

The geography of Washington State provides unique challenges for transportation planning. Washington's roadway system is made up of over 73,000 centerline miles of state and local roads, which include over 3,000 bridges and numerous tunnels, all linked to an extensive freight and passenger rail system, the largest ferry system in the nation and numerous marine ports and airports.



The Deception Pass Bridges connect Fidalgo and Whidbey Islands.

The condition of the state's highway system is critical to the movement of people and freight. Many roads and bridges, and their electrical systems, catch basins, and culverts have reached or are approaching the end of their life span. All of these highway system elements require continual maintenance to preserve and protect our transportation investments. Furthermore, some of these elements are no longer functionally adequate to provide the level of service required to maintain an efficient network.



Changing signal lights is just one part of Maintenance's program.

WSDOT manages this complex system through four major programs: maintenance, operations, preservation and improvements. Some of these programs are divided into subprograms focusing on specific needs. The programs and subprograms are:

Maintenance (Program M)

The maintenance program protects highway infrastructure and functional operation of the highway system. Maintenance includes patching potholes and sealing roadway cracks; painting stripes and stop bars on the roadway; fixing damage to guardrails or fences; cleaning ditches and culverts;



WSDOT maintenance crews perform avalanche control and snow removal on 10 mountain passes.

controlling the spread of noxious weeds; and performing bridge and tunnel maintenance. Services include plowing, sanding or anti-icing roads during winter; cleaning rest areas; servicing lights and signals; and patrolling for roadway debris. WSDOT maintenance crews are also the first line of defense for the roadways when natural disasters such as mud slides or floods occur. This program is publicly accountable through the Maintenance Accountability Process (MAPS) (see [Appendix H](#)) or visit their web site at www.wsdot.wa.gov/fossc/maint/ then click "Maintenance Accountability Process."



A Maintenance crew paints the fog line striping on U.S. 97 near the Columbia River.

Operations (Program Q)

The operations program is responsible for working towards squeezing the most capacity out of the existing highway transportation system. This work involves timing traffic signals, operating ramp meters, monitoring freeways, responding and clearing incidents, and providing traveler information.

Traffic operations also works to operate the highway system as safe as possible for the traveling public. This work involves investigating the public concerns about highway safety and using regulatory measures and traffic control devices as primary tools for improving safety. The demands on this program have grown quickly with the increased need to maximize efficiency and safety on the highway transportation system as construction investment declines and the traffic continues to grow.

Preservation (Program P)

The preservation program addresses the long-term preservation of the existing highway infrastructure. This program is made up of three subprograms for specific elements of the highway system:

Pavements (Subprogram P1)

Roadways require periodic resurfacing to keep the driving surface smooth and safe and to prevent failure of the underlying sub-structure. WSDOT's policy is to resurface specific highway segments when it is most economical to do so. If resurfacing is done too early, pavement life is wasted. Resurfacing that is done too late requires additional costly repair work and increases the risk of failure of the underlying surface structure.

There is currently a backlog of pavement preservation needs that have gone beyond the point of economical resurfacing (lowest lifecycle cost). This backlog will result in a higher cost of rehabilitation. The HSP outlines the level of funding that will achieve lowest lifecycle cost paving while eliminating the backlog of needs. Doing so will result in lower preservation and maintenance costs in the later years of the plan.



The most economical timing of paving saves the most money, as seen on this Eastern Washington highway.

Structures (Subprogram P2)

This subprogram includes replacement of old bridges, seismic retrofit of bridges, bridge painting, bridge deck overlay, tunnel repair, and bridge inspection.

The investment made in recent years for seismic retrofit to bridges appears to have paid off, as many structures survived the February 28, 2001, 6.8 magnitude Nisqually Earthquake with little or no damage. However, some structures were heavily damaged and require considerable repair or replacement.



The Hood Canal Bridge on State Route 104 links the Kitsap and Olympic Peninsulas.

There are currently over 3,000 bridges on our state highway system. Nearly one-third were constructed over 40 years ago and will require major rehabilitation or replacement in the near future. Approximately 700 of WSDOT's bridges have been rated "functionally obsolete" and do not comply with today's standards for roadway width or load carrying capacity.

Replacing these functionally obsolete bridges over the next 20 years is critical to preserving many of the connections made within the state's highway system. The replacement of these outdated structures will ensure the efficiency, capacity, and safety of our highway system.

Other Facilities (Subprogram P3)

This subprogram provides for rehabilitation or replacement of unstable slopes, failing drainage systems, and failing or outdated electrical (lighting), electronic (information systems), and mechanical systems. This subprogram also supports the refurbishment of safety rest areas. Keeping these facilities in good condition is an important element of highway safety and efficiency. Slopes or drainage systems are also attended to, since failures can result in major road closures causing motorist delays, detours and high costs associated with replacing entire roadway sections. Also included in this subprogram is the construction of weighing facilities, which help to prevent damage caused by overweight trucks.



A large mud slide near Hood Canal destroyed this section of U.S. 101 near Eldon. This caused traffic to be detoured for several months while the hillside was stabilized and a new roadway built.