Oregon Department of Transportation

2025

Bridge Condition Report
& Tunnel Data

Oregon Department of Transportation

Siuslaw River Bridge.

2025 BRIDGE CONDITION REPORT & TUNNEL DATA

Compilation by Michael McDonald
Astoria-Megler Bridge by Bert Hartman, P.E.
Major Bridge Maintenance Program article by Orren Jennings, P.E.
Bridge Preservation Program article by Bjorn Miller, P.E.
Seismic Program article by Albert Nako, P.E.
Load Rating Program article by Jon Rooper, P.E.
Tunnel Data by Bjorn Miller, P.E.
Photos courtesy of ODOT Flickr team unless noted by instance
Lead editing by Jill Pearson
Publication design by Carlee Justis

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The 2025 Bridge Condition Report provides a snapshot of the condition of bridges in Oregon that are on state highways. Condition information is measured by Oregon's Bridge Key Performance Measure and by the National Bridge Performance Measure. In addition to condition information, there is information on bridge programs that are in place to manage and preserve state highway bridges. These include Major Bridge Maintenance, Bridge Preservation, the Seismic Program, and Load Rating. Efforts to maintain and preserve existing bridges are critical. With adequate funding, approximately 27 state highway bridges could be replaced annually, which is consistent with a 100-year service life.

The highlight for this year's report is on the Astoria-Megler Bridge located at the mouth of the Columbia River. The bridge is over four miles long and took four years to complete. This is such a massive bridge that structural details are repeated many times, and when areas of concern are identified, the needs are extensive.

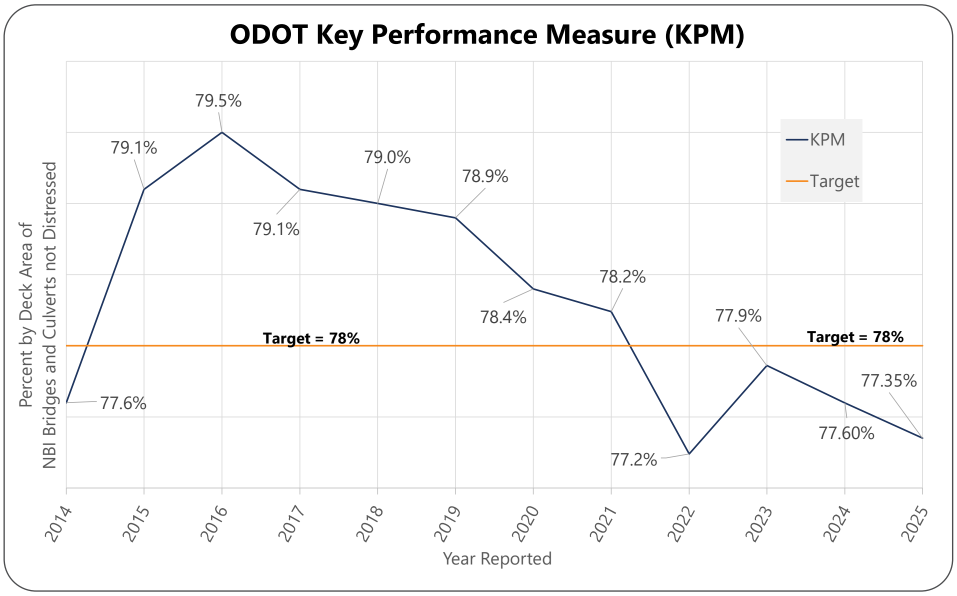
A growing concern is the 6,000 plus breeding pairs of cormorants that nest on the bridge. Their waste products interfere with the ability to inspect the bridge for cracks in the steel and also deteriorates the paint that protects the steel from corrosion. There are many steel bearings that allow the bridge to expand and contract with changes in temperature that can no longer move due to corrosion. The concrete road surface has many locations where vehicle traffic has worn ruts into the concrete and exposed the steel reinforcement to the highly corrosive coastal environment.

Finally, the Astoria-Megler Bridge may be vulnerable to collapse due to a vessel collision, as there are large ocean-going vessels that travel under the bridge. An assessment is currently underway to determine the vulnerability of this bridge to vessel collision. If the results of the vulnerability assessment show that the bridge is above the acceptable level of risk, ODOT needs to determine short and long-term strategies to reduce the probability of a potential bridge collapse from a vessel collision.

2025 Bridge Condition Report Content

Bridge Conditions: With only an average of three bridges replaced annually, ODOT continues to lose ground in the effort to manage the system. Although a significant portion of these bridges are in fair condition at this time, in the following decades, the agency will be burdened with a huge responsibility to maintain or replace the 40% of the inventory built between 1951-1970, as they continue to deteriorate.

Bridge Key Performance Measure (KPM): The overall trend since 2016 has been down and is consistent with a decrease in the percentage of bridges in good condition that are reported in the National Bridge Performance Measure.



ODOT bridges in not distressed condition. Larger percentages are better.

National Bridge Performance Measure (NBPM): Oregon is meeting the requirements of the National Bridge Performance Measure, especially in the low percentage of deck area for bridges that are in poor condition. At the same time, Oregon has the lowest percentage of deck area for bridges that are in good condition when compared to six other western states.

Major Bridge Maintenance (MBM): The MBM program continued to provide tremendous value to the bridge program in 2025 by repairing 12 bridges in poor condition and addressing 53 other bridges with high priority maintenance recommendations. The program also funded projects to seal concrete bridge decks to protect against winter chemicals, replace deteriorated asphalt, and perform maintenance on many other bridges.

Bridge Preservation: The Preservation program includes the preservation of the historic coastal bridges that were built in the 1930s and economic-focused preservation of high-value bridges statewide. Typical preservation projects include applying corrosion resistant coatings, strengthening bridges and maintaining moveable bridges. The program's objective is to preserve historic bridges while subtly achieving modern-day design standards. Current examples of this work in the 2024-2027 STIP cycle range from applying impressed cathodic protection on the Depoe Bay Bridge to replacing the bridge deck on the Gold Hill Bridge over the Rogue River. The U.S. 101 Yaquina Bay Bridge will have a project in the 2027-2030 STIP cycle that includes painting, strengthening, and repairs to address cracking and corrosion.

Seismic Program: Seismic retrofit construction is complete on the southern portion of U.S. 97, which is designated as a primary north-south lifeline in the aftermath of a major earthquake. The Southern Oregon Seismic Bridge Retrofit project is also complete. Construction is underway on the final bridge project to make Oregon 58 seismically resilient. Also, construction activities are in full swing on I-205 Abernethy Bridge and the Van Buren Bridge in Corvallis.

Bridge Load Rating: In 2025, there were two ODOT owned bridges that were load posted for specialized hauling vehicles and three-axle emergency vehicles, and three other ODOT owned bridges that were load posted for just the three-axle emergency vehicles. Of our total inventory, 15.6% of our structures have at least one weight restriction. Efforts to legalize larger and more robust vehicles – to haul freight and deliver emergency services – pose an ongoing concern. While these larger vehicles allow for greater efficiency by hauling more goods or carrying emergency tools, they pose a significant risk to Oregon's inventory of older bridges. The state constructed much of its bridge inventory prior to 1970. At the time, vehicles were much smaller and lighter weight. New vehicle configurations can result in greater, more concentrated stress points on our structures.

When new vehicle configurations are approved at the national level, our program must evaluate our structures individually for the capability to carry these heavier trucks. Load rating structures – assessing, signing, and enforcing – comes at a cost. Conducting engineering reviews on nearly 3,000 structures can cost upwards of $20 million – an expense incurred every time state or national standards change. While it is critical that we assess our structures for their capability to carry people, goods and services across our state, it is important to note that funds spent to load rate bridges come from the same reserve as those used to improve bridge conditions.

ABBREVIATIONS AND DEFINITIONS

Bent – A primary vertical substructure support that serves to hold the bridge erect and still. It can also retain approach embankments and vertical and horizontal loads from the superstructure.

Distressed Bridge – A bridge condition rating used by the Oregon Department of Transportation to indicate that the bridge has been identified as either structurally deficient or as having other deficiencies. A classification of "distressed bridge" does not imply that the bridge is unsafe.

Functionally Obsolete (FO) – A bridge assessment rating used by the Federal Highway Administration to indicate that a bridge does not meet current (primarily geometric) standards. The rating is based on bridge inspection appraisal ratings. Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths, vertical clearances, or design loads to serve traffic demand. This definition also includes bridges that may be occasionally flooded.

Key Performance Measure (KPM) – A measure used to evaluate the progress of an organization in managing to a particular goal.

Major Bridge Maintenance (MBM) – One of three funding approaches the Bridge Program uses to manage the bridge system. The MBM program typically addresses smaller scale bridge preservation needs and emergency bridge repairs that are outside the scope of work that can be accomplished by an ODOT district.

National Bridge Inventory (NBI) – The aggregation of structure inventory and appraisal data collected to fulfill the requirements of the federal National Bridge Inspection Standards (NBIS).

National Bridge Inspection Standards (NBIS) – Federal regulations establishing requirements for inspection procedures, frequency of inspections, qualifications of personnel, inspection reports, and preparation and maintenance of a state bridge inventory. The NBIS applies to all structures defined as bridges located on all public roads.

National Highway System (NHS) – The National Highway System comprises approximately 225,000 miles of roadway nationwide, including the Interstate Highway System as well as other roads designated as important to the nation's economy, defense, and intermodal mobility. The NHS was developed by the United States Department of Transportation in cooperation with the states, local officials and metropolitan planning organizations. Congress approved the NHS in 1994.

National Tunnel Inspection Standards (NTIS) – Federal Highway Administration guidelines for inventorying, inspecting, and load rating tunnels.

Non-National Highway System (NNHS) – Routes not designated as part of the NHS.

Other Deficiencies (OD) – A bridge condition rating used by the Oregon Department of Transportation to indicate that a bridge has identified needs in one or more of nine factors and is a candidate for repair or replacement. This condition rating is specifically designed to address specific bridge needs such as freight mobility, deterioration, serviceability, and safety. A classification of "other deficiencies" does not imply that the bridge is unsafe.

Types of ODs include:
- **Rail = Bridge rail**
- **LC = Load capacity**
- **LSL = Low service life**
- **MB = Movable bridge**
- **DG = Other geometric clearances (deck geometry)**
- **Paint = Paint**
- **Scour = Scour**
- **TS = Timber structures (substructure)**
- **VC = Vertical clearance**

Poor Detail Bridge – Bridges identified in the state bridge inventory that have critical design issues related to rail, decks, and reinforcement locations. Bridges with poor details have a higher incidence of shear cracking that may grow rapidly, holes in thin bridge decks developing without warning, low reserve load capacity, and instability during seismic events.

Scour – The removal of sediment such as sand and gravel around the bridge foundations caused by hydraulic forces of fast-moving water.

Scour Critical Bridge – A scour critical bridge is one with an abutment or pier foundation rated as unstable due to (1) observed scour at the bridge site or (2) a scour potential as determined by an engineering scour evaluation study.

Service Life – The time duration during which the bridge element, component, subsystem, or system provides the desired level of performance or functionality, with any required level of repair and/or maintenance.

State Transportation Improvement Program (STIP) – Oregon's four-year transportation capital improvement program. The STIP document identifies the funding for, and scheduling of, transportation projects and programs.

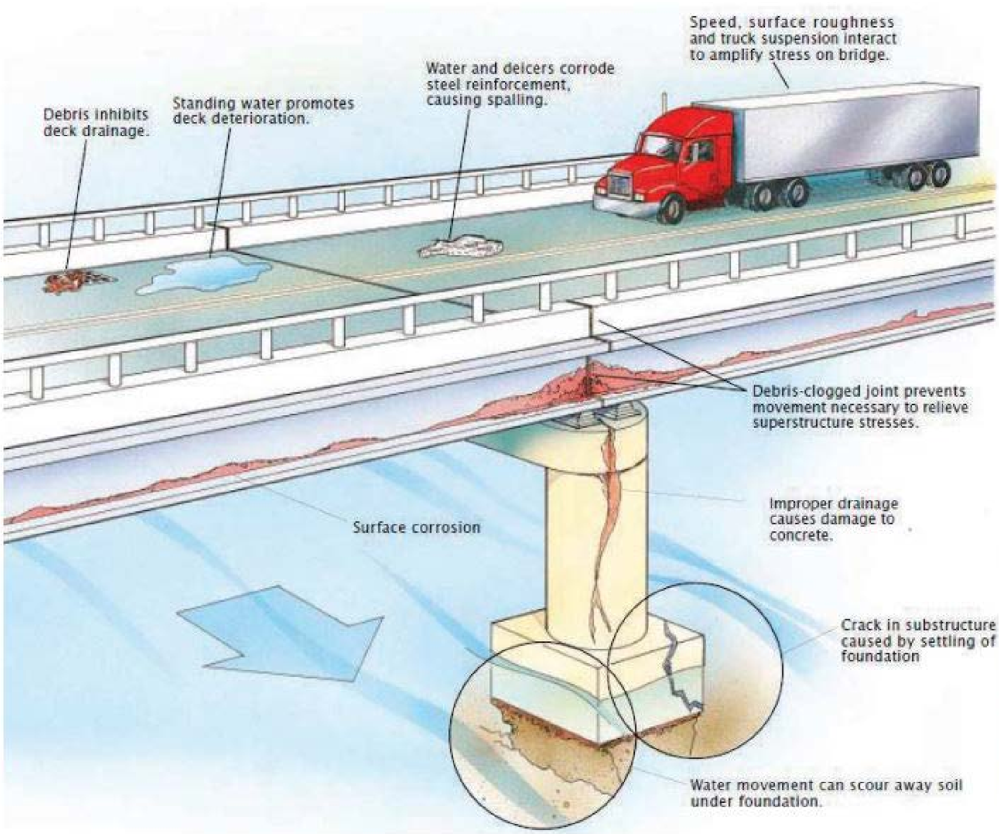
Structurally Deficient (SD) – A bridge condition rating used by the Federal Highway Administration to indicate deteriorated physical conditions of the bridge's structural elements (primarily deck, superstructure, and substructure) and reduced load capacity. Some of these bridges are posted and may require trucks of a certain weight to detour. A classification of "structurally deficient" does not imply that bridges are unsafe. When an inspection reveals a safety problem, the bridge is posted for reduced loads, scheduled for repairs, or in unusual situations, closed until repairs can be completed. Structural deficiency is one of the many factors used in the ODOT State Bridge Program for project ranking or selection.

BRIDGES 101

General Deterioration Factors

Experience has shown that bridge deterioration is dependent on complex interactions of multiple factors as shown.

Extreme events (earthquakes, flooding, vehicle impacts) are another cause of bridge distress not considered as general deterioration but result in the need for quick response and investment to restore mobility.

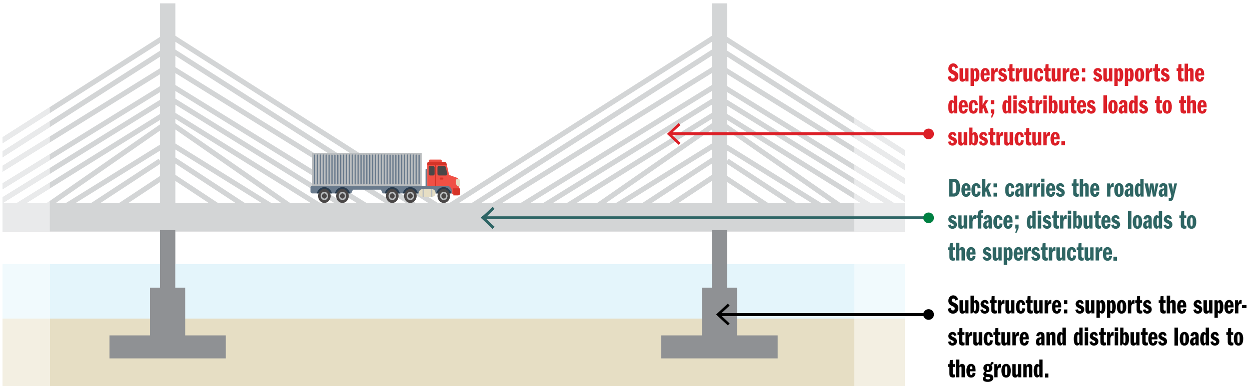


Adapted from "Why America's Bridges are Crumbling," by K.F. Dunker and B. G. Rabbat, 1993, March, Scientific American, 268, no. 3, p. 69. Permission for use courtesy of Jana Brenning, illustrator.

Bridge Condition Ratings

Bridge conditions are categorized by evaluating bridge components (deck, superstructure, and substructure) as shown in the graphic.

National Bridge Inspection Standards (NBIS) were established in 1968 to monitor existing bridge performance to ensure the safety of the traveling public. The NBIS regulations apply to all publicly owned highway bridges 20 feet and longer located on public roads. To comply with the NBIS and assess bridge conditions, ODOT manages a statewide bridge inspection program that includes both routine and specialized inspections. Bridge condition ratings are described on the next page.



The NBI ratings provide simple tools for agencies to describe the overall conditions of their bridge populations and the overall effectiveness of their bridge programs. The critical rating is when a highway bridge is classified as structurally deficient (SD).

NBI Component	NBI Rating	Condition Rating Description
• Deck • Superstructure • Substructure • Culvert rating (if applicable)	Lowest condition NBI rating of all components (scale =0-9)	8-9: Very good condition 7: Good condition 5-6: Fair condition 4: Poor condition ≤ 3: Very poor condition

Bridge condition rating description.

Beginning in 2018, a bridge is classified as structurally deficient only if any component (deck, superstructure, substructure) has an NBI rating of 4 or less. Previously, load capacity and hydraulic opening below the bridge could result in an SD classification.

Maintenance Needs and Cost Impacts

Keeping a bridge in fair to good condition requires routine inspections, proactive maintenance and preservation treatments. Examples of proactive maintenance are:

- Sealing or replacing leaking joints to minimize the deterioration of superstructure and substructure elements beneath the joints.
- Painting/coating or overcoating structural steel to protect against corrosion.
- Installing scour countermeasures to protect the substructure from undermining and failure due to scour below the bridge.

Timing is critical when performing the work since the longer the deterioration occurs, the more extensive/expensive the required treatment.

ASTORIA-MEGLER BRIDGE

The Astoria-Megler Bridge is a key part of the Pacific Coast Highway as it is the last link connecting U.S. Route 101 from California to Washington. Construction on the bridge began in 1962 and took four years to complete. The construction was an impressive engineering feat, with massive steel sections floated down the river and hoisted into place.

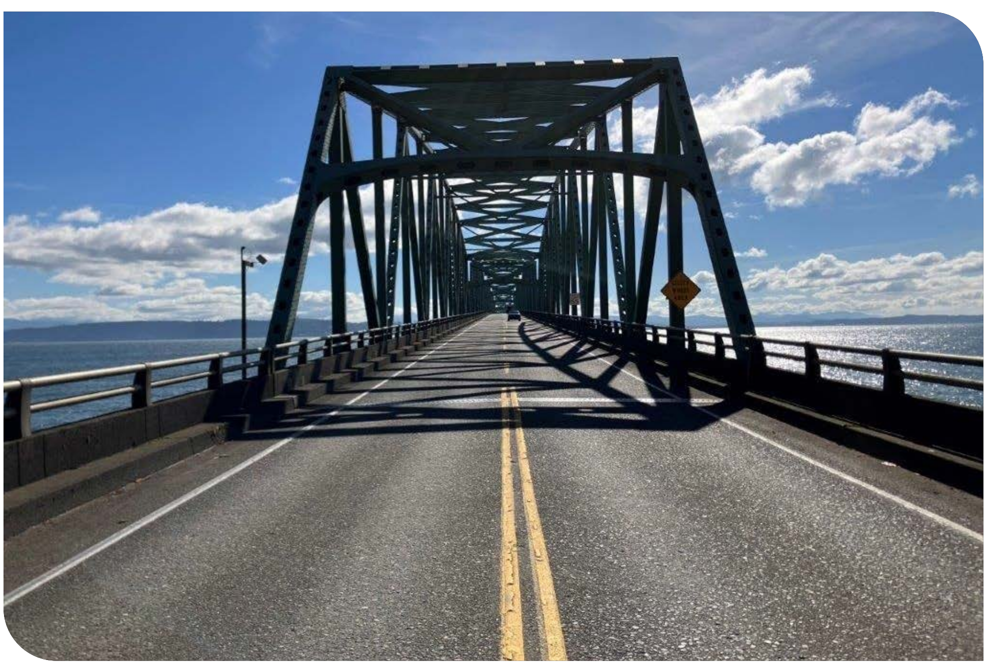
The bridge replaced the unreliable ferry system that could be shut down due to bad weather or the Columbia River's strong currents. What used to take 30 minutes to cross the Columbia River by ferry, now takes about six minutes to drive across the bridge. When the bridge opened in 1966, both local and regional businesses in Oregon and Washington saw a significant increase in the reliable transport of goods. Today, the average daily traffic of cars and trucks that cross the bridge is 9,200.

Because this bridge is so important to commerce – both for freight over the bridge and for ships that pass beneath it – we are spotlighting how we keep the bridge operating year after year and what needs are on the horizon.

Bridge Structure

The Astoria-Megler Bridge is a massive bridge and because of this, structural details are repeated many times. When we identify a defect that needs to be fixed, there are probably many other locations with a similar defect. Since the bridge is so large, we divide it into individual sections so that we can easily communicate the inspection results.

Starting in Washington, the first portion of the bridge has some spans supported with steel girders, and some spans with trusses that are over the roadway as shown in the photo below.



The next portion of the bridge is 140 spans of prestressed concrete girders as shown in the photos below. This is the longest portion of the bridge. The climb to the main spans over the shipping channel can be seen in the distance.

The next section of the bridge is the approach to the shipping channel. The roadway is supported by steel trusses that are below the roadway.

The photo below, taken from the Oregon approach, shows the main truss over the shipping channel and the spans on either side. These three spans are recognized as the longest continuous truss bridge in North America and is 2,465 feet long, including the 1,233 feet long span over the shipping channel.

The photo above was taken during a painting project on the underside of the main truss. The enclosed containment area staged in the middle of the span was needed to keep the lead paint that was removed from being released into the environment.

The Oregon approach is shown above, in both the foreground and background as it crosses the highway twice.

Condition

Overall, the bridge is in satisfactory condition, which is normal for a bridge that has been in service for 60 years and has had projects to address condition-based needs. However, there are two portions of the bridge that are in fair condition. The steel in the main truss spans over the shipping channel has cracking and corrosion. The concrete driving surface on the spans at the Oregon end of the bridge have areas of extensive patching and exposed reinforcement. There are 140 spans of prestressed girders near the middle of the bridge that are in poor condition. The steel bearings have corroded after being subject to the harsh marine environment and they no longer allow the bridge to expand and contract due to daily temperature changes.

To preserve the Astoria-Megler Bridge, we need to address five main areas of concern. These include cormorants nesting on the bridge, steel cracking, protective paint peeling, roadway surface deterioration, steel bearing corrosion, and vessel collision.

Cormorants

Cormorants degrade paint by leaving waste products on the bridge surface and shortening its service life. Nests and waste products also interfere with the ability to properly inspect the bridge, leaving small cracks to grow before they can be located and addressed. Removing nests and waste products adds to the cost of inspections, maintenance, and projects, and creates a hazardous environment for workers.

The number of double-crested cormorants nesting on the Astoria-Megler Bridge has increased dramatically in the past decade. The colony grew from fewer than 350 nesting pairs of birds in 2014 to about 5,150 pairs in 2023. In addition, about 1,000 breeding pairs of Brandt's cormorants have been nesting on the bridge in recent years. Federal management of the nearby East Sand Island cormorant colony, which began in 2015, was the apparent primary cause of the cormorant colony population growth. In total, there are about 6,000 breeding pairs (12,000 individuals) of three different cormorant species nesting on the bridge, the vast majority of which are double-crested cormorants.

The birds' nesting activities and associated waste accelerate deterioration of the bridge's paint, increasing maintenance costs for Oregon and Washington, and pose hazards to drivers and bridge maintenance workers on this vital Columbia River crossing. Birds struck by vehicles on the bridge pose a risk to drivers and maintenance workers who must remove the carcasses regularly.

ODOT is working with numerous entities in Oregon and Washington including WSDOT, Native American Tribes, wildlife officials, and federal and state agencies on how to move the birds back downriver. Due to the large number of entities involved with the cormorant issue, a four-day workshop was held in June 2023 to develop alternatives and provide recommendations. The recommendations focus on a coordinated "push-pull" strategy to deter the birds from landing on the bridge by providing a more appealing alternate location. The next step is to create a plan and identify funding for it. We estimated the proposal will require seven to 10 years to implement and cost up to $50 million.

In September 2025, Governor Kotek pursued a preliminary injunction against four federal agencies for low salmon populations in the Columbia River. Judge Simon issued a ruling in February 2026 granting Oregon's request for additional spill at several dams to assist salmon migration but did not order the federal agencies to relocate cormorants on the Astoria-Megler Bridge, as Oregon had requested. This lawsuit is ongoing. The cormorant relocation project has an initial implementation phase, ongoing costs for the first four years, and ongoing long-term costs. The initial implementation includes modifications to the bridge including catwalks, ladders and netting to prevent cormorants from gaining access to the bridge. We will purchase a small fire boat and use it to spray water on the bridge periodically to discourage the cormorants from remaining on the bridge. Ongoing costs for the first four years include maintaining and operating the fire boat, clearing the cormorants at the bridge, attracting the cormorants to East Sand Island, deterring other colony sites, and cleaning the bridge. The long-term costs are primarily monitoring the cormorant population and deterring them from returning to the Astoria-Megler Bridge or relocating to other bridges such as the Lewis & Clark Bridge in Longview, which has a growing colony of cormorants.

Steel Cracking and Painting

Fatigue cracks happen in steel due to a combination of minor defects in manufacturing, repeated traffic loading and the force of the wind. These cracks grow slowly over many years but accelerate with time. Bridges in the United States have failed due to fatigue cracking. In early 2024, ODOT coordinated with WSDOT to address the most concerning fatigue cracks. One of the cracks was already over 6 inches long.

An inspection team completed a steel inspection on a portion of the Astoria-Megler Bridge in October 2025. They used an "under bridge inspection truck" with a moveable arm and a bucket to hold the inspector as they closely inspected the steel. The picture to the right is from that inspection.

The inspectors found some cracks that had formed since the last inspection (bridges are inspected every two years). The crack in the photos below is half an inch long. The location and extent of the cracks are marked on the bridge.

Some cracks have not grown since the last inspection.

Other cracks have grown since the last inspection. The crack shown above grew from 4 inches to 9 inches between the 2023 inspection and the 2025 inspection.

The very tip of the crack has a very high stress concentration. Many cracks can be prevented from future growth by drilling a small hole at the tip to greatly reduce stress concentration. Significant cracks like the one shown on the previous page will need to be repaired so the bridge can continue to function as designed. The photo on the previous page, lower right shows the grinding of the paint near a crack, and the smooth hole that is drilled at the crack tip.

The photo to the right was taken in December 2025, shows the completed repair.

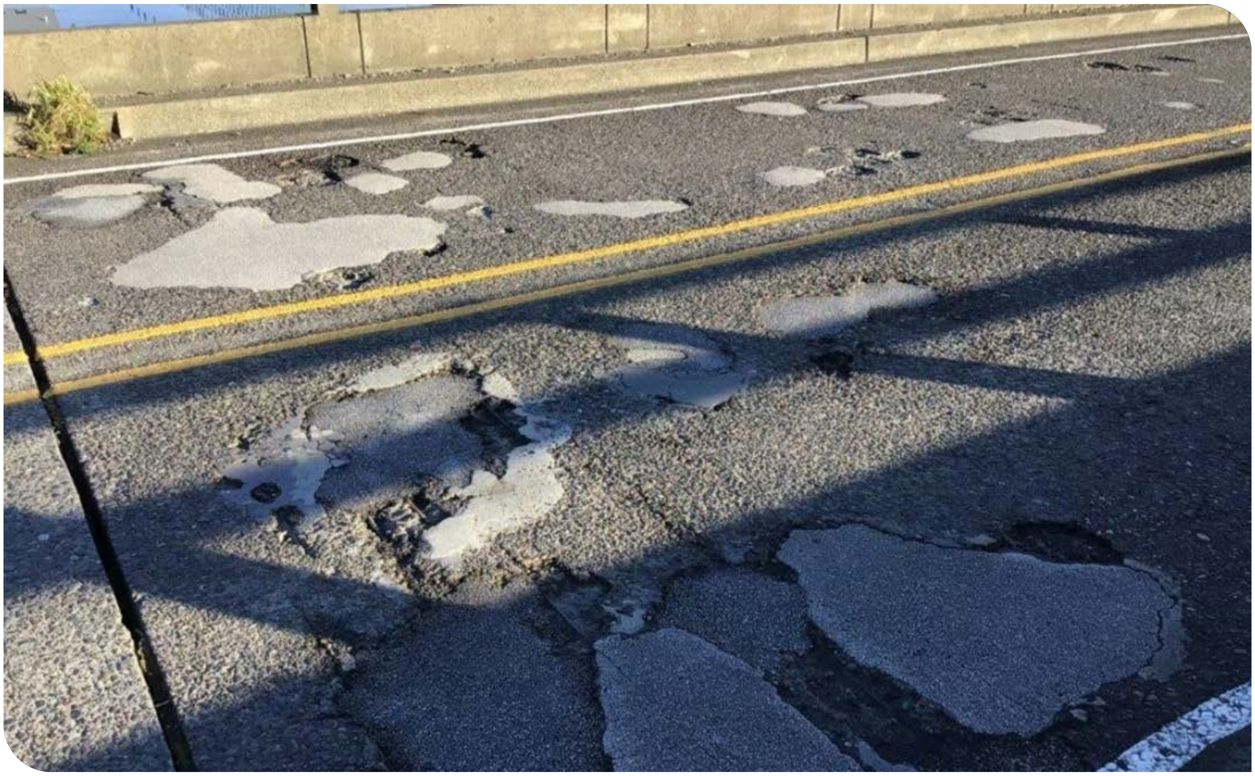
The Astoria-Megler Bridge has painted steel spans near the shore on the Washington end of the bridge, and also at the main shipping channel near the Oregon end. The spans near and over the shipping channel were painted in three projects from 2012 to 2021, with a combined cost of $48 million.

Deterioration of the Roadway Surface

The bridge deck directly carries vehicles, and the top of the deck is the roadway surface. The surface can wear down over time, especially when vehicle tires make contact with the pavement. The deck transfers the vehicle loads to the girders that support the deck. The deck on the Astoria-Megler Bridge is reinforced concrete, with steel reinforcement placed near the top and bottom surfaces. The steel reinforcement located near the top of the deck was designed to have 1 ½ inches of concrete over the steel to protect it from traffic wear and to protect it from the highly corrosive coastal marine environment.

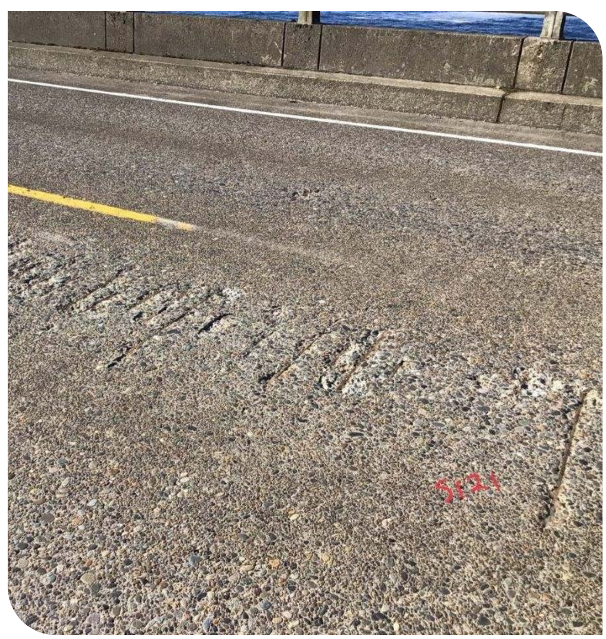
Currently, there is insufficient concrete to cover the top level of deck reinforcement. There are portions of the bridge that have exposed and rusted reinforcement. Due to the length of the bridge, there will need to be a series of concrete overlay projects. The estimate to remove the top layer of concrete and place new concrete on the Oregon approach and update the deficient bridge rails, is $13.5 million. This represents 8.7% of the deck area for the entire bridge. Based on the cost of overlaying the Oregon approach, the preliminary estimate to overlay the entire bridge and update the deficient bridge rails is $155 million. Due to the high cost, we will need to program a series of projects to address the deck and the deficient bridge rails.

The photo below is of the Oregon approach. It shows portions of the deck that have failed, some of which have been patched. A few of the earlier patches have failed and been replaced with new patches.



As shown in the photos below, there is a widespread issue of not enough concrete covering the steel reinforcement under the driving surface. Portions of the exposed steel reinforcement have been covered with concrete patches; however, it's a temporary measure at best. The top layer of concrete on the bridge has been contaminated by salt from the ocean for the past 60 years and must be removed. Once this is complete, we will add a new layer of concrete to provide the protective layer of concrete to the reinforcement that was intended when the bridge was built.

Looking northeast at the deck surface.



Surface wear on the Astoria-Megler Bridge.

Corroded Steel Bearings

The 140 prestressed girder spans are supported by a combination of fixed concrete bearings and moveable steel bearings that allow the bridge to expand and contract with changes in temperature. All 136 steel bearings have extensive corrosion, with 12 of the bearings no longer able to move due to the buildup of corrosion. The bridge needs to be able to expand and contract but can no longer do so at the steel bearing locations and this is causing the concrete bearings to crack.

The photo below shows the paint placed on the bearing to prevent corrosion has failed. There is corrosion at both the upper and lower surfaces of the bearing, and the steel base plate is disintegrating. This bearing, designed to allow for the expansion and contraction of the prestressed concrete girders, no longer functions. Above the bearing a portion of the prestressed girder has broken off, exposing the steel reinforcement. The photo also shows the concrete support for the girder in the next span has a significant portion that has separated. The crack is due to the stress on the concrete support that was caused by the steel bearing at the other end of the span being unable to provide movement as the bridge expands and contracts due to daily temperature changes. As portions of the concrete support separate, the intact concrete that is left to support the girders is reduced and is under a greater load.

The photo left shows a corroded steel bearing and a cracked concrete support.

The Major Bridge Maintenance Program estimated it would require $2.2 million to address the four movable steel bearings and the four cracked concrete supports at 13 locations. Due to both Oregon and Washington funding constraints, there is a contract underway to address four of the 13 locations that have the most deteriorated bearings.

The photo left is an example of a completed repair on one of four cracked concrete supports on the Astoria-Megler Bridge

Vessel Collision

On March 26, 2024, the 984-foot-long cargo vessel (containership) Dali was transiting out of the Baltimore Harbor, Maryland, when it experienced a loss of electrical power and struck the southern pier of the central span of the Francis Scott Key Bridge. A portion of the bridge collapsed, killing six construction workers. The National Transportation Safety Board (NTSB) investigated this incident and included a vulnerability assessment of how susceptible the Key Bridge was to collapse from a vessel collision. The vulnerability assessment found that the Key Bridge was above the acceptable level of risk established by the American Association of State Highway and Transportation Officials. The NTSB identified 68 other bridges nationwide that are frequented by ocean-going vessels, constructed prior to 1991 (when guidance on vessel collision was issued), and have not undergone a vulnerability assessment resulting in an unknown level of risk of collapse from a vessel collision.

The Astoria-Megler Bridge, the St. Johns Bridge, and the Lewis & Clark Bridge are included in the list of bridges that require a vulnerability assessment. Washington State has the lead role for the Lewis & Clark Bridge, and the vulnerability assessment is underway. As of November 2025, Oregon is in the procurement process to address the vulnerability assessments for the Astoria-Meger Bridge and the St. Johns Bridge.

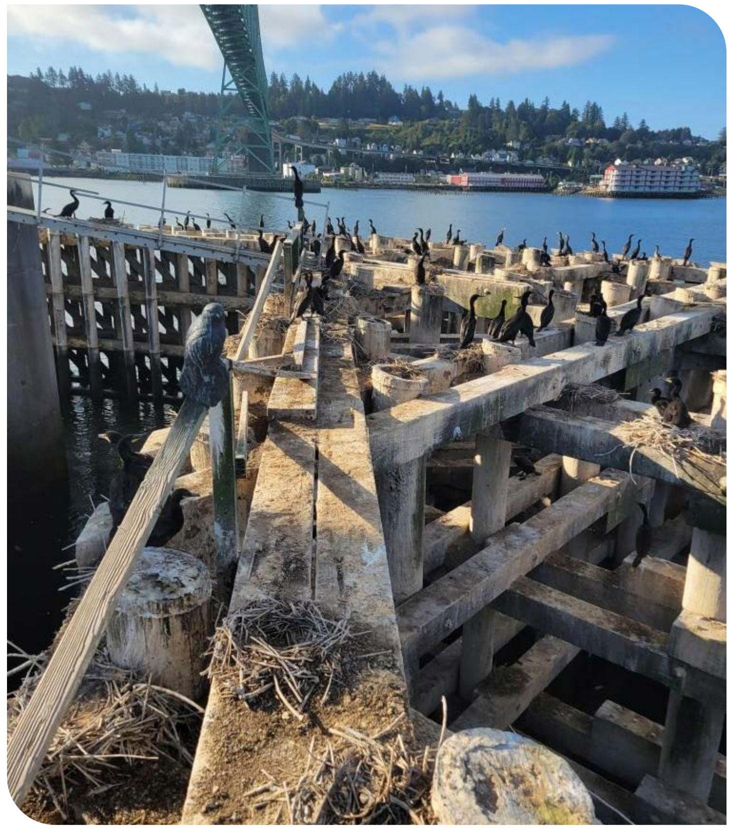
Vulnerability assessments consider bridge design, pier protection, characteristics of vessel traffic transiting the main navigation channel, vessel transit speeds, waterway characteristics, and other factors to determine the bridge vulnerability. If the results of the vulnerability assessment show that the bridge is above the acceptable level of risk, we then determine short and long-term strategies to reduce the probability of a potential bridge collapse from a vessel collision.

In November 2023, the Coast Guard held a Port and Waterways Safety Assessment Workshop, just six months prior to the collapse of the Key Bridge. The workshop included the Columbia River Steamship Operators' Association, Columbia River Pilots, Columbia River Bar Pilots, the U.S. Army Corp of Engineers, representatives from commercial shipping and cruises, and others. They considered 16 waterway risk conditions and evaluated the likelihood and impact of an unwanted event. They identified the top risk factor was the frequency and severity of mechanical issues and a decrease in mechanical reliability due to required vessel compliance with emission regulations. The issue is that crews may not be able to manually override systems as easily as they could in the past. Mitigation for this risk includes using a tug escort and changes to the rules associated with emission limiters. This workshop shows that the concern of vessel collision with bridges on the Columbia River was being considered prior to the collapse of the Key Bridge.

Large cruise ships are being serviced at the Vigor Shipyard in Portland and large container ships make calls to the Port of Portland. When there is 10 feet or less of air gap between the ship and the bridge, the Columbia River Pilots require the ship owners to hire a consultant to monitor the transit.

In addition to the pending vessel collision analysis, ODOT and WSDOT are working together on possible measures to mitigate vessel collision risks, including LIDAR survey, air gap sensors, virtual coordination center enhancements to improve emergency response, and remotely controlled traffic gates to allow rapid bridge closure. Following the vessel collision analysis, cost-benefit studies will identify short-term safety improvements and long-term safety improvements if warranted.

The photo to the right was attached to an email from Dan McFadden, ODOT Bridge crew supervisor, on Aug. 28, 2024. The foreground shows a detail of the fender system that is used to protect the main piers of the shipping channel. The background has a complete picture of the fender system for the other main pier. This photo also shows a portion of the cormorant colony on the bridge, and the working conditions for those who maintain the bridge. Part of the vessel collision analysis will be to determine the ability of the fender system to protect the bridge from an impact from a large container ship or cruise ship. With some of these ships being over 1,000 feet long, the bow of the ship may hit the bridge prior to the fender system being engaged.



Next Steps

In 2011, ODOT developed the System Preservation Work Plan for bridges. The first strategy is to protect high value coastal, historic, and major river crossings and border structures. The primary issue is having a high value bridge fall into a condition where rehabilitation is not an option. The intention is for ODOT to maintain these bridges indefinitely, and to keep them at a higher-than-average structural condition rating. With the ongoing effort to replace the I-5 Columbia River border bridges, and the possibility of needing to replace the Lewis & Clark (Longview) Bridge (built in 1929), it is very important to preserve the Astoria-Megler Bridge.

Washington State will soon conduct a study to determine how much service life remains on the Lewis & Clark (Longview) Bridge. The study will also identify the preservation projects that will be needed during the remaining service life.

The results of that study will inform ODOT of the benefit of conducting a similar study on the Astoria-Megler Bridge. As preservation projects are identified, the funding will be provided equally by Oregon and Washington.

The vessel collision study for the Astoria-Megler Bridge should start in early 2026 and the design effort to replace the deteriorated roadway surface on the Oregon approach will continue, with construction anticipated in 2027. Oregon will continue to work with Washington to address the deteriorated steel bearings in the prestressed concrete girder spans. Dealing with the cormorants is a long-term issue that will require active participation and support from various agencies and stakeholders.

2025 BRIDGE CONDITIONS

ODOT's 2025 Bridge Condition Report summarizes bridge condition ratings on state highways and performance measures based on National Bridge Inventory (NBI) and ODOT data. As a consistent reference point for evaluation, ODOT uses the bridge conditions snapshot provided annually to the Federal Highway Administration. Data from the March 2025 submittal is the basis of this report.

Bridge conditions are reported in a number of different measures, none of which stands alone in the communication of bridge conditions for decision-making purposes. The most common and those presented here, are the NBI ratings for the major structural components of the bridge (deck, superstructure, and substructure, or the culvert rating), deficient bridge classification, and structural condition rating.

The structural condition rating ranging from very good to very poor is based on the lowest of the deck, superstructure, substructure, or culvert ratings.

Inventory Changes

ODOT currently owns 2,786 bridges. This year, six bridges were replaced: Wallowa Lake Highway (Oregon 82) over Bear Creek in Wallowa County; Rogue River Highway (Oregon 99) over Birdseye Creek in Foot's Creek, Jackson County; Rogue River Highway (Oregon 99) over Miller's Gulch in Foot's Creek, Jackson County; Wasco-Heppner Highway (Oregon 206) over Rock Creek in Gilliam County; Pacific Highway (I-5) over SW 26th Avenue in Portland; and Sunset Highway (U.S. 26) over Little Humbug Creek in Necanicum Junction, Clatsop County. Because they were all replaced by one new dedicated bridge each, our total bridge count was not affected.

A total of five bridges were added to the inventory. (There were six bridges added and one bridge that was transferred to another jurisdiction.) One bridge was added as part of the Oregon 217 project and three more bridges were added as part of the U.S. 97 project in Bend. Two bridges were added to replace structures formerly not in the inventory with structures eligible to be included in the inventory. For example, there are many culverts that have openings that are too small to be included in the National Bridge Inventory. When one of these culverts is replaced with a bridge, the bridge is added to the inventory. There was also one bridge that was formerly in the inventory that was transferred to another jurisdiction.

Having six bridge replacements in 2025 is good news and is double the typical number of bridge replacements. However, the combined bridge replacements for 2022, 2023, and 2024 were also six. The long-term bridge replacement rate is still approximately three bridges per year. At this rate, an Oregon bridge will need to stay in service for over 900 years, which is well beyond the expected service life of 75 to 100 years.

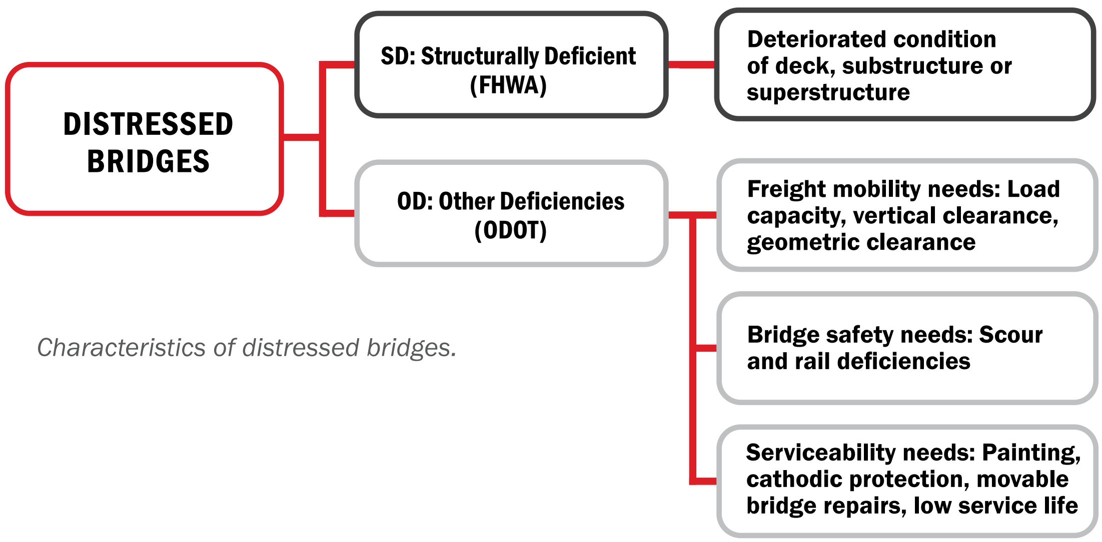
ODOT Bridge Key Performance Measure

(Percent by Deck Area of Bridges Not Distressed)

ODOT measures bridge conditions based on the bridge key performance measure – percent of bridges not distressed. The KPM includes two categories of bridges:

1. The percent of bridges not structurally deficient (SD) as defined by FHWA.
2. The percent of bridges without other deficiencies (OD) as defined by ODOT. Structurally deficient and other deficiency components capture different characteristics of bridge conditions as shown in the following graphic.

A distressed condition indicates the bridge is rated as structurally deficient or has at least one *other deficiency*. ODOT considers both structural deficiency and other deficiency aspects in determining bridge needs and selecting projects for the Statewide Transportation Improvement Program.

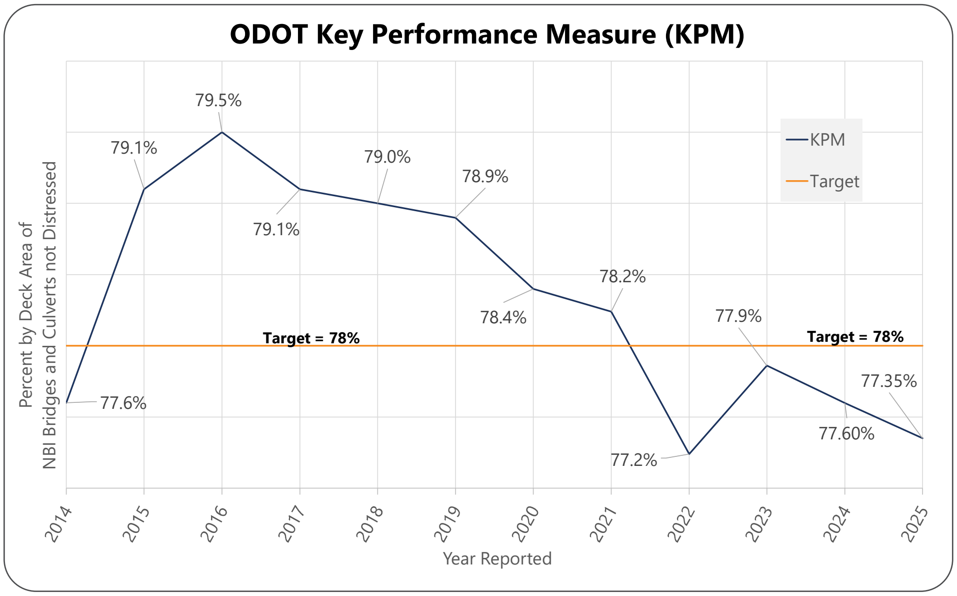


Characteristics of distressed bridges.

The number of bridges with other deficiencies fluctuates with time due to bridges being repaired where a deficiency is removed or deteriorating where a deficiency is added.

In reviewing the chart below, there is a large spike propelling bridge KPM from a 2014 low of 77.6% to a 2016 high of 79.5%. This spike was due to the Oregon Transportation Investment Act and special federal funding sources enabling a large number of bridges to be built and replaced at higher-than-normal levels for a short period of time.

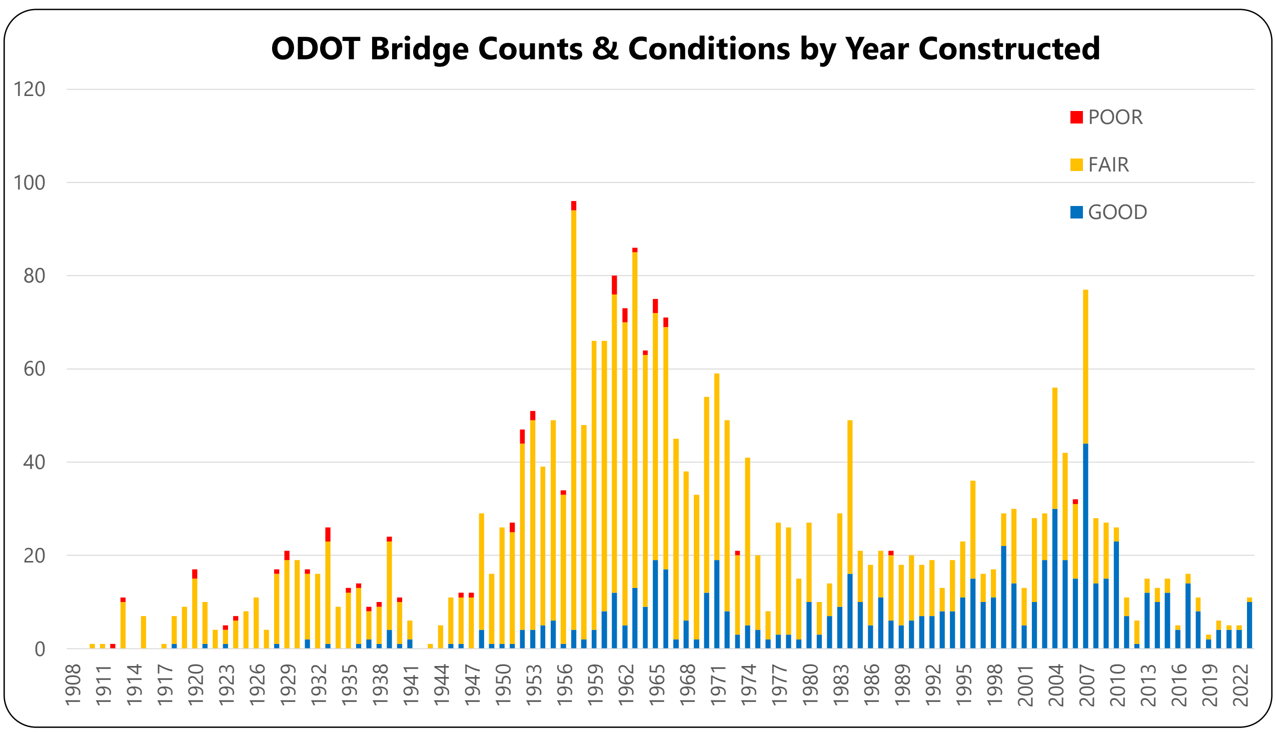
Since 2016, the KPM has decreased at an approximate average rate of 0.25% each year. While there is a variation in the rate of decline from year to year, the long-term trend is a steady decline in bridge conditions. Since 2022, the bridge KPM has been below the target and is not expected to recover at our current bridge replacement rate.



ODOT bridges in not distressed condition. Larger percentages are better.

Bridges By Year Constructed

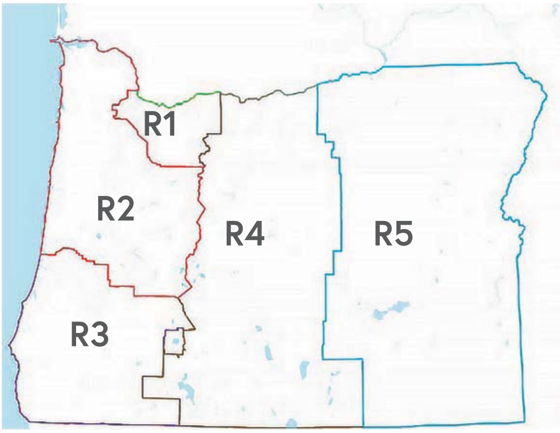
An alternate approach to understanding the system needs is to compare bridge conditions by the construction year. The graphic below provides a picture of the looming wave of bridges constructed in the 1950s and 1960s (now over 55 years old) that are in fair condition and approaching the end of their service lives. While fair bridges are safe, as they continue to age the maintenance and rehabilitation needs increase.



The graph above shows a large number of bridges built in 1950s and 1960s that are now 55 plus years old and most of them have exceeded their design life. Although operating in fair condition, they will eventually move to poor condition if not maintained or replaced.

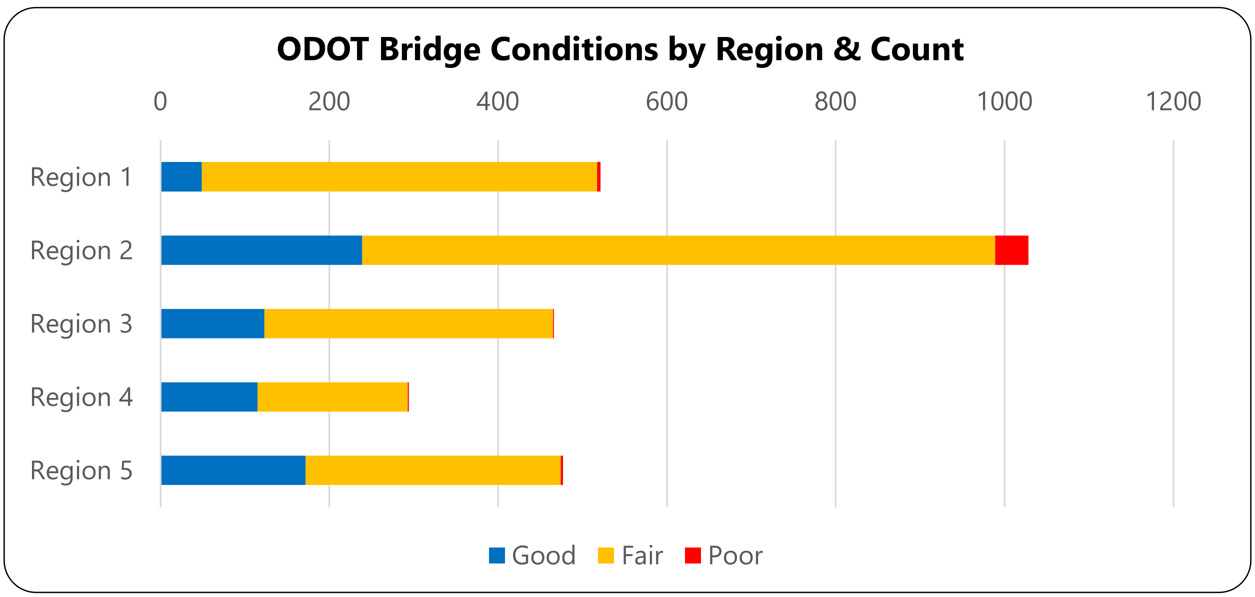
Bridge Conditions by Region

The distribution of bridges by bridge count and deck area are shown in the two graphics following the map for comparison. Region 1, which includes the Interstate Bridge over the Columbia River and the Marquam and Fremont Bridges over the Willamette River in downtown Portland, has more deck area than Regions 3, 4 and 5 combined.

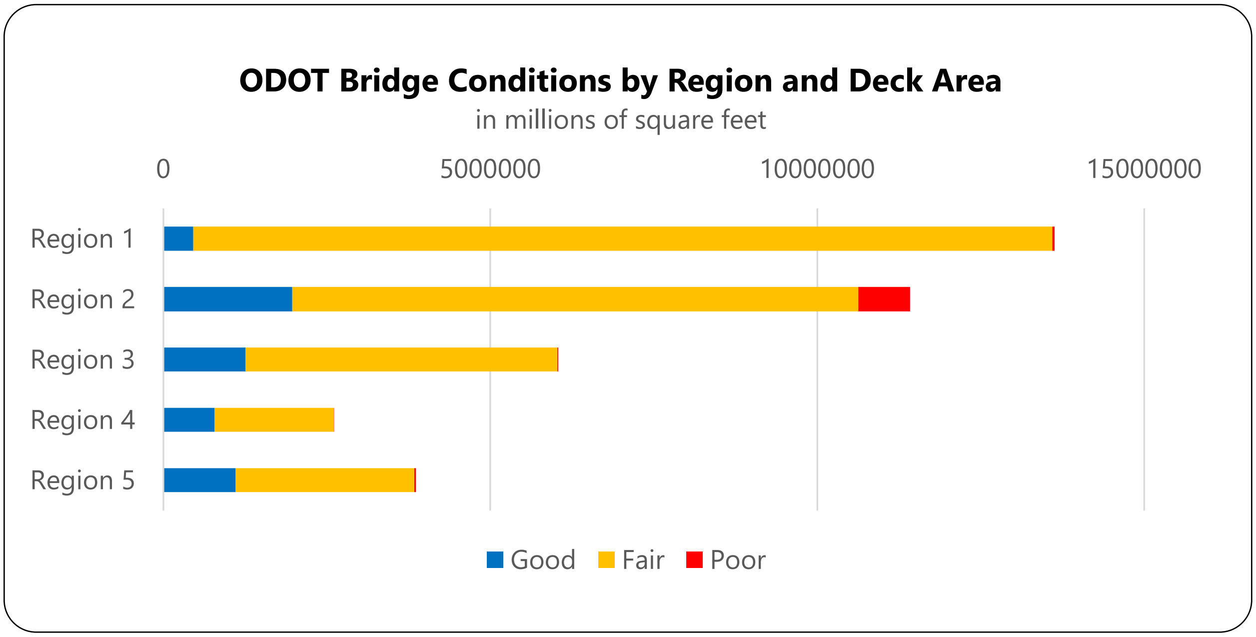


ODOT Region Map

While the bridge system includes only 48 bridges in poor condition (structurally deficient), bridge conditions are slowly declining as noted by the bridge KPM.



ODOT region bridge conditions by count. Total bridge count by region is Region 1 - 521 | Region 2 - 1,028 | Region 3 - 466 | Region 4 - 294 | Region 5 - 477



ODOT bridge conditions by millions of square feet of deck area. Note that Region 1, which includes the Portland Metro area, includes the greatest quantity by bridge deck area.

Supplemental Data:

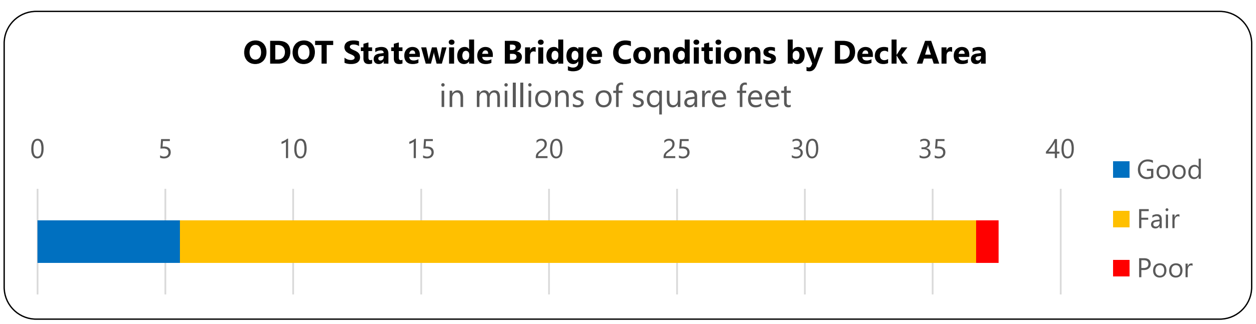
Region 1 breakdown of 521 bridges totaling 13.6 million square feet of deck area is 9.4% good by count while 3.3% by deck area, 89.8% fair by count while 96.4% by deck area, and 0.8% poor by count while 0.2% by deck area.

Region 2 breakdown of 1028 bridges totaling 11.4 million square feet of deck area is 23.2% good by count while 27.3% by deck area, 73.0% fair by count while 75.8% by deck area, and 3.8% poor by count while 6.9% by deck area.

Region 3 breakdown of 466 bridges totaling 6.0 million square feet of deck area is 26.4% good by count while 20.8% by deck area, 73.4% fair by count while 79.0% by deck area, and 0.2% poor by both count and deck area.

Region 4 breakdown of 294 bridges totaling 2.6 million square feet of deck area is 39.1% good by count while 29.9% by deck area, 60.5% fair by count while 69.9% by deck area, and 0.3% poor by count while 0.2% by deck area.

Region 5 breakdown of 477 bridges totaling 3.9 million square feet of deck area is 36.1% good by count while 28.6% by deck area, 63.3% fair by count while 70.6% by deck area, and 0.6% poor by count while 0.8% by deck area.

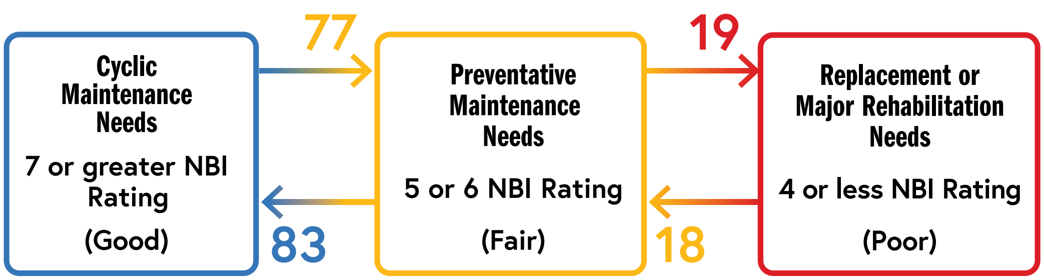


The total statewide bridge deck area is 37.57 million square feet.
Good = 5.17 mil ft²   Fair = 31.19 mil ft²   Poor = 0.64 mil ft²

2023 – 2025 Changes in NBI Ratings

In the last two years, 211 bridges had lower (declining) overall condition ratings versus 226 bridges with higher (improved) condition ratings. The changes are primarily due to Oregon implementing updated federal guidance for evaluating and coding specific bridge data. The guidance that was used in the past was from 1995. Since bridges are inspected every two years, and the transition period to the updated federal guidance also has an implementation schedule, the impact of implementing the new guidance will dominate changes in bridge conditions through 2027.

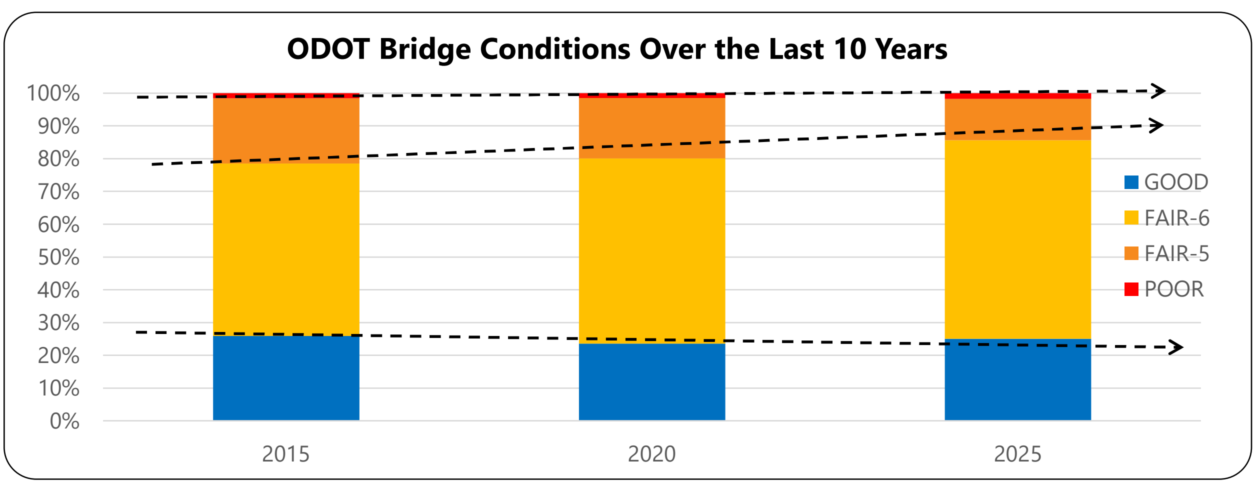
The following chart shows both the dynamic nature of bridge conditions and the growing backlog of work for those bridges that have changed conditions. The period from 2023 – 2025 reflects bridge conditions over one full inspection cycle (24 months). In a balanced state, the number of bridges moving from blue to yellow and red (deteriorating conditions) would be equal to the number moving from red to yellow and blue (improving conditions.)



A few more bridges had improving conditions (83+18=101, bottom line) than bridges with deteriorating conditions (77+19=96, top line). However, it should be noted that the number of bridges in poor condition show a net increase.

Condition Changes Over the Last 10 Years

An overall assessment of bridge condition changes can be determined by comparing previous to current NBI ratings. The chart below provides the percentage of bridges in good, fair, and poor condition in the last 10 years. Bridges are classified as fair if the NBI value is 5 or 6, however, a value of NBI = 5 indicates more distress.



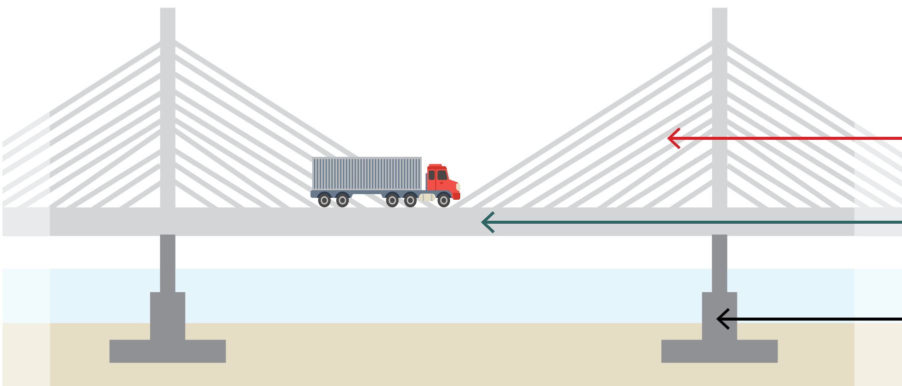
The ten-year chart shows percent of good bridges by area (not count) continuing to move to fair condition due to aging inventory. If more bridges are not maintained or replaced, the poor inventory will continue to increase and put stress on the transportation system.

Our percentage of bridges in good condition was higher this year than five years ago. Recall also that rating standards have recently changed, so some bridges are rated as having improved when there is not an actual improvement. Next reporting cycle we will have enough recent data for two years of historical ratings by the same new standard.

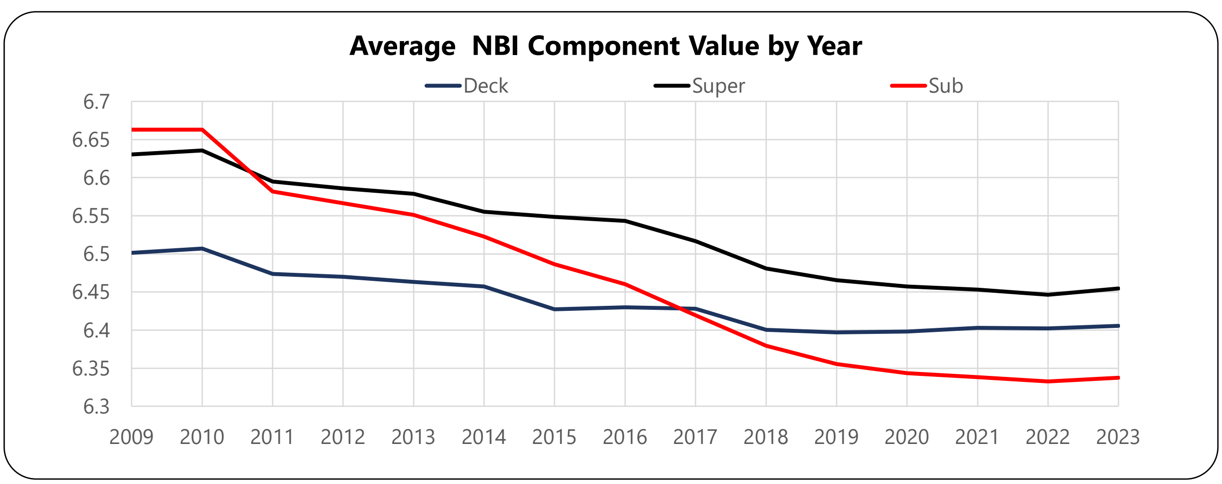
The population of fair bridges continues to age and will require more and more rehabilitation and maintenance over time. Many fair condition bridges have already exceeded their service life but remain in place due to regular maintenance.

Substructure Conditions Deteriorating

The NBI value is a simplified measure of bridge conditions, reflecting only the lowest of the superstructure, deck and substructure conditions. To get a clearer picture of bridge condition changes over time, FHWA submittal data are shown from the past fifteen years to compare the overall deck, superstructure and substructure conditions of ODOT bridges.

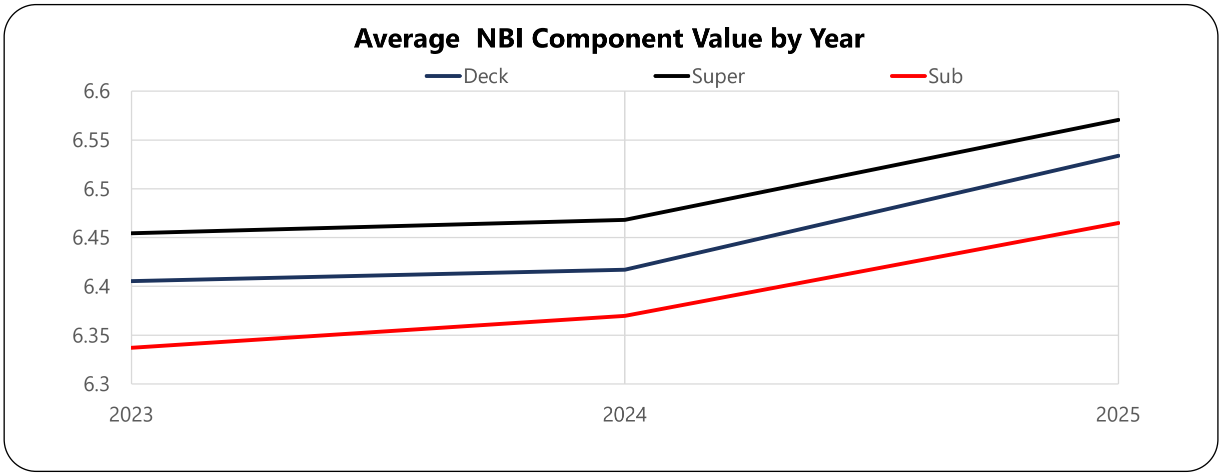


In this graph, the component NBI values are plotted to indicate changes over time. In 2009, substructure (red) conditions started out in the best condition, relative to the other components, but by 2017, they were in the worst condition. The average substructure NBI value indicates more bridge substructures have moved out of good condition into fair condition.



The graph indicates that averages of all three NBI components that indicate bridge conditions have trended downward from 2010-2022, however, it is important to note that substructure decline is steeper than others. When a bridge has a poor substructure, it is generally more cost-effective to replace than to maintain it. Poor substructure condition leads to bridge postings and potentially closures, if not replaced.

While a substructure deteriorating from good to fair condition is not a major concern at this time, as substructure conditions continue to decline, it will become problematic. Replacing a deck or strengthening the superstructure can be done multiple times, however, if a substructure deteriorates from fair to poor, the most cost-effective treatment is generally to replace the bridge. As bridge substructures approach poor conditions, expect more bridge postings and potentially closures.



The graph indicates that averages of all three NBI components have trended upward from 2023-2025. This is due to the implementation of the latest bridge inspection standards. We do need a caption, and we also need the paragraph to explain the inspection cycle.

Why is there an increase in average NBI component values since 2022?

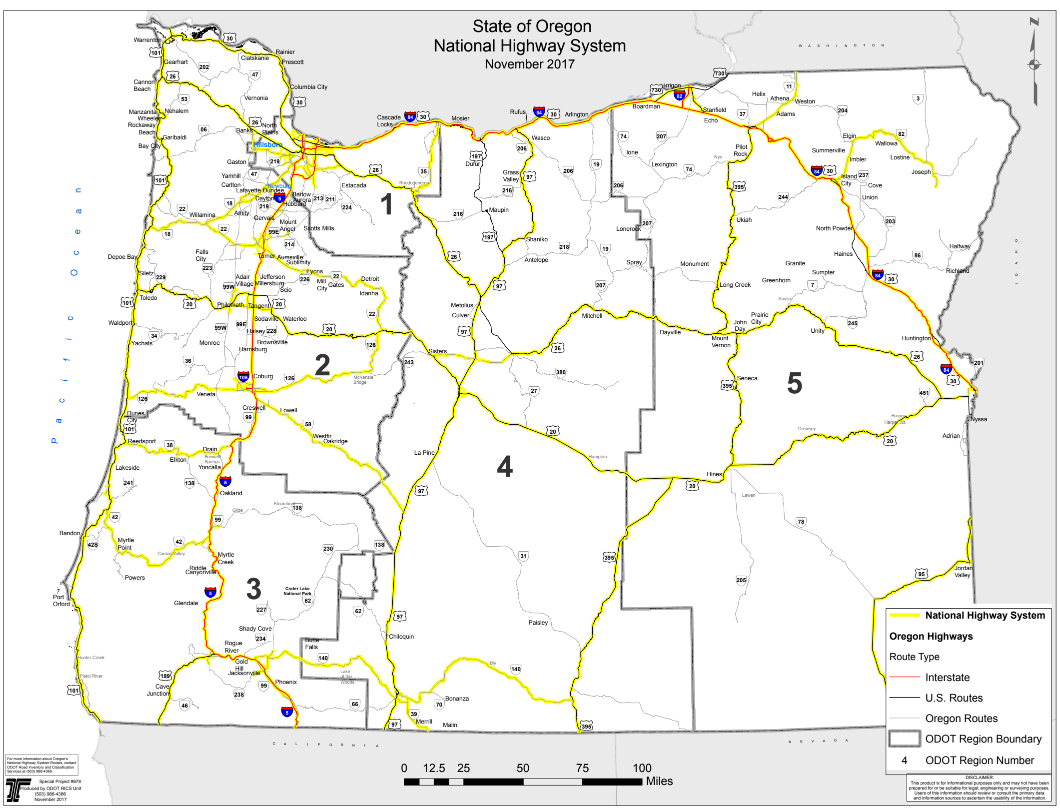
All states are now required to evaluate and report all bridges based on what is called the Specifications for the National Bridge Inventory. Compared to the older standard, the newer one rates more bridges favorably than it does unfavorably. A full inspection cycle is needed before the full effect becomes known. Our inspection cycle is two years. The third year of increase is latency (or lag) from implementing measurement changes midway between reporting cycles.

NATIONAL BRIDGE PERFORMANCE MEASURE DETAILS

Condition Based Performance

The Infrastructure Investment and Jobs Act (IIJA) requires the state to establish bridge condition targets and report conditions based on specific performance measures including:

1. **Percent of NHS bridges by deck area classified in good condition.**
2. **Percent of NHS bridges by deck area classified in poor condition.**



State of Oregon National Highway System.

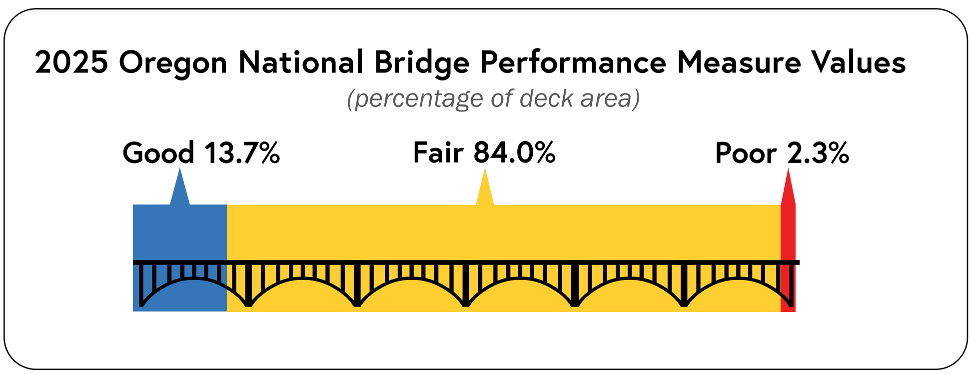
National Bridge Performance Measure Details

The National Bridge Performance Measure is for all bridges in Oregon that are on the National Highway System, which includes the interstates as well as other roads serving major airports, ports, military bases, rail or truck terminals, and other strategic transport facilities. While the majority of the bridge deck area on the National Highway System in Oregon is on state highways, 7.8% of the bridge deck area is owned by local agencies and others.

National Bridge Performance Measures began in 2018 and are updated every four years. The 2022 update included the baseline percentages of bridge deck area on the National Highway System in good condition and in poor condition, and the targets set for the midpoint of the reporting period (2024) and the end of the reporting period (2026). The graph below shows the actual conditions and the 2-year and 4-year targets. In 2024, Oregon exceeded the 11% target set for the National Performance Measure for good bridges, by having 13.2% in good condition. This is primarily due to the implementation of updated bridge inspection standards.

However, in 2024 Oregon had 1.9% of the deck area on the National Highway System in poor condition which did not meet the 1.8% target. This increase can be attributed to the implementation of updated bridge inspection standards and the normal deterioration of bridges as they age, spending the majority of their service life in fair condition.

While not reported to FHWA, the 2025 National Bridge Performance Measure Values are shown below. Of most concern is the .4% increase in poor condition bridges compared to 2024.

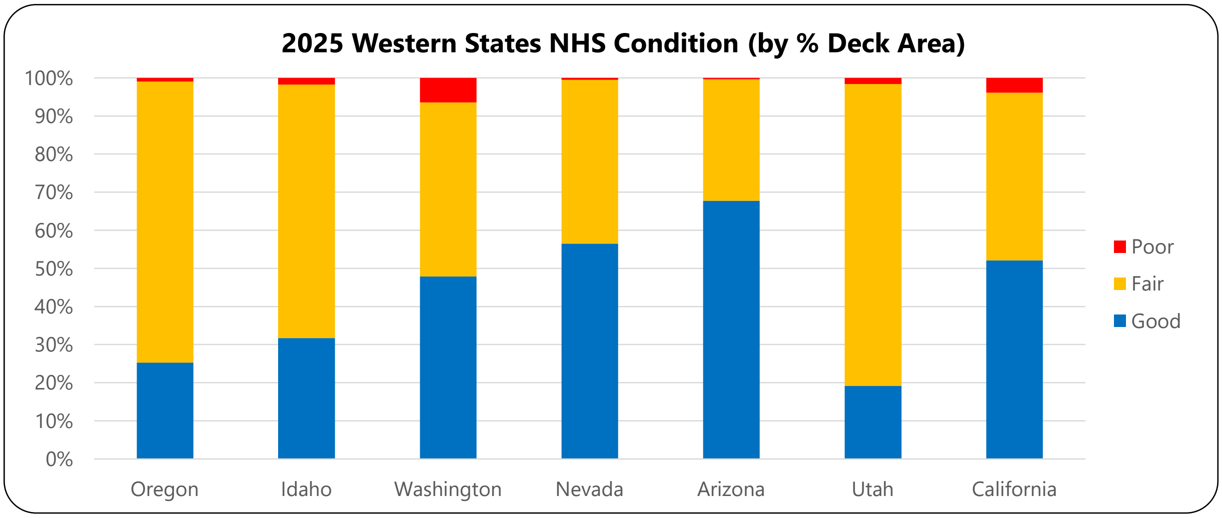


ODOT has a large inventory of aging bridges, as a result, more bridge are likely to transition to poor condition in the future.

Oregon expects the percentage of poor bridges to continue to increase and to exceed 10 percent prior to 2035. If more than 10 percent of the total deck area of bridges in Oregon on the National Highway System have been classified as being in poor condition for a three-year period, Oregon will be in a "penalty" situation. The penalty is that a minimum percentage of the federal allocation of funding that Oregon receives from the Highway Trust Fund must be used only for eligible projects on bridges on the National Highway System. The penalty is in effect until there is less than 10 percent of the total deck area of bridge in Oregon on the National Highway System classified as in poor condition.

Performance Relative to Neighboring Western States

Compared to neighboring western states, Oregon has the least quantity of NHS bridges in good condition. The graph below shows western states' bridge conditions using 2025 data submitted to FHWA. While Oregon ranks among the best for the least percentage of poor bridge conditions, it also ranks among the least for the bridges in good condition. Due to a large number of aging bridges in Oregon's inventory, some of the fair condition bridges continue to slide into poor condition due to limited funding resources required for bridge replacement and maintenance.



Oregon has a low percent of bridges in good condition and a high percent of bridges in fair condition compared to other western states. If not replaced, bridges in fair condition will deteriorate to poor status over a period of time.

It is worth noting that not all of these states have environments similarly favorable to prolonged bridge health. Moisture and salt air are both considered generally unfavorable. So is a perpetual freeze and thaw cycle. Oregon's climate and environment is not the very worst for keeping bridges healthy over long lives, but it certainly is not the best either. For example, Arizona's environment is dramatically more favorable to bridges. The same potential disparity applies between any two of the states shown.

The National Performance Measure does not include penalties around the percent of good condition bridges; it does recognize the importance of having a range of bridge conditions in the statewide inventory providing a balanced approach to managing the bridge system.

BRIDGE PROGRAM UPDATES

		FOCUS
1	Major Bridge Maintenance	▸ Funding ▸ Accomplishments ▸ Repair of Older Bridges ▸ Repair of Bridges for Scour
2	Bridge Preservation	▸ Preserving Oregon's Big Bridges-Cathodic Protection ▸ Temporary Work Access and Containment ▸ Strengthening and Modifications
3	Seismic Program Status	▸ Oregon 58: Coast Fork Willamette River to Lower Salt Creek Bridges ▸ I-205 Abernethy Bridge and Van Buren Bridge ▸ Southern Oregon Retrofit Project
4	Bridge Load Rating	▸ History ▸ Basics ▸ SHVs and EVs

1 Major Bridge Maintanance

In 1990, the State of Oregon established the Major Bridge Maintenance (MBM) Program to specifically address major and emergency bridge repairs. These repairs are typically large enough to be outside the scope of work that can be funded at the district level, but are too small or can't wait to be included in the STIP.

MBM highlights include:

- Approximately 200 projects are selected annually.
- Starting in 2018, funding increased to $10,000,000/year.
- Starting in 2021, funding increased to $12,000,000/year.

One of the primary objectives of the MBM program is to address urgent maintenance recommendations. Urgent maintenance recommendations are defects identified during the routine bridge inspection that need to be corrected as soon as possible or pose a traffic safety concern. In 2024, the MBM program funded 23 projects to address critical and urgent maintenance recommendations at a total cost of $4,080,000. Examples of these projects include repairing steel fatigue cracks, replacing deteriorated timber members, deck repairs, rail repair and addressing scour.

Typical Distresses Addresssed by MBM

Failed Deck

Steel Fatigue Crack

Distressed Timber

Foundation Scour

Maintaining the asphaltic concrete pavement (ACP) on bridge decks and approaches has become a growing challenge for ODOT. Deferred maintenance on secondary highways has resulted in more bridge only paving projects. These smaller volume paving projects tend to attract high bids. In 2024, the MBM program funded paving work on 47 bridges at a total cost of $6,368,230. Maintaining ACP represents a significant expenditure for the MBM program and will be a continued challenge for the agency into the future.

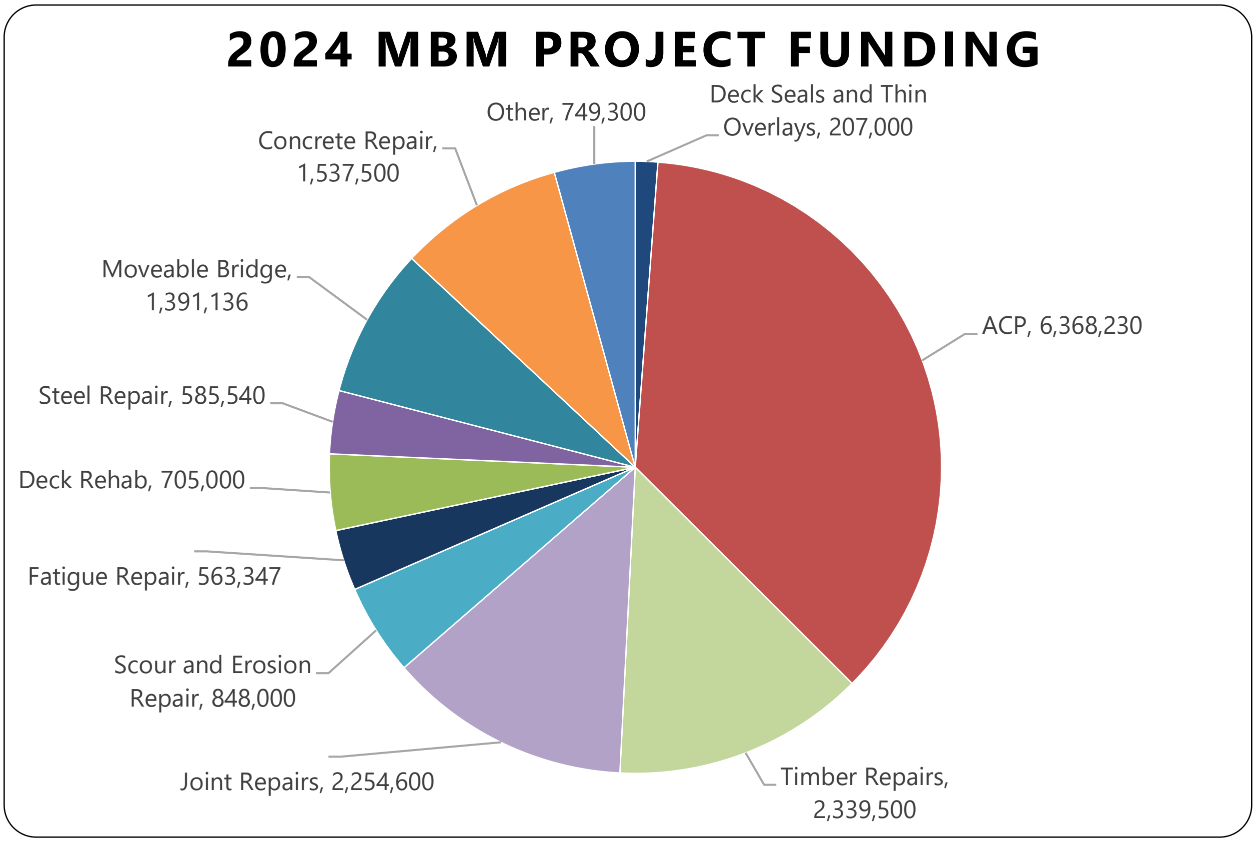
In addition to addressing urgent defects and performing preventative deck maintenance, the MBM program addresses deck joint repairs, timber repairs, approach repairs, bearing replacements, and maintenance on the moveable bridges. The variety and volume of work performed by the MBM program is what makes it a key component in maintaining Oregon's infrastructure.

2024 MBM Project Accomplishments

In 2024, ODOT repaired 12 bridges in poor condition through the MBM program. In addition, we repaired 53 bridges with urgent or high priority needs. These are bridges with defects identified during routine bridge inspections that need to be corrected as soon as possible since they may pose a traffic safety issue.

There is a detailed list of MBM expenditures in the graphic below, which includes 47 bridges that were programmed for pavement work (ACP) and 31 bridges programmed for timber repairs.

ODOT is updating the load carrying capacity calculations of all existing bridges in the state. By doing so, MBM will add more strengthening projects to avoid load postings and closures. You can find more details on ODOT's load rating efforts in this report.



2024 annual funding distribution by project type.

Focus on Older Bridges

Each year the Major Bridge Maintenance program funds approximately 200 bridge repair projects typically in response to a localized defect on the bridge. Localized MBM repairs can raise the bridge condition rating from poor to fair, however, the rise is only temporary as the bridge will continue to deteriorate. These focused repairs aren't intended to rehabilitate the entire structure but rather focus on a single defect. Many of the bridges that require the repairs should be replaced, however, the upfront replacement costs simply aren't available as funding is allocated to higher priority bridges and spread around to keep more bridges in service.

As resources continue to shift toward maintaining deteriorating bridges that should be replaced, fewer resources are available for cost effective preservation and maintenance treatments.

Eventually bridges on lower priority routes will not be serviceable leading to load restrictions or even closures, posing a significant risk to Oregon's mobility in the coming decades.

Preventive Maintenance

In 2024, preventive maintenance projects accounted for 14% of the annual MBM budget. Preventative maintenance activities are widely considered a cost-effective way to extend the service life of bridges. Strategic preventive maintenance projects can delay the need for larger, expensive rehabilitation projects.

The deck is the highest value item on a bridge, and it is also at the highest risk due to its exposure to weather, de-icing chemicals, and wear from traffic. When concrete decks are cracked, the risk to the deck is elevated because there are now pathways for water and de-icing chemicals to get deep into the concrete and reach the reinforcing steel. Once the reinforcing steel begins to corrode, costly deck rehab or replacement projects are required. However, if the deck can be sealed quickly, the deck service life can be significantly extended. Other maintenance activities include bridge washing, spot painting and joint repairs.

Highlighted Projects

Timber substructure repair at Abiqua Creek, Oregon 213

Abiqua Creek, Oregon 213.

The Abiqua Creek Bridge was constructed in 1934, is 167 feet long and consists of six spans. During a routine inspection in 2023, ODOT found tow timber pile caps that needed to be replaced. State forces were able to remove the decayed timber and replace it with steel.

Concrete repairs Spanish Hollow Creek, Interstate 84 Frontage Rd

Spanish Hollow Creek, Interstate 84 Frontage Rd.

The Spanish Hollow Creek Bridge was constructed in 1936. Several of the concrete columns had spalling and exposed rebar. Due to the concrete's age, it lost the high alkalinity needed to protect the rebar. State forces patched the damaged portions of concrete. The columns will continue to be monitored for future deterioration.

Rail repair on the Necarney Creek Bridge, U.S. 101

Necarney Creek Bridge, U.S. 101.

The U.S. 101 Necarney Creek Bridge is located on a curve between Tillamook and Seaside. It was built in 1937. The bridge is well above the terrain. The rails that keep out-of-control vehicles from going over the bridge do not meet modern design standards. To increase safety, two rectangular steel tubes were added to the rail in 2008. A vehicle hit this rail in August 2024. The original rail and sidewalk failed, with only the steel tubes remaining after the crash. The MBM program repaired this portion of the rail at a cost of $1,244,257.

2 Bridge Preservation

One of Bridge Preservation Unit's goals is to maintain and preserve our "high value" bridges through practical design and novel means. High value bridges include the large coastal bridges which are also historic, other historic bridges, major river crossings, and border bridges. The issue is with having a high value bridge fall into a condition where preservation is not an option. As it is the intention of ODOT to maintain these bridges indefinitely, there is a desire to keep them at a higher-than-average structural condition rating. Many of Oregon's high value bridges were built in the early part of the 20th century and have experienced decades of deterioration from traffic and the elements and are nearing or exceeding their design life.

In the past 100 years traffic volumes, vehicle dimensions, and vehicle weights have steadily increased. The challenge arises from balancing preserving the character-defining features, modifying the structure to meet modern day design needs, and determining feasible construction methods.

What is a high value bridge in Oregon?

In Oregon, a high value bridge is one that meets any of the following criteria:

1. The structure is listed as a historic structure or contributing to a historic district.
2. The structure is a tunnel carrying traffic.
3. The structure is a bridge that crosses a state border.
4. The structure is a bridge longer than 1,100 feet.
5. The structure has a span longer than 370 feet (not including rigid frame structure type.)
6. The structure crosses a major river (Deschutes, John Day, Willamette, Snake, and Columbia) and has a deck area greater than 10,000 square feet. These criteria exclude forks of major rivers.
7. The structure is an ancillary structure (ramps, approach structures, etc.) to any criteria above.

What is so special about these bridges?

In 2011, ODOT created the System Preservation Strategy for bridge assets. The first strategy is to identify and preserve structures that the state cannot afford to replace. ODOT's intention is to maintain these bridges indefinitely and keep them at a higher-than-average structural condition rating.

An example of a high value bridge is the Glenn Jackson Bridge between Oregon and Washington. This bridge has a deck area of more than 1.1 million square feet and will soon need a structural overlay (a rehabilitation effort). Planning level costs estimate this work to be roughly $500,000,000 compared to the replacement cost of nearly five times that amount.

The Bridge Engineering Section is in the process of standardizing a crash tested, ornamental, open-window bridge rail. The new standard rail will be used on several historic bridge projects during the 2024-2027 STIP cycle.

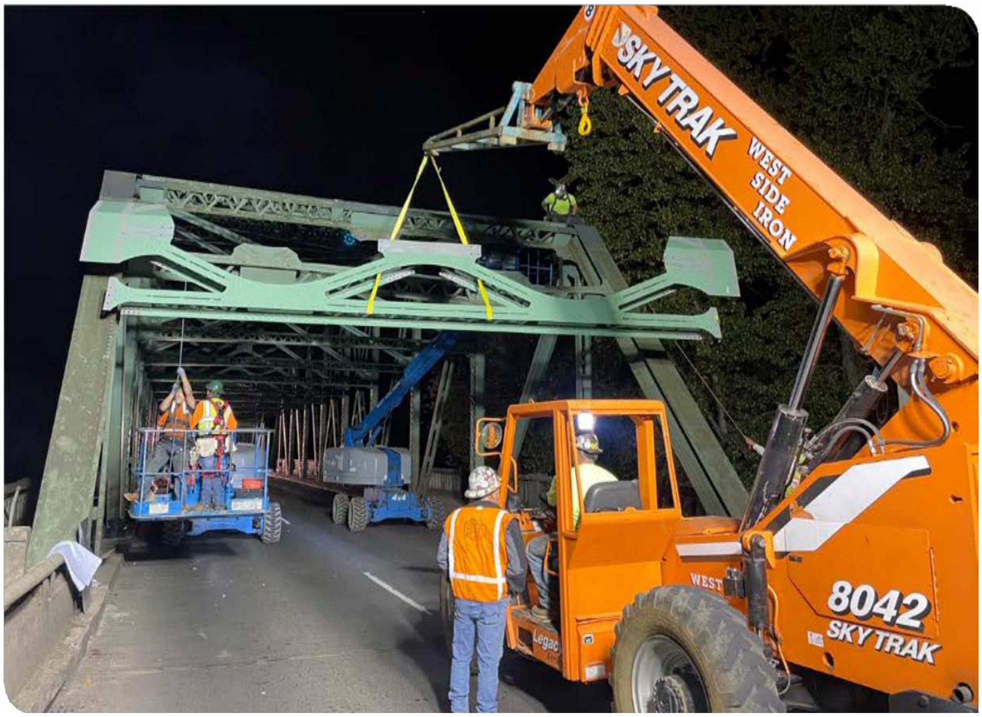
Winchester Bridge over the North Umpqua River (Roseburg, OR) – bridge rail and widening work (2008).

Geometric Modifications

Oregon has many historic, through-truss bridges and through-arch bridges. With these types of bridges, the trusses are overhead giving motorists the feeling they are driving through a bridge, rather than on a bridge. These types of bridges, however, have some shortcomings. Similar to strengthening needs for modern day loads, height and width dimensions have increased and historic bridges are not typically constructed to accommodate these loads. It is not uncommon for through-truss bridges, despite being signed with height restrictions, to get hit by over-height loads.

We can take steps to reduce damage to our historic bridges from vehicular collisions by modifying and replacing the existing bracing system. The bracing system over the roadway, also known as cross bracing, is a structural system that uses diagonal supports to keep a structure stable under side forces like wind or seismic activity. Modified bracing systems provide increased vertical clearance. They must be designed carefully to meet structural loading requirements and consider construction sequencing and erection tolerances.

Sometimes historic bridges can be modified to accommodate additional lanes, shoulder width, and lane width for both vehicles and pedestrians. When a historic bridge needs this type and variety of work, it's difficult to avoid major visual impacts to the bridge. There are times when it's possible to widen a bridge deck on the existing superstructure and substructure. Other times the increased loads and width require us to construct new superstructure and substructure elements, designed and detailed to look similar to the original bridge architecture.



Ellsworth Bridge over the Willamette River – Portal bracing replacement (2024).

Making the Right Decision and Stretching Funds

The Bridge Preservation Unit works closely with ODOT architectural historians to ensure that our historic resources are preserved to the greatest extent possible. This process consists of exhaustive alternative analysis and ODOT engineers consider avoidance, minimization, and mitigation measures. We always pursue strengthening and bridge modification measures with historic integrity in mind.

There is no single solution for bridge preservation projects, and we consider the context of the bridge, its history, and location. In one situation the right choice might be to discreetly strengthen a bridge since it is on a major freight route. In another case where a historic bridge is on a route with low traffic volumes, and a short detour route is present, it might be best to avoid strengthening work and simply load post the bridge. The Bridge Preservation Unit will continue to pursue, design and construct projects that preserve historic integrity but also increase functional purpose.

3 Seismic Program

The Seismic Program has become an important part of the State Bridge Program, which manages the state highway bridge inventory. Maintaining a good balance between improving seismic resilience while preserving the state's highway assets has been a real challenge for the Bridge Program. Although bridges with severe structural deficiencies are generally seismically vulnerable, not all seismically vulnerable bridges have other major structural deficiencies. Also, prioritization of the routes included in the Seismic Program adds another level of complexity to the selection process for bridge projects.

ODOT's Seismic Implementation: Policies and Design Guidelines provide useful tools for planning an efficient strategy toward resilience. A good understanding of the flexibilities for investment prioritization while not losing focus on the main goal and objective becomes more important under a budget constraint situation. Evaluating lower-tier seismic corridors, where both structural deficiencies and seismic vulnerabilities can be addressed at the same time, could provide the most economical option, especially when these lower-tier corridors can be used to detour traffic from higher-tier corridors after a seismic event.

Many bridges on Highway 99W are older and in need for major repairs or replacement, while bridges on Interstate 5 are in relatively good condition apart from their seismic performance. Highway 99W offers an alternative route for traffic movement between Eugene and Portland. Replacing deficient bridges on 99W will allow ODOT to meet seismic resiliency goals and other bridge needs at the same time. Additionally, Highway 99W offers several options for localized detour routes (by using city or county roads), which would allow for bypassing several vulnerable bridges along this corridor.

While ODOT evaluates future investment options for the Seismic Program, several projects are either under design, construction, or have just recently been completed. Once completed, these projects will offer seismically resilient highway corridors that can save lives and help the Oregon economy to recover after a major seismic event.

Construction of the U.S. 97: Oregon 58 California Border Bridge Retrofits project is now complete. This project consisted of six bridge retrofits [U.S. 97 over Union Pacific Railroad (Lobert Bridge), U.S. 97 over Nevada Avenue, U.S. 97 over the United States Bureau of Reclamation Canal, U.S. 97 over the Link River and Main Street, U.S. 97 over Oregon 140 (Green Springs Interchange), and U.S. 97 over the Klamath River and BNSF Railroad) and one complete bridge replacement (U.S. 97 over Lakeport Boulevard & Union Pacific Railroad (Pelican City Bridge)]. This project improved the seismic resiliency of U.S. 97 which is designated as a primary north-south lifeline route in the aftermath of a major earthquake.

Salt Creek Bridge Replacement - Demolition of the existing bridge clears the way for building the new bridge.

Another seismic retrofit project is also complete; Oregon 58: Coast Fork Willamette River to Lower Salt Creek Bridges. This project provides another seismically resilient corridor that will allow traffic flow from U.S. 97 to the Willamette Valley immediately after a major seismic event. Four bridges were strengthened under this project: Coast Fork Willamette River Bridge at milepost 2.4, Willamette River (Barnard) Bridge at milepost 33.2, Salmon Creek Bridge at milepost 36, and Lower Salt Creek Bridge at milepost 38.2.

Coast Fork Willamette River Bridge – The truss span has been secured from falling off its supports.

This project was met with a few challenges. The design for the strengthening was based on the existing plans for the bridge. However, the design needed to be changed when it became apparent that the existing plans did not entirely match what was built. The project caused only minimal traffic impact (single lane nighttime closure) as most of the work was performed below the bridge deck.

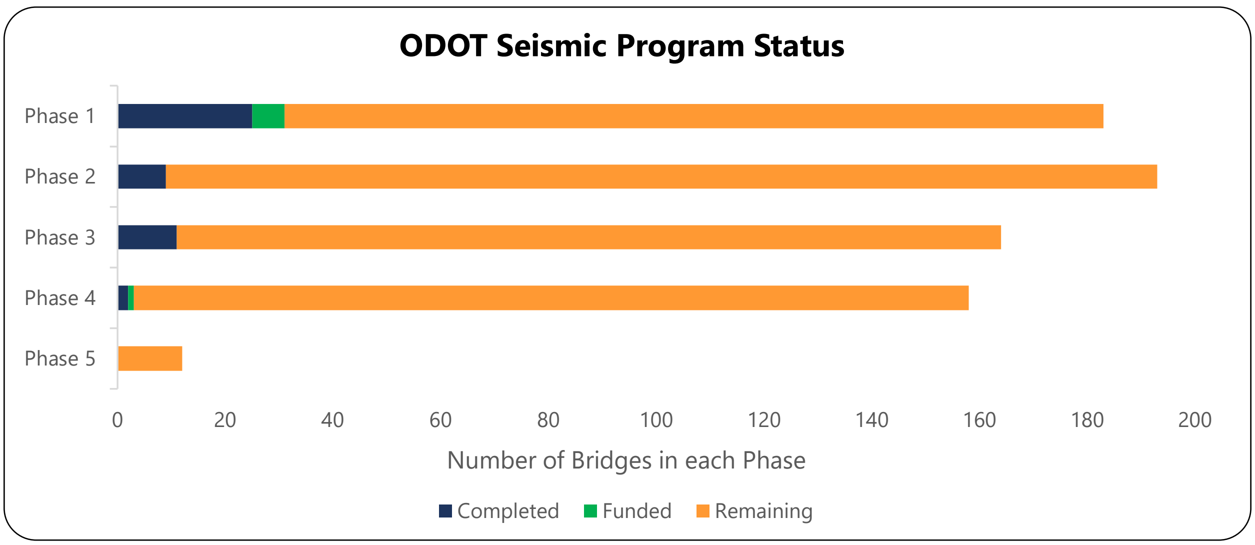
Construction for the Salt Creek Bridge Replacement on Oregon 58 started in February 2025. Besides being seismically vulnerable, the existing bridge had other deficiencies including a severely deteriorated concrete deck. The new bridge is being designed according to modern seismic requirements and will have a wider deck.

The initial construction activities included clearing the ground, relocating existing utilities within the work zone, and installing temporary water management measures. Afterwards, the contractor installed the permanent stone embankment on the east side of the creek, which became part of the temporary roadway alignment and the temporary diversion bridge. Traffic has been diverted onto the temporary bridge and demolition of the existing structure is nearly complete.

We have already started constructing the supports for the new bridge. There will be 9-ft diameter reinforced concrete drilled shafts that will serve as the foundation for the two intermediate bridge supports, with construction expected to be completed by end of 2025. Next, we will begin constructing the reinforced concrete columns at these interior bridge supports.

We anticipate the project will be completed by fall 2027, making the Oregon 58 corridor between U.S. 97 and I-5 a lifeline route to deliver supplies between the southern Willamette Valley and Central Oregon after a major earthquake.

ODOT Seismic Program Status



Several bridges have been removed from the program after the field scoping, or the preliminary design confirmed no need for seismic improvements.

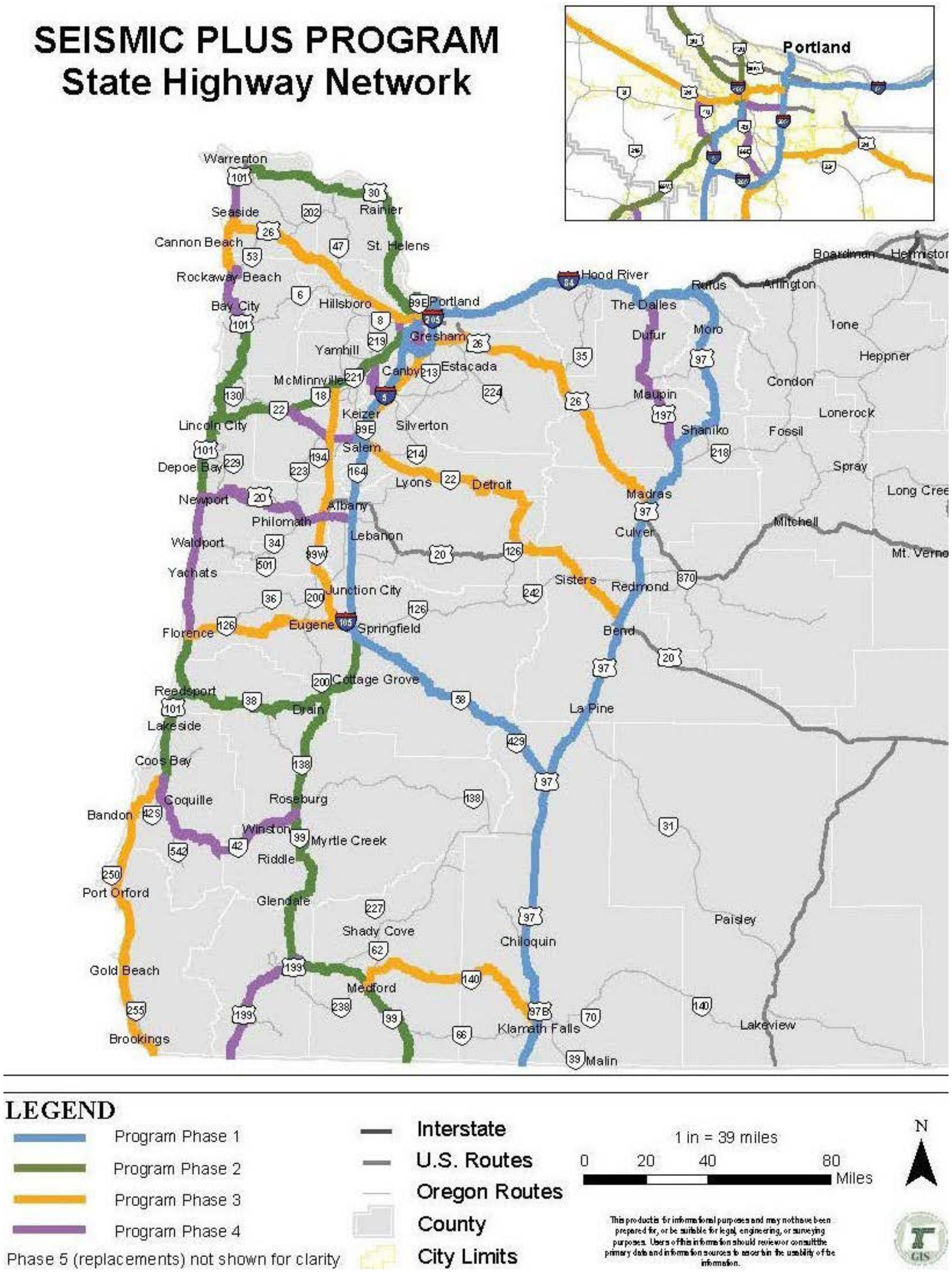
Phase 1: Provides a connection to the Redmond Airport, the cornerstone of the program; east-west freight movement and a north-south corridor on U.S. 97.

Phase 2: Connects the Willamette Valley with the coastal communities and Southern Oregon (Rogue Valley.)

Phase 3: Adds redundancy and capacity to the transportation network already strengthened in Phases 1 and 2.

Phase 4: Will finalize strengthening of all proposed seismic lifeline corridors.

Phase 5: Includes 12 bridge replacements like the Medford Viaduct, the Ross Island Bridge, several historic coastal bridges and other large bridges.



The Bridge program has closely followed the guidelines and recommendations for allocating seismic program funds provided in ODOT's Seismic Implementation: Policies and Design Guidelines. Addressing seismic vulnerabilities of bridges on Phase 1 routes remains the program's priority, however, several bridges with lower seismic priority phases have either been replaced due to poor condition or retrofitted/replaced as part of projects funded directly from the House Bill 2017 (e.g., Southern Oregon Seismic Bridge Retrofit.)

Other Funded Seismic Projects

Construction continues on I-205 Abernethy Bridge Project. In addition to providing a wider structure and accommodating additional travel lanes for both northbound and southbound traffic, this project will improve the seismic performance of the existing bridge, making it the only reliable point for interstate traffic to cross the Willamette River after a major seismic event affecting the Portland Metro area.

This project consists of numerous seismic retrofit measures that can be categorized into three primary types of work: replacing some existing bridge supports, strengthening the remaining of existing bridge supports, and replacing bridge bearings on several bridge supports.

The existing support replacement work is primarily associated with supports in the water or near the water's edge. These support replacements have reinforced concrete drilled shafts as large as 12 feet in diameter and all this work is now complete. All new bridge columns for support replacement or support widening have also been constructed, and removal of existing columns is currently underway. Construction of crossbeams for the supports is nearly complete.

The main construction activities planned for 2026 consist of removing the work bridge, sliding both northbound and southbound structures away from each other to allow for bridge widening, and completing bearing replacement on all locations. All ramps will be closed during the sliding activities, and lanes will be closed intermittently.

Abernethy Bridge - Construction of the crossbeams is nearing completion.

Construction on the Van Buren Bridge replacement in Corvallis is in its final stage. The diversion structure was removed, and the new bridge is open to traffic.

Construction completed in 2025 included the drilled shafts, which serve as the foundation for the bridge, the bridge columns and the crossbeams at the support locations, placing the bridge girders, pouring the concrete bridge deck, and installing specialized expansion joints and all bridge rails.

Work is underway to complete the approach roadway at both ends of the bridge. The project is expected to be completed by summer 2026.

Van Buren Bridge – Traffic using the new bridge while work continues to remove the temporary structures.

The Southern Oregon Seismic Bridge Retrofit is an additional seismic project funded by House Bill 2017. This project is divided into four separate projects. The first coincided with a pilot project to evaluate the cost-benefit of using the buckling restraint bracing (BRB) system for seismic bridge retrofits. The BRB system proved to be a cost-effective retrofit method for bridges with multi-column bridge supports, especially for grade separation structures. It allowed ODOT to address the seismic vulnerabilities of the first two bridges of this project (I-5 northbound and southbound over Leland Road) at a relatively low cost. ODOT will continue exploring opportunities to use this retrofit strategy in future seismic retrofit projects.

The second project addressed seismic vulnerabilities of five bridges supporting Interstate 5: I-5 over Hillcrest Drive, I-5 over the Redwood Highway northbound, I-5 over Scoville Road, and both I-5 northbound and southbound over Glendale Interchange. This project is now complete.

Construction is also complete on the third project, consisting of five bridges. Four bridges have been seismically retrofitted on Oregon 140: Little Butte Creek, Schoolhouse Creek, Lick Creek, and North Fork Little Butte Creek. The fifth bridge, Sutherlin Creek, located on Del Rio Road, will provide a detour option for part of Interstate 5.

The fourth project included replacing three bridges on Oregon 99, another detour route for I-5. Construction for replacement of Millers Gulch Bridge, Birdseye Creek Bridge, and Foots Creek Bridge is now complete, and all bridges are now open to traffic.

The new Foots Creek Bridge – In addition to replacing an old deficient structure, it improved traffic safety.

Completion of this project allows the southwest Oregon region to remain connected and recover after a major earthquake.

Right of way funding is available for coastal maintenance stations at Seal Rock and Coos Bay. We are considering an additional facility in Astoria, but it is not currently funded. Each station will be supplied with seismic response kits. The purpose of the kits is to stockpile key materials and supplies that can assist local communities in the early days following a seismic event. The kits will include culvert pipes of various sizes, construction materials, solar powered generators and trailer mounted solar light panels, diesel and unleaded fuel storage tanks, survival supplies (water, field rations, first aid supplies), power tools, batteries, portable boats, flat railroad cars and satellite phones and Ham radios.

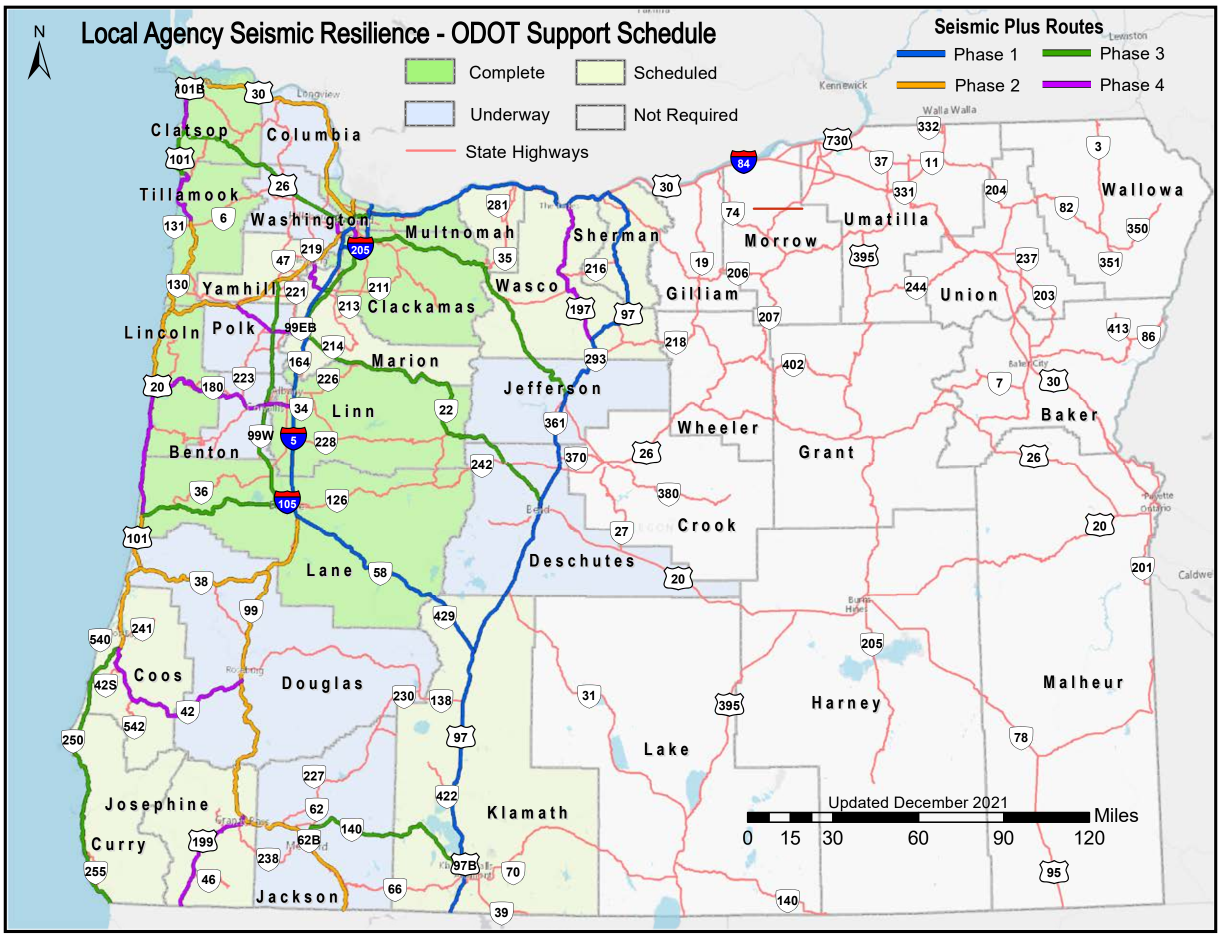
Local Agency Seismic Resilience Support

The Bridge seismic standards engineer and other leaders at ODOT are working collaboratively with Oregon counties to develop planning reports documenting county routes and priorities for seismic resiliency. ODOT provides bridge data and technical support, and the counties provide information about their network.

While the information is useful for county planning, we can also compare it to the state seismic bridge priorities to determine possible state highway detour routes that may be more cost effective to seismically retrofit or replace. Eventually the planning reports may provide an opportunity for seismic resiliency funding from either state or federal funds.

The status of the local agency work is provided below.

Complete	Underway	Scheduled
Clackamas Clatsop Lane Lincoln Linn Multnomah Tillamook	Benton Columbia Deschutes Douglas Jackson Jefferson Polk Washington	Coos Curry Hood River Josephine Klamath Marion Sherman Wasco Yamhill



Local agency seismic resilience – ODOT support schedule.

4 Bridge Load Rating

Trucks continue to evolve to improve the efficiency of freight movement and emergency response. The result is modern trucks travelling over older bridges designed for much smaller loads. To ensure bridges can safely support the trucks, ODOT evaluates each bridge to determine the safe load capacity based on a load rating.

ODOT is currently including the specialized hauling vehicles (SHVs), and emergency vehicles (EVs) in all new load ratings. Due to the concentrated loading, we expect there will be a need in the near future to strengthen or place load restrictions on many state and local agency bridges.

Load Rating History

In an effort to keep up with transportation demand, national design loads for bridges were increased in 1944, 1980, and 1993. Over half of the bridge population was designed before 1970 using existing design loads; yet the economy demands more efficient delivery services, so trucks continue to get bigger and heavier.

An early delivery truck with two axles.

An early freight truck with just three axles.

Bridge Load Rating Basics

The load rating analysis determines the capability of a bridge to carry loads. The analysis calculates rating factors (RF) at many points to determine the bridge's weakest member. A rating factor is simply the ration of the load the bridge can carry to the load produced by the vehicle considered.

The load capacity of a bridge considers the following factors:

- The weight of the bridge since the bridge must hold itself up.
- The bridge configuration like length of the bridge spans.
- The strength of the concrete, steel, or timber that was used to construct the bridge.
- The bridge condition – are steel members corroded or damaged? Is the concrete cracked? Are portions of the timber decayed?

Using the bridge related factors identified above, we evaluated different truck loading configurations. The analysis is based on the national bridge formula established in 1975 to limit the weight-to-length ratio of a vehicle. There are four categories of loads evaluated that cover different truck configurations.

Legal Loads
(includes SHVs)

Common semi-trucks, construction and waste management trucks with short wheel bases.

≤80,000 lbs GVW

Continuous Trip Permits

Log trucks, milk tank trucks, chip trucks, gasoline tanker trucks, and other semi-trucks that are heavier than legal loads.

≤105,500 lbs GVW

Single Trip Permit Loads

Non-divisible loads like vehicles hauling windmill components; self-propelled cranes.

Variable weights

Emergency Vehicle Loads

Fire trucks and other vehicles equipped to mitigate hazardous situations.

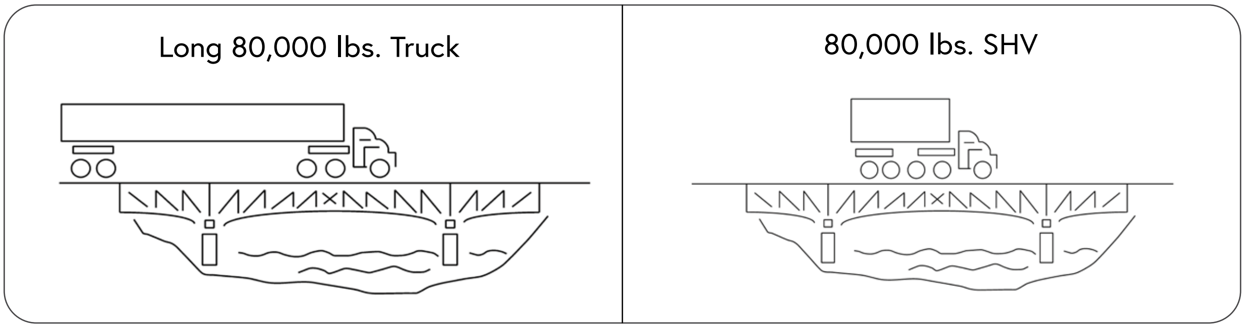
Up to 86,000 lbs GVW with short wheelbases that create highly concentrated loads.

Concentrated Loading from SHVs and EVs

As trucks grew heavier in the 1950s and 1960s, ODOT had to do something to protect bridges. The solution was to link allowable weights to the number and spacing of axles and using the bridge formula to establish limitations. Limiting the weight-to-length ration of a vehicle crossing a bridge is accomplished by either spreading the weight over additional axles or by increasing the distance between axles. One unintended consequence of the bridge formula is a new class of trucks that are called specialized hauling vehicles (SHVs.) These trucks are a single unit with many axles spaced closely together to comply with the requirements of the bridge formula.

Specialized hauling vehicle (SHV).

As shown in the FHWA publication on the bridge formula (excerpt shown below), the loading on bridges can be considerably more for an 80,000-pound specialized hauling vehicle than for an 80,000-pound semi-truck.



This illustration shows how a short vehicle with closely spaced axles can produce higher load effects on bridges compared to a longer vehicle of the same weight that has the axles farther apart.

Because of the national concern with SHVs there is a requirement to update all load ratings to include these vehicles. Specialized hauling vehicles emerged at the same time as new, heavier emergency vehicles were beginning to use roadways.

The current federal highway bill, Fixing America's Surface Transportation (FAST) Act, made it legal for emergency vehicles that have heavier than legal axle weights to travel on the interstate system to respond to wildland fires and other natural disasters. As a result, FHWA has mandated all states to load rate, and if necessary, load post bridges on interstate routes, or within reasonable access (one road mile) of an interstate, for FAST-Act emergency vehicles.

The FHWA mandate requires that lower risk bridges on an interstate or within one road mile, referred to as group 1 bridges, be rated for emergency vehicles when a normal re-rating is warranted. All other bridges that are on an interstate or within one road mile are identified as group 2 bridges and were required to be rated for emergency vehicles by Dec. 31, 2021, which we completed.

Firetruck. (Emergency vehicle.)

The truck shown on this page is an example of the EVs legalized by the FAST Act. These EVs can have a tandem axle weighing nearly double that of the traditional legal tandem. The weight on the two rear axles of this firetruck is equal to the weight that a five-axle dump truck can carry, while the dump truck spreads the load out over its 22-foot wheelbase. Not only is this load much more concentrated than the SHVs, but it is also almost twice the concentrated load that was used to design the Interstate Era bridges built in the 1950s and 1960s.

Oregon is planning to expand these same criteria to all public roadways instead of just on or near an interstate. The FHWA mandate requires that if a state law allows or exempts emergency vehicles to operate as legal loads without restriction off the interstate system, then bridges must be load rated and posted, if necessary, for these vehicles.

It will take several years to get all of the bridges within Oregon load rated for the FAST Act emergency vehicles. ODOT decided to load post all state-owned bridges that have been load rated for emergency vehicles and do not have the capacity to support them safely. As a result, there are 435 state-owned bridges that are load posted.

It Gets More Complicated

The majority of Oregon bridges need updated load ratings using the current method for analysis and to account for the new types of heavier vehicles.

The engineering aspect of an analysis can be complicated. In some cases, the plans for older bridges are not available. Instead of being archived, they may have been placed in an unknown location or inadvertently discarded as office locations and personnel changed. The challenge is that bridge details like the location of reinforcing steel is not known so a load rating is assigned based on the condition and length of the bridge spans.

Another complication can be that a basic analysis may show the need for load posting or strengthening when the bridge shows no signs of distress. For these situations, ODOT performs a load rating using a more advanced analysis to determine the strength of the bridge. If the load rating for a bridge in good condition still shows the need for load posting or strengthening, ODOT may test the materials or perform an on-site load test to determine the strength of the bridge.

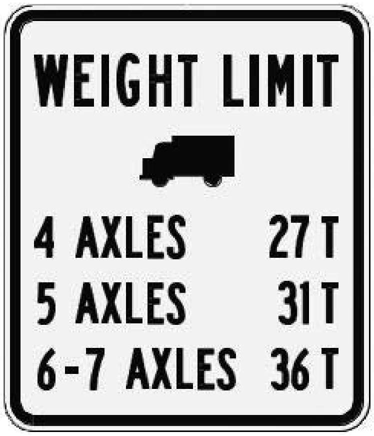
What Happens When a Bridge Can't Carry the Truck Load?

Oregon's economy depends on moving goods efficiently and communities depend on emergency vehicles having ready access to all bridges. Therefore, we make every effort to ensure bridges are safe and reliable. If a load rating indicates that one or more loads exceed the bridge capacity, ODOT uses the under-capacity resolution process to address the load rating.

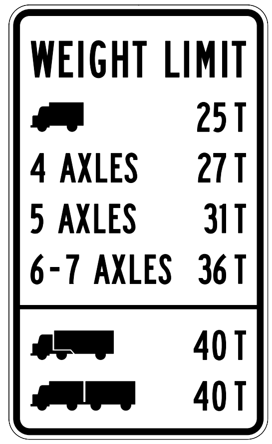
Actions include:

- Coordinating with local agencies, the freight industry and interested parties, including FHWA.
- Monitoring by the region bridge inspector (if not already begun.)
- Reviewing impacts of a load restriction and alternate routes.
- Assembling a response team by ODOT Maintenance to generate an action plan.
- Mobilizing a bridge crew to complete repairs if a bridge cannot be restricted or preparing a contract to either repair or replace the bridge, depending on timing and overall needs.

According to FHWA, if there isn't readily available means to address the load rating, the bridge owner must post load restrictions as soon as possible but no later than 30 days after a load rating identifies the need for posting.



An example of a load posting sign for when only SHVs need to be restricted.



An example of a load posting sign for when all legal vehicles, including SHVs, need to be restricted.

When load postings for a bridge get down to 15 tons or less, we will use a sign that has a single weight posting for all vehicles, showing the maximum tons allowed on the bridge.

Why a Recent Increase in the Number of Load Posted/Restricted Bridges?

Per FHWA memorandum HIBT-10, every U.S. state and other jurisdiction had until Dec. 31, 2022, to have every NBI bridge re-load rated to include the specialized hauling vehicles. ODOT met this federal deadline by working with our consultant engineering firms to complete the load ratings. As a result of completing so many load ratings in a relatively short time, there has been a slight increase in the number of bridges that have rated out low for legal or permit vehicles and thus required either a load posting for legal vehicles or a restriction for permit loads.

Some of the bridges that needed to be re-load rated ended up with much lower rating factors. This was due to differences in current load rating methods versus previous practices. The main difference is that previous load rating methods only analyzed the maximum force locations of each member, or bridge component, that were required to be load rated within a bridge. Current load rating procedures not only analyze these same maximum force locations but also look at every change in structural details (changes in reinforcing, material properties, and member geometries) that will have an effect on the member capacity through the entire bridge. Since our current load rating procedures are now looking at every detail that can change a member's capacity throughout the entire bridge, we often find locations on a bridge that now control the load rating that were never looked at or considered in the older load rating methods since they are not at maximum force locations. This is the reason why some bridges that had previously passed a load rating analysis are now rating out low and requiring a load posting/restriction. Having a relatively large number of bridges re-load rated in a short time has resulted in an increase in load posting/restrictions when compared to previous years.

In 2025, there were two ODOT owned bridges that were load posted for specialized hauling vehicles and three-axle emergency vehicles, and three other ODOT owned bridges that were load posted for just the three-axle emergency vehicles. Of our total inventory, 15.6% of our structures have at least one weight restriction. Efforts to legalize larger and more robust vehicles – to haul freight and deliver emergency services – pose an ongoing concern. While these larger vehicles allow for greater efficiency by hauling more goods or carrying emergency tools, they pose a significant risk to Oregon's inventory of older bridges. The state constructed much of its bridge inventory prior to 1970. At the time, vehicles were much smaller and lighter weight. New vehicle configurations result in greater, more concentrated stress points on our structures.

When new vehicle configurations are approved at the national level, our program must evaluate our structures individually for the capability to carry these heavier trucks. Load rating structures – assessing, signing, and enforcing – comes at a cost. Conducting engineering reviews on nearly 3,000 structures can cost upwards of $20 million – an expense incurred every time state or national standards change. While it is critical that we assess our structures for their capability to carry people, goods and services across our state, it is important to note that funds spent to load rate bridges come from the same reserve as those used to improve bridge conditions.

2025 TUNNEL DATA

Keeping ODOT tunnels functioning with regular monitoring and timely maintenance is critical to ensure safe passage for all users. In addition, minimizing tunnel closures is critical to prevent hardship for the travelling public.

ODOT manages nine state-owned vehicular tunnels and is responsible for all inspections, maintenance, and major rehabilitation of the structures. ODOT also inspects the Capitol Mall Tunnel owned by the Oregon Department of Administrative Services, two state-owned pedestrian tunnels that were formerly vehicular tunnels and five vehicular tunnels owned by other road agencies.

ODOT had performed inspections on tunnels for more than 20 years. Until 2017 there were no FHWA requirements to inspect or report tunnels. The inspections were done under the authority of the State of Oregon, and the inspection program/procedures were devised by the State of Oregon, although they were based on the National Bridge Inspection Standards (NBIS.) Under the ODOT program, tunnels were inspected on a regular two-year cycle, with in-depth inspections on a 10-year cycle. ODOT district maintenance crews perform tunnel and drainage inspections yearly.

National Tunnel Inspection Standards (NTIS) Implementation

In 2017, FHWA instituted a requirement that tunnels be inspected. Now, the National Tunnel Inspection Standards (NTIS) for tunnel inventory, inspection and load rating is available to the public. States are now required to report the results of these inspections yearly to FHWA, similar to the way they are required to report inspection information for the National Bridge Inventory (NBI).

While there are parallels between the data reported for the NBI and NTI, there is one striking difference. The NTI condition data is only element data (the condition of the individual parts of a tunnel, such as the liner, portal, electrical system, etc.) The NBI condition data includes element data as well as ratings of the major components of a bridge, such as the deck, superstructure, substructure and culvert. The NTI has no equivalent to major components, only elements.

The major component rating allowed FHWA to create a bridge condition rating for the entire structure in the NBI. However, there is not a major component rating for tunnels and no similar rating for an entire tunnel.

Oregon wanted to be able to determine the overall tunnel conditions (good, fair or poor) using element conditions. Putting the element condition information together to determine the overall tunnel condition provided a challenge as there is not established national standard.

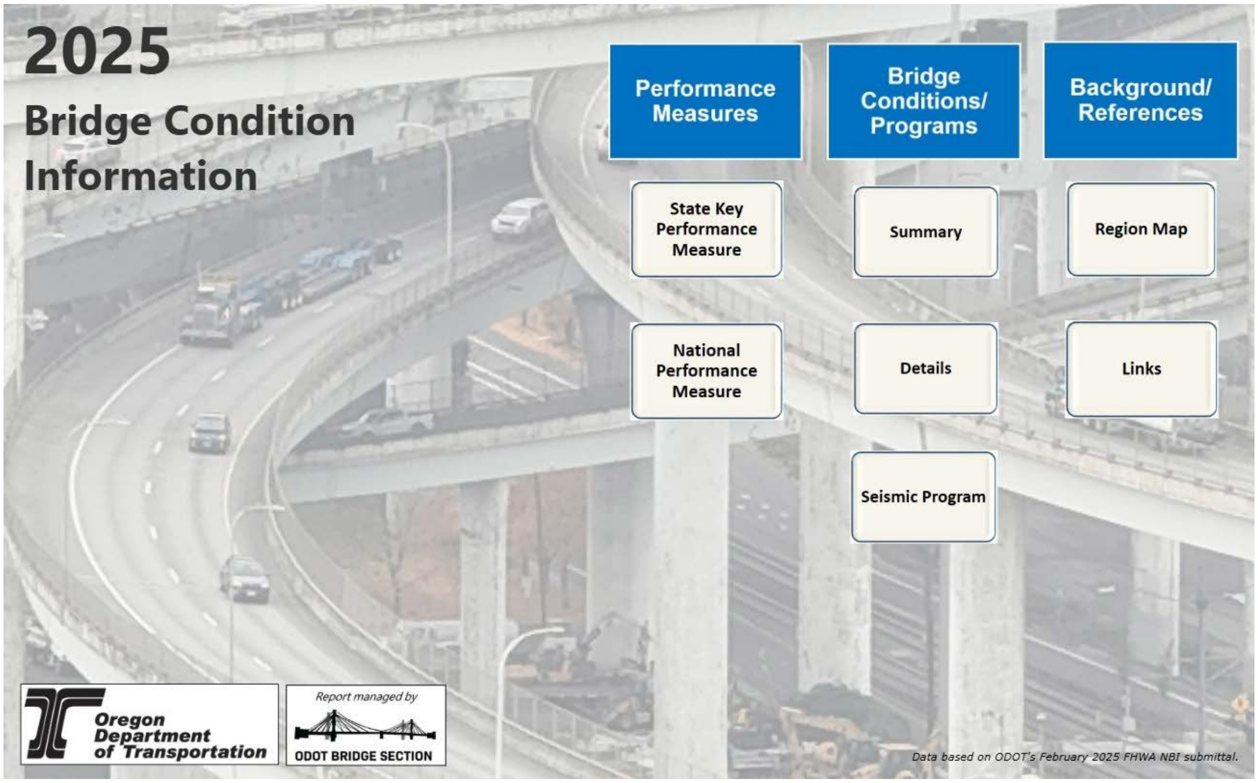
To classify the tunnel condition with the updated NTI Oregon Data, ODOT borrowed a bridge condition parameter termed Health Index (HI) with values ranging from 0 to 100. The HI, in general, incorporates the condition of each element with a weighted average based on the importance of the element to the tunnel and the unit of measurement. The 2024 tunnel condition information reported is based on the updated HI method calibrated with a general assessment of the tunnel conditions and engineering judgement.

Tunnel Conditions 2025

The data provided in the following table was constructed using this ODOT tunnel rating system based on the Oregon NTI element data.

Tunnel Conditions as of February 2025 (based on 2025 FHWA submittal of NTI data)

Region	District	Tunnel Name	Year	Length, ft	Materials	Condition	Owner/Notes
Reg. 1	2B	Vista Ridge Tunnel, Hwy 47 EB	1969	1002	Reinforced Concrete	Good	ODOT
Reg. 1	2B	Vista Ridge Tunnel, Hwy 47 WB	1970	1048	Reinforced Concrete	Good	ODOT
Reg. 1	2C	Oneonta Tunnel (Bike/ Ped), Hwy 100	2008	115	Shotcrete Concrete	Good	ODOT (Ped Only)
Reg. 1	2C	Tooth Rock Tunnel, Hwy 2 EB	1936	827	Reinforced Concrete	Fair	ODOT
Reg. 2	01	Arch Cape Tunnel, Hwy 9	1937	1228	Shotcrete Concrete	Fair	ODOT
Reg. 2	01	Sunset Tunnel, Hwy 47 (Dennis L Edwards Tunnel)	1940	772	Shotcrete Concrete	Good	ODOT
Reg. 2	05	Knowles Creek Tunnel, Hwy 62	1958	1430	Reinforced Concrete	Good	ODOT
Reg. 2	05	Salt Creek Tunnel, Hwy 18	1939	905	Reinforced Concrete	Fair	ODOT
Reg. 2	05	Cape Creek Tunnel, Hwy 9	1931	714	Shotcrete Concrete	Fair	ODOT
Reg. 3	07	Elk Creek Tunnel, Hwy 45	1932	1090	Shotcrete	Good	ODOT
Reg. 4	09	Mosier Tunnels	1920	1096	Shotcrete	Fair	ODOT (Ped Only)
Other Agency Tunnels							
Reg. 1	2B	Rocky Butte Tunnel	1939	400	Reinforced Concrete	Good	Portland
Reg. 1	2B	W Burnside Tunnel	1940	230	Reinforced Concrete	Fair	Portland
Reg. 1	2B	Cornell Tunnel #2, (West), NW Cornell Rd	1941	247	Reinforced Concrete	Good	Portland
Reg. 1	2B	Cornell Tunnel #1, NW Cornell Rd	1940	497	Reinforced Concrete	Good	Portland
Reg. 2	03	Capitol Mall Tunnel Chemeketa St	1990	363	Reinforced Concrete	Good	DAS
Reg. 5	14	Owyhee Tunnel, Owyhee Lake Rd	1929	200	Unlined Rock	Fair	Malheur County



More information is available online through the 2025 Interactive Bridge Condition Report.

https://www.oregon.gov/odot/Bridge/Pages/BCR.aspx

The report includes detailed bridge condition information by region, county, district and route with tables and an interactive map.

Oregon Department of Transportation