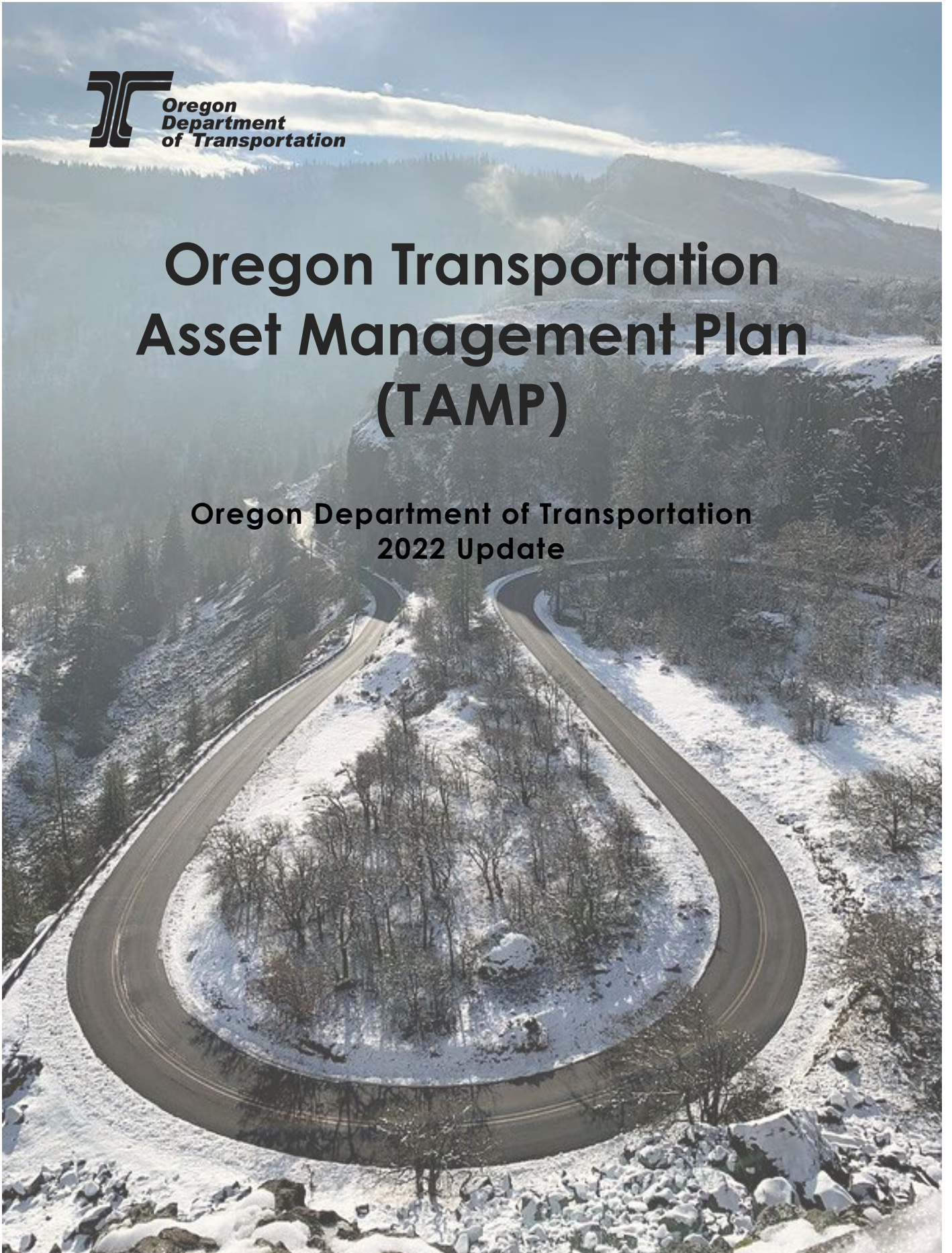




Oregon Transportation Asset Management Plan (TAMP)

Oregon Department of Transportation
2022 Update



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Oregon

Kate Brown, Governor

Department of Transportation

Office of the Director, MS 11

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Oregon Transportation Asset Management Plan Oregon Department of Transportation

Section 119(e)(8) of title 23 United States Code requires each state department of transportation to develop an asset management plan for the National Highway System (NHS) to improve or preserve the condition of NHS infrastructure and performance of the system. Contents of the plan are to be in a form determined by the Secretary of Transportation. A requirement established by the Secretary is that the developed plan is to be approved by the head of the State Department of Transportation.

In accordance with these requirements, I hereby acknowledge that I have reviewed the Oregon Transportation Asset Management Plan and approve its submission to the Federal Highway Administration for formal review and certification.

Kristopher W. Strickler
Director, Oregon Department of Transportation

June 28, 2022

Date

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Executive Summary

Overview and Purpose

Oregon's Transportation Asset Management Plan, or TAMP, documents information about Oregon's National Highway System (NHS) pavement and bridge assets, their condition, use and performance, the processes by which they are managed, and results of alternative management practices and investment decisions.

Provisions of Moving Ahead for Progress in the 21st Century Act (MAP-21) mandate that states develop a risk-based asset management plan which, at a minimum, is in a form that the Secretary determines to be appropriate and includes:

1. A listing and condition of pavement and bridge assets on the National Highway System.
2. Asset management objectives and measures.
3. Identification and analysis of performance gaps between national goals and asset condition.
4. Lifecycle costs and risk-based management analyses.
5. A financial plan with a minimum forecast period of 10 years.
6. Investment strategies.

Pavement and Bridge Ownership and Data

Oregon has 78,991 total public road centerline miles, of which 7,603 are on the State Highway System (SHS) and 4,319 are on the NHS. ODOT owns and maintains 4,048 centerline miles on the NHS. The remaining 271 centerline miles are maintained by local agencies.

Oregon has 6,985 NBI public bridges, of which 2,759 are on the SHS, and 1,848 are on the NHS. ODOT owns and maintains 1,762 bridges on the NHS, totaling an area of 2,659,663 sq. meters. The remaining 86 bridges on the NHS are maintained by local agencies.

Goals, Measures, Targets and Conditions

All 2-year (2020) national performance targets for pavement and bridges on the NHS were exceeded. The Full Performance Period Progress Report will be submitted to FHWA in October 2022.

NHS Pavement National Performance Measure	Baseline	2-Year Condition/ Performance	2-Year Target (2020)	4-Year Target (2022)
Percentage of pavements of Interstate System in Good condition	-	64.4%	-	35%
Percentage of pavements of Interstate System in Poor condition	-	0.2%	-	0.5%
Percentage of pavements of non-Interstate NHS in Good condition	63.9%	65.9%	50%	50%
Percentage of pavements of non-Interstate NHS in Poor condition	6.6%	6.6%	10%	10%

NHS Bridge National Performance Measure	Baseline	2-Year Condition/ Performance	2-Year Target (2020)	4-Year Target (2022)
Percentage of NHS Bridges Classified as in Good Condition	12.4%	13.2%	11.4%	10.0%
Percentage of NHS Bridges Classified as in Poor Condition	1.9%	1.9%	2.4%	3.0%

Both state performance targets for pavement and bridges on the SHS were met.

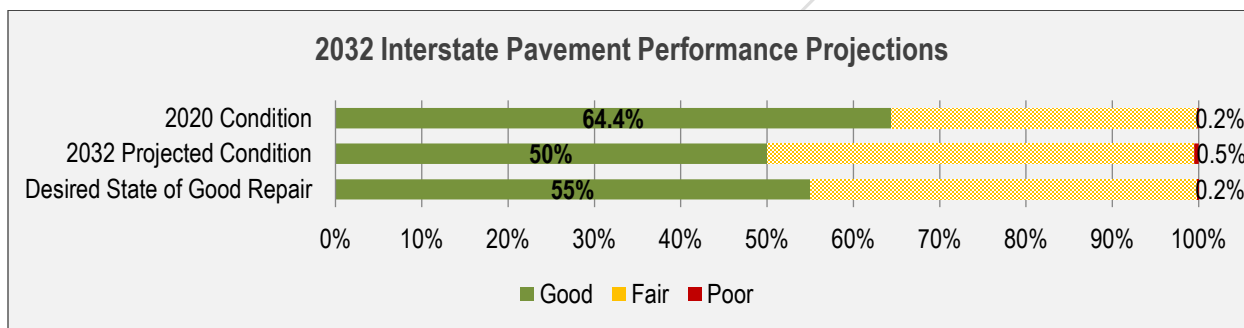
Oregon Legislatively Approved Key Performance Measures	2021 Condition	2021 Target
Pavement Condition - Percent of pavement lane miles rated “fair” or better out of total centerline miles in the state highway system	89%	85%
Bridge Condition - Percent of state highway bridges that are not “distressed”	78%	78%

Condition & Performance Gap Analysis

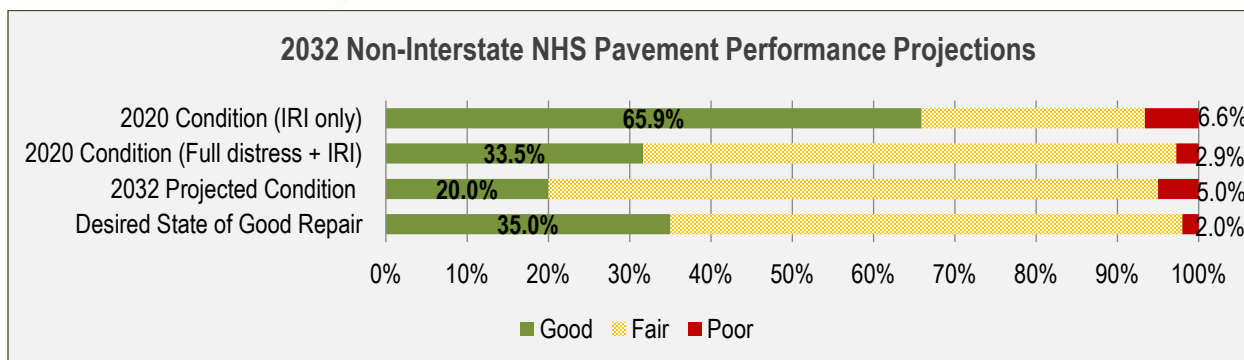
ODOT estimates that the agency needs approximately **\$273 million per year to maintain current pavement conditions** and continue to meet the desired state of good repair of 90% “fair” or better, over the long term across the entire system.

Projected annual pavement investment ¹	Annual pavement investment needed to <i>Maintain Current Conditions</i>	Annual pavement investment needed to meet <i>Desired State of Good Repair</i> ²
State Highways: \$112M/year NHS and Interstate only: Approx. \$90M/year	State Highways: \$273M/year NHS and Interstate only: Approx. \$241M/year	State Highways: \$273M/year NHS and Interstate only: Approx. \$241M/year

It is projected about 50% (+/-5%) of Oregon’s Interstate pavement will be in *good* condition in the year 2032, and that the percent of Interstate pavement in poor condition is projected to be about 0.5%.



Oregon’s Non-Interstate NHS pavements are projected to experience significant declines in condition over the next 10 years. The percent of pavement rated good is projected to decline to about 20% (+/-5%) by 2032, similarly the percent of Non-Interstate NHS pavement in poor condition is expected to rise to about 5%.



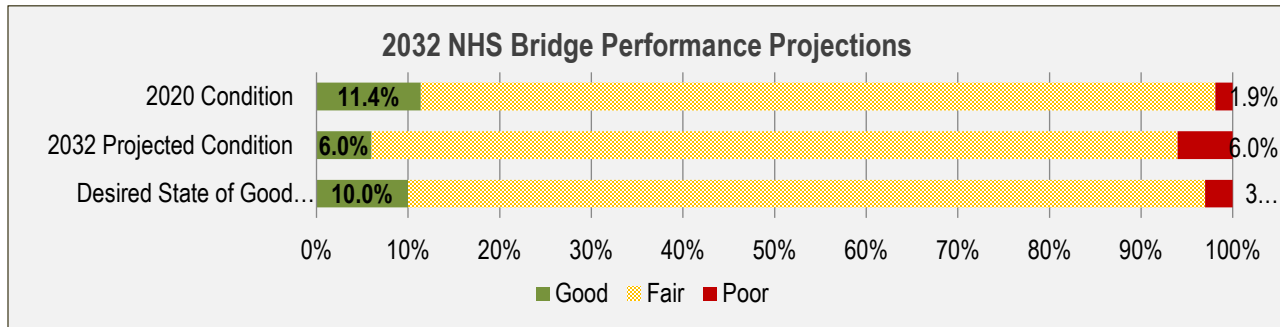
¹ Does not include Interstate Sign funding.

² Pavement SOGR is based on 2020 Pavement Condition Report estimate updated to 2022 costs.

An estimated \$320 million is needed to maintain current bridge conditions, and \$539 million per year is needed to meet the desired state of good repair of 78% of bridges “not distressed” over the long term.

Projected annual bridge investment ³	Annual bridge investment needed to <i>Maintain Current Conditions</i>	Annual bridge investment needed to meet <i>Desired State of Good Repair</i>
State Highways: \$156M/year NHS and Interstate only: Approx. \$145M/year	State Highways: \$320M/year NHS and Interstate only: Approx. \$273M/year	State Highways: \$539M/year NHS and Interstate only: Approx. \$420M/year

A noticeable decline in bridge conditions on the NHS is projected over the next 10 years. It is projected about 6% of Oregon’s NHS bridges will be in *good* condition in the year 2032, and that about 6% will be in poor condition.



Lifecycle Planning

ODOT minimizes life cycle costs through extending the useful life of pavement and bridge assets, to the extent practicable, through establishing life cycle strategies. Reconstruction and maintenance costs rise as pavement and bridges ages. However, if maintenance and/or rehabilitation is carried out too early, the costs are prohibitively high. There is an optimum time at which maintenance can be performed to provide the maximum cost-effectiveness.

Pavements must be resurfaced or rehabilitated at periodic intervals (typical average 15 to 20 years for asphalt and 40 to 50 years for concrete) to keep them out of poor condition

Most bridges today are designed with 75-year design life. With regular attention, the actual service life can be expected to extend to 100 years or more. Based on a service life of 100 years, a conservative approach would be to replace about one percent of all bridges every year.

Risk Management

The goal of the agency’s approach to risk management is to make better and more informed decisions regarding existing and potential risks to its transportation assets and programs and better understand the likely outcomes and impacts of alternative actions.

ODOT is engaged in a number of risk management activities and in many cases has already identified and is addressing high-priority risks that may impact achieving the goals of the TAMP. ODOT categorizes risk into the six major risk management categories of:

1. Pavement,
2. Bridge,
3. Other Tier-1 Assets,
4. Environmental,
5. Economic and Financial, and
6. Organization and Leadership

³ Assumes 50% of bridge seismic funding will benefit SOGR and MCC scenarios, through bridge replacements.

The Pavement Services Unit attempts to address programmatically as many different risks to pavement as possible in the Pavement Management System (PMS). For instance, risks of accelerated pavement deterioration are handled through the scoping process and annual review of interstate pavement conditions and the treatment assumptions and deterioration models in the PMS.

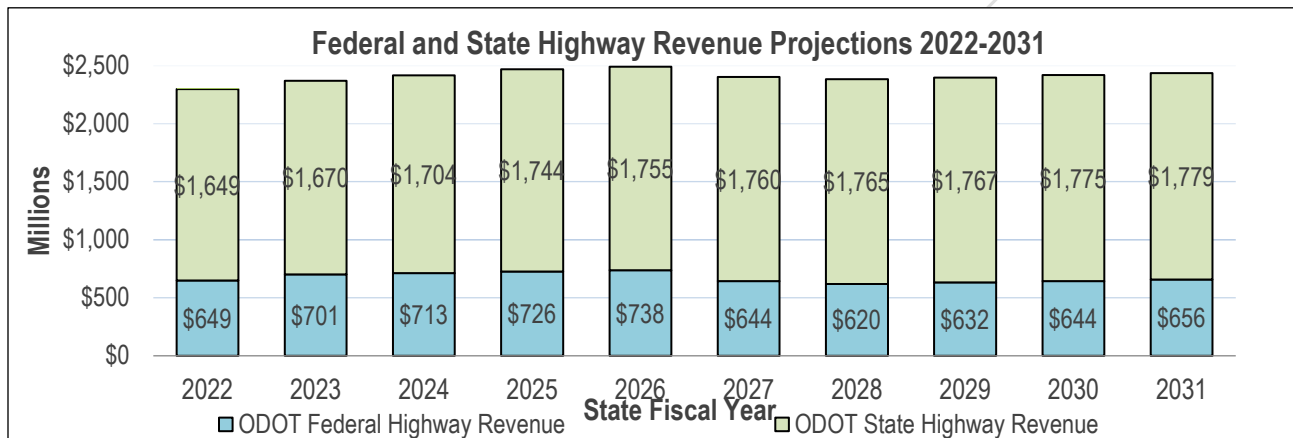
The Bridge Section has focused additional attention on risks related to four key areas:

- decks;
- corrosion on steel bridges and reinforced concrete bridges;
- fatigue cracking on steel bridges; and
- scour

Financial Plan

The TAMP documents and summarizes the requirements, plans, activities and processes emphasizing preservation and improvement of Oregon’s pavements and bridges on the State highway system. The TAMP also provides financial planning and investment strategies which inform STIP development and funding allocations.

The following chart represents a snapshot in time and serves as a starting point for identifying optimal investments that maintain, preserve, and enhance Oregon’s highway and bridge assets.



The total estimated funding shown below includes all project types and funding sources that contribute to the condition and performance of NHS pavements and bridges, including projects driven by modernization or enhancement efforts.

SCENARIO 1: CURRENT REVENUE FORECAST – NHS PAVEMENT										
TAMP Work Type	2021- 2024			2024-2027			2027-2030			...
	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31
New Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reconstruction	\$6	\$7	\$6	\$5	\$7	\$5	\$5	\$7	\$5	\$5
Rehabilitation	\$41	\$42	\$41	\$39	\$40	\$39	\$37	\$38	\$37	\$37
Preservation	\$39	\$39	\$39	\$37	\$37	\$37	\$35	\$35	\$35	\$35
Maintenance	\$16	\$17	\$16	\$15	\$16	\$15	\$14	\$15	\$14	\$14
Total	\$102	\$105	\$102	\$96	\$100	\$96	\$91	\$95	\$91	\$91
	\$309m			\$292m			\$277m			

SCENARIO 1: CURRENT REVENUE FORECAST – NHS BRIDGE										
TAMP Work Type	2021- 2024			2024-2027			2027-2030			...
	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31
New Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reconstruction	\$66	\$66	\$66	\$73	\$73	\$73	\$73	\$73	\$73	\$73
Rehabilitation	\$93	\$93	\$93	\$81	\$81	\$81	\$81	\$81	\$81	\$81
Preservation	\$35	\$35	\$35	\$29	\$29	\$29	\$29	\$29	\$29	\$29
Maintenance	\$20	\$20	\$20	\$12	\$12	\$12	\$12	\$12	\$12	\$12
Total	\$214	\$214	\$214	\$195	\$195	\$195	\$195	\$195	\$195	\$195
	\$642			\$585			\$585			

Investment Strategy

Underlying the investment strategies is asset management information and analyses presented in other chapters of the TAMP. The performance gap analysis helps identify investment needs to achieve policy goals for condition and performance of NHS pavements and bridges. Lifecycle cost considerations provide information on the costs of maintaining and improving NHS pavement and bridge assets over time. Financial plan estimates of state and federal funding permit the development of likely future conditions and performance of pavements and bridges on priority NHS routes as well as the overall state system. Risk management analysis highlights and prioritizes factors that positively or negatively impact strategies and outcomes.

The agency operates under the direction of the Oregon Transportation Commission (OTC), which sets strategy and policy for the state transportation system. Together, the OTC and ODOT work closely with the governor and state legislature to ensure efforts to maintain and enhance the system are aligned with the broader needs, priorities and resources of the state

Strategies are supportive of [ODOT's Mission and Values](#) and founded on policies, plans and objectives adopted by the OTC. They are presented in ODOT's [Oregon Transportation Plan](#) and associated modal and topic plans including the [Oregon Highway Plan](#), [Strategic Business Plan](#), [Strategic Action Plan](#) and the [OTC Investment Strategy](#).

The following summarizes ODOT's investment strategies as it seeks to balance investment between Modernization, Preservation, and Maintenance under a constrained revenue scenario:

- Target more dollars for preservation and maintenance over modernization⁴
- Focus preservation and preventative maintenance activities on key routes and corridors⁵
- Provide funding to enhance the seismic resilience of pavements and bridges⁶

In April 2018, the OTC adopted a strategic business plan for the agency called [One ODOT: Positioned for the Future](#). The OTC and ODOT leadership recognized the need to also develop externally facing priorities, and in response developed the [2021-2023 Strategic Action Plan](#).

As a result of the Strategic Action Plan, two significant efforts are to more robustly integrate social equity and climate change mitigation and adaptation considerations into ODOT business and asset management investment strategies. What this looks like, is actively being developed.

⁴ [1999 OHP \(pg. 7\)](#)

⁵ [2020 OTC Investment Strategy \(pg18\)](#) and [1999 OHP \(pg. 9\)](#)

⁶ [2020 OTC Investment Strategy \(pg. 23-24\)](#)