EXECUTIVE SUMMARY

Investments in maintaining and preserving transportation infrastructure have not kept pace with growing system needs over time. The effects of decades-long underinvestment are particularly acute across state highways and transit systems that are facing growing maintenance and modernization needs.

In 2019, the Commission requested the opportunity to update its 2017 Investment Strategy to account for the additional funding in HB 2017 and an updated assessment of need across the transportation system. Across all modes of transportation, HB 2017 met only a portion of the funding needed to maintain and enhance the transportation system. In some areas such as bridges and pavement HB 2017 means we are falling behind more slowly; in other areas like bicycle-pedestrian we will be able to slowly eat away at significant unmet need; and in transit we will see significant service expansion that will meet only a portion of the need for public transportation.

The Commission plays a key role in making investment decisions for the transportation system and the agency, primarily through the Statewide Transportation Improvement Program. In 2020 the Commission will begin work on the next STIP that will cover the 2024-2027 time period. This work will begin with allocating funding among basic program categories. The Commission also will provides direction on the specific funding programs in which projects are selected.

Revenue

- The Oregon Constitutional restriction on use of highway funds ensures that user fees are invested in roads but makes it challenging to fund non-highway modes.
- The Constitution’s requirement for cost responsibility between light and heavy vehicles underlies our unique weight-mile tax and ensures trucks pay their fair share for their use and impact on the roads.
- The State Highway Fund relies on a three-legged stool of fuels tax, driver and motor vehicle fees, and motor carrier taxes and fees, a well-balanced portfolio of revenue.
- Oregon’s overall highway taxes are lower than most western states, and Oregon has among the lowest vehicle fees of any state in the nation.
- The Legislature has effectively used bonding to pay for transportation projects, but debt service payments will limit the ability to fund new projects in the future.
- Inflation erodes most of our highway revenue streams.
- Increasing fuel efficiency will erode the fuels tax, the primary source of transportation revenue; per-mile road usage charges could be a solution.
Federal funding has been flat for about a decade, and federal funding is at serious risk of being cut because the Highway Trust Fund will run short of cash in 2021.

**Preservation**
- Oregon is a fix-it first state. The Oregon Transportation Plan and Oregon Highway Plan focus on preserving the system; highway improvements are focused on enhancing efficiency and the capacity of existing facilities rather than building new ones.
- ODOT focuses on preserving a set of Fix-It Priority Corridors that carry high volumes of freight and connect most communities.
- Funding to preserve state highway assets is not adequate, resulting in a triage approach to preservation, rehabilitation, and repair, and maintaining status quo conditions requires more than doubling current funding.
- Due to the aging of Oregon’s bridges, many are reaching the end of their service life. But funding only allows for bridge rehabilitation rather than replacement; the current bridge replacement cycle is about 900 years.
- Repaving on most state highways has stretched to a 50-year cycle. As a result, conditions will start declining in 2024. The resulting pavement deterioration will require more expensive reconstruction rather than simple repaving.
- Thousands of culverts cross Oregon highways. However, culverts face a 1,310 year replacement cycle, increasing the risk of catastrophic failures that close highways.
- Day to day highway maintenance and operations can only be funded by a portion of State Highway Fund revenue– and ODOT faces a major shortfall in these funds.
- More burden will fall on maintenance crews as the system deteriorates.
- 24% of maintenance facilities are over 50 years old and over 40% are obsolete.

**Safety**
- ODOT funds safety through a variety of programs, including road and rail infrastructure investments, behavioral programs, and rail/transit regulatory programs.
- The primary infrastructure program is the All Roads Transportation Safety (ARTS) program, which uses a data-driven process to find the most cost-effective ways to drive down fatalities and serious injuries for all road users regardless of jurisdiction.
- Programs focused on road user behavior are funded by a variety of state and federal sources and flow through the Transportation Safety Division (TSD). TSD selects projects within priority focus areas through a strategic investment process based on the Transportation Safety Action Plan.

**Multimodal Transportation Options**
- Across the non-highway programs the agency has a significant role in program development, project selection, and grant administration. These functions are all performed in partnership with stakeholders.
• In non-highway programs, the role of the agency and the OTC is to select the best projects across jurisdictions to ensure connectivity and mobility, rather than on ensuring the health of the state highway system.
• Bicycle and pedestrian projects can be funded from a wide variety of funding sources. However, these disparate funding sources often lead to opportunistic and fragmented investments rather than strategic investments.
• State Highway Fund resources can only go to bicycle and pedestrian projects within the right of way. As a result, most of the active transportation funding in HB 2017 went to Safe Routes to School projects within the road right of way and very little additional money went to off-road paths that are often preferred by walkers and bikers.
• The Statewide Transportation Improvement Fund is the first significant state investment in public transportation; previously most funding came from local and federal sources.
• Much of the need for investment in public transportation is for operations, rather than capital expenditures to preserve the bus fleet or invest in infrastructure.
• Oregon’s passenger rail funding can pay for existing service, but we don’t have a dedicated funding source for passenger rail that is sufficient to pay for increased service or improve infrastructure to reduce travel times and increase reliability.
• ODOT has managed to creatively scrape together match funding to secure some federal grants to improve the rail system, but a lack of state match sources make it difficult to leverage federal rail grant programs.

Multimodal Freight
• Aviation, ports and rail are highly reliant on Connect Oregon for infrastructure investments. While the new privilege tax will provide Connect Oregon a sustainable funding base, it won’t be adequate to run a robust program.
• New aviation funding provided by the Legislature has provided match funds that have allowed most general aviation airports to leverage Federal Aviation Administration grants. However, funding has only met a portion of grant requests and the funding has not been able to provide significant assistance to the commercial service airports.

System Operations
• Operations investments can be a cost-effective way to improve mobility and safety while reducing GHG emissions.
• With relatively short replacement cycles, aging operations infrastructure increases maintenance expenditures and impacts mobility and safety.

Modernization
• Modernization projects have relied primarily on legislative funding in recent years.
• Tolling may be a way to pay for major highway expansion projects that don’t have a funding source, but federal law limits where a state can impose tolls.
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INTRODUCTION

The 2016 Investment Strategy, adopted by the Commission in January 2017, laid out the agency’s investment strategies in various program areas, compared total need to available funding, discussed the implications of long-term system performance at current funding levels, and outlined options for additional investment. It was developed for legislative consideration during the 2017 legislative session, during development of the transportation funding package.

In response to the projected impact of deferred investment described in the 2016 Investment Strategy, the 2017 Oregon Legislature passed House Bill 2017 (HB 2017). Often referred to as Keep Oregon Moving, HB 2017 marked a historic investment in transportation, designed to promote a clean environment, strong communities with good quality of life, a vibrant economy with good jobs, and safe, healthy people.

The funding package included substantial investments in public transit, roads, and bridges, advanced congestion-pricing (tolling) and allocated funding for safe routes to school infrastructure and electric vehicle purchase incentives as well as increasing funds for roads and bridges. To provide this additional funding, the legislation increased traditional Highway Fund taxes and fees (i.e. motor-fuels tax and DMV fees) and introduced four new taxes (privilege-tax, use-tax, payroll-tax, and bicycle-tax).

The 2020 Investment Strategy update will build on the 2016 iteration by examining the gap between total system-wide needs and current funding-levels (post-HB 2017), given that revenue is projected to decline, costs are rising and needs are growing. This report consists of an updated overview of how the Department’s scarce resources are being invested, the resulting performance/system conditions, and prioritization of expenditures should funding levels remain flat or are further reduced. The anticipated impacts and implications for the transportation system, economy, and traveling public in Oregon have been updated and are included to inform future decisions regarding Department priorities and strategic investments.

With future funding uncertain and significant unmet needs identified across all modes and investment areas, the Department recognizes that the need for sustainable revenue remains significant. To that end, information regarding the status of current revenue generation efforts and additional options for further exploration has also been incorporated.
BACKGROUND

Strategic Investment Decisions

The Commission plays a key role in making investment decisions for the transportation system and the agency. Throughout 2019, the Commission held a series of Strategic Investment Workshops aimed at familiarizing the Commission with system revenue streams, budget process and program funding investments, as well as developing a shared understanding of how current statewide policy direction and past transportation plans relate to ODOT’s strategic investment work under the Strategic Business Plan (SBP). This shared understanding is foundational to the policy development in the Oregon Transportation Plan (OTP) update.

The program funding levels, transportation system conditions, as well as the impact to Oregon’s economy and users of the system contained in this report, are based on the best available information.

Agency Request Budget (ARB)

The Department Budget includes all of the funds that flow through the department, for both the transportation system and the agency, over a two-year period. The budget includes expenditures focused on agency service levels and capabilities, including capital expenditures on fleet, facilities, and information systems. It also includes agency operations costs for our maintenance and operations forces and ODOT’s service, revenue, administrative and regulatory functions (i.e. DMV, Commerce and Compliance Division, and Support Services Division). The Commission approves the Agency Request Budget, and the Legislature ultimately approves the final budget.

Allocation of State Highway Fund Resources in ODOT's Operational Budget
The Department relies on a large number of funding sources, and each comes with specific restrictions. Although ODOT is a multimodal agency, our funding is heavily tilted toward highways. As a result, the budget for the Delivery and Operations Division is four times larger than the Public Transportation Division.

**The Statewide Transportation Improvement Program (STIP)**

The STIP is a subset of the budget that focuses on capital investments in the transportation system. It is required by the Federal government and shows how we plan to use all of our federal funds, although it also includes regionally significant state-funded highway projects. The STIP is where the Commission has the most flexibility to make investment decisions by allocating available funding among programs. Investment decisions made in the STIP are then folded into the agency’s biennial budget. In recent STIPs, the OTC put the vast majority of its discretionary resources into Fix-it and safety programs.

**Allocation of Funding in the 2021-2024 Draft STIP**

Because it focuses on programing federal funds, the STIP does not include all transportation system funding. It does not include highway maintenance or state-funded non-highway programs (i.e. Connect Oregon, Statewide Transportation Improvement Fund (STIF), Safe Routes to School (SRTS), and passenger rail operations). Funding levels for these programs are generally set by the Legislature in statute or in ODOT’s budget, and the Commission makes decisions about distribution of these funds in competitive funding cycles.
TRANSPORTATION REVENUE AND FUNDING: CHALLENGES AND RISKS

Oregon Department of Transportation and Oregon’s transportation system face significant long-term funding challenges. A number of trends will drive changes in the way the state invests in the transportation system, while other trends will create significant challenges for the revenue needed to invest in the system.

State Highway Fund Revenue

A key concept in highway funding is the “user pays principle.” Most highway funding comes from user fees, where those who use the system and benefit from it pay for it. There are two primary sources of highway funding: State and Federal.

Constitutional and Legal Framework

Oregon’s Constitution in Article IX Section 3a states that “Any tax levied on, with respect to, or measured by the storage, withdrawal, use, sale, distribution, importation or receipt of motor vehicle fuel or any other product used for the propulsion of motor vehicles” and “Any tax or excise levied on the ownership, operation or use of motor vehicles” “shall be used exclusively for the construction, reconstruction, improvement, repair, maintenance, operation and use of public highways, roads, streets and roadside rest areas in this state”.

This provision limits State Highway Fund spending to roads; no rail, aviation, or even bicycle and pedestrian trails outside the right of way can be funded.

A number of Oregon Supreme Court decisions have provided case law that clarifies the meaning of this provision. These include:

- Automobile Club of Oregon v. State of Oregon, in which the Court found that revenues from a fuel storage “assessment” were a “tax” on motor vehicle fuel, and also that an “emission fee” was a “tax or excise” on the ownership, operation or use of motor vehicles, and therefore both are subject to the constitutional restriction on use of highway funds.
- Rogers v. Lane County, which clarified eligible highway expenditures, noting that to be eligible expenses must “primarily and directly facilitate motorized vehicle travel”.
- Oregon Telecommunications Association v. Oregon Department of Transportation, which further clarified what expenses are eligible under the Article IX Section 3a.

Based on these cases and consultation with the Oregon Department of Justice, ODOT has concluded that it most likely can fund the following transit and bicycle/pedestrian programs using constitutionally dedicated highway resources.
• Congestion management options such as dedicated lanes for transit or carpooling, shared lanes for mixed auto/light rail traffic, and queue-jumping lanes.
• Transit facilities within public highway rights-of-way such as transit stops and transit stations.
• Park and ride locations in or adjacent to the right of way that serve buses.
• Transit signal priority.
• Highway pull outs to accommodate buses.
• Bicycle and pedestrian facilities within the highway, road, or street right-of-way.

ODOT has also concluded that new sources of revenue, such as tolls and road usage charges, do constitute a tax that would be subject to the constitutional restriction.

Sources

The State Highway Fund relies on three primary sources: fuels tax, driver and motor vehicle fees, and motor carrier taxes and fees (primarily the weight-mile tax). The Department’s share of the State Highway Trust Fund is expended in four primary ways: to fund highway projects, to pay debt service on bonds issued to fund projects, highway maintenance and operations by ODOT forces, and other agency operations.

Prior to HB 2017, State Highway Fund resources were essentially fully committed to highway maintenance and operations by ODOT forces, other agency operations costs, and debt service, with a very small amount going to match federal funds and a handful of small capital programs. As a result, federal funds constituted almost the entire Statewide Transportation Improvement Plan (STIP).

To pay for highway investments, HB 2017 raised the gas tax in multiple steps over a six-year period. The gas tax will increase a total of 10 cents with the final two-cent increase going into effect on January 1, 2024 – provided the Department meets the accountability requirements in HB 2017 by December 1, 2021 and 2023. Registration and title fees have also been increased, and the legislation created surcharges for electric vehicles and hybrids that pay little in gas tax to ensure they pay for their use of roads. Even with these increases, Oregon has among the lowest vehicle fees of any state in the nation.

Increases in revenue over the next several biennia can be attributed to HB 2017. The base funding—which constitutes the resources available to operate the agency – isn’t really growing. Pre-COVID 19, the revenue forecast, beyond the next couple years, showed a sluggish growth rate, at best.
COVID-19 and the Economy

The onset of the COVID-19 pandemic has reduced traffic volumes significantly, which has also reduced fuels tax revenue. Oregon’s three-legged stool of fuels tax, driver and motor vehicle fees, and weight-mile taxes has limited the pandemic’s impact on the State Highway Fund compared to other states that are more dependent on the fuels tax. Nonetheless, ODOT economists’ initial revenue forecast predicts a loss of about $125 million in State Highway Fund revenue from the beginning of the pandemic in March 2020 through June 2021—a reduction of about 6% that will reduce funding available to ODOT, cities and counties.

What’s more, this revenue forecast is highly uncertain, as the pandemic’s longer-term impact on the economy is unknown. The abrupt recession we find ourselves in is unprecedented and likely to double the percentage drop in employment compared to the Great Recession. The June 2020 State Economic and Revenue Forecast predicts that once the economy begins to reopen almost 40% of those jobs will return. Also, because the economy was in good shape heading into the recession our expectation is for a relatively quick recovery, reaching pre-recession employment levels within four years.

Even if the recession is modest, it will punch a hole in state and federal transportation revenue—and if the recession is worse than projected, the revenue loss could be significant. And COVID-19 could also impact traffic volumes and commuting patterns for years, changing investment needs.

Discussion in Congress has begun on potential fiscal relief legislation that could provide additional funding for infrastructure. Legislation passed by the House of Representatives would provide $15 billion for state DOTs and metropolitan areas to backfill lost revenue and stimulate the economy with transportation investment.

Fuel Efficiency and Electrification

Cars driven today are drastically different than they were even a decade ago. National fuel economy standards were 27.5 miles per gallon in 1982, 30.2 MPG in 2011, 37.7 MPG in 2019 and will go up to 49.7 MPG by 2026 for passenger vehicles and light-duty trucks, according to the final rule published by the Environmental Protection Agency and the National Highway Traffic Safety Administration in 2012. While the growing number of hybrids and electric vehicles on the road account for some of this growth, even vehicles powered by internal combustion engines are becoming much more efficient than previous models. As a result of increasing fuel efficiency, Oregon’s fuels tax revenue is projected to peak in coming years and start to decline in 2022.

The Legislature attempted to address the revenue issue of higher efficiency vehicles with a surcharge on hybrid and electric vehicle title and registration fees built into HB 2017.
However, even with the tiered registration and title fees high-efficiency vehicles will pay much less than the average vehicle that gets about 20 miles per gallon.

Though the registration surcharges ensure that electric vehicles pay for their use of the roads, the surcharges introduce two inequities:

- An electric vehicle that drives a lot of miles will pay much less than a low-efficiency vehicle.
- An electric vehicle pays the same amount regardless of how many miles it drives, which does not incentivize driving less.

**Federal Funding Uncertainty**

Each year the federal government sends approximately $45 billion to states for highway projects and another $10 billion to states and transit agencies for transit. Oregon receives more than $600 million annually in federal funds through a variety of formula programs tailored to specific areas of the system. Federal funding for highways, transit, and safety has been provided through September 2020 under the current surface transportation authorization act, known as the Fixing America’s Surface Transportation (FAST) Act.

The federal gas tax provides virtually all of the resources flowing into the federal Highway Trust Fund. The 18.3 cent per gallon federal gas tax has not been raised since 1993, resulting in a significant gap between user fee revenue and expenditures.

In order to provide funding at current levels Congress has had to transfer over one hundred billion dollars of general fund revenue into the Trust Fund. Federal funding levels are unknown and risky because the Highway Trust Fund will exhaust its balances in 2021, and funding will be cut by more than a third if Congress does nothing; the Trump Administration has already expressed its intent to bring spending into alignment with revenue when the FAST Act expires. The imminent expiration of the FAST Act combined with the looming insolvency of the Highway Trust Fund makes long-term, strategic planning difficult for the Department and local government agencies.

The recently adopted 2021-2024 STIP assumes a 10% reduction in federal funds each year following the expiration of the FAST Act, which is consistent with past reductions of federal funding after expiration of authorization acts. If more money is available, projects can easily be added to the STIP.
Increasing Cost of Doing Business: Inflation and Aging Infrastructure

**Inflation**

Most taxes generally rise along with incomes, prices, or property values. However, the gas tax, DMV fees, and weight-mile taxes are set at a flat level (rather than a percentage) and their purchasing power is constantly eroded by inflation.

State Highway Fund revenue in total is barely growing, even with HB 2017’s tax increases, when accounting for inflation. The gas tax increases under HB 2017 will only get the gas tax back to the same purchasing power of 2011 after the Jobs and Transportation Act gas tax increase. The three 2 cent increases under HB 2017 only keep up with inflation.

**Aging Infrastructure**

Most of ODOT’s transportation assets were built in the post-war Interstate construction era and are reaching the end of their original lifespans. For example, more than half of the state’s bridges were built before 1970 and have reached the end of their 50 year design life.

However, funding for maintenance and repair has not kept up with the growing needs of an aging system. As a result, ODOT is managing the decline of the transportation system. Deliberate strategies and expertise by ODOT’s public servants and industry partners help stretch the available funding and slow the deterioration.
The Shifting Landscape of Mobility

As the smart phone continues to change society, new mobility options enabled by mobile apps continue to roll out. Uber, Lyft and other shared transportation services continue expanding. Electric bicycles and scooters as well as bike-share systems (sometimes referred to as “micro-mobility” options) are shifting how users get from point A to point B.

These services are often referred to as “mobility on demand” and they will have broad-ranging impacts on transportation, particularly in urban areas. Commuting, public transportation and management of the right of way will all be impacted. Due to COVID-19, teleworking has risen significantly, keeping people plugged in remotely (and out of their cars). Whether this is a short-term blip or part of a longer-term shift is not yet known. As technology continues rapidly advancing, the deployment of autonomous vehicles will undoubtedly alter travel and commuting patterns. All of these trends will modify investment needs across the transportation system, in ways that are not well-understood at this time.
# INVESTMENT AREAS & SUPPORTING PROGRAMS

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<td>Culverts</td>
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<td>Seismic</td>
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<td>Highway Maintenance</td>
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PRESERVATION

Oregon has 74,000 miles of highways, streets, and roads and 8,000 bridges to preserve and maintain. The transportation system that the Oregon Department of Transportation (ODOT) operates was built primarily by past generations.

Oregon is a “fix-it first” state. In alignment with the Oregon Transportation Plan, ODOT places a top priority on maintaining assets that make up our transportation system. “Fix- It” programs within ODOT strategically invest toward stated outcomes by allocating funds to specific projects and maintenance activities. The Oregon Transportation Plan (OTP) and Oregon Highway Plan (OHP) focus on preserving the system and making it safer before adding capacity. OHP policy 1G.1 outlines the following investment hierarchy:

1. Protect the existing system.
2. Improve the efficiency of facilities that already exist, by implementing intelligent transportation systems and other solutions.
3. Add capacity to the existing system.
4. Only after we’ve done everything else do we add new facilities.

This hierarchy and fix-it policy lean is reflected in the STIP.

One of the ways we deal with limited funding is by focusing on the most critical corridors— the ones that connect most of our communities and serve most freight. By focusing our investments we can stretch scarce bridge and pavement funding further.

ODOT Fix-It Priority Corridors
STATE BRIDGE PROGRAM

Purpose & Funding Levels

The State Bridge Program oversees Oregon’s state highway bridges, inspecting conditions on a bi-annual basis and using inspection and asset data to manage the selection and funding of bridge preservation, rehabilitation, and replacement projects.

Current funding allows ODOT to touch less than 10% of state highway bridges each year. Most of the bridges addressed each year are done through the Major Bridge Maintenance program, which addresses emergency repairs and preservation treatments like deck seals. Each year less than 1% of bridges see rehabilitation (deck work, strengthening, and concrete repairs), and just 0.1% are replaced. This means that bridges are currently being replaced on an approximately 900 year cycle—far beyond their intended life of 50-100 years.

A sustainable program would increase the number of annual bridge replacements from 0.1% to 1.0%, or 28 bridges replaced each year. It would also increase the number of bridges receiving preservation/ rehabilitation projects from 0.07% to 2.0% annually. This would target a 100-year service-life and address the wave of Interstate Era bridges approaching the end of their service-lives that need to be addressed.

Investment Strategy

The current strategy for managing Oregon’s bridges places an emphasis on maintaining the bridge system, funding bridge repairs on the highest priority freight routes (Fix-It Priority Corridors). Even the infusion of additional resources under HB 2017 leaves ODOT with resources for very few bridge replacements. Oregon’s scenic beauty is enhanced by many iconic and historic high-value bridges, particularly bridges on US 101 on the Oregon Coast. Because replacement of these bridges is cost-prohibitive, preserving them is the only option to ensure safe transportation and critical services.
The bulk of state highway bridges are in fair condition, with few poor (or structurally deficient) bridges. However, a large number of these fair bridges are at the cusp of slipping into poor condition and requiring increased attention.

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<tr>
<th>STATE HIGHWAY BRIDGE CONDITIONS</th>
<th>OREGON - 2020</th>
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<tbody>
<tr>
<td>Good</td>
<td>24%</td>
</tr>
<tr>
<td>Fair</td>
<td>74%</td>
</tr>
<tr>
<td>Poor</td>
<td>2%</td>
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ODOT considers both structurally deficient and other deficiencies in determining bridge needs and selecting projects for the STIP. ODOT measures bridge conditions based on the Bridge Key Performance Measure – Percent of Bridges Not Distressed. The Key Performance Measure includes two categories of bridges:

- The percent of bridges not structurally deficient as defined by FHWA.
- The percent of bridges without other deficiencies as defined by ODOT.
While bridge conditions currently exceed the Key Performance Measure target, 2019 marks the third year of a measurable decline, and ODOT projects conditions will sleep below the target in the future.

**Typical Life Cycle**

The typical service life of a bridge is driven by deterioration caused by studded tire wear, impact loading, salt, weather, and aging materials.

- Typical service life including repairs is about 75-100 years.
- Replacement cycle at current funding level is about 900 years.

By extending the service life of a large population of bridges instead of replacing a sustainable portion each year, we are leaving the next generation with an issue that will take an extended amount of time and money to address. Based on the large number of bridges in service that were built prior-to or during the Interstate Era, a significant number of Oregon’s bridges will fall below the desired state of good repair between 2025 and 2030. Even if the decision to fund bridges to maintain a state of good repair is left to the next generation, they will be paying substantially more and will not see the benefit since the number of bridges in poor condition will greatly exceed the rate at which new bridges can be built.

**Needs**

A large number of bridges with critical and near-critical conditions have had their service lives extended beyond a normal time period because of long-standing inadequate funding. Those bridges demand vigilance and dedication by inspectors and maintenance personnel to maintain safe conditions. Those critical and near-critical conditions will grow at an increasing rate until a point in the near future that current resources will not be able to keep up with these serious issues.

Doubling the current annual Bridge Program Funding from $100 million to about $200 million would allow ODOT to continue to manage the system in accordance with the Bridge Strategy, with emphasis on the Fix-It Priority Corridors, the protection of high-value, historic, major river crossings, and border structures. Funds would primarily be used to address bridge needs on the highest priority freight corridors. The few additional bridges that could be replaced would be based on freight and seismic priorities.

An incremental increase in funding will slightly increase the number of good bridges, however many bridges will still remain in fair condition for a longer period of time. An incremental funding increase would result in fewer restrictions for the movement of freight. It would also decrease the chances of a major structure deteriorating to the point that the
only practical choice is replacement. With a doubled bridge program, funding would primarily be directed to the Fix-It Priority Corridors and high value bridges with some bridges not part of that population still subject to postings and ultimately closures.

With the growing population of bridges in fair condition deteriorating into poor condition, a significant and prolonged investment in new bridge construction will be required to return the system to a state of good repair. Funding to maintain a state of good repair is substantial, close to $460M per year, which far exceeds the level of funding that bridges have received for several decades.

**Impacts & Implications**

Although every bridge is important to someone, the bridge program investment strategy focuses on maintaining bridges critical to Oregon’s economy, which is not always in alignment with bridges perceived as critical to the general public.

Even with the increased funding from HB 2017, bridge conditions are expected to continue to deteriorate. The number of poor bridges will increase on the Fix-It, High Volume (HV) routes and increase even more on the non-Fix-It routes over the next ten years. Bridges on non-Fix-It routes will only be repaired as needed while rehabilitation or replacement needs will be deferred. As bridge conditions decline and rehabilitation or replacement work is deferred, bridges may be load restricted or closed to manage public safety, which will require detours that may increase delays and shipping costs. The Rough Roads Ahead 2 report published by ODOT demonstrated that bridge restrictions will create significant negative impacts to Oregon’s economy.

The Major Bridge Maintenance program provides significant repairs on poor bridges to temporarily improve their condition from poor to fair. Due to limited resources, at some point, Major Bridge Maintenance efforts will not be sufficient, resulting in bridge restrictions, delays, and detours onto local roads.

<table>
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<tr>
<th>State of Good Repair Needs, $Million/Year</th>
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<tbody>
<tr>
<td>$160</td>
</tr>
<tr>
<td>$300</td>
</tr>
<tr>
<td>$460M = Total Bridge SOGR Need</td>
</tr>
<tr>
<td>$160M Funded; $300M Unfunded</td>
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</tbody>
</table>
Seismic Resilience

In the event of an earthquake and tsunami, a resilient transportation network is necessary for reestablishing critical connections for emergency response, medical and shelter facilities, population centers, energy and communications facilities and freight needs for response and economic recovery. The Oregon Resilience Plan assessed the seismic integrity of Oregon’s multimodal transportation system and characterized the work considered necessary to restore and maintain transportation lifeline routes after a Cascadia earthquake and tsunami. The Oregon Resilience Plan emphasizes the physical infrastructure needed to support business and community continuity. The policy recommendations, if implemented over the next 50 years, will enhance infrastructure reliability, help preserve communities and protect the state economy.

As part of this work, ODOT assessed the vulnerabilities of the highway system, considered links to critical facilities and prioritized routes for investments in improved resilience. The focus of the effort was on preparation for response and recovery from a major Cascadia Subduction Zone earthquake and related events. The result was a recommended “Backbone” system of lifeline routes. The findings were incorporated into an Oregon Highways Seismic PLUS Report that describes the types of retrofits required to address bridge, landslide and other hazards. Implementation of the Seismic PLUS program would make the state highway system resilient in the face of an earthquake, allowing more effective response and reducing economic impact.

The Seismic PLUS program includes five phases that would cost an estimated $5.1 billion. This would pay to replace 138 bridges, seismically retrofit 390 bridges, rehabilitate and retrofit 190 bridges, and mitigate nearly 1200 landslides and rockfalls. Even with the infusion of resources
under HB 2017, the limited number of bridge replacements ODOT can undertake limits the pace at which ODOT can implement the Seismic PLUS investments.

Given limited resources, ODOT’s seismic investment strategy has a number of components.

- **Focus mitigation on Phase 1.** ODOT is retrofitting and replacing bridges to achieve a long-term full mitigation for the most important corridors in Phase 1.
- **Triage for Phases 2-4.** ODOT will identify lower cost alternative routes on the local system that could serve segments of the corridor.
- **Recovery planning for bridges in Phase 5.** Phase 5 bridges include the major coastal bridges that are cost-prohibitive to replace at current funding levels.
- **Enhance maintenance facilities.** ODOT is enhancing maintenance stations and pre-staging critical supplies in the most affected areas. This approach aims to leverage existing funding and co-location with local partnerships. The three first priority locations that have been identified are Coos Bay, the central coast, and Astoria.
PAVEMENT PRESERVATION PROGRAM

Purpose & Funding Levels

The Preservation Program maintains the pavement on roughly 7,350 centerline miles of Oregon state highways to prevent them from becoming a threat to safe travel, from costing more to rebuild, and from having a negative effect on the state’s economy. The program also corrects roadside safety feature deficiencies such as obsolete guard rail, addresses curb ramp accessibility deficiencies abutting repaving projects, and applies new stripes to the surface resulting in smooth “like new” highways at a fraction of the cost to replace them. The Program’s overall goal is to keep highways in the best condition possible with available funding, by taking a life-cycle cost approach to preservation and maintenance. Rather than following a “worst-first” philosophy, the Program applies a “mix of fixes” including preventive maintenance seal coats, resurfacing preservation projects, pavement rehabilitation, and reconstruction.

While federal funding allocations to the Preservation program have remained relatively flat for nearly two decades, the Preservation program has received supplemental funding through the Oregon Transportation Investment Acts (OTIA), federal Recovery Act, HB 2017, and also the Maintenance program outside the STIP. As a result, pavement spending over the last few years has averaged roughly $150 million per year. The long term average pavement project cycle time since the early 2000’s has been 20 to 25 years for most of the state highway system, which isn’t far from the state of good repair goals.

However, even with HB 2017, funding for the Preservation program drops to about $106 million per year after 2022. At the same time, costs for pavement projects continue to increase. Based on Preservation project mileage from projects programmed in the 2021-2024 STIP, this funding level only provides an equivalent life-cycle time of 50 years. In the future, unless additional pavement funding is provided, there will be fewer paving projects and a substantial drop in miles treated, leading to a corresponding decline in pavement conditions.

Typical Life Cycle

Pavements are load-carrying structures that degrade over time due to the cumulative effects of traffic, weather, and material aging. To keep them properly maintained and out of poor condition, they must be resurfaced or rehabilitated at periodic intervals. Typical design life for asphalt pavements are 15 to 20 years, while concrete pavements last 40 to 50 years.
When degradation is confined to the surfacing only, and the pavement’s foundation and base layers are protected, a given pavement can be resurfaced over and over again, with occasional strengthening, but without the need for a complete replacement. But when pavement is allowed to deteriorate, replacement at great cost becomes necessary.

**Investment Strategy**

Current funding for maintenance and repair does not keep up with all needs, so the program follows an asset management strategy to reduce the slope of declining pavement conditions across the system. ODOT has developed and implemented a pavement strategy that uses a tiered approach to prioritize highway routes and also prioritizes projects where the most cost-effective maintenance treatments can be employed. State highway pavement preservation investments prioritize pavement conditions by state highway classification into four levels:

1. Interstate Highways (highest priority, condition target, and level of investment)
2. Fix-It Priority Routes (e.g., US-97, OR-58, or US-26)
3. Remaining State Level National Highway System Routes (e.g., US-101)
4. Region and District Level Routes (e.g., OR 99E or OR214)
Pavement conditions have recently trended upward due to a focus on lower cost per mile projects, temporary increases in Federal funding, and new funding from HB 2017. The current 90 percent “fair” or better KPM is above the 85 percent legislative target.

### Needs

Although the overall statewide pavement KPM is currently 90% “fair” or better, some parts of the system, particularly state highways through urban areas and lower traffic routes, are on the decline as needs exceed available funding. If Pavement funding levels were restored to the recent average annual allocation of approximately $150 million per year, pavement conditions could be maintained at a near optimal investment level on the most important routes in the system. This funding level would ensure that the interstates and fix-it priority routes are maintained at a state of good repair and also provide for relatively slow declines on other parts of the system. Although this investment roughly doubles the number of projects off the interstate compared with current funding, it still is not sufficient to address all of the needs of the system, particularly those off the Fix-It Priority Corridors.

Previous studies, including the 2017 OTC Investment Strategy, the Rough Roads 2 report, and the Oregon Transportation Asset Management Plan (TAMP), have defined a state of good repair for Pavement as maintaining the current 90% “fair” or better KPM, while addressing pavement needs across the entire system, not just the routes with less expensive projects. ODOT estimates that the agency needs approximately $220 million per year to achieve and hold pavement at a state of good repair over the long term across the entire system.

### Impacts and Implications

Highways in very poor condition, those that need extensive rehabilitation, and those that require costly upgrades to meet current standards, are typically cost-prohibitive. These problems are most acute on district level routes which are critical roads for our local communities. Poor pavement surfaces are often associated with potholes, excessive ruts, rough ride, low friction, and worn out striping, which decrease safety and negatively impact vehicle repair costs, freight movement, and mobility.
If resurfacing is delayed for too long, the pavement structure and underlying base materials can become excessively damaged and complete replacement (i.e. reconstruction) becomes necessary at a much higher cost. The typical cost to restore a severely damaged road is orders of magnitude higher than the cost to preserve pavement through seals and resurfacing treatments. Timely maintenance and preservation are by far the most efficient way to preserve our investment.

**Reliance on Maintenance Funding outside the Fix-It Program**

Pavement funding in the Maintenance program outside the STIP plays a critical role in the overall preservation of the pavement system. Approximately 46% of state highway mileage are not eligible for STIP Pavement Preservation funding program and only receive maintenance treatments through the Low Volume Road (LVR) program, funded through ODOT’s maintenance program at $13.5 million per year. This amount is subject to cuts during heavy winter weather years when maintenance funds are diverted to more immediate needs.

In the future, LVR program allocations may have to be reduced in the face of flat or declining Maintenance budgets. Given that less than 15 percent of the overall Pavement budget is holding up nearly 50 percent of the system, cuts to this program would have a devastating effect on pavement conditions. Although these roads are not as high in priority as other routes, they are vital links between local communities and the rest of the state.
ADA PROGRAM

In March of 2017, ODOT and the Association of Centers for Independent Living reached a settlement agreement whereby the Department committed to bring business practices into compliance with the Americans with Disabilities Act.

As a result, the ADA Program was established to implement ODOT’s responsibilities, outlined in the settlement agreement. In accordance with the agreement, the Department’s focus thus far has been on program development, curb ramp projects, and pedestrian-activated signals. The Department is also responsible for the development and implementation of an ADA transition plan, required by FHWA (describing how ODOT will come into full compliance with the Americans with Disabilities Act). The funding allocated to date has been focused on establishing the ADA Program and working to meet the various requirements of the legal settlement.

Investment Strategy

Initial efforts were focused on leveraging existing projects to construct or reconstruct curb ramps to validate innovative approaches for curb-ramp-only projects. The focus now is on projects that will construct a substantial number of curb ramps – more than 2,400 curb ramps across the state each year. These curb-ramp-only projects will increase significantly in the near-term, with 16 curb-ramp-only projects scheduled to be under construction this year (2020) and more to follow in 2021.

Need

While ODOT is learning from other states and local agencies about costs for constructing a large number of curb ramps, significant uncertainty exists around the true costs of these projects. Funding levels have been and will continue to be adjusted to react to market conditions as additional cost data is obtained. Current estimates are as high as $50 million per year to meet the agreed upon mitigation requirements. One of the primary constraining factors is the capacity to program, design, and reconstruct the thousands of curb ramps.

The Commission recently approved the following increased funding for ADA curb ramps through 2023. The following table summarizes funding needs and when funds need to be made available through 2023. These estimates reflect the best available information to date on the costs for delivering curb ramps. Based on the projects that go to construction in June 2020, future estimates will be updated to reflect market conditions for this type of work in Oregon.
CULVERT FUNDING PROGRAM

Purpose and Funding Levels

Culverts convey water across roadways to help reduce flooding, protect streams and roadways, and provide safety for the traveling public. The majority of Oregon’s culverts were installed prior to 1960. These culverts were not designed to current standards, don’t allow for fish passage and exhibit a higher failure rate due to their age.

In 2016 ODOT dedicated additional funding to address the growing need and urgency to replace and repair ODOT’s aging culverts. The Culvert Funding Program encompasses the Culvert Fix-It Program and the Major Culvert Maintenance (MCM) Program. The Culvert Fix-It Program focuses on scheduled replacement and repair of culverts through the STIP. The MCM program is comprised of state maintenance program funding, allocated to address culverts in urgent need of repairs prior to the next STIP. Eligibility for both programs requires the culvert to be in critical or poor condition.

The current post-HB 2017 funding level for culverts of $14.1 million per year is not keeping pace with the steep deterioration rate. As culvert conditions deteriorate, low-cost renewal options become less viable and complete replacement becomes necessary at higher cost.

Investment Strategy

ODOT’s culvert investments focus on improving the condition of culverts on the Fix-It Priority Corridors to fair or better. For non-priority routes, the agency focuses on addressing urgent culvert needs utilizing the MCM program funds. At post-HB 2017 funding levels, currently identified poor and critical condition culverts on priority routes are slated for repair or replacement on a 58-year cycle. Meanwhile, the percentage of culvert failures is increasing each year. These failures result in catastrophic washouts, sinkholes in the roadway, and/or major landslides, especially along coastal routes that cause environmental damage and economic hardships to Oregon’s local communities.
Needs

The majority of the agency’s culverts were designed to last between 25-50 years. In 2004 ODOT Hydraulics changed the standard practice for design life to 25-75 years. Based on a total culvert asset replacement cost of $18.5 billion, if the status quo funding levels remains stagnant, at approximately $14.1 million per year, the resulting service life needed for culverts is 1,310 years.

To replace or repair all culverts on priority routes that are currently in critical and poor condition would require funding at $20.5 million per year, for 50 years, which does not include funding to mitigate additional culvert infrastructure deterioration. To repair, replace and maintain culverts on priority routes in fair or better condition would require $96 million per year in perpetuity.
Impacts & Implications

Culverts on non-priority routes, which make up the majority of critical and poor culverts on the highway system, will continue to decline. With the limited size and scope of the MCM program, ODOT would struggle to adequately address culvert failures occurring on non-priority routes and lack of resources to be responsive to emergent issues on non-priority routes will result in increased risk to public safety and potential isolation of rural communities.

- Funding level is insufficient to address deterioration of culverts along the priority routes.
- Continuing decline of the non-priority routes which make up the majority of critical and poor culverts on the highway system.
- MCM program is limited in size and scope to address all the urgent culverts located on non-priority routes.
- Increased risk to public safety, isolating rural communities and the economy.
- Continued deferred investment reduces low-cost renewal options and results in more expensive replacements.
HIGHWAY MAINTENANCE & OPERATIONS

Purpose and Funding Levels

ODOT is responsible for operating and maintaining more than 8,000 miles of Oregon’s highway system. Drivers expect to be able to drive on safe, properly-maintained and functioning state highways; they don’t typically think about the cost and effort it takes to maintain them.

ODOT’s maintenance and operations program provides for a safe and reliable transportation system that promotes efficient use and freight movement through routine daily activities of maintaining, preserving, repairing and restoring more than 8,000 miles of existing highways and bicycle/pedestrian facilities. The maintenance and operations program also responds to traffic incidents and major emergencies affecting the system. These activities may include replacing what is necessary to keep the system safe (such as signs, pavement markings, and traffic signals), but generally does not include road reconstruction.

ODOT’s maintenance and operations program is composed of two types of general transportation maintenance functions: reactive ("fix it if it breaks") and proactive ("spend now to save later"). Reactive activities include responding to weather-caused events to clear roads, responding to crashes, cleaning ditches, and repairing guardrails, potholes and signals. Proactive activities include inspection and upkeep of bridges and pavement surfaces, and maintaining vegetation to ensure proper drainage and safety for motorists. In addition, significant effort is also given to winter operations, including snow removal, the application of salt and sanding material.

Major cost drivers for maintenance activities include the following:

Inflation: Increased materials costs that are growing faster than the consumer inflation rate are currently consuming any savings realized from efficiencies, decreasing the amount of maintenance that can be accomplished.

Aging and deteriorating infrastructure: Older infrastructure requires more maintenance, and as assets deteriorate due to inadequate preservation funding, more burden will fall on maintenance crews. This includes the hard infrastructure of roads, bridges, and culverts – and also the aging fleet of maintenance and operations equipment.

Aging and obsolete maintenance facilities: ODOT operates 100 maintenance stations across the state. Of these, 24% of maintenance facilities are over 50 years old and over 40% have become functionally obsolete. Maintenance stations should be replaced on a cycle of
about 75 years. Meeting this replacement cycle would require $108 million each biennium until 2037 to catch up; in recent biennia ODOT’s capital construction budget for maintenance facilities has been about $20 million.

**Traffic volumes:** Daytime traffic volumes are high enough that maintenance work must often take place at night, increasing worker risk and costs.

**ITS/operations infrastructure:** ODOT is increasingly deploying cost-effective Intelligent Transportation Systems operational solutions to mitigate congestion and improve safety on state highways, which result in added infrastructure to operate, maintain and replace as the equipment reaches the end of its relatively short useful life. Since 2003, the number of Intelligent Transportation System (ITS) devices has increased 352%.

Budget increases have not kept up with cost increases. During the last 10 years, ODOT has felt the effects of increases in reactive activities and other costs and ODOT has offset these effects by reducing personnel.

**Maintenance Program Budget Trends** *(Average annual change since 2005)*

- Maintenance Budget: +4%
- Culvert Repairs: +24%
- Illegal Camping Management: +30%
- Guard Rail and Barrier: +15%
- Winter Maintenance: +10%
- FTE: -.027%

**Investment Strategy**

ODOT continues to look for efficiencies in the maintenance program to help offset increasing costs.

**Winter Maintenance**

- ODOT continues to evaluate and use new types of winter maintenance equipment that makes the removal of snow more cost-effective, including new plow bits, double wing plows, and tow plows.
- The agency is expanding the use of rock salt. The use of solid deicer chemicals adds a new tool to the toolbox for conditions where liquid deicers are not viable. Deploying this new product also requires an upgrade in equipment and technology.
ODOT has winter operations staffed for areas of the state that normally expect extreme winter storms. During extreme storms in other parts of the state that do not typically see extreme winter storms, staff are shifted to those areas when possible – but staffing levels cannot maintain a strong statewide response to an extreme winter storm.

**Southern Oregon Incident Response Pilot**

Dedicated Incident Response positions have become very beneficial in urban areas of the state, reducing the impact on maintenance crews and increasing the response to the users of the system. The addition of a dedicated Incident responder was evaluated on I-5 and on OR 62 and OR 140 in the Medford area. Maintenance crews responded to 40% fewer calls in the summer and 17% fewer in the winter, improving maintenance operational efficiencies. Incident clearance times were reduced between four and 16 minutes which reduced the exposure of the motoring public to secondary crashes between 14% and 56%.

**Fleet Management**

ODOT is now utilizing a fleet reservation system to increase utilization of specialty fleet. Plans are underway to start managing certain specialty equipment at a statewide level which would rotate the equipment around the state to optimize life-cycle costs. The equipment would move high-use equipment to crews who use specialty equipment less frequently as well as using underutilized equipment from low-use crews to those that use it more consistently.

**Needs**

Existing resources no longer keep pace with the maintenance and operations needs of an aging system, responding to more extreme weather events, and dealing with increasing traffic volumes. The result has been multi-vehicle crashes and lengthy closures that delay people and goods. In addition, maintenance requirements for the upkeep of traffic signs, retaining walls, tunnels, variable message signs, and other infrastructure are growing. An additional investment would help address maintenance needs in freeway corridors and across key highway assets, preserving our multibillion dollar highway system and keeping our highways more reliable and safe during the winter months. With revenues not keeping up with expenditures, the level of service the traveling public expects will decrease as the staffing levels of maintenance crews are decreased to reduce costs; this will impact winter operations, repairs to the aging infrastructure, and response times to incidents and clearing those incidents.
SAFETY

ODOT’s Highway Safety Program is focused on reducing the number of fatal and serious injury crashes using several system management tools that help guide and prioritize how public investments are made. Oregon’s transportation safety vision is no deaths or life-changing injuries on Oregon’s transportation system by 2035. That vision is laid out in the Transportation Safety Action Plan (TSAP), which serves as our statewide topic plan for safety and our federal Strategic Highway Safety Plan.

Safety investments are focused on four key areas known as the 4Es of safety: engineering, education, enforcement, and emergency medical services (EMS). Of these four, the Department and Commission are primarily responsible for engineering of roadways and education. The TSAP covers all four Es of safety and lays out a number of priorities for investment and action, including:

- Risky behaviors,
- Infrastructure,
- Vulnerable users, and
- Improved systems.

The Highway Safety Plan (HSP) is analogous to the Statewide Transportation Improvement Program (STIP). The HSP follows the strategies outlined in the TSAP, sets goals and performance measures, and lays out how we will spend all of the funding ODOT receives from the National Highway Traffic Safety Administration, or NHTSA.

While our goal is eliminating all fatalities and serious injuries, Oregon has set realistic targets to reduce fatalities and serious injuries gradually over time. Despite these goals and agency investments, fatalities and serious injuries have been increasing in Oregon. Between 2013 and 2017 an average of more 1,800 fatal and serious injury crashes occurred per year. Oregon is not the only state experiencing this trend; fatal and serious injury crashes are increasing nation- and world-wide.
ALL ROADS TRANSPORTATION SAFETY (ARTS) PROGRAM

Purpose and Funding Levels

The All Roads Transportation Safety (ARTS) program is a collaborative effort to carry out safety improvement projects on all public roads to achieve a significant reduction in traffic fatalities and serious injuries, through a data-driven, strategic approach with a focus on implementation of cost-effective and proven measures. Working jointly with local jurisdictions increases awareness of safety on roads, promotes best practices for infrastructure safety, complements behavioral safety efforts, and focuses limited resources.

Safety projects consist of data-driven safety countermeasures, including:

- New and upgraded traffic signals
- Roundabouts
- Medians and refuge islands
- Rumble strips
- Rapid flash beacons
- Lighting
- Sign upgrades and chevrons
- Curve warning systems
- Median barriers
- Left turn lanes
- Road configurations
- Bike lanes and cycle tracks
- Widening shoulders and increase sight distance

Safety programs currently receive approximately $49 million per year, $10 million of which is new state funding established under HB 2017 for safety projects on state highways. An additional $6 million per year goes to upgrading deficient guardrails and $3 million goes to rail crossing safety improvements.

Investment Strategy

ODOT invests approximately 50% of safety funds in low-cost, widespread, systemic improvements (e.g. curve signs, rumble strips, and cable barriers). These improvements are highly effective at addressing safety risks in priority areas to prevent Pedestrian/Bicycle, Roadway Departure and Intersections crashes. The other 50% of safety funding is invested in “hot-spot measures.” These higher-cost safety improvements are deployed at “hot-spot” locations where a higher than expected number of crashes occur. The increased funds
stemming from HB 2017, have allowed ODOT to strategically upgrade traffic controls, place more low-cost elements, and also address some higher-cost areas.

Safety project selection is a data-driven process that is blind to jurisdictional ownership. Projects are compared based on benefit to cost analysis, which compares the benefit a measure may bring to cost of the project. Projects with higher benefit-cost ratios receive priority for funding. Benefit-cost ratios for safety projects can vary, but typically range between average 5 and 20—meaning every dollar spent results in safety benefits 5 to 20 times the amount invested.

Needs

Despite recent increases in safety funding, a significant number of important and cost-effective safety improvements remain unfunded. For example, ODOT received All Roads Transportation Safety (ARTS) applications for $295 million for the three year, 2021-2024, STIP cycle. Only $88 million, just under 30%, of the submitted projects were funded.

Doubling current funding would save lives, reduce serious injury and advance our goal of no fatal and serious injury on Oregon roadways. While increases in overall crashes are linked to primary driver errors such as speeding, impaired driving, lack of seat belts and distracted driving, the implementation of safety countermeasures can reduce the severity of the crashes and sometimes prevent the crash. Investments in Roadway Departure systemic measures (i.e. rumble strips, curve warning, delineators) yield some of the highest returns because these are some of the lowest cost safety measures. The Roadway Departure Plan found that an
expenditure of $18 million on state highways can prevent an estimated 36 fatalities and 77 serious injuries. On non-state roadways an investment of $30 million can prevent an estimated 48 fatalities and 109 serious injuries.

### Impacts & Implications

At current funding levels the number of fatal and serious injury crashes are increasing or at best holding level. To make gains we will need more funding. Many of the easy fixes have been done. The remaining fixes are more expensive and inflation reduces efficiency of the funding. Although trends have been in the wrong direction, the investments in safety measures are saving lives. Any increase in investments will pay off in lives saved and reductions in serious injuries. The relatively recent introduction of systemic low-cost measures has helped.
RAIL CROSSINGS

Oregon has 1,887 public at-grade highway-railroad crossings. Approximately 48 percent have active warning devices. Between 2006 and 2017, 120 recorded incidents occurred at public railroad crossings, resulting in 20 fatalities. ODOT allocates state and federal grade crossing safety funds to improve safety at public crossings. In 2016, federal rules mandated all states to complete a State Rail Crossing Action Plan.

In 2018, ODOT began work on a plan that will assess rail crossing incidents and locations. The plan will identify, prioritize, and develop solutions to address rail crossing safety issues and provide a framework to prioritize locations for improvements. Rail inspections and crossing safety are funded in part or in full by a gross revenue fee on railroads. Additional funding for crossing safety comes from Federal Highway funds and the Grade Crossing Protection Account, a subset of the State Highway Fund.
**MULTI-MODAL TRANSPORTATION OPTIONS**

Oregon constitutional restriction on use of highway funds ensures that user fees are invested in the highway system. However, it makes it challenging to fund non-highway modes. Oregon relies on a number of small funding sources for non-highway modes that are not adequate to meet needs. HB 2017 met only a portion of the funding need for the multimodal transportation system, including non-highway modes. In non-highway programs, the role of the agency and the commission is to select the best projects across jurisdictions to ensure connectivity and mobility, rather than ensuring the health of the state highway system.

**ACTIVE TRANSPORTATION PROGRAMS**

Active transportation modes such as walking, bicycling, and accessing public transit, continue to be important to Oregonians. Since 1971, Oregon’s Bicycle and Pedestrian Bill (ORS 366.514) has required recipients of State Highway Funds to provide appropriate walkways and bikeways whenever a highway is “constructed, reconstructed, or relocated” and to spend a minimum of one percent of State Highway Funds on pedestrian and bicycle improvements annually.\(^1\) Over the past 30 years, ODOT has expended an average of 1.1% of state highway funds on pedestrian and bicycle improvements.

**ODOT Pedestrian & Bicycle Spending as Percent of State Highway Fund**

\(^1\) [https://www.oregon.gov/odot/Programs/TDD%20Documents/Interpretation-of-ORS-366.514.pdf](https://www.oregon.gov/odot/Programs/TDD%20Documents/Interpretation-of-ORS-366.514.pdf)
PEDESTRIAN AND BICYCLE INFRASTRUCTURE PROGRAM

Purpose & Funding Levels

ODOT's Pedestrian and Bicycle Program constructs walking and bicycling infrastructure along and across state highways to improve accessibility, safety, health, and climate outcomes while advancing ODOT’s mission to provide a safe and reliable multimodal transportation system that connects people and helps Oregon’s communities and economies thrive.

ODOT funds pedestrian and bicycle projects through a wide variety of programs. Roadway projects across ODOT’s programs often include bicycle and pedestrian features, and a number of dedicated bicycle/pedestrian programs also provide funding. ODOT’s Sidewalk Improvement Program (SWIP) funds smaller-scale construction of sidewalks, crossings, bike facilities and other pedestrian and bicycle safety improvements located on or along state highways. In the 2018-2021 STIP, SWIP was funded at $4 million per year, roughly 0.5% of ODOT’s estimated State Highway Fund revenues, for a total of $12 million over three years. In the 2021-24 STIP, SWIP funding was increased to a full one percent of ODOT’s estimated State Highway Fund revenues, $7.4 million per year or $22.2 million over three years. Additionally, the 2021-24 STIP allocated $21 million in funds for the Active Transportation Leverage Program to add active transportation improvements to projects funded through Fix-It programs.

In addition to targeted projects along the state system, $6.3 million of All Roads Transportation Safety (ARTS) program funding is dedicated to addressing bicycle and pedestrian safety improvements through a jurisdictionally blind grant program. Bicycle and pedestrian improvements are also eligible for funding through the Small City Allotment, Congestion Mitigation and Air Quality Improvement Program, Federal Lands Access Program, and local State Highway Fund allocations; however, these improvements are primarily focused on local streets.

Shared use paths outside of the road right-of-way are not eligible for State Highway Funds, but provide critical active connections within and between communities that are more attractive to many users because they are separated from traffic. The 2021-24 STIP allocated $6 million in federal Transportation Alternatives Program funds to address this need. Additionally, the Multimodal Active Transportation (MAT) Fund was established in 2019 by the Oregon legislature to support shared use path projects. The MAT Fund is comprised of 7% of the Connect Oregon Fund and revenues from the bicycle excise tax. Both the MAT and the $6 million from the 21-24 STIP are combined together to provide the funding for the Oregon
Community Paths program. This is a competitive grant program for local agencies to build transportation focused paths in and between communities.

**Investment Strategy**

ODOT addresses pedestrian and bicycle network needs by targeting funds to reducing gaps in the walkway and bikeway network. Oregon’s Bicycle and Pedestrian Plan provides a strategic investment framework for prioritizing investments in the state and local pedestrian and bicycle system:

1. Protect the existing system and address significant safety issues
2. Add critical connections and address other safety issues
3. Complete the system
4. Elaborate the system

Many ODOT projects include walking and biking facilities as is required by ORS 366.514. Utilizing existing projects to include walkways and bikeways is a critical strategy for providing accommodation but has resulted in an incomplete network for people walking and biking along or across state roadways.

The Oregon Transportation Plan includes a goal of completing sidewalk and bicycle facilities along 100 percent of ODOT’s urban state highway miles by 2030. Progress towards this goal is monitored as an agency key performance measure, but due to inadequate funding ODOT has never achieved its performance targets for this measure.
Needs

There are currently roughly 1,169 miles of sidewalk and 1,222 miles of bicycle facilities along state highways. An additional 1,222 miles of sidewalk and 805 miles of bicycle facilities are needed to complete a basic connected pedestrian and bicycle network. The ODOT urban sidewalk network is currently only 49% complete and 19% of the network with existing sidewalk is in poor condition, meaning it has cracks or other issues that make it non-compliant with the American’s with Disabilities Act (ADA). Additionally, several hundred improved pedestrian crossings are needed to meet ODOT’s crossing spacing guidelines and provide safe access to transit stops, schools, and other destinations.

Nearly one-third of Americans are “transportation disadvantaged,” meaning they are unable to drive due to age, disability, or cost to purchase a car or transportation services and must generally rely on walking and biking. Businesses depend on well-connected walkways or bikeways to get workers to their jobs and consumers to their stores, and school age children often rely on these travel modes to get to class, especially where school bus service is not available. Programs that promote walking and biking and reduce VMT are critical in helping ODOT achieve its GHG targets and implementing the Statewide Transportation Strategy and Executive Order 17-20. Approximately one half of trips are under three miles and can be completed within a 15 minute bike ride. A basic network of connected facilities must be made available for Oregonians to change their travel behavior and allow people to get around safely.

The Oregon Bicycle and Pedestrian Plan estimated the total cost of pedestrian and bicycle facility needs along state highways over the next 25 years to be over $1 billion. At current funding levels it will take over 150 years to achieve the goal of completing minimal sidewalks and bike lanes along state highways, not accounting for inflation, increasing construction costs, growing urban areas, or maintenance. A minimum annual investment of $53 million per year is needed to complete a basic walking and biking network along state highways by 2050.

**Impacts & Implications**

Due to the overwhelming active transportation system needs versus available funding, ODOT has developed an Active Transportation Needs Inventory (ATNI) to further prioritize investments based upon Oregon Bicycle and Pedestrian Plan goals, including safety, equity, access to essential destinations, and connections to transit. The ATNI identifies locations with the highest need for improvement. However, current funding is inadequate to pursue
strategic large-scale standalone projects such as providing safe crossings and sidewalks and bicycle facilities along a corridor. Communities must often wait years until a STIP preservation project is programmed in the area for an opportunity to address sidewalk and bike lane gaps to remediate barriers and safety concerns that impede walking and biking.

A significantly higher level of investment is needed to construct the modern system of separated sidewalks and bike lanes needed to achieve the mode share increases called for in the Statewide Transportation Strategy and to maintain these facilities in fair or better condition. The quality of pedestrian and bicycle infrastructure is often lower in low-income and minority communities, contributing to higher pedestrian fatality rates, lower physical activity levels, and poorer health outcomes. Deferring investment in walking and biking facilities also results in more expensive and complex improvements in the future.
SAFE ROUTES TO SCHOOLS PROGRAM

Purpose and Funding Levels

Through ODOT’s Safe Routes to School (SRTS) program, the agency aims to create a future where all students and families can safely use active and shared transportation options to and from school. SRTS addresses barriers to students walking and biking to school through both a construction program and an education program.

Construction (Infrastructure): HB 2017 dedicated $10 million annually (increasing to $15 million in 2023) of State Highway Fund revenue to address physical barriers for children biking or walking to school, including adding walkways, bikeways, safe crossings, and other features. The majority of the funds are distributed through a competitive grant process, and smaller amounts are used as a discretionary funding program for urgent projects that can address a recent injury or fatality and to help communities with limited capacity identify Safe Routes to School projects.

Education (Non-Infrastructure): The OTC dedicated an additional $3 million in the 21-24 STIP cycle for SRTS non-infrastructure programs. The focus of these funds is to help children to bike or walk to school safely through education and engagement programs. Sixty percentage of the funds are distributed in grants through a competitive process to provide local capacity and SRTS resources to students and families. Forty percent is used to provide statewide technical assistance and statewide resources and to cover ODOT staff time.

Investment Strategy

Through ODOT’s SRTS Programs, the Department includes and leverages investments for safety focused construction projects and education programs to increase access for students. To achieve this vision with limited capacity, the agency aims to prioritize low-income communities and communities of color (35% of Oregon students are students of color) while facilitating high quality and effective programs implemented with transparency.
Needs

The Oregon Safe Routes to School Network, a statewide group that shares best practices and promotes walking and biking to school, estimates the need for construction projects at $1 billion and the need for education programs at $12 million annually for Safe Routes to School in Oregon. Even though ODOT is one of several agencies investing in Safe Routes to School, ODOT is often the sole opportunity for rural, low-income communities and communities of color to access funds. Studies continue to show that low-income and communities of color are at higher risk to be killed while walking. Students are more likely to walk to school without access to a sidewalk and are more likely to have poor health outcomes. Even through current investments are prioritized for communities at higher risk, ODOT can only fund projects at three percent of the low-income schools in Oregon annually.

Impacts & Implications

In the 2019-2020 school year, ODOT’s Safe Routes to School Construction and Education programs supported or created local staff capacity to provide direct service to 156 schools, free resources to 250 schools, and improved infrastructure at 25 schools. ODOT grantees have educated hundreds of students in classrooms, have completed or are building numerous sidewalk and crossing enhancements, celebrated and encouraged walking and biking to school with hundreds of families and teachers, and created or are working on 43 Safe Routes to School Plans or school travel action plans.

Safe Routes to School provides needed transportation options that increase physical

"My son told me about the bike safety classes he has been taking with the Safe Routes program and so I thought we’d give biking a try. I was impressed with his skills I didn’t even know he had. (Some other parents should take this class too) We’ve now been riding to school when it’s sunny out. It varies two to three days a week." Juniper Elementary Parent
activity and access to school-based health care, increase safety in a community by providing safe places to walk and bike, and increase the ability of students to arrive at school ready to participate. The impact of Safe Routes to School also reduces morning and afternoon traffic congestion and improves air quality around schools.

On average, ODOT’s Safe Routes to School programs currently reach 12.5% of Oregon schools by addressing barriers to walking and biking to school at some level. Increased investment is needed in order to provide current or improved level of investment to more low-income schools in Oregon, increasing the health, safety, and access to education of Oregon students and reducing congestion and greenhouse gas emissions. There are 1,253 schools in Oregon and of those 835 (67%) are low-income schools. In order to provide our current level of service to all 835 low-income schools we would need to invest $4.5 million annually in education programs, and it would take 60 years of current construction funding to address one project at each low-income school.
TRANSPORTATION OPTIONS

Transportation Options programs enhance choices available to travelers to connect people to jobs, schools, shopping, and other destinations through transportation choices including carpool, vanpool, transit, walking, biking, and telecommuting. Implementation efforts focus on providing people with information and access, including park-and-ride facilities, ride-matching services, vanpool coordination, telecommuting, and public transportation pass programs, safety and modal education, and employer programs. Programs and strategies can help make the most of existing transportation infrastructure, help individuals save money, reduce overall GHG emissions, and improve active transportation choices.

Purpose and Funding Levels

Transportation Options programs help people identify and take advantage of their options: drive alone, carpool, vanpool, transit, bike, walk or switch out a trip for an online replacement like telework, allowing individuals to choose the right mode to meet their needs. Examples of ODOT’s Transportation Option (TO) activities include:

- Administration of federal grant funds and collaboration with local transportation options partner programs. These programs are often housed within a local transit agency, city, county or Metropolitan Planning Organization.

- Support congestion mitigation for major construction projects, safety corridors, and congestion points. The TO Program supports ODOT Regional offices in providing outreach and education around specific issues or projects to reduce impacts and delays and/or promote safety.

- Management of the statewide ride matching database, Get There, to help people connect with carpools, vanpools and other travel options. The ride matching database is an essential tool for local and regional partners, and provides information on fuel savings and reductions of vehicles miles traveled.

- Management (in collaboration with local partners) of an annual event, Get There Challenge, to help the public become familiar with their transportation options and support carpooling, vanpooling, biking, walking and transit.

The Statewide Options program work includes communications with businesses and the general public about the TO program; management of the carpool matching and trip
logging tool named Get There; management of grant recipients including provision of communications support materials and training; and, the Annual Get There Challenge. The current funding-level during the 21-24 STIP cycle is roughly $500,000 per year ($1.5 million over three years).

Funds are also distributed directly to local providers through a formula distribution. The Local TO Providers program focuses on on-the-ground outreach, working directly with businesses in their assigned region to promote reduction in single occupancy commute trips, and working with individuals to make them aware of the travel options available for all their trips and how to travel safely. During the 21-24 STIP cycle, a total of $4.5 million in funds will be distributed to providers across the state.

Congestion and Construction Mitigation is a TO program to assist the Agency in integrating alternative modes into the congestion mitigation strategy during construction and exploring no-build solutions on congested corridors. This program has already shown positive early results and will continue to build on the past pilots and support policy conversations on topics such as climate change, congestion pricing and state agency telework policies. Funding for this program is $300,000 over the 21-24 STIP cycle.

ODOT also provides Technology Innovation Research and Pilot Program grants. This competitive process is a refined evolution of previous years “Innovation Grants.” In its updated form, ODOT will utilize this process to support research, white papers and pilot implementation for transportation options topics such Mobility as a Service (MaaS). Funding for this program is $500,000 over the 21-24 STIP cycle.

**Impacts and Implications**

Transportation options can help achieve significant reductions in personal vehicle miles traveled which in turn help reduce carbon emissions from personal transportation. Prior to the adoption of the Oregon Transportation Options Plan (OPTP) in 2015, ODOTs Transportation Options program primarily operated as a formula grant disbursement program with little state level engagement. Implementation of the OPTP has resulted in a more robust and strategic program.
One key example of a statewide implementation effort includes the launch of the statewide travel planning tool, Get There, on July 1, 2019. In the last year, 8,406,905 miles of non-drive-alone trips were voluntarily logged resulting in 2,663 tons of carbon not emitted just from the program participants. Other implementation efforts of the OPTP include the Local Transportation Options Providers’ work directly with businesses setting up carpool matching networks, distributing bus passes and providing information at transportation and benefit information fairs. Investing in Transportation Options programs at the state and local level are a key strategy for ODOT to help us achieve our goals to transition to a truly multimodal system.
PUBLIC TRANSPORTATION PROGRAMS

Purpose & Funding Levels

The Commission has responsibility to set the statewide vision for public transportation, which is largely implemented by local transit providers in communities across the state. ODOT’s Public Transportation Division administers five public transportation programs:

- The **General Public Transportation** program funds transit services benefitting the general public in every county in the state. This program provides capital funding for buses and facilities, operations, maintenance, planning, training, and administration. The Statewide Transportation Improvement Fund Program established statewide technical resource center to assist rural areas with training, planning, and information technology.

- The **Special Transportation Program** benefits seniors and people who have disabilities by funding a range of fixed route transit service as well as demand response service, which picks people up and drops them off door-to-door. More than 20 million trips on fixed route or demand response service are taken each year by seniors and individuals with disabilities.

- The **Statewide Transit Network** includes services aimed at connecting communities to each other, cities to each other, rural communities to major transportation hubs and urban centers, as well as services that connect regions. The state focuses on statewide gaps through a combination of passenger rail and bus service.

- The **Public Transportation Planning and Research** program supports coordinated planning at statewide, regional, local, and corridor levels. Activities also include research and development of enhanced trip-making information to improve customer service and to provide information for system analysis and program improvements, including funding for route planning and analysis tools for local providers.

- The **Passenger Rail program** is part of the statewide public transportation network.
Public transportation in Oregon is funded through a combination of federal, state, and local funds and fares.

Beginning in 2020, approximately $99.3 million, or 55% of the public transportation funding administered by ODOT, will come from the payroll (transit) tax established by HB 2017. Other revenues administered by ODOT for public transportation include a portion of cigarette taxes, ID card revenues, non-highway gas taxes, federal funds appropriated by the Federal Transit Administration (FTA) as well as FHWA funds the Commission transfers to FTA.

**Investment Strategy**

ODOT is currently focused on implementing three key initiatives to meet the reasonable unmet need within current funding constraints:

- **Public Transportation Plan Integration** focuses on promoting an effective, efficient, and seamless public transportation system, building on the need to plan for transportation together. The focus is to help agencies further integrate their planning activities.
- The **Regional and Intercity Public Transportation Initiative** centers on improving service between cities and regions as well as connecting Oregon communities to other states. Public Transit’s statewide perspective can assist providers, help fill gaps, and promote a logical system that links areas throughout the state.
- The **Transportation Technology Initiative** focuses research and effectively using technology to help Oregonians meet routine needs via public transportation.

For example, continued investment in a standardized transit network, ridership data, and software tools results in improved transit information for the public, improved transit planning, and investment at the local, regional and state level.
2019 was the first year for distribution of STIF dollars, initiating improvements in transit. Based on plans submitted by STIF funding recipients, we estimate an increase of as many as 2.7 million rides per year, but with historic levels of population growth in the state and the impact of the COVID-19 epidemic on public transportation ridership, the state is likely to decline below 32 rides per capita in the near-term.

The cost of providing transit service is going up. Much of the increase of new funds, over time, will be invested in sustaining service levels and other improvements, potentially affecting future ridership increased by limiting the amount of funds available for transit expansion. Local government decisions may impact ridership. For example, in some communities the need for transit support infrastructure such as passenger shelters, secure bus parking, and technology could result in less investment in direct service.

ODOT’s Public Transportation Division partners with local agencies to provide buses to help communities offer safe, cost-effective public transportation. ODOT’s key performance measure is to keep transit buses in a “State of Good Repair” based on federal standards for expected age, mileage and condition. ODOT’s funding priority is to replace vehicles before increased maintenance costs become a poor investment. New federal requirements mandate setting a target for replacing vehicles to keep them in a continuous state of good repair. Our current target is no more than 40 percent of vehicles statewide exceeding their useful life standard.

The new Statewide Transportation Improvement Fund has provided additional capital asset funding for transit service providers to bring the fleet closer to the desired goal. To address a growing backlog of vehicle replacements resulting from vehicles purchased with Recovery Act funding in 2009, the Commission added $15 million in the 2018-2021 STIF. Additional funding will be needed to maintain this level in 2024 and beyond due to an increasing number of vehicles projected to exceed useful life by 2024.

Local governments and providers own and operate the buses that ODOT holds security interest in. Providers decide when to request vehicle replacements based upon vehicle condition and their ability to meet requirements for local match. Oregon transit providers often have difficulty raising the required local funds to maintain an optimum replacement schedule, and rely on the state Special Transportation Fund (STF) and Statewide Transportation Improvement Fund (STIF) for local match. Expanded services are causing accelerated depreciation of capital assets. These effects have yet to be forecast into future condition estimates.
**Needs**

Current reasonable unmet need estimates statewide based on OPTP are an estimated $400-$650 million per year (in 2016 dollars). This does not account for potential, unforeseen, reductions in funding (such as the Legislature’s removal of General Fund revenues from the Special Transportation Fund), nor does it meet the level of public transportation service needed to achieve Oregon’s GHG emissions reduction goals.

![Public Transportation Funding Projection](image)

Significant unmet need for public transportation still exists even with expanded funding from Keep Oregon Moving. Current funding levels only sustain existing services through 2026. Transit asset condition and the need to transition to next generation technologies will continue to put pressure on funding needs.

**Impacts & Implications**

Any of the multiple sources of public transportation funding—including local, state, federal, funds and fare revenue—may experience declines due to changing conditions. State funding may decline temporarily due to economic recessions that affect payroll tax receipts, for example, and cigarette tax and ID card revenues are likely to decrease in the future.
ODOT and local providers in most cases do not have control over these risks. Inadequate funding for public transportation puts more demand on the highway and local road systems, and impacts vulnerable populations disproportionately.

Additional potential impacts from reduced funding include:

- **Reduced services.** Providers would likely strive to maintain overall service to the extent possible, but local providers would have to make some service reductions as they seek to preserve core services.

- **Limited service in rural areas.** Rural providers particularly depend on federal and state funding and operate with thin budgets. Stagnant or reduced funding would likely significantly impact rural providers, because they do not typically have substantial farebox revenues or other local revenues to support service.

- **Regional connections remain unchanged or experience service declines.** The ability of public transportation providers to supply regional services, such as connecting to the neighboring system or the next larger town, would likely decline in urban and rural areas alike.

- **Older equipment is kept in use longer.** Providers will need to keep older equipment in service longer, increasing the likelihood of equipment breakdowns, service disruptions, and increased maintenance costs. In addition, they would likely forego implementing new technologies, such as efare, or fleet technologies, like automatic passenger counters.
**PASSENGER RAIL PROGRAM**

The Passenger Rail program is part of the statewide public transportation network. ODOT partners with WSDOT and Amtrak to provide the Amtrak Cascades service, which provided multiple roundtrips each day between Eugene and Vancouver, British Columbia, with multiple stops in cities between. ODOT’s section includes two daily round-trips between Eugene and Portland with stop in Albany, Salem, and Oregon City. These trains are supplemented by additional bus service. ODOT and WSDOT cover the operating costs of the service, net of ticket revenue.

Ridership on Oregon’s portion for the service reached its highest level of more than 215,000 rides in 2013. However, ridership remained flat from 2015 through 2017 averaging fewer than 194,000 riders per year. Ridership increases result from on-time reliability, greater frequency, reduced travel time, increased range of service, connectivity with other transportation modes and optimized schedules. These conditions depend upon sufficient and dependable capital and operational investment.

On December 18, 2017, a derailment in DuPont, Washington on the Amtrak Cascades caused three fatalities, 80 injuries and destroyed a WSDOT-owned trainset. ODOT Rail has been working with WSDOT and Amtrak since the derailment to recover service levels due to loss of fleet equipment and customer confidence. Ridership is expected to increase once service is restored.

ODOT’s funding for passenger rail operations and equipment comes from two sources.

- **Passenger Rail Fund (PRF)**, additional fees collected for issuance of personalized license plates.
- **Transportation Operating Fund (TOF)**, unclaimed refundable taxes paid on fuel used for off-road purposes.

Connect Oregon funds have also been used to make investments in rail systems to improve passenger rail operations. Capital grants for improving passenger rail infrastructure and planning for the future have been provided episodically by the Federal Railroad Administration (FRA), but a lack of dedicated state match sources make it difficult to leverage federal rail grant programs.

**Investment Strategy**

ODOT has developed an Oregon Passenger Rail Project that includes increasing train roundtrips from Portland to Eugene train from two to six by 2035 and improving reliability of passenger rail in Oregon. This will require capital improvements to the Union Pacific line that
are currently unfunded as well as additional operational costs for the additional trains. However, ODOT’s passenger rail operations funding is already stretched, and the agency cannot use other funding sources (such as federal and state highway funds) for the capital costs of improve service.

**Needs**

Oregon’s passenger rail funding can pay for existing service, but the agency doesn’t have a dedicated funding source for passenger rail that is sufficient to pay for increased service or improve infrastructure to reduce travel times and increase reliability. By 2035, 3.6 million people are expected to reside in the greater Willamette Valley. Intercity and regional travel demand will increase, and congested freeways will leave people looking for other options. Changing demographics and GHG reduction will disfavor automobile travel.

**Impacts & Implications**

With currently available resources, the Oregon Passenger Rail Project will be side-tracked. Without increased funding to leverage federal grants to add capacity on Union Pacific’s line between Portland and Eugene and pay for increased service, ODOT will not be able to implement the Service Development Plan to increase passenger train service resulting in travelers having fewer modal choices.

**Ultra-High Speed Ground Transportation**

The Washington State Department of Transportation (WSDOT) is studying how ultra-high-speed ground transportation (UHSGT) might serve as a catalyst to transform the Pacific Northwest. A stronger, better connected Cascadia economic megaregion — stretching from greater Vancouver, British Columbia to metro Seattle, Washington to Portland, Oregon — has the potential to thrive in the global marketplace. A key component of that vision is a fast, frequent, reliable, and environmentally responsible transportation system that unites this megaregion and positions it for global competitiveness and future prosperity.

A 2019 Business Case Analysis builds on previous UHSGT studies conducted by WSDOT and provides a comprehensive and detailed picture of the wide range of benefits that would flow to the region due to UHSGT. It further confirms that an ultra-high-speed transportation system could be viable in the Pacific Northwest. The 2019 report focuses on:

- Corridor options, including possible station areas, connections to other travel modes (such as transit), and costs
- Potential ridership and revenue based on some express service trips stopping at only a few locations, interspersed with other trips that stop at more locations
• Governing structures to administer such a project across state and international borders
• Funding and finance alternatives
• Key benefits related to better travel connections, economic development, housing, environment, and safety
• Building on the Business Case Study, work for the new study is addressing:
  • Development of a governance framework to result in recommendations needed to advance the development of the high-speed corridor.
  • Development of a long-term funding and financing strategy for the project initiation, development, construction and program administration of the high-speed corridor. The development of this strategy is to build upon the Funding and Financing chapter of the 2019 Business Case Analysis and align with the governance framework recommendations.
  • Development of recommendation for a WSDOT-led high-speed corridor engagement for policy leadership (e.g., key elected officials).

Oregon has participated in the past phases for the UHSGT Study that is working on an ultra-high speed service between Portland, Seattle and Vancouver, B.C. ODOT has contributed $200,000 for the third phase of this work and have a representative on the Steering Team and representatives on the Executive Committee from ODOT, the Oregon Transportation Commission, Metro, the City of Portland and the Governor’s Office.

Construction of this project will likely cost tens of billions of dollars. However, a funding source for construction has not yet been identified, so additional work will need to be done to identify and secure new sources of funds.
**MULTIMODAL FREIGHT**

As a trade-dependent state, Oregon relies on multimodal freight movement to facilitate international freight movement and participate in the global economy. Investing in multimodal freight promotes expansion and diversification of Oregon’s economy by providing options for shippers and businesses, reduces GHG emissions, and improves resiliency of the state transportation system by providing alternatives to highway freight movement.

Efficient freight movement relies on an integrated system designed to take advantage of the efficiencies provided by different modes. Freight mode choice depends on cost, reliability, time sensitivity, fragility, and other factors. Trucks currently move the majority of freight in Oregon. That said, a significant amount of freight is moved using multiple modes together, such as truck, rail, and marine. Constraints on movement of one mode or facility create additional pressures on the other parts of the system. The Oregon Freight Plan addresses issues affecting all modes of freight transportation and proposes strategies to maximize the efficiency of the system.

The movement of goods within Oregon will remain higher than both inbound and outbound shipments combined, indicating that transportation connections within and between cities and industries need to be maintained and potentially enhanced to meet this growth. Different modes are responsible for moving key commodities into, out of and within Oregon. For example, marine vessels are often used to carry heavy, low-value items within states or between regions. Airfreight often carries low-weight, high-value goods to markets all across the world. The Oregon Freight Plan addresses issues affecting all modes of freight transportation and proposes strategies to maximize the efficiency of the system. It will be critical to Oregon industries to make sure that the transportation system supports reliable and timely service to get these goods into the state. The amount of freight originating in Oregon is expected to exceed the amount of freight coming into Oregon by 2035. It will be critical to continue to maintain and improve connections between Oregon and the rest of the world for all modes in order to be able to support this expected increase in exports.
CONNECT OREGON

Purpose and Funding Levels

In 2005 the Oregon Legislature created the Connect Oregon program to invest in non-highway infrastructure improvements through grants and loans to non-highway transportation projects that promote economic development in Oregon. The program is critical to attracting and sustaining businesses and jobs in Oregon and ensuring the state builds strong connections to world markets.

Between 2005 and 2017, the Oregon Legislature funded seven cycles of Connect Oregon projects with lottery-backed bonds totaling $457 million invested in non-highway transportation projects statewide. In HB 2017 the Legislature provided ongoing support for the program through a vehicle dealer privilege tax. However, the net revenue provided to Connect Oregon is only about $11 million dollars annually, far less than the $35 million a year the program averaged from 2006 through 2017.

The overall investment in Connect Oregon has leveraged approximately $700 million in other funds and supports multimodal connections and better integrates transportation system components; this in turn improves the flow of commerce and promotes economic development.

Investment Strategy

Connect Oregon improves transportation connections around the state by investing in rail, ports, and aviation projects. Connect Oregon focuses on improving connections between transportation modes to better integrate and improve the efficient flow of goods and people.

Marine & Ports

Oregon’s 23 ports include five deep-draft and four shallow-draft marine ports. Marine ports face a number of challenges, including maintaining adequate depths via dredging to ensure sufficient vessel accessibility. Marine/port projects (e.g. dock/wharf rebuilds, terminal expansion, supporting structures, lifting equipment, and channel dredging) have received $47 million in Connect Oregon Funds.

Airports

The aviation industry in Oregon includes over 300 aviation related companies providing a variety of employment opportunities ranging from manufacturing and repair to pilots. The Oregon Department of Aviation administers all aspects of pavement maintenance at
participating airports on a three-year cycle. Maintaining good pavements can significantly extend the initial investment in the facility and saves costs by extending pavement life, and also extending the time intervals between complete airport pavement rehabilitation.

Aviation provides a significant economic boost to the state, supporting thousands of living-wage jobs. The Oregon Aviation Plan is the comprehensive transportation document for all public use airports. It identifies needed airport improvements and analyzes how aviation meets the needs of economic development, resiliency, tourism and transportation services. It provides the basis for state aviation policy and is adopted by the Oregon Aviation Board. Aviation projects (e.g. taxiway/runway rehabs, hangars and supporting buildings, equipment with long lifespan: communications, generators) have received $97 million in Connect Oregon Funds.

**Railroads**

There are 2,344 miles of rail track in Oregon, including 1,111 miles of interstate trunk line and 1,175 miles of secondary branches operated by short lines. Trunk lines are operated by Class I carriers such as BNSF and Union Pacific Railroad, which carry the majority of freight and passenger trains. Short line railroads, with lower traffic than trunk lines, face challenges brought on by aging infrastructure and constrained resources. To preserve efficient movement of goods and people in the future, it will be important to make rail improvements so that both freight and passenger capacity needs are met. Rail projects (e.g. track/switch upgrades, sidings, pinch point improvements) have received $173 million in Connect Oregon Funds.

**Needs**

In 2016, roughly 240 million tons of freight valued at $270 billion moved within, to, and from Oregon via truck, rail, air, pipeline, and marine modes. The value of freight moved into, out of and within Oregon is expected to increase 161 percent between 2002 and 2035, substantially higher than the anticipated 88 percent increase in tonnage.

Connectivity between major highways and intermodal facilities such as airports or marine ports, between all regions of the state, and between key industries and the freight network is critical because it allows businesses and industries to move their goods throughout Oregon and beyond in a cost-effective manner.

The Oregon Freight Plan selected four major multimodal corridors whose connectivity is vital to the state economy.
- The I-5 and I-84 corridors—including nearby rail and river routes— are the dominant corridors in terms of the tonnage and value of freight.
- The U.S. 97 and U.S. 20 corridors carry moderate freight volumes but provide critical redundancy in the freight system.

Increasing truck traffic places further demands on the system and requires substantial investment in maintenance of the existing highway and road network. The growth of truck share reflects the shift towards higher value products and greater time sensitivity in product movements. With truck traffic anticipated to rise substantially in the future, roadway congestion issues, transport reliability and road access issues will be exacerbated. Roadway issues are therefore anticipated to become an even greater focus of future freight planning in Oregon.

**Impacts and Implications**

The freight system connects Oregon to the rest of the global supply chain while at the same time ensuring that all regions of the state have access to quality transportation services. Anticipated growth in Oregon’s population, freight volumes and resulting congestion highlight the need to plan for transportation system improvements to meet requirements of shippers, carriers and other freight system stakeholders. Effective coordination, communication, and cooperation are critical to the delivery of an efficient multimodal transportation system.

Aviation, ports and rail are highly reliant on Connect Oregon for infrastructure investments. While the new privilege tax will provide Connect Oregon a sustainable funding base, it won’t be adequate to run a robust program. ODOT has managed to creatively scrape together match funding to secure some federal grants to improve the rail system, but a lack of state match sources make it difficult to leverage federal rail grant programs. New aviation funding from by the legislature provided match funds allowing most general aviation airports to leverage Federal Aviation Administration grants. However, funding has only met a portion of grant requests and the limited funding has not been able to provide significant assistance to the commercial service airports.
SYSTEM OPERATIONS

Purpose & Funding Levels

Highway system operations encompass many different activities that improve the efficiency of the transportation system and operations through technology, infrastructure investment, and operations management. Operational tools used on Oregon highways include ramp metering, traffic signal synchronization, variable speeds, the Green Light truck preclearance program, incident management programs, traveler information services, and others making the existing system safer and more efficient.

Operations solutions provide cost-effective approaches to meet the challenges presented by increased demands on the system coupled with increasing constraints on available funding. Investments in technology-based solutions not only improve mobility and safety of the system but also reduce the need for more expensive capacity expansion projects. These strategies are very effective at reducing emissions in congested areas, helping travelers to keep moving, avoiding stops and starts.

Active traffic management investments refer to technology that monitors roadway conditions and the movement of vehicles in order to keep traffic moving. Such technology can inform drivers of when to enter a freeway (ramp meters), when to slow down (advisory speed signs), how long their trip will take (traveler information signs), and more. Active traffic management systems produce measurable benefits for improved safety and reliability, travel time savings on severely congested highway and freeway segments, and increased fuel efficiency, reduced emissions. After the initial deployment of the “Real Time” active traffic management system on Oregon 217, ODOT found these technologies helped reduce crashes that cause non-recurring congestion by 21%, increased travel time reliability by 10%, and enhanced vehicle throughput by 5%.

Traffic Incident Management (TIM) focuses on clearing crashes quickly to keep traffic moving and improve safety. Doing so takes coordination across transportation departments and emergency responders. Traffic and roadway conditions are monitored; communication is made with police, fire, or others, and transportation incident response trucks sent to the scene. Such coordination and response helps get assistance to the scene quickly, helps those in need, clears crashes, and reduces resulting travel delay, congestion, and emissions.

Traffic signals are designed to keep traffic moving safely but can also keep traffic moving efficiently when they are optimized. Optimizing signals requires adding new software and hardware to older signals. When upgraded, signals can be coordinated within a corridor or
area to keep traffic moving. Sequencing green lights across the system will help to reduce stops and starts, saving traveler’s time, improving fuel efficiency, and reducing emissions.

The Operations Program did not receive any HB 2017 funding; however some of the seismic funding will be used to address some unstable slope problems. The program is currently funded at $27 million per year for FY 2022-2024. Key components of the program include traffic signals, signs, roadway lighting, Intelligent Transportation Systems (ITS), and landslide and rockfall mitigation.

The program has the following a number of investment areas:

- Operations Asset Replacement – replace aging operations infrastructure that is beyond its service life.
- Statewide Systems – server replacements and software modernization to keep statewide IT systems used for implementing operations strategies in reliable and supportable condition.
- Fix Identified Hazards – projects to fix identified, priority unstable slopes.
- System Optimization and Region Identified Needs – small projects to address opportunities to optimize system operations and other projects that don’t fit other STIP funding categories.

The Operations Program also funds project types that don’t fit the criteria for other STIP funding categories.

**Typical Life Cycle**

The Operations program encompasses a wide variety of assets. The following table shows a list of assets along with inventory numbers and service life. Many electronic and computer systems have a relatively short lifespan—in the range of 10 years. As more of this infrastructure is deployed, maintenance and replacement costs will grow.

**Needs**

Typical service life is driven primarily by asset deterioration but is also influenced by technical obsolescence. Given the wide variety of assets within the Operations Program, the assets vary in level of information available, but some current condition information is available.

- 25% of ODOT’s traffic signals are in poor or very poor condition. Conditions are declining as these assets age.
- 8.8% of ODOT’s ITS assets are beyond their service life. The percentage is increasing over time.
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<td>Highway Advisory Radio</td>
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<tr>
<td>Weather Warning Systems</td>
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• 1.2% (2,157 signs) of ODOT’s traffic sign inventory are below minimum retro-reflectivity standards.
• Only 0.38% of ODOT’s major traffic structures (e.g. sign bridges) are rated poor which has been stable over the last several years.
• There are 4,044 identified unstable slope locations on the state highway system, and the number of identified unstable slopes is continuing to increase. Of these 4,044 locations, 251 are identified as high priority and 108 are identified as immediate need meaning these sites pose significant risk to the traveling public and the system.

Impacts and Implications

Conditions will continue to decline at the current funding level. An analysis of the investment needed to keep operations assets within the design life shown in the table above is $28.7 million per year. If the entire program allocation were used for asset replacement, ignoring other program investment categories, conditions would still decline over time. The cost to repair the 4,044 known unstable slope locations is $3.3 billion in today’s dollars. If the entire Operations Program allocation at the current funding level was used for this purpose it would take 122 years to repair these locations at current cost levels. The repair costs of just the 108 immediate need sites is $201 million.

Declining conditions shift costs to the maintenance program. Aging operations infrastructure impacts the reliability of equipment and increases maintenance expenditures to keep equipment functioning which also directly impacts mobility, safety and the user experience of system users. Failure to address unstable slope problems shifts costs to maintenance to respond to clean up and repair of slides and rockfall locations. Finally, the low funding level compared to the breadth of the program limits opportunities to improve the mobility and safety of the system through investment in system optimization projects. For example, rockfalls can cause crashes and close highways to vehicles.
MODERNIZATION PROGRAM

Purpose & Funding Levels

Modernization typically refers to any project that adds lanes, even if it’s just an auxiliary lane or truck climbing lane, typically to address congestion and delay for freight and passenger vehicles and improve safety. As noted above, the OTP and OHP focus on making the system more efficient before adding capacity and focus on improving existing routes before adding new facilities like bypasses or new roads.

As the population and economy of the state grows, congestion increasingly afflicts the state, particularly the major urban areas. The Portland metro area faces unique transportation infrastructure challenges as it experiences population growth and increased economic activity. According to ODOT’s 2018 Traffic Performance Report for the Portland metro area, hours of congestion on the region’s freeways increased 13% between 2015 and 2017, while daily vehicle hours of delay increased by 20%. The region faces 123 average daily hours of congestion and more than 80,000 daily vehicle hours of delay at an economic daily cost of $2 million. Oregon’s other urban areas have also seen significant increases in congestion.

Through development and subsequent implementation of HB 2017, the Legislature, OTC, and ODOT have prioritized strategies and actions to address congestion in the Portland metro area. The Commission and Department, in partnership with state, regional, and local stakeholders, have developed a comprehensive congestion relief strategy designed to enhance mobility through enhancing transportation options, deploying technology to enhance operations, tolling to manage demand and raise resources, and strategic bottleneck relief projects.

These bottleneck relief projects include:

- I-5 Rose Quarter Improvement Project
- OR-217 Oregon 10 to Oregon 99W Auxiliary Lanes
- I-205 Corridor Bottleneck & Active Traffic Management
- I-205 Widening & Seismic Improvement Project
- Interstate Bridge Replacement Program

These projects, taken together with the other elements of the comprehensive multimodal strategy, establish a path toward congestion relief in the Portland metro regional transportation system. The consequences of failure to address congestion by meeting modernization need include growing congestion and delays for freight and commerce. Past
analysis, including reports on the Cost of Congestion, found that congestion imposes significant costs on Oregon’s freight-dependent economy.

Investment Strategy

ODOT has traditionally focused much of its system modernization on projects that benefit both freight movement and passenger vehicles. ODOT has developed a freight bottlenecks analysis, which looked at the worst areas of truck delay across the state. Not surprisingly, most of these areas were in Portland. Virtually the entire Portland freeway network has been identified as causing significant delays for the movement of freight. I-5 in particular has been identified as critical because it provides access to ports and industrial areas and also has some of the worst truck bottlenecks in the nation.

Identifying modernization need is fundamentally a policy decision about how to effectively address travel demand and reduce congestion and delay. Rather than the universal solution for congestion, modernization projects are just one part of a comprehensive congestion management strategy. They provide a supply-side solution to addressing congestion and delay, as do adding travel capacity through transit, active transportation, and transportation options; demand-side solutions such as pricing and teleworking can also help reduce congestion and delay. As a result, it’s difficult if not impossible to quantify how much modernization spending is needed to “fix” the system. However, virtually any analysis of modernization funding need would run into the billions of dollars—particularly given major projects like the Interstate Bridge replacement.

Needs

Since the Jobs and Transportation Act of 2009, major modernization projects have relied primarily on legislative earmarks. That legislation included a number of new sections of state highway—including the Newberg-Dundee Bypass Phase 1, Sunrise Corridor Phase 1, and the OR 62 Bypass—as well as improved interchanges and new lanes on state highways. HB 2017 also dedicated funding to a number of major modernization projects, including I-5 Rose Quarter and OR 217 auxiliary lanes.

With discretionary funding in the STIP primarily directed by the OTC to Fix-It programs, STIP funding for modernization has been significantly constrained. In the 2021-2024 STIP, discretionary highway modernization spending totaled just $24 million, though that was supplemented by hundreds of millions of dollars in spending on HB 2017 dedicated projects. The STIP has funded relatively small-scale modernization projects such as auxiliary lanes and truck climbing lanes, but major interchanges and new lanes typically require either a direct
legislative earmark, a major funding package like OTIA III, JTA, or HB 2017, or a long-term phased approach to completing the work—or a combination of these.

Given the limited modernization funding available, ODOT has been exploring tolling as a way to both fund modernization projects and manage demand on the transportation system using congestion pricing. Going forward, tolling may be the only way to pay for modernization megaprojects—particularly the Interstate Bridge and widening of I-205—that cost hundreds of millions to billions of dollars.
Across the nation, transportation funding has been in a near constant state of crisis for more than a decade. State legislatures and local governments, left hanging by declining assistance from the federal government and higher costs of road construction and maintenance, have responded emphatically and creatively in their approaches to create new transportation revenue streams. Oregon has been no different, seizing on the opportunity in HB 2017 to make a substantial investment in the state’s multimodal transportation system.

In addition to the traditional funding sources of the gas tax, driver and motor vehicle fees, and weight-mile tax, the Department has been exploring new approaches to fund and finance needed transportation investment, such as piloting road usage charging programs, implementing increased user-fees on electric and hybrid vehicles and establishing a tolling program to address many of Oregon’s congestion challenges.

RENEWING THE FEDERAL PARTNERSHIP

Since 1956, when Congress passed the Interstate Highway program, the federal government has been a strong partner in funding the nation’s surface transportation infrastructure. But since 2009, when the SAFETEA-LU authorization legislation expired, the federal contribution has been essentially flat. In fact, from 2011 through 2017 federal-aid highway funding flowing to Oregon actually fell; it wasn’t until 2018 that funding reached the same level as 2010—and it was much lower in 2018 in inflation-adjusted terms.

With bipartisan support for investments in infrastructure, Congress is now considering surface transportation investments that would renew the federal government’s role in highways, transit, and rail. House Transportation and Infrastructure Committee Chair Peter DeFazio’s INVEST Act would significantly increase investment in state and local transportation
programs. The Commission should continue advocating for the federal government to reclaim its role as a significant partner in infrastructure investment.

**TOLLING STRATEGIES**

The 2017 Legislature directed the Oregon Transportation Commission (OTC) to pursue and implement tolls on I-5 and I-205 in the Portland metro region to help manage traffic congestion and raise revenue for infrastructure improvements. HB 2017 also established a Congestion Relief Fund, which will receive any net proceeds from tolls. The fund is subject to Article IX, Section 3a of the Oregon Constitution and therefore must be spent on roadway projects, which could include construction or reconstruction of travel lanes, as well as bicycle and pedestrian facilities or transit improvements in or along the roadway.

To that end, ODOT established the Tolling Program Office in late 2019 and launched two tolling projects on I-5 and I-205 in early 2020. Revenue generated by tolling I-205 near the Abernethy Bridge could help fund the planned widening and seismic strengthening of I-205 between Stafford Road and OR 213 including the Abernethy Bridge.

Tolling may be a way to pay for major highway projects that don’t have a funding source. What’s more, the OTC has broad statutory authority to toll roads, making it one of the few areas where the Commission can generate additional resources. However, federal law limits where a state or local government can impose tolls. Federal law generally allows for four potential opportunities to use tolling.

**Bridge Reconstruction.** Federal law provides broad authority to toll when a bridge is replaced or reconstructed. This authority may allow ODOT to pay for major congestion relief projects in the Portland metro region such as widening of the I-205 Abernethy Bridge and adjacent sections of I-205 and the Interstate Bridge and perhaps other projects. In the future, this authority could allow for tolling to pay for high-cost bridge reconstruction and replacement projects elsewhere in the state where traffic volumes may be sufficient to warrant tolling.

**New Roads.** Federal law allows for tolling newly-constructed roads, and due to limited resources for building new roads ODOT will likely need to consider tolling for any new state highway corridors that are considered in the future. However, past feasibility analyses of tolling new facilities such as the Newberg-Dundee Bypass and the Sunrise Corridor found that much of the anticipated traffic would avoid the tolls by using parallel routes, limiting revenue generation and the traffic benefits of building a new road.
New Lanes. Federal law does not allow imposing a toll if it will reduce the number of free through lanes on the Interstate, other than when replacing or reconstructing a bridge. This makes tolling to pay for Interstate widening projects difficult, though FHWA has some ability to grant waivers to these limitations. ODOT is planning to seek a waiver from FHWA to toll I-5 through Central Portland.

High Occupancy Toll (HOT) Lanes. While federal law allows building HOT lanes or converting existing HOV lanes to HOT lanes, these opportunities in Oregon are extremely limited given the state’s lack of an extensive HOV lane network. What’s more, tolling a HOT is not likely to generate enough revenue to construct a new lane; HOT lanes are generally recognized as traffic management strategies rather than revenue generation tools. As a result, the value pricing feasibility analysis ODOT conducted in 2017-2018 did not find any likely opportunities for HOT lanes.

Given these federal strictures and public opinion, tolling will most likely be used primarily for congestion relief projects where the benefit to drivers makes them willing to pay a toll, as well as for to cover the costs of replacing or reconstructing major bridges that would otherwise be infeasible.

Tolling Equity and Mitigation Framework

While variable rate tolling or congestion pricing is a proven tool for funding projects and managing traffic, success for the metro region will require improved public transit or other travel options. The process to implement a toll program requires substantial analysis, public input, construction, testing and driver education before the system can be operational.

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*Construction start dependent on funding availability.
ODOT is planning extensive public and stakeholder involvement to inform an equity framework, project development and community mobility, and equity priorities. The goals of the equity framework are:

- Gain better outcomes for traditionally disadvantaged and underserved communities;
- Be inclusive and intentional when engaging communities in solutions.

Multiple strategies are planned to ensure the Oregon Transportation Commission and ODOT staff hear a diversity of perspectives before making decisions on selected alternatives for both I-205 and I-5, equity and mobility strategies and, in the future, toll policies and rates.

ODOT is developing an equity framework to advance the community mobility and equity priorities identified during the feasibility analysis and to be the foundation for project development and delivery. The framework will serve as a navigation tool to ensure the tolling projects achieve equitable outcomes and to implement an intentional and equitable engagement process that prioritizes historically underrepresented communities. These include, for example, communities of color and people with low incomes or disabilities.

The consultant team includes TransForm, with expertise in integrating an equity focus throughout engagement, planning, development, and evaluation of pricing projects. TransForm, working with local equity experts has conducted an equity training with the project team and will lead workshops with regional partners, stakeholders and the public.

An Equity and Mobility Advisory Committee (EMAC), supported by the ODOT project team, has been convened to advise the Commission. Early engagement by the Committee will inform the equity foundation of the projects, including guidelines, strategies, processes and timelines. Committee members will provide an important link in regional public involvement and education by assisting with outreach to their constituents and communities.

**MULTIMODAL REVENUE OPTIONS**

Due to Oregon’s constitutional restriction on the use of highway funds, modes other than roads often face funding challenges. HB 2017 addressed some of these shortfalls by providing a significant infusion of dedicated funding for public transportation provided through a statewide payroll tax of 0.1%, as well as providing dedicated permanent funding for Connect Oregon through the dealer privilege tax on new vehicles and generating additional revenue for bicycle and pedestrian trails through a bicycle excise tax.

Bicycle and pedestrian projects can be funded through a wide range of sources, including:

- Multimodal Active Transportation Fund (projects outside the road right of way)
- State Highway Fund (only projects inside the highway right of way)
• Federal highway funding (all types of bicycle/pedestrian projects)

This ability to use multiple funding sources for bicycle/pedestrian projects has allowed Oregon to make significant investments in active transportation infrastructure in recent years. However, the level of investment from these funding sources has been inadequate, indicating the need to find additional funding sources or dedicate more from these existing sources.

Rail and marine/port projects are among the most difficult projects to fund because they can only be funded through the Connect Oregon program.

While public transportation received a major increase in state funding in HB 2017, significant needs remain across the state. Increasing transit funding to meet this need could involve creating new funding sources or increasing one or more of the existing revenue sources, such as the statewide payroll tax.

ODOT proposes to develop a stakeholder-supported multimodal strategic investment framework that can be used to develop multimodal strategic investment plan. One of the plan strategies could be implementation of a consolidated multimodal funding program that would prioritize funding multimodal projects that best meet legislative and Commission investment priorities. This would vary from the current funding models that are largely focused by mode and fund source. For example, a high priority project might be one that fills in a sidewalk gap at an improved transit stop in a neighborhood that is traditionally underserved.

ROAD USAGE CHARGING

In true Oregon fashion, we’re pioneering new ways to fund our roads to support our state’s mobility and economy, now and for future generations. Oregon was the first state to collect a fuel tax to fund highway projects starting in 1919. Currently, Oregonians pay a fuel tax, 36 cents per gallon, to fund road preservation and improvement projects. But, as more cars and trucks run on electricity or use less gas, Oregon gets less funding to maintain roads and bridges.

With vehicles becoming more fuel efficient and increasing number of electric vehicles that pay no gas tax on the road, transportation experts have looked to migrating our current user-pays approach toward per-mile road usage charges. These charges would have the virtue of ensuring
that all vehicles pay for their use of the roads while also helping square our commitments to carbon reduction with the need to fund infrastructure; we cannot shift away from fossil fuels as the motive power for automobiles while leaving taxes on fossil fuels as the primary source of state and federal transportation funding.

Oregon has been leading the nation on per-mile road usages charges for nearly two decades. In 2015 we launched OReGO, a voluntary program where people pay 1.8 cents per mile. We’ve had over 1,500 vehicles in the program to date and proved that it is feasible. The Legislature has taken a step toward shifting OReGO from a pilot program to a revenue generation program while retaining its voluntary nature by allowing people to opt out of the higher registration fee on electric vehicles and hybrids if they opt in to paying the road usage charge. OReGO enrollment has increased as a result.

In order to transition OReGO into a large-scale revenue program, ODOT will have to ensure both that the public accepts the concept—particularly the privacy implications—and reduce the high administrative costs associated with a small-scale program. This will require new technologies beyond those readily available today.

The Department has received federal grants to further develop the OReGO program, including through partnerships with other states. We’ve teamed up with other western states, particularly California and Washington, to explore interoperability across state lines, and ODOT is also exploring local option road usage charges to provide funding solutions to local governments. Work is underway to incorporate new technologies that will lower administrative costs and eliminate the need for people to put a device in their car—which would help address privacy.

The legislatively-chartered Road User Fee Task Force is beginning the policy development process for potential legislation in 2021. In the past, RUFTF has proposed legislation that would make OReGO mandatory for high-efficiency vehicles, and the group will continue to grapple with how to advance road usage charging toward wide adoption.

THE FUTURE OF USER FEES: TRUE-COST PRICING

For economists, the Holy Grail of user fees is a system in which transportation user fees reflect both the use of and the costs drivers impose on the system and society. Going forward, Oregon could leverage its unique transportation funding system—including a weight-mile tax and the first per-mile road usage charging system—to create a “true cost pricing” approach. This could include a number of components.

*Fuels taxes* would charge people for emitting carbon and incentivize efficient use of fossil fuels.
Road usage charges would ensure that all vehicles pay for their actual use of the roads, regardless of whether they pay fuels tax.

Congestion charges would charge people higher prices for use of the system at peak times in order to reduce congestion and incentivize more efficient use, such as using other modes or traveling at less congested times, when prices would be lower.

Weight-based taxes would ensure that heavy trucks pay their fair share for their disproportionate wear and tear on roads; this principle of cost responsibility is enshrined in Oregon’s constitution.

With the weight-mile tax and fuels taxes already in place, a nascent road usage charging system growing over time, and congestion pricing under consideration, Oregon is on the cusp of developing a truly revolutionary approach to user fees that could be replicated in other states to drive more efficient funding and use of the transportation system.

However, as Oregon moves down this path, policymakers should deliberate consider how true-cost pricing would impact people across income levels to ensure equity. Oregon’s leaders also need to make the fundamental policy decision of whether to optimize user fees or transition to some other method of generating road funding.
NEXT STEPS – ALIGNING STRATEGIC PRIORITIES AND GOALS WITH NEAR-TERM INVESTMENT DECISIONS

The management review performed by McKinsey & Co. in 2017 found that ODOT and the Oregon Transportation Commission lacked clear strategic alignment on the agency’s highest priorities and goals. The review found that ODOT could improve its overall coordination by defining and communicating its vision and direction more clearly, ensuring targets cascade throughout the organization, and clearly defining governance roles and responsibilities, with an eye toward simplifying strategic documents. In the past few years, the department has made significant strides to establish and simplify ODOT’s mission, vision, and goals; however this work is ongoing.

Presently, ODOT remains in a period of transition, with a new OTC chair and vice chair, a new director, new executive leadership, and changing public needs and directions from the Governor and Legislature. Having expressed their collective desire to intentionally focus efforts on shared OTC/ODOT strategic priorities and long-term policy direction and plan development, the time is ripe for defining the strategic priorities and goals shared by the OTC and ODOT and developing an implementation plan to meet them. At the core of both the commission’s work and the department’s work is ensuring the system meets the needs of Oregonians into the future; this work is critical now more than ever as ODOT re-examines how it does its business in light of a significant operating budget shortfall and delivers on the historic investments entrusted to the agency in HB 2017. Delivering on this core responsibility for the state of Oregon requires a clear articulation of vision, priorities, and goals in order to chart a pathway forward under the current circumstances.

Upon commission approval of the priorities and goals, the department will develop and refine associated measures and outcomes and also revise existing ODOT strategic documents to ensure a clear nesting of agency activities that supports this strategic vision. ODOT anticipates socializing and discussing this work with the commission throughout the fall of 2020. Key to this strategic plan will be how ODOT addresses equity and climate change.
ODOT is taking steps to better incorporate these key priorities in decisions, including investments and project selection, across the agency’s portfolio, and has begun to develop organizational structures and plans to better address these areas.

**EQUITY FRAMEWORK**

As part of the reorganization of the agency, the agency created a new Office of Social Equity led by a new Assistant Director position. The office’s charge is to:

- Institutionalize equity, diversity, and inclusion practices in ODOT’s programs, policies, performance, and priorities
- Place an equity lens on transportation decisions within communities and in funding decisions
- Develop equity and inclusion as a vital workforce skill
- Ensure that contractors, consultants and advisory structures reflect Oregon’s diversity
- Ensure equitable project and service delivery for all of Oregon’s communities with a specific focus on communities of color and other communities historically marginalized by government policies.

As we develop a framework of support, resource, and accountability regarding social equity for the agency an overview of plans and progress is necessary as well as an update on that which has been long withstanding and connected to social equity. Currently, the Assistant Director for Social Equity is working to understand ODOT’s system based barriers to equity while providing baseline information and recruiting a team to begin the process of operationalizing equity in our planning, projects, community partnerships, and internal operations. This is happening alongside the diligent work from the Office of Civil Rights and the multiple units working on the implementation of the Americans with Disabilities Act.

Upon commission approval of the joint OTC/ODOT priorities and goals during its workshop, July 2020, we will offer a frame for social equity to the agency as well as defining and refining measures and outcomes that will allow us to move from talking about equity to pivoting our operations toward equity by the start of 2021.

**CLIMATE CHANGE MITIGATION AND ADAPTATION**

Flooding, landslides, and wildfires are only a few signs that Oregon’s climate is changing. These events are becoming more frequent and have resulted in road closures, infrastructure damage, and hundreds of staff hours in clean-up. Impacts to the transportation system cost the state hundreds of millions each year and are far reaching to the traveling public and state economy. ODOT recognizes that concerted efforts must be placed on understanding and addressing the impacts of climate change to the transportation system.
Transportation accounts for the largest share of greenhouse gas (GHG) emissions in the state (around 40%). Increased GHG emissions will only exacerbate the impacts of climate change and efforts are needed to reduce the amount of carbon that comes from the transportation sector. ODOT is committed to implementing the Statewide Transportation Strategy for GHG reduction. In late March 2020 ODOT announced the formation of a new Climate Office. The Climate Office was created recognizing that concerted and strategic efforts are needed to understand and prepare for the impacts the climate is having on Oregon’s transportation infrastructure and to reduce the carbon footprint of transportation. The Climate Office consists of three parts:

- **Climate Change Mitigation:** Implementing ODOT’s Statewide Transportation Strategy: a 2050 Vision for Greenhouse Gas Reduction (STS), pursuing transportation electrification, and reducing the carbon footprint of ODOT and the transportation sector.
- **Climate Change Adaptation:** Understanding the impacts of climate change and better preparing ODOT's infrastructure and responding.
- **Sustainability:** Continuing and reporting on a limited set of sustainability actions, such as water resource management, energy use, and similar efforts.

The current focus of the Office is primarily on mitigation, complying with Executive Order 20-04 and on multi-agency STS implementation efforts (see below). In addition, staff is supporting adaptation through the creation of an Adaptation Implementation Roadmap. The Roadmap will help the Agency better understand how the climate is changing, associated impacts to transportation infrastructure, and to develop an approach for ODOT to better prepare for and respond to events such as intense rainfalls and flooding, landslides, wildfires, and sea-level rise.

Overall, the Climate Office will work across ODOT divisions to educate, develop and institutionalize mitigation and adaptation strategies in the ways the agency plans for, invests in, builds, manages, maintains, and supports the multi-modal transportation system. Staff will also work with other state agencies and local agency partners to find collaborative approaches and solutions, connect with stakeholders, and learn best practices from other states. The staff makeup and activities of the Climate Office will evolve over time as the work evolves and opportunities are identified.
Executive Order 20-04: Directing State Agencies to Take Actions to Reduce and Regulate Greenhouse Gas Emissions

On March 10, 2020, Governor Brown signed Executive Order 20-04, directing several state agencies, including ODOT, to take actions within their authority to regulate and reduce GHG emissions. The Executive Order included the following directives to ODOT:

- **Conduct a Transportation Electrification Infrastructure Needs Analysis** to identify electric charging infrastructure needs in order to support transportation electrification.
- **Evaluate the GHG Emission Impacts of Projects as Part of the STIP Planning Process** to develop and apply a process for considering GHG emissions in making STIP decisions.
- **Identify and Implement Assistance for Local Planning to Meet GHG Reduction Goals** to identify and implement technical and financial support for local planning efforts to meet GHG reduction targets.
- **Integrate Climate Change into Agency Decisions** to integrate climate change, climate change impacts, and the state’s GHG emission reduction goals into policy, planning, and investment decisions.

The Climate Office is leading the agency efforts to comply with the Executive Order, working across ODOT divisions and groups. Several of these directives will require input from the OTC and staff will update the Commission regularly, and ODOT will actively collaborate with other state agencies and stakeholders.

Multi-Agency STS Implementation Work Program

ODOT is also working on a multi-agency implementation work program for the STS. The multi-agency work was directed by the Governor in a letter sent late 2019 and affirmed in Executive Order 20-04. Accordingly, ODOT has been meeting with the Department of Land Conservation and Development (DLCD), Oregon Department of Energy (DOE), and Oregon Department of Environmental Quality (DEQ) to develop a cooperative work program. This work was led at the highest levels of the agencies by the Directors and respective Commission Chairs. Staff from each agency also met and agreed on actions requiring two or more agencies to collaborate, and that are likely to have a measurable GHG reduction impact. All strategies in the STS were reviewed and the following main categories of actions have tentatively been selected:

- **Electric Vehicles**: Identify rules, regulations, and supporting actions to promote transportation electrification.
- **Cleaner Fuels**: Support DEQ’s Clean Fuels program and identify state-actions to support transition to cleaner fuels for all modes of transportation.
• **Transportation Options:** Decrease drive-alone trips through parking management, pricing, and demand management techniques.

• **Local GHG Reduction Planning:** Provide technical and financial support for local GHG planning efforts and amend rules.

**CONCLUSION: STRATEGIC INVESTMENTS IN THE 2024-2027 STIP AND LONG-RANGE PLANNING**

**2024-2027 STIP Development**

The development of the 2024-2027 STIP provides the Commission the ability to make investment decisions, starting with the allocation of hundreds of millions of dollars in federal funding among categories and programs and setting program goals and requirements. Over the second half of 2020 ODOT will work with the Commission on the STIP program funding allocation process. This Investment Strategy will serve as a foundation of information for the need discussions during the STIP process. The Investment Strategy presents the current programs and strategies, allowing the Commission to make decisions about where to adjust those strategies and program allocations.

**Oregon Transportation Plan and Oregon Highway Plan Updates**

Beyond the next STIP period, the next several years will present the Commission the opportunity to update the key long-range policy plans that help set the basic framework for investment in Oregon’s multimodal transportation system.

The Oregon Transportation Plan (OTP) OTP Update will replace a version adopted in 2006, and the Oregon Highway Plan (OHP) Update will replace a version adopted in 1999. The updates are being done in conjunction with each other. The preliminary schedule for the process to get both the OTP and OHP Updates to adoption by the Commission is 2023.

The OTP and OHP Updates will align objectives for understanding the state transportation system’s multiple users and their needs to inform a framework for prioritizing investments on Oregon’s transportation system. The intent of the OTP Update is to provide the long-range
vision and policy framework for shaping Oregon’s transportation system through the year 2050. The OHP Update then functions as a strategic element for managing the state highway system, articulating its multi-modal nature, and prioritizing investments under the guiding aspect of the OTP.

The challenges facing Oregon’s transportation system are significant and growing more complex. It is critical that we effectively monitor the investment of scarce resources so we can best manage, maintain, and improve the transportation system to meet these challenges while striving to achieve the policy goals and priorities set by the Commission. Looking towards the future, ODOT will consider a range of trends, opportunities and uncertainties, as continual population growth, increasing freight volume, dramatic technological changes, and the threat of climate change impact our communities and the transportation system. The OTP-OHP Updates represent a critical opportunity to guide our strategic decision-making and shape a resilient statewide transportation system that accommodates multiple users with different needs.