

## Getting there safely



2018 Regional Transportation Plan update

### TRANSPORTATION SAFETY

# Performance Targets & Measures - DRAFT

January 2017



## INTRODUCTION

This report outlines the recommended 2018 Regional Transportation Plan (RTP) safety targets and performance measures developed by the Regional Transportation Safety Work Group.

### Safety Performance 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.

### Safety System Evaluation Measures

1. Safety Infrastructure Investments – Number, cost and percent of safety projects in the RTP investment packages region-wide and in areas with historically marginalized communities.<sup>1</sup>
2. Exposure to Crash Risk – 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 areas with historically marginalized communities.

### Safety Monitoring Measures and Targets

For monitoring purposes, identifies annual targets, based on a five year rolling average of the number of people killed and seriously injured in traffic crashes in the region, by mode, per 100 million vehicle miles traveled, and per 100 thousand people. These safety monitoring measures and targets fulfill the requirements of the FAST-ACT and FHWA for MPO safety performance targets.

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<sup>1</sup> Historically Marginalized Communities are identified as areas where there are high concentrations of people of color, people with low-incomes, people with limited English proficiency, older adults, and youth relative to the region.

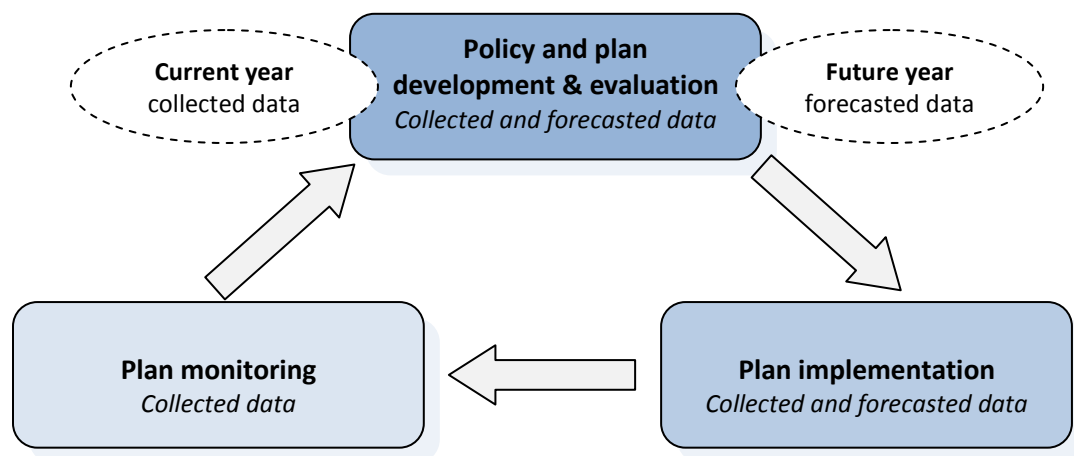
## POLICY FRAMEWORK FOR SETTING PERFORMANCE TARGETS AND MEASURES

Performance measures are indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, objectives and policies. The policy framework guiding the update of regional transportation safety performance measures and targets is captured in Metro’s Regional Transportation Safety Plan Policy Framework Report (July 2016). It includes an overview of the policies that currently exist at the federal, state and regional level related to transportation safety, highlighting those that have changed since the region’s first Regional Transportation Safety Plan was completed in March 2012. In particular, the report highlights policies that reflect:

- Continued emphasis on improving transportation safety
- Growing use of the Towards Zero Deaths and Vision Zero frameworks and targets
- Use of data, performance measurement, and evaluation
- Recognition of vulnerable users
- Integration of equity and public health perspectives

Performance measures serve as the dynamic link between RTP goals and plan implementation by formalizing the process of target-setting, evaluation and monitoring to ensure the RTP advances toward achievement of the region’s transportation, land use, economic, and environmental goals. The RTP refers to the process of plan development, evaluation and monitoring over time as the performance measurement system, as shown in Figure 1.

Figure 1: RTP Performance Measurement System



Metro’s Performance Measures Scoping Report (April 2016) provides the background and context for reviewing and refining adopted regional transportation performance measures and targets for the 2018 RTP.<sup>2</sup> The report describes the three layers of measurement in the 2014 RTP. These are listed in Table 1 table below with the corresponding 2014 RTP safety measures.

**Table 1: Current & Proposed Targets and Performance Measures**

Measure/Target	2014 RTP Measure/Target	Recommended 2018 RTP Measure/Target
<p><b>RTP Performance Targets</b> set time bound, quantifiable goals for achieving the region’s desired policy outcomes for investment in the region’s transportation system. These measures use a combination of modeled and observed data.</p>	<p><i>“By 2040, reduce the number of fatal and severe injury crashes for pedestrians, bicyclists, and motor vehicle occupants each by 50% compared to 2007 2011 average.”</i></p>	<p>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.</p>
<p><b>RTP System Evaluation Measures</b> compare the base year conditions with alternative investment packages (projects) 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.</p>	<p>The region does not currently forecast the regional safety target, though this is being explored.</p>	<p>1. Number, cost and percent of safety projects in the RTP investment packages region-wide and in areas with historically marginalized communities.</p> <p>2. Exposure to crash risk through 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.</p>
<p><b>RTP Monitoring Measures</b> support the region’s federally-required Congestion Management Process reporting between RTP update cycles.</p> <p>State DOTs and MPOs are now required to set performance targets for the Federal safety performance measures identified in MAP-21.</p>	<p><i>“Number of fatalities, serious injuries and crashes per vehicle mile traveled for all modes of travel region-wide.”</i></p> <p>The region does not currently set targets for monitoring measures, but will do so to comply with federal regulations.</p>	<p>Annual targets, based on a five year rolling average of the number of people killed and seriously injured in traffic crashes in the region, by mode, per 100 million vehicle miles traveled, and per 100 thousand people.</p>

<sup>2</sup> See the 2018 RTP Performance Measures page: <http://www.oregonmetro.gov/public-projects/2018-regional-transportation-plan/performance> and the meeting packet for April 25, 2016

## PERFORMANCE TARGET

RTP Performance Targets set time bound, quantifiable goals for achieving the region's desired policy outcomes for investment in the region's transportation system.

Metro's Regional Transportation Safety Plan Policy Framework Report (July 2016) demonstrates existing policy direction for the region to develop a target of eliminating transportation related fatalities and serious injuries. Additionally, several current or soon to be adopted plans have "zero deaths" visions and/or targets, including the Oregon Transportation Safety Action Plan, Portland Vision Zero Action Plan, Clackamas County Transportation Safety Action Plan, Washington County Transportation Safety Action Plan, and the Hillsboro Transportation Safety Action Plan. In 2016, the Federal Highway Administration adopted a national target of zero traffic fatalities.

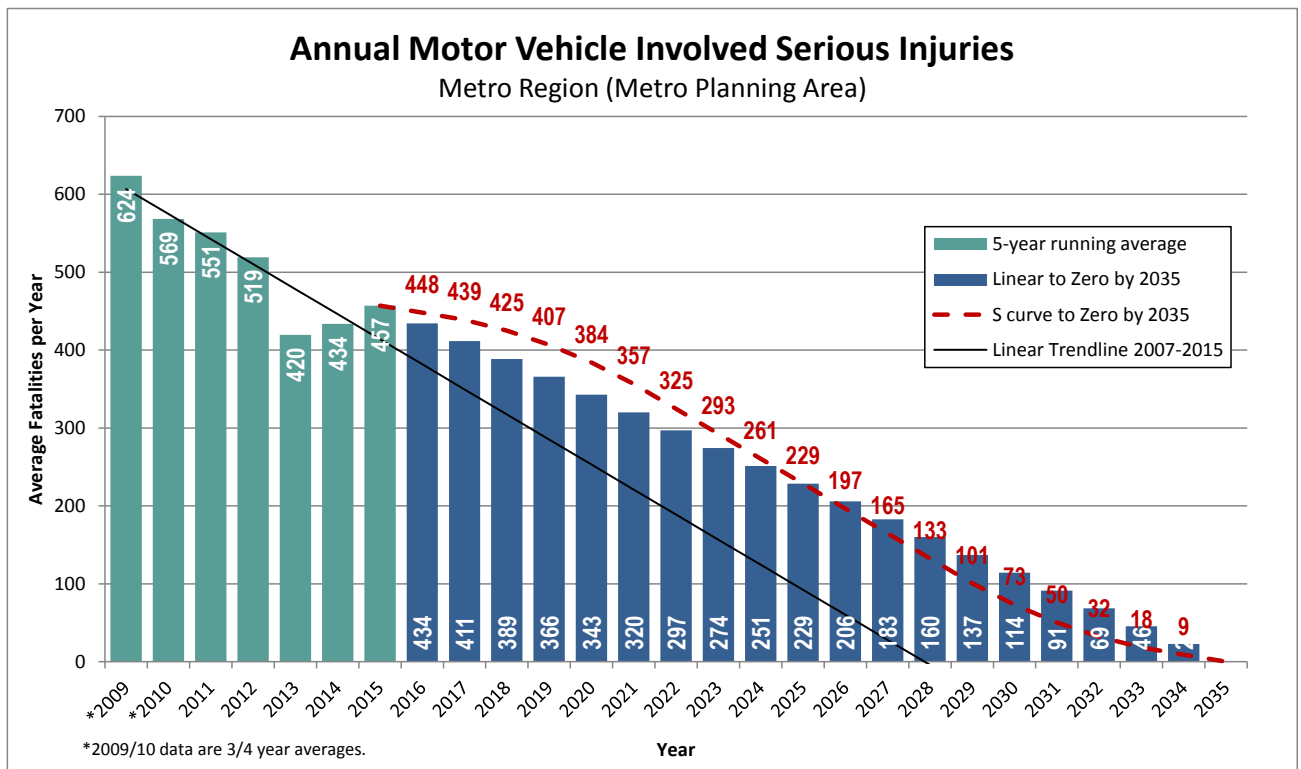
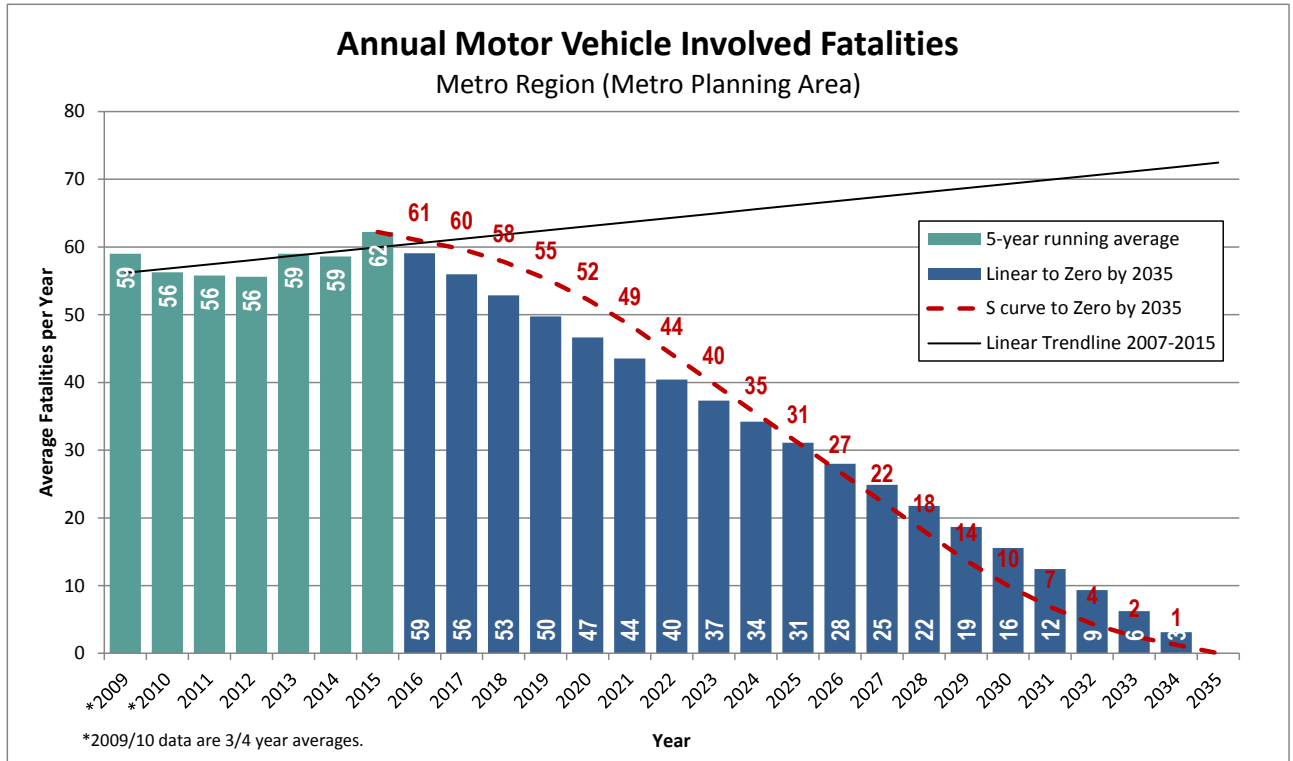
The Safety Work Group recommends a target of zero deaths and fatalities by 2035; the target includes a specified date, refers to "all users" of the transportation system, and includes interim targets. The interim targets correspond with the monitoring measures annual targets.

### **Recommended 2018 RTP Safety Performance 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."

- This target would replace the current 2014 Safety Performance Target.
- A five year rolling average of ODOT crash data is used to track the target.
- Progress towards meeting the 2035 target (annual and interim targets) would be tracked through the annual rolling monitoring targets.
- The target year of 2035 would not change in subsequent RTP updates.

The two graphs on the next page show the linear trend line for fatalities and serious injuries in the region. The trend for fatalities is increasing because of the trend in pedestrian deaths. The graphs also shows two different ways to forecast future deaths and fatalities – one using a linear trend based on a zero deaths and serious injuries by 2035 and one an "S-curve" forecasted trend line, also based on zero deaths and fatalities by 2035, but anticipating a less immediate change as plans and policies take time to be implemented; ODOT is employing this method in the recently adopted state safety action plan. Metro recommends using the "S-curve" forecasting method.



## SYSTEM EVALUATION MEASURES

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.

The current RTP does not include system evaluation measures for safety. The RTP Transportation Equity Work Group recommended both safety system evaluation measures be included in the 2018 RTP.

### 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.

For the purpose of the RTP and infrastructure investments system evaluation measure, **safety projects are defined as:** Infrastructure projects with the primary intent to address a safety issue, and allocate a majority of the project cost to a documented safety countermeasure(s) to address a specific documented risk, or improve safety for vulnerable users, including people walking and bicycling, older adults and youth.

**Safety countermeasures are** actions taken to improve transportation safety and therefore decrease the number of injuries and fatalities. Safety countermeasures may include geometric design, systemic safety, and intelligent transportation systems. Examples of proven safety countermeasures include, but are not limited to, FHWA’s nine proven safety countermeasures: road diets, medians and pedestrian crossing islands, pedestrian hybrid beacons, roundabouts, access management, retroreflective backplates, safety edge, enhanced curve delineation, and rumble strips.<sup>3</sup>

### 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

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<sup>3</sup> <http://safety.fhwa.dot.gov/provencountermeasures/>



## MONITORING MEASURES

RTP Monitoring Measures support the region’s federally-required Congestion Management Process reporting between RTP update cycles. (Metro has had limited resources and capacity to track System Monitoring Measures every two years as intended, and, observed data is not always readily available; crash data for example, is usually at least one year old. To aid better reporting, Metro will be moving toward a new online “Mobility Corridors” tool for monitoring.)

State DOTs and MPOs must now report on the federally required performance measures identified in MAP-21 and the FAST Act.<sup>4</sup> 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.

The measures identified in Table 3, below, are proposed to replace the 2014 RTP safety monitoring measure: “Number of fatalities, serious injuries and crashes per vehicle mile traveled for all modes of travel region-wide.”

The measures in Table 3 include the five FHWA safety measures that Metro is required to report on and additional monitoring measures proposed by Metro and the Safety Work Group, to measure: “The five year rolling average of the number of people killed and seriously injured in traffic crashes in the region, by mode, per 100 million vehicle miles traveled, and per 100 thousand people.”

**Table 2: Annual Monitoring Targets for FHWA and RTP Transportation Safety Performance Measures**

Reporting Year (based on a 5-year rolling average)	FHWA Performance Measures						Non-Motorized Fatalities and Serious Injuries (People)
	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)	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.

<sup>4</sup> The final safety rule can be accessed at: <http://safety.fhwa.dot.gov/hsip/rulemaking/> Significant federal rulemaking activities to implement the performance provisions first included in the Moving Ahead in the 21st Century Act (MAP-21) Act and subsequent provisions contained in the Fixing America’s Surface Transportation (FAST) Act have been underway for nearly 4 years by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

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.

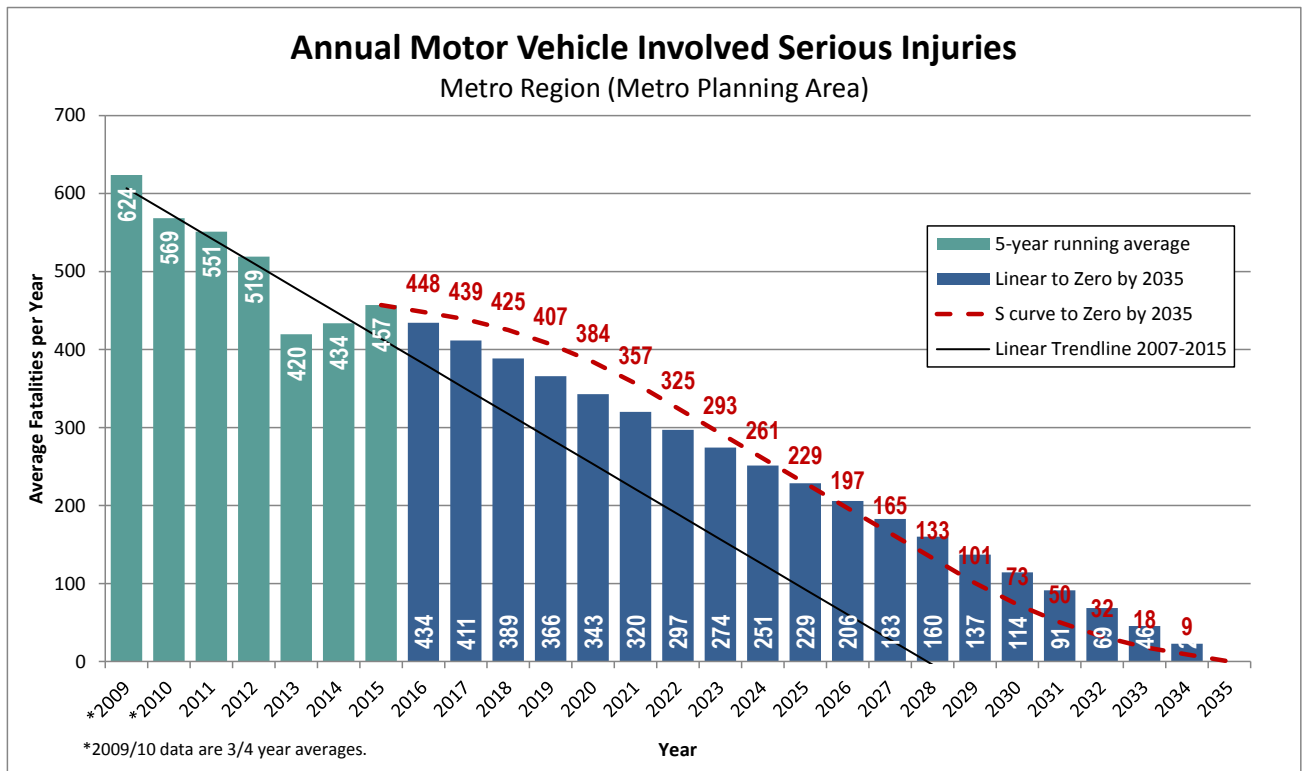
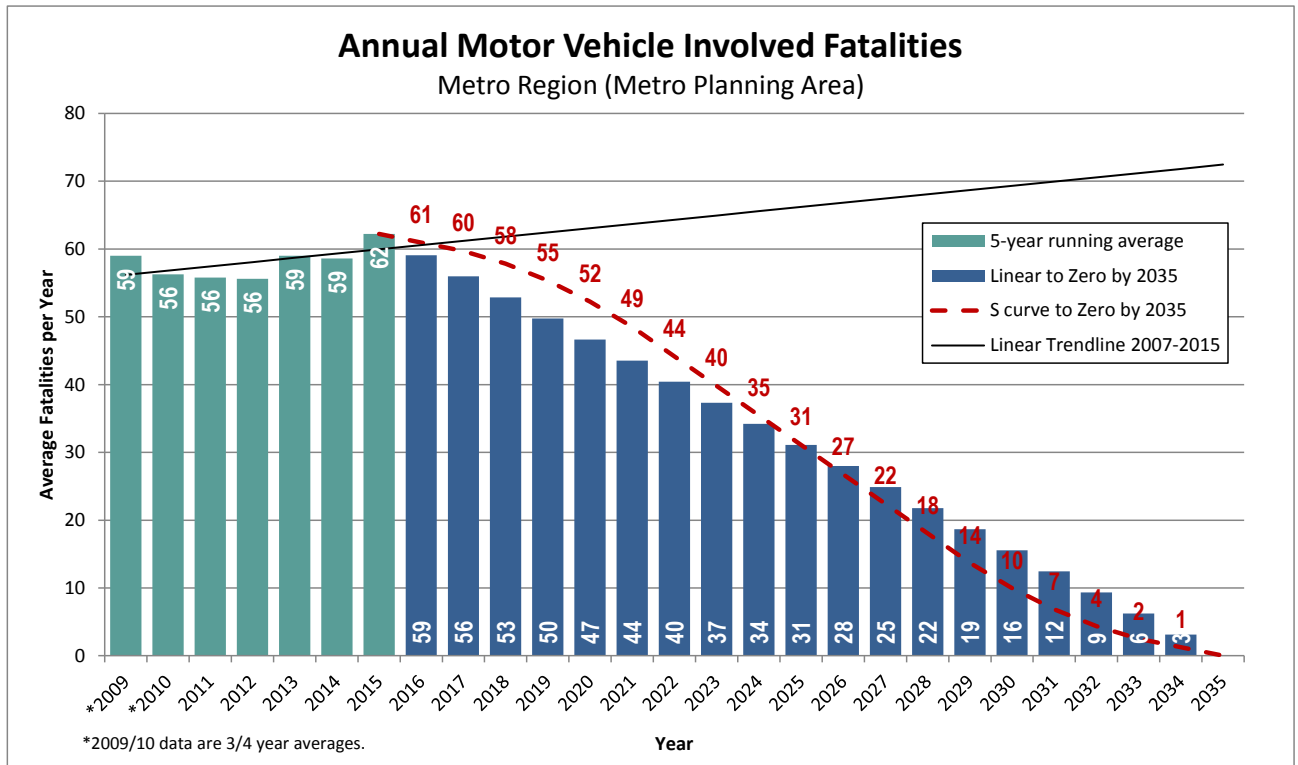
Reporting Year (based on a 5-year rolling average)	Pedestrians					
	Fatalities (People)	Fatality Rate		Serious Injuries (People)	Serious Injury Rate	
		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)
2011 - 2015 (Base)	22	0.3	1.4	56	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

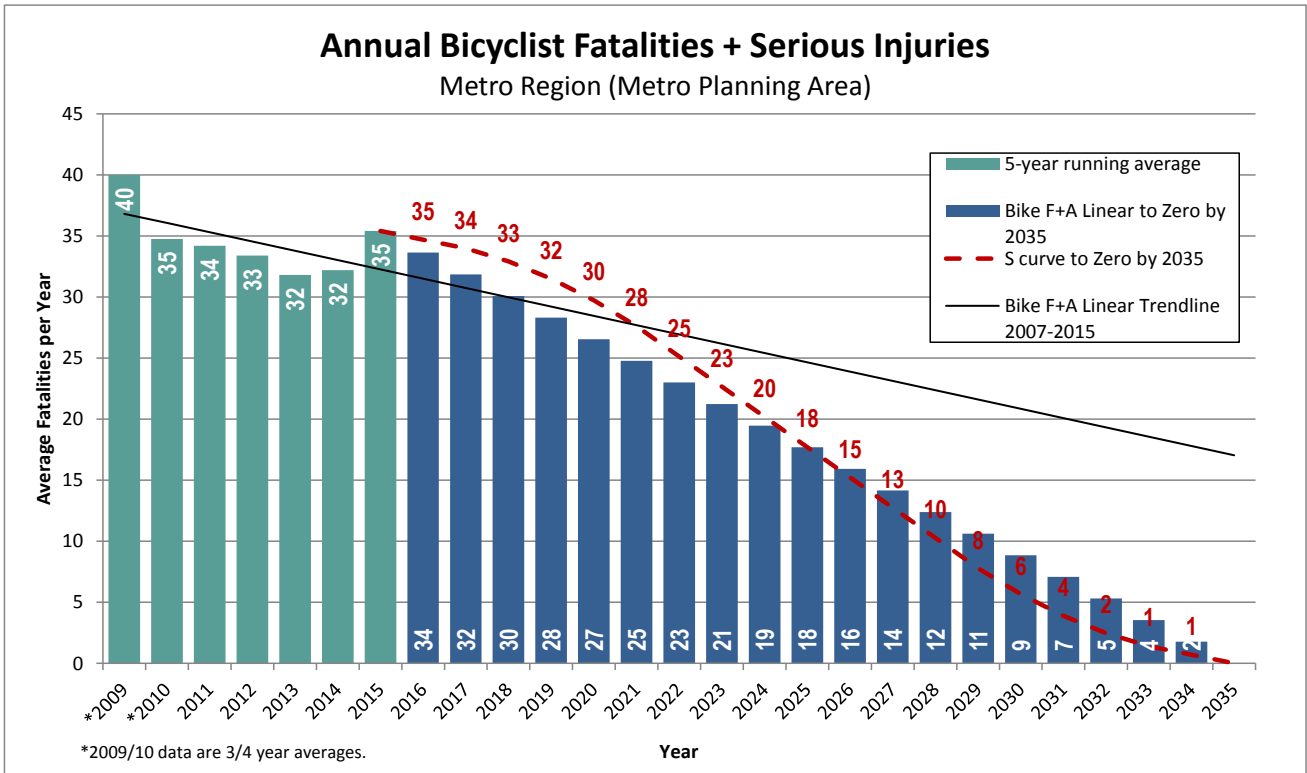
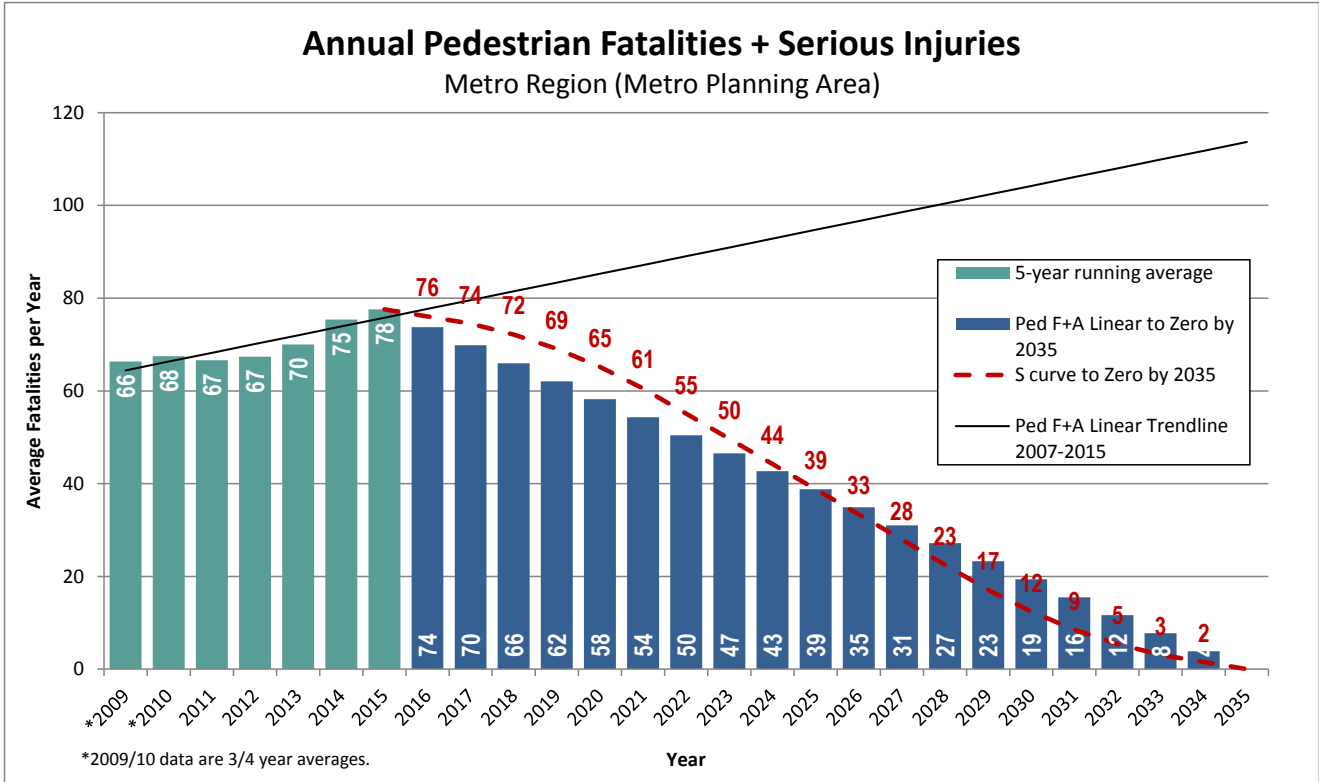
Note: Due to rounding, addition of numbers across modes may result in minor variation from totals.

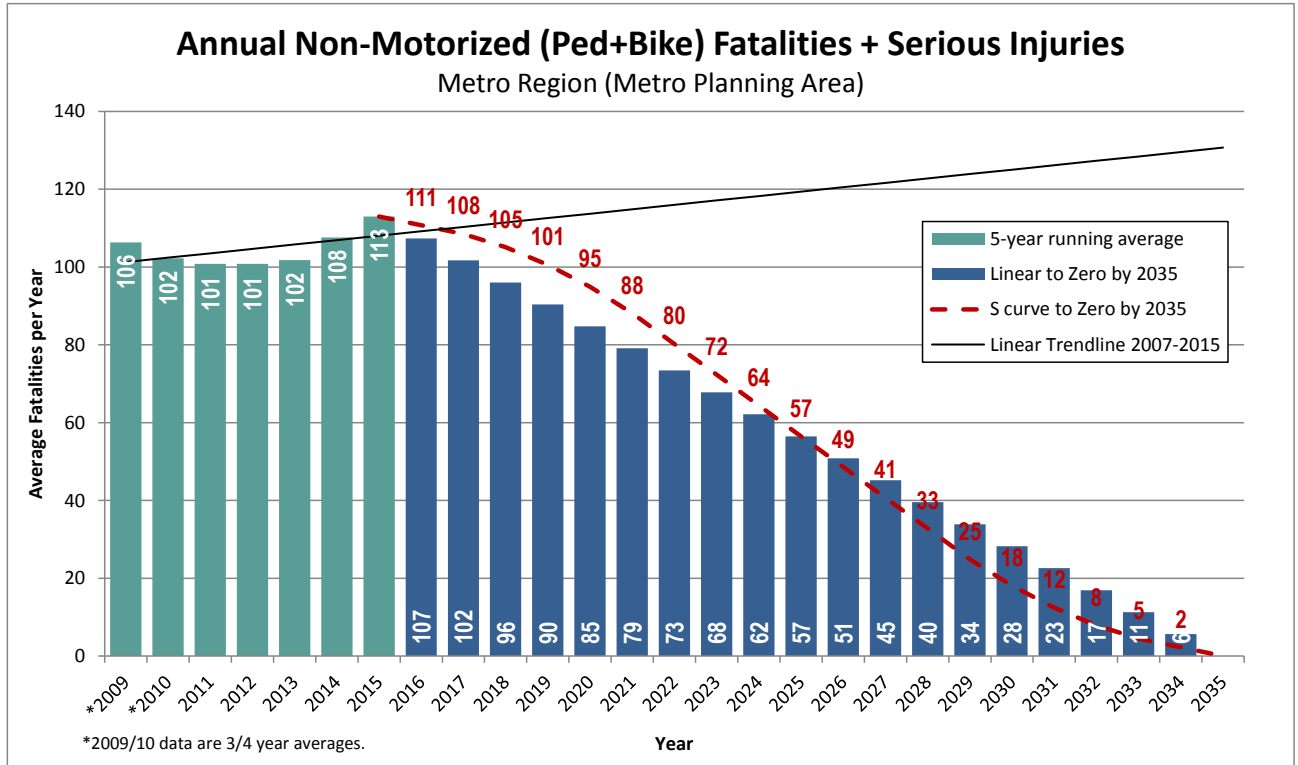
Reporting Year (based on a 5-year rolling average)	Bicyclists					
	Fatalities (People)	Fatality Rate		Serious Injuries (People)	Serious Injury Rate	
		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)		Per VMT (People/ 100 MVMT)	Per capita (People/ 100k pop)
2011 - 2015 (Base)	2.2	0.03	0.14	33	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.

The annual targets are calculated using the “S-curve” forecasting trend. The S-curve forecast method was developed assuming the five-year average number of crashes may be relatively flat in the near future; start to decline in a few years in recognition of different projects, programs and actions implemented in the region and/or automated vehicles; an flatten out again in the future as it becomes more difficult to address the remaining fatalities.









Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and sustainable transportation and living choices for people and businesses in the region. Voters have asked Metro to help with the challenges and opportunities that affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to providing services, operating venues and making decisions about how the region grows. Metro works with communities to support a resilient economy, keep nature close by and respond to a changing climate. Together we're making a great place, now and for generations to come.

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