

Engineering at Ecology



Common types of engineers

- Environmental
- Civil
- Chemical
- Industrial



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Experience level

Entry level: Engineer-In-Training Certificate or bachelor's degree in an engineering field.

Senior level: More than 5 years of experience, often in consulting, industry, or technical positions. Requires a Professional Engineering license.

Ecology engineers do the work

We perform an incredible range of work within the agency, such as:

Environmental modeling of [total maximum daily load \(TMDL\)](#)³ data to determine pollution loads to waterbodies.

- Providing review for design reports, plans, and specifications for projects receiving [Ecology grants and loans](#).⁴
- Providing compliance and non-enforcement technical assistance, including [toxic reduction assistance](#).⁵
- Writing, reviewing, and approving permits for businesses and other organizations, including [water quality permits](#),⁶ [industrial emissions permits](#),⁷ and [Hanford nuclear cleanup permits](#).⁸
- Ensuring [dam safety](#)⁹ through design review and construction inspections.
- Providing review for remedial investigations, feasibility studies, and cleanup action plans that include engineering specifications, design, and technical documents provided by private consultants and other entities following the [Model Toxics Control Act \(MTCA\) cleanup process](#).¹⁰

We're often the last stop regarding technical and complex solutions that protect and restore Washington state's environments. Our engineers manage complex environmental and regulatory issues and are trusted to get the job done.

Which programs use engineers, and where are they based?

We are spread throughout all [Ecology office locations](#).¹ We work in and across every region and almost every [agency program](#)² on many types of large and complex projects.



¹ <https://ecology.wa.gov/About-us/Contact-Us/Find-a-location>

² <https://ecology.wa.gov/About-us/Who-we-are/Our-Programs>

³ <https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Total-Maximum-Daily-Load-process>

⁴ <https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan>

⁵ <https://ecology.wa.gov/programs/hwtr/lean>

⁶ <https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits>

⁷ <https://ecology.wa.gov/Air-Climate/Air-quality/Business-industry-requirements>

⁸ <https://ecology.wa.gov/Waste-Toxics/Nuclear-waste/permits-that-direct-our-nuclear-waste-program>

⁹ <https://ecology.wa.gov/Water-Shorelines/Water-supply/Dams>

¹⁰ <https://ecology.wa.gov/Water-Shorelines/Water-supply/Dams>

Ecology engineers are mission driven

We're dedicated to protecting human health and the environment of our state. We work hard to:

- Manage and reduce the use of solid and hazardous waste.
- Prepare for, prevent, and respond to oil and hazardous materials spills.
- Protect and restore Washington's waters.
- Measure, assess, model, and communicate environmental conditions.
- Clean up soil, sediment, and mixed radioactive waste contamination.
- Protect and improve air quality.
- Ensure dam safety.

What kind of projects do Ecology engineers work on?

Industrial process technical assistance

Founder's Choice Cabinets, a family-owned custom cabinet manufacturer in Tacoma, wanted to help the environment and improve their business practices. We helped them [improve operational performance and reduce costs](#).¹¹

Contaminated site cleanup and brownfield redevelopment

The [Kendall Yards](#)¹² site in Spokane, a contaminated former rail yard, was cleaned up through a partnership between Ecology, the Department of Commerce, and the City of Spokane. The formerly unused site is now off the state's Hazardous Sites List and is a walkable

community that hosts shops, restaurants, public art, and housing.

Salish Sea modeling

The [Salish Sea Model](#)¹³ (SSM) is a powerful computerized tool that can simulate hydrodynamic and water quality processes. It allows us to run virtual experiments and assess the impacts certain actions have on Puget Sound. We use the SSM to help guide local nutrient management strategies for the [Puget Sound Nutrient Reduction Project](#).¹⁴ It's one of many [models and tools](#)¹⁵ that we use to evaluate how a water body will respond to changes in pollutant loading, and determine what kinds of actions need to be implemented to improve water quality and watershed health.



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To request an ADA accommodation, contact Ecology by phone at 360-407-6831 or email at ecyadacoordinator@ecy.wa.gov, or visit <https://ecology.wa.gov>. For Relay Service or TTY Call For Relay Service or TTY call 711 or 877-833-6341.

¹¹ <https://ecology.wa.gov/Blog/Posts/March-2021/Tackling-Toxics-How-partnerships-produced-success>

¹² <https://ecology.wa.gov/Blog/Posts/December-2020/Cleaning-Kendall-Yards>

¹³ <https://ecology.wa.gov/Research-Data/Data-resources/Models-spreadsheets/Modeling-the-environment/Salish-Sea-modeling>

¹⁴ <https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Helping-Puget-Sound/Reducing-Puget-Sound-nutrients/Puget-Sound-Nutrient-Reduction-Project>

¹⁵ <https://ecology.wa.gov/Research-Data/Data-resources/Models-spreadsheets/Modeling-the-environment/Models-tools-for-TMDLs>