

# PERFORMANCE MEASURES



**BMPO** Bend Metropolitan  
Planning Organization



December  
2019

## Bend MPO Federal Performance Measures

Bend Metropolitan Planning Organization (MPO) is required to adopt or support state performance measures. The following report summarizes the Bend MPO status for each Performance Measure.

# Overview of Performance Measures

## FEDERAL LEGISLATION REQUIREMENT

MAP-21 established a performance-based planning framework intended to improve transparency and hold state transportation departments, transit agencies and metropolitan planning organizations (MPOs) accountable for the effectiveness of their transportation planning and investment choices. The objective of the new framework was to ensure States and MPOs invest federal resources in projects that collectively will make progress toward the achievement of the national goals identified in MAP-21.

## National Performance Goals for Bend MPO

- **Safety** – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure condition** – To maintain the highway infrastructure asset system in a state of good repair.
- **System reliability** – To improve the efficiency of the surface transportation system.

## Timeline Table for Target-Setting Due Dates

MAP-21 Related Rules	Rule Effective Date	ODOT Target-Setting Due Date	Transit Agency Target Setting Due	Bend MPO Target-Setting Due Date	Status
<b>Safety</b>	4/14/2016	8/31/2017	NA	2/27/2018	MPO Adopted 2/20/2018
<b>Pavement and Bridge Condition Performance Measures</b>	5/20/2017	5/20/2018	NA	11/20/2018	MPO Adopted 10/18/18
<b>System Performance Measures</b>	5/20/2017	5/20/2018	NA	11/20/2018	MPO Adopted 10/18/18
<b>Highway Safety Improvement Program</b>	4/14/2016	8/31/2017	NA	NA	NA
<b>Transit Asset Management</b>	10/1/2016	NA	10/1/2018	3/30/2019	Pending

Source: Compiled from Federal Highway Administration Transportation Performance Management website ([www.fhwa.dot.gov/tpm/](http://www.fhwa.dot.gov/tpm/)) and Federal Transit Administration Transit Asset Management website ([www.transit.dot.gov/TAM](http://www.transit.dot.gov/TAM)).

# Pavement Performance Measures

## FEDERAL LEGISLATION REQUIREMENT

The Federal Highway Administration (FHWA) published in the *Federal Register* (82 FR 5886) a final rule establishing performance measures for State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) to use in managing pavement and bridge performance on the National Highway System (NHS).

### Bend MPO Adopted to support ODOT 4-year target

#### Oregon DOT 4-year target

50% of non-Interstate NHS Pavement in Good Condition

10% of non-Interstate NHS Pavement in Poor Condition

#### 2016 Baseline Data (Temporary Targets until Mid-Performance Report in October 2020)

58% of Bend MPO non-Interstate NHS Pavement in Good Condition

5% of Bend MPO non-Interstate NHS Pavement in Poor Condition

64% of statewide non-Interstate NHS Pavement in Good Condition

6.5% of statewide non-Interstate NHS Pavement in Poor Condition

### ODOT Requirements

Must establish targets, regardless of ownership, for the full extent of the Interstate and non-Interstate NHS.

Must establish statewide 2- and 4-year targets for the non-Interstate NHS and 4-year targets for the Interstate by May 20, 2018, and report by October 1, 2018.

May adjust targets at the Mid-Performance Period Progress Report (October 1, 2020).

Bend MPO region does not have any Interstates. See

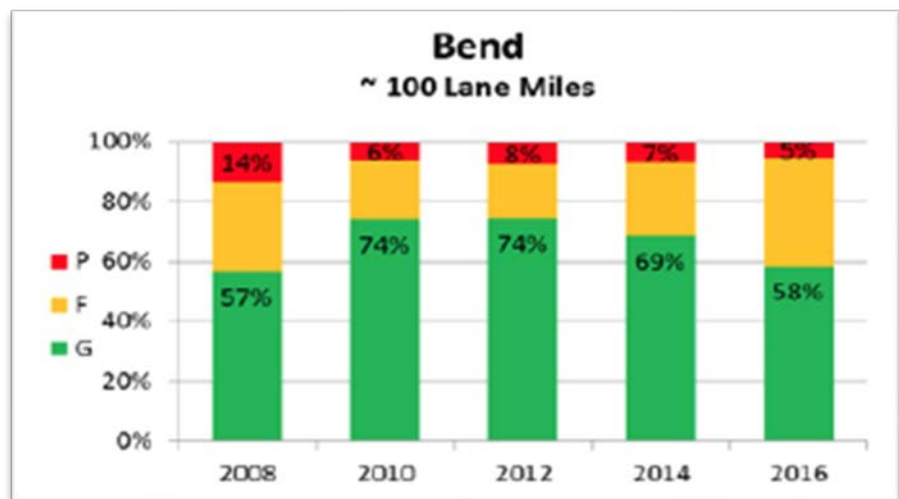


Figure 1 ODOT Pavement Assessment on NHS System in Bend MPO  
PP = Poor F = Fair G = Good

# Bridge Performance Measures

## FEDERAL LEGISLATION REQUIREMENT

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### Bend MPO Adopted to support ODOT 4-year target

#### Oregon DOT 4-year target

10% of NHS Bridges in Good Condition

3% of NHS Bridges in Poor Condition

#### 2013 Baseline Data

In Bend, there are 22 state bridges and 3 local bridges<sup>i</sup> on the NHS.

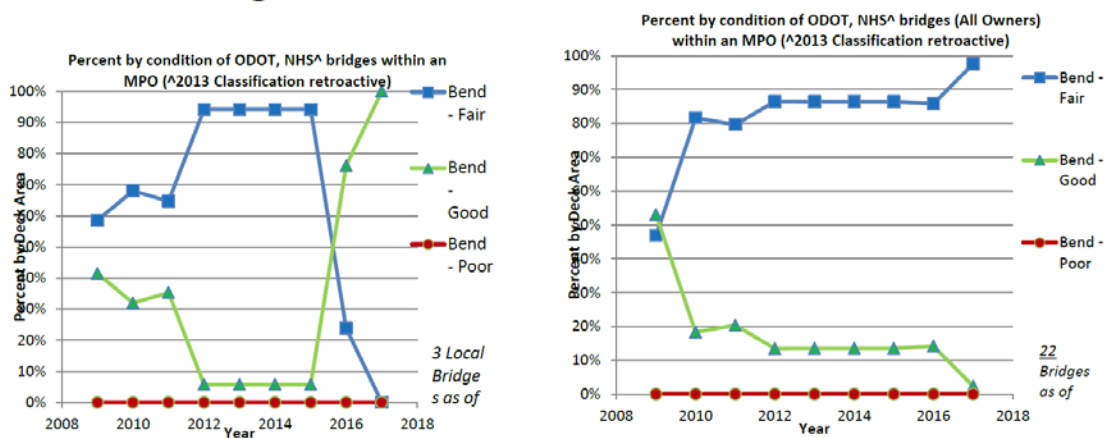
12% of Bend MPO Bridges in Good Condition

0% of Bend MPO Bridges in Poor Condition

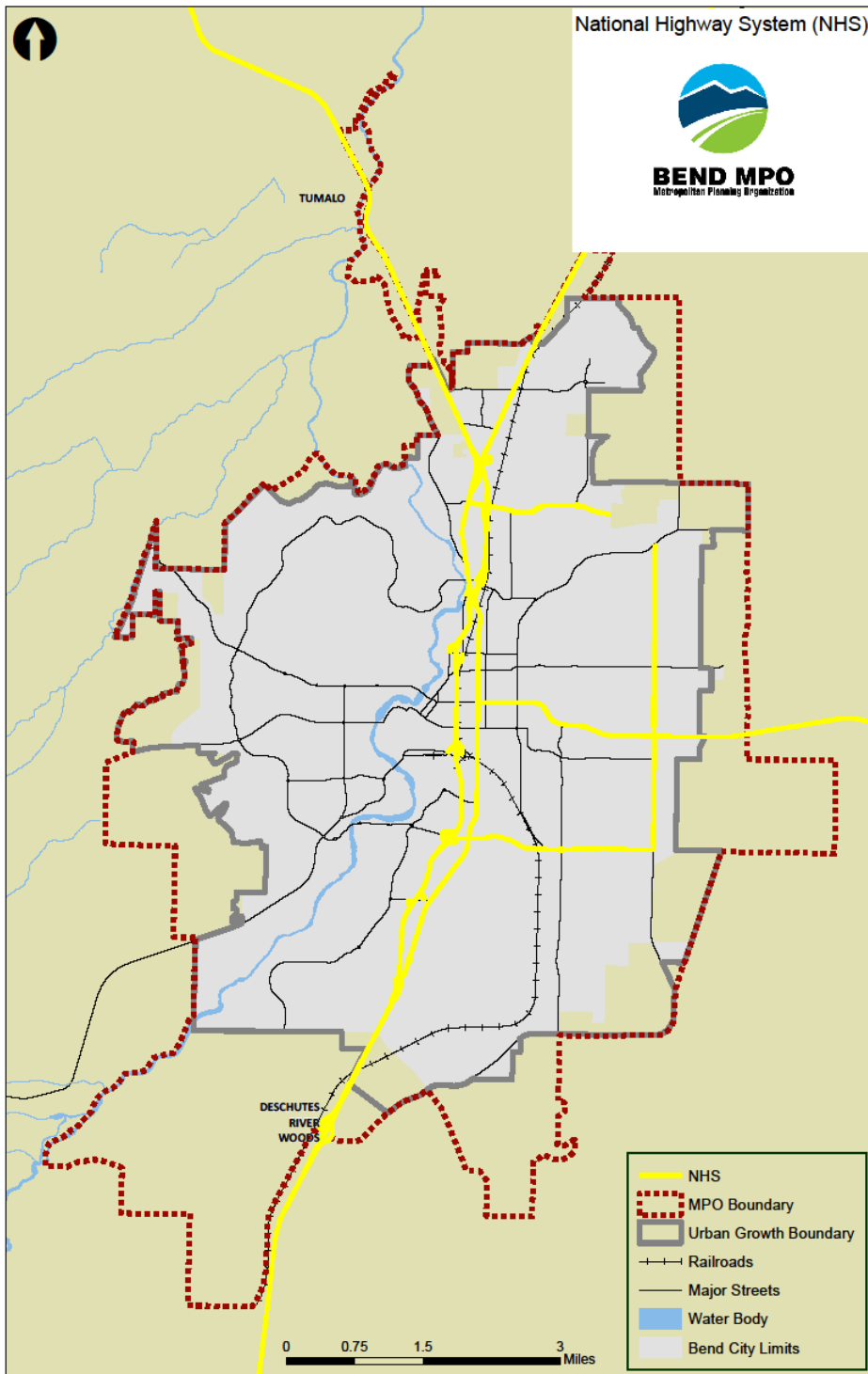
### ODOT Requirements

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## NHS Bridges – Historical Trend - Bend



# National Highway System (NHS)



## What is the NHS System?

The National Highway System, or NHS, includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility.

The NHS was developed by the Federal Department of Transportation in cooperation with the states, local officials, and metropolitan planning organizations.

NHS is a dynamic system that can change in response to future travel and trade demands. The state must cooperate with local and regional officials in proposing the modifications. In metropolitan areas, the local and regional officials shall act through the metropolitan planning organizations.

Figure 2 National Highway System in Bend

# Travel Time Reliability Performance Measures

## WHAT IS TRAVEL TIME RELIABILITY?

Even in a congested corridor, if travel times can be confidently predicted drivers can plan their trips to arrive on time.

## FEDERAL LEGISLATION REQUIREMENT

The Federal Highway Administration (FHWA) performance measures for State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) to use in measuring travel time reliability on the Interstate and non-Interstate National Highway System (NHS) Through MAP-21. Congress required FHWA to establish measures to assess performance in 12 areas, including performance on the Interstate and non-Interstate NHS. [\[See 23 CFR 490.507\(a\)\].](#)

## Bend MPO Adopted to support ODOT 4-year target

### ODOT Travel Time Reliability Measure

78% Percent of person-miles traveled on the non-Interstate NHS that are reliable (2022 Performance target)

Bend MPO will consider US 97, Hwy 20 and major arterials such as: 3<sup>rd</sup> Street, Reed Market Avenue, Empire Avenue, 27<sup>th</sup> Street for travel time reliability

Level of Travel Time Reliability (LOTTR) is defined as the ratio of the longer travel times (80th percentile) to a “normal” travel time (50th percentile). Figure 3 shows travel time reliability for portions of the Bend Parkway, US20 and Third Street in Bend. Travel time reliability analysis was performed using the most recent three years of available HERE data for the Parkway. HERE data includes crowdsourced travel time information from mobile devices on a selected corridor. DKS analyzed travel time reliability using a planning time index for the study segments along the Parkway and US 20/US 97 Business/SE 3rd Street. The planning time index represents the total travel time that should be planned for, including both typical and unexpected delay. For example, a planning time index of 1.50 means that for a trip that takes 20 minutes in light traffic a traveler should budget a total of 30 minutes to ensure on-time arrival 95 percent of the time. The higher the index, the less reliable the segment. For more details on this type of data, see the [US 97 Bend Parkway Plan](#) webpage. The Existing Condition Technical Memo dated August 2017 has a section on Travel Time Reliability.





# Pavement Condition

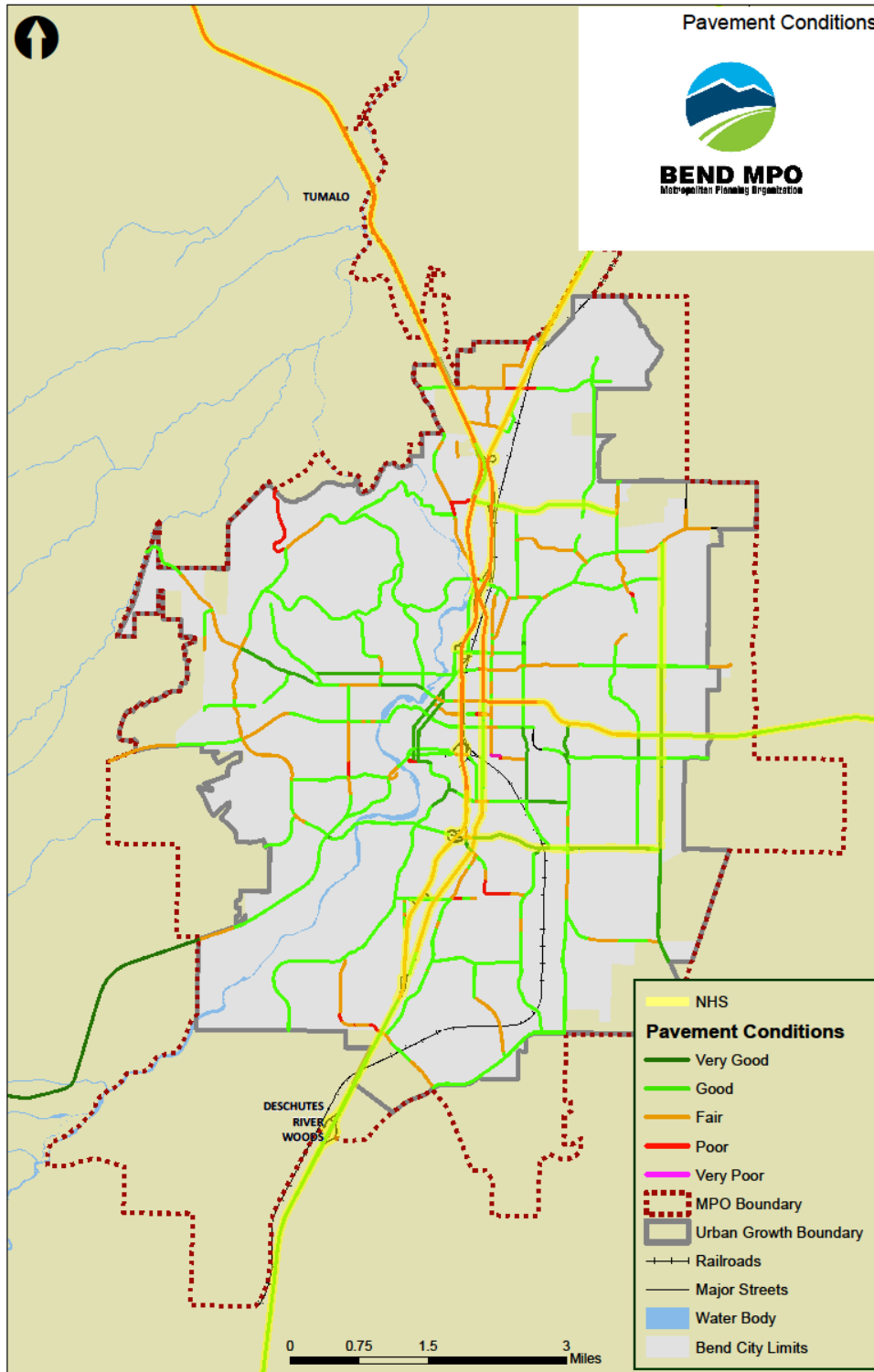


Figure 4 Pavement Conditions in Bend 2017

## Pavement Condition NHS

2016 Baseline Data  
ODOT

### Bend MPO non-Interstate NHS Pavement

58% Good Condition  
5% Poor Condition

### Statewide non-Interstate NHS Pavement

64% Good Condition  
6.5% Poor Condition

## Pavement Condition City

2017 City Data

### Arterials

63% Good Condition  
2% Poor Condition

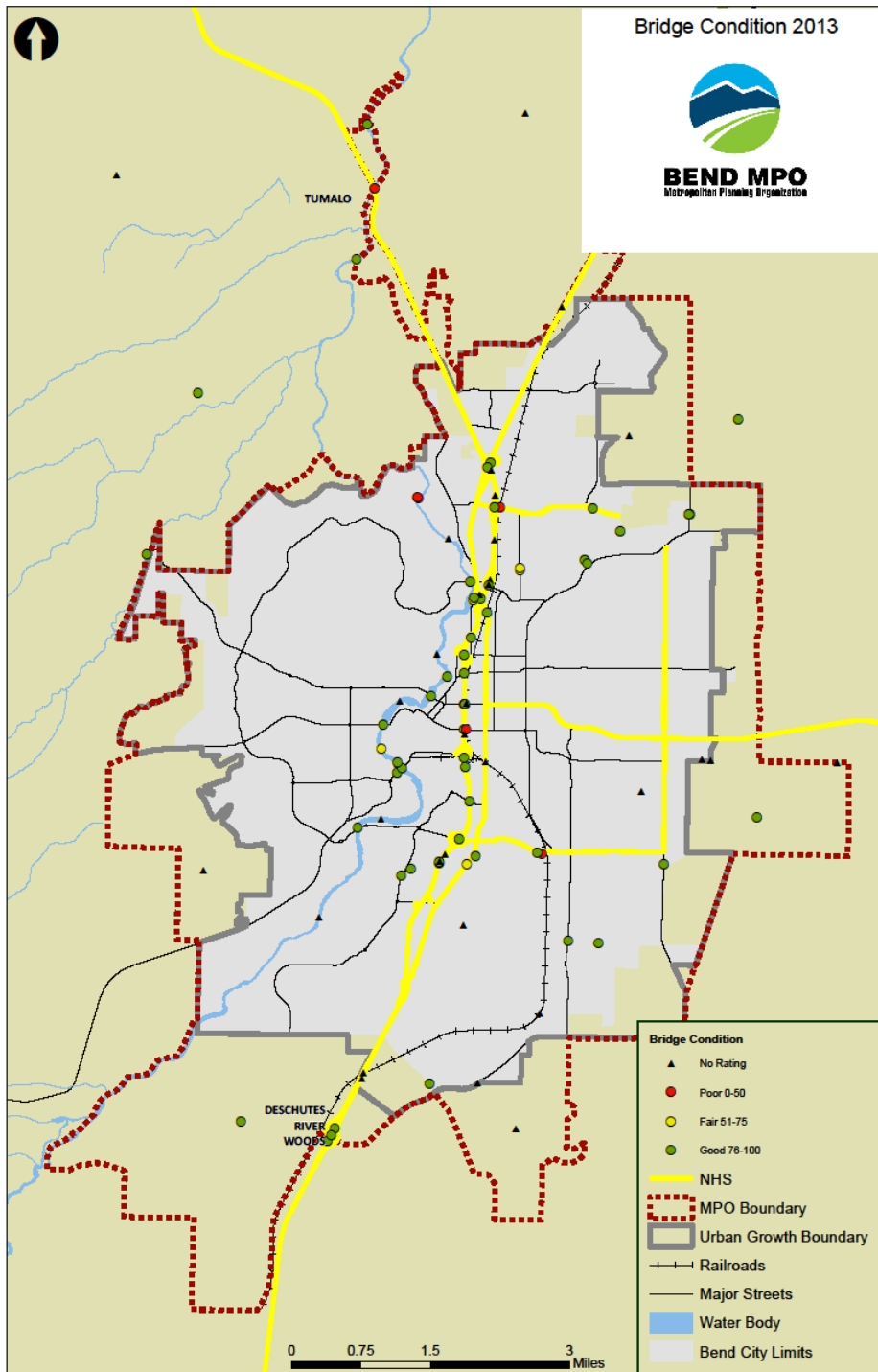
### Collectors

63% Good Condition  
5% Poor Condition

Good = 75-95  
Poor = 20-45  
Pavement Condition Index



# Bridge Condition



## Bridge Condition - NHS

In Bend, there are 22 state bridges and 3 local bridges on the NHS.

12% of Bend MPO Bridges in Good Condition  
0% of Bend MPO Bridges in Poor Condition

## Bridges in MPO

In the Bend MPO Boundary, there are 88 public bridges.

30 - ODOT  
33 - City of Bend  
6 - Deschutes County  
11 - Non Vehicle  
8 - Private/Other

Figure 5 Bridge Conditions in Bend 2013

<sup>1</sup> Bend local bridges on NHS roadways are: 3<sup>rd</sup> by Fred Meyer over canal, Empire over RR, and Empire over canal east of 18<sup>th</sup>)

# Safety Performance Measures

## FEDERAL LEGISLATION REQUIREMENT

The Federal Highway Administration (FHWA) published in the Highway Safety Improvement Program (HSIP) final rule (23 CFR Part 490) requires States to set targets for five safety performance measures (PM's) by August 31, 2017 and establish safety targets by agreeing to plan and program projects that contribute toward the accomplishment of the State targets, or establish their own targets within 180 days of the State establishing and reporting its safety targets.

## Bend MPO Adopted Safety PM's on February 20, 2018

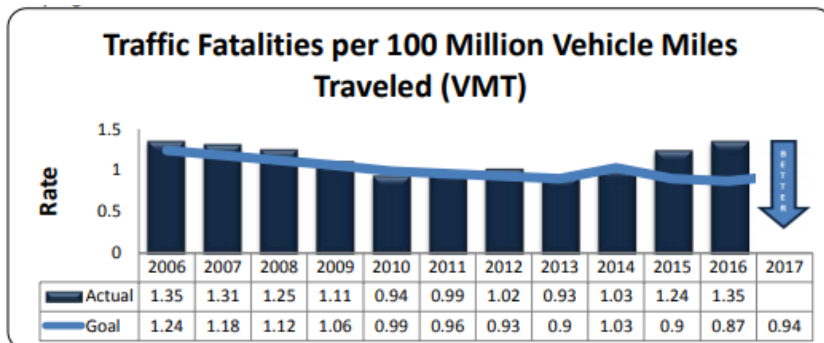
- Bend MPO adopts ODOT's safety performance targets as established in the 2016 Oregon Transportation Safety Plan via Bend MPO Resolution 2018-02.

**Oregon Transportation Safety Action Plan has established targets for five performance measures based on five year rolling averages for:**

- (1) **Number of Fatalities,**
- (2) **Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT),**
- (3) **Number of Serious Injuries,**
- (4) **Rate of Serious Injuries per 100 million VMT, and**
- (5) **Number of Non-Motorized Fatalities and Non-motorized Serious Injuries**

## MPO REPORTING REQUIREMENT

The Bend MPO supports ODOT's safety performance targets as established. To view these targets see [www.oregon.gov/ODOT/PerformMang](http://www.oregon.gov/ODOT/PerformMang). We will work with ODOT to review and verify our safety performance measures annually.



**Fact**  
 Fatal crashes involving alcohol; speed; or not wearing a safety belt are the most common causes of a fatality on Oregon roadways.

**FHWA Performance Management Areas, Measures, and Targets for ODOT (As of Aug 16, 2018)**

Safety					
Base Period	Fatalities (People) (2011-2015)	Fatality Rate (People per 100 Million VMT) (2011-2015)	Serious Injury (People) (2010-2014)	Serious Injury Rate (People per 100 Million VMT) (2010-2014)	Non-motorized Fatalities and Serious Injuries (People) (2010-2014)
Baseline	357	1.04	1,491	4.42	234
<b>2013-2017</b>	357	0.94	1,491	4.42	234
<b>2014-2018*</b>	350	0.89	1,461	4.33	229
<b>2015-2019</b>	343	0.83	1,432	4.24	225
<b>2016-2020</b>	328	0.78	1,368	4.06	215
<b>2017-2021</b>	306	0.73	1,274	3.78	200

\*2014-2018 is the first period that targets must be established for the HSIP Program.  
The federal performance areas and targets addressing safety are contained in the [Oregon Transportation Safety Action Plan](#).

Pavement Condition		
Performance Measure	2022 Performance Target	
1. Percentage of pavements of Interstate System in Good condition	35%	
2. Percentage of pavements of the Interstate System in Poor condition	0.5%	
3. Percentage of pavements of the non-Interstate NHS in Good condition	<u>2-Year</u> 50%	<u>4-Year</u> 50%
4. Percentage of pavements of the non-Interstate NHS in Poor condition	<u>2-Year</u> 10%	<u>4-Year</u> 10%

Bridge Condition		
Performance Measure	2022 Performance Target	
5. Percentage of NHS bridges classified as in Good condition	10%	
6. Percentage of NHS bridges classified as in Poor condition	3%	

National Highway System Performance		
Performance Measure	2022 Performance Target	
7. Percent of the person-miles traveled on the Interstate that are reliable (Interstate Travel Time Reliability measure)	78%	
8. Percent of person-miles traveled on the non-Interstate NHS that are reliable (Non-Interstate Travel Time Reliability measure)	78%	

Freight Movement on Interstate System		
Performance Measure	2022 Performance Target	
9. Truck Travel Time Reliability (TTTR) Index (Freight Reliability measure)	1.45	

Congestion Mitigation and Air Quality - Traffic Congestion		
Performance Measure	2022 Performance Target	
10. Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita (PHED measure)	23.96	
11. Percent of Non-SOV Travel	<u>2-Year</u> 33.1%	<u>4-Year</u> 33.5%

Congestion Mitigation and Air Quality- On-Road Mobile Source Emissions		
Performance Measure	2022 Performance Target	
12. Total Emissions Reduction; 2-year and 4-year cumulative reported emission reductions, for all projects funded by CMAQ funds, of each criteria pollutant and applicable precursors (PM2.5, PM10, CO, VOC, and NOx) under the CMAQ program for which the area is designated nonattainment or maintenance	<u>2-Year (Kg/Day)</u>	<u>4-Year (Kg/Day)</u>
	VOC – 29.49	VOC – 58.97
	CO – 584	CO – 1168
	NOx – 71.45	NOx – 142.9
	PM10 – 363	PM10 – 726.4
	PM2.5 - .12	PM2.5 - .23

\*FHWA Performance Areas and Measures are contained in the [Oregon Highway Plan \(OHP\) Appendix L](#) ~ Adopted May 17, 2018

The Oregon Highway Plan addresses the FHWA performance management requirements for National Highway Performance, Congestion Mitigation and Air Quality, and National Freight Movement. The performance based planning process and performance targets contained in this amendment are for ODOT’s federal reporting requirements only. This sheet is found online at:

<https://www.oregon.gov/ODOT/PerformMang/Documents/FHWA%20Performance%20Management%20Area%20Targets.pdf>