and studies, is noted. Key implementing partners and action leads are also identified. A full list of partners is provided at the end of the document.

❶ Reduce speeds and speeding

Speed is a fundamental contributing factor in crash severity. Reducing speeds and speeding saves lives.

#	Action	Lead	Partners	Effectiveness*
1.1	Design arterial roadways to achieve appropriate safe target speeds, generally 35 mph or less, using design elements that have been shown to effectively result in lower speeds. A majority of excessive speed related serious crashes occur on arterial roadways.	Cities, counties, ODOT	Metro, TriMet, SMART, public health, advocates	Proven
1.2	Change state law to increase the number of jurisdictions eligible for fixed speed camera installation, especially at high injury locations.	Cities, counties, ODOT	Metro, public health, advocates	Proven
1.3	Utilize authority provided through HB 2409 to issue speeding tickets through red light cameras. Change state law to increase the number of jurisdictions eligible to use this tool.	Cities, counties, ODOT, Metro	Public, health, advocates	Proven
1.4	Seek authority to lower speed limits on arterial roadways to appropriate safe speeds, generally 35 mph or less.	Cities, counties	ODOT, Metro, public health, advocates	Proven
1.5	Fund and install intelligent speed adaptation technologies that alert the vehicle traveling over the speed limit, prioritizing high risk and high injury corridors.	ODOT, cities, counties	Metro, public health, advocates	Proven

❷ Protect Vulnerable Users

Vulnerable users have higher fatality rates. Increasing safety for vulnerable users increases safety for all transportation users.

#	Action	Lead	Partners	Effectiveness*
2.1	Implement Safe Routes to School programs and infrastructure projects, prioritizing schools in areas with higher concentration populations of people with lower incomes, people of color, and low English proficiency.	ODOT, Metro, cities and counties	Schools, public health, advocates	Recommended
2.2	Provide culturally and age appropriate on-going education of traffic laws and street designs.	ODOT, Metro, cities and counties,	Advocates	Recommended

		Senior advocates, public health		
2.3	Increase opportunities to provide education and products to increase visibility of people walking and bicycling (e.g. lights, reflective materials).	ODOT, cities and counties, schools	Public health, advocates	Recommended
2.4	Continue to improve data collection and reporting of vulnerable users, including: • Collecting and making crash data on race and ethnicity of victims available; • Supporting and developing programs to coordinate and collect bicycle and pedestrian count data. • Evaluate motorcycle, pedestrian and bicycle crash locations and risk factors though analysis of existing data and development of new data sources.	ODOT, Metro cities, counties, police, research institutions	Public health, advocates	Recommended
2.5	Explore opportunities to increase large vehicle industry awareness of safety benefits of rear wheel and side guards and front and side mirrors. Explore opportunities to collaborate with the US DOT, ODOT, Port of Portland, City of Portland and other agencies to increase use of such safety features.	Metro, cities, counties, ODOT, Port of Portland, US DOT	Advocates, large vehicle industry	Proven
2.6	Evaluate pedestrian and bicycle crash locations and risk factors in TSPs though analysis of existing data and development of new data sources.	Cities, counties, ODOT	Metro, research institutions	Recommended

❸ Design roadways for safety

Arterial roadways have the highest serious crash rate per road mile and per VMT. Prioritizing and standardizing safety in street design for all modes can prevent dangerous behaviors and save lives.

#	Actions	Lead	Partners	Effectiveness*
3.1	Implement/prioritize context sensitive and universal design and engineering solutions such as the Federal Highway Administration proven safety countermeasures, the Highway Safety Manual and other resources that have been shown to support safe speeds, protect vulnerable users and reduce fatal and severe crashes, focusing on arterial roadways and high injury corridors and intersections. Countermeasures with proven safety benefits include:	Cities, counties, ODOT, Metro	TriMet, SMART, public health, advocates	Proven and/or recommended

	• medians and pedestrian crossing islands – for pedestrian safety and to address head-on crashes • protected left turn signals • separation of travel modes on streets with higher traffic speeds, volumes, and truck volumes with protected bikeways and walkways • bicycle boxes • lead pedestrian intervals • pedestrian hybrid beacons • roundabouts • road diets • access management • driveway consolidation • backplates with retroreflective borders • freight aprons Pedestrian design should account for the needs of all potential users, including those with physical or mental limitations. Design and engineering solutions should account for designated truck routes to safely move freight and agricultural equipment amid other modes.			
3.2	Develop and adopt Complete Streets policies and Complete Streets checklists.	ODOT, Metro, cities and counties	Public health, advocates	Unknown
3.3	Provide context sensitive best practices for Vision Zero street design in the Designing Livable Streets regional street design guidelines and tools.	Metro	ODOT, cities and counties, public health, advocates	Unknown
3.4	Review standards for auto travel lane widths and develop criteria to explore making 10' travel lanes preferred standard for arterial roadways in certain contexts, allowing more right-of-way for wider sidewalks, protected bikeways and other safety features.	Cities, counties, ODOT, TriMet	Metro, public health, advocates	Recommended (*greater separation of modes)*
3.5	Develop criteria and spacing standards and/or policies for enhanced pedestrian crossings in areas with pedestrian activity (such as transit access) and where enhanced crossings are greater than 530 feet apart.	Cities, counties, ODOT	Metro, public health, advocates	Recommended

3.6	Explore policies to make protected bike lanes the preferred design for arterial roadways with posted speeds of 30 mph or higher, and/or average daily traffic above 6,000 autos per day, and/or heavy truck volumes.	Cities, counties, ODOT	Metro, NACTO, public health, advocates	Recommended
3.7	Illuminate the transportation system appropriately by: • Requiring new development and redevelopment in the urban area to install street lighting. • Integrating street lighting into major transportation improvement projects, where appropriate. • Exploring a variety of lighting options and identify the appropriate contexts to use them. Considering street lighting designs and practices that limit impacts on neighborhoods, wildlife and agriculture.	Cities, counties, ODOT	Metro	Recommended
3.8	Investigate and perform engineering reviews for crashes that result in fatalities and severe injuries to determine effective countermeasures for preventing future severe crashes. Conduct routine evaluation of effectiveness of traffic safety interventions.	Police, cities, counties, ODOT, academic institutions	Metro, advocates, public health	Recommended
3.6	Prioritize funding for projects that: • Increase safety for vulnerable users, including people walking, bicycling and accessing transit and schools (increasing safety for vulnerable users has been shown to increase safety for all users) • Are on a high risk or injury location, with demonstrated crash history, safety concern or other risk factor • Increases safety in areas with high concentrations of people of color, people with low-incomes and people with low English proficiency	Metro, ODOT, counties and cities	Public health, advocates	Recommended
3.7	Standardize Highway Safety Manual crash prediction project analysis to guide project development as part of the traffic analysis procedure.	ODOT, cities and counties	Metro, academic research institutions	Recommended
3.8	Pursue policies and tools to reduce vehicle miles traveled, including congestion pricing, multimodal facilities, transit and Transportation Demand Management programs.	ODOT, Metro, cities and counties	Advocates, public health	Recommended

❹ Address Dangerous Behaviors

Dangerous behaviors include those that arise from aggressive or distracted driving and can lean in an instant to injury or death. Systems and policies can reduce and minimize the impact of bad decisions.

#	Actions	Lead	Partners	Effectiveness*
4.1	Focus high visibility enforcements on dangerous behaviors (speeding, failing to yield to pedestrians, signal violations, improper turns/illegal turns, texting while driving) and high injury corridors, taking actions to reduce the disproportionate impacts on people of color and people with low incomes, including fully implementing Oregon's anti-racial profiling bill (House Bill 2355). Research shows that high-visibility enforcement can reduce drunk driving fatalities by as much as 20%.	Police, cities, counties	Metro, ODOT, advocacy groups, public health	Recommended
4.2	Increase penalties for dangerous behaviors, identifying actions to reduce the disproportionate impacts from fines on people of color and people with low incomes, such as diversion classes and other non-monetary penalty options.	State, cities, counties, police	Metro, ODOT, advocacy groups, public health	Recommended
4.3	Support implementation of recommendations identified in Reducing Distracted Driving in Oregon report and HB 2597 "Distracted Driving Law"	ODOT, police, cities and counties, Metro	Public health, advocates, auto industry	Unknown
4.4	Support auto insurance companies to provide lower auto insurance costs to drivers that install technologies to turn off phone while driving.	ODOT, Metro, cities, counties, advocates	Public health, advocates	Unknown
4.5	Compile a comprehensive list and contacts of private sector companies that operate large numbers of vehicles in the region, and identify a process that supports state and local partners to engage in outreach regarding safe driving behaviors to members, workforces and customers – companies such as ride hailing services and trucking companies	Metro, ODOT, cities and counties	ODOT, cities and counties, commercial vehicle companies	Unknown
4.6	Support legislation to increase frequency of driver education, testing, inclusion of urban transportation safety in test materials, and driver's license renewal.	Metro, ODOT, cities and counties	Advocates, public health	Recommended

❺ Address impairment

Crashes involving alcohol and drugs have a much higher likelihood of being fatal than other crashes. Providing options to people using the roadways while drunk or intoxicated saves lives.

#	Actions	Lead	Partners	Effectiveness*
5.1	Identify funding to send law enforcement to Drug Recognition Experts (DRE) training, and training to prevent profiling.	Police, cities, counties	State, public health, advocates	Recommended
5.2	Adopt National Transportation Safety Board recommendation to reduce Blood Alcohol Concentration limit to 0.05	State	Advocates, public health, Metro, cities and counties	Proven
5. 3	Implement pre-paid morning parking programs in areas where appropriate (prevents towing/ticket for drivers who choose other way home).	Cities, counties	Public health, advocates	Recommended
5.4	Promote use of apps such as SaferRide developed by NHSTA, which provide people easy ways to find a safe ride home.	Cities, counties, ODOT, Metro	Public health, advocates	Recommended
5.5	Explore opportunities to support the U.S. DOT to work with industry groups and vehicle manufacturers to further the use of technology to reduce impaired driving.	ODOT, Metro, cities and counties	Public health, advocates	Recommended
5.6	Support culturally appropriate safety programs and educational messages to curb the risk of impaired driving, using resources such as NHSTA's Impaired Driving Segmentation research (2017). Messaging is more effective when there is an in-depth understanding of what messages work for different groups.	ODOT, Metro, cities and counties, advocates, public health	Public health, advocates	Recommended

❻ Ongoing Engagement and Coordination to Implement Vision Zero

Many partners will implement Vision Zero. Ongoing engagement and coordination among all partners is essential.

#	Actions	Lead	Partners	Effectiveness*
6.1	Convene regular local safety meetings made up of state and local transportation and public health professionals, equity representatives, police and fire, and community and advocacy	Local agencies	ODOT, Metro, public health,	Recommended

	organizations, to review progress on implementing safety plans and collaborate on specific topics, such as impairment, distracted driving, street design, and enforcement. Integrate Vision Zero/Toward Zero Deaths framework and priorities, including racial equity and public health.		advocates, police, fire, TriMet, SMART	
6.2	Provide an annual Vision Zero report back to JPACT and Metro Council, reporting on safety targets and regional safety plan implementation.	Metro	Cities and counties, ODOT, TriMet, SMART, public health, advocates	Recommended
6.3	Maintain and update Metro crash data. • Update Metro webpage annually with MAP-21 transportation safety performance measure data; include data on race and ethnicity as available. • Update and maintain regional crash map tool and crash map. • Develop a regional crash prediction modeling tool that utilizes and links social and environmental factors with injury data.	Metro	FHWA, ODOT, public health, academic inst.	Recommended/ Proven
6.4	Identify opportunities to engage and partner with community based organizations and advocates, especially to increase opportunities for proactive monitoring and feedback gathering from the community on their safety issues and concerns. Conduct targeted outreach/education to communities near high injury arterials and intersections, focusing on historically marginalized communities.	Metro, ODOT, cities and counties	Public health, advocates	Recommended
6.5	Support development of city and county Transportation Safety Action Plans and Vision Zero targets, participate in local, regional and state safety task forces, and develop and participate in state, regional and city safety summits.	DLCD, Metro, cities and counties, ODOT	Public health, advocates, TriMet, SMART	Recommended
6.6	Identify opportunities to develop safety workshops for state, regional, county and city staff on Vision Zero framework and priorities, including racial equity and public health.	ODOT, Metro, TriMet, cities and counties	FHWA	Recommended
6.7	Review and update trainings for state, county and city police officers to reflect new traffic safety priorities and regularly conduct trainings, including racial equity and public health.	Police, state, cities, counties,	Advocates, public health	Recommended

6.8	Identify funding for and develop at least one annual coordinated culturally appropriate and targeted mass media safety campaign in the region, utilizing campaign materials developed by NHSTA, Drive Toward Zero, Vision Zero, Toward Zero Deaths and other sources as appropriate. Strong, targeted advertising with high-visibility enforcement and publicity about that enforcement have proven to be most effective.	Metro, cities, counties, ODOT	Advocates, public health	Proven
6.9	Update the following sections of OAR 660-012-0000, the Oregon Transportation Planning Rule: • Section 0020 (2), , requiring Transportation System Plans to include a transportation safety plan, with data analysis that addresses all modes and is based on a safety inventory based on both an analysis of crash rates and an analysis of crash risks. • Section 0030 (1) and (2) identifying safety as a need. • Section 0060 (1)(c) clarifying that making a known safety problem worse constitutes a "significant effect".	DLCD, Metro, ODOT	Cities and counties, advocates	Recommended
6.10	Support safety legislation and regulations at the state and federal level that implement Vision Zero and do not increase racial disparities.	Metro, ODOT, cities, counties, advocates	Advocates, public health	Recommended
6.11	Monitor federal and state autonomous vehicle (AV) policies and ensure that they do not place the burden of safety on vulnerable users (e.g., requiring them to carry a sensor/install an app to be picked up by an AV), and require rigorous safety testing of all AVs prior to public deployment.	Metro, ODOT, cities and counties	Advocates, public health, AV industry	Unknown
6.12	Update Regional Transportation Functional Plan to reflect changes in RTSS.	Metro, cities, Counties, other agency partners	Advocates, public health	Unknown

***Effectiveness: Proven = proven to be effective based on several evaluations with consistent results**
Recommended = generally accepted to be effective based on evaluations or other sources
Unknown = limited evaluation or evidence; experimental; outcomes inconsistent or inconclusive among studies

Chapter 5: Implementation

Implementation of the 2018 RTSS is contingent on the availability of funding and the political will to advance actions which may be challenging.

5.1 Ongoing Engagement and Coordination to Implement Vision Zero

Many partners will implement Vision Zero. Ongoing engagement and coordination among all partners is essential.

The previous chapter identified near-term actions for reducing fatalities and life-changing injuries in the Portland metro region. Example long-term and near-term coordination, implementation or outreach roles or activities for agencies and stakeholders in the region are summarized below and are based on the 2016 Oregon TSAP.

5.2 Implementing Adopted Plans

[to be added to]

Transportation safety is an essential element of the region's desired outcomes, to ensure people have safe and reliable transportation choices, and it is achieved through the implementation of state, regional and local land use and transportation plans, in addition to safety strategies and plans.

Implementing land use and transportation system plans, including the 2040 Growth Concept, will help achieve Vision Zero. Building walkable and bikewable communities, reducing travel distances, locating jobs and housing near each other, making transit more accessible all contribute to safer communities.

ADD summary of local plans

5.3 RTP Safety Projects and Programs

To be added – will summarize the safety related investment in the 2018 RTP and regional programs, such as RTO.

5.4 Available Funding for Safety

[to be added?]

Chapter 6: Measuring Progress

Progress towards Vision Zero will be measured by the number of fatal and severe injury crashes reduced annually.

6.1 Annual Performance Targets

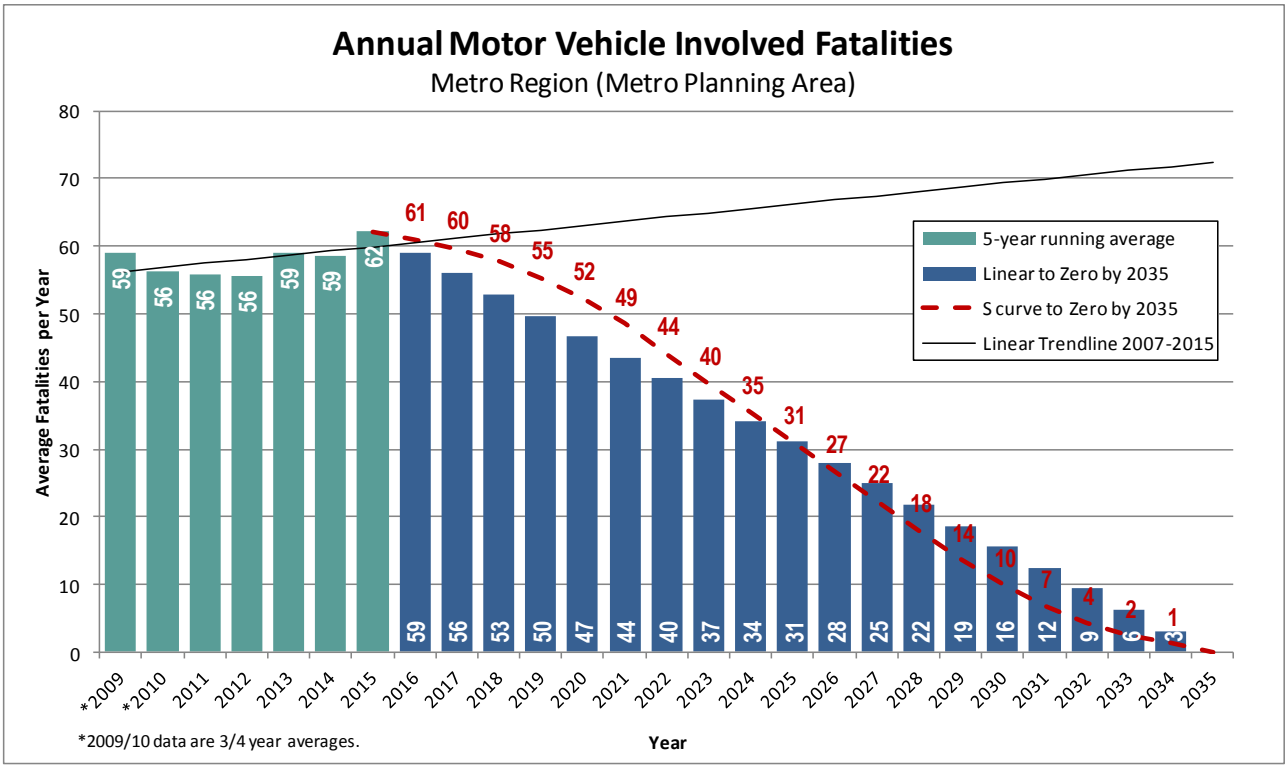
State DOTs and MPOs must now report on the federally required safety performance measure identified in MAP-21 and the FAST Act. Metro will report on these measures in each update of the RTP, and in the Metropolitan Service District report of performance measures that Metro is required to submit in accordance with ORS 197.301 to the Department of Land Conservation and Development (DLCD) every two years. Additionally, Metro will report out annually to JPACT and the Metro Council.

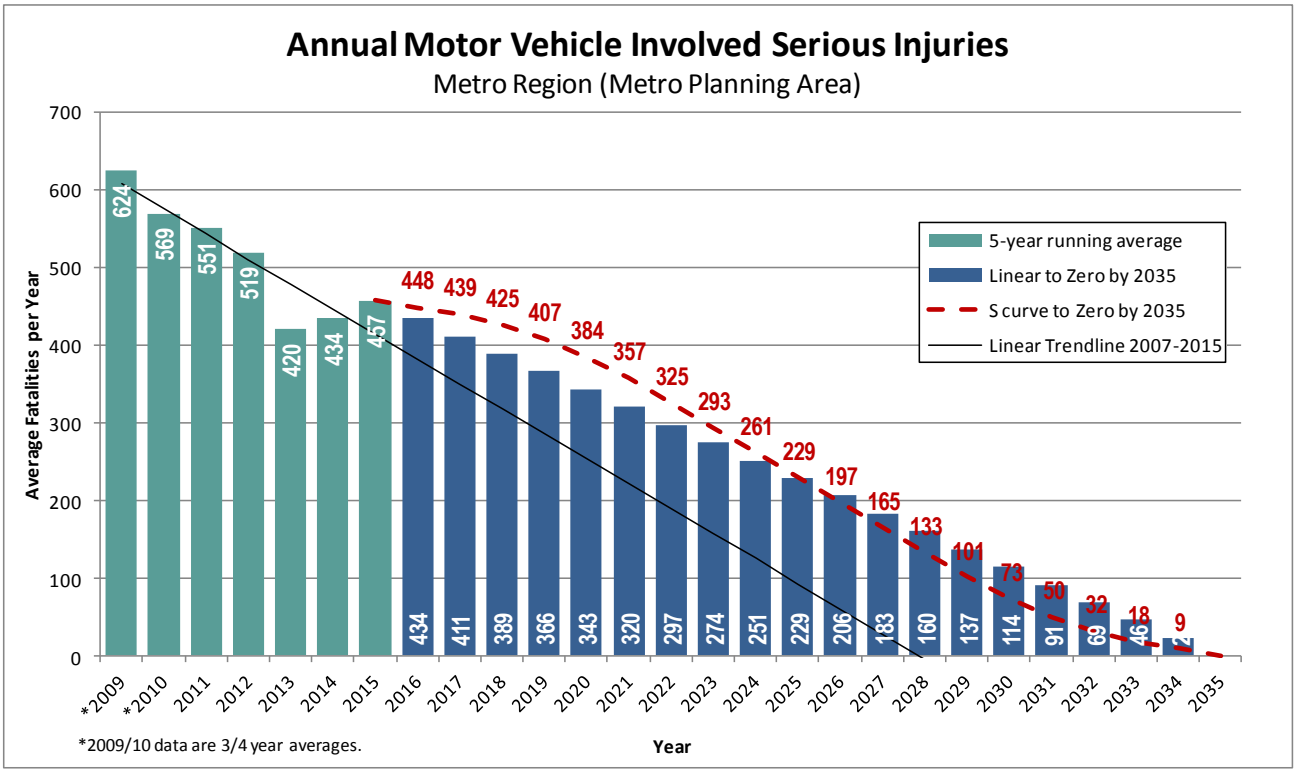
To satisfy federal requirements, Metro will report on the five year rolling average of the number of people killed and seriously injured in traffic crashes in the region, per 100 million miles traveled (per VMT) and the number of non-motorized fatalities and serious injuries.

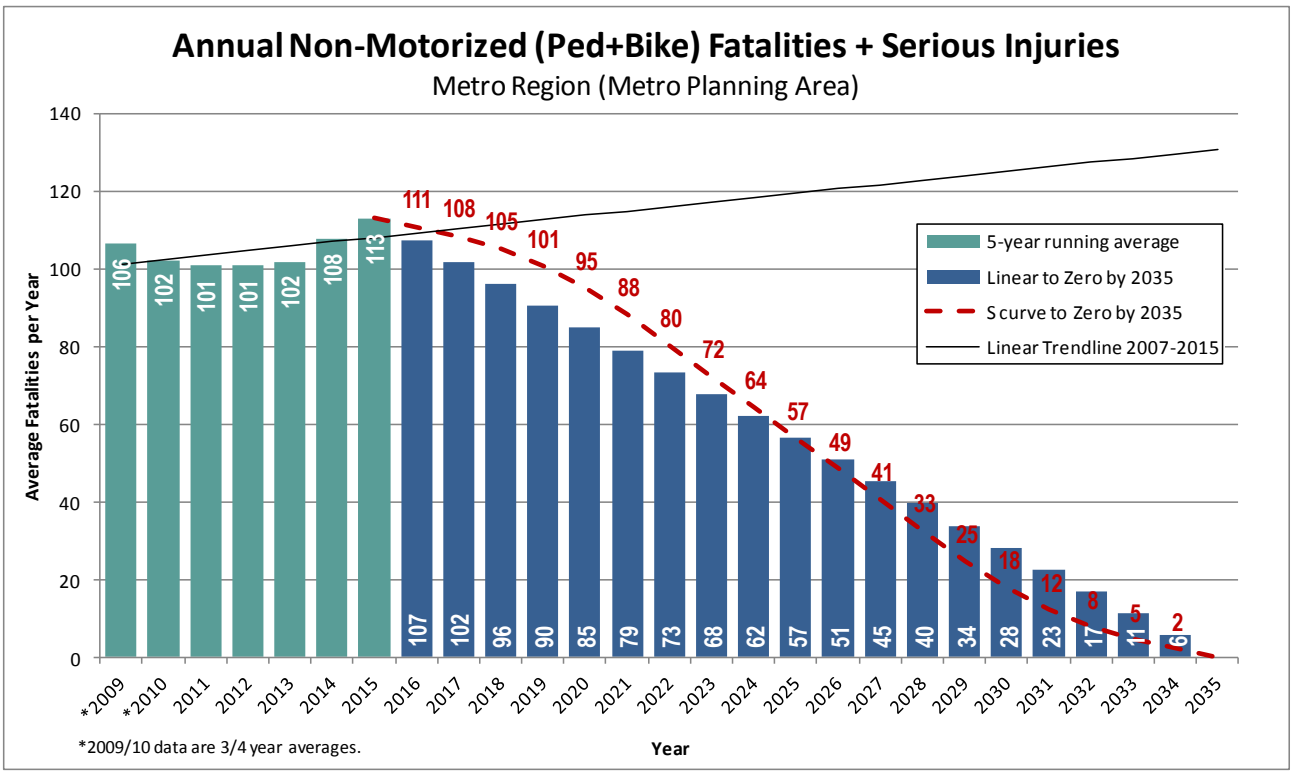
Additionally, Metro will also report on the number of fatalities and serious injuries for each mode separately, as well as per VMT and per captia for each mode.

The tables and charts below show the annual performance targets necessary to reach zero fatalities and severe injuries by 2035. The black trend line in the charts shows the expected trend of crashes for each mode. Pedestrian fatalities are rising.

	FHWA Performance Measures						
		Fatality Rate			Serious Injury Rate		
Reporting Year (based on a 5-year rolling average)	Fatalities (People)	Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)	Serious Injuries (People)	Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)	Non-Motorized Fatalities and Serious Injuries (People)
2011 - 2015 (Base)	62	0.9	4.0	457	6.4	29.4	113
2014 - 2018	58	0.8	3.6	425	5.8	26.5	105
2015 - 2019	55	0.7	3.4	407	5.5	25.1	101
2016 - 2020	52	0.7	3.2	384	5.1	23.4	95
2017 - 2021	49	0.6	2.9	357	4.7	21.5	88
Note: Due to rounding, addition of numbers across modes may result in minor variation from totals.							

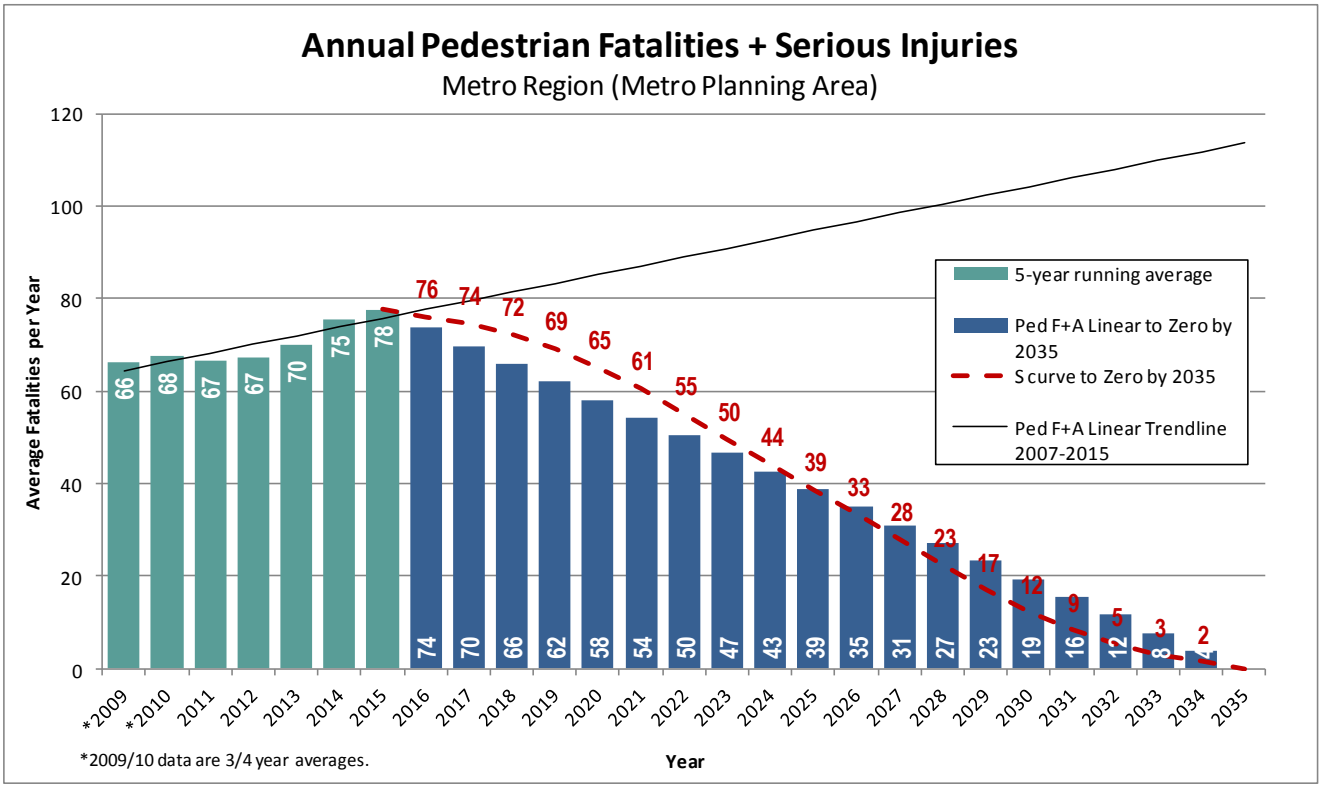

Annual Motor Vehicle Involved Fatalities
Metro Region (Metro Planning Area)
Average Fatalities per Year
Year
*2009/10 data are 3/4 year averages.
5-year running average
Linear to Zero by 2035
S curve to Zero by 2035
Linear Trendline 2007-2015


Annual Motor Vehicle Involved Serious Injuries
Metro Region (Metro Planning Area)
Average Fatalities per Year
Year
*2009/10 data are 3/4 year averages.
5-year running average
Linear to Zero by 2035
S curve to Zero by 2035
Linear Trendline 2007-2015



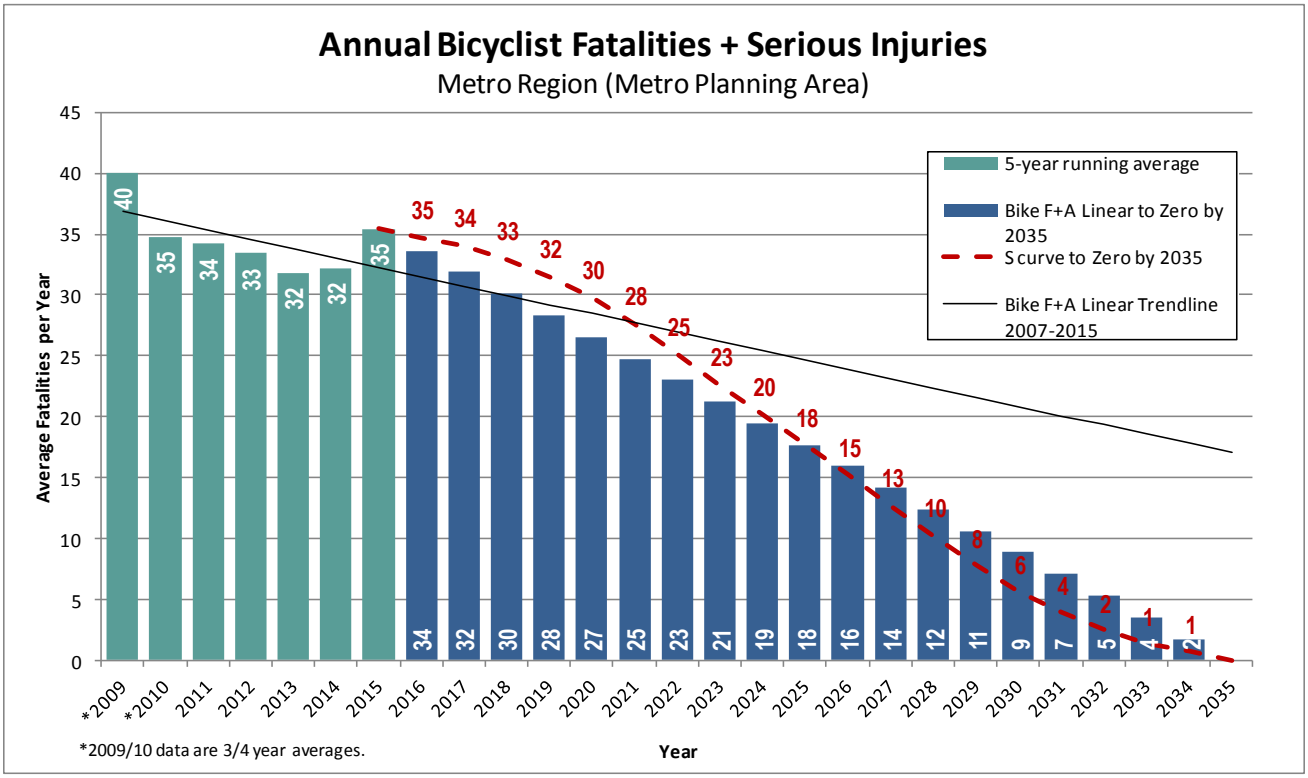
Reporting Year (based on a 5-year rolling average)	Motor Vehicle Only					
	Fatalities (People)	Fatality Rate		Serious Injuries (People)	Serious Injury Rate	
		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)
2011 - 2015 (Base)	38	0.5	2.4	368	5.2	23.7
2014 - 2018	35	0.5	2.2	343	4.7	21.3
2015 - 2019	34	0.5	2.1	328	4.4	20.2
2016 - 2020	32	0.4	1.9	309	4.1	18.8
2017 - 2021	30	0.4	1.8	287	3.8	17.3

Note: Due to rounding, addition of numbers across modes may result in minor variation from totals.



Reporting Year (based on a 5-year rolling average)	Pedestrians					
	Fatalities (People)	Fatality Rate		Serious Injuries (People)	Serious Injury Rate	
		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)
2011 - 2015 (Base)	22	0.3	1.4	56	0.8	3.6
2014 - 2018	20	0.3	1.3	52	0.7	3.2
2015 - 2019	20	0.3	1.2	49	0.7	3.0
2016 - 2020	18	0.2	1.1	47	0.6	2.8
2017 - 2021	17	0.2	1.0	43	0.6	2.6

Note: Due to rounding, addition of numbers across modes may result in minor variation from totals.



Reporting Year (based on a 5-year rolling average)	Bicyclists					
	Fatalities (People)	Fatality Rate		Serious Injuries (People)	Serious Injury Rate	
		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)
2011 - 2015 (Base)	2.2	0.03	0.14	33	0.5	2.1
2014 - 2018	2.0	0.03	0.13	31	0.4	1.9
2015 - 2019	2.0	0.03	0.12	30	0.4	1.8
2016 - 2020	1.8	0.02	0.11	28	0.4	1.7
2017 - 2021	1.7	0.02	0.10	26	0.3	1.6

Note: Due to rounding, addition of numbers across modes may result in minor variation from totals.

6.2 System Evaluation Measures

In addition to tracking the number of serious crashes, the 2018 RTP includes two system evaluation measures to assess *future of traffic safety* by tracking the level of safety investments in the RTP and crash risk through exposure to VMT. These measures will change over time as more comprehensive methods, such as a crash prediction model, are developed accounting for more of the crash factors. Both of these measures also assess equity impacts.

RTP System Evaluation Measures compare the base year conditions of the transportation system with alternative investment packages of projects and programs to document how well each

package of transportation investments performs on an array of measures that are linked to RTP Goals, and in most cases, overlap with the RTP Performance Targets.

Transportation Safety – Infrastructure Investments
This system evaluation measure identifies the number, cost and percent of safety projects in the RTP investment packages region-wide, and the number, cost and percent of safety projects in areas with historically marginalized communities to identify where and at what level of investment the package of future transportation projects addresses transportation safety.This system evaluation measure requires providing a definition of a "safety project" in order to track safety investments.

Refer to Chapter 5 for a summary of this evaluation measure for the 2018 RTP.

Transportation Safety – Exposure to Crash Risk
This system evaluation measure approximates the risk of exposure to crashes by identifying whether the package of future transportation investments increases or decreases the sum of all non-freeway vehicle miles traveled (VMT) in Transportation Area Zones (TAZ) for RTP investment packages region-wide, and in historically marginalized communities.

ADD summary of 2018 RTP results.

Acronyms

AASHTO	American Association of State Highway and Transportation Officials
DLCD	Department of Land Conservation and Development
FAST ACT	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HSM	Highway Safety Manual
HIN	High Injury Network
HSIP	Highway Safety Improvement Plan
JPACT	Joint Policy Advisory Committee on Transportation
MAP-21	Moving Ahead for Progress in the 21st Century Act
MMLOS	Multi Modal Level of Service
MPA	Metro Planning Area
MPAC	Metro Policy Advisory Committee
MTAC	Metro Technical Advisory Committee
NHSTA	National Highway Safety Traffic Administration
RATP	Regional Active Transportation Plan
RTFP	Regional Transportation Functional Plan
RTP	Regional Transportation Plan
RTSS	Regional Transportation Safety Strategy
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
ODOT	Oregon Department of Transportation
OTP	Oregon Transportation Plan
UGMFP	Urban Growth Management Functional Plan
SHSP	State Highway Safety Plan
TPAC	Transportation Policy Alternatives Committee
TSAP	Transportation Safety Action Plan
TSP	Transportation System Plan
VMT	Vehicle Miles Traveled

List of Partners

Government alone cannot achieve the broader changes needed to end traffic fatalities. In addition to national, state, regional and local agencies, multiple organizations, private entities and the public play a role in achieving Vision Zero.

National agencies
U.S. Department of Transportation
Federal Highway Administration
National Highway Traffic Safety Administration

State agencies
Oregon Department of Transportation
Oregon Health Authority
Department of Motor Vehicles
Oregon State Police
Department of Land Conservation and Development

Regional Agencies and Districts
Metro
TriMet
SMART
Portland of Portland

Local agencies – transportation/ public health professionals
City and county transportation and public health agencies

Schools
Public and private

Elected officials
US Representatives and Senators
State Representatives and Senators
Governor
Metro Council
Metro Joint Policy Advisory Committee on Transportation
City Mayors and Councils
County Commissioners

Appointed committees
Oregon Transportation Commission
Oregon Transportation Safety Committee
Oregon Bicycle and Pedestrian Advisory Committee
Oregon Freight Advisory Committee
Oregon Transit Advisory Committee
Portland pedestrian, bicycle and freight committees

City and county transportation committees
Emergency Service Providers

County and Local Police
Clackamas, Multnomah and Washington County Sheriff's Offices
City Police

County and City Fire & Rescue
Portland Fire and Rescue
Tualatin Valley Fire and Rescue
Clackamas Fire District #1
Multnomah County Fire District #14
Washington County Fires District #2
Gresham Fire
Hillsboro Fire
Cornelius Fire
Forest Grove Fire and Rescue
Gladstone Fire
Lake Oswego Fire

Advocacy and Community Organizations
Oregon Walks
Oregon and SW Washington Families for Safer Streets
Vision Zero Network
Toward Zero Deaths
National Safe Routes to School Partnership
AARP
Street Trust
Community Cycling Center

Commercial Vehicle Companies
Companies located and/or operating in the region

Industry Groups
Auto insurance companies
Auto manufacturers
AAA

Technology Leaders
Volpe Institute

Research and Academic Institutions
Portland State University
ODOT Research
Transportation Research Board (TRB)

Glossary

The glossary defines terms used in this document. These definitions are also included in the2018 Regional Transportation Plan.

AASHTO: The American Association of State Highway and Transportation Officials; it represents all five transportation modes: air, highways, public transportation, rail, and water and has a primary goal of fostering the development, operation, and maintenance of an integrated national transportation system.

Aggressive Driving: An individual commits a combination of moving traffic offenses so as to endanger other persons or property (FHWA). For purposes of this plan those offenses are driving too fast for conditions, following too closely, and/or driving in excess of posted speed.

Aggressive Driving Related Crash: One or more of driving too fast for conditions, following too closely, and/or driving in excess of posted speed was an attribute of the crash. As used in this plan, note that duplicate crashes are not counted more than once.

Arterial Street is a functional classification for surface streets. AASHTO defines arterials from the motor vehicle perspective as providing a high degree of mobility for the longer trip lengths and high volumes of traffic, ideally providing a high operating speed and level of service and avoiding penetrating identifiable neighborhoods.

Autonomous Vehicle (AV): Also known as a driverless car, self-driving car, robotic car is and unpiloted ground vehicle is that is capable of sensing its environment and navigating without human input.

Basic Rule Speed: A speed that is reasonable and prudent considering the conditions at the time. Speeds in excess of the posted speed are evidence of the violation. Basic rule violations can apply on any roadway.

Best Practices: For purposes of this plan, the term "best practices" is used as a general term of preferred practices accepted and supported by experience of the applicable professional discipline. It is not prescriptive to a particular set of standards or a particular discipline.

Collector: A functional classification for surface streets. AASHTO defines collectors as providing both land access and traffic circulation within neighborhoods and commercial and industrial areas. The role of the collector system, from the motor vehicle perspective, is to distribute traffic to and from the arterial system.

Complete Streets: A transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation.

Context sensitive design: A model for transportation project development that requires proposed transportation projects to be planned not only for its physical aspects as a facility serving specific transportation objectives, but also for its effects on the aesthetic, social,

economic and environmental values, needs, constraints and opportunities in a larger community setting. Projects designed using this model:

Countermeasure: An activity or initiative to prevent, neutralize, or correct a specific problem.

Crash: A violent collision, typically of one vehicle with another or with an obstacle.

Crash Reduction Factor (CRF): The percentage crash reduction that might be expected after implementing a given countermeasure at a specific site. For example, the installation of centerline rumble strips on a two-lane roadway can expect a 14%reduction in all crashes and a 55% percent reduction in head-on crashes.

Design Speed: Speed for which roadway elements such as curves are designed.

Designated speeds: As opposed to statutory speeds (i.e., 35 mph on city arterial), and must be established by a defined speed zoning process and investigation. Designated speeds typically have to be administered by the Oregon Department of Transportation.

Distracted Driving: Engagement in any activity that could divert a person's attention away from the primary task of driving: the practice of driving a motor vehicle while engaged in another activity. Typical distractions include eating, dealing with passengers or pets, changing settings on vehicle devices, and, increasingly, using a cellular phone or other electronic device.

DMV: Driver and Motor Vehicle Services, Oregon Department of Transportation

Emerging Technologies: Are the technical innovations representing progressive developments within a field aim at providing competitive advantage.

EMS: Emergency Medical Services

Equity: See Social Equity

FARS: Fatal Analysis Reporting System is a nationwide census providing NHTSA, Congress and the American public yearly data regarding fatal injuries suffered in motor vehicle traffic crashes.

FAST: Fixing America's Surface Transportation Act is a funding and authorization bill to govern United States Federal surface transportation spending, signed by President Obama on December 4, 2015. It is subsequent to MAP-21, but does not replace all of the applicable requirements of that earlier law, so both must be referenced.

Fatality Rate: The number of traffic fatalities per number of vehicle miles traveled in a given year. The rate is usually expressed in terms of fatalities per one hundred million miles traveled. Sometimes also expressed as a rate of fatalities per population or licensed drivers

FHWA: The Federal Highway Administration is an agency within the U.S. Department of Transportation that supports State and local governments in the design, construction, and

maintenance of the Nation's highway system (Federal Aid Highway Program) and various federally and tribal owned lands (Federal Lands Highway Program).

Fixed speed camera: A camera installed to detect traffic regulation violations.

Freeway: Directional travel lanes usually separated by a physical barrier, and access and egress points are limited to on-and off-ramp locations or a very limited number of at-grade intersections.

Functional classification: The class or group of roads to which the road belongs. There are three main functional classes as defined by the United States Federal Highway Administration: arterial, collector, and local.

High Crash Location: Are highway or road segments that are susceptible to an inordinate number of crashes. Identification of high crash locations is part of the problem identification process.

High Injury Corridors (regional): Corridors within a transportation network with higher risk of injury than other corridors within the network.

High Visibility Enforcement (HVE): Law enforcement efforts that are highly visible and well publicized through paid and earned media support. (NHTSA)

Highway Safety Improvement Program: The term "highway safety improvement program" means projects, activities, plans, and reports carried out under this section. (23 USC section 148)

Highway Safety Improvement Project: (23 USC section 148) In general, the term "highway safety improvement project" means strategies, activities, and projects on a public road that are consistent with a state strategic highway safety plan and correct or improve a hazardous road location or feature; or address a highway safety problem.

Historically marginalized communities: Are communities of people that have been historically excluded from critical aspects of social participation including, voting, education, housing and more. Historical marginalization is often a result of systematic exclusion based on devaluation of any individual existing outside of the dominant culture.

HSM: Highway Safety Manual is the recognized source of information and methods for quantitatively evaluating traffic safety performance on existing or proposed roadways.

HSP: Highway Safety Plan, the grant application submitted for Federal section 402 and similar funds. Funds are provided by the National Highway Traffic Safety Administration and the Federal Highway Administration.

Impaired Driving: Driving a vehicle while the driver's reflexes have suffered from alcohol or other drugs to a point that is generally considered unsafe to operate a vehicle. Impairment is usually viewed less severely than intoxication. (NHTSA)

Injury A and Incapacitating injury - are used interchangeably. Incapacitating injuries typically are injuries that the victim is not able to walk away from. They are synonymous with the term Severe injury

Injury B and **Moderate injury are** used interchangeably.

Injury C and **Minor injury** are used interchangeably.

Intelligent speed adaption technologies: Are any system that ensures that vehicle speed does not exceed a safe or legally enforced speed. In case of potential speeding, a human driver can be alerted, or the speed reduced automatically.

KABCO Injury Scale: An injury rating scale used to determine the severity of injuries ranging from Severe Injury (A) to Minor Injury (C)

Local Street: A functional classification for surface streets that includes all public surface streets not defined as arterial or collector. Local streets are typically low-speed streets with low traffic volumes in residential areas, but also include similar streets in commercial and industrial areas.

MAP-21: Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), reauthorization of Federal highway funding, signed into law by President Obama on July 6, 2012. Subsequent adoption of the FAST Act does not replace MAP-21 in all areas regulation of transportation safety planning and funding, so both must be referenced.

Metro Planning Area Boundary

Minor Arterial: Provides moderate-length trips and offers connectivity to the higher arterial system, providing intracommunity continuity.

Model Minimum Uniform Crash Criteria Guideline (MMUCC): A minimum, standardized data set for describing motor vehicle crashes and the vehicles, persons and environment involved. The Guideline is designed to generate the information necessary to improve highway safety within each state and nationally.

Monitoring: Management and oversight of the day-to-day operations of grant and sub-grant supported activities to assure compliance with applicable Federal and state requirements and that performance goals are being achieved.

Motorcycle: A motor vehicle with motive power having a seat or saddle for the use of the rider and designed to travel on not more than three wheels in contact with the ground. The NHTSA defines “motorcycle” to include mopeds, two or three-wheeled motorcycles, off-road motorcycles, scooters, mini bikes and pocket bikes.

MPO: Metropolitan Planning Organization. MPOs are designated by the governor to coordinate transportation planning in an urbanized area of the state.

MUTCD: Manual on Uniform Traffic Control Devices is a document issued by the Federal Highway Administration (FHWA) of the United States Department of Transportation (USDOT) to specify the standards by which traffic signs, road surface markings, and signals are designed, installed, and used.

NHTSA: The National Highway Traffic Safety Administration is an agency of the Executive Branch of the U.S. government, part of the Department of Transportation. It describes its mission as "Save lives, prevent injuries, reduce vehicle-related crashes."

NTSB: National Transportation Safety Board is an independent U.S. government investigative agency responsible for civil transportation accident investigation. In this role, the NTSB investigates and reports on aviation accidents and incidents, certain types of highway crashes, ship and marine accidents, pipeline incidents, and railroad accidents.

ODOT – Oregon Department of Transportation

Operating Speed: This is the speed at which motor vehicles generally operate on that road.

Per capita: Is used to describe crash rate per population. Except where otherwise noted, crash rates are per million residents.

Per vehicle miles traveled (VMT): Is used to describe crash rate per motorized vehicle miles. Except where otherwise noted, crash rates are per 100-million motorized vehicle miles travelled.

Performance Measure: "A process of assessing progress toward achieving predetermined goals, including information on the efficiency with which resources are transformed into goods and services (outputs), the quality of those outputs (how well they are delivered to clients and the extent to which clients are satisfied) and outcomes (the results of a program activity compared to its intended purpose), and the effectiveness of government operations in terms of their specific contributions to program objectives." (FHWA)

Portland metro region: Is the scope of this plan, and is defined as area within the Metropolitan Planning Area (MPA) boundary.

Posted Speed Violations: In Oregon, posted speeds set the maximum speed that can be traveled, violations can be either speed limit or basic rule.

Posted Speed: The speeds indicated on signs along the roadway.

Protected bike lanes: A bike lane that is physically separated from auto traffic, typically they are created using planters, curbs, parked cars, or posts and are essential for creating a complete network of bike-friendly routes.

Public health: The health of the population as a whole, especially as monitored, regulated, and promoted by the state.

Road Safety Audit: A formal safety performance examination of an existing or future road or intersection by an independent multidisciplinary audit team. (23 CFR § 924.3).

Road users: A motorist, passenger, public transportation operator or user, truck driver, bicyclist, motorcyclist, or pedestrian, including a person with disabilities. (23 USC section 148)

Roadway Departure Crash: Crash where roadway departure is an attribute. As used in this plan, note that the roadway or lane departure definition excludes intersections, pedestrian-related, and bicycle-related crashes.

RTP: Regional Transportation Plan for a Metropolitan Planning Organization

Safe Routes to School: A federally led program that provides federal funds for improvements of the built environment near schools with the goal of increasing walking and biking to school.

Safety data: includes, but is not limited to, crash, roadway, and traffic data on all public roads. For railway- highway grade crossings, safety data also includes the characteristics of highway and train traffic, licensing, and vehicle data. (23 CFR § 924.3)

Serious Injury: An incapacitating injury or any injury, other than a fatal injury, which prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred.

Severity: A measurement of the degree of seriousness concerning both vehicle impact (damage) and bodily injuries sustained by vehicle occupant.

SHSP: Strategic Highway Safety Plan, A comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Side Guard for Trucks: Vehicle-based safety devices designed to keep pedestrians, bicyclists, and motorcyclists from being run over by a large truck's rear wheels in a side-impact collision.

Social Equity: The idea that all members of a societal organization or community should have access to the benefits associated with civil society – the pursuit of an equitable society requires the recognition that there are a number of attributes that give members of a society more or less privilege and that in order to provide equitable situations the impacts of these privileges (or lack thereof) must be addressed. For transportation, equity refers to fair treatment or equal access to transportation services and options. In the context of safety, transportation equity relates to improving the travel choices, the safety of travel and not unfairly impacting one group or mode of transportation. More specifically it means improved safety for all transportation options and lessening the risks or hazards associated with different choices of transportation.

Speed Limit: Speed limits are limited to specific roadways such as interstates, roadways within city limits, and school speed zones. In addition, speed limits apply to certain types of vehicles on any roadway – large trucks, school buses and vehicles transporting children or workers.

Speeding: Driving too fast for conditions and/or driving in excess of posted speed

Speed-Related Crashes: Attributes of crash include driving too fast for conditions and/or driving in excess of posted speed (note that duplicate crashes are not counted more than once).

SPIS: The Safety Priority Indexing System is a systemic scoring method that identifies potential safety problems on state high-ways.

Spot Safety Improvement: An improvement or set of improvements that is implemented at a specific location on the basis of location-specific crash experience or other data-driven means.

SSHSP: State Strategic Highway Safety Plan; A comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

State Highway Safety Improvement Program: The term "State highway safety improvement program" means a program of highway safety improvement projects, activities, plans and reports carried out as part of the Statewide transportation improvement program under section 135(g). (23 USC section 148)

Statutory Speeds: Are posted as defined in statute (i.e., 25 mph on a neighborhood street) and any road authority may post applicable statutory speeds within their jurisdiction.

STIP: Statewide Transportation Improvement Program is the Oregon Department of Transportation's capital improvement program for state and federally-funded projects. The Oregon Transportation Commission and ODOT develop the STIP in coordination with a wide range of stakeholders and the public.

Strategic Highway Safety Plan (SHSP): A comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systemic Safety Improvement: An improvement or set of improvements that is widely implemented based on high-risk roadway features that are correlated with particular severe crash types.

Toward Zero Deaths: A term analogous to Vision Zero

Transportation Demand Management: The application of strategies and policies to reduce travel demand, or to redistribute this demand in space or in time

Transportation Planning Rule (TPR): Oregon's statewide planning goals established state policies in 19 different areas. The TPR implements the Land Conservation and Development Commission's Planning Goal 12 (Transportation) which requires ODOT to prepare a Transportation System Plan (TSP) to identify transportation facilities and services to meet state needs.

TSAP: Oregon's Transportation Safety Action Plan

Vision Zero: A system and approach to public policy developed by the Swedish government which stresses safe interaction between road, vehicle and users. Highlighted elements include a

moral imperative to preserve life, and that the system conditions and vehicle be adapted to match the capabilities of the people that use them.

VMT: Vehicle miles traveled; a measure used as a means of determining exposure in calculating fatality rates.

Appendices

Appendices are stand-alone documents that provide additional technical information for the 2018 Regional Transportation Safety Strategy.

Appendices can be accessed at_____

2017 Metro State of Safety Report
Describes the data used in the analysis, the attributes of the data, and any data limitations. Describes the process Metro used to analyze the data. The 2017 State of Safety report presents the findings, identifying trends and relationships of serious crashes with environmental factors including roadway and land use characteristics and serves as the foundation for the 2018 RTSS.

Regional High Injury Corridors and Intersections Report
Provides information and link to the Metro Crash Map and High Injury Corridors online map.

Transportation Safety Policy Framework Report
Developed prior to the 2018 RTSS, provides an overview of pertinent polices that guided the development of the 2018 RTSS. Includes profiles of local agency plans, actions and programs for transportation safety.

Safety Performance Measures Report
Developed prior to the 2018 RTSS, outlines the transportation safety related performance measures and targets for the update of the 2018 Regional Transportation Plan.

Meeting minutes

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Meeting:	**RTP Safety work group meeting #6**
Date/time:	July, 27 2017 | 9-11 a.m.
Place:	Metro Regional Center, room 401
Purpose:	Review Draft Strategies and Actions
Outcome:	Input on Draft Strategies and Actions

Work Group Attendees	**Organization**
Tegan Enloe	City of Hillsboro
Chris Strong	City of Gresham
Brendon Haggerty	Multnomah County
Amanda Owings	City of Lake Oswego
Kari Schlosshauer	Safe Routes to Schools
Dyami Valentine	Washington County
Dana Dickman	City of Portland
Stephanie Noll	The Street Trust
Jeff Owen	TriMet
Jake Davis (for Noel Mickelberry)	Oregon Walks
Eileen Cunningham	Multnomah County

Metro Staff
Lake McTighe, Work Group Lead
Tom Kloster
Marie Miller
Anthony Buczek
Tim Collins
Nicholas Simmons (intern)
Jamie Snook

Welcome & introductions

The meeting was called to order at 9 a.m. by Tom Kloster. The committee was welcomed and a round of introductions was made.

Project update

Lake McTighe noted that at the work group's last meeting, April 4, 2017, work group members provided input on the draft table of contents for the regional transportation safety action plan. At that meeting input on the draft strategies was provided and is reflected in the strategies and actions table. She noted that the work group has developed many of the components of the safety plan. A draft of the plan will be discussed at the Sept. 14 (**changed to Oc.19)** meeting (the last meeting of the work group).

Lake also shared that MPAC and JPACT had recommended moving forward with the Vision Zero target and framework at their April, 2017 meetings, and the Metro Council provided unanimous support at their February 28, 2017 work session.

Draft Strategies and Actions discussion

Lake reviewed the Vision Zero framework, the draft target, performance measures, RTP safety Goals and objectives, referring to the "2018 RTP Moving for Vision to Action Framework" hand out.

- Work group members noted that comparing different approaches can be helpful, but not making the traditional approach seem like it is "not caring." It was suggested to describe the two approaches as reactive vs. proactive.
- It was suggested that in the "2018 RTP Moving for Vision to Action Framework" the target be moved above performance measures, and flip objective and target location and wording (first sentence in the "target" would be a better objective). Lake noted that this framework is for the whole RTP and still being developed, and safety plan would need to be consistent with whatever was finalized.

Anthony Buczek provided an overview of the crash data from the analysis of the 2011-2015 crash data.

- It was suggested that more data on 'who' is getting hurt and killed is needed – race, ethnicity, income, etc.
- Is anyone anywhere collecting data trying to analyze what percentage of pedestrians in crashes are accessing transit? It was suggested that crash data on pedestrians accessing transit would be important to have.
- Does inattention include distracted driving? Yes – but we do not have very accurate data on people driving and texting.

Lake walked through each section of the draft strategies and actions table. She noted that the "Vision Zero Toolbox" was an attachment to the table. **(Vision Zero Toolbox will not be included at this time.)**

<u>Strategy 1 – Reduce Speeds and Speeding</u>

- Clarify that this is a Metro plan and Metro is recommending these actions.
- 1.1 Suggest providing more context on lane width reduction and conflicts with state policy ORS.366.215 and NHS – when jurisdictions want to narrow lanes it can be prohibited
- 1.4 – change to 35 mph <u>or less</u> – changing speed limit alone does not change behavior, good to combine with 1.5
- 1.5 – refine language to designing for target speed
- Prefer language in 1.5 versus 1.4, seems more flexible
- Support 35 mp/h or less, need to set the bar
- 1.7 – change and to 'or' – adding signalized intersections is difficult

- How is urban being defined **(anything within the MPA boundary)**
- Happy to see reducing speed the first action, like distinction between speed and speeding
- want to assure that the actions are sufficiently strong enough to meet our goals even if it will be hard
- Insert term "context sensitive" into actions where appropriate
- want to assure that the actions are sufficiently strong enough to meet our goals even if it will be hard
- Need to discuss what can and cannot be done o roadways with certain restrictions, e.g. ORS 366 routes
- 1.4 – what about roadways that are restricted access, or low access?

<u>Strategy 2 – protect Vulnerable Users</u>

- Add people with disabilities as a vulnerable user
- Clarify note about hospitalization rates, clear it up if it was traffic related
- Add "context sensitive" to 2.1
- 2.2 and 2.3 different from Washington County standards
- 2.4 - 25 mph seems a bit low (based on forthcoming NACTO recommendations) – it is 35 mph in Washington County
- 2.10 – language should be stronger on that- It's clear lighting has an impact so why not say something about providing guidance on lighting?
- 2.5: projects and infrastructure for safe routes to school should be included rather than just the education programs
- 2.3: wondering if what you meant was 530 feet for enhanced crossings or crossings in general? This standard is not practical from an engineering perspective.
- 2.3 mostly applies on multilane arterials
- 2.3 maybe we should provide guidance (getting to transit) rather than a specific number of feet
- 2.3 – look at NCHRP 562 for guidance on spacing
- 2.6 - only about senior citizens; should we include children, refugees and new citizens? maybe training isn't the right word. Talk to AARP about what they think and what they say about it
- one thing that is missing is a bicycle helmet law.
- Do not think there should be an action on a bicycle helmet law
- 2.4 "I would really caution this to go up to 35." If we're not comfortable with 25, we should have separation for above 25. Work on language for protected.
- 2.4 - This is best practices, that doesn't mean you have to do it. These are aspirational.
- 2.6: It is both a lot of seniors but also a lot of people that are just new Portlanders and don't understand our traffic laws.
- 2.2 - add TriMet as a partner
- Having transit users listed in the vulnerable users category or in 2.3 would be good
- 2.9: Is there a reasonthat only ODOT provide the data? There is also data from the medical examiners, cities, counties, etc. we should be collecting data from multiple sources, especially to track equity. Look at medical examiner reports
- aspire to improve how we collect all of our data

<u>Strategy 3 – Safety design</u>

- 3.5 and 3.6: clarify if these are just best practices that Metro is recommending
- 3.8: might make more sense in 3.5 or toolbox
- 3.10: concerned on the funding impacts on projects
- 3.11: might be somewhat redundant to 3.9
- 3.5 and 3.6: see these as similar and could be combined into one
- 3.10: is there a standard? Are there recommendations for smaller districts?
- 3.9 could be cleaned up
- 3.3: use "encourage" language
- 3.8 – move to safety toolkit

Strategy4 – Address and minimize impact of dangerous behaviors

- Acknowledge the dangerous behavior of pedestrians making improper crossings
- Bicyclist as well [calling out on dangerous behavior]
- Would section four be the place for encouraging getting driver's license renewals?
- Strongly second the driver's license renewals
- 4.10 – make education and testing on-going – important for people to know about new infrastructure

Strategy 5 – Address impairment

- 5.4 clarify what pre-paid morning parking programs are
- Remind everyone that this framework is not about victim blaming, but about making sure people are not driving when they are drinking or taking drugs

Strategy 6 – Ongoing Engagement, Education and Planning

The group ran out of meeting time and did not have an opportunity to discuss. Lake encouraged work group members to send her additional comments.

Vision Zero Toolbox

- Suggest providing more context on lane width reduction and conflicts with state policy ORS.366.215 and NHS – when jurisdictions want to narrow lanes it can be prohibited
- Provide information on ORS 366 to clarify whether striped bike lanes reduce capacity or not (if there is already a downstream constraint on ORS 366 route it is easier to narrow)

Next steps

- September 14 - Transportation Safety Work Group provides input on first draft of Regional Transportation Safety Action Plan (RTSAP) **it is possible meeting will be rescheduled to October**
- November 15 and 17 – TPAC and MTAC provide input on revised draft RTSAP
- November – Draft findings and recommendations of the 2018 RTP project list system evaluation, including number, percentage, cost, location and timing of safety projects
- Spring 2018 – 45-day public review and comment on the Draft RTSAP as part of the 2018 RTP public comment period

ATTACHED: 7-19-17 version of Strategies and Actions

2018 Safety Work Group Comments on 7-19-17 version of the Draft Strategies and Actions for the Regional Transportation Safety Action Plan

October 10, 2017

Strategy/ Action #	Source of Comment	Comment/ Suggested Change	Metro Staff Response
4.2	Metro	7-19-17 version of 4.2 has been deleted, and combined into updated 4.2 DELETED: Research updating fine structure(s) to promote equitable traffic enforcement strategies that do not have disproportionate economic impact on people with low incomes	
New action	Metro	ADDED new action	6.11 Monitor federal and state autonomous vehicle (AV) policies and ensure that they do not place the burden of safety on vulnerable users (e.g., requiring them to carry a sensor/install an app to be picked up by an AV), and require rigorous safety testing of all AVs prior to public deployment.
3.18	Metro	Moved action and integrated with 6.3	
1.1 and 1.5	Metro	Combined 1.5 with 1.1	
Strategy 3	Metro	All specific roadway design elements combined into action 3.1	
3.7	Metro	Moved to and combined with 6.4	
3.15	Metro	Now 3.3	
2.2, 2.3, 2.4, 2.10	Metro	Moved to Strategy 3 – roadway design actions are now primarily in strategy 3	
2.9 (now 2.4)	Metro	Moved last bullet from 2.10 and combined into what is now 2.4	
2.11 and 2.12	Metro	Combined (now 2.11)	
2.13	Metro	Combined with what is now 3.8	
3.7	Metro	Moved to strategy 6	
3.12 and 3.13	Metro	Moved to Implementation Chapter of RTSAP	
3.14	Metro	Moved to Strategy 6	
3.16 and 3.17	Metro	Combined, now 3.8	
General	Clackamas County	The Traditional Approach versus VZ Framework in the July 19 memo is great.	This will be included in the RTSAP
General	Clackamas County	There are many references to the racial equity and I think that this issue is best covered through each agency and their Title VI compliance. I would suggest having a general statement about the racial equity but not call it out in the individual objectives.	No change recommended. Title VI is a good start, but even strict compliance with Title VI does not address the systemic effects of racism which continue to create inequitable outcomes for communities of color, including in transportation safety. We feel that noting when specific actions may have different or disproportionate outcomes for different groups, including communities of color, is important in regional as well as local plans.
Strategy 1	Clackamas County	Under the bubble diagram under action "1)Reduce speeds and speeding". I would suggest that it state "Ensure appropriate speed zoning and reduce or eliminate speeding."	No change recommended. Maintain title of Strategy 1 as "Reduce Speeds and Speeding." Focus is to achieve lower operating speeds that are survivable, especially on arterial roadways where a majority of fatal crashes occur.
1.1	Clackamas County	1.1 Assuming you are referring to ITE Vision Zero Toolbox	1.1 updated: *Design arterial roadways to achieve appropriate safe target speeds, generally 35 mph or less, using design elements that have been shown to effectively result in lower speeds. A majority of excessive speed related serious crashes occur on arterial roadways.* The VZ Toolbox referred to is a set of countermeasures identified by Metro. However, development of this

			stand alone “toolbox” has been put on hold and will not be included as part of the RTSAP.
1.2	Clackamas County	1.2 Fixed speed cameras are not legal in the counties – State law needs to be changed	1.2 updated: *<u>Change state law</u> to increase the number of jurisdictions eligible for fixed speed camera installation, especially at high injury locations.*
1.4	Clackamas County	1.4 change to “Ensure appropriate speed zones, generally 35 mph or less”. ODOT should also be included.	Updated: Seek authority to lower speed limits on arterial roadways to appropriate safe speeds, generally 35 mph or less.
1.7	Clackamas County	1.7 provide safe crossings at appropriate intervals based on local agency TSP or standards. Have appropriate operating speeds.	Action has been deleted, intent covered in what is now 3.5 (see response to Washington County comment on 1.7)
Strategy 2	Clackamas County	Under TZD, vulnerable users are considered to be bicyclists, peds, motorcycle operators, children, elderly, construction workers and other personnel working in the roadway. I would leave it at that and not include reference to color or income.	Updated definition (no longer in strategies and actions table, now in Sections 3 and 4 of the RTSAP) Vulnerable users are groups of people that are more vulnerable to being killed or seriously injured in crashes. Vulnerable users are pedestrians, bicyclists, motorcycle operators, children, older adults, construction workers, people of color and people living in lower income areas.
2.2 (now 3.4)	Clackamas County	2.2 Narrower travel lanes do not necessary make things safer. Often, the vehicle simply encroaches more into the bike lane, increasing the potential for conflict. Lane width should be evaluated based on the speeds, volumes of users and types of traffic. Prescriptive 10’ lanes does not work in all areas within the METRO boundary.	Updated (now 3.4): Review standards for auto travel lane widths and develop criteria to explore making 10’ travel lanes preferred standard for arterial roadways in certain contexts, allowing more right-of-way for wider sidewalks, protected bikeways and other safety features.
2.4 (now 3.6)	Clackamas County	2.4 This should be vetted and agreed upon by all the agencies. May be good for Portland but not for the counties. May need more thought.	Updated (now 3.6): Explore policies to make protected bike lanes the preferred design for arterial roadways with posted speeds of 30 mph or higher, and/or average daily traffic above 6,000 autos per day, and/or heavy truck volumes.
2.11 (now 2.5)	Clackamas County	2.11 This is a USDOT issue	Updated (2.11 and 2.12 combined): Explore opportunities to increase large vehicle industry awareness of safety benefits of rear wheel and side guards and front and side mirrors. Explore opportunities to collaborate with the US DOT, ODOT, Port of Portland, City of Portland and other agencies to increase use of such safety features.
2.12 (now 2.5)	Clackamas County	2.12 USDOT issue	Updated (2.11 and 2.12 combined): Explore opportunities to increase large vehicle industry awareness of safety benefits of rear wheel and side guards and front and side mirrors. Explore opportunities to collaborate with the US DOT, ODOT, Port of Portland, City of Portland and other agencies to increase use of such safety features.
Strategy 3	Clackamas County	Bear in mind that if you make vehicle travel difficult on certain streets, motorists may simply fan out to other routes resulting in other safety problems. Work on high crash corridors needs to be done looking at the broader transportation planning picture of where the people are trying to go and what options they have. Trying to “force” people out of their personal vehicles may be the goal of one agency, but not all. I would suggest creating mode options is a better goal.	Goal is not to force people out of vehicles but to design arterial roadways to reduce occurrence of fatal and severe injury crashes. Creating mode options by increasing safety for people walking and bicycling and older people and children makes the roadway safer for all users.
3.7 (now 6.4)	Clackamas County	3.7 eliminate reference to marginalized communities	Updated and moved to 6.4: Identify opportunities to engage and partner with community based organizations and advocates, especially to increase opportunities for proactive monitoring and feedback gathering from the community on their safety issues and concerns. Conduct targeted outreach/education to communities near high injury arterials

			and intersections, focusing on historically marginalized communities. A majority of high injury corridors and a majority of pedestrian deaths are occurring in historically marginalized communities. Targeted outreach is a recommended best practice to address safety issues.
3.9 (now 3.6)	Clackamas County	3.9 Increase safety for vulnerable users; eliminate rest of sentence after Title 1 schools.	Updated (now 3.6): Prioritize funding for projects that: • Increase safety for vulnerable users, including people walking, bicycling and accessing transit and schools (increasing safety for vulnerable users has been shown to increase safety for all users) • Are on a high risk or injury location, with demonstrated crash history, safety concern or other risk factor • Increases safety in areas with high concentrations of people of color, people with low-incomes and people with low English proficiency A majority of high injury corridors and a majority of pedestrian deaths are occurring in historically marginalized communities. Additionally, African and Native Americans in the region are disproportionally injured or killed in traffic related crashes in Oregon.
3.10	Clackamas County	3.10 Set reasonable expectations for evaluations to keep costs low	Action has been deleted.
3.11 (now 3.6)	Clackamas County	3.11 eliminate reference to marginalized communities	Updated (added to 3.6): Prioritize funding for projects that: • Increase safety for vulnerable users, including people walking, bicycling and accessing transit and schools (increasing safety for vulnerable users has been shown to increase safety for all users) • Are on a high risk or injury location, with demonstrated crash history, safety concern or other risk factor • Increases safety in areas with high concentrations of people of color, people with low-incomes and people with low English proficiency A majority of high injury corridors and a majority of pedestrian deaths are occurring in historically marginalized communities. Additionally, African and Native Americans in the region are disproportionally injured or killed in traffic related crashes in Oregon.
3.12	Clackamas County	3.12 – If you track level of investment, should track results. Consider simplified HSM approach to predict safety benefits of projects and follow up with data to see how they did. In this manner you can track your estimated versus actual impacts on safety. But, bear in mind the HSM is complicated to use, so a simplified method needs to be developed.	Action has been deleted and moved to RTSAP Implementation chapter
3.14 (now 3.7)	Clackamas County	3.14 – As mentioned, develop easier method based on HSM	Updated: Standardize Highway Safety Manual crash prediction project analysis to guide project development as part of the traffic analysis procedure. Does this address concern that HSM is complicated to use?
3.15 (now 3.3)		3.15 Make sure street designs work in variety of contexts from dense urban to suburban situations. One size does not fit all.	Agreed. Regional design guidelines are being developed with a context sensitive design approach.

			Updated: Provide context sensitive best practices for Vision Zero street design in the Designing Livable Streets regional street design guidelines and tools.
3.16 (now 3.8)	Clackamas County	3.16 Not sure what this is set to accomplish.	Higher VMT is correlated with higher crash rates. Implementing policies that help lower VMT/capita lower VMT can lower crash rates. Updated: Pursue policies and tools to reduce vehicle miles traveled, including congestion pricing, multimodal facilities, transit and Transportation Demand Management programs.
3.17 (now 3.8)	Clackamas County	3.17 State in a way that supports creating mode choices. Not everyone supports "reducing car dependence" but most support having safe mode choices and they will use them.	3.17 combined with 3.16 into what is now 3.8 see above.
Strategy 4, 4.2	Clackamas County	4.2 No one should get a break. If you want to change it focus on an education component.	No change recommended. Focus is to make penalties equitable, not to give anyone group a break. 4.2 (which has been combined with what was 4.3) updated: Increase penalties for dangerous behaviors, identifying actions to reduce the disproportionate impacts from fines on people of color and people with low incomes, such as diversion classes and other non-monetary penalty options.
4.3	Clackamas County	4.3 Eliminate reference to color and income.	4.3 has been deleted
4.4	Clackamas County	4.4 Punt to ODOT	Deleted. Covered in 4.2
4.6	Clackamas County	4.6 Eliminate reference to color and income. You enforce where the problems are.	4.6 deleted. is Covered in 4.1. No change recommended for reference to color and income. Intent is to enforce where problems are but to take steps such as providing profiling training to police officers to address disproportionate impacts (only 1 in 3 officers have received racial profiling training).
4.7 (now 4.3)	Clackamas County	4.7 We know that all forms of use of electronic devices, shaving, makeup, eating are distracting. No research needed. New law supports most of this.	Now 4.3 updated: Support implementation of recommendations identified in Reducing Distracted Driving in Oregon report and HB 2597 "Distracted Driving Law"
4.9 (now 4.5)	Clackamas County	4.9 I like this – support having businesses of all sizes have driving/walking/biking/transit use policies for their employees.	Thank you
4.10 (now 4.6)	Clackamas County	4.10 – Extremely important – thanks for including this.	Thank you
Strategy 5, 5.1 (now 6.1)	Clackamas County	5.1 – Participating in the Portland DUI Work Group for a long time revealed that there are differences between the agencies. The strategies and targets should be done agency by agency working with their own PD's, engineering, health, etc. There can be some sort of regional group that meets quarterly, but the work needs to be done at the local level.	Combined actions 5.1 and 6.1 : Convene regular local safety meetings made up of state and local transportation and public health professionals, equity representatives, police and fire, and community and advocacy organizations, to review progress on implementing safety plans and collaborate on specific topics, such as impairment, distracted driving, street design, and enforcement. Integrate Vision Zero/Toward Zero Deaths framework and priorities, including racial equity and public health.

5.2 (now 5.1)	Clackamas County	5.2 Just $$ to send officers to DRE training	Updated: Identify funding to send law enforcement to Drug Recognition Experts (DRE) training, and training to prevent profiling.
5.4 (now 5.3)	Clackamas County	5.4 Assuming this is so you can leave your car and not get towed.	Updated: Implement pre-paid morning parking programs in areas where appropriate (prevents towing/ticket for drivers who choose other way home).
5.6 (now 5.5)	Clackamas County	5.6 USDOT issue	Updated: Explore opportunities to support the U.S. DOT to work with industry groups and vehicle manufacturers to further the use of technology to reduce impaired driving. Intent is to support these efforts
Strategy 6, 6.1	Clackamas County	6.1 Want each agency to take a proactive role within their own borders.	Updated: Convene regular local safety meetings made up of state and local transportation and public health professionals, equity representatives, police and fire, and community and advocacy organizations, to review progress on implementing safety plans and collaborate on specific topics, such as impairment, distracted driving, street design, and enforcement. Integrate Vision Zero/Toward Zero Deaths framework and priorities, including racial equity and public health.
6.10 (now 6.6)	Clackamas County	6.10 eliminate equity reference since it's an overarching theme	No change recommended: These themes have not generally been addressed and more opportunities to understand the racial and public health implications of transportation safety are needed.
6.11	Clackamas County	6.11 same	Deleted. Repetitive with 6.10 (now 6.6)
6.14 (6.8)	Clackamas County	6.14 There are campaign materials that can be used from RTZ, DTZ and VZ and other groups. Cast a wide net and use them all.	6.14 (now 6.8) updated: Identify funding for and develop at least one annual coordinated culturally appropriate and targeted mass media safety campaign in the region, utilizing campaign materials developed by NHSTA, Drive Toward Zero, Vision Zro, Toward Zero Deaths and other sources as appropriate. Strong, targeted advertising with high-visibility enforcement and publicity about that enforcement have proven to be most effective.
6.15 (now 6.9)	Clackamas County	6.15. This is a great idea.	Updated: Update the following sections of OAR 660-012-0000, the Oregon Transportation Planning Rule: • Section 0020 (2), , requiring Transportation System Plans to include a transportation safety plan, with data analysis that addresses all modes and is based on a safety inventory based on both an analysis of crash rates and an analysis of crash risks. • Section 0030 (1) and (2) identifying safety as a need. • Section 0060 (1)(c) clarifying that making a known safety problem worse constitutes a "significant effect".
6.16 (now 6.10)	Clackamas County	6.16 eliminate racial reference	No change recommended. Recent research in this area indicates that vision zero campaigns could exacerbate racial disparities.
6.17 (now 3.8)	Clackamas County	6.17 eliminate "reduce driving" add create mode options and encourage ….	Now 3.8: Pursue policies and tools to reduce vehicle miles traveled, including congestion pricing, multimodal facilities, transit and Transportation Demand Management programs.
RTP Target/ Objective	Washington County	The target and objective could be switched to more accurately reflect the intent and purpose.	• Helpful suggestion which is being taken into account. • Metro is still refining the overall framework to organize vision, goals, objectives, etc, for the 2018 RTP. Each of the modal and topical plans will follow the same framework.

		Objective 7.3 - By 2035 eliminatetransportation related fatalities and serious injuries for all users of the region's transportation system. Target - Fatal and severe injuries – reduce the number of fatal and severe injury traffic crashes each year by at least 5%, with a 16% reduction by 2020 (as compared to the 2015 five year rolling average), and a 50% reduction by 2025.	
Strategy 1	Washington County	FHWA states in Speed Concepts: Informational Guide (Publication No. FHWA-SA-10-001) • "The management of speed through appropriate speed limits is an essential element of highway safety. Appropriate speed limits are a prerequisite for effective and sustainable speed management. Speed limits should reflect the maximum reasonable speed for normal conditions. Speed limits should be accepted as reasonable by most drivers. Not all drivers will conform to reasonable speed limits. In essence, speed limits separate high-risk and reasonable behavior. If lower speed limits are desired, then engineering and other measures should be implemented that reduce speeds to a level that would support a lower limit." • "Research has repeatedly shown that changes in posted speeds have little effect on operating speeds."	• NHTSA states that speed limits are a highly effective way to control driving speeds, when enforced. *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, Eighth Edition. DOT HS 812 202. Washington, DC: US Department of Transportation, NHTSA, 2015* • Research has found that lowering speed limits can lead to sustained traveling speed reductions and crash reductions in urban areas. *Reducing Speeding-Related Crashes Involving Passenger Vehicles, Safety Study, National Transportation Safety Board, 2017* (pgs.27-29).
1.4	Washington County	This action does not address the context, engineering, or design of the system. While lower speeds clearly reduce both the frequency and severity of accidents the proposed action needs to address the context, engineering and design of the system. A uniform capping of speeds such as implied by this action may have the opposite outcome than desired and cause a greater difference in vehicle speeds resulting in higher injury rates. Establish appropriate speed limits that reflect the maximum reasonable speed for normal conditions with consideration for the safety and welfare of the traveling public	• Revised action: *Seek authority to lower speed limits on arterial roadways to appropriate safe speeds, generally 35 mph or less. Pedestrians are 80% more likely to die when hit by a vehicle traveling 40 mph versus 20 mph.* • This action does not recommend uniform capping. It recommends jurisdictions seek authority to lower speeds and recommends best practice speed for arterials in cities. Suggested revision is current practice and does not provide guidance on survivable speeds. Actions in the RTSAP are intended to provide guidance to go beyond current practice to reduce fatal and serious crashes. • The actions for Strategy 1 are meant to work together. Lowering speed limits, in unison with other actions such as 1.2 and 1.5, reflect a multi-pronged approach to achieve lower speeds and reduce speeding. • See response to previous comment. • *NACTO Urban Street Design Guide* recommends a design speed of less than 35 mi/h for urban arterials (2013, p. 141). • I*TE's Designing Walkable Urban Thoroughfares* recommends a design speed of 25–35 mi/h for a "Boulevard," which is similar to an arterial (2010, pp. 70–71). • Other cities are reducing posted speed limits as part of their safety strategies: NYC implemented a 25 mph speed limit on nearly all streets; Portland has identified gaining authority to lower speed limits on its High Crash Network as an action in its Vision Zero Action Plan (action S.2, S.3.); Seattle made the default arterial speed limit to 25 mph and the default non-arterial speed limit to 20 mph for the purpose of improving public health and safety.
1.7	Washington County	FHWA disagrees with this action. According to FHWA report *Intersection Proven Safety Counter Measures* "increased signal density contributes to substantially higher crash rates." (page 8) Current best practice nationally has demonstrated that this action may have the opposite outcome than desired.	• Action 1.7 deleted. It is covered in other actions, and the intention was not clear. • The intention of the action was not to recommend adding more intersections but to increase the number of existing intersections that are enhanced or have signals - combined with signal timing they can manage speed (e.g. downtown Portland).

		More study is necessary before this action should be considered as a safety counter measure. Eliminate this proposed action until such time that data is available that recognizes it as a proven safety counter measure.	• According to FHWA, it is the density of access points is what can lead to an increase in crashes (not necessarily that they are signalized or enhanced for pedestrian crossings). "Analysis of access-related crashes has revealed that driveways and minor uncontrolled intersections can be especially dangerous locations for pedestrians and bicyclists." (FHWA Corridor Access Management) • From FHWA Intersection Safety: "Intersections are planned points of conflict in any roadway system. Where different paths separate, cross or join are known as conflict points, and these are always present at intersections. Strategies to address intersection safety are diverse. Many strategies are engineering based, including geometric design and application of traffic control devices (such as signs, markings and signals). Most of the intersection safety work by FHWA focuses on engineering – all share a common foundation in human factors." • Access on throughways is highly managed, which is one reason these types of facilities can have less fatal and serious injury crashes. However, limiting access must be carefully balanced with access to services and destinations for non-driving modes. While being safe for driving, limited access facilities can present huge barriers to non-driving modes. Consolidating or eliminating driveways can have a positive safety impact for non-auto modes, but completely limiting access can have negative impacts on mobility.
Strategy 2 2.1 (now 3.1)	Washington County	Appears to be redundant with 1.4 and 1.7. Within available funding, implement design and engineering solutions identified in the Vision Zero Design Toolbox, the Highway Safety Manual and other accredited resources that have demonstrated safety improvements for all travelers.	All actions mentioning specific design treatments and countermeasures combined into Action 3.1, Updated: I*mplement/prioritize context sensitive and universal design and engineering solutions such as the Federal Highway Administration proven safety countermeasures, the Highway Safety Manual and other resources that have been shown to support safe speeds, protect vulnerable users and reduce fatal and severe crashes, focusing on arterial roadways and high injury corridors and intersections.Pedestrian design should account for the needs of all potential users, including those with physical or mental limitations. Design and engineering solutions should account for designated truck routes to safely move freight and agricultural equipment amid other modes.* Countermeasures with proven safety benefits include: • medians and pedestrian crossing islands – for pedestrian safety and to address head-on crashes • protected left turn signals • separation of travel modes on streets with higher traffic speeds, volumes, and truck volumes with protected bikeways and walkways • bicycle boxes • lead pedestrian intervals • pedestrian hybrid beacons • roundabouts • road diets • access management • driveway consolidation • backplates with retroreflective borders • freight aprons Reference to funding is unnecessary; funding and resource constraints apply to all of the actions.
2.2 (now 3.4)	Washington County	Existing data has shown that 10' travel lanes do not reduce speeds or capacity. Narrowing travel lanes to 10' may support other objectives in the appropriate context, but must factor in operational characteristics, vehicle type and user envelopes. For, example transit and truck routes may need 11-12' lanes.	Revised action (now 3.4): *Review standards for auto travel lane widths and develop criteria to explore making 10' travel lanes preferred standard for arterials in certain contexts, allowing more right-of-way for wider sidewalks, protected bikeways and other safety features.* • Ten foot travel lanes are already allowed, and the suggested revision by Washington County is

		Review standards for auto travel lane widths and explore allowing 10' travel lanes on a case-by-case basis accounting for existing space constraints and operational characteristics. Where space is available, use buffers to reduce side- swipe risks without increasing design speed.	already current practice– this action is about moving towards a more comprehensive and easily implemented use of this tool to achieve safety outcomes. • The purpose of this action is to identify practices that can increase the safety of vulnerable users. *Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts (2016) U.S. Department of Transportation, Federal Highway Administration:* Part 1 of the report states "Narrower lanes can improve comfort and safety for vulnerable users. By narrowing lanes, designers can create space for a separated bike lanes, a widened sidewalk with buffer, and reduced crossing distances, or a standard bike lane and widened buffer. Narrower lanes, as an element of an integrated urban street design, can contribute to lower operating speeds." • *National Cooperative Highway Research Program (NCHRP) Report 783, Evaluation of the 13 Controlling Criteria for Geometric Design (2014):* "On roadways with speeds of 45 mph or less, there are often good reasons for using narrow lanes as a flexibility measure to obtain other benefits: shorter pedestrian crossing distances, inclusion of turn lanes, medians, bicycle lanes, etc. These other benefits for road users, in and of themselves, constitute mitigation for the use of narrower lanes." • Portland and Seattle has made 10' travel lanes the preferred standard (when certain criteria are met).NYC is amending their traffic design manual to make 10-foot travel lanes their standard lane width in order to provide wider bicycle and pedestrian facilities and other roadway improvements. They recommend 11-foot travel lanes only under three conditions (designated freight route, lane immediately adjacent to opposing traffic, greater than 10 buses during peak hour, speed limit greater than 30 mph).
2.3 (now 3.5)	Washington County	This action appears to be redundant with action 1.7. As presented the action is too broad and makes a blanket statement that doesn't consider context. Furthermore, FHWA disagrees and has published data that says such a policy if implemented could make the system less safe. Washington County seeks first to manage access along arterials based on FHWA guidance. Appropriately spaced Protected crossings may be desirable on roadways with higher speeds and/or motor vehicle volumes. Encourage protected crossings, where warranted by existing pedestrians, to provide safe access to major transit stops, schools and other essential destinations.	• Revised action 2.3 (now 3.5): *Develop criteria and spacing standards and/or policies for enhanced pedestrian crossings in areas with pedestrian activity (such as transit access) and where enhanced crossings are further than 530 ft. apart.* • Action 1.7 has been deleted. • The intention of this action is to develop guidance and criteria for appropriate spacing. Portland is currently developing such guidance and criteria. Regionally, 530' is the connectivity standard for mixed-use and new development in the Regional Transportation Functional Plan. Where no street intersections exist the RTFP standard for bike and pedestrian connectivity is 330'. This action would define guidance and criteria for spacing of enhanced crossings. • Access management is a good tool and will be added to the list of actions. Limiting access must be carefully balanced with access to services and destinations for non-driving modes. While being safe for driving, limited access facilities can present barriers to non-driving modes, if crossings are not provided. Consolidating or eliminating driveways can have a positive safety impact for non-auto modes, but completely limiting access can have negative impacts on mobility. • While intersections and access points are spots for conflict, they are necessary for access and mobility. The intention of this action is to make existing crossings safer, and to add enhanced crossings on streets with limited opportunities to cross safely. *NCHRP 562: Improving Pedestrian Safety at Unsignalized Crossings* notes that increases in distance between crossings are twice as likely to affect jaywalking as increases in traffic volumes (having to wait a long time to cross the street).
2.4 (now 3.6)	Washington County	There is the risk that if we establish this as a standard for safety it may become a requirement of development. As a requirement the additional land area and/or expense may reduce the ability to exact *any* bicycle facility whatsoever from a development due to proportionality concerns. In such circumstances a bike lane is preferable to none. Therefore, we need to be careful on the wording establishing that it is not a standard but a preferred treatment.	Revised action (now 3.6): Explore policies to make protected bike lanes the preferred design for arterial roadways with posted speeds of 30 mph or higher, and/or average daily traffic above 6,000 autos per day, and/or heavy truck volumes. • The Regional ATP design guidance recommends protected bike lanes on streets with traffic ADT greater than 6,000 and where the posted speed is above 35 mph. However, NACTO is releasing

		Consider not including specific speed and volumes values or increase to 35 MPH and 10,000 ADT. Protected bike lanes or other types of enhanced bicycle facilities are desirable on roadways with higher speeds and/or motor vehicle volumes. Encourage protected facilities in such circumstances where practicable.	new guidance which recommends protected bike lanes on streets with speeds posted above 25 mph. • The City of Portland has developed guidance for protected bike lanes and have direction to make protected bike lanes the standard. Metro will look into the issue of development requirements and how the policy is being implemented to avoid the issue you raise.
2.10 (now 3.7)	Washington County	No additional research is necessary. There is sufficient evidence that street lights improve safety. Illuminate the transportation system appropriately by: • Requiring new development and redevelopment in the urban area to install street lighting, • Integrating street lighting into major transportation improvement projects, where appropriate. • Exploring a variety of lighting options and identify the appropriate contexts to use them. • Considering street lighting designs and practices that limit impacts on neighborhoods and agriculture	Revised action 2.10: *Illuminate the transportation system appropriately by:* • *Requiring new development and redevelopment in the urban area to install street lighting,* • *Integrating street lighting into major transportation improvement projects, where appropriate.* • *Exploring a variety of lighting options and identify the appropriate contexts to use them.* *Considering street lighting designs and practices that limit impacts on neighborhoods, wildlife and agriculture.*
2.11 and 2.12 (combined into 2.11	Washington County	These appear to be outside the scope of regional policy. As presented, the action is unrelated to the target. Delete.	• Combined 2.11 and 2.12. Revised action (now 2.11): *Explore opportunities to increase large vehicle industry awareness of safety benefits of rear wheel and side guard and front and side mirrors. Explore opportunities to collaborate with the US DOT, City of Portland and other agencies to increase use of such safety features.* • These are proven safety measures can decrease fatalities for people walking and bicycling as much as 61% (2005 study in the UK). *How can cities increase the safety of large vehicles in urban areas? Vision Zero Network case study, 2017.* • Portland is exploring ways to increase awareness and use of this safety feature. Jurisdictions such as Chicago, New York City and London have made these safety features a requirement. • Action is consistent with regional policies to convene and educate and support best practice programs.
Strategy 3	Washington County	Add reference to a number of other proven counter measures and/or include in the Toolbox • Safety edge for pavement drop-offs • Roundabouts • Corridor Access Management • Backplates with retroreflective borders • Longitudinal rumble strips and stripes on 2 lane roads • Enhanced delineation and friction for horizontal curves • Medians and pedestrian crossing islands • pedestrian hybrid beacons • Roadway reconfiguration "road diet"	Revised action 3.1: I*mplement/prioritize context sensitive and universal design and engineering solutions such as the Federal Highway Administration proven safety countermeasures, the Highway Safety Manual and other resources that have been shown to support safe speeds, protect vulnerable users and reduce fatal and severe crashes, focusing on arterial roadways and high injury corridors and intersections.Pedestrian design should account for the needs of all potential users, including those with physical or mental limitations. Design and engineering solutions should account for designated truck routes to safely move freight and agricultural equipment amid other modes.* Countermeasures with proven safety benefits include: • medians and pedestrian crossing islands – for pedestrian safety and to address head-on crashes

			• protected left turn signals • separation of travel modes on streets with higher traffic speeds, volumes, and truck volumes with protected bikeways and walkways • bicycle boxes • lead pedestrian intervals • pedestrian hybrid beacons • roundabouts • road diets • access management • driveway consolidation • backplates with retroreflective borders • freight aprons Will review list of countermeasures further. Focus is on multi-modal high injury corridors
3.9 (now 3.6)	Washington County	Washington County has locally funded transportation projects addressing deficiencies in our transportation network for 30 years resulting in a safer transportation system as evidenced by the State of Safety Report. This strategy needs more careful deliberation and consideration of geographic and financial equity. Prioritize funding for safety projects that provide benefits to all users of the transportation system in a geographically equitable manner: • Increase safety for the traveling public • Are at a location with a demonstrated accident history, safety concern, or other risk factor • Demonstrate an improved safe route to a school, prioritizing title 1 schools, and transit • In areas with high concentrations of people of color, lower incomes and/or lower English proficiency.	Revised action 3.9 (now 3.6): Prioritize funding for projects that: • Increase safety for vulnerable users, including people walking, bicycling and accessing transit and schools (increasing safety for vulnerable users has been shown to increase safety for all users) • Are on a high risk or injury location, with demonstrated crash history, safety concern or other risk factor • Increases safety in areas with high concentrations of people of color, people with low-incomes and people with low English proficiency Intent is to recommend areas for investments to achieve the greatest safety benefit, based on data, not set criteria for competitive grant program. Metro uses the word “crash” as opposed to “accident” - Crash encompasses a wider range of potential causes for vehicular crashes than does the term accident. A majority of fatal crashes are caused by intoxicated, speeding, distracted, or careless drivers and, therefore, are not accidents.
3.10	Washington County	How would new facilities be evaluated? Revise to account for new facilities.	Action has been deleted
3.1 and 3.12	Washington County	Consolidate into a single action statement and related to 3.9	• 3.11 – deleted • 3.12 moved into RTSAP Implementation chapter
3.16 (now 3.8)	Washington County	Reword: Consider congestion pricing as a method to reduce motor vehicle traffic	Revised action (now 3.8): Pursue policies and tools to reduce vehicle miles traveled, including congestion pricing, multimodal facilities, transit and Transportation Demand Management programs. This action is consistent with current policies. Region is pursuing as part of implementation of the RTP; HB 2017 directs ODOT to implement value pricing by December 2018.
3.16 and 3.17	Washington County	These actions appear outside the scope of a regional safety action plan and targeted at reducing motor vehicle volumes as a method of improving safety mixing in other aspirational objectives under the name of safety. The Regional Transportation Safety Action Plan ought to focus on short-term and proven safety counter measures. Delete.	• 3.16 (now 3.8)– wording revised, see above • 3.17 (now 3.8) – combined into new action with 3.16 - now 3.8 The current *Regional Transportation Safety Plan (2012)* includes recommended strategies to “reduce the need to drive, and therefore reduce vehicle miles traveled.” The rationale for these strategies is based on findings from the *2012 Metro State of Safety Report*: Higher levels of vehicle miles traveled correlate with

			more fatal and serious crashes due to increased exposure (Sections 1 & 8)
Strategy 4 and 5	Washington County	Both strategies represent driver behavior and enforcement. Consider combining.	No change recommended at this time. Though there is overlap between driving while impaired and behaviors such as speeding, impairment is such a critical factor in fatal crashes that it seemed to warrant its own strategy.
4.2, 4.3 and 4.4	Washington County	Appear to be redundant	4.2 and 4.4 deleted. 4.3 (now 4.2) revised: Increase penalties for dangerous behaviors, identifying actions to reduce the disproportionate impacts from fines on people of color and people with low incomes, such as diversion classes and other non-monetary penalty options.
4.5 and 5.1	Washington County	Appear to be redundant	4.5 and 5.1 deleted and combined into 6.1. Revised action 6.1: Convene regular local safety meetings made up of state and local transportation and public health professionals, equity representatives, police and fire, and community and advocacy organizations, to review progress on implementing safety plans and collaborate on specific topics, such as impairment, distracted driving, street design, and enforcement. Integrate Vision Zero/Toward Zero Deaths framework and priorities, including racial equity and public health.
4.8 (now 4.4) and 5.6 (now 5.5)	Washington County	Appear to be redundant	No change recommended (now 4.4 and 5.5)
6.1, 6.7 and 6.9	Washington County	Could be combined	6.8 combined with 6.7 (6.8 deleted) Revised action 6.7 (now 6.6): *Support development of city and county Transportation Safety Action Plans and Vision Zero targets, participate in local, regional and state safety task forces, and develop and participate in state, regional and city safety summits.*
6.10 and 6.11 (now 6.6)	Washington County	Appear to be redundant	6.10 combined with 6.11 (6.10 deleted) Revised action 6.11(now 6.6): *Identify funding and opportunities to develop safety workshops and training programs for state, regional, county and city staff on Vision Zero framework and priorities, including racial equity and public health*
6.15 (now 6.9)	Washington County	This needs more deliberation. The first section requiring a Transportation System Plan (TSP) to include a Transportation Safety Action Plan (TSAP) is unworkable. A TSP under the Transportation Planning Rule (TPR) 660-012-0010(1) "establishes land use controls and a network of facilities and services to meet overall transportation needs." often described as: the need, mode and general location of transportation facilities. While a TSAP establishes near-term actions intended to address system safety. These processes have very different objectives and the TSP process is complex enough without adding a significant near-term action list into the mix. Suggested revision: Update Section 0020 of the Oregon	• Revised wording (now 6.12): *Update the following sections of OAR 660-012-0000, the Oregon Transportation Planning Rule:* ○ *Section 0020 (2), , requiring Transportation System Plans to include a transportation safety plan, with data analysis that addresses all modes and is based on a safety inventory based on both an analysis of crash rates and an analysis of crash risks.* ○ *Section 0030 (1) and (2) identifying safety as a need.* ○ *Section 0060 (1)(c) clarifying that making a known safety problem worse constitutes a "significant effect".* • Safety can be considered a need as defined in the TPR: Section 0005 "Transportation Needs" means estimates of the movement of people and goods consistent with acknowledged comprehensive plan and the requirements of this rule. Needs are typically based on projections of future travel demand resulting from a continuation of current trends as modified by policy objectives, including those expressed in Goal 12 and this rule, especially those for avoiding principal reliance on any one mode

		Transportation Planning Rule to include a requirement for a safety inventory based on both an analysis of crash rates and an analysis of crash risks in subsection (3)(a). Update Section 0060 (1)(c) of the Oregon Transportation Planning Rule (plan amendments) clarifying that making a known safety problem worse constitutes a "significant effect".	of transportation. " Safety falls under the needs definition in terms of current trends (crashes) as modified by policy objectives (e.g. safety targets, goals and objectives) including those expressed in Goal 12, which starts out: "To provide and encourage a safe, convenient and economic transportation system", and continues "is based on an inventory of needs" (e.g crash locations and strategies to address the needs). • Safety is identified as a need in the 2014 RTP. • TSPs address existing and future needs and include near term and long term projects and programs. • Like other plans in TSPs (e.g. freight, transit, pedestrian) a safety plan in a TSP does not need to be as extensive as Washington County's TSAP.
Add/ modify	Washington County	Reducing conflict points as a strategy. A whole series of actions proven to reduce fatal and sever crashes fall under this strategy, and have served Washington County well over the last 30 years as evidenced by the State of Safety Report.	It would be great to see these specific actions.
Add	Washington County	Consider adding an action that promotes access management as an effective approach to reducing conflicts. FHWA states that "corridor access management has been shown to improve safety by reducing, managing, and separating conflict points, which increases available response time for all roadway users, including pedestrians and bicyclists. Safety benefits have also been attributed to certain improvements in traffic flow. In particular, improved traffic operations can engender more consistent driver behavior and reduce aggressive actions, such as speeding, red light running, and failing to yield the right- of-way." Reduce the number of access points on collectors and arterials. When possible remove or consolidate driveways.	Added to action 3.1 access management to the list of suggested countermeasures. Limiting access must be carefully balanced with access to services and destinations for non-driving modes. While being safe for driving, limited access facilities can present huge barriers to non-driving modes. Consolidating or eliminating driveways can have a positive safety impact for non-auto modes, but completely limiting access can have negative impacts on mobility. "Successful access management, managed by change in access density, seeks to simultaneously enhance safety, preserve capacity. " FHWA
ADD	Washington County	Consider adding an action that promotes separating travel modes as an effective approach to reducing conflicts. Where and when practicable, separate travel modes and minimize conflicts between and within modes Identify appropriate safety solutions for designated truck routes to safely move freight and agricultural equipment amid other modes	Added to 3.1
General	ODOT	Will strategies and actions be adopted as an element of the RTP? Will the Regional Functional Plan be amended to reflect the actions that apply to city and county TSPs?	Most likely not. The action will be the same as for the toolbox of actions identified in the Climate Smart Strategies. The strategies and actions are best practices and are not required. The Regional Transportation Functional Plan will not be updated as part of the 2018 RTP. There could be recommendations in the RTSAP to update the RTFP in the next update of the RTP.
	ODOT	Regarding the numbering: please move actions relating to Impairment to # 1, since Impairment consistently is a greater contributing factor than Excessive Speed (e.g. impairment is a contributing factor to 57% of fatalities, versus excessive speed at 33%).	No change recommended. The order of the actions does not infer that one is more important than another. All of the strategies are equally important. Will add note to that affect in the RTSAP.
1.4	ODOT	Action 1.4: specify "on arterials" – this action is not appropriate for freeways. Cities and counties to seek authority to set their own speed limits. Refer to ODOT TSAP for the language for changing the process of setting speed limits.	Change has been made.

1.6 (now 1.5)	ODOT	Action 1.6: what is this?	Speed signs
1.7	ODOT	Action 1.7: I'm not sure I understand the intent on this one. Increasing the density of protected crossings doesn't necessarily mean that people will drive slower, especially if they aren't used. You need to change the context of the corridor and this isn't a standalone measure. I think this should be removed because Action 2.1 is more appropriate.	Action has been deleted. Intent of action is covered in what is now action 3.5
2.1 (now 3.1)	ODOT	Action 2.1: been shown to 'reduce serious crashes' instead of slow speeds. Enhanced crosswalks instead of protected.	Changes made to what is now action 3.1
2.2 (now 3.4)	ODOT	Action 2.2: Need to consider standards for NHS routes, truck volumes, bus volumes, interchange areas, land use. Not a proven safety countermeasure. I need to follow up with our Roadway unit on this one.	Updated wording to include identifying criteria (such as NHS routes)
2.3 (now 3.5)	ODOT	Action 2.3: How will we prioritize locations for crossings?	Updated: Develop criteria and spacing standards and/or policies for enhanced pedestrian crossings in areas with pedestrian activity (such as transit access) and where enhanced crossings are greater than 530 feet apart.
2.4(now 3.6)	ODOT	Action 2.4: start by making this the standard for multi-lane arterial and collector streets with posted speeds at or over 35 mph. We can refine this in the Livable Streets Handbook to differentiate between standards for designing new streets and for retrofitting existing streets. If ODOT, cities and counties are supposed to take the lead on this, you're more likely to succeed with a more reasonable target.	Updated: Explore policies to make protected bike lanes the preferred design for arterial roadways with posted speeds of 30 mph or higher, and/or average daily traffic above 6,000 autos per day, and/or heavy truck volumes.
2.10 (now 3.7)	ODOT	Action 2.10: Is this for lineal lighting?	For intersection and linear
2.13 (now 2.6)	ODOT	Action 2.13: add cities and counties as Leads, not just Partners, and express the expectation that they do this as part of any TSP update (and amend the RTFP accordingly).	Added cities and counties as partners; Updated action: Evaluate pedestrian and bicycle crash locations and risk factors in TSPs though analysis of existing data and development of new data sources.
3.6 (now 3.8)	ODOT	Action 3.6 Do you mean 'investigate" on the spot, or investigate crash data after the fact?	Both
3.7 (now 3.6)	ODOT	Action 3.7: specify what communities are considered "historically marginalized communities" in the Portland Metro area.	Changed historically marginalized communities to: areas with high concentrations of people of color, people with low-incomes and people with low English proficiency
4.5, 4.6, 5.1 and others	ODOT	Actions 4.5, 4.6, 5.1 and others: Note that the Oregon State Police (OSP) is not part of	Partners sections updated to reflect this

		ODOT – some actions apply to the OSP rather than ODOT, some to both.	
6.3 (now 6.4)	ODOT	Action 6.3: “engage and partner” on what?	Updated: Identify opportunities to engage and partner with community based organizations and advocates, especially to increase opportunities for proactive monitoring and feedback gathering from the community on their safety issues and concerns. Conduct targeted outreach/education to communities near high injury arterials and intersections, focusing on historically marginalized communities.
6.5	ODOT	Action 6.5: DLCD should be the lead for this. They and the OSP should also be listed under State agencies.	Change made. Added under state agencies
Strategy 2	Safe Routes to School National Partnership	Protect Vulnerable Users: second bullet of description: fatality rates for pedestrians are more than three times as high ... (as opposed to twice as high)	Corrected. Data point moved out of table and into Section 3 of the RTSAP
Strategy 4, #4.1	Safe Routes to School National Partnership	Strongly advocate for removing this action item, as an increase in enforcement can lead to an increase in racial profiling. Suggest exploring the idea of replacing Action Item #4.1 with "Identify actions to reduce the disproportionate impacts from enforcement on people of color and people with low incomes"	No change recommended. Racial profiling is a concern and actions, including fully implementing Oregon’s anti-racial profiling law, must be taken. However, enforcement of dangerous behaviors is a recommended action to reducing fatal and severe crashes. Update 4.1: Focus high visibility enforcements on dangerous behaviors (speeding, failing to yield to pedestrians, signal violations, improper turns/illegal turns, texting while driving) and high injury corridors, <u>taking</u> actions to reduce the disproportionate impacts on people of color and people with low incomes, <u>including fully implementing Oregon’s anti-racial profiling bill (House Bill 2355). Research shows that high-visibility enforcement can reduce drunk driving fatalities by as much as 20%.</u> Also updated 5.1: Identify funding to send law enforcement to Drug Recognition Experts (DRE) training, <u>and training to prevent profiling.</u>
4.2	Safe Routes to School National Partnership	Action Item #4.2 - suggest including language about diversion classes and other non-monetary penalties here	4.2 updated: Increase penalties for dangerous behaviors, identifying actions to reduce the disproportionate impacts from fines on people of color and people with low incomes, <u>such as diversion classes and other non-monetary penalty options.</u>
General	Safe Routes to School National Partnership	Will there be effectiveness recommendations for all actions?	That is the intent. Still researching effectiveness for some of the actions.

7/19/17 DRAFT Strategies and Actions – Regional Transportation Safety Action Plan

Action Item #	Actions	Lead	Partners	Effectiveness
	❶ Reduce speeds and speeding Speed is the fundamental factor in crash severity – as speed increases so does risk of death in a crash, especially for people walking. Reducing speeds in the urban area must be prioritized to eliminate fatal crashes. Along with alcohol, drugs, and aggressive behavior, speed is the most common contributing factor in fatal crashes. • Speed is a factor in 7.5% of all crashes, but in 33% of fatal crashes • 55% of serious speed related crashes occurred on an arterial, and 71% occurred at a non-intersection • 25% of serious motorcycle crashes, 25% of serious freeway crashes, and 22% of serious truck crashes involved speed • 51% of serious speed related crashes involved a fixed object • 97% of serious speed related crashes involved aggressive behavior, and 38% involved alcohol • **Add data on race and ethnicity and age from state level analysis			
1.1	Implement/ prioritize design and engineering solutions indentified in the 'Vision Zero Design Toolbox' the Highway Safety Manuel and other resources that have been shown to slow speeds and reduce crashes – including, traffic/pedestrian signals, signal timing, medians and roundabouts	Cities, counties, ODOT, TriMet, SMART	Metro, public health, advocates	Proven and/or recommended
1.2	Increase the number of streets in the region eligible for fixed speed camera installation, especially at high injury locations	Cities, counties	ODOT, Metro, public health, advocates	Proven
1.3	Utilize authority provided through HB 2409 to issue speeding tickets through red light cameras	Cities, police	Public, health, advocates	Proven
1.4	Lower speed limits in urban areas to less than 35 mph	Cities, counties	ODOT, Metro, public health, advocates	Proven

Action Item #	Actions	Lead	Partners	Effectiveness
1.5	Design streets for desired speed, using design elements such as those identified in the Vision Zero Design Toolbox	ODOT, cities, counties	ODOT, Metro, public health, advocates	Proven
1.6	Fund and install intelligent speed adaptation technologies that alert the vehicle traveling over the speed limit, prioritizing high risk and high injury corridors	ODOT, cities, counties	Metro	Proven
1.7	Increase the density of protected crossings and signalized intersections, especially on high injury corridors, to lower operating speeds	ODOT, cities, counties	ODOT, Metro, public health, advocates	

❷ Protect Vulnerable Users

Vulnerable users are groups of people that are killed or seriously injured more often in crashes than other groups. Vulnerable users are pedestrians, bicyclists, motorcyclists, children, older adults, people of color and people with lower incomes.

- 56% of Regional High Injury Corridors are in areas with higher concentrations of people of color, people with low incomes and people with low English proficiency (Add analysis for high injury intersections)
- 36% of all fatal crashes involve a pedestrian (the most common fatal crash type), and 18% involve a motorcyclist
- While 1.4% of auto-only crashes are serious, crashes involving motorcycles (18%), pedestrians (16%), and bicycles (7%) have a higher serous crash rate
- 5% of serious bicycle crashes involved a truck, and 10% of serious truck crashes involved a bicycle
- In Oregon, 15% of the population is over 65, and account for 20% of pedestrian deaths
- In Oregon, American Indians/Alaska Natives have the highest average rate of deaths (5.9 per 100,000) 1.8 times the rate among whites (3.3 per 100,000) (2008-2014 crashes)
- In Oregon, American Indians/Alaska Natives and Black or African American had the highest hospitalization rate - 52.2 and 46.2 per 100,000, compared to 45.5 for whites and 20.8 Asian Pacific Islander (2012-2014)
- In Oregon, motor vehicle crashes are a leading cause of death for children
- **Add additional data on race, ethnicity, age and income as available

Action Item #	Actions	Lead	Partners	Effectiveness
2.1	Implement design and engineering solutions indentified in the 'Vision Zero Design Toolbox' the Highway Safety Manuel and other resources that have been shown to slow speeds and make it safer for people walking and bicycling – including protected crosswalks, crosswalk lighting, protected bike lanes, medians, road diets and roundabouts	Cities, counties, ODOT, TriMet, SMART	Metro, public health, advocates	Proven and/or recommended
2.2	Review standards for auto travel lane widths and explore making 10' travel lanes standard for arterials (if not already standard), slowing traffic and allowing more right-of-way for wider sidewalks, protected bikeways	Cities, counties, ODOT	Metro, public health, advocates	
2.3	Develop policies and standards for spacing of marked and protected crossings in urban areas and explore standardizing marked crossings every 550' (if not already standard)	Cities, counties, ODOT	Metro, public health, advocates	
2.4	Develop policy to make protected bike lanes the standard for streets with posted speed of 25 miles per hour or higher and/or average daily traffic above 6,000 autos a day, and/or heavy truck volumes	Cities, counties, ODOT	Metro, NACTO, public health, advocates	
2.5	Fund Safe Routes to School Programs, prioritizing schools in areas with higher concentration populations of people with lower incomes, minorities, and low English proficiency	ODOT, Metro, cities and counties	Schools, public health, advocates	Recommended
2.6	Identify funding for and provide trainings for senior citizens on walking and bicycling	ODOT, Metro, cities and counties, Senior advocates, public health	Advocates	Recommended

Action Item #	Actions	Lead	Partners	Effectiveness
2.7	Increase opportunities to provide education and products to increase visibility of people walking and bicycling (e.g. lights)	ODOT, cities and counties, schools	Public health, advocates	Recommended
2.8	Support and develop regional program to coordinate and collect bicycle and pedestrian count data	Metro	ODOT, cities and counties, PSU	Recommended
2.9	Support ODOT to make crash data on race and ethnicity of victims available	ODOT	Metro, cities and counties, PSU	
2.10	Research effectiveness of street lights relative to reducing pedestrian and bicycle crashes in urban areas	TBD		Unknown
2.11	Define process to develop policy to outfit large vehicles with front and side mirrors to improve visibility	TBD		Proven
2.12	Define process to develop policy to outfit large vehicles with rear wheel and side guards	TBD		Proven
2.13	Evaluate pedestrian and bicycle crash locations and risk factors though analysis of existing data and development of new data sources	ODOT, Metro	Cities, counties	

Action Item #	Actions	Lead	Partners	Effectiveness
	❸ Focus safety countermeasures on high injury and high risk intersections and corridors Not all streets in the region are the same. A majority of fatal and severe crashes occur on a small sub-set of streets, primarily arterials, and intersections. These corridors and intersections also have high crash risk characteristics. • 60% of serious crashes occur on 6% of the region's roadways • 49% of serious crashes occurred at an intersection, while 73% of serious bicycle crashes occurred at an intersection • 69% of all serious crashes occurred on an arterial • 75% of serious pedestrian crashes occurred on an arterial • 85% of serious failure to yield crashes are at an intersection • 81% of serious bicycle involved, and 50% of serious pedestrian involved crashes are fail to yield crashes • 63% of serious bicycle involved crashes are turning involved (while only 1% of serious pedestrian involved crashes are turning involved) and 20% of serious turning crashes are bicycle involved			
3.1	Implement context sensitive design and engineering solutions indentified in the 'Vision Zero Design Toolbox' the Highway Safety Manuel and other resources to reduce serious crashes– including medians, protected left turn signals, bicycle boxes, pedestrian lead intervals, road diets and roundabouts	Cities, counties, ODOT, TriMet, SMART		
3.2	Develop and adopt Complete Streets policies and a complete streets checklist	ODOT, Metro, cities and counties		Unknown
3.3	Conduct routine evaluation of effectiveness of traffic safety interventions	ODOT, cities and counties, academic institutions	Metro, advocates, public health	Recommended
3.4	Identify resources to develop a regional crash prediction modeling tool that utilizes and links social and environmental factors with injury data	Metro	FHWA, ODOT, public health, academic inst.	Proven

Action Item #	Actions	Lead	Partners	Effectiveness
3.5	Perform engineering reviews at all traffic fatality and high collision locations, and at scenes of fatal and severe crashes	Cities, counties, ODOT		Recommended
3.6	Investigate crashes that result in fatalities as well as crashes that result in severe injuries	Police, cities, counties, ODOT		Recommended
3.7	Targeted outreach/education to communities near high injury arterials and intersections, focusing on historically marginalized communities	Cities, counties, ODOT, Metro		Recommended
3.8	Prohibit right turn on red at high risk and high injury locations	Cities, counties		Recommended
3.9	Prioritize funding for safety projects that: • Increase safety for people walking, bicycling and accessing transit • Are on a high risk or injury location • are within 1 mile of schools, prioritizing Title 1 schools, and transit • are in areas with high concentrations of people of color, people with low-incomes and people with low English proficiency	Metro, ODOT, counties and cities	Public health, advocates	
3.10	Require regionally funded transportation projects to conduct and provide before and after case studies to understand impact	Metro		
3.11	Prioritize safety projects in regional funding opportunities. Further prioritize safety projects near Title 1 schools and near transit stops in areas with historically marginalized communities	Metro, ODOT, cities and counties		

Action Item #	Actions	Lead	Partners	Effectiveness
3.12	Track level of investment in safety projects in the Regional Transportation Plan and local Transportation System Plans	Metro, cities and counties		
3.13	Track level of investment of safety projects on high injury corridors and intersections in the Regional Transportation Plan and local Transportation System Plans	Metro, cities and counties		
3.14	Use Highway Safety Manuel crash prediction project analysis to guide project development	ODOT, cities and counties		
3.15	Provide best practices for Vision Zero street design in the Designing Livable Streets regional street design guidelines and tools	Metro	ODOT, cities and counties, public health, advocates	
3.16	Pursue congestion pricing to reduce traffic volumes	ODOT, Metro, cities and counties		Recommended
3.17	Support Transportation Demand Management programs to reduce car dependence, improve transit and promote walking and bicycling	ODOT, Metro, cities and counties		Unknown
3.18	Identify funding to update and maintain regional Crash Map tool	Metro		
3.19	Support implementation of the Oregon 2017 Commercial Vehicle Safety Plan	ODOT, cities, counties, Metro		

Action Item #	Actions	Lead	Partners	Effectiveness
	❹ Address and minimize impact of dangerous behaviors Dangerous behaviors include aggressive behavior, distracted driving, following too close, failing to yield the right of way, hit and run, and excessive speed (see actions to reduce speed). Actions can address individual behavior change and make systems changes that reduce the impacts of dangerous behaviors. • 41% of auto-only serious crashes involved aggressive behavior (compared to 9% of pedestrian involved crashes and 8% of bicycle involved crashes) • 36% of fatal crashes involve aggressive behavior • 40% of serious crashes are fail to yield ROW involved • 100% of serious following too closely crashes involved aggressive behavior • 64% of serious freeway crashes involved aggressive behavior • Drivers use their cell phones 88 out of 100 trips (analysis of 570 million trips in US) • 75% of drivers drive distracted when alone, and 44% when driving with passengers			
4.1	Focus enforcements on dangerous behaviors (speeding, failing to yield to pedestrians, signal violations, improper turns/illegal turns, texting while driving) and high injury corridors	Police, cities, counties		Recommended
4.2	Research updating fine structure(s) to promote equitable traffic enforcement strategies that do not have disproportionate economic impact on people with low incomes			
4.3	Increase penalties for driving with a suspended license, identifying actions to reduce the disproportionate impacts from fines on people of color and people with low incomes			Recommended
4.4	Update DMV point penalty structure so that dangerous offenses are punished with the most severe point values, identifying actions to reduce the disproportionate impacts on people of color and people with low incomes			

Action Item #	Actions	Lead	Partners	Effectiveness
4.5	Convene regular meetings of transportation leaders and police to review traffic safety performance and determine strategies for improvement	Cities, counties, ODOT		Recommended
4.6	Conduct high visibility enforcement of distracted driving/ texting while driving, identifying actions to reduce the disproportionate impacts from fines on people of color and people with low incomes	ODOT, cities and counties, police		Proven
4.7	Support implementation of recommendations identified in Reducing Distracted Driving in Oregon report, including implementing an education and media campaign, developing a distracted driving toolkit, and engaging in distracted driving research	ODOT, cities and counties		
4.8	Support auto insurance companies to provide reduced auto insurance to drivers that install technologies to turn off phone			
4.9	Compile a comprehensive list and contacts of private sector companies that operate large numbers of vehicles in the region. Identify a process that supports state and local partners to engage in outreach regarding safe driving behaviors to members, workforces and customers – companies such as ride hailing services and trucking companies	Metro	ODOT, cities and counties, commercial vehicle companies	
4.10	Support legislation to increase funding for and access to driver education, frequency of testing, and inclusion of urban transportation safety in test materials	Metro, ODOT, cities and counties		

Action Item #	Actions	Lead	Partners	Effectiveness
	❺ Address impairment Crashes involving alcohol and drugs have a much higher likelihood of being fatal than other crashes. • 57% of fatal crashes involved alcohol or drugs • 20% of serious auto-only crashes and 38% of serious pedestrian crashes are alcohol and/or drug involved • 27% of serious alcohol involved, and 29% of serious drug involved crashes are pedestrian involved • 56% of serious alcohol involved, and 57% of serious drug involved crashes are auto-only crashes • 77% of serious alcohol involved, and 56% of serious drug involved crashes occurred at night • 36% of serious alcohol and drug involved crashes are speed involved • 51% of serious drug involved crashes are also alcohol involved • **ADD data on race and ethnicity			
5.1	Convene and/or coordinate targeted workgroup of safety professionals (police, fire, emergency services, etc.) to continue to review and develop targeted strategies to reduce the prevalence of driving under the influence of alcohol and/or drugs	ODOT, cities, counties	Metro	
5.2	Provide training and education in impairment detection for law enforcement	Police, cities, counties, ODOT		
5.3	Adopt National Transportation Safety Board recommendation to reduce Blood Alcohol Concentration limit to 0.05	State		Proven
5.4	Explore usefulness of pre-paid morning parking programs	Cities, counties		Recommended
5.5	Promote use of apps such as SaferRide developed by NHSTA, which provide people easy ways to find a safe ride home	Cities, counties, ODOT		

Action Item #	Actions	Lead	Partners	Effectiveness
5.6	Partner with industry groups and vehicle manufacturers to further the use of technology to reduce impaired driving			Recommended
	❻ Ongoing Engagement, Education and Planning			
6.1	Convene a regional Vision Zero Work Group, made up of state and local transportation and public health professionals, equity representatives, police and fire, and community and advocacy organizations, to meet quarterly to review progress and collaborate on specific topics, such as reducing drunk driving.	Metro/ODOT	Cities and counties, ODOT, public health, advocates, TriMet, SMART	Recommended
6.2	Provide an annual Vision Zero report back to JPACT and Metro Council, reporting on safety targets and RTSAP implementation	Metro	Cities and counties, ODOT, TriMet, SMART, public health, advocates	Recommended
6.3	Identify opportunities to engage and partner with community based organizations and advocates	Metro, ODOT, cities and counties	Public health, advocates	
6.4	Continual and proactive monitoring and feedback gathering from the community on their safety issues and concerns	ODOT, cities and counties		Recommended
6.5	Maintain Metro webpage on transportation safety	Metro		
6.6	Update Metro webpage annually with MAP-21 transportation safety performance measure data; include data on race and ethnicity as available	Metro		

Action Item #	Actions	Lead	Partners	Effectiveness
6.7	Support development of city and county Transportation Safety Action Plans and Vision Zero targets Participate in local and state safety task forces	Metro, ODOT, TriMet		
6.8	Develop and participate in state, regional, county and city safety summits	Metro, cities and counties, ODOT, TriMet, SMART	Public health, advocates	
6.9	Identify opportunities to advance Vision Zero policies, practices and projects in federal programs with US DOT and Congress	ODOT, Metro, FHWA, cities and counties		
6.10	Identify funding and opportunities to host safety workshops, including a focus on racial equity and public health	Metro, ODOT	FHWA	
6.11	Develop training programs for state, regional, county and city staff on Vision Zero framework and priorities, , including racial equity and public health	ODOT, Metro, TriMet, cities and counties		
6.12	Review and update trainings for state, county and city police officers to reflect new traffic safety priorities and regularly conduct trainings, including racial equity and public health	Cities, counties		Recommended
6.13	Identify funding for and develop at least one coordinated culturally appropriate mass media safety campaign in the region	Metro, cities, counties, ODOT		

Action Item #	Actions	Lead	Partners	Effectiveness
6.14	Utilize campaign materials developed by NHSTA to promote safety awareness	Metro, cities, counties, ODOT		
6.15	Update Section 0020 of the Oregon Transportation Planning Rule requiring Transportation System Plans to include a transportation safety action plan, with data analysis that addresses all modes and is based on both an analysis of crash rates and an analysis of crash risks. Update Section 0060 (c) of the Oregon Transportation Planning Rule (plan amendments) clarifying that making a known safety problem worse constitutes a "significant effect".			
6.16	Support safety legislation and regulations at the state and federal level that implement Vision Zero and do not increase racial disparities	Metro, ODOT, cities, counties, advocates		
6.17	Support and implement land use and transportation policies that reduce driving and encourage transit, walking and bicycling	Metro, state agencies, cities and counties	Advocates, public health	

Partners

Government alone cannot achieve the broader changes needed to end traffic fatalities. In addition to national, state, regional and local agencies, multiple organizations, private entities and the public play a role in achieving Vision Zero.

National agencies
U.S. Department of Transportation
Federal Highway Administration
National Highway Traffic Safety Administration

State agencies
Oregon Department of Transportation
Oregon Health Authority
Department of Motor Vehicles

Regional agencies and Districts
Metro
TriMet
SMART
Portland of Portland

Local agencies – transportation/ public health professionals
City and county transportation and public health agencies

Schools
Public and private

Elected and appointed officials
US Representatives and Senators
State Representatives and Senators
Governor
Oregon Transportation Commission
Oregon Transportation Safety Committee
Oregon Bicycle and Pedestrian Advisory Committee
Oregon Freight Advisory Committee
Oregon Transit Advisory Committee
Metro Council
Metro Joint Policy Advisory Committee on Transportation
City Mayors and Councils
County Commissioners

Emergency Service Providers

State, County and Local Police
Oregon State Police
Clackamas, Multnomah and Washington County Sheriff's Offices
City Police

County and City Fire & Rescue
Portland Fire and Rescue
Tualatin Valley Fire and Rescue
Clackamas Fire District #1
Multnomah County Fire District #14
Washington County Fires District #2
Gresham Fire
Hillsboro Fire
Cornelius Fire
Forest Grove Fire and Rescue
Gladstone Fire
Lake Oswego Fire

Advocacy and Community Organizations
Oregon Walks
Oregon and SW Washington Families for Safer Streets
Vision Zero Network
Toward Zero Deaths
National Safe Routes to School Partnership
AARP
Street Trust
Community Cycling Center

Commercial Vehicle Companies
Companies located and/or operating in the region

Industry Groups
Auto insurance companies
Auto manufacturers
AAA

Technology Leaders
Volpe Institute

Research and Academic Institutions
Portland State University
ODOT Research
Transportation Research Board (TRB)

DRAFT Safety Project Takeaways

2018 Regional Transportation Plan

October 18, 2017

1. Number of projects total by county, by category

TOTAL: Out of 1058 RTP Projects, 270 projects identified as "Safety Projects" [1] (25% of all projects), 19 listed '*reducing fatal and severe injury crashes*' as the primary purpose, 34 listed '*reducing crashes*' as the primary purposes, 329 listed 'reducing crashes or 'reducing fatal and severe injury crashes' as a secondary objective.[2]

All RTP Projects by County:

County	Clackamas	Multnomah	Washington
Project count	246	438	455
% of all projects	23%	41%	43%

**Some projects span multiple counties. Inclusive counts include projects that lie partially, or entirely in a county's boundaries.*

RTP Projects by Investment Category:

Active Transportation	Freight	Other	Roads / Bridges	Throughways	Transit	TSMO/TDM/ TOD
393	48	5	432	38	71	70

Safety Projects by County:

County:	Clackamas	Multnomah	Washington
Project Count	81	132	59
% of all safety projects	30%	49%	22%

**Some projects span multiple counties. Inclusive counts include projects that lie partially, or entirely in a county's boundaries.*

[1] Agencies self identified projects as safety projects.

[2] RTP project solicitation form question "Is this a safety project?": *Consistent with criteria used to determine eligibility for state and federal safety program funding, this question aims to identify projects with the primary purpose of addressing a documented safety problem at a documented high injury or high risk location with one or more proven safety countermeasure(s).*

Safety Projects by Investment Category:

Active Transportation	Freight	Other	Roads / Bridges	Throughways	Transit	TSMO/TDM/ TOD
143	10	1	89	2	9	16

2. Number of projects by time frame

2018 - 2027: All Projects: 374; Safety Projects: 130 (35%);
2027 - 2040: All Projects: 683 ; Safety Projects: 140 (20%);

3. Number and percent of projects in historically marginalized communities, focused historically marginalized communities, and by time frame.

Historically Marginalized Communities:[3]
All Projects: 892 projects, 84% of all projects
2018 - 2027: 318
2027 - 2040: 574

Safety Projects: 241 projects, 23% of all projects, and 89% of all safety projects
2018 - 2027: 118
2027 - 2040: 123

Focused Historically Marginalized Communities:[4]
All Projects: 569 projects, 53% of all projects
2018 - 2027: 207
2027 - 2040: 362

Safety Projects: 160 projects, 15% of all projects, and 59% of all safety projects;
2018 - 2027: TBD
2027 - 2040: TBD

[3] Historically marginalized communities are areas with above the regional rate of people of color, people with low-incomes, people with limited English proficiency, older adults and/or young people.
[4] Focused historically marginalized communities are areas with high concentrations (compared to the regional average) of people of color, people with low-incomes, and people with limited English proficiency.

4. Number of safety projects on regional high injury corridors

Safety Projects: 182, 67% of all safety projects; 17% of all RTP projects.

5. Total cost, percent of total cost of all projects, for RTP financially constrained and strategic lists

All RTP Projects: $ 21,287,567,461
Financially Constrained Projects: $ 14,740,031,644
Strategic Projects: $ 6,547,535,817

6. Cost range

Cost Range of All Projects:

Smallest cost estimate	OR 224 / OR 99E Refinement Plan	$ 300,000
Largest cost estimate	I - 5 Columbia River Bridge	$ 3,169,866,000

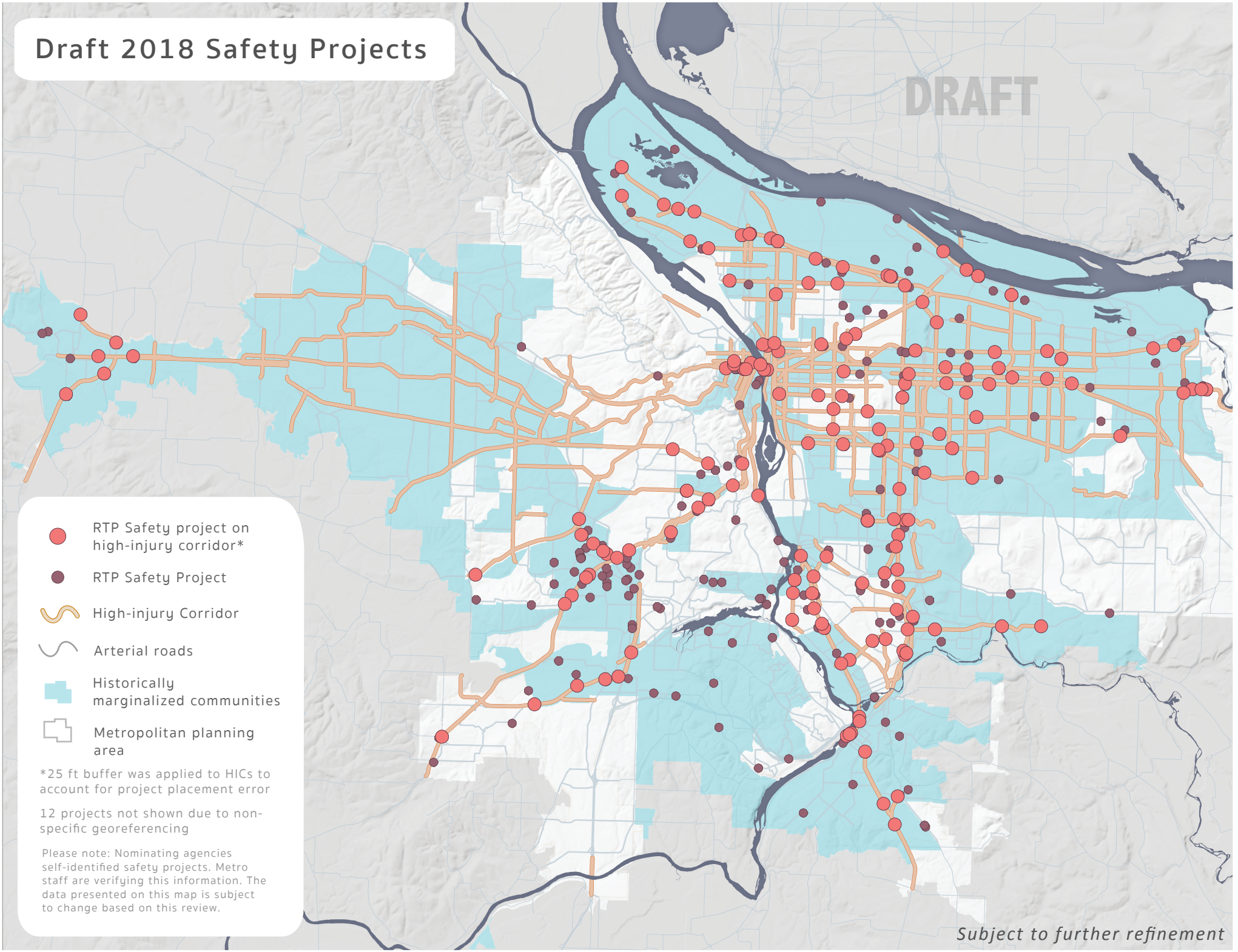
Cost Range of Safety Projects:

Smallest cost estimate	Rusk Rd Bike and Ped Improvements (TSAP)	$ 1,000,000
Largest cost estimate	I-5 from I-405 to I-84 (Rose Quarter and Lloyd District) Construction	$ 375,000,000

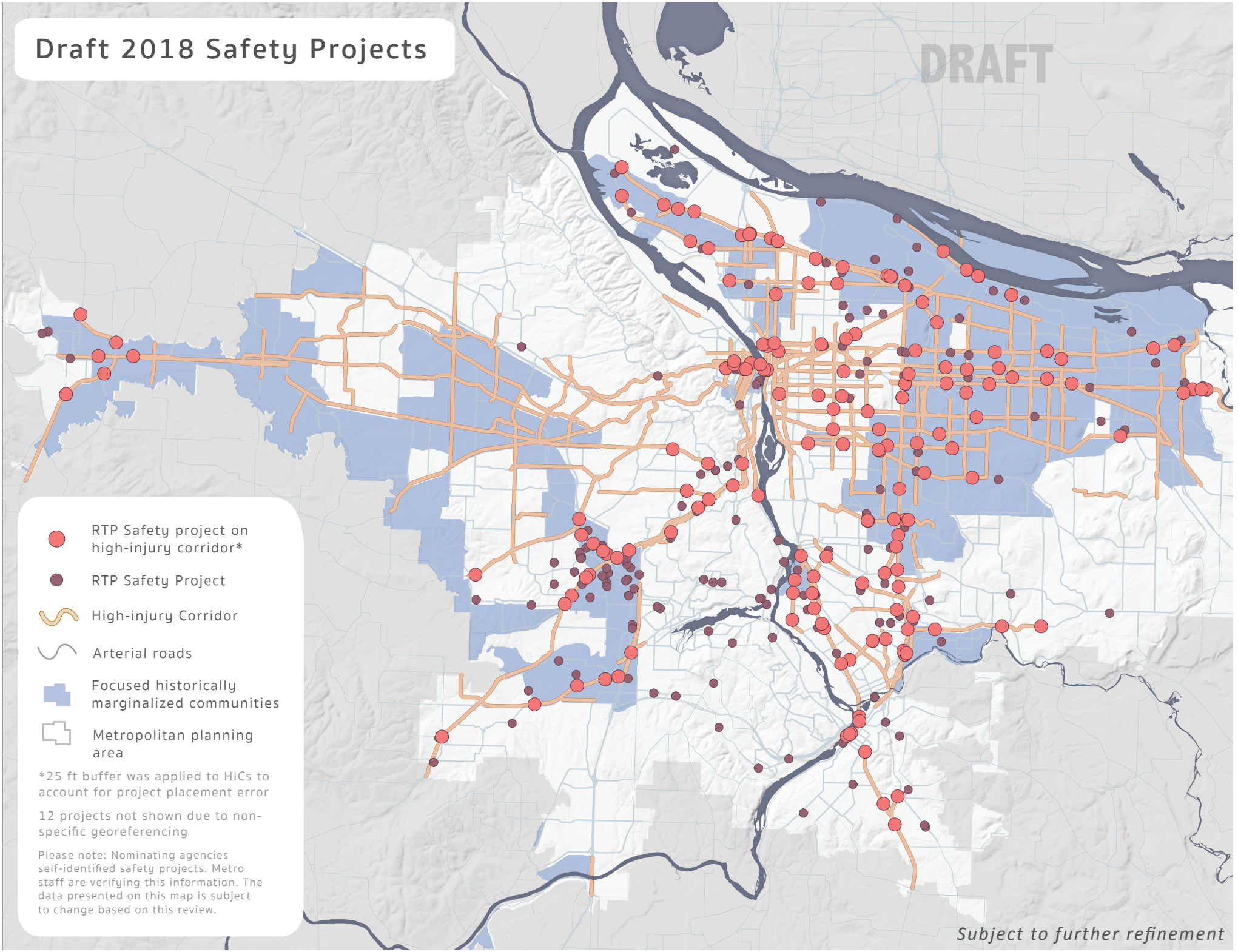
7. Average cost

Average Cost of All Projects: $20,139,610
Average Cost of Safety Projects: $8,450,087

Draft 2018 Safety Projects



Draft 2018 Safety Projects



2018 REGIONAL TRANSPORTATION PLAN UPDATE

Draft Regional Transportation Safety Strategy

2018 RTP safety Work Group – Meeting #7

October 19, 2017

Welcome - meeting purpose and desired outcome

Meeting purpose:

- Work Group input on the technical draft of the RTSS

Desired outcome:

- Refinement of the RTSS for TPAC and MTAC review

Introductions & announcements

- Name & organization
- Work group member announcements

Project update

- Update on the 2018 RTP – where we are and where we are going
- Recap of July 27 meeting
- This is the last meeting of the work group – but not the last opportunity to provide input on the RTSS

Draft 2018 RTSS

- Organization of the safety strategy
- Key areas to cover:
  - Ch.2, Section 2.4
  - Ch. 4 – Strategies and actions
  - Ch. 5 - Implementation

Next steps

- **Oct 30**- deadline to provide additional comments RTSS
- **November 15 & 17** –MTAC & TPAC provide input on draft RTSS
- **Nov – Dec** – RTP Findings and Recommendations report
- **Jan-Feb** – Online public comment on RTP project list and key findings
- **Feb 6** – Draft RTSS to Metro Council
- **March 14 & 15 –** Draft RTSS to MPAC & JPACT
- **Spring 2018** – 45-day public review and comment on the Draft RTSS as part of the 2018 RTP public comment period