Chapter 447  Hazardous Materials (HazMat) and Solid Waste

447.01  Considering HazMat During the Project Lifecycle

Hazardous materials (HazMat) will impact a Washington State Department of Transportation (WSDOT) project when encountered. WSDOT has a responsibility to consider HazMat issues early on and throughout the lifecycle of a project in order to:

- Protect public health and safety by ensuring that construction does not spread or contribute to existing contamination.
- Manage HazMat issues in a cost-effective manner to avoid or minimize construction impacts.
- Avoid or manage agency cleanup liability.

WSDOT must abide by numerous federal, state, and local regulations that govern HazMat. These regulations are stringent and take different time frames to comply with. These regulations are found at the end of this chapter. WSDOT projects may also encounter or generate solid waste, which is not hazardous or dangerous. Laws and regulations also govern the handling and disposal of solid waste.

The rest of this chapter describes HazMat specific topics that WSDOT region staff considers for projects. Construction related topics such as identifying, managing, and disposing of HazMat are included in this chapter. Please visit the WSDOT HazMat web page for additional information and procedural guidance on addressing HazMat issues.

447.02  Determining Suitable HazMat Documentation from the ERS

Region staff often determines how to proceed with hazardous materials documentation based on the likelihood that a project will encounter contamination. This is a professional judgment made during project scoping when staff completes the Environmental Review Summary (ERS) in the Project Summary Database (Section 300.02). The ERS asks the following:

1. Discuss any known or potentially contaminated sites within or near the project area.
2. Describe any contamination the project is likely to encounter. If known, how will the project specifically impact these sites?
3. Identify any additional investigations or documentation that would be needed.
Region staff uses the answers to these questions to determine if further investigations will help identify potential HazMat issues at a site or within a corridor. They also use the information to assess potential project impacts (including to the project budget and schedule), mitigations, and required permits or approvals. Types of further investigations will be discussed later in this chapter and include Hazardous Materials Analysis and Phase I and II Environmental Site Assessments.

If during the NEPA/SEPA process a region classifies a project as a Documented Categorical Exclusion, then the ERS is exported into the Environmental Classification Summary/SEPA Checklist database (ECS) and becomes the hazardous materials documentation for the project (Section 300.04). The ECS is signed by the WSDOT Region Environmental Manager and sent with the federal permits and/or documentation to the Federal Highway Administration for approval. Although both forms ask the same questions, the information and level of detail required in an ECS is greater because the ECS is a final decision document for Federal Highway Administration signature. If staff determines that no documentation is required based on project specifics, they justify the decision on the ERS or ECS. Additional information regarding the ERS/ECS documentation is located at the WSDOT HazMat Investigations and Documentation web page.

447.03 Writing and Right-Sizing HazMat Analysis

A Hazardous Materials Analysis is prepared to satisfy project NEPA/SEPA requirements for environmental documentation. Region staff determines the appropriate level of analysis required when they complete the ERS. The purpose of the analysis is to identify potentially contaminated sites along a project corridor that may:

- Affect the environment during construction.
- Create significant construction impacts.
- Incur cleanup liability for WSDOT.

The HazMat Analysis must document significant unavoidable adverse impacts that WSDOT cannot reasonably mitigate. Whenever possible, include the Analysis directly in the NEPA document. In unusual cases, when warranted by the nature of the project, the Analysis can be documented in a separate discipline report which supplements the environmental document. Factors such as project size and type of construction activities, past and current land use in an area, and acquisition plans help WSDOT staff determine the best approach. WSDOT provides Right Size guidance that describes three levels of reports as well as situations where no documentation may be required. Right-size is a common term used to describe the level of detail necessary to analyze a specific project given the setting and anticipated impacts. The level of detail must be sufficient to allow region staff to make informed decisions regarding the selection of alternatives and mitigation measures. Region staff should be able to use the Analysis to assess budget and schedule impacts and decide when to engage in early coordination with regulatory agencies. The documentation must provide site-specific recommendations for additional investigations needed prior to acquisition and construction. Right-sizing keeps documentation short and concise.
447.04 Identifying Potentially Contaminated Property

The Department of Ecology (Ecology) has regulatory authority over contaminated properties pursuant to the Model Toxics Control Act (MTCA) Cleanup Regulations found in Chapter 173-340 WAC. MTCA holds that any past or present relationship with a contaminated site may result in liability for cleanup. Thus, Ecology can find WSDOT responsible for cleanup of hazardous materials whether the original source is from WSDOT activities, from a tenant, or inherited when WSDOT purchases property.

Cleanup costs for contaminated properties can be extraordinary and cleanup actions can take many years. For this reason, WSDOT seeks to reduce liability by identifying the nature and extent of contamination at properties prior to acquisition and construction. This process is commonly known as completing “due diligence.”

As discussed, one way WSDOT identifies potentially contaminated sites is through research and environmental documentation (see Sections 447.02 and 447.03, respectively) completed during the NEPA/SEPA process. Second, WSDOT conducts investigations called Environmental Site Assessments (ESAs). These investigations are performed either independent of, or in conjunction with, the NEPA/SEPA process. They meet the standard of the industry for identifying potentially contaminated property.

WSDOT uses the two ESAs listed below and their associated standards developed by the American Society for Testing and Materials (ASTM). WSDOT staff has access to ASTM standards through an internal web page without a fee.

- Phase I ESA (ASTM E 1527-05)
- Phase II ESA (ASTM E 1903-11)

(1) Phase I Environmental Site Assessment (Phase I ESA)

The purpose of a Phase I ESA is to evaluate the potential for contamination to be present on or adjacent to a single property. WSDOT completes a Phase I ESA prior to acquisition in order to meet “All Appropriate Inquiry” as defined by the USEPA and qualify for one of the defenses under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)—aka the Superfund law—to limit cleanup liability and potentially recover future cleanup costs. WSDOT also uses the information to assess potential impacts on project design and construction.

Phase I ESA Reports follow the American Society for Testing and Materials (ASTM) E 1527-05 Standard Practice to the extent practical. Per the ASTM standard, an Environmental Professional should complete the assessment. Since WSDOT routinely uses the HazMat Analysis in the environmental document to identify potentially contaminated properties, WSDOT does not automatically complete Phase I ESAs for all individual sites. A Phase I ESA in full compliance with the ASTM standard should only be conducted for properties that may be substantially contaminated and require WSDOT acquisition. Additional information regarding a Phase I ESA is available on the WSDOT HazMat Investigations and Documentation web page.
(2) **Phase II Environmental Site Assessment (Phase II ESA)**

The purpose of a Phase II ESA is to further investigate sites that may have contamination based on the findings of the HazMat Analysis or Phase I ESA. The Phase II ESA is conducted to characterize the nature and extent of potentially contaminated media prior to acquisition and construction. WSDOT uses information obtained in previous reports, planned areas of construction, and acquisition plans when conducting the assessment. A Phase II ESA is limited in scope and will not always identify all the contamination on a site.

Oftentimes a Phase II ESA is not necessary when site specific documentation exists in the Ecology files for the planned acquisition or construction areas. Additional information regarding a Phase II ESA is available on the WSDOT HazMat Investigations and Documentation web page.

Finally, WSDOT may identify or encounter contamination during geotechnical exploration drilling. As described in the Geotechnical Design Manual M 46-03, prior to drilling activities crews complete a geotechnical field exploration and an environmental assessment. The manual also provides procedures for planning, storing, and disposing of potentially contaminated material generated during drilling activities. Additional information regarding Geotechnical Soil Boring Procedures is available on the WSDOT HazMat Investigations and Documentation web page.

Identifying the extent of contamination through a Phase II ESA helps WSDOT:

- Select project alternatives and/or mitigation options.
- Prepare real estate transactions and determine fair market property value.
- Determine appropriate property management options.
- Identify construction impacts and associated costs for mitigation and/or disposal of material.
- Consider worker health and safety needs.

WSDOT’s policy is to follow the American Society for Testing and Materials (ASTM) E 1903-11 Standard Practice to the extent practical. Per the ASTM standard, field sampling and report writing should be performed only by or under the direct guidance of an Environmental Professional.

### 447.05 Managing Liability During Real Estate Acquisition

Under current federal and state hazardous waste cleanup statutes, all former, current, and future property owners can be held individually liable for 100% of the cleanup cost for contaminated property. This is referred to as “joint and several liability” and means that when WSDOT acquires contaminated property, it automatically may be held liable for any or all cleanup and restoration costs regardless of the “degree of guilt.” WSDOT can also be held liable as a prior owner, thus, selling land does not protect the department from liability.

To avoid potential liability associated with the purchase of contaminated properties, the purchaser must perform “all appropriate inquires” (AAI) prior to obtaining any contaminated properties as required under Section 101(35)(B)(ii) and (iii) of the CERCLA regulations (40 CFR 312). If the inquiry and subsequent site investigation identifies actual soil and/or groundwater contamination, the purchaser may pursue a “private right
of action” with past or current owners of the property. A private right of action is a legal claim authorized by MTCA (RCW 70.105D.080) under which a person may recover costs of remedial action from other persons liable under the Act provided that a cleanup is “substantially equivalent” to a cleanup performed or supervised by Ecology. If the source of contamination is on an adjacent property, the persons liable for the adjacent contamination could be responsible for costs associated with cleanup of a site and costs to repair damages to natural resources.

WSDOT also uses property appraisals performed by the WSDOT Real Estate Services Office as described in the Right of Way Manual M 26-01. Chapter 4 of the manual instructs appraisers to document potential HazMat issues on parcels such as odd soil odors or colors, the presence of tanks or drums, and suspected asbestos containing materials. If observed, the manual provides directions on how to proceed with the appraisal.

WSDOT avoids acquiring contaminated property whenever possible. When WSDOT must acquire contaminated property, Real Estate staff follow the steps outlined in Right of Way Manual M 26-01 Chapter 6 to identify and mitigate risk as much as possible. Actions may include, but are not limited to, valuing the property as clean and holding funds in escrow for cleanup, including an indemnification clause, or a creating a Prospective Purchaser Agreement. Once the purchase of a contaminated property is complete, the Real Estate Services Office is required to report the information to the Environmental Services Office (ESO).

ESO tracks contaminated properties that WSDOT owns, and their associated cleanup liability, and uses the information to report to the Washington State Office of Financial Management. This reporting is required by the Governmental Accounting Standards Board (GASB) Statement 49, Accounting and Financial Reporting for Pollution Remediation Obligations.

447.06 Planning for Sediment Management

Projects that occur in marine or freshwater environments, including ferry terminals and bridge crossings, may need to evaluate and characterize sediment for chemical contamination. WSDOT uses the Sediment Management Standards (Chapter 173-204 WAC), promulgated by Ecology, to sample and evaluate sediments that may be disturbed. The sediment regulations impose a number of specific requirements, including special sampling and laboratory analysis procedures, that make early coordination critical to WSDOT project schedules.

If a project will involve dredging, WSDOT also follows the requirements of the Dredged Material Management Program (DMMP) administered by the U.S. Army Corps of Engineers. The DMMP provides criteria for in-water disposal of dredged sediment. If the sediments are not suitable for open-water disposal, they will need to be disposed of at an appropriate upland disposal facility.

When WSDOT staff follow the policies in this chapter and the procedures on the HazMat web pages, WSDOT can reasonably anticipate and address HazMat issues prior to the advertisement of a project. During construction, WSDOT may need to have a contractor handle and manage issues such as contaminated soil or water, underground storage tanks, asbestos containing materials (ACM), cementitious material or wastes, lead based paint, potentially hazardous chemicals such as detergents, polymers, dust palliatives, concrete curing compounds, form release oils, or spills. WSDOT relays this information to contractors bidding on the work in four main ways:

- **Standard Specifications** M 41-10, which are standard protocols that are required for all WSDOT projects.
- **General Special Provisions**, which are provisions written to describe specific construction requirements and are available for use on multiple projects.
- **HazMat Special Provisions and Plans Sheets**, which are project-specific amendments that describe the location of, and how to handle, HazMat issues requiring special attention.
- **Hazardous Materials Management Plans**, which supplement a HazMat Special Provision and provide detailed instructions for managing materials.

For complex issues, WSDOT HazMat Specialists are available to assist with writing or reviewing HazMat Project-Specific Special Provisions. Often these provisions define areas with differing types or depths of contaminated soil or water. The Project-Specific Special Provision describes how the Contractor will handle and manage the material, including stockpiling. Information about how WSDOT will characterize the material for disposal is also often included.

Further information about how specifications and provisions address HazMat topics is available on the WSDOT Investigations and Documentation web page.

447.08 Identifying and Reporting HazMat During Construction

WSDOT identifies areas with known or suspected HazMat issues or underground storage tanks (USTs) in the Special Provisions and on Contract Plan Sheets. In these situations, the contractor follows the steps outlined in the Special Provisions for managing and disposing of materials.

Even with advanced planning, it is not possible for WSDOT to know the entire history of every site and unanticipated encounters of HazMat can occur. WSDOT remains prepared for unexpected situations during construction by having policies and procedures in place for the following:

- Encountering unknown USTs.
- Finding releases of unknown HazMat.
- Responding to spills from construction activities.
- Reporting spills caused by the traveling public.
These unexpected situations require rapid response actions to minimize impacts to the environment and the project work. WSDOT staff follows the Environmental Compliance Assurance Procedure (ECAP) as described in Construction Manual M 41-01, Section 1-2.2K(1). The ECAP includes steps for notifying WSDOT management and regulatory agencies. The subsections below describe each situation and related reporting requirements in more detail.

Once WSDOT identifies HazMat, WSDOT must appropriately manage the material prior to reuse or disposal at a permitted disposal facility willing to accept the material. Sections 447.09 and 447.10 address these topics. For more information about HazMat during construction, please visit the Hazardous Materials Investigations and Documentation web page.

1. **Encountering Unknown Underground Storage Tanks (USTs)**

Due to potential explosion hazards, USTs require special consideration when encountered at a WSDOT site. Usually unknown USTs that a contractor encounters are home heating oil or farm fuel USTs that are not registered with Ecology. When a contractor encounters a UST, WSDOT policy is for the contractor to stop work in the immediate area and notify the WSDOT Project Engineer (PE). The PE will initiate ECAP.

Ecology has the authority for the UST regulations. The main regulation that covers USTs is Chapter 173-360 WAC. If there is a confirmed release from a UST, WAC 173-340-450 will also apply. In the case of a confirmed release, WSDOT must ensure that Ecology receives notification within 24 hours. A status report is then due to Ecology within 20 days.

A certified contractor is required to remove a UST and a certified Site Assessor must be present during removal to sample and document UST closure activities. Thirty days prior to removing a regulated UST, a Notice of Intent is due to Ecology. WSDOT can ask Ecology to waive this requirement if it will cause schedule delays. The HazMat program has certified UST Site Assessors to assist in UST removal.

If there is no contamination discovered during a UST removal, Ecology must receive a Closure and Site Assessment Notice, a Site Check/Site Assessment Checklist, and a Site Assessment Report within 30 days. If there is contamination from a UST, Ecology must receive a Site Characterization Report within 90 days. The reports should contain required information detailed in the 2003 Ecology document Guidance for Site Checks and Site Assessments for Underground Storage Tanks. For more information, see the Ecology UST web page.

Some USTs are exempt from Ecology regulations but may be regulated by local agencies. WSDOT requires a site assessment be performed even when removing a non-regulated UST.

Local health and fire departments may also require notification of UST site closures.

- Pierce County Health Department Permit
- Pierce County Health Department Process
- King County Health Department

Different counties may have various requirements. A registered UST decommissioner will know local regulations regarding tank removal. Not all USTs are regulated by Ecology.
(2) **Finding Releases of Unknown HazMat**

When a contractor finds a release of previously unknown HazMat, usually identified by sight or smell, WSDOT policy is for the contractor to stop work in the immediate area and notify the WSDOT PE. The PE initiates ECAP as appropriate. The PE should also coordinate with ESO and the WSDOT Safety Office to assess the health and safety situation at the site to determine whether WSDOT workers can safely continue working.

The PE follows notification procedures established in ECAP to determine internal and external reporting requirements. WSDOT HazMat Specialists will help to coordinate any required regulatory reporting. Per [WAC 173-340-300](#), WSDOT is required to report to Ecology hazardous substances that may be a threat to human health or the environment based on best professional judgment. WSDOT regional offices are required to provide copies of all Ecology letters related to contamination on WSDOT property to ESO within 30 days of receipt. ESO tracks the information and uses it for GASB reporting as discussed in Section 447.05.

(3) **Responding to Spills From Construction Activities**

Spills caused by WSDOT contractors during project construction are the responsibility of the contractor to clean up, report, and dispose of properly. As a way to prevent and respond to spills on project sites, WSDOT requires contractors to prepare and implement a Spill Prevention Control and Countermeasures (SPCC) Plan for all projects. The SPCC Plan must address the ten elements identified in Standard Specifications Section 1-07.15(1), including reporting requirements. The contractor may not begin any onsite construction activities until the contractor submits and WSDOT accepts the SPCC Plan. If a spill occurs on a project, WSDOT staff follows ECAP. Visit the WSDOT [Spill Prevention Control and Countermeasures](#) web page for additional guidance, resources, and training information. WSDOT has a [Spill Reporting Flow Chart](#) that contractors and staff can use as a quick reference for how to report spills.

(4) **Reporting Spills Caused by the Traveling Public**

Neither WSDOT nor WSDOT contractors are responsible to clean up spills that result from the traveling public, also referred to as a “3rd party” such as a trucking company. [CERCLA Section 9607(b)](#) regulates the responsibility for these cleanups. When WSDOT becomes aware of the spill, staff must immediately notify the Washington State Patrol and Ecology to identify the responsible party. If the spill is an immediate threat to human health or the environment (e.g., tank truck leaking into a water body of the state), WSDOT staff should take reasonable actions to contain the spill until Ecology or the Washington State Patrol arrive on the scene. Reasonable actions will depend upon the expertise of the WSDOT staff at the scene and the materials that are available to them. WSDOT may recover cleanup costs at a later date if and when the state identifies a responsible party.

447.09 **Managing HazMat During Construction**

WSDOT contractors are responsible for the management of HazMat when encountered at a site, as described by the Special Provisions. If the contract does not address HazMat that is inadvertently discovered, the PE works with a WSDOT HazMat Specialist and the contractor to coordinate the management of these materials. Typical HazMat encountered on construction sites includes contaminated soil, sediment, and water; USTs; ACM; lead-based paint, cementitious material or wastes; potentially hazardous chemicals such as detergents, polymers, dust palliatives, concrete curing compounds, or form release oils.
Working with HazMat requires special training and knowledge. WSDOT policy is that only WSDOT HazMat Specialists or consulting environmental professionals who have the required training and experience are qualified to handle HazMat and collect samples.

The management of HazMat may include any or all of the activities listed below.

Visit the WSDOT HazMat web page for information on each topic.

- Identifying the type, concentration, and extent of the contamination.
- Stockpiling and covering HazMat or otherwise containing liquids.
- Sampling and submitting samples for laboratory analysis.
- Labeling containers and drums.
- Characterizing the material for reuse, or disposal at a permitted disposal facility able to accept the material.
- Submitting information to regulatory agencies.

The contractor is responsible to manage HazMat in a cost-effective manner in accordance with all federal, state, and local laws and regulations.

If project waste materials designate as dangerous waste, WSDOT assumes responsibility as the generator of the waste for reporting purposes. Per Chapter 173-303 WAC, WSDOT must obtain a Resource Conservation and Recovery Act (RCRA) Site ID number from Ecology. WSDOT is required to track and count quantities of all Dangerous Waste generated and disposed. While the RCRA Site ID number remains open in Ecology’s system, the PE is required to submit an Annual Report to Ecology due no later than March 1st of each year.

Besides managing and disposing of HazMat generated from an active construction project, the immediate cleanup of contaminated soil or water is not typically required. The PE decides the level of cleanup that is feasible based on the construction schedule and budget, as well as other factors, such as apparent extent of contamination and the intended future use of the site. Where possible, the PE should consider the opportunity to minimize WSDOT’s future cleanup liability, to cleanup areas where final construction might prevent or obstruct future cleanup, and to perform cleanup to protect environmentally sensitive areas. Visit the WSDOT HazMat Program web page for more information about cleanup options.

### 447.10 Reusing or Disposing of Project Waste Materials

WSDOT is ultimately responsible for the reuse and disposal of project waste materials including soils. Disposal of materials can be costly and may impact project schedules. It is for these reasons that WSDOT coordinates the sampling and characterization of HazMat as described above. The decision to reuse or dispose of project waste materials is influenced by the following factors:

- Type and level of contamination (e.g., petroleum product vs. solvents).
- Future site use (e.g., residential vs. industrial, a parking lot or roadway).
- Site access and presence of critical areas.
- Permit requirements and environmental commitments.

WSDOT addresses the reuse and disposal of solid wastes during construction in Standard Specifications Section 2-01.2, Section 2-02.3, and Section 2-03.3(7). If a contractor
provides a disposal site, they are required by Section 2-03.3(7)C to provide the PE with the location of the disposal site and copies of required permits and approvals before they transport any waste off the project site. The PE keeps a copy of the disposal documentation in the project file.

When HazMat is addressed in a project Special Provision, WSDOT includes a description of the materials and identifies the type of disposal facility that will accept the materials. As a common practice, WSDOT does not direct contractors where to take materials for disposal. It is required that contractors dispose of waste in accordance with all federal, state, and local regulations.

The WSDOT HazMat web page provides information about and disposal options for the types of waste listed below. Please consult a WSDOT HazMat Specialist with project-specific questions.

- Solid Waste
- Problem Waste
- Dangerous Waste
- Asbestos Containing Materials
- Lead-Based Paint
- Creosote Treated Wood

447.11 Laws and Regulations

Numerous federal, state, and local regulations govern HazMat issues and related topics. Below is a list of the most common federal and state regulations that apply to WSDOT projects.

(1) Federal Laws and Regulations

- All Appropriate Inquiries, 40 CFR Part 312
- Clean Water Act, 33 USC 1251 et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC 9601 et seq.
- National Emission Standards for Hazardous Air Pollutants, 40 CFR Parts 61 to 71
- National Environmental Policy Act, 42 USC 4321 et seq.
- Oil Pollution Prevention, 40 CFR Part 112
- Occupational Safety and Health Act, 29 USC 651 et seq.
- Resource Conservation and Recovery Act, 42 USC 6901 et seq.
- Safe Drinking Water Act, 42 USC 300f et seq.
- Toxic Substances Control Act, 15 USC 2601

(2) State Regulations

- Dangerous Waste Regulations, Chapter 173-303 WAC
- General Occupational Health Standards, Chapter 296-62 WAC
- Hazardous Waste Operations, Chapter 296-843 WAC
- Minimum Standards for Construction and Maintenance of Wells, Chapter 173-160 WAC
- Model Toxics Control Act, Chapter 173-340 WAC
• Safety Standards for Construction Work, Chapter 296-155 WAC
• Sediment Management Standards, Chapter 173-204 WAC
• Solid Waste Handling Standards, Chapter 173-350 WAC
• State Environmental Policy Act, Chapter 197-11 WAC
• Underground Storage Tank Regulations, Chapter 173-360 WAC
• Water Quality Standards for Groundwaters of the State of Washington, Chapter 173-200 WAC
• Water Quality Standards for Surface Waters of the State of Washington, Chapter 173-201A WAC

### 447.12 Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACM</td>
<td>Asbestos Containing Materials</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>Ecology</td>
<td>Washington State Department of Ecology</td>
</tr>
<tr>
<td>ECAP</td>
<td>Environmental Compliance Assurance Procedure</td>
</tr>
<tr>
<td>ECS</td>
<td>Environmental Classification Summary</td>
</tr>
<tr>
<td>ERS</td>
<td>Environmental Review Summary</td>
</tr>
<tr>
<td>ESA</td>
<td>Environmental Site Assessment</td>
</tr>
<tr>
<td>ESO</td>
<td>Environmental Services Office</td>
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<tr>
<td>GASB</td>
<td>Governmental Accounting Standards Board</td>
</tr>
<tr>
<td>HazMat</td>
<td>Hazardous Materials</td>
</tr>
<tr>
<td>MTCA</td>
<td>Model Toxics Control Act</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
</tr>
<tr>
<td>PE</td>
<td>Project Engineer</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td>SEPA</td>
<td>State Environmental Policy Act</td>
</tr>
<tr>
<td>SPCC</td>
<td>Spill Prevention Control and Countermeasures</td>
</tr>
<tr>
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<td>United States Environmental Protection Agency</td>
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<td>USC</td>
<td>United States Code</td>
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<tr>
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<td>Underground Storage Tank</td>
</tr>
<tr>
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<td>Washington Administrative Code</td>
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<tr>
<td>WSDOT</td>
<td>Washington State Department of Transportation</td>
</tr>
</tbody>
</table>

### 447.13 Glossary

WSDOT uses the common term “Hazardous materials” to describe waste materials that require special handling and disposal. The term covers all types of contaminated or hazardous media including dangerous waste, hazardous waste, problem waste, hazardous substances, and petroleum products. The definitions below describe the different terms found in state and federal regulations.
Dangerous Waste – Solid wastes designated in WAC 173-303-070 through 173-303-100 as dangerous or extremely hazardous or mixed waste. Dangerous waste includes all federal hazardous waste, plus certain wastes exhibiting specific characteristics based on toxicity and persistence. The regulatory requirements for disposal of dangerous waste are more complex than the requirements for disposal of problem waste and place additional responsibility both on WSDOT as the generator and on the contractor for safe handling and disposal.

Hazardous Substance – Hazardous substance designated under CERCLA in 42 USC 9601(14) and 40 CFR 116 that pose a threat to public health or the environment. Federal regulation of hazardous substances excludes petroleum, crude oil, natural gas, natural gas liquids or synthetic gas usable for fuel. State regulation of hazardous substances is more stringent and includes petroleum products, as addressed in WAC 173-340-200.

Hazardous Waste – Solid wastes designated in 40 CFR 261 and regulated as hazardous and/or mixed waste by the USEPA. Mixed waste includes both hazardous and radioactive components; waste that is solely radioactive is not regulated as hazardous waste. Hazardous waste includes specific listed waste that is generated from particular processes or activities or exhibits certain reactive, corrosive, toxic, or ignitable characteristics. Hazardous waste is also regulated by Ecology as dangerous waste.

Problem Waste – Pursuant to Chapter 173-304 WAC, problem wastes are defined as soil, sediment, sludge, and liquids (groundwater, surface water, decontamination water, etc.) that are removed during the cleanup of a remedial action site, or other cleanup efforts and actions, that contain hazardous substances but are not designated as dangerous waste pursuant to Chapter 173-303 WAC. Examples of the type of waste streams that may be disposed of under this definition include:

• Contaminated soil, sludge, groundwater, surface water, and construction demolition debris containing any combination of the following compounds: petroleum hydrocarbons, volatile and semivolatile organic compounds, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, heavy metals, herbicides, and pesticides.

• Contaminated dredge spoils (sediments) resulting from the dredging of surface waters of the state where contaminants are present in the dredge spoils at concentrations not suitable for open water disposal and the dredge spoils are not dangerous wastes and are not regulated by Section 404 of the Clean Water Act.

• Asbestos containing material.

Solid Waste – State regulation Chapter 173-350 WAC define solid waste as all putrescible and nonputrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, problem wastes as defined below, and recyclable materials. Federal regulations define solid waste as any garbage, refuse, or sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. Solid waste includes hazardous and problem wastes.