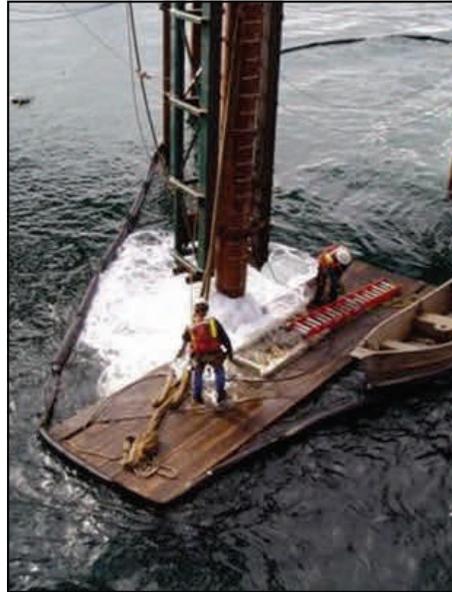




## ENVIRONMENTAL COMPLIANCE FOR CONSTRUCTION



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# TABLE OF CONTENTS

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<b>ACRONYMS</b> .....	<b>II</b>
<b>CHAPTER 1 INTRODUCTION AND OVERVIEW</b> .....	<b>1-1</b>
What is Environmental Compliance? .....	1-2
Why is Environmental Compliance Important?.....	1-4
What are the Major Regulations?.....	1-6
Role of Environmental Regulatory Agencies.....	1-14
<b>CHAPTER 2 PRE-CONSTRUCTION COMPLIANCE PLANNING</b> .....	<b>2-1</b>
What Are The Key Compliance Topics? .....	2-1
What Are The Primary Components of Pre-Construction Planning?.....	2-2
What is Important during Pre-Construction Meetings?.....	2-6
What Environmental Commitments Pertain to a Particular Project? .....	2-7
What are the Key Sources of Environmental Compliance Information?.....	2-14
<b>CHAPTER 3 ENVIRONMENTAL COMPLIANCE DURING CONSTRUCTION</b> .....	<b>3-1</b>
What are the Key Compliance Topics? .....	3-1
What are the Primary Components of a Compliance Monitoring Program?.....	3-3
Environmental Compliance Assurance Procedure.....	3-9
Responsibilities Following Unanticipated Discovery of Cultural Resources .....	3-10
Compliance Trends and Reporting.....	3-11
Lessons Learned - Examples.....	3-11
<b>CHAPTER 4 PROJECT COMPLETION AND FINAL INSPECTIONS</b> .....	<b>4-1</b>
What are the Key Compliance Topics? .....	4-1
Who Has Post Construction Commitment Responsibility?.....	4-2

# ACRONYMS

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	<b>A</b>		<b>N</b>
AGC	Association of General Contractors	NEPA	National Environmental Policy Act
AHB	Area Habitat Biologist	NHPA	National Historic Preservation Act
	<b>B</b>	NOAA	National Oceanic and Atmospheric Administration
BA	Biological Assessment	NOV	Notice of Violation
BiOp	Biological Opinion	NPDES	National Pollutant Discharge Elimination System
BMPs	best management practices	NTUs	Nephelometric Turbidity Units
	<b>C</b>		<b>P</b>
CE	Categorical Exclusion (NEPA)	PDM	Project Delivery Memo
CESCL	Certified Erosion and Sediment Control Lead	PE	Project Engineer
Corps	Army Corps of Engineers		<b>R</b>
CTS	Commitment Tracking System	RCRA	Resource Conservation and Recovery Act
CWA	Clean Water Act	RCW	Revised Code of Washington
	<b>D</b>	REM	Regional Environmental Manager
DAHP	Department of Archaeology and Historic Preservation		<b>S</b>
	<b>E</b>	SEPA	State Environmental Policy Act
EA	Environmental Assessment	SHPO	State Historic Preservation Officer
ECAP	Environmental Compliance Assurance Procedure	SMA	Shoreline Management Act
EIS	Environmental Impact Statement	SPCC	Spill Prevention Control and Countermeasure
EPA	Environmental Protection Agency	SSDP	Shoreline Substantial Development Permit
ESA	Endangered Species Act		<b>T</b>
ESC	Erosion and Sediment Control	TESC	Temporary Erosion and Sediment Control
	<b>F</b>		<b>U</b>
FHWA	Federal Highway Administration	UDP	Unanticipated Discovery Plan
	<b>G</b>	USTs	Underground Storage Tanks
GMA	Growth Management Act	USFWS	U.S. Fish and Wildlife Service
	<b>H</b>		<b>W</b>
HPA	Hydraulic Project Approval	WAC	Washington Administrative Code
HRM	Highway Runoff Manual	WDFW	Washington Department of Fish and Wildlife
	<b>I</b>	WSDOT	Washington State Department of Transportation
IAs	Interagency Agreements		
IDR	Inspector's Daily Report		
	<b>J</b>		
JARPA	Joint Aquatic Resource Permit Application		
	<b>M</b>		
MTCA	Model Toxics Control Act		
MOA	Memoranda of Agreement		
MOU	Memoranda of Understanding		

# Chapter 1 Introduction and Overview

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*The purpose of this section is to:*

- *Define environmental compliance*
- *Explain why environmental compliance is important*
- *Explain the major regulations*
- *Understand the role of regulatory agencies*

*WSDOT inspectors have been responsible for environmental compliance to one degree or another for many years, so this course presentation does not represent a new program. Rather, it is meant to connect you with the most recent guidance and tools for organizing and managing a complex set of environmental commitments to ensure environmental compliance.*

*We assume that you have thorough knowledge of construction practices and techniques, an essential prerequisite to environmental compliance. This course does not cover compliance with health and safety requirements, right-of-way matters, etc. Furthermore, it does not contain the level of detail provided in other WSDOT courses related to environmental inspections and compliance (e.g., erosion and sediment control, introduction to wetlands, and spill plan reviewer's training).*



High-Visibility Fencing and Silt Fence at a Wetland Mitigation Site.

## 1.1 What is Environmental Compliance?

In the context of a WSDOT project, “environmental compliance” simply means adhering to the environmental commitments made by WSDOT relative to all phases of project delivery. It includes: complying with the provisions of various federal, state and local rules and regulations as well as the specific stipulations in permits and approvals issued under these authorities. Environmental compliance also means adhering to internal WSDOT policies, procedures and standards as well as interagency agreements on a variety of environmental matters; and, in general, satisfying the needs of the regulatory community and the affected public to ensure WSDOT is a good steward of the environment.

WSDOT delegates some of its environmental responsibilities to contractors during the construction phase of project delivery. Therefore, it is critical that our contractors clearly understand the environmental requirements for which they are responsible. Project environmental commitments can be divided into two categories:

1. Commitments that the contractor is responsible for implementing per the contract terms.
2. Commitments that WSDOT is responsible for implementing.

As stated in *Standard Specification 1-07.1 Laws to be Observed, local laws, ordinances, and regulations that affect Work under the Contract.*” The Project Engineer is responsible for the enforcement of the contract.

Even though WSDOT delegates environmental requirements to contractors, WSDOT is ultimately responsible for environmental compliance, because we are the project owners. If a WSDOT project causes damage to the environment or surrounding community, the public will lose trust in our agency.

Therefore, it is critical that WSDOT staff have the knowledge to recognize environmental issues in the field and the confidence to report non-complaint events. This awareness, combined with a high degree of responsiveness, will ensure environmental stewardship. Ensuring compliance requires:

- An overall understanding of the environmental topics
- Knowing why environmental compliance is important
- Being familiar with the environmental requirements
- Good communication and the ability to work well with contractors and the WSDOT project team.

### 1.1.1 Environmental Compliance Topics

Here are some of the things to be aware of when ensuring compliance on WSDOT construction projects:

- [Stormwater and Erosion](#). Stormwater runoff can carry sediment, oils, and other pollutants off site that can be a major cause of water quality degradation and permit violations.
- [Wetlands](#). Wetlands provide a number of important functions, such as water quality improvement, water retention, and fish and wildlife habitat.
- [Fish and Wildlife](#). Populations of fish and wildlife and their habitats are important for a variety of reasons. They may be vital to sport and commercial harvesting, be designated as threatened/ endangered at the federal or state level, or carry special historical/cultural significance.
- [Hazardous Materials and Spill Prevention](#). Inadvertent releases of petroleum products and toxic/hazardous substances can adversely affect soil and water quality and harm plant and animal populations.
- [Air Quality and Noise](#). Dust from uncontrolled construction sites and noise from construction equipment can impact local residents and lead to complaints and negative media coverage.
- [Cultural and Historical Resources](#). Sites and resources important to tribes as well as historical properties and features must be protected. If any such resources are unexpectedly discovered during construction, the work must stop, which can have major ramifications on project costs and schedule.
- [Visual Resources](#). Projects can change the roadside character by altering the road alignment, increasing lighting, or removing vegetation. These changes may affect the visibility for the traveling public and nearby residential areas.



Turbid water exceeding 250 NTU's discharging into a creek.



Juvenile Coho encountered during fish exclusion for a culvert removal project in Bothell, WA.

### 1.1.2 Environmental Compliance Topics – Non-Technical

Some of the non-technical procedural matters involved in the field of environmental compliance include:

- [Tracking Environmental Commitments](#). As an inspector, you need to know specifically what you are responsible for monitoring and you need to maintain a current commitment list throughout the project.
- [Internal WSDOT Communications](#). Environmental compliance issues are often complicated and potentially sensitive. You will need to communicate with a number of WSDOT personnel who need to be involved in responding to potential compliance problems.

- Communications with Contractor. Work with your Project Engineer to establish a communication strategy. Determine who will give direction to the contractor regarding environmental compliance. This communication needs to be timely, clear, and well documented and must not conflict with contract documents.
- Prevention. Make sure the contractor installs best management practices (BMPs) correctly the first time. If you see a situation that appears to be out of compliance, report it, so it can get addressed before it becomes a bigger issue.
- Monitoring. Inspectors must design and implement a program for routine monitoring and be prepared to inspect, respond to and monitor unplanned events.
- Documentation and Reporting. These are particularly important elements, not only for ensuring a complete and accurate file but for alerting others who may need to know about potential or actual non-compliance events.

This manual touches on all these technical and non-technical environmental compliance topics. This document also points you to the tools and resources that will help you understand and monitor environmental compliance during construction.

## **1.2 Why is Environmental Compliance Important?**

Environmental compliance is important for two primary reasons:

1. It's the law; and
2. It's the right thing to do.

The many laws pertaining to environmental compliance are described in Section 1.3.

### **1.2.1 Adverse Situations**

Environmental violations can negatively impact the neighboring community and society at large. WSDOT and the contractor need to ensure all staff understands compliance to minimize this risk. Environmental compliance is important to prevent these kinds of adverse situations:

- Environmental Degradation. This is the single most important reason for ensuring compliance, since we all benefit from a healthy, productive environment and we all must contribute to responsible environmental stewardship.
- Work Delays and Cost Increases. The state has limited funds to develop our vital transportation infrastructure and cannot afford work delays and project cost increases caused by noncompliance.

- Negative Public Relations. Environmental problems on WSDOT projects will almost certainly be noticed by the media, resulting in negative publicity and a reduced level of confidence in WSDOT's abilities to meet its public obligations.
- Upset Citizens/Landowners. Although all of us suffer when our environment is degraded, WSDOT bears a special environmental responsibility to the people who live and work in the immediate vicinity of its construction projects.
- Conflicts with Other Agencies. Established, dependable, honest working relationships with other agencies leads to trust, which in turn facilitates permitting and permit compliance on all WSDOT projects.
- Conflicts with Internal WSDOT Policy. WSDOT is committed to conducting all its affairs in accordance with the dictates of sound environmental protection practices. Furthermore, WSDOT requires all employees to exercise their responsibilities to assure that its environmental policy intentions are diligently carried out.
- Criminal/Civil Actions and Fines against Owner, Contractor and/or Responsible Individuals. Virtually any organization or individual with responsibility for environmental compliance is subject to criminal and civil liability for noncompliance.

The last situation is of particular importance to WSDOT and its employees because WSDOT has experienced several Clean Water Act violations at construction projects. The Attorney General's office has analyzed the range of civil and criminal problems that violations can create for both WSDOT and its employees. Their November 26, 2004 memo regarding individual liability for violations of the Clean Water Act states:

*"To conclude, staff members of the Washington State Department of Transportation (WSDOT) can face individual civil and criminal liability for violations of the Clean Water Act."*

*"First, an individual can face civil judicial action for a violation of the Act with civil penalties or injunctive relief as the remedy. Civil penalties imposed may be up to \$25,000 per day for each violation, and once a violation is determined penalties are considered mandatory. Injunctive relief may be mandated to restrain the violations or to require future compliance with the Act. Alternatively, an individual can face civil administrative enforcement for a violation of the Act with administrative penalties or a compliance order as the remedy. Administrative penalties may be imposed up to \$125,000 depending on the type of penalty imposed."*

*"Second, an individual can face a citizen suit brought against him or her for violations of the Act. However, a citizen suit may not be*

*brought if the federal government or the state is diligently prosecuting an action against the individual for the same violation.*

*“Third, an individual can face criminal liability for both knowing and negligent violations of the Act.*

*“Finally, whenever a municipality is a party to a civil action, the state in which the municipality is located must be joined as a party. The state may be liable for payment of any judgment incurred as a result of the action.”*

Violations of the Endangered Species Act and other laws can also bring fines and court actions against responsible individuals and organizations.

### **1.3 What are the Major Regulations?**

Environmental compliance is driven by a variety of federal, state, local, and tribal laws and regulations (administrative procedures for implementing a law). WSDOT is required to obtain permits and approvals from numerous regulatory agencies before construction can begin. These permits and approvals include conditions and mitigation measures, that when implemented, minimize impacts to streams, wetlands, vegetation, fish and wildlife, air quality, cultural/historical resources, and the surrounding community.

#### **1.3.1 Key Environmental Rules and Regulations**

You need to be familiar with the key environmental rules and regulations affecting WSDOT projects. These are listed on the [Environmental Permitting](#) webpages and described below:

##### **1.3.1.1 National Environmental Policy Act/Washington State Environmental Policy Act**

The National Environmental Policy Act (NEPA) was adopted by Congress in 1969 to ensure evaluation of the probable environmental consequences of a proposed action before decisions are made by federal agencies. NEPA also allows federal agencies to change, condition, or deny proposals based on environmental considerations. NEPA applies to projects that: 1) are sponsored by a federal agency; 2) require a federal permit, or 3) receive federal funding. Most WSDOT projects fall into the second or third category and can be covered by a Categorical Exclusion (CE) because the project is not likely to have significant adverse environmental impacts. Larger, more complex projects may require WSDOT to prepare an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) (for significant adverse environmental impacts).

The Washington State Environmental Policy Act (SEPA) provides a local process for analyzing the environmental impacts of development. SEPA is not a permit per se but is an environmental

review process designed to fit with other existing permits and certifications. SEPA requires full disclosure of the likely significant adverse environmental impacts of a project and the identification of ways to mitigate or reduce the impacts of a project. Impacts to the natural and built environment are considered. For proposals likely to have a significant adverse impact on the environment, an EIS must be prepared. For most WSDOT projects, both NEPA and SEPA requirements are addressed in a single document.

A NEPA/SEPA document typically includes mitigation measures intended to avoid, minimize or compensate for environmental impacts expected to be caused by the project. Some of these measures are incorporated into the project design or construction plans, whereas others may be identified in a separate section of the document. Regardless, the environmental mitigation elements contained in a NEPA/SEPA document represent environmental commitments that WSDOT has agreed to and must be met. See the WSDOT [NEPA/SEPA Guidance](#) webpage for more information.

### 1.3.1.2 [Endangered Species Act](#)

The Endangered Species Act (ESA) of 1973, as amended, was adopted to prevent the extinction of plants and animals. The ESA protects threatened and endangered species by prohibiting “the take of listed species without special permit” where:

- Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or the intent to engage in such activities. Harm includes indirect harm to listed species by harming the habitat.

Several stocks of salmon (principally Chinook salmon in the Puget Sound area) and bull trout – as well as their designated critical habitat – are protected under the ESA. Most marine and fresh waters in Washington state support ESA-listed species or their habitat. Among the many ESA-listed birds, spotted owl and marbled murrelet are most commonly of concern. A number of mammals and plants are also protected. Accordingly, protection of threatened and endangered species is a requirement on nearly all WSDOT projects. See the [ESA and WSDOT](#) webpage for more information about listed species.

ESA protections for marine species (including anadromous salmon and steelhead, which spend their adult life in the ocean) are administered by the National Oceanic and Atmospheric Administration (NOAA) Fisheries, whereas terrestrial and freshwater species (including bull trout) are under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS). Consultation with these two agencies (termed “the Services”) may be handled by the Corps during their Section 10/404 permit review process, by the Federal Highways Administration (FHWA), or by WSDOT directly



This biologist is using an electrofisher to exclude fish from a work area prior to the start of construction activities.

under authority delegated by both the Corps and FHWA. The ESA documents that contain environmental commitments are the individual Biological Assessment (BA), programmatic BA, and Biological Opinion (BO).

#### **1.3.1.2.1 Biological Assessment**

For WSDOT projects involving activities that could directly or indirectly affect an ESA-protected species, WSDOT prepares a Biological Assessment (BA). The project Biological Assessment will typically include a section titled “Project Description” and a section titled “Conservation Measures” which collectively represent those actions WSDOT will take to avoid or minimize the potential for harm to a listed species or its habitat. The Project Description describes the way the project will be constructed. Once the project permits are approved, the Project Description and Conservation Measures become part of the project’s environmental commitments.

#### **1.3.1.2.2 Biological Opinion**

When the Biological Assessment determines that project impacts are “likely to adversely affect” ESA-protected species, formal consultation with NOAA Fisheries and/or USFWS must be initiated. Assuming the services approve the project, the approval will come in the form of a BO. All parts of the BO are related to ensuring environmental compliance, but the most important sections for the WSDOT inspector are titled “Reasonable and Prudent Measures” and “Terms and Conditions.” These sections describe the actions that WSDOT must take to avoid the likelihood of jeopardy to the species or destruction or adverse modification of designated critical habitat. These Reasonable and Prudent Measures and Terms and Conditions become environmental commitments deserving of special consideration because of the potential for civil and criminal penalties and fines, third-party lawsuits, negative publicity and other actions authorized under the ESA.

#### **1.3.1.3 National Historic Preservation Act**

Section 106 of the [National Historic Preservation Act of 1966](#) requires consideration of historic properties in the thousands of federal actions that take place nationwide each year. The law and regulations require federal agencies to consult with the State Historic Preservation Officer (SHPO) and/or Tribal Preservation Officer and to give the [Advisory Council on Historic Preservation](#) an opportunity to comment before projects are implemented. The Section 106 process also provides for consultation with affected tribes and public input in the decision-making process. See the WSDOT [Cultural Resources](#) webpage for more information.

Projects that involve the acquisition of right of way or excavation within existing right of way may need to be surveyed and inventoried to determine if cultural resources exist. A WSDOT discipline report for cultural resources is typically prepared to support the NEPA/SEPA documentation. Section 106 property may also meet the requirements for a public lands evaluation (required under Section 4(f) of the Federal Department of Transportation Act) if it has been determined that the proposed project will have an adverse effect on the site.

#### 1.3.1.4 Joint Aquatic Resource Permit Application

[Joint Aquatic Resource Permit Application](#) (JARPA) is a simplified permit application for development activities in or along aquatic environments. JARPA is an effort to simplify the application process for projects that may impact our local water bodies. JARPA does not circumvent current regulations; it does provide a way for applicants to give the same information at the same time to all the involved permitting agencies. This one permit, then, makes it easier for applicants to begin and move through the permitting process.

#### 1.3.1.5 Clean Water Act

Water pollution is regulated under the Federal Water Pollution Control Act of 1972, known as the Clean Water Act (CWA). The primary goal of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” The CWA establishes effluent discharge limitations and receiving water quality standards. As noted previously, WSDOT and its responsible employees can face individual civil and criminal liability for violations of CWA permit conditions. The three major types of permits typically issued under the CWA for WSDOT construction projects are described below.

##### 1.3.1.5.1 [Section 404 \(U.S. Army Corps of Engineers\)](#)

Section 404 of the Clean Water Act is specifically directed towards regulating discharges of dredged or fill material into waters of the U.S., including wetlands. Project proposals involving such actions must obtain a Section 404 permit before the work can proceed. Virtually any surface water body – even many of the ditches along WSDOT’s highways – is regulated as “waters of the U.S.”

Section 404 permits are administered by the Corps. Through this permitting program, the Corps will review the project and may consult with other agencies before issuing a permit, which typically comes with both general and project-specific conditions. Permit approval must comply with guidelines developed by the U.S. Environmental Protection Agency (EPA) under Section 404(b)(1) of the Clean Water Act. Once a permit is issued for a particular project, all permit terms and conditions become environmental



Portable turbidimeter showing a stormwater discharge of 29.7 NTUs.

commitments for that project. The Corps also issues [Nationwide Permits](#) every five years that streamline the permitting process.

#### **1.3.1.5.2 Section 401 (Ecology Water Quality Certification)**

The purpose of Section 401 of the Clean Water Act is to ensure that, when the federal government issues a permit (such as a [Corps permit under Section 404](#)), that the permit complies with state water quality laws and other appropriate state laws related to the protection of aquatic resources. In this state, implementation and enforcement of Section 401 of the CWA has been delegated by EPA to Ecology.

Any time WSDOT applies for a 404 permit from the Corps, we are required to obtain a Section 401 water quality certification or letter from Ecology verifying that the activity does not violate state water quality standards. Ecology must determine whether the materials to be discharged will comply with applicable effluent limitations and water quality standards. If the state denies certification, the federal permitting agency must deny the permit application. If the state imposes conditions on a certification, the conditions become part of the federal permit.

#### **1.3.1.5.3 Section 402 (Ecology National Pollutant Discharge Elimination System)**

Section 402 of the CWA addresses National Pollutant Discharge Elimination System (NPDES) permits authorizing discharge of pollutants. In Washington, EPA has delegated NPDES permitting authority to Ecology.

In December 2010, Ecology issued a new [Construction Stormwater General Permit](#) that addresses stormwater runoff from construction sites. As of January 1<sup>st</sup>, 2011 NPDES permits are required on WSDOT construction projects that involve disturbance of 1 acre or more. This is the most commonly encountered permit on WSDOT construction projects. Ecology has published numerous guidance documents relating to NPDES and other construction-related permits that are available on their [Permit and Associated Documents](#) website.

NPDES permits require that [Temporary Erosion and Sediment Control](#) (TESC) and [Spill Prevention Control and Countermeasures](#) (SPCC) plans be completed and on site before starting work.

#### **1.3.1.6 Rivers and Harbors Act**

The Corps has regulatory authority over many activities affecting the waters of the U.S. This authority is derived not only from Clean Water Act Section 404 (described above) but from Section 10 of the Rivers and Harbors Act of 1899. A [Corps' Section 10 permit](#) is

required for dredging operations and placement of structures in, over or under navigable waters. “Navigable waters” are a subset of “waters of the U.S.” and generally include all marine waters plus the lower portions of rivers and major tributaries. If both a Section 10 and [Section 404 permit](#) are required, the Corps issues a single permit that covers both sets of requirements.

### 1.3.1.7 State Water Quality Standards

The State Water Pollution Control Act (Chapter 90.48 RCW) regulates the discharge of pollution to waters of the state, including wetlands. Pollution is defined broadly to include any alteration of the physical, chemical or biological properties of any state waters. Ecology administers the Act through several different permitting programs, including the Section 401 and NPDES programs described above.

State water quality standards for surface waters of the state of Washington (WAC 173-201A) were developed to be consistent with public health and public enjoyment of the waters and the propagation and protection of fish, shellfish and wildlife, pursuant to the Water Pollution Control Act. This regulation describes numerous water quality standards, including those for turbidity, pH, dissolved oxygen and temperature. Turbidity and pH are the most common parameters associated with enforcing water quality standards on construction projects.

WSDOT’s [Monitoring Guidance for In-Water Work](#) provides information on how to properly sample for projects involve in-water work. WSDOT’s [Temporary Erosion and Sediment Control Manual](#) provides guidance on sampling stormwater runoff from projects. These procedures have been developed to document compliance with state of Washington surface water quality standards and other local, state and federal permit conditions. These procedures are also used to evaluate the effectiveness of best management practices (BMPs).

### 1.3.1.8 State Hydraulic Code

The state Hydraulic Code (RCW 77.55 [Chapter 77.55 of the Revised Code of Washington] and WAC 220-110 [Chapter 220-110 of the Washington Administrative Code]) is intended to protect fish life from damage by construction and other activities in all waters of the state. The code is implemented through a permit called the [Hydraulic Project Approval](#) (HPA) obtained from the WDFW. An HPA is typically required for any construction activities occurring waterward of the ordinary high water mark or, in some instances, in the immediate vicinity of a waterbody. The HPA will include permit conditions that become environmental commitments for the project.



Sample locations shall be clearly identified in the field to ensure consistency throughout the life of the project.

### **1.3.1.9 Hazardous Materials**

Stringent federal and state environmental laws and regulations expose WSDOT to full responsibility for cleanup and proper disposal of hazardous materials, whether the original source is from WSDOT activities, from a tenant, or inherited when property is acquired. WSDOT has assumed a leading role in dealing with hazardous materials associated with transportation project development. The extraordinary costs incurred with liability for hazardous materials make it imperative that WSDOT aggressively seek to reduce exposure to liability. The following summarizes the major regulations that are likely to be relevant to environmental compliance inspections, although this field is complicated and WSDOT hazardous materials specialists should be consulted for direction and technical support.

#### **1.3.1.9.1 Underground Storage Tanks**

The RCRA program for Underground Storage Tanks (USTs) is implemented through WAC 173-360. Most important to WSDOT inspectors are the 24-hour reporting requirement for leaks or spills above a de minimis amount that come into contact with soil, groundwater or surface water. After a leak or spill subsequent investigation requirements might be imposed on operators and owners of regulated tanks. The most frequently occurring cause of petroleum contamination is leaking USTs. In accordance with the Uniform Fire Code, removal of USTs requires permits and a licensed UST remover. Under no circumstances should an unlicensed individual remove a UST. Note also that, as described in 40 CFR 112 (Title 40, section 112 of the Code of Federal Regulations), special SPCC plan requirements exist for facilities that store more than 1,320 gallons in above-ground tanks.



Underground storage tank being decommissioned at a residential property in Burlington, WA.

#### **1.3.1.9.2 Model Toxics Control Act**

The Model Toxics Control Act (MTCA) applies to any site with identified environmental contamination that could pose a threat to human health and/or the environment during this project. MTCA is contained in RCW 70.105D and its implementing regulations are addressed in WAC 173-340. These regulations include strict requirements for site discovery and reporting, site assessments, and state hazardous site lists. MTCA establishes the acceptable cleanup limits for contaminated media. Any hazardous substance released to the environment must be reported to Ecology within 90 days of discovery, except where the release originates from a UST. In the case of a UST release, notification to Ecology is required within 24 hours.

### 1.3.1.9.3 Dangerous Wastes

Dangerous Waste is a special category of solid waste that is characteristically reactive, corrosive, toxic, or ignitable. Washington's Dangerous Waste Regulations, contained in WAC 173-303, implement the federal Resource Conservation and Recovery Act (RCRA). These regulations define generator, transportation, storage, and disposal requirements, including forms and rules related to manifesting and transporting hazardous waste.

### 1.3.1.9.4 Asbestos and Lead Paint

Asbestos is most commonly found in pre-1985 buildings and various underground piping and conduits. Lead-based paint is also common in pre-1980 buildings. Both substances pose risks to environmental health and worker safety, and their testing and removal must be performed by trained and certified personnel or contractors. Inspectors should consult with WSDOT hazardous waste specialists if the handling and disposal requirements are not clearly specified in the project plans or if either substance is suspected but was not identified during the environmental investigation or design phases.

### 1.3.1.10 Shoreline Management Act

The Shoreline Management Act (SMA) is designed to help manage development of the state's shorelines, including all marine areas and larger streams and lakes. The Act emphasizes protecting shoreline resources, accommodating all reasonable and appropriate uses, and protecting the public's right to use shorelines. The SMA contains goals that are implemented by local governments through policies and regulations established in local Shoreline Master Programs. These programs require that a Shoreline Substantial Development Permit (SSDP) be issued for substantial development activities occurring within 200 feet of designated shorelines and that the activities be consistent with the local shoreline program. The terms of the permit become environmental commitments.

### 1.3.1.11 Growth Management Act

The Growth Management Act (GMA) was originally adopted by the state legislature in 1990. It focuses on local "grass roots" planning and is intended to help local governments better manage growth throughout the state. The GMA establishes 13 planning goals and requires that certain local governments adopt comprehensive plans and development regulations to manage growth. As part of the GMA, all cities and counties are required to develop ordinances to protect critical areas, defined to include wetlands, fish and wildlife habitat areas, geological hazards, frequently flooded areas and



Five gallon containers of used oil illegally dumped within WSDOT's right of way during construction.

aquifer recharge zones. Some jurisdictions may issue specific permits for some critical area ordinance elements while others will incorporate the critical area protections and mitigation requirements into other permits issued for the project. Wetland protection often has its own permit at the local level in addition to state and federal wetland permits.

#### 1.3.1.12 Other Key Environmental Laws, Regulations and Policies

- [Local Floodplain Ordinances/Permits](#). These ordinances/permits are intended to ensure that the project does not increase the likelihood or risks of flooding.
- [Local Noise Ordinances/Variations](#). These ordinance/variances are usually limited to regulating maximum noise levels when construction occurs in the evening (daytime construction noise is exempt).
- [Landowner/Neighborhood Agreements](#). These agreements may include terms and conditions related to environmental compliance.
- [Tribal Permits and Approvals](#). These permits or approvals are usually limited to work on tribal lands although environmental commitments may be related to project elements that could impact traditional fish and shellfish harvest areas.



Site visit to an off-site wetland mitigation site from a local jurisdiction.

#### 1.4 Role of Environmental Regulatory Agencies

Regulatory agencies with jurisdiction over environmental matters may be involved in all project development phases, from project permitting through construction, site cleanup and final restoration. During permitting, regulators exercise a considerable amount of discretionary authority and judgment and they generally strive to write permits that implement the relevant rules and regulations in a way that balances competing interests. They understand that their needs will most likely be met if they:

- Establish permit conditions that are practical and reasonable.
- Balance costs and competing interests fairly, such that the most attention is paid to the environmental issues of greatest concern.
- Help the applicant understand the purpose or value of conditions placed on the permits.

Consequently, if a permit condition is unclear, impractical, or seems out of balance, you should work with the region environmental office to seek clarification and/or modification of the permit prior to construction.

During the construction phase, environmental regulators are responsible for ensuring that permit conditions are being satisfied. They have the right to access the construction site at any time for purposes of inspection and enforcement and should be welcomed by the WSDOT project team.

Communication between WSDOT and environmental regulators is crucial to ensure a successful project. For most projects, WSDOT environmental staff in the region office serve as the focal point for communication with environmental regulators during construction and post-construction phases because they were responsible for permitting and have developed working relationships with the regulators – in this case, you will need to closely coordinate all agency interactions with region staff. In other situations, primary contact with the regulators may become the responsibility of the project construction team – in this case, you should coordinate agency contacts primarily with the Project Engineer (PE) and keep the region staff informed. Each project is different, so be sure to seek a clear understanding of responsibilities for agency communications during pre-construction planning.

Having established effective communications with the regulators can be invaluable when it comes to dealing with a non-compliance situation that may lead to a permit violation. Regulators may allow some flexibility in enforcement if they see that the overall permit conditions are being met and that WSDOT has responded quickly to correct the situation. Work closely with your PE and the region environmental staff to keep the regulators involved and informed.

Turnover of agency personnel has been a common problem on longer-term WSDOT projects. Staying in close touch with the regulators also allows the project team to anticipate and facilitate these transitions and get the new regulators up to speed in relatively short order.

#### **1.4.1 What to do when a Regulator Arrives On Site?**

Whether or not specified as a permit condition, agencies with regulatory jurisdiction over a project have the right to visit your construction site at any time. You should welcome such visits as they provide an opportunity to demonstrate WSDOT's commitment to environmental compliance and to further build confidence and trust within the environmental permitting community. You should notify the PE and the appropriate region environmental staff when an agency visit occurs.

The purpose of the agency visit may be simply to observe how the project is proceeding. At the other extreme, the regulator may be

visiting in response to a reported violation. Regardless of the purpose:

- NEVER hide evidence,
- NEVER mislead or lie to the investigator,
- NEVER continue construction activities that are reported to be causing a violation,

Work cooperatively with agency personnel to collect the needed information or to develop solutions that will correct the problem. Once the compliance problem has been resolved, place special attention on ensuring that this problem does not happen again. Most regulators are less concerned with compliance problems if they are corrected soon after they are identified, but they will quickly lose patience with WSDOT and the project team (and increase their inspection frequency) if the mistake is repeated.

WSDOT has previously experienced compliance problems stemming from an agency representative visiting a project site and requiring that a change be made in a BMP or other type of environmental commitment. Although WSDOT needs to accommodate agency visits and be receptive to their suggestions, no changes to any commitment should be made without consulting first with the PE and the appropriate region or headquarter environmental personnel. This consultation process must consider the impact of the change on project schedule and costs and on all the other commitments to avoid inter-agency conflict.

Some of these on-the-spot agency requests can and should be accommodated (being sure the necessary written documentation is obtained). This is certainly the case where the change is minor and does not conflict with other commitments, such as adding additional silt fence to better protect a wetland during a critical phase of construction. In other instances, however, it may be necessary to decline the request because it conflicts with other commitments or would entail an unreasonable level of effort and costs – be sure the agency is notified in writing of the rationale. Remember that agencies always have the right to inspect the work and even issue enforcement orders but never to control or direct the contractor's work. You should not hesitate to tell the regulator that you need to consult with the PE and region environmental staff before agreeing to any changes that could have a measurable impact on the project or other environmental commitments.

#### **1.4.2 What Approaches, Attitudes and Styles Work Best?**

Success in achieving environmental compliance will depend to a large extent on your ability to communicate with the PE, other WSDOT project personnel, the contractor and the regulators. You

will have a greater chance of success if you adopt these communication styles and attitudes:

- Be proactive – be prepared for compliance problems.
- Find the right balance between your dual responsibilities (“auditing/reporting” versus “enabling/ preventing”).
- Communicate regularly with contractor/foremen/operators based on a pre-agreed communication protocol.
- Communicate regularly with the region environmental office.
- Avoid an “us versus them” attitude when dealing with regulators.
- Approach agencies with positive solutions rather than open-ended questions or problems.
- Don’t take shortcuts to environmental compliance.

When an environmental compliance problem occurs, don’t panic. Take the time needed to understand the root cause of the problem and explore different solutions. Involve people who know the most about the relevant construction or environmental elements.

Work with your project team to help them understand why environmental compliance is important. Untrained employees can hurt the compliance effort by saying or doing the wrong thing or by not reporting issues. Inspectors represent the last line of defense for ensuring that WSDOT’s commitments get fulfilled.

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# Chapter 2 Pre-Construction Compliance Planning

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*The purpose of this section is to provide an overview of how environmental compliance is managed and controlled during the pre-construction phase. You should come out of this session with a basic understanding of the important compliance topics and approaches that should be considered prior to the beginning of construction on WSDOT projects*

## 2.1 What Are The Key Compliance Topics?

Compliance topics are encountered before, during and after the construction phase of a project. Thorough planning during the pre-construction phase is important to set the stage for how environmental compliance will be managed during all subsequent project phases. Compliance topics most commonly encountered prior to construction of WSDOT projects include:

- **Notifications.** Regulatory agencies typically require that WSDOT inform them a certain number of days prior to the start of major project events such as pre-construction meetings and the beginning of construction or in water work. This may be electronically via email (for documentation purposes) or combined with a phone call to the regulator (to ensure that they received the notice).
- **TESC, SPCC and Monitoring Plans.** The [TESC](#) and [SPCC](#) plans must be prepared and on site before work begins. This same requirement may pertain to Water Quality Monitoring plans as well. Note that *Standard Specifications* Section 8-01.3(1)A allows the contractor to revise a WSDOT-prepared TESC plan with the PE's approval.



Environmental Compliance Training prior to the start of construction.

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### How do I keep track of all of the required notifications?

Hint: Attend regular schedule meetings to get current schedules and updates from construction managers. Use Microsoft Outlook to set calendar reminders with alarms so you don't forget key notifications.

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- **Marking/Staking.** It is extremely important that the clearing limits, travel corridors, stockpile sites, and sensitive areas be delineated and clearly marked with brightly colored construction fence prior to construction. WSDOT strengthened its commitment to this requirement through the development of [Project Delivery Memo #09-02](#) and the [2004 Compliance Implementing Agreement between WSDOT and Ecology](#).



Fencing and a sign posted at the edge of a sensitive area.

- **BMP Installation.** Design, procedural, and physical BMPs, such as storm drain protection or fish passage culverts, must be in place and possibly approved by the appropriate regulatory agencies prior to the start of construction.
- **Stabilization of Construction Entry/Exit Points.** Wherever construction vehicle entry/exit points intersect paved roads, provisions must be made to minimize the transport of sediment (mud) onto the paved road prior to the use of these access points.
- **Baseline Surveys.** Certain commitments may require that water sampling, photo-documentation or other types of site surveys be completed prior to the beginning of work to establish pre-construction conditions.



Installation of a stabilized construction entrance to minimize track out.

## 2.2 What Are The Primary Components of Pre-Construction Planning?

This section reviews the procedural roles and responsibilities related to pre-construction environmental compliance. At the beginning of this effort and continuing through all project phases, you should maintain a strong coordination and communication link with the environmental personnel responsible for preparing the environmental documentation and securing the permits. WSDOT environmental personnel have the most complete and current information on the environmental issues of concern and are likely to serve as the primary point of contact with the regulators.

### 2.2.1 Develop an Understanding of the Big Picture

In order to implement a successful environmental compliance program, you must not only understand the specific commitments established for your project but you should also step back from the details and develop a broad, commonsense view of the environmental concerns most important to WSDOT, the regulators, and the public at large. This requires that you think outside the box and seek an understanding of the:

**Baseline conditions** – i.e., KNOW YOUR SITE, VICINITY, LANDSCAPE AND WEATHER PATTERNS

- *What does the immediate project site look like? What kind of traffic patterns can be expected at different times of day/season?*
- *What about the area surrounding the project site? Is it commercial, residential, industrial, undeveloped? Which land uses could be most affected during construction?*
- *How is water reaching the site as rainfall or run-on going to move through the site? Have you been out to walk the site, ideally under a range of precipitation events?*
- *What are the primary landscape features? Are the upgradient areas (the source of surface runoff reaching the site) wooded or dominated by slopes subject to erosion? What about groundwater characteristics? How does your project fit into the existing landscape?*
- *When will construction occur and what are the typical weather conditions? What are the extremes of rainfall, wind, etc. reported for the area?*

**Project plans** – i.e., KNOW YOUR PROJECT PLANS AND SCHEDULE

- *What is the scope of the project? What activities will occur on site and off site?*
- *What is the planned schedule for the various phases of construction?*
- *How will surface water runoff patterns be affected?*
- *How will the project affect traffic patterns, and how will traffic affect your ability to inspect?*
- *What are the critical path items to successful project completion?*

**Expected impacts and risks** – i.e., KNOW WHERE/HOW TO FOCUS YOUR ENVIRONMENTAL COMPLIANCE RESPONSIBILITIES

- *Of all the environmental features potentially affected, which commitments are the most sensitive or of the most concern to the regulators and the public?*
- *Which elements of construction (locations, work activities, times of year, times of day) present the greatest risk to the environment?*

You can best accomplish these objectives by reviewing the project's background documents (particularly hazardous material reports, NEPA documents and accompanying discipline reports),

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**How does your project fit into the existing landscape?**

TESC plans must consider the topography and soils associated with your project. Pre-construction field investigations should be carried out to identify any off-site discharges that could dump excess stormwater water onto the site.

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Off site stormwater from illegal discharges can wreak havoc on construction sites and BMPs.

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**Where can I find procedures for tracking commitments?**

The Environmental Services Office has a web page dedicated to [tracking commitments](#) during the design, contract preparation, and construction phases of project delivery.

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**How do I keep track of all the commitments?**

Entering project commitments into a database prior to the start of construction will make it easier for you to keep track of environmental commitments. A relational database such as WSDOT's [Commitment Tracking System](#) (CTS) allows users to query and create reports to help ensure compliance.

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**How will I know when certain commitments are applicable?**

It is critical that you obtain a weekly schedule for upcoming construction activities. Once you know what work is planned, you can target the high risk activities and identify the most applicable commitments.

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by walking the site, and by talking directly to the project designers and construction team, the WSDOT personnel responsible for environmental assessments and permitting, and the key regulators.

### **2.2.2 Review Environmental Commitments**

The region Environmental Office is responsible for creating and maintaining a [commitment file](#) as a project progresses through its development process. Whenever commitments are made, they are incorporated into project documents and added to the environmental commitment file once they are finalized. Some regions use [WSDOT's Commitment Tracking System](#) (CTS) to accomplish this task. An environmental compliance binder or notebook may have been prepared by the environmental office to ensure the construction project office is aware of all the environmental requirements. If this information has not already been prepared by others, you should work with region environmental personnel to be sure all the relevant commitments have been captured and organized prior to the start of construction.

Here are some things to review prior to the start of the project:

- **Compilation of environmental commitments.** A list of commitments and who is responsible for them should have been developed prior to your involvement in the project, but you may need to become familiar with the permits and other documents supporting these commitments and you may have to help update the list to account for late-issued permits. Regions use various means of doing this. Some use databases, such as the Commitment Tracking System to ensure your list is current, while others use compliance binders containing pertinent information. Talk to your Region environmental representative to establish roles and responsibilities for managing commitments. You should maintain a copy of all permits, approvals and documents relevant to the environmental commitments on site for future reference by you, the PE, construction managers and foremen, agency personnel or others.
- **Relationship of each commitment to discrete project phases, locations, and timing.** Some commitments are general in nature and pertain to all project elements, but most will only apply to specific work activities or to specific locations or to specific daily or seasonal work schedules. Considering that WSDOT construction projects can involve hundreds of commitments, you may benefit from categorizing each environmental commitment so that you can focus on those commitments applicable to the work being conducted at the time and place you are monitoring.

- **Inspection punch lists, checklists, and databases.** You may need to prepare daily and weekly punch lists based on the applicable commitments to ensure that nothing falls through the cracks and project compliance is adequately documented. For larger, more complex projects, you should consider organizing the commitments into an electronic database that can be queried to identify those commitments applicable to the activities occurring at the time you are doing an inspection.
- **Capturing environmental commitments in the project plans.** To the extent feasible, the contractor's environmental commitments should be shown on the contract plans. Prior to construction, you should review these plans to be sure commitments are clear and that a responsible party has been assigned and are shown in graphic form (such as silt fence locations) or in note format (such as a requirement that disturbed areas be revegetated or that a certain grass seed mix be used).

### 2.2.3 Apply the Principals of Risk Management

As applied to environmental compliance, risk management involves first identifying environmental risks during project development and then allocating compliance resources in general proportion to the magnitude of those risks. A risk assessment process is typically applied during a project's environmental evaluation and permitting phases, so the environmental commitments that result are generally intended to account for most environmental risk factors.

However, permit writers do not always have a good grasp of actual site conditions or construction practices. For example, permit conditions may require that all wetlands in the project area be protected but may not distinguish between wetlands located immediately adjacent to and down gradient from a work area and wetlands located at some distance and over a ridge. The TESC plan may or may not adequately account for these differences.

You should regularly review these matters during all stages of the project to reflect project details and refinements and to incorporate the kind of project-specific information that can only be obtained from hands-on construction experience. This approach will not only help ensure overall compliance, it might make your job much easier by reducing the level of inspection effort required in low-risk situations.

During the pre-construction phase, developing a big-picture understanding (Section 2.2.1) and reviewing the project's



It is important to identify any lessons learned at the end of each activity so they can be considered for future work. See the [Construction Project Management](#) webpage for more information.

environmental commitments (Section 2.2.2) will provide you with most of the information needed to prepare a monitoring plan that assigns the most time and resources to the environmental features at greatest risk. Applying your first-hand experience and consulting with the PE, the contractor and others, you should also conduct “what-if” brainstorming. For example, what could happen if a 100 year storm event occurs? Are there times of year when a protected fish or wildlife population could be adversely affected by an inadvertent release of hydraulic fluid? Which project activities or weather events are most likely to cause permit violations or trigger an [Environmental Compliance Assurance Procedure](#) (ECAP) notification? Which events are most likely to have the most impact on the project in terms of cleanup or corrective action costs and/or schedule delays? In addition to evaluating an event’s magnitude or impact, you should consider how likely it is to happen.



It is important to discuss environmental commitments and set expectations prior to the start of work.

This kind of risk management approach should be carried through the construction stage, so that the project team can shift its inspection and prevention resources to accommodate a changing assessment of risks. Of course, any changes in priorities or resource allocations need to be approved by the PE.

#### **2.2.4 Discuss Expectations & Raise Awareness**

Achieving environmental compliance on a WSDOT construction project is a major task that simply cannot be done by a single person – it requires the concerted effort of everyone working on the job. Consequently, it is critical that environmental requirements as well as more general goals and objectives be conveyed to the team through a well-designed and comprehensive environmental training and awareness program. Ensure that:

- WSDOT staff are current in any required training courses; and
- Contractors and their subcontractors understand WSDOT policy/procedure as it applies to the project

The pre-construction meeting is the perfect time to address these issues.

### **2.3 What is Important during Pre-Construction Meetings?**

Pre-con meetings are a good way to meet the parties involved in the project and to emphasize roles, responsibilities and expectations prior to starting construction. Good communication between the WSDOT project team and the contractor begins with

a good pre-con meeting. Environmental [compliance topics](#) to be covered during the pre-con meeting may include:

- Overall importance of environmental compliance, including WSDOT's expectations of the contractor to meet those environmental commitments specified in the contract documents.
- Any environmental compliance issues or inconsistencies in the contract plans.
- Project roles and responsibilities especially that of region and/or headquarter environmental staff. [Chapter 600](#) of the Environmental Procedures Manual includes a section that describes construction roles and responsibilities.
- Communications protocols, including day-to-day channels of communication regarding environmental compliance, a list of designated agency representatives and who is responsible for agency communications, contractor and WSDOT notification requirements in the event of a spill or other potential problem, contacts with landowners, etc.
- Sensitive resources within the project area and their proximity to various work elements.
- Project specific strategies to ensure compliance
- High risk work elements (i.e. in-water work, concrete pouring, etc.)
- Safety protocols for resource agency staff visiting the project
- A schedule, provided to the Project Engineer, as part of the contractors' progress schedule for implementation of erosion/sediment control BMPs as per *Standard Specification 8-01.3(1)B*.
- Plan for contractor and subcontractor training.

For more complex projects, it might be necessary to have a separate pre-con meeting devoted entirely to environmental compliance. This meeting might include regulatory agency representatives to ensure that everyone is operating from the same playbook and to obtain agreement on respective roles and responsibilities.

## 2.4 What Environmental Commitments Pertain to a Particular Project?

The purpose of this section is to show you how to find the applicable environmental commitments when you are first

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### Helpful Hint

If regulatory agencies are invited to the pre-construction meeting, WSDOT needs to be prepared to demonstrate how they plan to ensure compliance. Therefore, it is important your team meets internally, prior to the pre-construction meeting, to go over key messages and to ensure everyone is on the same page.

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**Helpful Hint**

Prior to construction you should locate all of the environmental documents and permits pertaining to project. Print them out and create files so these documents can be readily accessed. Knowing the project-specific environmental commitments associated with a project will boost your confidence as an inspector!

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assigned to a project. Environmental commitments are made in project-specific NEPA/SEPA, documents, and permits.

Ideally, all commitments have been entered into a database, incorporated into contract documents, and are easily accessible. Prior to construction, be prepared to help ensure that the applicable environmental commitments have been fully captured and compiled so that you are prepared to inspect and monitor for compliance once soil disturbing activities begin.

Remember that WSDOT is ultimately responsible for a project's compliance with all environmental commitments, but the hands-on implementation of any single commitment could be the primary responsibility of the WSDOT inspector, other WSDOT personnel or the contractor. These matters need to be clearly sorted out prior to construction so it is clear to each party which tasks they are directly responsible for implementing.

Although this section addresses matters common to all regions, it is critical that you are familiar with your Region's Environmental Compliance tools. Such tools include a comprehensive collection of relevant documents (referred to as a "Project Environmental Notebook," "Environmental Construction Manual for Field Inspectors," or "Environmental Binder") as well as [ECAP](#) reporting flow charts and field checklists.

#### **2.4.1 Contract Requirements**

The inspector's primary environmental compliance role is to ensure that the contractor properly implements environmental commitments incorporated in the contract documents. This section discusses those parts of the contract that could include environmental commitments. Per section 1-04.2 of [Standard Specifications for Road, Bridge and Municipal Construction](#) (M41-10), "Any inconsistency in the parts of the Contract shall be resolved by following this order of precedence":

1. Addenda,
2. Proposal Form,
3. Special Provisions,
4. Contract Plans,
5. [Amendments to the Standard Specifications](#),
6. [Standard Specifications](#), and
7. [Standard Plans](#).

#### **2.4.1.1 Addenda**

Addenda are issued periodically over the pre-bid opening phase of the project when changes to the contract are required. Sometimes, conditions attached to a specific permit are presented in Addenda when the permit is issued after the Special Provisions have been prepared.

#### **2.4.1.2 Special Provisions**

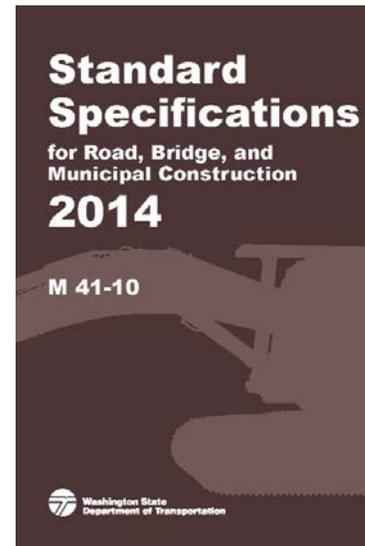
Special Provisions are supplemental specifications and modifications to the Standard Specifications and Amendments to the Standard Specifications that apply to an individual project. Environmental commitments may be included in one or more sections of the Special Provisions, or they may require the contractor to prepare an Environmental Compliance Plan and obtain WSDOT's approval of the plan prior to construction.

Environmental commitments may be included in one or more sections of the Special Provisions, or they may require the contractor to prepare an Environmental Compliance Plan and obtain WSDOT's approval of the plan prior to construction.

As new environmental requirements pertaining to WSDOT construction projects are developed, they may be described in a Project Delivery Memo (PDM). The PDM typically provides background information explaining the purpose of the requirement as well as a mechanism for incorporating the requirement into existing and future contracts as a Special Provision. An example of a relevant PDM that may be incorporated into contract documents is [PDM #09-02: High Visibility Fence Clarifications](#). This memo requires the notation of fencing for wetland and sensitive areas on Contract Plans and the installation and agency approval of this installation prior to the start of any other work on the site.

#### **2.4.1.3 Contract Plans**

To the extent Contract Plans show key environmental features and the applicable environmental commitments, it will be easier for you to monitor the contractor's work and help them stay in



WSDOT Standard Specifications

compliance. Some regions (e.g., Northwest) intend to show all commitments on plan sheets prior to construction, but other regions may include more general commitments in separate documents so check with your region. Regardless of region differences, location of high visibility fencing and key erosion control features such as silt fencing and wattles should be shown on the Contract Plans. WSDOT inspectors should review these plans prior to construction to make sure the appropriate commitments have been correctly displayed.

#### **2.4.1.4 Standard Specifications for Road, Bridge and Municipal Construction and Amendments**

Standard Specifications for Road, Bridge and Municipal Construction (M41-10) serves as a baseline for construction and delivery of WSDOT projects. It contains construction, material and contract administration requirements applicable to every project unless supplemented or changed by an Amendment, Special Provision or GSP. Amendments to the Standard Specifications are the “pink pages” that address specifications not yet incorporated into the most current version of the Standard Specifications. Both the Standard Specifications and Amendments are incorporated into the written contract and become the legal and enforceable language of the contract.

A summary highlighting WSDOT’s [Standard Specifications for Environmental Compliance](#) is available on WSDOT’s [Environmental Compliance Guidance for Construction](#) webpage.

#### **2.4.1.5 Standard Plans**

WSDOT’s Standard Plans for Road, Bridge, and Municipal Construction (M21-01) contain a collection of plan details that have been pre-approved for use on WSDOT projects. The Standard Plans provide standardized fabrication, installation and construction methods for specific items of work and complement the contract documents and the Standard Specifications. Standard Plans relevant to environmental compliance are contained primarily in Section I (Site Preservation and Erosion Control). Included here are plans for erosion and sediment control of storm drain inlet protection, installation of silt fence, wattles, straw bale barriers, check dams and erosion control blankets.

#### **2.4.2 Interagency Agreements**

Memoranda of Understanding (MOU), Memoranda of Agreement (MOA), and Interagency Agreements (IAs) are various forms of agreements between WSDOT and other agencies or tribes. To the extent such agreements pertain to environmental aspects of project construction, they could contain environmental commitments applicable to your project. Regardless of whether

these provisions are specifically incorporated in your contract documents, you must be familiar with their requirements pertaining to environmental compliance during construction. Also see the [General Permit](#) webpage for programmatic permits.

A complete list of [Interagency Agreements](#) is available in Appendix B of the Environmental Procedures Manual. Of particular note are the following:

- [2004 Compliance Implementing Agreement between WSDOT and Ecology](#). This agreement was adopted to help ensure that WSDOT projects comply with Ecology permits and certifications as well as the applicable state water quality standards. It addresses fencing of environmentally sensitive areas, mitigation sites and wetland buffers as a first order of work, requires WSDOT to notify Ecology 10 days in advance of conducting work in such areas, and requires that all WSDOT inspectors be trained in compliance with Section 401 and NPDES permit conditions, among other requirements.
- [2008 Memorandum of Agreement between WDFW and WSDOT Concerning Administration of Hydraulic Project Approvals for Transportation Activities; and Implementation of the Fish Passage Retrofit Program; and Implementation of the Chronic Environmental Deficiency Program](#). This agreement helps ensure the constant and efficient administration of Hydraulic Project Approvals for transportation projects. It also outlines general expectations for Hydraulic Code compliance.

### **2.4.3 Other Environmental Commitments**

Some or all of the environmental commitments summarized by category in the following sections may be included in one or more parts of the contract. For various reasons, the inspector should be familiar with all environmental commitments related to construction regardless of whether they are included in the contract. WSDOT is responsible for meeting all environmental commitments applicable to each project whether or not they are covered by the contract.

#### **2.4.3.1 Permit Terms and Conditions**

Terms and conditions are usually specified in project permits issued by various federal, state and local agencies. Some conditions are “boilerplate,” while others are based on unique project-specific characteristics. Projects of any size generate a number of permits. A comprehensive list of [permits and approvals](#) is available on the web.

Any single permit may have numerous conditions attached. For the larger, more complex projects involving many permits, the total number of environmental commitments may be in the hundreds. Construction of the second Tacoma Narrows Bridge project, for example, initially involved 853 permit conditions and other environmental commitments. You will need to work with the PE and the region environmental staff early in construction planning to review the environmental compliance responsibilities and to ensure that the project has the resources and tools needed to monitor the many commitments.

Some typical permit conditions that you might encounter on your project are shown in the following crosswalk documents and in the table below:

- [Army Corps Nationwide Permits](#) (3,13,14,15,18,27, and 33)
- [General Hydraulic Project Approval for Bridge and Ferry Terminal Maintenance](#)
- [NPDES Waste Discharge Permit for Bridge and Ferry Terminal Washing](#)
- [NPDES Construction Stormwater General Permit](#)
- [2004 Compliance Implementing Agreement for Water Quality Standards](#)

#### Hydraulic Project Approval

Topic	Typical Permit Condition (Environmental Commitment)
Timing Restrictions	Work within the wetted stream shall only occur beginning June 1 and shall be completed by September 30, annually, except work may occur anytime the stream is dry within 30 days before and after these dates, respectively.
Notification Provisions	The Area Habitat Biologist (AHB) listed below shall receive verbal or written notification from the person to whom this HPA is issued no less than seven (7) days prior to the start of work.
Reporting	Monthly during project construction, the AHB shall receive a written progress report of permitted activities.
General	The person(s) to whom this HPA is issued may be held liable for any loss or damage to fish life or fish habitat which results from failure to comply with the provisions of this HPA. Failure to comply with the provisions of this HPA could result in a civil penalty of up to one hundred dollars per day or a gross misdemeanor charge, possibly punishable by fine an/or imprisonment.

#### 2.4.3.2 Endangered Species Act Requirements

Endangered Species Act (ESA) commitments are listed separately here because of the importance of these resources and the individual and organizational liabilities accompanying non-compliance and unauthorized “take.” Although these ESA commitments are occasionally incorporated in Corps Section 10/404 permits, they sometimes stand alone (e.g., when there is no federal permit but federal funding or construction on federal land has triggered the need for ESA consultation).

ESA commitments can be expressed as Conservation Measures or elements of the Project Description in Biological Assessments or as Reasonable and Prudent Measures and Terms and Conditions in Biological Opinions (BO). They may place limits on construction methods, locations and timing to ensure that habitats and sensitive life history stages of ESA-listed species are adequately protected. A common requirement for work in the vicinity of bald eagle nests is, “No pile driving activities shall occur during the bald eagle nesting period of January 1 through August 15.”

#### 2.4.3.3 National Environmental Policy Act/State Environmental Policy Act Commitments

NEPA/SEPA documents contain a variety of mitigation measures which become environmental commitments for the project. These commitments, which may overlap with permit conditions, could address matters related to construction noise and dust, erosion and runoff, water quality, fisheries, wetlands, hazardous materials, flooding, cultural resources and public services and utilities. They could be contained in the main body of the NEPA/SEPA document or in a technical report appended to that document. The NEPA/SEPA documentation may or may not include a separate list of the project environmental commitments. Furthermore, some or all of the NEPA/SEPA commitments may or may not have been incorporated into the contract documents. Inspectors should consult with region environmental staff to be sure it’s clear who has what responsibility for monitoring compliance with these commitments.

#### 2.4.3.4 Cultural Resources/Section 106 Commitments

Section 106 review is required for transportation projects affecting a historic property listed on or eligible for listing on the National Historic Register. Typical environmental commitments resulting from this process are as follows:



Small salamander encountered during fish exclusion activities.



A WSDOT Fish Biologist hard at work capturing fish for exclusion.

- WSDOT will contract with an experienced professional Cultural Resource staff to conduct on-site monitoring during initial ground-disturbing activities. The Archaeologist will be required to meet the Secretary of Interior's qualification standards and to be proficient in the identification of human skeletal remains.
- WSDOT will arrange for the Archaeologist to train the Environmental Inspector and construction supervisors about the appropriate procedures to follow in the event of encountering human remains or cultural resources.
- WSDOT will notify Tribes prior to project ground disturbing activities that require construction monitoring. WSDOT will provide access to the construction site and the Tribal Monitor will coordinate with the Environmental Inspector and the Archaeologist.
- The Archaeologist and the Tribal Monitor will have the authority to request that the Environmental Inspector stop construction activities in the immediate area of a potential find of human remains or cultural resources so that the Tribal Monitor and the Archaeologist can examine the find and determine what treatment is required.
- If any member of the construction work force believes he or she has made an unanticipated discovery of human skeletal remains, all work adjacent to the discovery will be stopped and the PE will be immediately notified. Section 3.4 of this training manual covers what to do if there is a discovery during construction.

## **2.5 What are the Key Sources of Environmental Compliance Information?**

The following sections list and describe the basic tools needed to support environmental compliance activities. This includes construction compliance plans, existing printed/web manuals, training classes and – perhaps most importantly – the people who have special knowledge or experience in a particular area of environmental concern.

### **2.5.1 Project-Specific Technical Studies and Reports**

For more information on a particular environmental element of your project, you can review technical reports prepared in support of the NEPA/SEPA documentation or permit applications. These could include Discipline Reports, Initial Site Assessments or Preliminary Site Investigations, a Wetland Mitigation Plan or others. These reports and the appropriate WSDOT staff should definitely be consulted if there is any question about how to interpret a particular environmental commitment derived from one of these studies.

## 2.5.2 General Printed/Web Resources

In addition to the *Standard Specifications* book (see 2.4.1), here are some other printed and web-based resources available to help WSDOT inspectors perform their environmental inspection responsibilities.

- **[Construction Manual \(M41-01\)](#)**. This manual is a reference book that is consistent with the WSDOT *Standard Specifications*. It also includes [ECAP](#) provisions in Section 1-2.2K and addresses archaeological and historical objects in Section 1-1.9. A list of relevant [environmental sections](#) of the *Construction Manual* is available on WSDOT's [Environmental Compliance Guidance for Construction](#) webpage.
- **[Environmental Policy Statement \(E 1018.01\)](#)**. This Executive Order directs WSDOT employees to follow sound environmental protection practices in the planning, design, construction, operation, and maintenance of WSDOT's transportation systems and facilities.
- **[Environmental Procedures Manual \(M31-11\)](#)**. This manual focuses on the environmental review and permitting phases of project development, but it also includes a section on the construction phase. Relevant sections include:
  - Chapter 490 – Tracking Environmental Commitments during Design
  - Chapter 500 – Environmental Permitting
  - Chapter 590 – Incorporating Environmental Commitments into Contracts
  - Chapter 600 - Construction
  - Chapter 610 – Preparation for Construction
  - Chapter 620 – During Construction
  - Chapter 630 – Close Out of Environmental Commitments
- **[Design Manual \(M22-01\)](#)**. Chapter 225 covers environmental coordination.
- **[Roadside Manual \(M25-30\)](#)**. This manual addresses a variety of environmental functions provided by roadside areas, including water quality preservation, stormwater detention, wetland and habitat protection, and noise and air quality control.

- [\*\*Temporary Erosion and Sediment Control Manual \(M3109.01\)\*\*](#). *The Temporary Erosion and Sediment Control Manual (TESCM) provides guidance on temporary erosion and sediment control including protocols for sampling stormwater on construction projects to comply with the NPDES Construction Stormwater General Permit.*
- [\*\*Ecology Stormwater Management Manuals \(for Western and Eastern Washington\)\*\*](#). Although the TESCM serves as the equivalent to these Ecology manuals, there may be times when you will need to consult these manuals for additional information on erosion control best management practices.
- [\*\*Hydraulics Manual \(M23-03\)\*\*](#). This manual provides information necessary to complete hydrologic and hydraulic analysis for nearly all situations encountered during normal highway design.
- **Wetlands Policies.** Relevant policies concerning wetland protection and preservation are contained in the [\*Wetland Protection and Preservation Policy Statement P 2038.00\*](#).
- [\*\*WSDOT Environmental Services Website\*\*](#). The WSDOT website has a good variety of environmental compliance information and key contacts.

### **2.5.3 Training**

In addition to this course, WSDOT provides a number of other courses related to environmental compliance:

- BMP Field Class
- Commitment Tracking System
- [Construction Site Erosion & Sediment Control](#)
- [Cultural Resources Training](#)
- Environmental GIS
- Environmental Compliance for Design-Build
- Environmental Overview: Compliance for Construction Inspectors (e-Learning)
- Introduction to Wetlands
- Permitting Workshop
- [Spill Plan Reviewer](#) (e-Learning)

#### 2.5.4 People

Many people with a wide variety of skills and experiences are available to help you address environmental compliance issues. [Chapter 600](#) of the *Environmental Procedures Manual* lists roles and responsibilities for the project construction team. These people include WSDOT region and headquarters offices, consultant organizations under contract to WSDOT, and the regulatory agencies.



On-call Consultants help WSDOT install a piezometer at a recently constructed wetland mitigation site.

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# Chapter 3 Environmental Compliance during Construction

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*This section addresses environmental compliance from the time construction begins until the work is complete and all that remains is site cleanup, restoration, monitoring, and final reporting. An overview of environmental procedures during the construction phase is presented in [Section 600](#) of the WSDOT Environmental Procedures Manual.*

## 3.1 What are the Key Compliance Topics?

The purpose of this section is to review the primary technical issues and responsibilities likely to fall on the environmental compliance inspector during construction. Although each project has its own environmental requirements, the following are commonly encountered or are especially important to WSDOT:

- **Installation of high-visibility fencing around sensitive areas.** When shown in the plans, the first order of work shall be the installation of high visibility fencing to delineate all areas for protection or restoration, as described in the Contract. See *WSDOT Standard Specification 8-01.3(1)* for additional requirements.
- **Regular maintenance of BMPs.** *WSDOT Standard Specification 8-01.3(15)* requires regular inspection and maintenance of erosion and sediment control measures. The importance of these inspections cannot be overstated. BMPs can fail for a variety of reasons, so “be ready for the unexpected” during BMP inspections. Furthermore, situations will arise where the permitted BMPs are not adequate to accomplish the stated objective, so timely TESC plan revisions and field modifications may be necessary to ensure compliance.



High-visibility fencing installed to protect critical shoreline habitat.



Monitoring for noise at night during demolition to ensure compliance with a noise variance.

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**Where does WSDOT define the minimum requirements for a SPCC Plan?**

[Standard Specification 1-07.15\(1\)](#) lists numerous elements the SPCC Plan shall address. Additional information is available on the [Spill Prevention](#) webpage. WSDOT's Environmental Services Office developed a Spill Plan Reviewers e-Learning course that trains staff how to review a SPCC Plan. It's available to WSDOT staff through the [Learning Management System](#).

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- **Monitoring for water quality, air quality, noise, cultural resources, etc.** In the broadest sense of the term as related to environmental compliance, “monitoring” encompasses the full range of programmatic procedures necessary to inspect and document compliance with environmental commitments. A narrower definition of “monitoring” is the measurement of pollutants and other physical parameters in emissions and in the receiving environment for the purpose of checking compliance with permitted limits for emissions and ambient pollutant loads. Regardless, a rigorous monitoring program is an absolute necessity for documenting compliance and, even more importantly, for anticipating and correcting problems before they occur.
- **Responding to spills and hazardous materials during construction.** *Standard Specifications* [Section 1-07.15\(1\)](#) requires contractors to prepare project specific spill prevention; control and countermeasures (SPCC) plan to be used for the duration of the project. The SPCC plan shall outline spill response procedures including assessment of the hazard, securing spill response and personal protective equipment, containing and eliminating the spill source, and mitigation, removal, and disposal of the material.
- **Wet weather preparations.** Most compliance problems on WSDOT projects have been related to rainfall and stormwater runoff. To the extent you can anticipate and help prepare for unusual weather conditions, the more likely you are to achieve compliance.
- **Schedule/work window conformance.** In addition to a number of technical matters that need to be monitored, you must also track construction activities relative to schedule-driven environmental commitments. Early anticipation of scheduling problems, such as the need to work outside of an approved work window, will go a long ways toward timely resolution.
- **Emergency response and notifications.** When it comes to major construction projects and environmental compliance, you can almost count on something going awry. The inspector who plans for the range and scale of possible unanticipated events will be in a much better position to respond quickly and effectively when they occur.
- **Agency communications and site visits.** As an inspector, you need to know ahead of time, who will take the lead in communicating with regulators.

## 3.2 What are the Primary Components of a Compliance Monitoring Program?

You need to be aware of the range of environmental compliance methods, tools and procedures available so you can work with your Project Engineer (PE) proactively to implement the best approach for your particular project. The selected approach should consider both the minimum requirements for monitoring and reporting as well as going the extra mile to anticipate and prevent problems before they occur.

### 3.2.1 Inspection Approaches

You need to inspect or monitor the contractor's environmental commitments (routine inspections) as well as those unexpected situations arising from incidents or complaints (reactive inspections). Some approaches available to inspectors for accomplishing these objectives include:

- **Site visits and field observations.** Each environmental commitment that can be inspected in the field must be assigned a specific method and frequency of monitoring. Some may require a daily or weekly field visit by the inspector. Others may have to be visited only during or after a rainfall/runoff event, or on a schedule dictated by the risk of the activity. You can prepare a punch list of key requirements, derived from the project's environmental commitments, to reflect current construction activities and to help organize daily, weekly or monthly inspections. Use of a commitment database can help with this.
- **Verification inspections.** For commitments that are the primary responsibility of WSDOT personnel, you may need to communicate directly with those parties to verify compliance and obtain documentation to ensure that the responsible party has kept the necessary records. Where the contractor is implementing a compliance plan of their own, or is otherwise responsible for self-monitoring, you will need to obtain documentation showing that the plan has been implemented properly.
- **Sampling During In-water Work.** WSDOT is required to sample water quality during [in water work](#) to ensure compliance with the State Surface Water Quality Standards (WAC 173-201A) per Section 401 of the Clean Water Act. WSDOT's [Monitoring Guidance for In-Water Work](#) provides instructions to environmental staff and project teams so they can ensure compliance.
- **Sampling Construction Stormwater Runoff.** WSDOT is required to sample construction stormwater that discharges

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#### Helpful Tip

Environmental inspectors should have a good working relationship with the PE. It is critical that there is ongoing communication with the PE to minimize risks associated with non-compliance. It is the inspector's job to clearly communicate risks to the PE so the PE can work with the contractor to get them resolved in a timely manner.

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from its projects to ensure compliance with the NPDES Construction Stormwater General Permit issued under section 402 of the Clean Water Act. [Water quality sampling](#) guidance for construction stormwater runoff is contained in Chapter 4 of the *WSDOT Temporary Erosion and Sediment Control Manual*. References to these protocols should be included in the monitoring plan.

- **Spill Plan Audits.** Environmental commitments related to spill prevention and control require regular equipment inspections and that spill kits must be readily accessible and in good working order. Thus, your inspection program should include regular equipment checks to look for leaks to check the quantity of spill response materials available on site.

### 3.2.2 Documentation and Reporting Methods and Frequency

A number of tools are available to inspectors to record and document their monitoring activities, such as:

- **Erosion and Sediment Control Inspection Form.** This form was developed by WSDOT to help the contractor's ESC lead comply with NPDES Condition S4.B regarding site inspections. This form should be completed by the contractor's ESC Lead per the frequencies listed in Standard Specification 8-01.3(1)B. The Erosion and Sediment Control Inspection form #220-030 can be obtained from the [WSDOT internal Forms Management](#) site.
- **Inspector's Daily Report.** The second page of the standard WSDOT Inspector's Daily Report (IDR) can be used to record inspection activities, findings and recommendations relative to environmental commitments. Refer to Chapter 10 of the [Construction Manual](#) for a sample of the IDR.
- **Punch lists and Checklists.** Punch lists should be prepared to guide daily and weekly inspection activities. These lists are used to document recommendations for areas of non-compliance such as BMP maintenance and to record dates of completion.
- **Photography.** Inspectors should have access to digital cameras to document areas of non-compliance during inspections. Photos can be shared with management to communicate areas of risk that need immediate attention.
- **Communications Logs.** Communication with external agencies or the public related to environmental compliance should be documented either on the IDR or in a separate communication log.
- **Report Sampling Data for In-water Work.** If the project office has obtained an Individual 401 Water Quality Certification from

Ecology, they must submit all sample results monthly to the Ecology Federal Project Coordinator listed in the permit. A [Sampling Form for In-Water Work](#) is available online. For non-Ecology (Tribal or EPA) issued 401 Water Quality Certifications, check the permit for reporting requirements.

- **Report Sampling Data for Construction Stormwater.** All projects that have an Ecology-issued NPDES Construction Stormwater General Permit are required to enter stormwater monitoring data into WSDOT's [Construction Water Quality Monitoring Application](#) as it's collected but no later than the last day of the month. Contact WSDOT's Statewide Erosion Control Coordinator for training and access to the application.
- **Site Log Book.** WSDOT staff are responsible for maintaining a Site Log Book to comply with NPDES Condition S4.A. It must include a copy of the TESC plan (both narrative and plan sheets), the SPCC plan, documentation of BMP inspection and maintenance, site inspection reports, and water quality data. Any changes or corrections to BMPs or other physical features related to environmental compliance should be shown on the project TESC plan sheets.
- **Records of Change.** During the course of the work, it is likely that one or more environmental commitments will need to be changed or a new commitment may need to be added to reflect permit modifications, a change in construction activities or other factors. You may need to record the change and/or the regulatory authorization. A commitment tracking database provides a good place to document and track these changes.

One of the best ways to achieve environmental compliance is to help everyone involved in the project get interested in achieving compliance over the course of their daily routine. You should have a regular spot on the project briefing agenda to report findings and potential issues. For the larger or more complex projects, a weekly or monthly environmental status and awareness briefing is appropriate in addition to daily communications.

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#### Helpful Tip

Train everyone involved in your construction project to recognize environmental non-compliance events so they can alert you if they see issues in the field. Provide your staff with spill kits and training so they can reduce the chances of a spilled material getting to water.

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### 3.2.3 Notification Triggers

Prior to beginning construction, you and your staff should be clear about what kinds of activities trigger reporting. The [Environmental Compliance Assurance Procedure](#) (ECAP) includes notification triggers for when to report issues to the Project Engineer. It is described in detail in Section 3.3. Consult with WSDOT region staff to be sure region expectations and procedures are followed.



This truck rollover incident resulted in a small spill that triggered ECAP.

ECAP was designed not only to provide a standard procedure for reporting environmental violations but also to facilitate advance notifications of potential problems so they can be prevented from occurring. You should plan to work

closely with the Project Engineer, Region Environmental Manager (REM) and others to establish procedures and formats for such advance notifications. These discussions should cover the kinds of situations that would trigger a stop-work order issued to the contractor.

Similarly, you should establish procedures for notifying the PE and the contractor when impending events could jeopardize environmental compliance. Such situations could arise when weather forecasts call for unusually heavy storm events that could threaten erosion and runoff controls. These kinds of events are especially important to note when they could occur over a weekend or other times when crews would not otherwise be present to take preventative or corrective action.

### 3.2.4 Corrective Actions

Identifying a potential or actual violation of an environmental commitment is only part of the battle. The most important part is taking the actions needed to prevent or correct the problem. With first-hand knowledge of the situation and an understanding of what it will take to maintain or restore compliance, you can make a major contribution to these efforts.

Each compliance situation will demand its own response, depending on the nature and background of the commitment, the time and place of the event, and other factors. In general, corrective actions should be based on the type and magnitude of the environmental risks presented. That is, actions needed to correct smaller risks can be more deliberately planned and implemented than the emergency, full-response procedures that might be needed to correct immediate, high-risk events.

Agencies that issued the permit in question or otherwise have jurisdiction relative to the non-compliance event should be notified of the situation. Even if the notification amounts to nothing more than “We identified a potential problem but implemented such-and-such corrective measures to maintain compliance,” this will help advance project goals by demonstrating a high level of attention to the environmental commitments. Agency notifications should be coordinated through the PE and region environmental staff.

As an example of the corrective action steps involved, a typical Section 401 Water Quality Certification from Ecology will specify that, if the work causes distressed or dying fish or any discharge of oil, fuel or chemicals into state waters or onto land with a potential for entry into state waters, the permittee shall:

- Cease operations at the location of the violation;
- Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage;
- Notify Ecology of the failure to comply with the certification; and
- Submit a detailed written report to Ecology within five days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrent situation, results of any samples taken and any other pertinent information.



This issue needs immediate corrective action to prevent a continued discharge of highly turbid water offsite.

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#### Helpful Tip

As an inspector you should gather as much information as possible in the field and take good photos so when you get back to the office you can present the issue to management as accurately and quickly as possible. This should decrease the time it will take for decision to be made and corrective actions to occur.

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### 3.2.5 Project Changes that Could Affect Environmental Compliance

No matter how rigorous your environmental compliance planning and monitoring program, it is virtually certain that something will not occur as planned and that changes of one sort or another will be necessary. To the extent feasible, try to anticipate these changes so you are well prepared to respond when changes occur.

Typical examples of changes needing attention include:



This erosion issue resulted in a design change to stabilize the hillside at the end of a retaining wall.

- Site conditions other than expected (e.g., soils are found to be more erosive or have a higher silt content than described in the technical studies).
- Discoveries of hazardous materials, archaeological artifacts, or other features that cause a change in construction plans.
- Safety compromised due to environmental compliance (e.g., the permitted stormwater conveyance system causes inadvertent flooding of the roadway).
- Access (e.g., the need to get equipment into a fenced sensitive area due to restricted space).
- Changes in construction activities, location, or sequencing (e.g., cannot complete in-water work by close of work window, need to change location of permanent or temporary stormwater facility, etc).
- Environmental commitments shown to be inappropriate/ impractical.

The latter two items deserve special attention. If a construction delay could extend the work beyond the approved work window, WSDOT needs to allow plenty of time for the agencies to evaluate and approve a work window extension. In some cases, agency turn-around may take 2, 3 or 4 weeks or more, so the inspector needs to anticipate and notify the PE and region environmental staff well in advance.

Although your project's permit conditions and other environmental commitments were presumably developed with the best intentions and although these commitments were reviewed and accepted by WSDOT, it is not uncommon to discover early in construction that one or more of these commitments will simply not accomplish their objective. In other situations, you may find that the wording or intent of the commitment is not clear. Perhaps there is a conflict between commitments, or a commitment cannot be implemented without causing previously unanticipated impacts to the

environment or construction schedule. In all these instances, you should consult with the PE and appropriate environmental personnel to examine the situation, develop alternative approaches that will better achieve the objectives, and then present this information to the regulators with a request for a formal revision to the commitment.

Regardless of the cause, any material change in or addition/deletion of an environmental commitment must be approved by the PE and/or REM and the applicable regulatory jurisdiction(s). For changes that need to be implemented immediately, verbal communications with and authorization from the regulator may have to suffice until the appropriate written documentation can be provided. However, each change needs to be supported by a paper trail that documents the situation that occurred, the reasons for and/or benefits of the change and the agency's authorization.

If changes in site conditions or construction details lead to a material change in the project's environmental impacts, it may be necessary to reevaluate or revise the NEPA documentation. The Environmental Procedures Manual describes a procedure for this situation (Section 411.10), which most likely would be led by the REM.

### **3.3 Environmental Compliance Assurance Procedure**

WSDOT's [Environmental Compliance Assurance Procedure](#) (ECAP) is described in the *Construction Manual* (M41-01) in Section 1-2.2K. Its purpose is to recognize and eliminate environmental violations during construction of WSDOT projects and to ensure prompt notification to WSDOT management and agencies. It was developed in cooperation with key federal and state agencies and Associated General Contractors (AGC) of Washington.

The most important ECAP element for you to understand is the section on "notification triggers." Be sure to immediately report ECAP notification triggers to your PE. The introduction to this section states that, when any notification trigger occurs or if there are questions about compliance, the PE must initiate corrective actions in accordance with specified procedures. Furthermore, the REM will serve as a resource to the PE and give priority to addressing the actions, activities or situations that stem from notification triggers. The PE and REM will work together on an appropriate response to the notification trigger to avoid or minimize environmental damage.

Your PE may ask you to help with some of these documentation and reporting tasks. Responsibilities of other WSDOT personnel are described in subsequent sections of the ECAP.

### **3.4 Responsibilities Following Unanticipated Discovery of Cultural Resources**

Given the wealth of historical and archeological resources found in Washington, the PE should be familiar with the requirements of the National Historic Preservation Act (NHPA), [Standard Specification 1-07.16\(4\)](#), and any contract specifications regarding the discovery of cultural resources. The PE should discuss these requirements with the Contractor and WSDOT staff at the Pre-Construction Conference. These resources include, but are not limited to:

- Human skeletal remains,
- Anthropogenic soil horizons (areas showing the influence of humans on nature), occupational surfaces (areas showing evidence of human activity or habitation), midden (refuse heap), etc.,
- Areas of charcoal or charcoal-stained soil and stones,
- Stone tools or waste flakes (i.e. arrowheads or stone chips),
- Bones, burned rocks, or other food related materials in association with stone tools or flakes,
- Clusters of tin cans or bottles,
- Logging or agricultural equipment more than 50 years old.

Every project with ground disturbing activities should have an Unanticipated Discovery Plan (UDP) in the project provisions for use by the contractor and WSDOT. A UDP template can be found on the [Cultural Resources Compliance](#) webpage along with other [procedures during construction](#).

Headquarters Environmental Services Office, Cultural Resources Program can assist with the development or review of a project-specific plan.

The following guidance is given to assist the Project Engineer when construction activities cause disturbance to human skeletal remains. All human skeletal remains, which may be discovered, shall at all times be treated with dignity and respect.

Should any WSDOT employee, contractor, or subcontractor believe that he or she has discovered human skeletal remains or other Cultural Resources, follow the following steps in the *Construction Manual*:

[Discovery of Human Skeletal Remains \(1-2.2N\(1\)\)](#)

[Discovery of Other Cultural Resources \(1-2.2N\(2\)\)](#)

### **3.5 Compliance Trends and Reporting**

For its highways and maintenance programs, WSDOT compiles department-wide records of environmental non-compliance and reports on trends. The article is published annually in the [Gray Notebook](#) for the quarter ending in December. WSDOT self-monitors for “non-compliance events” whether or not such events lead to formal “notices of violation” (NOV) issued by a regulatory agency or an official. WSDOT is committed to continued monitoring of and reduction in the number of non-compliance events and NOVs.

### **3.6 Lessons Learned - Examples**

The following brief descriptions provide information on four projects that experienced compliance problems, including a summary of the issues and lesson’s that were learned to prevent reoccurrences in the future.

#### **3.6.1 Project Example #1 - Monitoring for Cultural Resources**

Summary: A highway widening project had deep, well-preserved organic soils with the possibility of containing archaeological sites. Regulators were concerned that excavation work in the mitigation area would reveal archaeological resources even though none had previously been recorded. WSDOT and Federal Highways Administration signed a Memorandum of Agreement (MOA) between the U.S. Army Corps of Engineers (Corps), the Washington State Historic and Preservation Officer, and two local Tribes.

The MOA stated that WSDOT shall prepare an archaeological monitoring plan and an unanticipated discovery plan. The monitoring plan was supposed to contain a list of activities that required the presence of a trained archaeological specialist. The commitment from the MOA was entered into WSDOT’s Commitment Tracking System (CTS).

WSDOT prepared both plans before starting construction and in the summer of 2013, WSDOT conducted the work, but failed to have a cultural resources specialist on site to monitor deep excavations in the wetland mitigation site.

In the fall of 2013, WSDOT was notified by their consultant hired to do the monitoring that the monitoring did not occur. WSDOT reported their mistake to the Corps, Department of Archaeology and Historic Preservation (DAHP), and the tribes. WSDOT received a letter from the Corps stating that WSDOT's failure to comply with the monitoring requirements of the MOA caused WSDOT to violate the Department of Army Permit. The Corps gave WSDOT 30 days to provide them with a:

1. Third party damage assessment of the excavated areas and material excavated from the channel that was not subject to the required monitoring.
2. Incident report explaining what happened at the site, and why the monitoring did not occur.
3. Remediation or compliance plan to apply to future actions to ensure this will not happen on other WSDOT projects.

#### Lessons Learned:

WSDOT project team members agree that opportunities were missed to fulfill the commitment of having an archaeological monitor on site. They recommend following these lessons on future projects.

- Documents that supplement existing agreements (in this case the monitoring plan) often generate commitments that need to be tracked, preferably in the Commitment Tracking System.
- Assign a responsible person/party to WSDOT commitments and let them know what is expected of them.
- Tracking environmental commitments needs to occur throughout project delivery, especially on larger projects and projects that are phased.

WSDOT also agreed to implement the following actions statewide to prevent similar violations from happening on future projects:

- Region Environmental Coordinators will work closely with Cultural Resource Specialists to identify cultural resource monitoring commitments and load them into Commitment Tracking System (CTS) PRIOR to contract advertisement.
- Design and Construction Project Offices will work closely with Region Environmental Coordinators PRIOR to

contract advertisement to include contract language (see General Special Provision 1-07.5.OPT1(Y)) that requires the contractor to notify WSDOT before initiating ground disturbing activities when archaeological monitoring is required.

- Construction PEs will invite the project's Cultural Resource Specialist to attend preconstruction meetings with the Contractor so they can review the project specific cultural monitoring requirements and expectations.
- The PE will coordinate with the Region Environmental Office to ensure a monitor is present before the Contractor is allowed to conduct work in an area that requires monitoring for cultural resources.
- [Environmental Compliance Assurance Procedure](#) (ECAP) was updated to acknowledge that failure to implement commitments associated with cultural resource monitoring is a trigger for reporting and elevating the issue.
- HQ Environmental Services Office will work with the HQ Construction Office to share the lessons learned with region Project Engineering Offices statewide to raise awareness and to stress the importance of fulfilling cultural resource monitoring commitments.
- HQ Environmental Services Office will emphasize the importance of fulfilling cultural resource commitments in their statewide environmental compliance training materials and upcoming classes.

### **3.6.2 Project Example #2 – TESC Planning**

Summary: During the summer the contractor requested, per Section 8-01.3(1) of the Standard Specifications, to exceed the limits of soil disturbance. The request was granted based on the contractors' desire to accomplish all the stormwater conveyance ditches and pipes, plus detention ponds associated with new on/off ramps. Having a fully functional stormwater system in preparation for the wet season would align with good TESC planning and be key to achieving compliance with water quality standards, especially if planning to expose a significant amount of soil. At the height of disturbance and leading into the wet season, the contractor exposed about 100 acres of soil. WSDOT Standard Specifications only allow the contractor to expose 17.5 acres unless they get permission from the PE.

The PE allowed much more than the minimum because the increase in disturbance was appropriate given the purpose of

completing the stormwater components and the contractors' verbal commitment to "button up" the site with best management practices (BMPs), which are described in the TESC Plan and as required by our Construction Stormwater General Permit. However, when it came time to act on the verbal commitment, the contractor stalled and did not implement most of the soil coverage, temporary runoff conveyance, or sediment trapping BMPs.

To make matters worse, the close of the seeding window was fast approaching and without a healthy stand of grass (the recommended BMP) covering the exposed soil, the project was at risk of being in the minority of projects responsible for the majority of the non-compliance events.

#### Lessons learned:

- Exposing large amounts of soil and delaying the implementation of BMPs until the last available moment, only increases the difficulty in achieving environmental compliance.
- It was clear that existing procedural controls could be improved. This effort revealed a need to update the Construction Manual (Section 8-1.1) to provide guidance to Project Engineers on how to process requests from contractors and that verbal commitments to implement TESC plans are not always adequate.
- If allowing the contractor to exceed the exposure limits, the contractor needs to prepare a plan and have it approved by the Project Engineer. The plan must detail how the project will regain compliance with acreage exposure and soil coverage requirements.

### **3.6.3 Project Example #3 - Discharge of Elevated pH**

Summary: In the fall, a shaft drilling sub-contractor, was pumping concrete into a drilled shaft located north of a fish bearing creek. At the same time concrete was being pumped into the shaft, water used to maintain hydrostatic pressure was being pumped out of the shaft into Baker tanks located south of the creek. The water in the shaft did not contain synthetic slurry. There were two Baker tanks on site, both approximately 25 feet from the edge of the creek. One of the tanks was known to be full of water from this pour. As water was being pumped to the second tank, it overflowed. This water overwhelmed two runs of silt fence located in between the Baker tanks and the creek and discharged into the creek creating a visible plume. A WSDOT Lead Inspector witnessed the water overflowing from the tank at 12:30 p.m. Immediately upon noticing the problem, he informed the prime contractor, who immediately instructed the sub-

contractor to stop pumping water from the shaft. The project engineer office later estimated that approximately 2135 gallons of water discharged from the Baker tank. Some of the water may have infiltrated into the ground, but most discharged to the creek.

When the sub-contractor stopped pumping water to the Baker tank, they started pumping the water to previously poured shafts located next to the baker tank. There was still capacity available in the casings of these shafts to store the excess water since the permanent casing extended above the concrete. They also pumped to a water truck. The WSDOT lead inspector notified the Assistant PE of the event. She contacted the REM and the Assistant Region Administrator for Construction.

#### Contributing Factors:

- The prime and sub-contractor stated that the Baker tanks overflowed simply because calculations had not been performed to determine the volume of water that would be pumped from the shaft compared to the capacity available in the Baker tanks. This was the fifth shaft drilled and the other four had been much shallower. The two Baker tanks had plenty of capacity for the other shafts; therefore they did not think to calculate the quantity of water that would be pumped from this shaft.

#### Lessons Learned:

- In order to assure this does not happen again, WSDOT should ensure contractors calculate the quantity of water to be pumped and adequate storage should be provided. The contractor should assign someone to continuously monitor the level of the water in the tanks and have contingency measures in place for extra storage.

### **3.6.4 Project Example #4 – Planning for Temporary Stormwater Containment**

Summary: In the summer, a TESC plan was developed for a particular phase of work located along a major interstate. The plan involved the construction of two retaining walls to accommodate the construction of a new interstate lane. To construct the walls, the contractor had to construct an access road on top of an existing drainage ditch that captured runoff generated from the freeway, surface runoff from the adjacent hillside, and groundwater seeps. Initial plans showed few BMPs to manage the off-site stormwater. Furthermore, the plans did not include any temporary BMPs for stormwater detention. Original

comments submitted from WSDOT to the contractor on the plan include:

- “Please show how you will keep the highway runoff from entering the work area (mixing with exposed soils) along the northbound lanes where Wall 2105 and Wall 2110 will be built. If proposing an asphalt berm, please provide details with calculations showing that the berm will not cause ponding along the freeway.”
- “There are no temporary detention BMPs such as temporary detention ponds, sediment traps, swales, etc. How will turbid water be detained for settling prior to discharge into catch basins and nearby surface water bodies?”
- “What BMPs will be used to intercept sheet flow, generated from areas above Wall 2105 and Wall 2110, to prevent it from entering the work area?”

In response to the comments, the Contractor installed an 8” double walled pipe to replace the function of the existing drainage ditch. The plan included sealing the scuppers of temporary barriers to prevent runoff from the freeway from entering the work area. As a result, the system required a series temporary cross drains to convey water from the temporary barrier to the 8” pipe. The Contractor added a temporary detention pond at the end of the conveyance system to detain stormwater. Despite these efforts, the Contractor had to resize the temporary pond a number of times in the winter to accommodate heavy volumes of runoff from the hillside and the freeway. A number of water quality exceedances occurred within this area as a result of exposed soils and a lack of volume for temporary stormwater detention.

#### Lessons learned:

- TESC plans must consider topography and drainage patterns for each specific area of work. Freeway runoff must be isolated from the work area so it can be conveyed to the nearest catch basin or surface water body to prevent mixing with exposed soils.
- If construction activities are going to impact existing stormwater facilities (such as swales, ditches, or ponds) construct temporary detention BMPs that will be of adequate size to handle runoff from the work area. Consider if work will occur in the winter.
- Hydraulic engineers should be utilized to help determine the volume of temporary containment needed by analyzing catchment areas and stormwater events.

- Research soil types to determine settling times for turbid water. If the soils have high clay content then detention facilities will need to be larger and a chitosan system may be necessary. If soils in the project area are sandy, it will take less time for turbid water to settle prior to discharge.

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# Chapter 4 Project Completion and Final Inspections

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*This section addresses environmental compliance from the time construction has ended through site cleanup and restoration and final inspection. It does not include ongoing maintenance.*

## 4.1 What are the Key Compliance Topics?

As in Section 3.1, the purpose of this section is to review the primary technical issues and responsibilities likely to fall on the environmental compliance inspector during the final inspection phase. Although each project has its own environmental requirements, the following are commonly encountered or are especially important to WSDOT:

- **Site Cleanup/Restoration.** Environmental commitments pertaining to project close-out typically require that all construction equipment, materials and wastes be removed from the site and that all disturbed areas be returned to pre-construction conditions. Regrading and revegetation are likely a part of the commitments. A variety of site cleanup and roadside restoration requirements are contained in the *Standard Specifications*. The “Status and Fulfillment” feature in the Commitment Tracking System facilitates this [close-out process](#).
- **Removal of Temporary BMPs.** Erosion control devices should be removed from the site once they are no longer needed, and soil rehabilitation measures may be necessary if the BMPs have caused soil compaction or otherwise rendered the soil inhospitable to plant growth. However, in no instance should temporary BMPs be removed until the site has been adequately stabilized (e.g. grass is growing and the potential for erosion is extremely low or non-existent).



Plants awaiting installation after final grading efforts have occurred.



Conducting a final walk-through to ensure temporary BMPs have been removed and that permanent stabilization has occurred.

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#### Helpful Tip

Prior to submitting a Notice of Termination to Ecology, conduct a walk-through with the contractor to ensure all temporary BMPs have been removed and that there are no areas of exposed soil remaining. Ecology will not approve a Notice of Termination until all exposed soils have been permanently stabilized.

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- **Agency Notifications and Inspections.** Some agencies may require that they be notified after project completion and be given the opportunity to inspect the work relative to compliance with their permit conditions. For example, the Department of Ecology requires WSDOT to submit a Notice of Termination which certifies that all disturbed areas have been stabilized. Ecology is committed to performing a site visit within 30 days of when WSDOT submits the Notice of Termination and they will either grant acceptance or deny the termination request.
- **As-Built Submittal.** WSDOT must prepare [as-built drawings/maps](#) for wetland and stream mitigation work. These submittals must contain very specific information and in formats that vary from one permitting agency to another. Be sure to review the project commitments to ensure the submittal meets the expectation of the permitting agency. Remember that the *WSDOT Construction Manual* also has as-built requirements that must be followed.
- **Monitoring.** Frequency and methods for monitoring revegetation of disturbed areas, roadside restoration sites and [mitigation sites](#) are usually specified in the environmental commitments. These conditions usually require that additional plantings be done if certain performance levels are not achieved. For example, any dead or dying plants are fully replaced in the first year following installation. Monitoring often carries over to the Maintenance phase. The Commitment Tracking System allows commitments to assign a phase of “Post Construction Operations and Monitoring” that provides visibility of the commitment to someone other than the construction inspector, such as Maintenance or another program responsible for long term plant establishment.
- **Reporting.** Monitoring reports demonstrating re-vegetation success are almost always required but may be the primary responsibility of the regional environmental staff. A final inspection report addressing overall environmental compliance of the project may not be specified in the commitment list but is recommended to ensure overall accountability.

## 4.2 Who Has Post Construction Commitment Responsibility?

Thorough documentation of inspection activities, findings and outcomes during all project phases will make it much easier to prepare a final environmental compliance report. The importance of a thorough and objective final report – especially one that shows that the right things were done in the right manner to achieve environmental compliance – cannot be overstated. You should work with the region environmental staff at the beginning of

the project to determine whether or not a report will be prepared, and if so, who is responsible for which elements, and so forth.

Similar to the transition from Permitting to Construction, the transition of a project from Construction to Maintenance represents a critical [hand-off](#) point where important information potentially related to environmental compliance needs to be conveyed to a new team. Considering the duration of monitoring and possibly other long-term environmental commitments, you should determine early in the project where your responsibilities will end and when Maintenance will take over.

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