

Washington State Department of Transportation

The Washington State Department of Transportation (WSDOT) is advancing its practice of integrating asset management into planning and programming through strong partner coordination and support, direct integration of asset management analyses into programming, and work to address equity impacts from transportation investments, including pavement preservation projects.

Notable Practices

- **Asset Management Guide for Transit Agencies.** WSDOT published [A Guide to Preparing Your Asset Management Plan](#) to ensure that WSDOT and public transportation agencies use an effective, aligned approach to asset management by outlining a common set of principles and resources.
- **Scenario planning for equity impacts.** WSDOT is using the update of the Highway System Plan to analyze and address equity impacts from highway investments and identify strategies to “avoid, minimize, or mitigate disparities and improve equity for overburdened communities.”
- **Direct relationship between the Transportation Asset Management Plan (TAMP) and the WSDOT Project Delivery Plan.** WSDOT incorporates recommendations from the Life Cycle Planning, Revenue and Financials, and Performance Scenario Analysis in the TAMP as part of project prioritization in the WSDOT Project Delivery Plan, the 6-year project plan for WSDOT transportation projects.

About the Washington State DOT and its Partners

WSDOT serves a population of 7.74 million. Its service area spans 71,362 square miles and includes over 18,600 lane-miles of state highway and over 4,100 bridges.¹ The transportation system handles over 600 million tons of cargo annually, worth \$707 billion.² Washington State has 17 regional transportation planning organizations (RTPOs), which include 12 metropolitan planning organizations (MPOs), and 5 RTPOs covering rural areas. The State also has 32 local government transit agencies, which include county transit authorities, city transit departments, agencies serving public transportation benefit areas, and one regional transit authority (Sound Transit), and coordinates with

¹ Washington State DOT. 2021. State Asset Management Plan.

<https://wsdot.wa.gov/sites/default/files/2021-10/Washington-State-DOT-Transportation-Asset-Management-Plan.pdf>

² [Ibid.](#)

the State's Tribal transportation planning organization. There are 6,800 full-time employees at WSDOT.

Highway and Transit Assets and Partner Agencies

WSDOT maintains a Statewide Transportation Asset Management Program (STAMP), which is the overarching program managing all of WSDOT's asset management plans. WSDOT categorizes its assets into four primary categories:

- **Highways:** Pavement, bridge, geotechnical, major electrical, roadside land use, roadside safety hardware, roadway delineation, signs, and hydraulics
- **Ferries:** Ferry vessels, ferry terminals
- **Intra-agency:** Assets that provide support for WSDOT operations: buildings and sites, technology service infrastructure, real estate, work vehicle fleet
- **Multimodal:** Railroad freight cars, railroad track, airports, runways, buses, vanpools³

Asset management efforts are spread across several divisions within WSDOT, with different divisions focusing on specific assets or asset management functions, such as budgeting, target-setting, and reporting.

Governance

In 2017, the Secretary of Transportation's [Executive Order \(SEO\) 1098](#) established a leadership group focused on asset management. This SEO integrated the asset management approach established in Washington State statutes with Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) regulations. The SEO directed the leadership group to establish policy guidance and an organizational framework for asset management. It also directed WSDOT to form Executive Steering Committees for each major asset category.

WSDOT's long range transportation plan (LRTP) is based on goals and recommendations established by the Washington State Legislature. The LRTP development is led by the Washington State Department of Transportation and approved by the Secretary of Transportation, a cabinet position appointed by the Governor.⁴ The statewide transportation improvement program (STIP) is developed from local agency TIPs (MPOs, RTPOs, county TIPs), led by WSDOT Local Programs.

Asset Management Relationship to Long Range Planning

WSDOT issues the LRTP, most recently published under the title Washington Transportation Plan – Phase 2 Implementation 2017- 2040. This long range statewide plan addresses all modes of

³ Washington State DOT Asset Management website.

<https://wsdot.wa.gov/construction-planning/funding/statewide-transportation-asset-management>

⁴ Washington State DOT. 2018. Washington Transportation Plan Phase 2 - Implementation 2017-2040. <https://digitalarchives.wa.gov/do/E1AA74E578340D7C175FDAEE6F34C701.pdf>

transportation in the system, assumes a constrained level of investment, and is driven by community engagement. The LRTP serves as the umbrella for a family of plans, developed by WSDOT and partner agencies.

The latest LRTP was completed in 2018, before the creation of the State’s first TAMP and Transit Asset Management (TAM) Plan. As part of its long range planning process, WSDOT develops the LRTP as the implementation of policy direction, and also develops modal plans, including the **Highway System Plan** (updated in 2023 after 15 years) and **Public Transportation Plan**, and **State Ferry Long Range Plan** (updated every 10 years), each of which has strategies to address asset management.

The Highway System Plan is currently undergoing an update, to be completed in 2023. The previous plan was published in 2010. The updated Highway System Plan will include new State priorities, including the State’s Practical Solutions approach, which prioritizes overall system performance and maintenance over expansion. The plan will have a strong performance focus with performance analyses that will inform recommendations for program investment levels.⁵

The WSDOT Public Transportation Plan describes goals for public transportation in the State, along with supportive strategies and actions. While the majority of funding for public transit is local, WSDOT notes that it plays a role as a partner to assist with data aggregation, facilitation, policy development, and funding. At the time of the WSDOT’s Public Transportation plan’s publication (2016), transit asset management plans were not yet required.⁶

Washington State Ferries (WSF), part of WSDOT, serves as a transit agency operating the ferry system in the State. WSF develops both a Transit Asset Management Plan and its own Long Range Plan for the State Ferry System.

Scenario planning for equity impacts. WSDOT is using the update of the Highway System Plan to analyze and address equity impacts from highway investments and identify strategies to “avoid, minimize, or mitigate disparities and improve equity for overburdened communities.” The agency will use scenario planning to explore tradeoffs among investment strategies as they relate to system performance and specifically benefits to disadvantaged communities as compared to non-disadvantaged communities, including preservation and maintenance investments.⁷

Asset Management Guide for Transit Agencies. In 2018, WSDOT published [A Guide to Preparing Your Asset Management Plan](#). WSDOT created this guide to serve as a resource for transit agencies

⁵ Washington State DOT. 2022. Highway System Plan Update overview., <https://wsdot.wa.gov/sites/default/files/2023-01/HighwaySystemPlanFolio-2023.pdf>

⁶ Washington State DOT. 2017. Public Transportation Plan. <https://wsdot.wa.gov/sites/default/files/2021-10/PT-Report-WashingtonStatePublicTransportationPlan-2016.pdf>

⁷ Washington State DOT. 2021. Highway System Plan’s Approach to Equity. <https://wsdot.wa.gov/sites/default/files/2021-07/HSP-Equity-approach.pdf>

to develop their transit asset management plan (TAM plan). The guide helps ensure that WSDOT and transit agencies use an effective, aligned approach to asset management by outlining a common set of principles and resources. For example, the State of Good Repair (SGR) policy includes three principles to ensure that transit agencies commit to high quality asset maintenance. These principles are as follows:

Principle 1: Capital assets must operate at complete performance level.

Principle 2: Regardless of the SGR status of other assets, each asset is independent and may operate at a compete level of performance.

Principle 3: A public transportation agency’s safety and TAM plan approvals must be balanced with daily operations and expansion needs.

The guidebook also includes a resource section for Tier I agencies and a full resource section chapter in the guide that includes resources for:

- Transit Asset Management Plan Development
- Transit Asset Management Plan Template for Small Agencies
- Transit Asset Management Plan Reporting
- Peer Resources
- FTA and WSDOT Transit Asset Management Websites

The guidebook provides an overview of Federal and State laws related to transit asset management, TAM Plan required elements, plan reporting, and recordkeeping, and plan implementation. It focuses on Subpart C of 49 CFR 625: Transit Asset Management Plans. WSDOT created a transit asset inventory reporting template that meets both FTA and Washington State requirements. Overall, the guide helps ensure that transit agencies are aware of the requirements and resources available.

The Public Transportation Division provides oversight for the rural transit agencies’ TAM plans to ensure that their plans meet FTA and State Requirements. Urban and Small urban transit agencies report directly to FTA. WSDOT PTD staff also conducts capital projects compliance oversight to review the asset maintenance records for the transit agencies to ensure that they are maintaining their assets in accordance with their TAM plan.

Support for transit asset condition reporting among transit agencies in the Puget Sound region.

WSDOT works with the Puget Sound Regional Council (PSRC), the MPO for the greater Seattle area. PSRC plays a significant role in coordinating with the region’s public transportation agencies to integrate transit asset management planning into the transportation planning process. To assist in the implementation of the TAM Plan rule in this region, PSRC convened a group of stakeholders that included all public transit agencies, including ferry operators, WSDOT Public Transportation Division, and the FTA. This group, known as the Transit Asset Management Advisory Committee, held meetings to develop uniform policies, procedures, and practices for implementing the FTA asset

management plan rule throughout the region.⁸ PSRC developed regional State of Good Repair performance targets as a weighted average of all transit agency-specific TAM targets, and coordinates with transit providers to assess progress toward achieving attainment of the regional targets.

Resiliency analysis for highway and transit assets. WSDOT uses a lifecycle planning approach for pavement and bridge assets and has begun to consider extreme weather and resilience in this analysis. Using analysis tools such as the Washington State Pavement Management System (WSPMS) and the Bridge Engineering Information System (BEIS), WSDOT considers information such as asset condition, treatment costs, expected changes in system demand, risks associated with current or future conditions, service life estimates, and system hierarchies. When constructing pavement structures, WSDOT conducts a lifecycle cost analysis to pick the pavement type. For bridges, WSDOT is currently in the process of implementing the American Association of State Highway and Transportation Officials' (AASHTO)'s BrM software and developing methods for projecting lifecycle costs. Risk analysis is currently primarily based on spreadsheet tools and ArcGIS. WSDOT has a GIS web application and has been working on extending the use of this tool to asset management. It has layers such as pavement preservation needs from the WSPMS and bridge preservation needs from the Bridge Management Office.

One of the cornerstone themes of the Ferries Long Range Plan is “sustainability and resilience.” Strategies under this theme include prioritizing maintenance at terminals with the most seismic risk or vulnerability to sea level rise, as well as terminals at “lifeline routes” that provide access to major population centers or critical facilities.

Decisionmaking for the State Transportation Improvement Program (STIP)

WSDOT's TAMP feeds directly into the STIP. Within the Capital Program Development and Management (CPDM) Division, which is where STAMP sits, there is also a Priority Programming Group, which helps with the implementation side of asset management work, such as distributing the funds and managing the budget.

WSDOT communicates its investment strategy through the Project Delivery Plan, a six-year list of prioritized and programmed projects, which also meets the requirements for the STIP.

Direct relationship between the TAMP and the WSDOT Project Delivery Plan. The TAMP provides critical information for WSDOT to set the direction of its investment strategies. WSDOT uses the results from Life Cycle Planning, Revenue and Financials, and Performance Scenario Analysis as the foundation for setting the direction of its investment strategies. For State-maintained pavements and bridges, WSDOT incorporates recommendations from the Life Cycle Planning, Revenue and

⁸ Central Puget Sound Regional Transit Asset Management Target Setting presentation. 2017. <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/asset-management/64661/tamregionaltargets2017pugetsound.pdf>

Financials, and Performance Scenario Analysis in the TAMP as part of project prioritization in the WSDOT Project Delivery Plan, the 6-year project plan for WSDOT transportation projects.⁹

Challenges and Opportunities

Process to prioritize preservation versus improvement projects. WSDOT is working on building staff capacity for its project delivery process and developing a decisionmaking product for prioritizing projects for implementation. This process is challenging as staff need to determine how to prioritize both preservation projects and capital improvement projects (both which address asset condition), as opposed to a single category of projects,

Limited resources for partner coordination and integration activities. Integrating the programming of projects requires that the various partners have the resources at the right time to contribute to the integration effort. The partners may be state agencies (e.g., WSDOT), regional organizations (e.g., Sound Transit), county organizations (e.g., King County METRO), and small cities (e.g., Community Transit). There are wide disparities in the resources available to these organizations. As such, integration may be hindered because a critical partner lacks the resources to contribute.

Insufficient funding to meet transportation needs. Recent analyses show that transportation needs require over twice as much funding as is currently invested. WSDOT will face continued challenges meeting asset performance without additional funds.

⁹ Washington State DOT. 2021. State Asset Management Plan.

<https://wsdot.wa.gov/sites/default/files/2021-10/Washington-State-DOT-Transportation-Asset-Management-Plan.pdf>