

ODOT Transportation Funding Needs Analysis

System Maintenance and Operations

Total Annual Funding Gap: \$205 million

Maintenance and operations are the activities associated with repairing existing transportation infrastructure and keeping the highway system open and functional. ODOT staff are responsible for about 7,300 miles of highway and over 2,700 bridges across the state. Significant staffing resources, equipment, materials, and supplies are needed to efficiently and effectively carry out maintenance and operations services. This work, performed primarily by ODOT crews, includes everything from painting centerlines and edge lines, plowing snow, patching potholes, fixing guardrails, responding to crashes, replacing traffic signs, repairing damage from severe weather events, and communicating every day with the public. Maintenance generally does not include activities intended to enhance existing transportation infrastructure or capital investments; importantly maintenance activities cannot be supported with federal funds, except in limited cases (e.g. declared emergencies like major natural disasters/events).

Maintenance and operations include both proactive and reactive activities:

- *Proactive* activities are planned to keep the system in good condition. Examples include sealing pavement cracks, cleaning drainage systems, and maintaining roadside vegetation. These efforts all prevent deterioration of the highway system and reduce safety risks. Prolonging the life of these assets is more cost effective than reacting to infrastructure failures that are often the result of deferred maintenance.
- *Reactive* maintenance work responds to incidents or weather to correct an immediate problem. Examples include responding to and repairing damage from a crash, repairing a landslide, and plowing snow and sanding/deicing the roadway.

Maintenance work helps identify and mitigate small issues before they become big problems, saving money in the longer term and helping reduce overall risk. Maintenance work also increases the day-to-day safety for Oregonians.

ODOT Maintenance and Operations needs around \$205 million per year in additional investment to keep up with inflation, meet the needs of today's transportation system, and ensure the resources are available to retain our capabilities into the future (Table 2).

Maintenance and Operations Additional Need per year	\$205,000,000*
Restore services lost due to inflation & budget cuts	\$121,100,000
Road, Bridge and Traffic Maintenance	\$38,000,000
Emergency Repairs	\$1,200,000
Responding to Incidents	\$2,200,000
Clean Up: Camp, Graffiti & Litter	\$10,800,000
Fleet, Fuels, Materials, Supplies & Equipment	\$18,000,000
Operational Support	\$3,900,000

Wireless Communications	\$7,100,000
Facilities Maintenance	\$2,800,000

*Rounded to the nearest million

Beyond the impacts of inflation and rising costs, additional investment is needed in the following:

- *Capabilities.* This includes the supporting equipment, facilities, and systems necessary to deliver the maintenance and operations programs. Investment in this category would:
 - Restore funding needed to maintain the operational effectiveness of staff.
 - Replace equipment and vehicles in a reasonable timeframe to avoid high repair costs.
 - Replace current maintenance software systems that are beyond service life and lack modern capabilities. For example, ODOT is one of the few state DOTs that lacks a modern maintenance management system, and a system to track permits for highway system use or access.

- *Direct services and systems.* Public demands of the transportation system are changing. Investment in this category would:
 - Maintain active transportation features, like separated bike lanes, multi-use paths, and enhanced pedestrian crossings.
 - Provide additional dedicated incident response capabilities to clear incidents more quickly and reduce congestion.
 - Meet the increased demand for graffiti, litter, and camp clean up.
 - Meet the safety and communication needs of ODOT and Oregon State Police (OSP) by replacing all land-based radios; they were purchased under the state radio project over a decade ago and are now reaching end of life.

- *Climate Impacts.* Weather extremes have resulted in more frequent and severe emergency events, leading to road closures and increased agency response and repair costs. On average, ODOT is spending an additional \$18 million every 5 years on these events. Extreme weather and climate impacts have also emphasized the need for more proactive investment in culvert maintenance, addressing unstable slopes to protect against landslides, and hazard tree management along our highways. Every \$1 spent on proactive resilience saves an estimated \$6 in repairs, but little dedicated funding exists to proactively invest.

Restore level of service reductions due to inflation and budget cuts (\$121 million annually)

This amount represents the additional investment needed to maintain the existing system at the current level. Beginning in the 2017-19 biennium (and in each subsequent biennium since) ODOT has made cuts and reductions to match available funds, resulting in reduced service levels each biennium. Additionally, record high inflation has continued to erode what can be accomplished with the maintenance budget. An investment of \$121 million would restore to the maintenance service level prior to cuts. This amount excludes funding needs for deferred maintenance work and other program changes detailed below.

The funding need estimate was derived by inflating the 2017-19 maintenance program budget using industry inflation factors for labor and for materials to 2025. The inflation factor for labor based on

the employment cost index is 26.3 percent. The inflation factor for services and supplies based on a state and local purchase price index is 29.7 percent. The difference between the inflated 2025 budget and the operating budget for 2025 with a 10 percent reduction to account for looming reductions next biennium, represents the additional funding needed in 2025 to deliver the same buying power of the 2017-19 budget.

Road, Bridge and Traffic Maintenance (\$38 million annually)

Changing regulations, growth in traffic volumes, increased priority of other modes, and other changes to the system have resulted in feature growth without adjustments to maintenance funding to address them. This includes funding for maintenance of new pedestrian features, increases in water quality features, additional electrical features, and changes to road markings. It includes funding to correct historically underfunded maintenance of culverts, rockfall features, and slide drains. It also includes funding for water quality features associated with the Portland Harbor clean up and the maintenance and operating costs for the new Rose Quarter systems. A total of \$38 million in additional funds is needed annually to support these investments. The cost estimate is derived from multiple sources including feature inventory growth, past contract prices for drain cleaning, culvert and rockfall feature inventories, and Washington State DOT costs for operating facilities similar to the Rose Quarter.

Emergency Repairs (\$1.2 million annually)

Climate change is producing larger and more frequent weather events creating more expenses to repair damage. This funding helps offset those cost increases that are not eligible for federal emergency relief funding. Cost estimate is based on historic spending trends. This results in an annual need of \$1 million above today's funding levels.

Responding to Incidents (\$2.2 million annually)

As traffic volumes and incident frequency continue to increase, maintenance crews are interrupted more frequently to respond to incidents (e.g. crashes, hazardous debris, etc.) impacting their ability to complete other maintenance work. This additional funding (\$2 million annually) invests in more dedicated incident response resources for incident hotspots, that not only allow maintenance crews to focus on other work but also clear incidents more quickly and reduce congestion. The cost estimate is based on a study of incident hot spots on the state highway system that resulted in a recommendation for 11 additional dedicated incident response personnel (Incident Response Operations Specialists).

Clean Up: Camp, Graffiti & Litter (\$10.8 million annually)

Clean up costs related to camping, graffiti, litter and vandalism continue to grow from biennium to biennium. This added funding (\$10.8 million) is necessary to address growing costs for cleanup and mitigation. This cost estimate is based on historic spending trends.

Fleet, Fuels, Materials, Supplies & Equipment (\$18 million annually)

Approximately 37% of ODOT fleet is beyond optimal service life. Extending equipment beyond optimal service life results in higher repair costs, lower cost recovery for surplus equipment, and lower reliability. American Association of State Highway and Transportation Officials (AASHTO) recommendations that no more than 10% of equipment be beyond service life, and additional funds are needed to meet this target. This category also includes the costs to electrify ODOT's light-duty fleet vehicles. The cost estimate is based on the funding needed to implement and maintain charging infrastructure of ODOT fleet, the short-term difference in cost between EVs and internal combustion vehicles, and the funding needed to catch up on fleet condition after many years of underfunding fleet acquisition, totaling an annual increase of \$18 million.

Operational Support (\$3.9 million annually)

ODOT is one of the only states without a modern maintenance management system. Similarly other maintenance software tools like our permits system are out of date and lack customer support and efficiency features expected from modern systems. The \$3.9 million more is needed each year to modernize and maintain this system. Costs are based on data from other state DOT costs and market research.

\$3.9M in Operational Support would purchase systems maintenance and operations branch could use to provide services to Oregonians, manage and track assets, services and the associated costs. These funds would support an incremental build of a maintenance management system that allows us to track the performance of our assets, our work orders and provides the data to determine if we are meeting our Level of Service commitments. This system does not exist today. Building a comprehensive system would be done over multiple biennia by breaking the work down into the following modules/projects:

1. **Condition of maintenance survey/asset management data aggregation system** to track the conditions of features like ditches, shoulders, guardrail, etc.
2. **EV integration with Fleet Information Management System** enhances our fuel management module to integrate propellant types and their consumption rates and costs for electric vehicles.
3. **Maintenance Management System** manages work orders, performance metrics
4. **Permit system** – Provides an online user interface, transaction system for permits tied to our data warehouse. Allows 24/7 access to permit application for utility, parades/events, driveway applications and other types of highway access permits. Improves customer service, provides a tool to monitor statewide consistency, accountability, response time metrics and transparency.
5. **Financial Information Management System Capital asset module** improves the existing system to track capital assets and maintenance utilization. Improves accountability and transparency.
6. **Full Automatic Vehicle Location data implementation/integration system** allows tracking and reporting of state vehicles. We have piloted tracking snowplow locations so that public can see where our crews are actively addressing highway incidents. This would be a full expansion of that system for maintenance.

7. **Herbicide system** allows us to track the application and performance of herbicide treatments.

All of these systems provide tools for maintenance managers to track and follow through on maintenance needs. It gives them a way to better track and plan work which will result in a more efficient use of our staff, equipment and supplies. We will have data on deferred maintenance. We'll have better tools to help with scheduled maintenance as is necessary with some of our water quality features among other things. It will give us data for performance metrics that will help with managing work and budgeting for maintenance. It will also provide us much better record keeping to defend ourselves with tort claims and lawsuits. It will help us identify trends that can be fed back into the design process.

Wireless Communications (\$7.1 million annually)

Industry standards for radio replacement is every 10 years. The ODOT and OSP radios installed as part of the state radio project will be 14 years old in 2025, and if funding is obtained, 15-16 years old by the time they are replaced. Old radios introduce issues related to reliability, availability of parts, and software compatibility as the radios are no longer supported by the radio vendor. Costs are based on contract radio costs and labor estimates. Approximately \$7 million more is needed each year to replace and maintain the radios and system. Thirty-five percent of this amount needs to be general funds to support OSP radio replacement that can't be paid for with the state highway fund.

Facilities Maintenance (\$2.8 million annually)

ODOT has approximately 1,100 maintenance facilities, and we have recently been deferring building maintenance due to budget constraints. ODOT investment in building maintenance is far below industry standards for building maintenance. Funding in this category supplements Emerging Small Business (ESB) funding and base budget facilities maintenance funding and would move ODOT closer to industry standards for building maintenance investment. The industry standard is that 2-5% of current building replacement costs should be spent on maintenance. With this additional funding (\$3 million), ODOT would be spending 1.4 percent of current replacement value on maintenance.