



50 years of Regional Vision, Cooperation, and Information

MEMORANDUM

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 City of Tenino
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 North Thurston Public Schools
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 PUD No. 1 of Thurston County

ASSOCIATE MEMBERS:

Lacey Fire District #3
 Puget Sound Regional Council
 The Evergreen State College
 Thurston Economic
 Development Council
 Timberland Regional Library

TO: Transportation Policy Board
 FROM: Veena Tabbutt, Research & Data Director
 DATE: June 7, 2017
 SUBJECT: Safety Performance Measures

PURPOSE

Brief Transportation Policy Board (TPB) on Federal Safety Performance Measures

Summary:

- The U.S. Department of Transportation issued two interrelated rules governing traffic safety and safety-oriented performance management. These rules became effective in April of 2016.
- Washington State Department of Transportation (WSDOT) and the Metropolitan Planning Organizations (MPOs) have been working together to develop a performance measure framework to address these new requirements.
- In February 2017, WSDOT adopted the *Target Zero* approach for safety performance measures.
- WSDOT recently released safety performance measure data to MPOs.
- TRPC anticipates adopting safety performance measures in the Regional Transportation Plan in the fall of 2017.

REQUESTED ACTION

For TPB's information and discussion.

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 Executive Director

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BACKGROUND

Transportation Performance Management Origins

In July of 2012 the Moving Ahead for Progress in the 21st Century Act (MAP-21) became law. The Act had two primary goals:

- Increase transparency and accountability relating to states' investment of federal taxpayer dollars into transportation infrastructure and services nationwide, and
- Ensure that states distribute funds to transportation projects that collectively make progress toward the achievement of national goals.

To achieve these objectives, MAP-21 created a performance measure framework to measure the states' progress in meeting national goals.

In December of 2016 the Fixing America's Surface Transportation (FAST) Act became law; there were no significant changes to the performance setting requirements of MAP-21.

MAP-21 Performance Management focuses on five subject areas:

- Safety
- Pavement & bridge
- System performance/congestion
- Freight movement
- Congestion mitigation & air quality

The federal rules on safety became effective in April of 2016. The rules on the other performance measures became effective on May 20, 2017.

SAFETY PERFORMANCE MEASURES

The U.S. Department of Transportation issued two interrelated rules governing traffic safety and safety-oriented performance management. These rules became effective in April of 2016. The rules specified that all State DOTs report targets and performance with respect to the following safety performance measures:

- No. 1 - Number of fatalities on all public roads
- No. 2 - Number of fatalities per 100 million vehicle miles traveled (VMT) on all public roads
- No. 3 - Number of serious injuries on all public roads
- No. 4 - Number of serious injuries per 100 million VMT on all public roads
- No. 5 - Number of non-motorist fatalities and serious injuries on all public roads

Washington State Department of Transportation (WSDOT) and the Metropolitan Planning Organizations in Washington State have been working together on a performance measure framework for the last few years. The Target Setting Framework Group has agreed that WSDOT will take the lead on establishing safety targets, which MPOs will then adopt.

WSDOT adopted the Target Zero approach for safety performance measures in February 2017. The State's Target Zero is a goal to reduce traffic fatalities and serious injuries on Washington's roadways to zero by the year 2030.

The State has been collecting safety data and analyzing trends to develop targets for all five safety performance measures. They recently released the data and draft MPO targets. MPOs have until February 2018 to adopt safety performance measures. These must be adopted into the Regional Transportation Plan during its next update, and referenced in the Regional Transportation Improvement Program (RTIP) after May 2018.

Process

The following are the steps and proposed timeline for TRPC's adoption of safety performance targets in the Regional Transportation Plan:

1. May 18, 2017 – TAC reviews safety data, performance targets, and process of adoption
2. June 14, 2017 – Transportation Policy Board (TPB) review of safety performance targets and process of adoption
3. July 7, 2017 – Thurston Regional Planning Council (TRPC) reviews safety performance targets and process of adoption
4. October 11, 2017 – TPB first review of Regional Transportation Plan amendment
5. November 3, 2017 – TRPC first review of Regional Transportation Plan amendment
6. December 1, 2017 – TRPC adoption of Regional Transportation Plan amendment

Coordination with Other Plans

Regional Transportation Plans (RTPs) updated on or after May 27, 2018 must include safety performance measures and targets. TRPC staff are recommending that the safety performance measures be updated into the Regional Transportation Plan through a 2017 amendment.

RTIPs and Transportation Improvement Programs (TIPs) updated on or after May 27, 2018 must include a description of how the RTIP/TIP contributes to achieving the performance targets in the RTP.

Local Monitoring

Progress towards reaching TRPC's safety performance targets will be monitored through the *Sustainable Thurston Report Card* – TRPC's monitoring program.

Penalties

If the U.S. Department of Transportation (USDOT) secretary determines that a **state** has not met or made significant progress towards achieving its safety performance targets, WSDOT will:

- Dedicate its obligation authority equal to the apportionment of the Highway Safety Improvement Program (HSIP) for the previous year to highway safety improvement projects. It is important to note that the State already programs their safety funds consistent with their Strategic Highway Safety Plan – or Target Zero.
- Submit an annual report to USDOT

HSIP funds are split based on fatal and serious injury crash data on state and local facilities. Around \$24 million are programmed annually through a competitive process for improvements to local facilities.

Safety Data and Targets

WSDOT provides safety data to the MPOs for the five safety performance measures. WSDOT calculates a five-year rolling average (the previous five years) to establish a 2016 starting point. A trend line is then drawn between the 2016 figure and the 2030 target (0). A 2018 (intermediate target) is established from the trend line. Two of the measures require estimates for vehicle miles traveled (VMT), and as 2016 VMT will not be available for several months, these data are draft.

Following are a summary data table and graphs for all five safety performance measures for Thurston County. The region is making progress in reducing fatalities. Unfortunately, serious injuries and non-motorist fatalities and serious injuries are increasing.

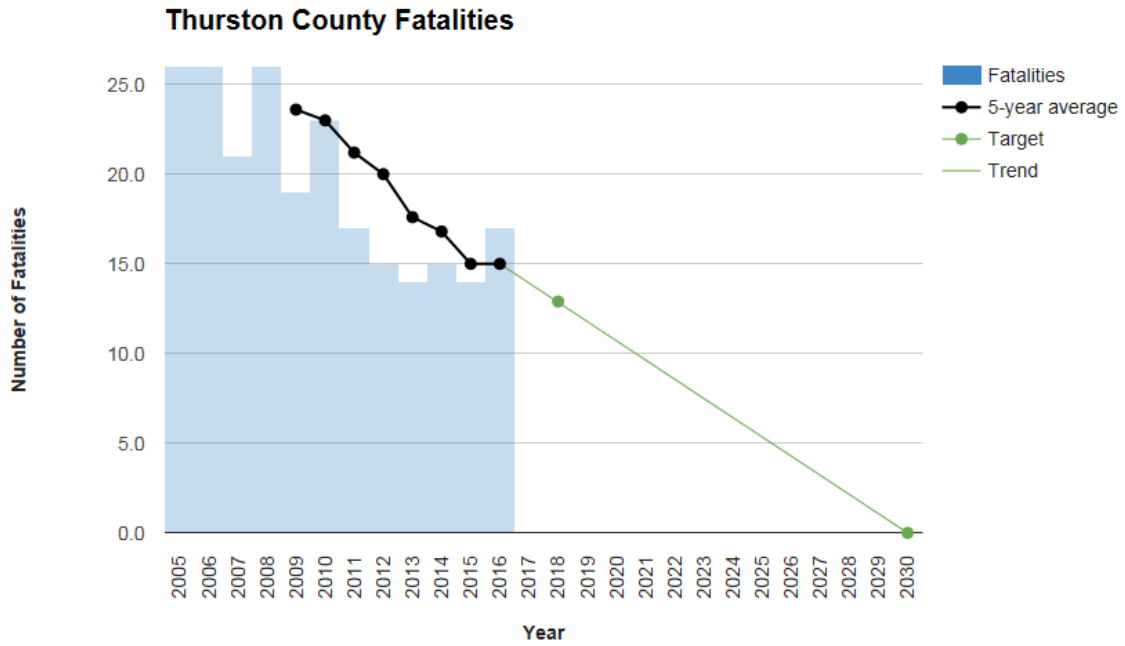
FACTORS CONTRIBUTING TO FATALITIES AND SERIOUS INJURIES

Thurston County 2008-2016	Fatalities		Serious Injuries	
	Number	% Total	Number	% Total
	160	100%	628	100%
High Risk Behavior				
Impairment Involved	91	57%	159	25%
Speeding Involved	73	46%	179	29%
Distraction Involved	49	31%	113	18%
Unrestrained Occupants	37	23%	67	11%
Unlicensed Driver Involved	30	19%	**	-
Drowsy Driver Involved	10	6%	18	3%
Crash Type				
Run Off the Road†	82	51%	192	31%
Intersection Related†	25	16%	192	31%
Opposite Direction Multi-vehicle (Headon)†	23	14%	69	11%
Road Users				
Young Driver Age 16-25-Involved	56	35%	222	35%
Motorcyclist	22	14%	112	18%
Pedestrian	16	10%	92	15%
Older Driver-Involved (age 75+)	15	9%	32	5%
Heavy Truck-Involved (GVWR>10,000 lbs)	17	11%	20	3%
Bicyclist	2	1%	41	7%
Other Monitored Emphasis Areas				
Wildlife	1	1%	6	1%
Vehicle-Train	1	1%	0	0%
Work Zone	0	0%	4	1%
School Bus-Involved	0	0%	0	0%

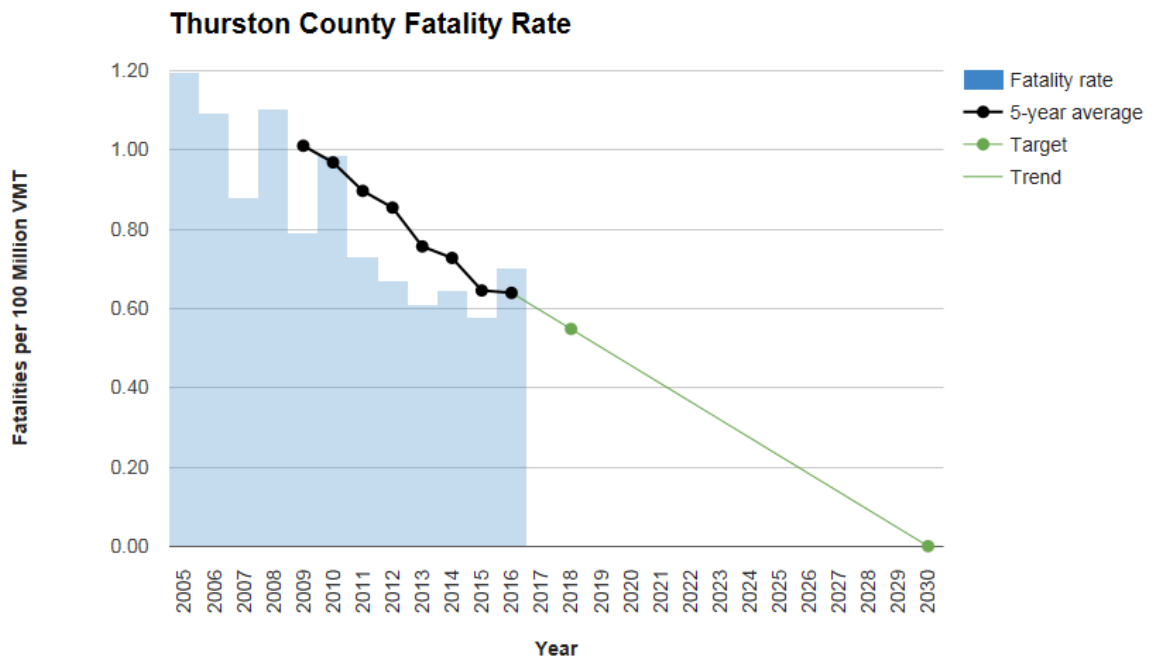
** Data currently unavailable for this measure.

†Run off the road, intersection-related, opposite direction multi-vehicle, and road types are defined by WSDOT and derived from the statewide collision database.

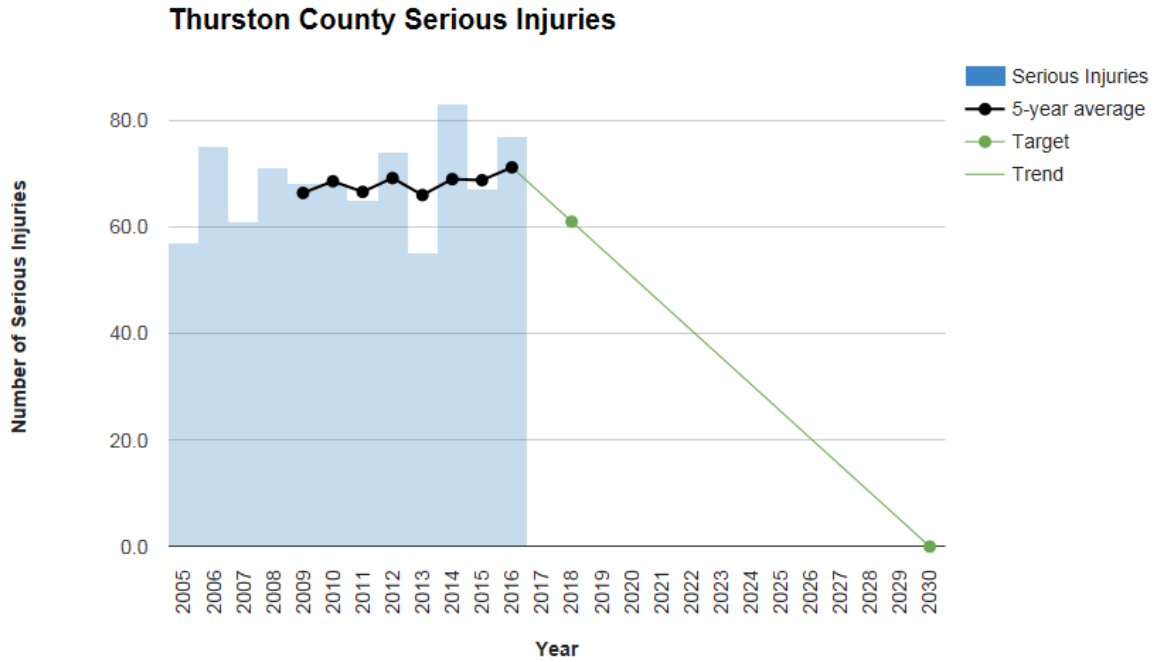
Measure No. 1: Fatalities



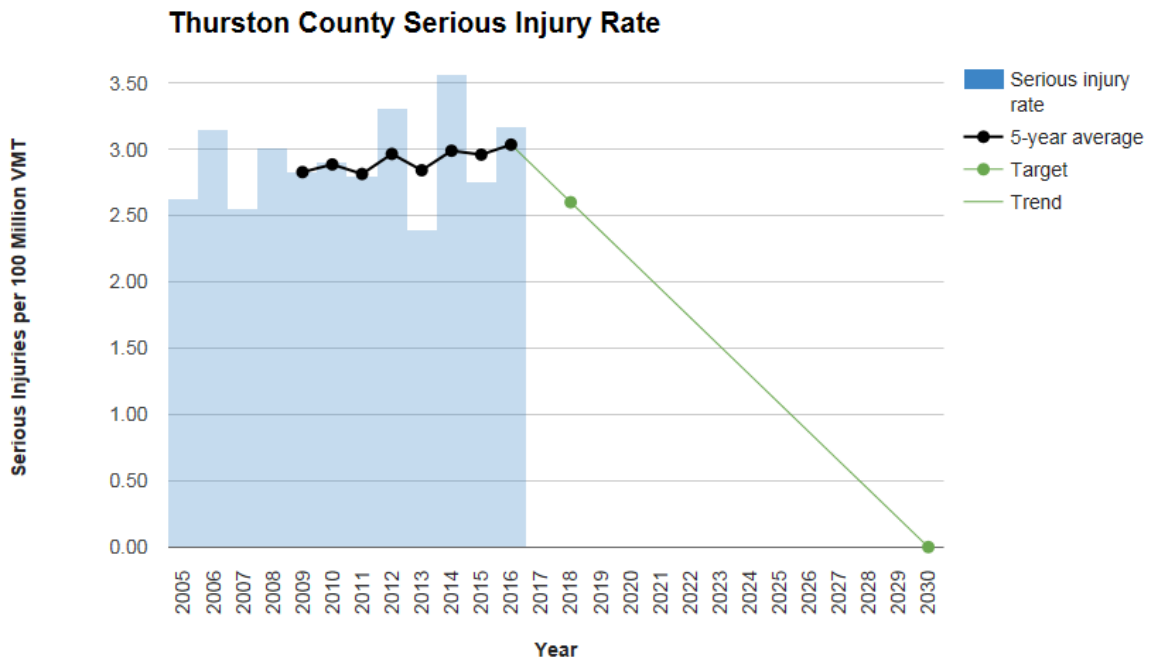
Measure No. 2: Fatality Rate



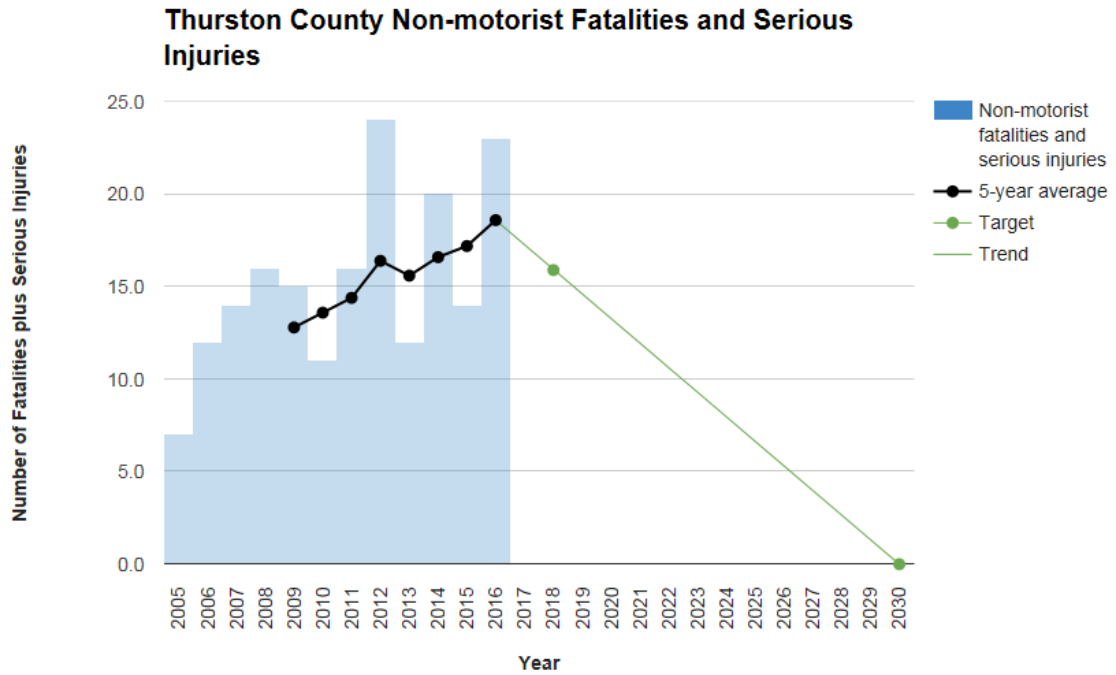
Measure No. 3: Serious Injuries



Measure No. 4: Serious Injury Rate



Measure No. 5: Non-motorist Fatalities and Serious Injuries



Disclaimer

Under [United States Code Title 23 Section 409](#), these data cannot be used in discovery or evidence at trial in any action for damages against Thurston Regional Planning Council, or the jurisdictions involved in the data.

Attachment (folio)



Data collection

- MAP-21 requires fatality data from the Washington State Traffic Safety Commission's (WTSC) Fatality Analysis Reporting System (FARS) and serious injury data from WSDOT's system.
- State law enforcement officers record crash events in The Washington State Police Traffic Collision Report. This report is the sole source for all WSDOT serious injury data and most FARS data, with few exceptions.
- MAP-21 requires Vehicle Miles Traveled (VMT) data from WSDOT's Highway Performance Monitoring System. Along with the number of fatalities or serious injuries, VMT is used to calculate the rate of fatalities or serious injuries per 100 million VMT.
- WSDOT's serious injury data and FARS fatality data for the previous calendar year is preliminarily available in about February and April of the following year, respectively. WSDOT's VMT data is available about June of the following calendar year.

Available Data

- Number of traffic fatalities for all public roads
- Rate of traffic fatalities per 100 million Vehicle Miles Traveled (VMT) for all public roads¹
- Number of serious traffic injuries for all public roads
- Rate of serious traffic injuries per 100 million VMT for all public roads¹
- Bicyclist/Pedestrian fatalities and serious injuries for all public roads²
- Fatality and serious injury data for drivers and pedestrians age 65 and older³
- Rate of traffic fatalities for all High Risk Rural Roads (HRRR)^{1 3}
- Number of fatalities for railway-highway crossings³

Notes: Crash data is available for all Washington public roads and annual summaries are also available by county. WSDOT entered into a data sharing agreement with the Washington Traffic Safety Commission to incorporate the fatality data necessary for target setting. **1** The Federal Highway Administration (FHWA) requires the use of Highway Performance Monitoring System (HPMS) data for any performance metric involving estimated vehicle miles travelled. **2** This data is required as part of the Fiscal Year 2015 Omnibus Appropriations Bill. **3** This data satisfies a MAP-21 special rule reported at the statewide level to FHWA, that may be of interest to MPOs.

For more information

MAP-21 safety requirements information: John Milton, Director of Quality Assurance and Transportation System Safety, at (360) 704-6363 or Milton.J@wsdot.wa.gov. Dan Davis, Assistant Director, Office of Strategic Assessment and Performance Analysis, at (360) 705-7558, or DavisD@wsdot.wa.gov. **Traffic crash fatal and serious injury data:** Mike Bernard at (360) 570-2454, BernarM@wsdot.wa.gov. Data is protected by U.S. Code 23 §148 and §409, but can be requested.

Penalties

As described in U.S. Code 23 Section 148(i), for the Final Safety Performance Rule (Rule #1), if the U.S. Department of Transportation (U.S. DOT) Secretary determines a state has not met or made significant progress toward achieving its safety performance targets by the date that is two years after the establishment of its targets, the State DOT would:

- Dedicate its obligation authority equal to the apportionment for HSIP to the state for the prior year to highway safety improvement projects until the U.S. DOT Secretary determines that the state has made significant progress or met the targets; and
- Annually submit to U.S. DOT a safety implementation plan until the U.S. DOT Secretary determines that the state has made significant progress or met the targets.

See WSDOT's [MAP-21 Funding and Performance Penalties](#) folio for full details.

What is the current distribution of HSIP funds?

Safety: Federal Highway Safety Improvement Program (HSIP) funding provided to the state is split based upon fatal and serious injury crash data on state and local facilities. The HSIP funds are used to implement engineering countermeasures which reduce fatal and serious injury crashes. WSDOT manages the Local Federal Safety program and provides more than \$24 million annually for improvements on local facilities. WSDOT prioritizes the improvements on state and local facilities based on crash data and benefit-cost analysis. The HSIP is one component of WSDOT's total annual expenditure on safety projects. WSDOT uses additional funds from other federal and state resources each year, averaging over \$15 million since 2013.

Purpose of reporting requirements

In July 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) became law. The primary objectives of MAP-21 are to increase the transparency and accountability of states for their investment of federal taxpayer dollars into transportation infrastructure and services nationwide, and to ensure that states invest money in transportation projects that collectively make progress toward the achievement of national goals. The new rules will require reporting performance on the following areas: Safety; Pavement and Bridge; System Performance/ Congestion, Freight, and Congestion Mitigation and Air Quality.

Americans with Disabilities Act (ADA) Information: This material can be made available in an alternate format by emailing the WSDOT Diversity/ADA Affairs team at wsdotada@wsdot.wa.gov or by calling toll free, 855-362-4ADA(4232). Persons who are deaf or hard of hearing may make a request by calling the Washington State Relay at 711.

Title VI Statement to Public: It is the Washington State Department of Transportation's (WSDOT) policy to assure that no person shall, on the grounds of race, color, national origin or sex, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of its federally funded programs and activities. Any person who believes his/her Title VI protection has been violated, may file a complaint with WSDOT's Office of Equal Opportunity (OEO). For additional information regarding Title VI complaint procedures and/or information regarding our non-discrimination obligations, please contact OEO's Title VI Coordinator at (360) 705-7082.

Moving Ahead for Progress in the 21st Century Act - Final rules on traffic safety performance management

The U.S. Department of Transportation has issued two interrelated final rules governing traffic safety and safety-oriented performance management which became effective on April 14, 2016. These two rules are referred to in this folio as

- Rule #1 - Safety Performance Measures rule; (23 CFR §490)
- Rule #2 - Highway Safety Improvement Program (HSIP) rule; (23 CFR §924)

Both final rules relate to highway safety, the primary objective being to significantly reduce fatal and serious-injury crashes on all public roads. The Safety Performance Measures rule (Rule #1) also includes the goal of reducing traffic fatalities of and serious injuries to people using non-motorized transportation modes, namely bicyclists and pedestrians.

Safety Performance Reporting

Rule #1 specifies the performance management measures for safety, and defines the target setting process for State DOTs and Metropolitan Planning Organizations (MPOs). Per Rule #2, State DOTs will establish and report their safety targets and progress toward these targets in an annual Highway Safety Improvement Program (HSIP) report.

In general, MPOs establish targets by either agreeing to plan and program projects so that they contribute toward the accomplishment of the State DOT HSIP target, or by committing to a quantifiable target for their Metropolitan Planning Area. MPOs will report annually to their State DOT in a manner agreed upon and documented by both parties. MPOs would report safety performance in the Metropolitan Transportation Plan, as provided in U.S. Code 23 Section 134(i)(2)(C).

In Washington state, the MPOs and WSDOT worked together to jointly develop a collaborative approach in support of data, process, and target-setting decision making. This Target Setting Framework Group has agreed WSDOT will take the lead in establishing safety targets, which MPOs will adopt.

About this folio: See inside for a description of the target setting approach for the five required safety performance measures in Washington state, and how this approach to target setting relates to the stipulations of MAP-21 rulemaking.

Summary of required performance measures

Rule #1 requires all State DOTs to report targets and performance with respect to the following safety performance measures:

- No. 1 - Number of fatalities on all public roads** (due July 1/Aug 31)
- No. 2 - Number of fatalities per 100 million vehicle miles traveled (VMT) on all public roads** (due July 1/Aug 31)
- No. 3 - Number of serious injuries on all public roads** (due July 1/Aug 31)
- No. 4 - Number of serious injuries per 100 million VMT on all public roads** (due Aug 31)
- No. 5 - Number of non-motorist fatalities and serious injuries on all public roads (e.g. bicyclists and pedestrians)** (due Aug 31)

Optional targets: States have the option to set additional targets for the performance measures for any number and combination of urbanized area boundaries, as well as for a single non-urbanized area. If optional targets are set, they will not be assessed when determining significant progress, and states will not incur penalties if they fail to show progress.

Overlapping measures/targets in the Highway Safety Plan: Targets for Measures No. 1 – 3 must also be reported to the National Highway Traffic Safety Administration by July 1 of each year. They must be numerically identical targets to those reported for MAP-21 compliance on August 31 as part of the HSIP. See the Timelines section inside for details.

Options for safety target setting under MAP-21

State DOTs and MPOs have flexibility in setting numeric targets for the five performance measures identified in Rule #1.

It does place stipulations on certain aspects of the process, however. It requires that states and MPOs report their performance metrics and targets for each of five performance measures as rolling five-year averages. Per Rule #2, states are also required to develop a Strategic Highway Safety Plan (SHSP). In Washington State this plan is called *Target Zero*, which can be used as the foundation for the target setting process (<http://www.targetzero.com>).

WSDOT's target adoption

WSDOT and its partners adopted the *Target Zero* approach for MAP-21 safety target setting in February 2017. See the table below for the targets produced via this method. Governor Inslee has endorsed this data-driven approach to traffic safety, as have statewide safety partners.

About these graphs

These graphs depict the methodology for targets that will be used for MAP-21 reporting in Washington state. At this time, final targets have been proposed for measures No. 1, No. 3, and No. 5 only. Final targets for measures No. 2 and No. 4 will be proposed when 2016 data on vehicle miles traveled (VMT) becomes available late June. The final safety targets are being developed by WSDOT in coordination with the Washington State Metropolitan Planning Organizations, the Washington State Traffic Safety Commission, and other partners using 2016 fatality and injury data.

"Significant Progress"

At the end of each reporting period, FHWA will determine whether a state has made overall "significant progress" toward achieving their safety targets. The penalties listed on the back page of this folio, including the obligation of state funds, will apply to the State DOT if FHWA deems that it has not made that progress.

MAP-21 Safety Target Setting

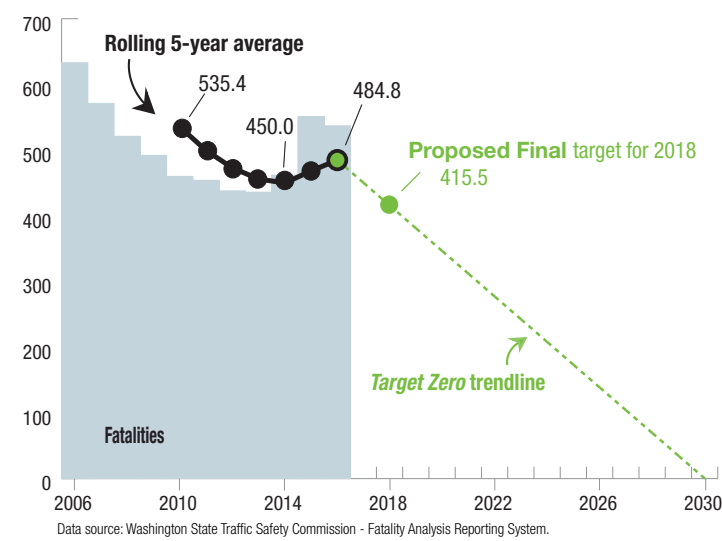
5-yr. rolling averages; number of persons, or number of persons per 100 million VMT

	2016 Baseline	2018 Proposed Targets
		Statewide MAP-21 Target (Target Zero)
No. 1 - Fatalities	484.8	415.5
No. 2 - Fatality rate ¹	0.831	0.712
No. 3 - Serious injuries	2,086.0	1,788.0
No. 4 - Serious injury rate ¹	3.582	3.071
No. 5 - Non-motorist fatalities & serious injuries	503.4	431.5

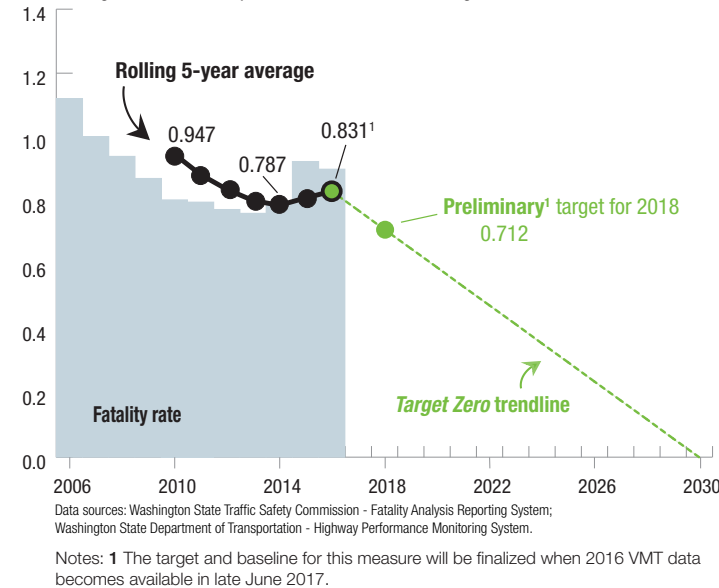
Data sources: Washington State Traffic Safety Commission - Fatality Analysis Reporting System; Washington State Department of Transportation - Transportation Data, GIS & Modeling Office.

Notes: ¹ The baselines and proposed targets for these two performance measures will be finalized when 2016 VMT data becomes available in late June 2017.

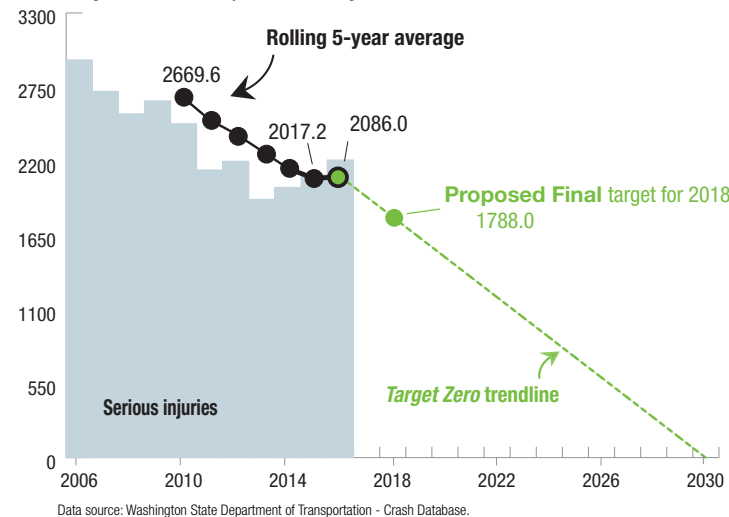
Measure No. 1 - Fatalities
2006 through 2030; Fatalities in Washington state



Measure No. 2 - Fatality rate¹
2006 through 2030; Fatalities per 100 million VMT in Washington state



Measure No. 3 - Serious injuries
2006 through 2030; Serious injuries in Washington State

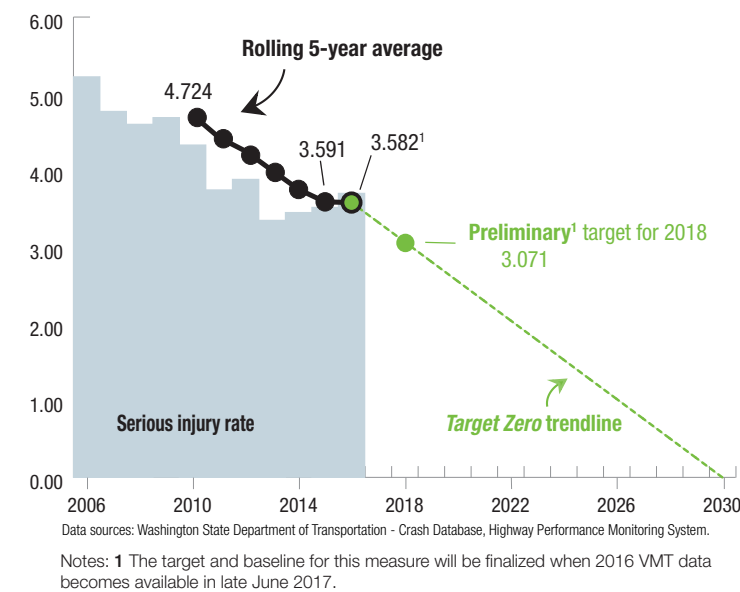


To make significant progress overall, a state must make significant progress in achieving at least four out of five targets. For each measure, there are two ways this can be done. For example, the value of the 5-year rolling average in 2017 must be:

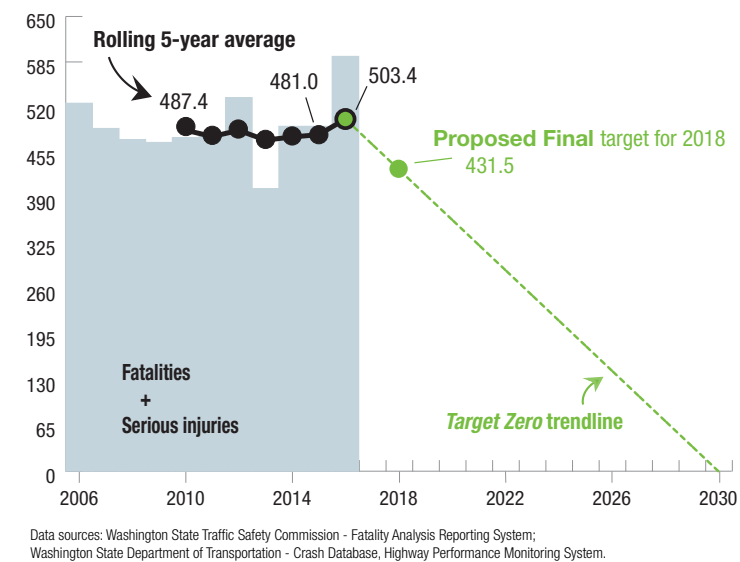
- At or below the target set in 2016, OR
- At or below its 2016 (baseline) level. The FHWA included this provision to avoid punishing aspirational target setting.

If either of these conditions is met, the state has made significant progress for that individual measure. It must do so in any four of the five measure to have made significant progress overall and avoid the penalty provisions.

Measure No. 4 - Serious injury rate¹
2006 through 2030; Serious injuries per 100 million VMT in Washington state



Measure No. 5 - Non-motorist fatalities and serious injuries
2006-2030; Fatalities and serious injuries in Washington state



Notes for all graphics: Fatality data for 2015 is finalized as of January 2017, serious injury count for 2015 is as of April 2017. All data for 2016 is preliminary as of April 2017. Fatality and serious injury rates are calculated using 2015 VMT data. Under 23 U.S. Code § 148 and 23 U.S. Code § 409, safety data, reports, surveys, schedules, 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 are not 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.

Due to long-term fatality reductions in Washington and a recent rise in the number of fatalities, WSDOT may not achieve overall significant progress toward these targets. WSDOT and its partners preliminarily concur that *Target Zero* should be consistently used to move Washington forward with fatality and serious injury reductions. WSDOT will continue to monitor spending levels and penalty consequences to assess risk and the impacts of this target setting approach.

The general process for generating trend and target information as prescribed by Rule #1 proceeds as follows:

- The annual number of fatalities, serious injuries, and Vehicle Miles Traveled (VMT) is determined for a 10-year period
 - A five-year rolling average is calculated for each performance measure. For example, in the graphs, data from 2006-2010 creates the first value of the rolling average in 2010; data from 2007-2011 creates the next five-year rolling average point.
- In *Target Zero's* approach to target setting, the method to establish targets would continue:
- The rolling five-year average value for 2016 (annual average of 2012 through 2016) will be set as the baseline performance.
 - A straight line will be drawn from this value in 2016 to a zero value in 2030. (The line is redrawn with each new year of data.)
 - The value of the *Target Zero* trendline in 2018 becomes the target for the performance measure in 2018.

Timelines

Final targets for Measures No. 1, No. 3 and No. 5 have been proposed and are displayed in the table on the previous page. Final targets for Measures No. 2 and No. 4 will be finalized in late June 2017, when 2016 VMT data becomes available. All targets are set for 2018 using 2012-2016 data as the baseline period, and the 2016 data used will be preliminary FARS data. (Rule #1 provides the option of using either final or preliminary FARS data when setting targets, but in actuality the finalized data for the most recent year would not be available until after the State DOTs' annual reporting deadline.)

For MAP-21 compliance, all five targets must be reported to FHWA by the HSIP submission deadline August 31, 2017. However, targets for Measures No. 1 – 3 are also required in the state's Highway Safety Plan, which must be reported earlier to the National Highway Traffic Safety Administration by July 1, 2017. Targets in both submissions must be numerically identical.

MPOs have until February 27, 2018 (180 days after the HSIP reporting deadline) to either agree to plan and program projects so that they contribute toward the accomplishment of the State DOT HSIP target, or commit to a quantifiable target for their Metropolitan Planning Area. In Washington state, MPOs have agreed to adopt the WSDOT target.

In December 2019, the FHWA will make its first determinations of significant progress toward achieving 2018 targets. They will notify states of the outcome in March 2020.