

Puget Sound Area

Safety Summit

Phil Fortunato, ECO-3

David Jenkins, Port of Seattle

Allan Bakalian, Zeno Drake Bakalian



⇒ Why are we doing this



Washington State Department of Ecology : Ecology News

Department of Ecology News Release - June 20, 2002

Battle Ground developer cited for failing to control muddy runoff

OLYMPIA - One of the developers of Park View Trails in Battle Ground has been **fined \$40,000** by the state Department of Ecology (**Ecology**) for repeatedly allowing muddy storm water to drain into sensitive wetlands and a stream at the headwaters of Mill Creek.

...In addition to allowing the muddy runoff, **the owner of Columbia Rim Construction, Mike DeFrees, was cited** for conducting construction activity for four months without a stormwater permit and for failing to comply with the permit once it was obtained.

.."This developer was not protecting the environment and was risking the health of an irreplaceable wetland and important aquatic habitat," said Megan White, manager of Ecology's water-quality program.

.."We usually don't have to ask them three, four or five times," she said



Washington State Department of Ecology : Ecology News

Department of Ecology News Release - December 16, 2002

Belfair mine fined for violating environmental permit

OLYMPIA - A sand-and-gravel mine near Belfair has been fined \$18,000 for violating a permit that is intended to protect water quality and prevent erosion. Inspectors with the Department of Ecology (Ecology) found that Belfair Sand & Gravel Inc. failed to submit an adequate plan to control erosion and sediment, did not build ponds to hold storm water as required, and has not submitted monitoring reports of its stormwater discharges for the past two years.

..."Fortunately, this has been a dry fall, but we can't rely on the lack of rainfall to prevent muddy runoff," Pacifico said. "There are simple, reasonable steps these operations can take to protect water quality and still make a profit."

...In addition to the fine, the company was ordered to take immediate steps, including building holding ponds for storm water and stabilizing slopes to prevent soil erosion.

...

EPA News Release (Region 10): Idaho Transportation Department to pay \$325,000 in additional penalties for federal storm water violations

(Seattle, WA. – July 5, 2008) The Idaho Transportation Department (ITD) has agreed to pay \$325,000 in penalties for numerous violations of a Clean Water Act (CWA) Consent Decree, the U.S. EPA announced today.

The 2006 Consent Decree was the result of **CWA violations by ITD and its contractor from 2001 to 2003, committed during the "Mica to Bellgrove" Highway 95 realignment project** in northern Idaho. In that case, **EPA fined ITD and its contractor a total of \$895,000 for numerous storm water management problems** and resulting discharges that harmed the Mica Creek watershed and violated the terms of EPA's national Construction General Permit.

...ITD is required to provide storm water training to its personnel, implement new self-inspection protocols, ...The additional penalties are largely related to failure by ITD and its contractors to train environmental personnel in a timely way, failure to conduct self-inspections as required, and failure to document compliance with storm water requirements. ...

A horizontal strip at the top of the slide shows a landscape with mountains and a sky with light clouds.

ECO-3 Erosion & Sediment Control Training

Erosion and Sedimentation Impacts

**Impacts of Erosion
And
Sedimentation**

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Erosion and Sedimentation Impacts

Impacts of Erosion and Sedimentation

- **Sediment runoff**
 - Impairs navigability of rivers and harbors
 - Increases shallow areas and aquatic plants growth in lakes, reducing usability

ECO-3 Erosion & Sediment Control Training

Erosion and Sedimentation Impacts

Impacts of Erosion and Sedimentation

- **Sediment runoff**
 - **Clogs Storm drains & Infiltration devices**
 - **Fills detention ponds decreasing capacities**

ECO-3 Erosion & Sediment Control Training

Erosion and Sedimentation Impacts

Impacts of Erosion and Sedimentation

- **Sediment runoff**
 - Increases turbidity in water systems
 - Reduces photosynthesis impacting food sources
 - Upsets the natural balance in the aquatic ecosystem

ECO-3 Erosion & Sediment Control Training

Erosion and Sedimentation Impacts

Impacts of Erosion and Sedimentation

- **Sediment runoff**
 - Impairs the feeding ability of aquatic animals
 - Clogs gill passages of fish
 - Clogs gravel and reduces successful fish spawning
 - Smothers the eggs or young fry following spawning

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Erosion and Sedimentation Impacts

➔ Impacts of Erosion and Sedimentation

- **Nutrient runoff**
 - **Loss of nutrients from natural topsoil**
 - **Increases use of additional soil amendments and fertilizers**
 - **Runoff from the topsoil sediment and additional amendments and fertilizer contribute additional nutrients to the stormwater**

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Erosion and Sedimentation Impacts

➔ Impacts of Erosion and Sedimentation

- Nutrient runoff
 - Increases nutrient run off, including phosphorus causes a proliferation of plant life, especially algae, which:
 - reduces the dissolved oxygen content
 - often causes fish kill



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Erosion and Sedimentation Impacts

⇒ Impacts of Erosion and Sedimentation

Indirect costs

- **Restoration a single lake can cost millions of dollars**
- **Reductions in spawning habitat, and salmon and trout production, can cause economic losses to recreational and commercial fishing**
- **Potable Water Treatment becomes more difficult and costly**

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Endangered Species Act (ESA)

The Endangered Species Act (ESA) is of concern for construction sites because of the potential adverse impacts from stormwater discharges to receiving waters

- sediment
- turbidity
- abnormal pH

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Endangered Species Act (ESA)

Endangered Species Act

Specific adverse impacts include:

- **suffocation of eggs or fry**
- **adverse impact on aquatic food sources**
- **reduction in the biodiversity of aquatic invertebrates;**
- **reduction of foraging abilities in turbid water;**
- **irritation of gill tissue**
- **filling of resting, feeding, or spawning areas with sediment**

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Endangered Species Act (ESA)

Endangered Species Act

Any impact to fish development could be determined to be a take under ESA including:

- ***Impairment of access or stranding of listed species behind erosion and sediment control features***

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Endangered Species Act (ESA)

Endangered Species Act

**For more information on ESA and how it affects your project,
contact the National Marine Fisheries Service at:**

<http://www.nmfs.noaa.gov/pr/laws/esa/>

or the U.S. Fish and Wildlife Service at:

<http://www.fws.gov/Endangered/>



⇒ Where does this come from

ECO-3 Erosion & Sediment Control Training

Regulatory Framework

- **Federal Clean Water Act**

(FEDERAL WATER POLLUTION CONTROL ACT 1972, Updated 1977, 1981, and 1987)

- Established water quality goals for the navigable waters of the United States.

- **Section 303**

- Quality Standards & Implementation Plans

(d)(1)(A) Each State shall identify those waters within its boundaries...(impaired water bodies)

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Regulatory Framework

- **Federal Clean Water Act (CWA)**
(FEDERAL WATER POLLUTION CONTROL ACT)
 - Section 401
 - Section 401 Certification and Wetlands
 - Section 404
 - Permits for Dredged or Fill Material

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Regulatory Framework– CWA

➔ NPDES Stormwater Permits - *Background*

One of the mechanisms for achieving the goals of the **Clean Water Act** is the *National Pollution Discharge Elimination System (NPDES) permit program*, administered by the U.S. Environmental Protection Agency (EPA).


ECO-3 Erosion & Sediment Control Training Regulatory Framework– NPDES Permit

EPA has 10 Regions

Region 10 includes:

Alaska, Idaho – (except Region 9 for Duck Valley
Reservation Lands)

Washington, Oregon – (except see Region 9 for Fort
McDermitt Reservation)

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ECO-3 Erosion & Sediment Control Training Regulatory Framework– NPDES Permit

US EPA, Region 10

NPDES Storm Water Program

1200 6th Ave (OW-130)

Seattle, WA 98101-1128

Phone: (206) 553-6650

ECO-3 Erosion & Sediment Control Training Regulatory Framework– NPDES Permit

In Washington

- Chapter 90.48 RCW, defines the Department of Ecology's authority and obligations in administering the NPDES permit program.

In Oregon

- Department of Environmental Quality

Alaska EPA has jurisdiction until 2011

- Department of Environmental Compliance

In Idaho EPA has jurisdiction

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SWPPP Development

⇒ SWPPP Development - National Requirement

The Phase I implementation of the 1987 CWA required municipalities to obtain NPDES permits for stormwater discharges from that:

- Have a separate storm sewer system or drainage ditches that discharges to surface water
- Have a population greater than 100,000 people.

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SWPPP Development

⇒ SWPPP Development - National Requirement

The Phase I implementation of the 1987 CWA required

- Industrial facilities
- Construction sites which disturb five acres or more

If there is a stormwater discharge to:

- Surface waters
- Municipal storm drains with discharge to surface waters

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SWPPP Development

⇒ SWPPP Development - National Requirement

The Phase II implementation in December 1999 required NPDES stormwater permits for all municipalities within census urbanized areas.

Implementation Phase II permits will be phased in by 2008.

Phase II NPDES regulations reduced the acreage trigger from five acres to one acre in July 2003.

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SWPPP Development

⇒ SWPPP Development - National Requirement

Both the Phase I and Phase II NPDES permit programs require permitted municipalities :

- Adopt ordinances implementing controls for development
- Control of erosion & sedimentation
- Control other pollutants on construction sites
- Include all of the Minimum Technical Requirements and Site SWPPP Development of the Stormwater Manual, or equivalent.

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General Stormwater Permit Compliance

Issuance Date: November 16, 2005

Effective Date: December 16, 2005

Expiration Date: December 16, 2010

CONSTRUCTION STORMWATER GENERAL PERMIT

**National Pollutant Discharge Elimination System (NPDES) and
State Waste Discharge General Permit for Stormwater Discharges
Associated With Construction Activity**

State of Washington

Department of Ecology

Olympia, Washington 98504-7600

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General Stormwater Permit Compliance

In compliance with the provisions of

The State of Washington Water Pollution Control Law

Chapter 90.48 Revised Code of Washington

and

The Federal Water Pollution Control Act

(The Clean Water Act)

Title 33 United States Code, Section 1251 et seq.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

Permit Conditions

- S1. Permit Coverage**
- S2. Application Requirements**
- S3. Compliance With Standards**
- S4. Monitoring Requirements**
- S5. Reporting And Recordkeeping Requirements**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

Permit Conditions

- S6. Permit Fees**
- S7. Solid And Liquid Waste Disposal**
- S8. Discharges to 303(d) or TMDL Waterbodies**
- S9. Stormwater Pollution Prevention Plan**
- S10. Notice Of Termination**

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General Stormwater Permit Compliance


Summary of Required “On Site” Documentation

Permit Conditions	Document
S2, S5	Permit Coverage Letter
S2, S5	Construction Stormwater General Permit
S9, S5	Stormwater Pollution Prevention Plan (SWPPP)
S4, S5	Site Log Book

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General Stormwater Permit Compliance

Summary of Required "On Site" Documentation

		CONSTRUCTION STORMWATER GENERAL PERMIT FIELD REPORT	
Section A: General Data			
NPDES Permit #:	County:	Receiving Waters:	Inspector:
Inspection Date:	Entry Time:	Exit Time:	Inspection Type:
Discharges type: Surface Water <input type="checkbox"/> Ground Water <input type="checkbox"/> Dewatering <input type="checkbox"/>			Weather:
Section B: Site Information			
Site Name:	Docs Available <input type="checkbox"/> General Permit <input type="checkbox"/> Coverage Letter <input type="checkbox"/> SWPPP <input type="checkbox"/> Site Logbook		Additional Participants:
Site Address:			
City, State, Zip:			
GPS:			
Total Acreage:	Disturbed Acreage:		
Certified Erosion and Sediment Control Lead (CESCL): (or on-site rep.)			
Name / Title / Company:			Phone: ()
Permittee / Operator:		Co-Permittee / Co-Operator:	
Name / Title:		Name / Title:	
Facility Name:		Facility Name:	
Mailing Address:		Mailing Address:	
City, State, Zip:		City, State, Zip:	
Phone: ()		Phone: ()	
Fax: ()		Fax: ()	



DAILY JOURNAL OF COMMERCE

\$1.25

Helping business do business since 1893

Thursday, December 11, 2008

Construction recycling fell slightly in '07

Construction sites now get tickets for polluting

Callison will close offices Dec. 25

By JOURNAL STAFF

A site visit from inspectors at the Washington State Department of Ecology might also bring an on-the-spot ticket, ranging between \$500 and \$3,000.

Ecology inspectors commonly find untreated wastewater discharges; spills of oil or other chemicals; lack of pollution prevention plans on site; muddy runoff escaping construction sites; and little or no prevention of stormwater contamination.

"These violations may seem small individually, but together they are snowballing into a serious threat to Puget Sound and water quality across the state," Susewind said.

Other Ecology programs that handle pollution threats from underground storage tanks and oil spills use a similar style of ticketing. Susewind said the tickets help cut the regulatory red tape, allowing Ecology inspectors to fix small but serious problems

large number of common violations that Ecology personnel regularly see during site inspections. About 4,400 facilities are covered by the three types of permits. Inspectors will carry ticket books with them during site visits.

"Field tickets will provide near immediate consequences for water quality violations, save state resources and speed the enforcement process," Susewind

See POLLUTING — page 7

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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

All areas of Washington State, except

- Federal land or projects (EPA Permit Required)

or

- Tribal Land -Puyallup Reservation may have permit coverage areas (EPA Permit Required)

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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

- Any clearing, grading, or excavating that will disturb one acre or more
- Parcels less than one acre that are part of a common plan of development totaling one acre or more

that will discharge stormwater from the site into surface water(s)

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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

- Parcels less than one acre that are part of a common plan of development totaling one acre or more



Single project 3 individual lots

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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

The acreage threshold is calculated on disturbed area

- If only installing roads and utilities, only land disturbed for that construction should be considered in the disturbed area calculations



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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

Any construction activity discharging stormwater that is determined to be a significant contributor of pollutants to waters of the state may be required to have permit coverage regardless of project size

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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

Individual Stormwater Permit – Site Specific

Contract Considerations:

- **Monitoring requirements may be included in as a standard part of the construction contract.**
- **Contractors should consider language focusing on the “General Permit ” monitoring requirements**
- **“Individual Permit” monitoring may be quite extensive and costly**

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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

Individual Stormwater Permit – Site Specific

Contract Considerations:

- **Individual Permits may also include tougher turbidity standards making it harder and more costly to comply with the permit requirements**

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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

Sites with 100% infiltration of surface water runoff within the site should still apply for the permit and indicate in the “Receiving body of water” that:

- no stormwater enters waters of the state or**
- a municipal storm drain**

A letter of rejection will be issued and should be treated as a permit document

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General Stormwater Permit Compliance

S1. PERMIT COVERAGE

Authorized Discharges:

Permittees are authorized to discharge stormwater associated with construction activity to surface waters of the state for:

- **Construction Site**
- **Support Areas - off-site equipment staging and storage areas, borrow areas, etc. (areas must be covered by SWPPP) – Restrictions apply**

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General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent (NOI) Form/Timeline

Who Needs to Apply?

You must get Ecology's stormwater permit even if you already have permits from you local government.

Ecology's permit does not replace more stringent requirements by local government.

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General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent (NOI) Form/Timeline

**Submit a completed Notice of Intent (NOI) Application
(Construction Stormwater General Permit Application)**

The NOI is the official permit application, which requests information about your site. Submit your NOI prior to the first public notice (see below) and at least 60 days prior to discharging stormwater.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent (NOI) Form/Timeline

**Submit a completed Notice of Intent (NOI) Application
(Construction Stormwater General Permit Application)**

**You are not required to submit a copy of your
SWPPP along with your application.**

**Your SWPPP must be finished before you begin
construction.**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent (NOI) Form/Timeline

Permit coverage may be transferred to one or more new operators, including operators of sites within a Common Plan of Development, by submitting a Transfer of Coverage Form in accordance with Condition G9. Transfers do not require public notice.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent Timeline Public Notice

The Applicant is required to publish two public notices one time each week, for two weeks in a row, with 7 days between publishing dates, in a general circulation newspaper in the county where the construction will take place

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent Timeline Public Notice

The 30-day public comment period begins after you publish the second notice.

Unless notified by Ecology, your permit coverage begins 31 days after the second notice is published.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent Timeline - Erosivity Waiver

Construction sites may be excluded from coverage if they apply for and meet the requirements of Low Rainfall Erosivity Waiver

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General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent Timeline - Erosivity Waiver

- **Construction disturbance starts and finishes within the following timelines for the different areas of the state.**

West of the Cascades Crest:

June 15 - September 15 of the *same year*.

East of the Cascades Crest, except the Central Basin:

June 15 - October 15 of the *same year*.

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General Stormwater Permit Compliance

S2 - APPLICATION REQUIREMENTS

Notice of Intent Timeline - Erosivity Waiver

- Site is under 5 acres
- Erosivity Index < 5 on Texas A & M Calculator

<http://ei.tamu.edu/>



Erosivity Index Calculator for Construction sites

- ▶ [Calculate Erosivity Index with Site Mapping](#)
- ▶ [Calculate Erosivity Index with Site Lat/Long](#)
- ▶ [EI Distribution Zone Map](#)
- ▶ [About](#)
- ▶ [Disclaimer](#)
- ▶ [Documentation](#)
- ▶ [Contacts](#)
- ▶ [Credits](#)
- ▶ [Support](#)
- ▶ [Erosion Picture Gallery](#)
- ▶ [Erosivity Index Calculator HOME](#)



Last updated 08/22/2003 06:35:08

Erosivity Index Calculator for Construction Sites

Map Version

Please type in your construction company name and address

Construction Company	<input type="text"/>
Address	<input type="text"/>

Click on the state of interest for your construction site



Erosivity Index Calculator for Construction Sites

Please select a construction period

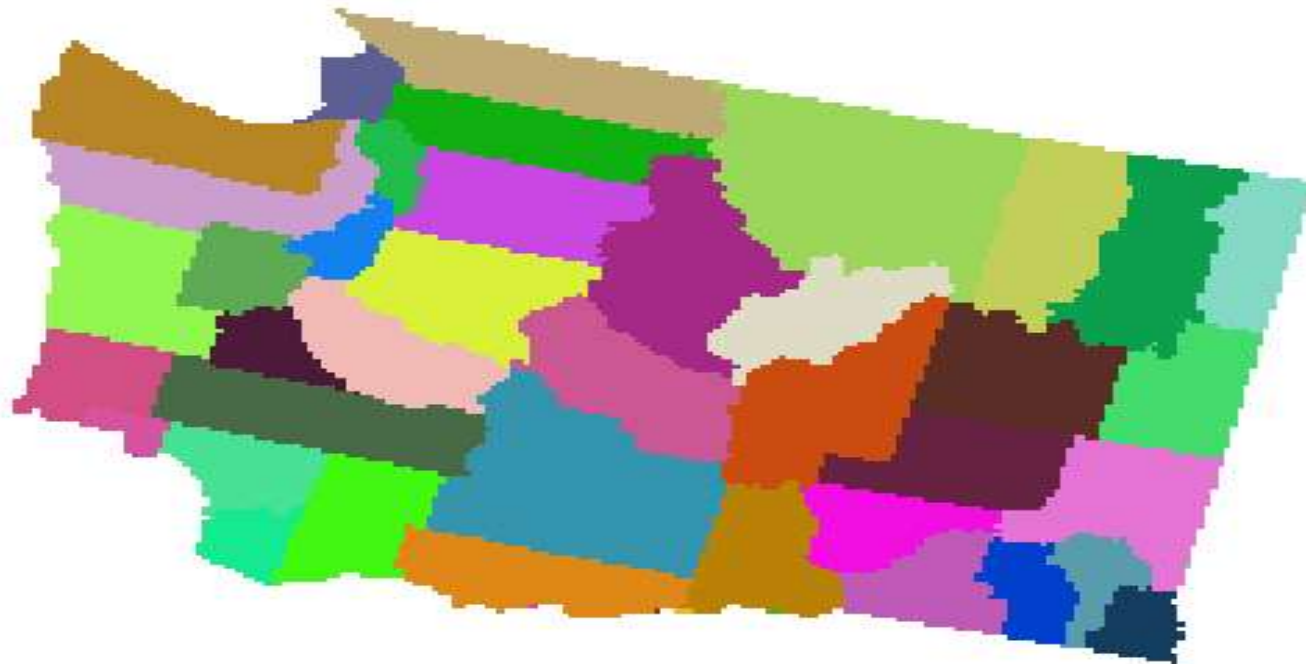
Start Date			End Date		
6	15	2007	8	14	2007
Month	Day	Year	Month	Day	Year

Select county from menu **OR** click on county using map below

Click 'NEXT' below if selection is made from dropdown menu

KING-WA

Reset

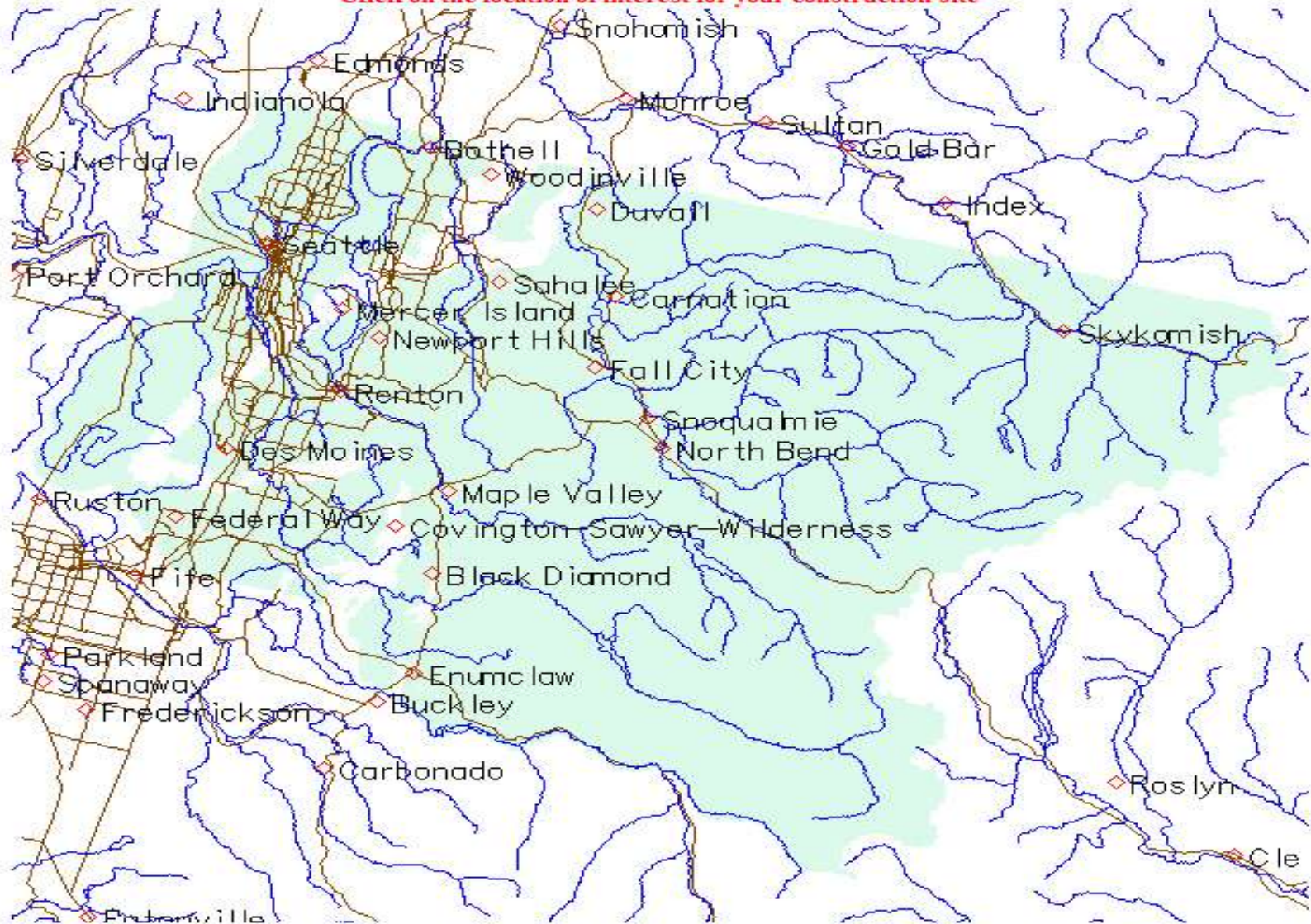


NEXT

Erosivity Index Calculator for Construction Sites

You have selected: **KING-WA** county for the period: **6/15/2007 - 8/14/2007**

Click on the location of interest for your construction site



Query Result

KING-WA County, Washington

AN EROSION INDEX VALUE OF **4.46** HAS BEEN DETERMINED FOR THE CONSTRUCTION PERIOD OF **6/15/2007 - 8/14/2007**.

An erosion index of 5.0 or less is in compliance with the EPA standard and qualifies for a permitting waiver.

An erosion index exceeding 5.0 is **NOT IN COMPLIANCE** with the EPA standard which requires that you submit an application for a construction permit.

Do you wish to change the period of construction if not in compliance? **Yes** **No**

[PRINT THIS PAGE FOR YOUR RECORDS](#)

NEXT

Query Result

WHATCOM-WA County, Washington

AN EROSION INDEX VALUE OF **4.93** HAS BEEN DETERMINED FOR THE CONSTRUCTION PERIOD OF **6/18/2007 - 7/16/2007**.

An erosion index of 5.0 or less is in compliance with the EPA standard and qualifies for a permitting waiver.

An erosion index exceeding 5.0 is **NOT IN COMPLIANCE** with the EPA standard which requires that you submit an application for a construction permit.

Do you wish to change the period of construction if not in compliance? **Yes** **No**

[PRINT THIS PAGE FOR YOUR RECORDS](#)

NEXT

Query Result

CLARK-WA County, Washington

AN EROSION INDEX VALUE OF **4.56** HAS BEEN DETERMINED FOR THE CONSTRUCTION PERIOD OF **6/15/2007 - 7/13/2007**.

An erosion index of 5.0 or less is in compliance with the EPA standard and qualifies for a permitting waiver.

An erosion index exceeding 5.0 is **NOT IN COMPLIANCE** with the EPA standard which requires that you submit an application for a construction permit.

Do you wish to change the period of construction if not in compliance? **Yes** **No**

[PRINT THIS PAGE FOR YOUR RECORDS](#)

NEXT

Query Result

SPOKANE-WA County, Washington

AN EROSION INDEX VALUE OF 3.40 HAS BEEN DETERMINED FOR THE CONSTRUCTION PERIOD OF 6/15/2008 - 10/15/2008.

An erosion index of 5.0 or less is in compliance with the EPA standard and qualifies for a permitting waiver.

An erosion index exceeding 5.0 is **NOT IN COMPLIANCE** with the EPA standard which requires that you submit an application for a construction permit.

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General Stormwater Permit Compliance

S3 - COMPLIANCE WITH STANDARDS

Discharges shall not cause a violation of or contribute to:

- **Washington State's surface water quality standards (Chapter 173-201A WAC)**
- **Sediment management standards (Chapter 173-204 WAC)**
- **Ground water quality standards (Chapter 173-200 WAC)**
- **National Toxics Rule (Federal Register, Vol. 57, No. 246, Dec. 22, 1992, pages 60848-60923).**

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General Stormwater Permit Compliance

S3 - COMPLIANCE WITH STANDARDS

The Permittee shall, prior to discharging stormwater to waters of the state:

- **apply All Known, Available and Reasonable Technology (AKART) to prevent the discharge of settleable solids and to reduce turbidity in discharges to surface waters**
- **Prepared and implemented a SWPPP that is adequate to prevent the discharge of toxic pollutants, floating materials, and sediment**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Acres Disturbed	Inspect Weekly	Sample Weekly	Monitor pH
< 1	X		
> 1 < 5	X	Meter or Tube	X
> 5	X	Meter	X

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Site Log Book

The Permittee shall maintain a site log book that contains:

- **SWPPP modifications**
- **Site inspections reports with installation and maintenance of BMPs**
- **Stormwater Discharge Monitoring Reports (DMRs)**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Site Inspections

Site inspections shall include all areas disturbed by construction activities, all BMPs, and all stormwater discharge points.

Stormwater shall be visually examined for the presence of suspended sediment, turbidity, discoloration, and oil sheen.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Site Inspections

Inspectors shall evaluate the effectiveness of BMPs and determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Site Inspections

Based on the results of the inspection, the Permittee shall review the SWPPP for compliance with S9 (SWPPP requirement)

- Make revisions within 7 days**
- Implement revisions within 10 days**
- Document revisions in the site log book**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Site Inspections

The site inspections shall be conducted

- Once a week
- and
- Within 24 hours of any discharge
- No discharge means no sampling

The inspection frequency for temporarily stabilized, inactive sites may be reduced to once a month

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Site Inspections

Site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL)

The CESCL shall be identified in the SWPPP and shall be present on-site or on-call at all times

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Site Inspections - Sampling Requirements

**Construction sites 5 acres or more, must monitor with a
Turbidity Meter as of October 1, 2006,**

**Construction sites 1 acre or more (<5 acres), must monitor
with a Turbidity Meter or Transparency Tube as of October 1,
2008**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Benchmark Values vs. Water Quality Standards

Benchmarks were established to provide guidelines on SWPPP modifications and on jobsites where a background turbidity cannot be established.

If discharges occur into “waters of the State”, water quality standards are the guideline

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

Benchmark Values vs. Water Quality Standards

Turbidity	Inspect Weekly	Modify SWPPP	Monitor
<=25 NTU (31 CM)	X		Weekly
26-249 NTU 7-30 CM	X	X	Weekly
250 or more <=6 CM	X	X	Daily

ECO-3 Erosion & Sediment Control Training

Stormwater Monitoring Guidelines

Benchmark Values vs. Water Quality Standards

Benchmarks are used when a background turbidity standard is not applicable.

Sites that do not drain directly surface water or a municipal drainage system that is unaffected by other sources, default to the Benchmark values

ECO-3 Erosion & Sediment Control Training

Stormwater Monitoring Guidelines

Benchmark Values vs. Water Quality Standards

A benchmark is not a numerical water quality standard but indicates if the BMPs are working to prevent pollutants from contaminating stormwater on-site.

Water Quality Standards take precedence over Benchmarks values when discharges occur into “waters of the State”

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Stormwater Monitoring Guidelines

Benchmarks:



25 NTU

26 - 249 NTU

250 NTU

≤ 25 NTU (≥ 31 CM) – No corrective action is necessary

- *Inspect weekly, monitor weekly*
- *SWPPP modification is not necessary (permit section S9)*
- *BMPs are performing well*

ECO-3 Erosion & Sediment Control Training

Stormwater Monitoring Guidelines

Benchmarks:



25 NTU

26 - 249 NTU

250 NTU

26-249 NTU (7-30 CM) – Corrective action is necessary

- *Inspect weekly, monitor weekly*
- *Modify SWPPP (S9) , Document changes in Site Log*
- *Evaluate BMP performance and add or maintain BMPs*

ECO-3 Erosion & Sediment Control Training

Stormwater Monitoring Guidelines

Benchmarks:



25 NTU

26 - 249 NTU

250 NTU

250 NTU (≤ 6 CM) – Corrective action is necessary

- *Notify Ecology by phone*
- *Inspect weekly, monitor Daily*
- *Modify SWPPP , Document changes in Site Log*
- *Evaluate BMP performance and add or maintain BMPs*

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

**Site Inspections -pH Monitoring: Sites with Significant
Concrete Work or Engineered Soils**

Significant Concrete Work means greater than 1000 cubic yards poured or recycled concrete.

- **For poured concrete, 1000 cubic yards of concrete is poured within 30 days.**
- **For recycled concrete, 1000 cubic yards of concrete used, recycled or crushed on-site.**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

**Site Inspections -pH Monitoring: Sites with Significant
Concrete Work or Engineered Soils**

Engineered Soils means the use of soil amendments including, but not limited to, Portland cement treated base (CTB), cement kiln dust (CKD), or fly ash to achieve certain desirable soil characteristics.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S4 - MONITORING REQUIREMENTS

**Site Inspections -pH Monitoring: Sites with Significant
Concrete Work or Engineered Soils**

pH monitoring must continue until newly poured concrete is more than 30 days old and until Engineered soils are fully stabilized (paved)

Monitoring may be done with pH meter, pH test kit, or wide range pH indicator paper

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S5 - REPORTING AND RECORDKEEPING

High Turbidity Phone Reporting

Any time sampling indicates turbidity is 250 NTU or greater (or transparency is 6 cm or less) the Permittee shall notify the appropriate Ecology regional office by phone within 24 hours of analysis.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S5 - REPORTING AND RECORDKEEPING

Discharge Monitoring Reports

DMRs are recorded weekly and mailed to Ecology within 15 days following the end of each month on Discharge Monitoring Report (DMR) forms provided by Ecology. Ecology is developing a “E-DMR Form” for future filing

**Department of Ecology
Water Quality Program - Construction Stormwater
PO Box 47696
Olympia, Washington 98504-7696**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S5 - REPORTING AND RECORDKEEPING

Access to Plans and Records

The Permittee shall retain the permit documentation on-site, or within reasonable access (1 hour) to the site, for use by the operator; or on-site review by Ecology or the local jurisdiction

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S5 - REPORTING AND RECORDKEEPING

Access to Plans and Records

The Permit Documentation to be retained on site:

- a. General Permit;**
- b. Permit Coverage Letter;**
- c. Stormwater Pollution Prevention Plan (SWPPP);**
- d. Site Log Book**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S5 - REPORTING AND RECORDKEEPING

Access to Plans and Records

The Permittee(s) shall provided all plans and records to Ecology within 14 days of receipt of a written request

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S5 - REPORTING AND RECORDKEEPING

Access to Plans and Records

The Permittee(s) shall provide records to the public upon written requests. Permittee may:

- Provide records to the requestor within 14 days or**
- Notify the requestor within 10 days of the location and times within normal business hours when the plans and records may be viewed, and provide access to the plans and records within 14 days**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S5 - REPORTING AND RECORDKEEPING

Access to Plans and Records

The Permittee(s) shall provide records to the public upon written requests. Permittee may:

- Within 14 days of receipt of the written request, the Permittee may submit a copy of the plans and records to Ecology for viewing and/or copying by the requestor at an Ecology office, or a mutually agreed upon location. The Permittee shall notify the requestor within 10 days where the plans and records may be viewed and/or copied.**

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S6 - PERMIT FEES

The Permittee shall pay permit fees assessed by Ecology. Fees for stormwater discharges covered under this permit shall be established by Chapter 173-224 WAC.

Permit fees will continue to be assessed until the permit is terminated under a NOTICE OF TERMINATION or revoked in accordance with General Condition G5.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S7 - SOLID AND LIQUID WASTE DISPOSAL

Solid and liquid wastes generated by construction activity such as demolition debris, construction materials, contaminated materials, and waste materials from maintenance activities, including liquids and solids from cleaning catch basins and other stormwater facilities, shall be handled and disposed of in accordance permit requirements

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S8 - DISCHARGES TO 303(D) WATERBODIES

Sampling and Numeric Effluent Limitations For Discharges to 303(d)-listed Waterbodies

- **Permittees shall conduct water quality sampling according to the requirements of this section.**
- **All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters**

ECO-3 Erosion & Sediment Control Training Stormwater Monitoring Guidelines

303(d) water bodies :

Some additional requirements apply, if your site discharges to a waterway on the 303(d) list for turbidity, fine sediment or phosphorous.

To check the 303(d) list visit the following web site:

*[www.ecy.wa.gov/programs/wq/
stormwater/construction/impaired.html](http://www.ecy.wa.gov/programs/wq/stormwater/construction/impaired.html)*

ECO-3 Erosion & Sediment Control Training Stormwater Monitoring Guidelines

DEPARTMENT OF
ECOLOGY
State of Washington

Topic Index | Contact Us | Search

[Ecology home](#) > [Water Quality](#) > [Resources & Guidance for the Construction Stormwater General Permit](#) > [Impaired Waters](#)

Impaired Waters

Identifying whether your site discharges to impaired waterways, or 303-d listed waters


Ecology's Construction Stormwater General Permit has special monitoring requirements when a construction site discharges to a water body listed for the following four parameters: pH, turbidity, fine sediment, and total phosphorous.

- **303-d list:** waterways that the state considers impaired for certain pollutants

The following list contains all the waterways in the state that are either 303-d or TMDLs for pH, turbidity, fine sediment and total phosphorous. The map below provides links to the list of impaired waters by county. Click on the county of interest to begin. Links to maps of the individual listed segments are available for most waterways.

[Click here, if you think your site might discharge to a listed water.](#)

Counties of Washington State



The map shows the following counties and their corresponding colors: San Juan (light blue), Island (dark blue), Clallam (light blue), Jefferson (light green), Mason (light blue), Grays Harbor (light blue), Pacific (dark blue), Wahkiakum (light blue), Whatcom (light green), Skagit (light blue), Snohomish (light blue), King (light blue), Pierce (light blue), Thurston (light blue), Lewis (light blue), Cowlitz (light blue), Clark (dark blue), Skamania (light blue), Okanogan (light blue), Ferry (light blue), Chelan (light blue), Douglas (dark blue), Grant (light blue), Adams (light blue), Franklin (light blue), Benton (light blue), Walla Walla (light blue), Columbia (light blue), Pend Oreille (light blue), Spokane (light blue), Asotin (light blue), Garfield (light blue).

Double click to change security settings

Internet | Protected Mode: Off | 11:05

www.ecy.wa.gov/programs/wq/stormwater/construction/impaired.html

ECO-3 Erosion & Sediment Control Training

Stormwater Monitoring Guidelines

King County

- Boise Creek is listed for high pH in Section 30, Township 20 N, Range 7 E. Map.
- Desire Lake is listed for total phosphorous in Section 36, Township 23 N, Range 5 E.
- Duwamish Waterway and River is listed for high pH in several places (marked in red):
- Green Lake is listed for phosphorus in Section 7, Township 25 N., Range 4 E.
- Hicks (Garrett) Lake is listed for phosphorous in Section 7, Township 22 N, Range 4 E.
- Meridian Lake is listed for phosphorus in Section 27, Township 22 N., Range 5 E.
- Pine Lake is listed for phosphorous in Sections 4 & 9, Township 24 N, Range 6 E. Map.
- Snoqualmie River, S.F. is listed for pH in Section 30, Township 23 N, Range 9 E. Map.
- White (Stuck) River is listed for high pH in Section 29, Township 21 N., Range 5 E;
Section 36, Township 21 N., Range 4 E. and Section 1, Township 20 N., Range 4
E. in Pierce County. Map of listed water.

ECO-3 Erosion & Sediment Control Training

Stormwater Monitoring Guidelines

Whatcom County

- Anderson Creek is listed for fine sediment in Section 19, Township 39 N., Range 4 E.
- Bellingham Bay is listed for high pH in Section 36, Township 38 N., Range 2 E. and Section 1, Township 37 N. Range 2 E. Map of listed water.
- Black Slough is listed for pH in Section 20, Township 39 N, R 5 E. Map of listed water. Listing does not include Section 29.
- Deer Creek is listed for pH in Sections 26 and 27 of Township 39 N, Range 2E.
- Kamm (Stickney) Slough and an associated Unnamed Creek are listed for pH in Sections 11, 14, 15, 20, 21, and 22 of Township 40 N, Range 3 E.
- Nooksack River is listed for fine sediment in Section 3, Township 39 N., Range 7 E.
- Racehorse Creek is listed for fine sediment in Section 10, Township 39 N., Range 5 E. Map of listed water. Listing does not include Kendall Creek.
- Whatcom Lake is listed for total phosphorous in Section 31 of Township 38 N, Range 4 E.

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S9 - STORMWATER POLLUTION PREVENTION PLAN

An Stormwater Pollution Prevention Plan (SWPPP) for construction activity shall be prepared and implemented beginning with initial soil disturbance and until final stabilization

The SWPPP shall be modified during the course of construction for each phase of the construction project

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S10. NOTICE OF TERMINATION

The site is eligible for termination when either of the following conditions have been met:

The site has undergone final stabilization, all temporary BMPs have been removed, and all stormwater discharges associated with construction activity have been eliminated

or

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S10. NOTICE OF TERMINATION

The site is eligible for termination when either of the following conditions have been met:

All portions of the site which have not undergone final stabilization, have been sold and / or transferred, and the Permittee no longer has operational control of the construction activity

ECO-3 Erosion & Sediment Control Training

General Stormwater Permit Compliance

S10. NOTICE OF TERMINATION

The termination is effective on the date the NOT form was received by Ecology, unless the Permittee is notified by Ecology within 30 days that termination request is denied because the eligibility requirements have not been met.

Puget Sound Area Safety Summit

Phil Fortunato, ECO 3

What do we do about it –

Commercial, Residential Plats & Developments

ECO-3 Erosion & Sediment Control Training

The Erosion Control Planning Process

Lay of the Land

- Flat – *low erosion potential, problems with site drainage, Pump watches, mud*
- Slope - *greater erosion potential, more maintenance*
- Sensitive areas - *additional protections or monitoring required*

ECO-3 Erosion & Sediment Control Training

The Erosion Control Planning Process

Consider the Soil Type

⇒ Review Soil Sampling

- **Sand Gravel** - *(Type A) Unstable, low runoff, quick settling times greater infiltration*
- **Silt clay** - *Type (D) high runoff, long settling times, less infiltration*

ECO-3 Erosion & Sediment Control Training SWPPP Development

Developing and Using a Stormwater Pollution
Prevention Plan -Data & Site Analysis

Soils:

The Natural Resource Conservation Service has national soil survey information available on their Web Soil Survey home page

<http://websoilsurvey.nrcs.usda.gov>



United States Department of Agriculture
Natural Resources Conservation Service

Web Soil Survey

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- ▶ [eFOTG](#)
- ▶ [National Soil Characterization Data](#)
- ▶ [Soil Geochemistry Spatial Database](#)
- ▶ [Soil Quality](#)
- ▶ [Soil Geography](#)
- ▶ [Geospatial One Stop](#)



The simple yet powerful way to access and use soil data.

Welcome to Web Soil Survey (WSS)



Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and

anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Three Basic Steps

1 Define.



Mouseover to enlarge image.

[Use the Area of Interest tab](#) to define your area of interest.

2 View/Explore.



[Click the Soil Map tab](#) to view or print a soil map, or click the [Soil Data Explorer tab](#)

I Want To...

- [Start Web Soil Survey \(WSS\)](#)
- [Know the requirements for running Web Soil Survey](#)
- [Know whether my web browser works with Web Soil Survey](#)
- [Know the Web Soil Survey hours of operation](#)
- [Find what areas of the U.S. have soil data](#)

Announcements/Events

- [Web Soil Survey 2.0 has been released! View description of new features.](#)

I Want Help With...

- [How to use Web Soil Survey](#)
- [Known problems and workarounds](#)
- [Frequently Asked Questions](#)
- [Citing Web Soil Survey as a source of soils data](#)



Area of Interest (AOI)

Soil Map

Soil Data Explorer

Shopping Cart

Quick Navigation

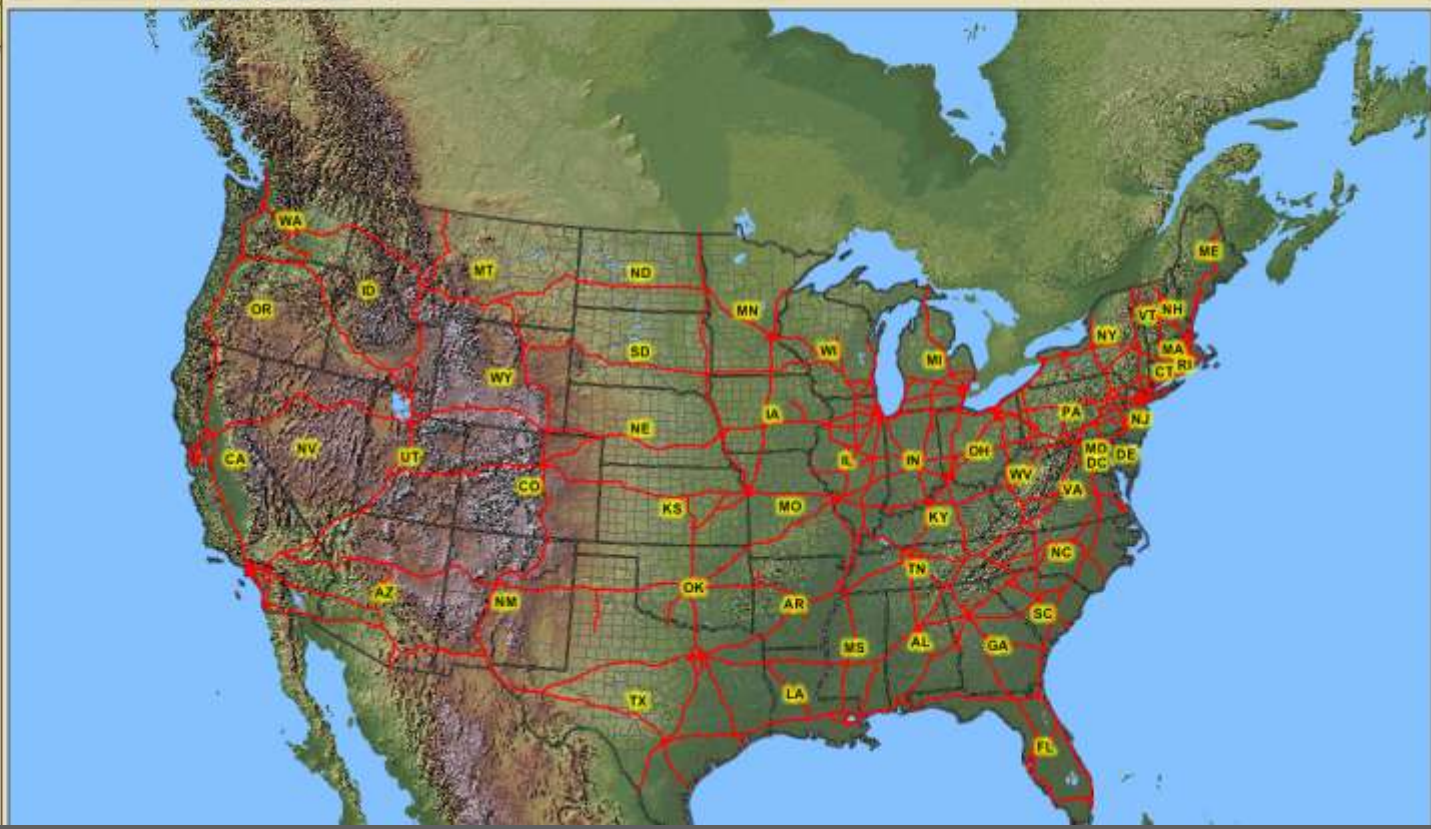
Navigate By...

- Address
- State and County
- Soil Survey Area
- Latitude and Longitude
- PLSS (Section, Township, Range)
- Bureau of Land Management
- Department of Defense
- Forest Service
- National Park Service
- Hydrologic Unit

Legend

Area of Interest Interactive Map

View Extent: Continental U.S. Scale: (not to scale)



Area of Interest Properties

Clear AOI

AOI Information

Name

Map Unit Symbols
Use Soil Survey Area Map Unit Symbols
Use National Map Unit Symbols

Area (acres) 533.6

Soil Data Available from Web Soil Survey

King County Area, Washington (WA633)

Soil Maps Version 1, Sep 21, 2004

Soil Data Version 3, Nov 21, 2006

Clear AOI

Quick Navigation

Navigate By...

Address

View

Address

City Sammamish

State Washington

Zip Code 98075

Show Postal Code Layer in Map

View

State and County

Soil Survey Area

Latitude and Longitude

PLSS (Section, Township, Range)

Bureau of Land Management

Area of Interest Interactive Map

View Extent Continental U.S. Scale 1:7,060 ± 1%



Soil Reports

Open All Close All

- AOI Inventory
- Building Site Development
- Construction Materials
- Land Classifications
- Land Management
- Recreational Development
- Sanitary Facilities
- Soil Chemical Properties

Soil Erosion

RUSLE2 Related Attributes

View Description View Soil Report

Options

Include Minor Soils

View Description View Soil Report

Windbreaks and Environmental Plantings

- Soil Physical Properties
- Soil Qualities and Features
- Vegetative Productivity
- Waste Management
- Water Features
- Water Management

Soil Map

Scale 1:7,120 ± 1 %



Report — RUSLE2 Related Attributes



King County Area, Washington

Map symbol and soil name	Pct. of map unit	Hydrologic group	Kf	Representative value		
				% Sand	% Silt	% Clay
AgC—Alderwood gravelly sandy loam, 6 to 15 percent slopes						
Alderwood	95	C	.28	68.5	24.0	7.5
AgD—Alderwood gravelly sandy loam, 15 to 30 percent slopes						
Alderwood	100	C	.28	68.5	24.0	7.5
EvC—Everett gravelly sandy loam, 5 to 15 percent slopes						
Everett	100	A	.28	68.2	21.8	10.0
Sk—Seattle muck						
Seattle	75	D	.02	15.0	60.0	25.0

ECO-3 Erosion & Sediment Control Training

The Erosion Control Planning Process

Check Permit & Local Requirements

- *Has the Stormwater Permit been issued?*
 - *General Stormwater Permit or*
 - *Individual Stormwater Permit*
 - *Site may discharge to a 303d impaired waterway and have additional turbidity limitations or other monitoring requirements*

ECO-3 Erosion & Sediment Control Training

The Erosion Control Planning Process

Check Permit & Local Requirements

- *Additional Local Turbidity Monitoring*
 - *City of Bellevue - Daily 3rd party turbidity monitoring*

- *Additional Local Requirements*
 - *City of Redmond – 50 NTU Max*
 - *Phosphorous mitigation plan for Lake Sammamish discharges*

BMPs - Best Management Practices

Source Control BMPs - Other

Scheduling (BMP C162)

⇒ How the project is scheduled has the biggest impact on erosion & sediment control on the site

BMPs - Best Management Practices

Source Control BMPs - Other

Scheduling (BMP C162)

- ⇒ Consider phasing construction to minimize exposed area during winter months
- ⇒ Move perimeter site work to the beginning of the project to provide protection for the life of the project
 - ◆ Road widening
 - ◆ Perimeter Curbing
 - ◆ Perimeter seeding or landscaping

BMPs - Best Management Practices

Source Control BMPs - Other

Scheduling (BMP C162)

- ⇒ How does the construction start time compare with seasonal work rules?
 - Are you going to phase your project?
 - Multiple mobilizations by Sub-Contractors
 - Consider adding multiple mobilizations to the contract

BMPs - Best Management Practices

Source Control BMPs - Other

Scheduling (BMP C162)

- ⇒ How does the construction start time compare with seasonal work rules?
 - Identify high erosion hazard or sensitive area lots
 - Steep slope lots or lots near wetlands are typically the last to be sold.
 - Consider seasonal conditions for stabilizing these lots
 - Stabilize these lots 100%