REGIONAL TRANSPORTATION PLAN

2026–2050

DRAFT

WATER QUALITY

Final Draft – April 2026

Puget Sound Regional Council

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Introduction

Puget Sound is beautiful from a distance but struggling Orca and salmon populations reveal the sound's declining health. Human actions over the past century have damaged Puget Sound by degrading the water quality, water quantity, and habitats of the region.

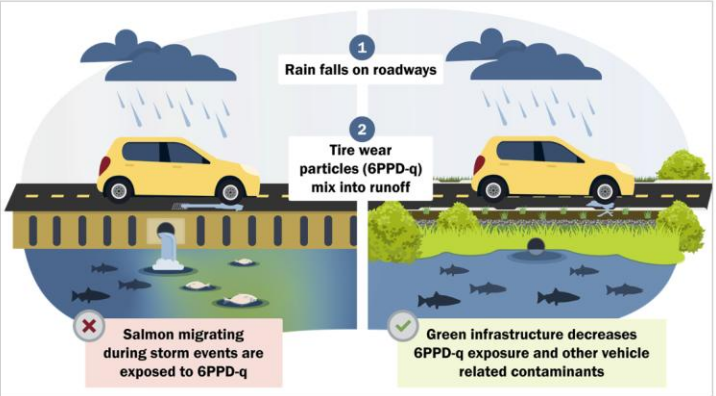
Transportation System Impacts on Water Quality

The transportation system impacts water and habitat by blocking fish passage and polluting and diverting water. Sources of water pollution from the transportation system include land-based vehicles, airplanes, and recreational and commercial ships. Vehicles and trains contribute pollutants from tire and brake pad wear, washing detergents, and oil leaks. Airplanes contribute de-icing compounds and oil and fuel leaks. Ships contribute anti-fouling compounds, oil and fuel leaks, sewage, and ballast water.

Impervious surfaces from the transportation system, such as parking lots, maintenance yards, and roads, collect these pollutants and often deliver them directly to streams, lakes, and other water bodies. They also divert and concentrate flows by blocking the infiltration of rainwater. This in turn degrades water quality and habitat by increasing erosion, particularly during heavy rains. In addition, vehicles and vessels are sources of air pollutants such as particulate matter. Although these pollutants initially enter the air, they can also contaminate surface waters.

When it rains, stormwater flushes many pollutants on roads, including bits of aging vehicle tires, into neighboring streams. Researchers have found that 6PPD-quinone, related to a tire chemical that keeps them from breaking down too quickly, is lethal to coho and other

species. In some Puget Sound streams, ~~all the~~ coho and other salmon species die before they can spawn.

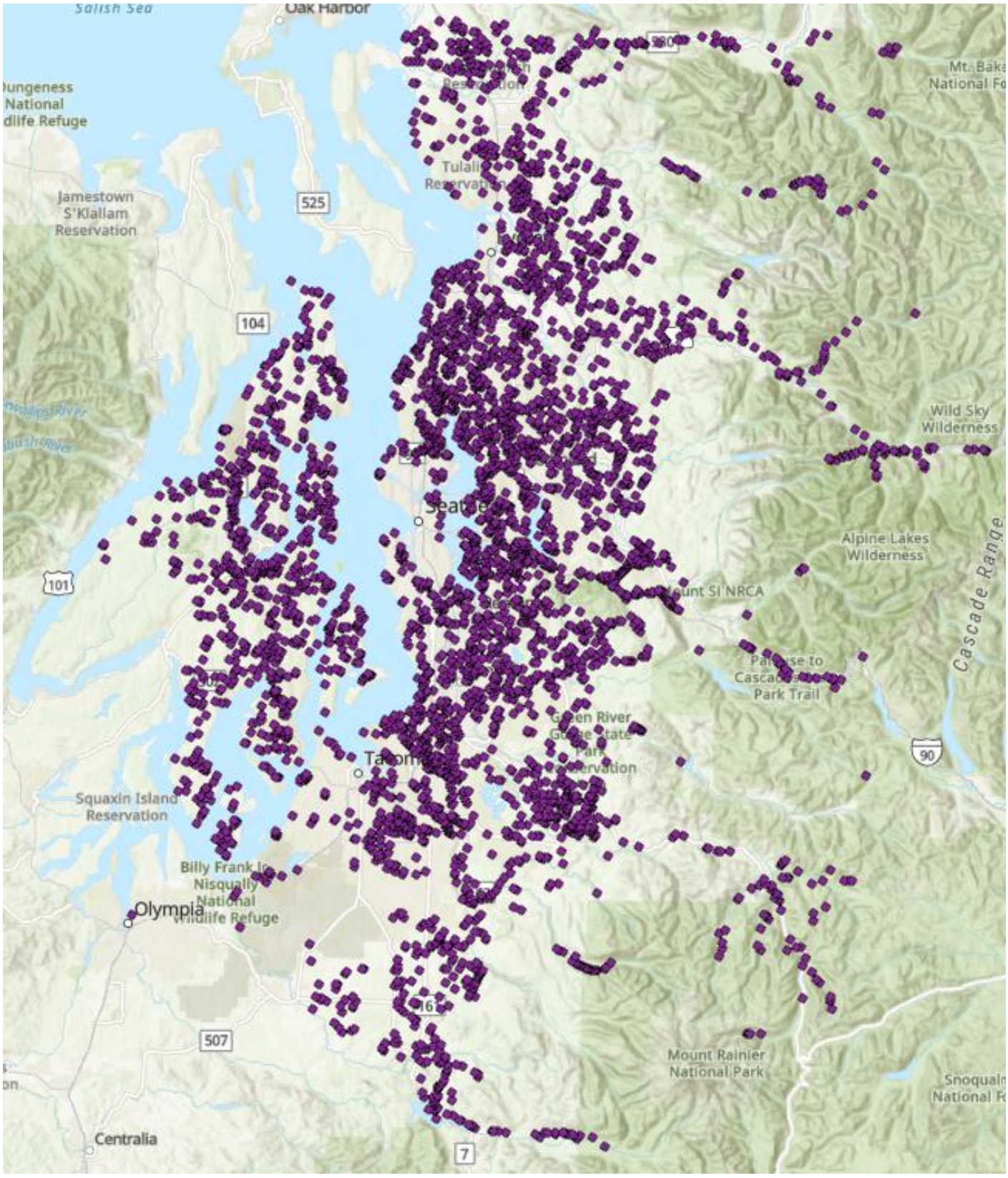


Source: Department of Ecology 6PPD-Quinone

Transportation infrastructure such as roads and bridges can impact wildlife habitat by creating fish passage barriers. These barriers, typically road culverts and dikes, are found throughout the region. The Washington State Department of Fish and Wildlife (WDFW) has an inventory of known fish passage barriers. Exhibit 1 shows partial and full fish passage barriers on federal, state, county, city and other public facilities. Many additional barriers are present on private land.

Roads can also affect other types of wildlife habitat. They can be a barrier to wildlife movement, cause mortality to wildlife, and function as a corridor when wildlife move parallel along roads.

Exhibit 1: Fish Passage Barriers on Public Facilities



Source: WDFW

Improving Water Quality and Habitat

While the transportation system has many challenges related to water quality, many partners around the region are working to address these issues under the umbrella of the Puget Sound Partnership, the state agency leading the collective effort to restore and protect Puget Sound.

A recent study by King County provides some evidence that these efforts are making a difference. The study's researchers saw overall improvement in the biological condition of streams across the county. They saw this improvement in 16 of 38 watersheds, while only one watershed declined. The study concludes that protective regulations and practices that have been in place over the last 20 years are making a difference and that they need to be continued.

The region's transportation and growth plans support Puget Sound recovery by addressing these issues through policies, actions, funding priorities and VISION 2050's Regional Growth Strategy. The growth strategy focuses development in urban centers and transit station areas, encouraging efficient use of land and active transportation which leads to lower vehicle miles traveled and emissions, less impervious surface, and other environmental benefits. VISION 2050 calls for reducing stormwater pollution from transportation facilities and improving fish passage through retrofits and updated design standards and, where feasible, integrating with other improvements to achieve multiple benefits and cost efficiencies (MPP-T-32). Recently updated local comprehensive plans have added goals, policies and projects to improve water quality and habitat and support Puget Sound recovery.

Tribal Treaty Rights

Under treaties signed with the United States in the 1850s, many Tribes in the region ceded most of the state of Washington, but in exchange reserved fishing and hunting rights, including off reservation rights, to fish in all usual and accustomed fishing grounds and the right to hunt and gather on open and unclaimed lands. Federal courts have interpreted the nature and extent of those retained rights and have ruled that sovereign Tribes, along with the state of Washington, have co-management responsibility and authority over fish and wildlife resources. Tribes are important partners in Puget Sound recovery and often take an active role in planning and projects that improve water quality and habitat.

Implementing the Regional Transportation Plan provides (RTP) the opportunity to improve water quality when strategies and best practices such as those listed below are used.

- Correcting fish passage barriers.
- Reducing vehicle miles traveled to decrease amounts of pollutants generated.
- Replacing toxic products such as copper brake pads with safer alternatives.

- Using and promoting cleaner fuels and vehicles.
- Minimizing impervious surfaces, enhancing tree canopy, and using low impact techniques and materials to manage runoff volumes and treat and infiltrate runoff.
- Adding stormwater retrofits to roads and facilities that lack up-to-date stormwater infrastructure, including regional stormwater treatment facilities and stormwater parks that treat runoff from large areas of roadways and parking surfaces.
- Incentivizing developers to manage more stormwater than is required by code.
- Increasing street sweeping and cleaning of stormwater pipes and catch basins.
- Avoiding and minimizing new impacts to wetlands, floodplains, shorelines and other habitat.
- Restoring streams, wetlands, buffers, and floodplains alongside transportation facilities.
- Improving spill response and cleanup coordination for transportation infrastructure and implementing pollution prevention techniques.
- Educating drivers and operators about reducing pollution from oil leaks, emissions, and other pollution sources.
- Reducing noise pollution and other impacts on Orcas as outlined in the Southern Resident Orca Task Force Recommendations.

These actions, and many others, are included in the Action Agenda for Puget Sound, the Puget Sound Partnership's roadmap for Puget Sound recovery. Some of the strategies in the Action Agenda that relate closely to transportation planning include ~~Strategy 1 –~~ Smart Growth, ~~Strategy 6 –~~ Fish Passage Barriers, and ~~Strategy 10 –~~ Stormwater Runoff ~~and Legacy Contamination~~. Many of the solutions that improve water quality provide multiple benefits. For example, reducing vehicle miles traveled also reduces emissions, and managing runoff through green stormwater infrastructure helps to reduce urban heat island effects.

The Washington Stormwater Center is another key agency in improving water quality. The center provides stormwater management solutions through research, training, and education. The center's stormwater permit assistance program provides stormwater management, education, outreach, and compliance assistance to local jurisdictions through a variety of services and activities.

Best Practices and Resources

Jurisdictions, agencies and other organizations across the region are providing many examples of best practices for improving water quality and habitat. Many resources to help plan and implement these types of projects and programs exist.

Green stormwater infrastructure, such as bioswales and trees, can improve water quality and promote salmon survival, addressing the effects of 6PPD-quinone and thousands of other pollutants found in stormwater. The City of Marysville has added green stormwater infrastructure to First and Third Streets to treat polluted stormwater runoff before it flows into Ebey Slough, improve transportation safety, and provide other benefits. The National Association of Transportation Officials has developed the Urban Street Stormwater Guide for integrating green stormwater infrastructure into many types of urban streets. The Washington State Department of Ecology, Washington Stormwater Center, Washington State Department of Transportation (WSDOT), and other partners are working together to better understand the effects of 6PPD-quinone and how to mitigate them.

Stormwater management for elevated roadways without up-to-date stormwater facilities can be improved by installing aboveground stormwater biofiltration planter boxes at the bottom of downspouts. Stewardship Partners and WSDOT are partnering to place these boxes on some WSDOT facilities, such as the I-5 Ship Canal Bridge. The technology targets 6PPD-quinone, with an average removal rate of 92%. Stewardship Partners is looking for other jurisdictions to partner with on their Adopt-a-Downspout program and have published design, installation, and operations and maintenance guides.

Northwest Fly Anglers, adoptees of an I-5 Ship Canal site

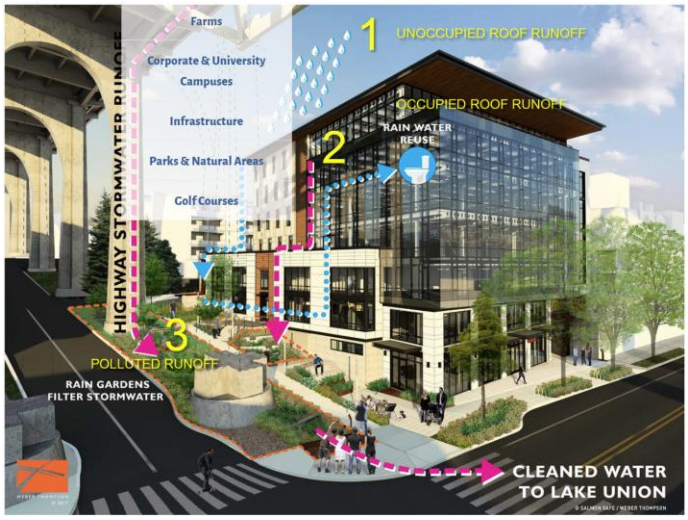
Source: Stewardship Partners

Regional facilities and stormwater parks are an efficient solution for managing stormwater for a larger area. A King County study found that stormwater parks and regional facilities are the most cost-effective action for reducing stormwater pollutants across watersheds. The region has many examples of stormwater parks. Manchester Stormwater Park provides treatment and flood control for 100 acres of roads, parking lots, and residential and

commercial properties in the small Kitsap County community of Manchester. Arlington Stormwater Wetland Park treats stormwater from 280 acres of Old Town Arlington. PSRC has guidance on planning stormwater parks.

Manchester Stormwater Park, Kitsap County

In partnership with Salmon Safe, The Nature Conservancy, and others, a developer integrated green stormwater infrastructure into a development project's landscaping to treat runoff from the Aurora Bridge, going above and beyond requirements. The nearby Northlake Commons project goes "beyond code" by treating stormwater from the lower Wallingford neighborhood, including roads, onsite. Seattle Public Utilities worked with the project's developers and provided incentives for the stormwater treatment that goes beyond code requirements. The Building Green Cities guidebook provides information for jurisdictions on creating low impact development incentive programs to encourage these development practices. Salmon Safe offers standards and certification for transportation, ~~and~~ ~~development projects~~development and other projects that exceed regulatory mandates for the protection of water quality and habitat, providing an incentive for environmentally innovative infrastructure and development.



Aurora Bridge Project

Source: Salmon Safe

Many stormwater issues involve multiple jurisdictions. The I-5/Ship Canal Bridge Stormwater Treatment Facility is bringing together many partners to build a stormwater treatment facility beneath the north end of the I-5 Ship Canal Bridge. This facility will capture, carry, and clean stormwater runoff from I-5 by removing harmful pollutants before the water flows into the ship canal.

WSDOT developed a GIS-based stormwater retrofit prioritization web map to address priority focus areas identified by the Washington State Legislature for funding WSDOT stormwater retrofits. The prioritization incorporates input from Tribes, scientists, federal and state agencies, local governments, and others and includes consideration of Tribal treaty rights and environmental justice. The web map is shared publicly for transparency, collaboration, feedback, and partnership, and will help~~ultimately to~~ create a planning tool to~~that will help~~ improve water quality.

Community-Based Public-Private Partnerships (CBP3) are partnerships between a local government and a private entity to collaboratively plan, deliver, or maintain public stormwater projects. These partnerships are intended to achieve community benefits beyond stormwater improvements and permit compliance through performance-based contracts and alternative procurement. They have the potential to deliver projects more quickly and efficiently than traditional processes. Seattle's Rain City Partnership program is piloting a project with targets to manage 25 acres of impervious surface, restore one acre of riparian area, and provide additional benefits to the community.

The City of Tacoma expanded efforts to reduce pollution and improve water quality by cleaning stormwater pipes and increasing street sweeping. The Washington Stormwater Center's Street Sweeping Manual provides information and tools to assist cities and counties with developing or improving their street sweeping program.

The Environmental Coalition of South Seattle and WSDOT are working together to add stormwater treatment under an on-ramp to I-5 in the Georgetown neighborhood of Seattle while opening the space to community co-benefits such as park-like features, educational signage, and community art. WSDOT has enabled other communities to do similar projects by amending their roadside vegetation permit to allow these types of multi-benefit projects.

WSDOT, cities, counties, Tribes and other partners are working to remove, replace, and restore culverts to recover salmon passage. For example, Pierce County completed the Horsehaven Creek Culvert Retrofit project at 150th Avenue East near Orting. The project was also designed to reduce flood risk. The counties and many of the cities in the region have prioritized lists of fish passage barriers to correct. WDFW provides information and guidance for prioritizing removal of fish passage barriers.

Snohomish County's Little Bear Creek Advance Mitigation project restored wetlands and stream habitat on the site and enhanced some areas to compensate for impacts associated with future roadway projects. The project is expected to save the county more than $450,000 in mitigation costs for the first two projects that will use the site.

Little Bear Creek Advance Mitigation project

Source: Snohomish County

Several programs help jurisdictions educate vehicle owners on how to prevent water pollution. The Don't Drip and Drive Program was created in partnership with state, non-profit organizations, and a coalition of 81 Western Washington jurisdictions called Stormwater Outreach for Regional Municipalities (STORM) to increase vehicle owners' awareness of leaks and motivate them to get them repaired. Another program of STORM is Puget Sound Starts Here, a Puget Sound-wide stormwater pollution prevention awareness campaign.

The Department of Ecology works with agencies, local governments, and other organizations to improve spill response and cleanup coordination. They work together to prevent oil spills through educational outreach, prepare for oil spills by participating in spill drills, and respond to spills in a rapid and well-coordinated manner.

Switching to cleaner fuels and vehicles can help improve air quality, water quality and people's health. More details on the state and regional transition to a zero emission transportation system can be found in the Climate and Environment report of the draft RTP, but a few examples are provided here. Bellevue's Electric Vehicle Roadmap is the city's plan to guide the transition to electric vehicles. The Puget Sound Regional Electric Vehicle Collaborative provides resources for transportation electrification. The Department of Ecology's clean transportation grants program supports projects that reduce pollution from diesel vehicles by replacing them with zero-emission vehicles. Because electric vehicles can wear tires out faster than non-electric vehicles, addressing pollutants in tires, such as 6PPD-quinone, is increasingly important.

Quiet Sound implements voluntary programs in Washington waters to reduce the acoustic and physical impact of commercial vessels on Orcas, a critically endangered species. This work is done in coordination with United States and Canadian authorities, Tribes, ports, the maritime industry, and conservation nonprofits.

Watershed Scale and Interdepartmental Coordination

As transportation projects are planned and developed, project implementers can consider how to minimize impacts and support additional water quality improvements. Watershed-scale planning for water quality improvements can further help accelerate Puget Sound recovery. Our Green Duwamish is a collaborative to improve and accelerate watershed-scale stormwater runoff management actions in the Green/Duwamish watershed. The collaborative is developing a watershed-wide stormwater retrofit project list and exploring financing opportunities to support retrofit construction. This type of collaboration could also help to accelerate water quality solutions in other watersheds.

In addition to collaborating across watersheds, coordinating with departments across the jurisdiction, such as public works, planning, parks and natural resources, can help to identify

priorities and opportunities to improve water quality. Understanding projects in salmon recovery plans at the Watershed Resource Inventory Area (WRIA) level is one example of considering priorities that could be incorporated into transportation projects. Another is looking at future park renovations or park gap areas for stormwater park opportunities.

Transportation Funding for Environmental Improvements

Many programs fund water quality, fish passage, and habitat projects. Puget Sound Partnership's Recovery Acceleration Funding Tool lists funding opportunities for Puget Sound ecosystem and salmon recovery. In addition to these grant programs, jurisdictions often pay for environmental projects through their stormwater utilities, general funds or other local funding sources. Transportation funding can also be used to correct fish passage barriers, improve stormwater systems, and address other environmental issues caused by transportation facilities. In some cases, a transportation project triggers requirements to address environmental issues.

Since 2020, 94 projects have programmed state or federal funds in PSRC's Regional Transportation Improvement Program (TIP) to correct fish passage barriers. For example, the Port of Tacoma and Puyallup Tribe of Indians' Lower Wapato Creek Habitat Project replaced two fish-barrier culverts with a fish-passable full-span bridge and relocated Wapato Creek from a ditched system to a longer, meandering stream channel and associated wetlands. This project provides advance mitigation for future transportation projects. Overall, eighteen projects focus on environmental improvements such as stormwater management to improve water quality. Another 39 projects provide stormwater or other environmental improvements to meet permit requirements for new roadways or other requirements. These projects have been planned but some may not have been constructed yet.

PSRC's federal funding programs invest in a variety of project investments including environmental mitigation projects as well as other improvements such as bicycle and pedestrian facilities. For example, Sound Transit's Lynnwood Link Scriber Creek Daylighting project is~~will~~ daylighting and restoring~~e~~ a piped stream that passes through the Lynnwood City Center Station and is a good example of an environmental project in a compact urban area. The SR 167 Completion Project has been designed to restore wildlife and aquatic habitat, reduce flooding and improve water quality, in addition to constructing sidewalks, shared-use paths and six new miles of highway to improve freight movement, safety and congestion.

Wapato Creek Habitat Project

Source: Port of Tacoma

The Role of the RTP in Puget Sound Recovery

This RTP describes the investments and policies needed to create a safe, clean and efficient transportation system essential to the region's quality of life, health and economy. Puget Sound and water quality are important elements of these regional goals. The RTP supports water quality and Puget Sound recovery by highlighting and encouraging incorporation of best practices into planning, design, construction, and operation of transportation systems. In addition, the framework by which major projects enter the RTP includes an assessment of each project towards supporting critical areas, resource lands and water quality.

Federal and state regulations require new transportation projects to mitigate their environmental impacts. Increasingly, new projects and standalone restoration projects are correcting for impacts from transportation projects constructed before these regulations were in place. More and more, jurisdictions are working across watersheds and departments to develop cost-effective, multi-benefit projects. While progress is being made, there is much left to do.

Puget Sound recovery is a priority for the region. Through the RTP and other VISION 2050 implementation efforts, PSRC will continue to coordinate with the Puget Sound Partnership, Tribes, the state, cities, counties and other partners on improving water quality and habitat.