

RVSS Erosion and Sediment Control Certification Course

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The Reason You're Here

Certification as an Erosion and Sediment Control Inspector

Why? It is a required certification for all construction sites ≥ 1 acre

Course Objectives:

- > Learn basics of water quality permitting history & science
- > Understand key regulatory elements of the 1200-C permit
- > Understand ESC inspection and reporting requirements
- Support compliance with corrective & preventive actions



1972 Clean Water Act (CWA)

- Framework for regulating pollutant discharges
- Gave EPA authority to set industry wastewater standards
- Funded sewage treatment plant construction
- Addressed nonpoint source pollution through planning
- Made point-source discharges illegal without a permit



Waters of the United States (WOTUS)
Section 303d List & TMDLs
NPDES Permitting System



What are Waters of the United States?

- > Territorial Seas
- ➤ Traditional Navigable Waters Including all interstate waters
- Tributaries to those Waters Perennial and intermittent
- Wetlands
 Adjacent to jurisdictional waters
- Additional Waters Lakes, ponds, impoundments that are relatively permanent



If there's a surface connection, it's probably Waters of the State



Section 303(d) and TMDLs

303(d) List = Impaired waters not meeting standards

The Total Maximum Daily Load (TMDL) = State's plan to restore water quality

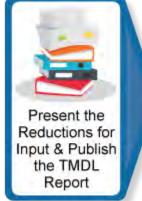
The TMDL sets a pollutant "budget" (max load allowed)







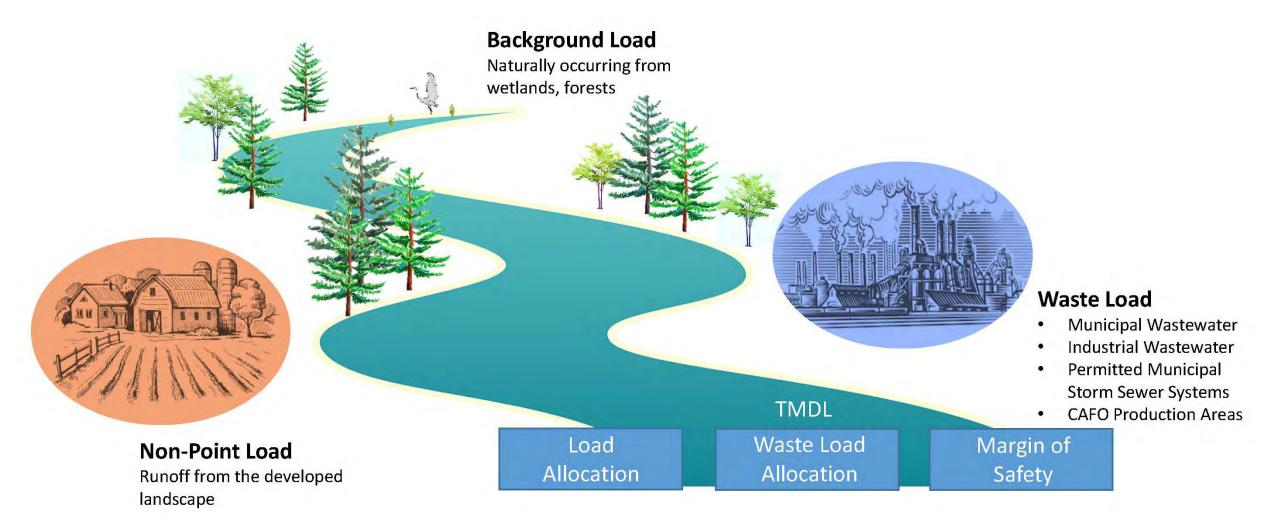








The TMDL Budget





How 303(d)/TMDLs Affect ESC Permits

If receiving waterbody is on 303(d) list or under a TMDL for turbidity/sedimentation, or discharge from the site enters a watershed that water body...

Then the Natural Buffer Zone increases by 5 ft per 1° slope





National Pollutant Discharge Elimination System (NPDES)

Clean Water Act: No pollutant discharge from a point source without a permit

- Permits set:
 - Discharge limits
 - Monitoring & reporting requirements

Two permits affect a construction site:

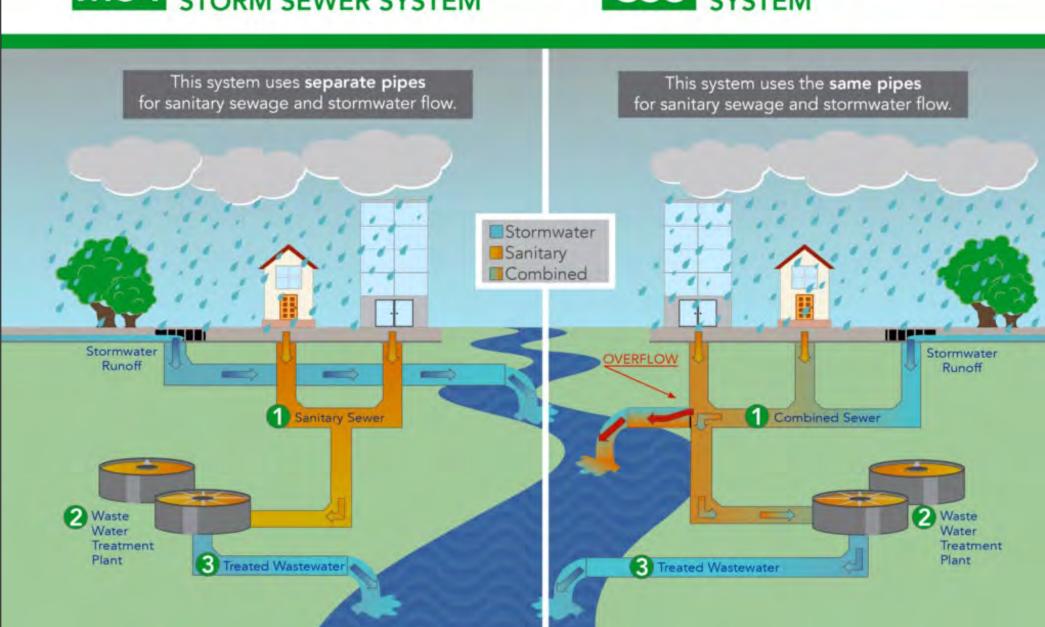
- MS4 Permit → Stormwater systems
- 1200-C General Permit → Construction sites





MS4 MUNICIPAL SEPARATE STORM SEWER SYSTEM



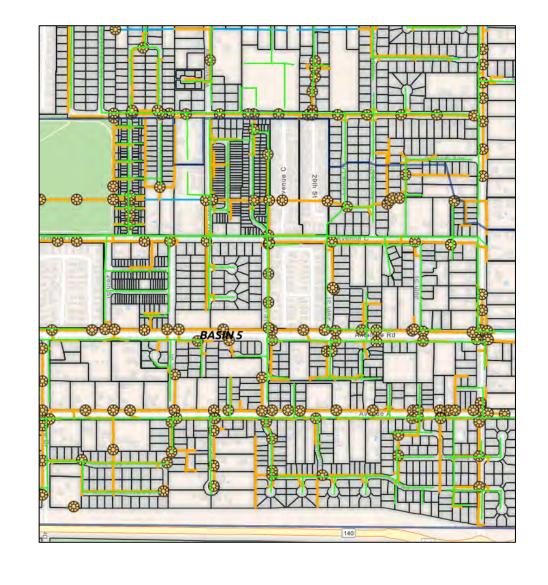




Municipal Separate Storm Sewer System (MS4)

- Urban area → high pollution potential
- Collects and conveys stormwater
- Discharges to WOTUS
- Owned/operated by a public body
- Outfalls = point sources → regulated

Within an MS4, your site is subject to oversight under the MS4 permit





Municipal Separate Storm Sewer System (MS4)

MS4 Permit – DEQ Permit for Urban Areas

- Stormwater discharge permit
- Held by RVSS for: Phoenix, Talent, Eagle Point, & urbanized Jackson County

Oversight requirements that affect you:

- Illicit Discharge Detection & Elimination (IDDE)
- Construction Site Runoff Control
- Post-Construction Runoff
- Pollution Prevention





1200-C Construction Stormwater General Permit

Oregon DEQ Permit for a Construction Site Required for any construction activity that disturbs ≥1 acre



The Permit DOES NOT cover in-water work!

(Work below ordinary high-water)



1200-C Construction Stormwater General Permit

Oregon DEQ Permit for a Construction Site Required for <u>any</u> construction activity that disturbs ≥1 acre

Why is a permit required for erosion and sediment control?

- 1) Sediment is the most common pollutant in US Waters
- 2) Construction is the biggest contributor to sediment in those Waters









National Pollutant Discharge Elimination System (NPDES)

1200-C Construction
Stormwater General Permit
Issued to the Site

MS4 Permit

Issued to Local Jurisdiction

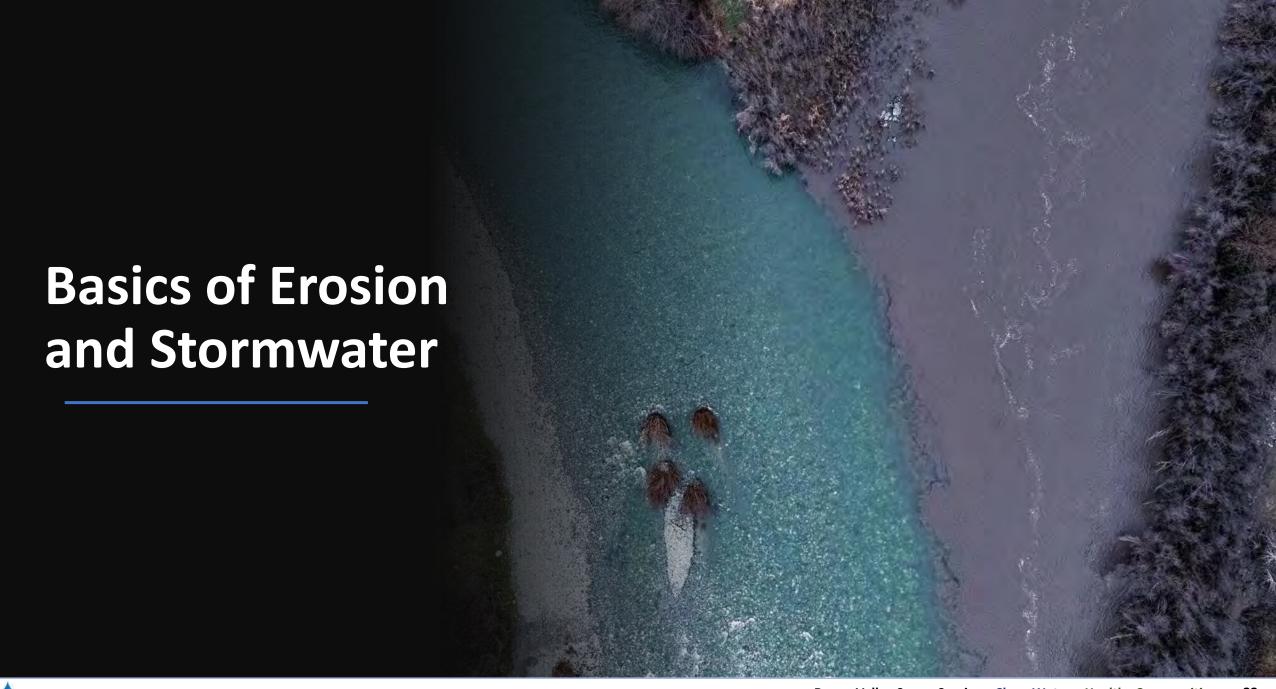
Mandates Oversite of Construction Sites

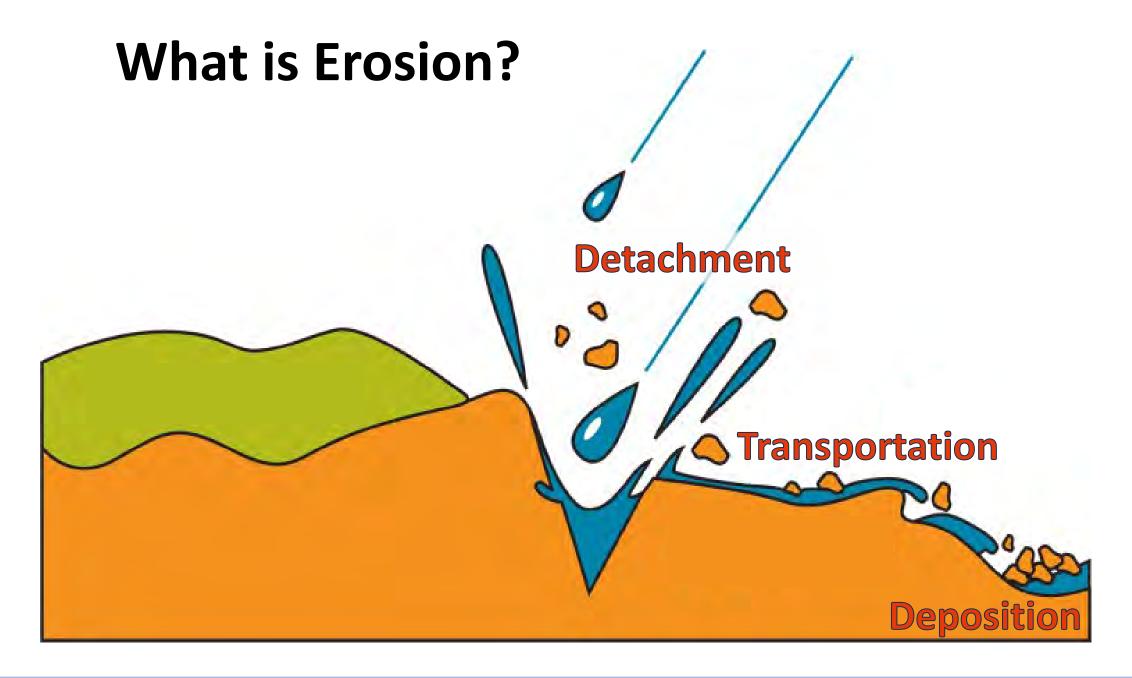




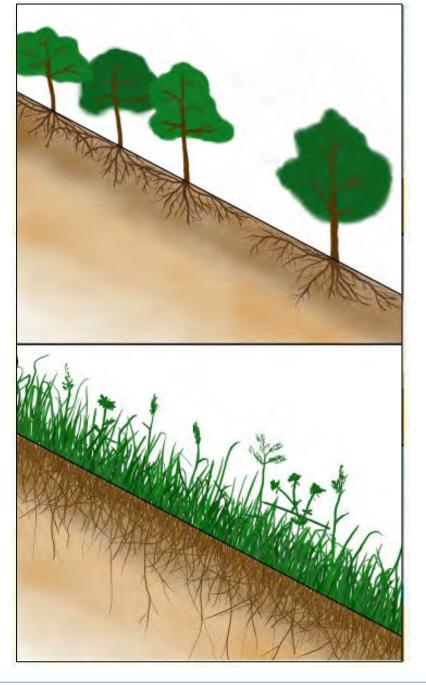












What causes erosion?

Vegetation Removal + Rain + Grade

What prevents erosion?

The easiest, best, and first option for erosion and sediment control...

Vegetation



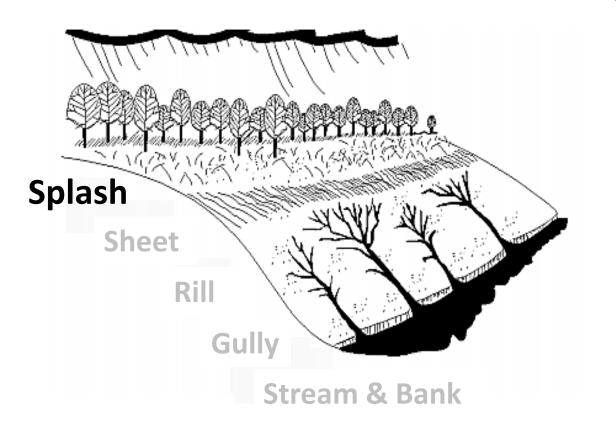
What Are We Talking About?

- Erosion is a natural, unstoppable process
- Removing vegetation (e.g. construction) accelerateserosion
- Erosion Prevention (e.g. stabilization) slows it down

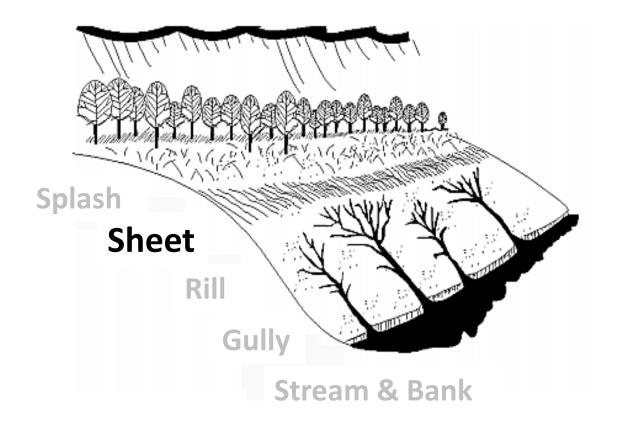


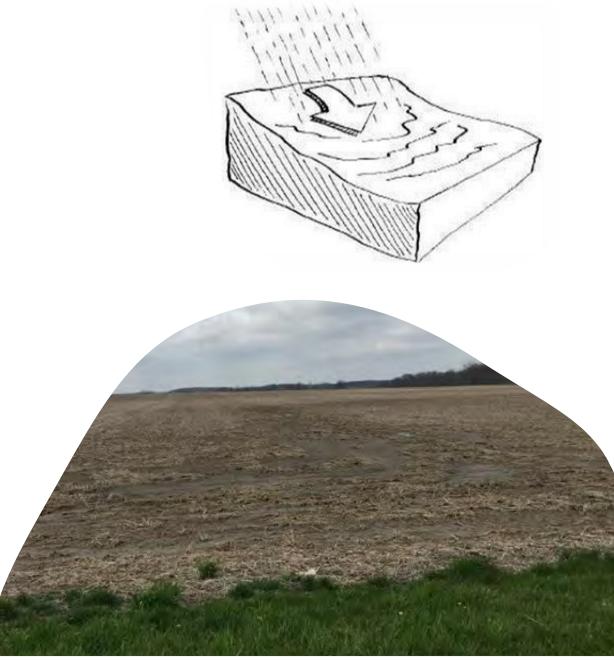
Stabilization = Maintaining or Replacing Cover



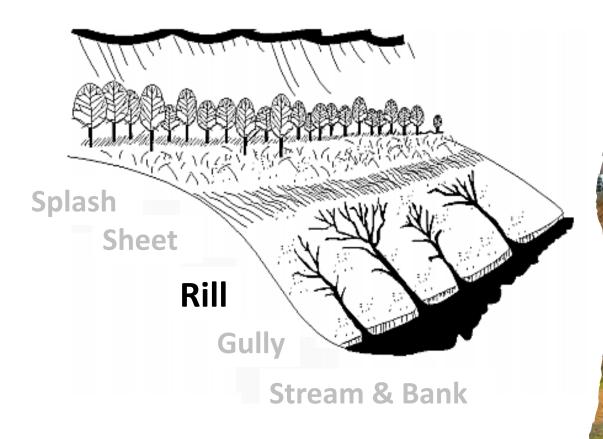






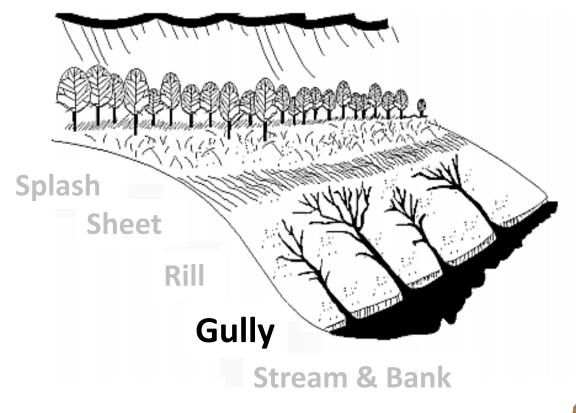




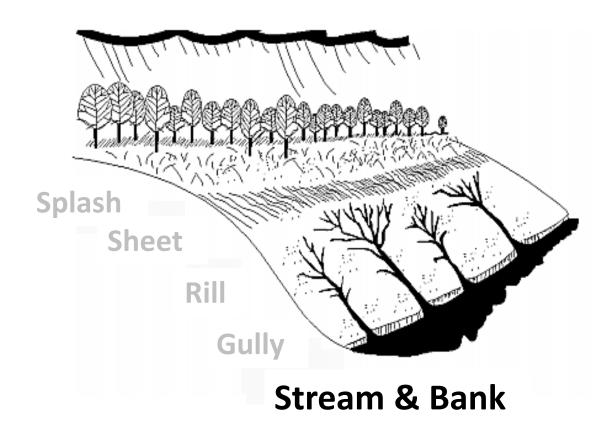


Rills are a call to action!













Other Types of Erosion

Dry Weather -> Dust = Wind Erosion





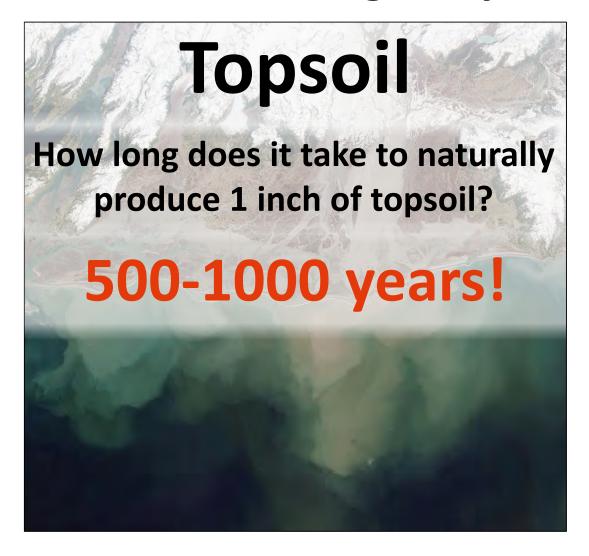
Mass Destabilization → Mass Wasting (Landslides)







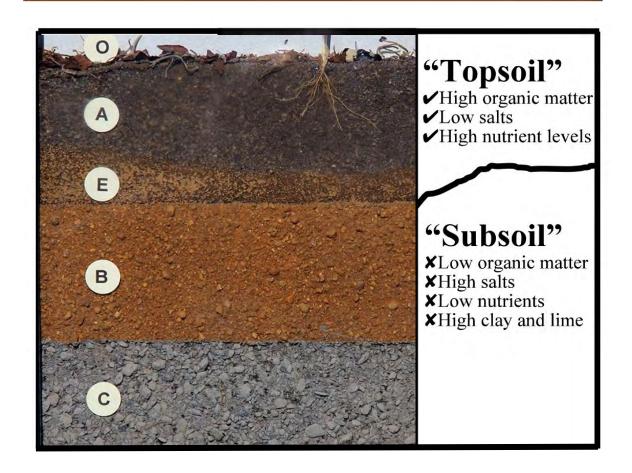
What is eroding away?



19th Century Soil Loss

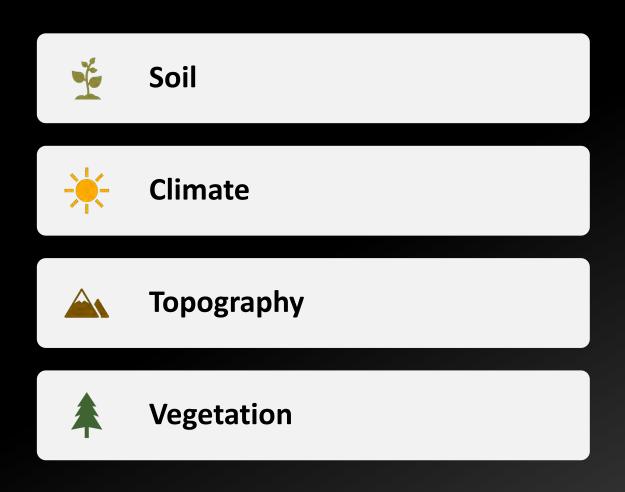
Topsoil loss > natural soil formation

Erosion Costs > \$45 billion annually in U.S.





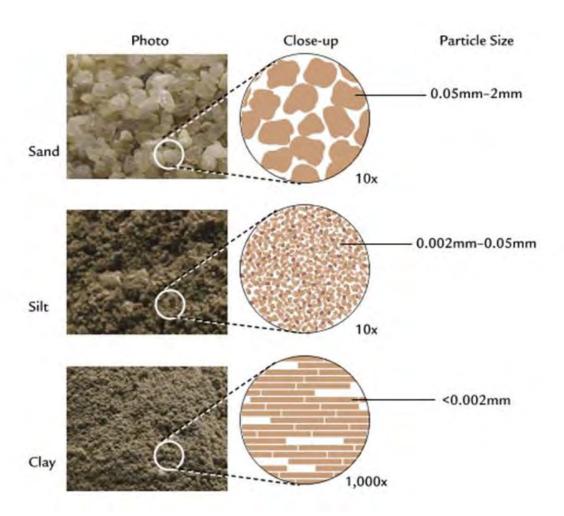
Factors Influencing Erosion Potential

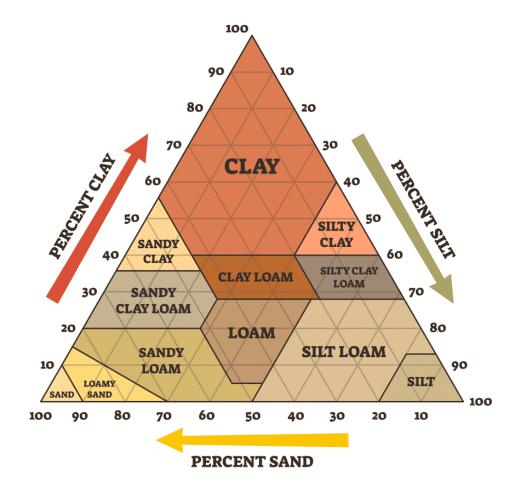






Soil Types

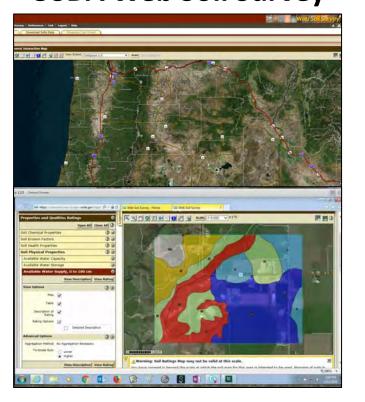






What Type of Soil Is On Your Site?

USDA Web Soil Survey



Jar Testing



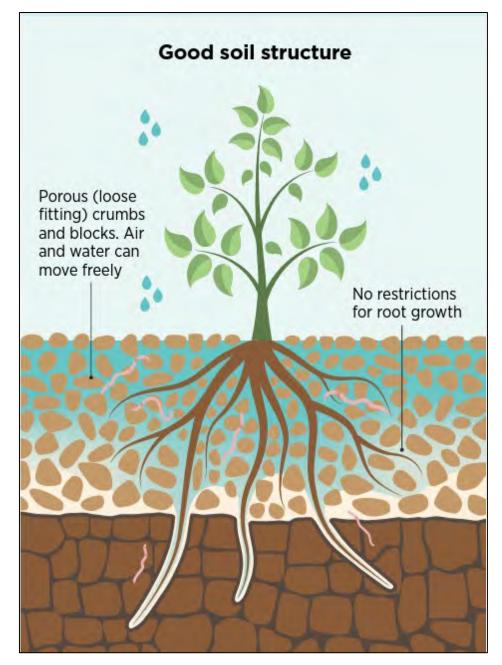
Ribbon Testing



Geotechnical Testing

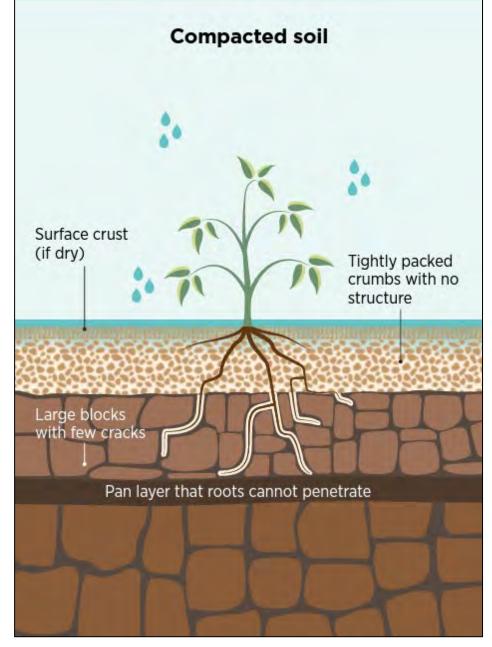






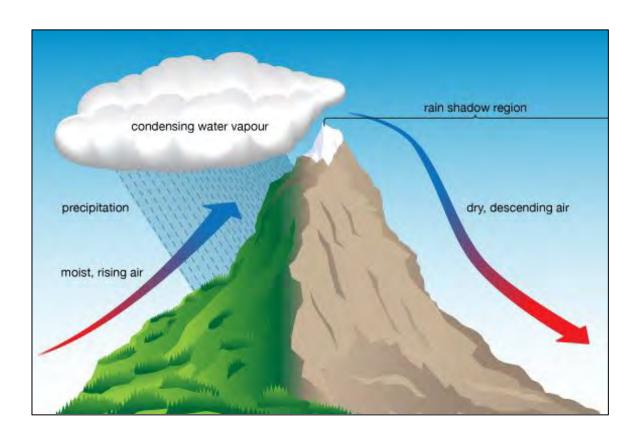
Soil Compaction

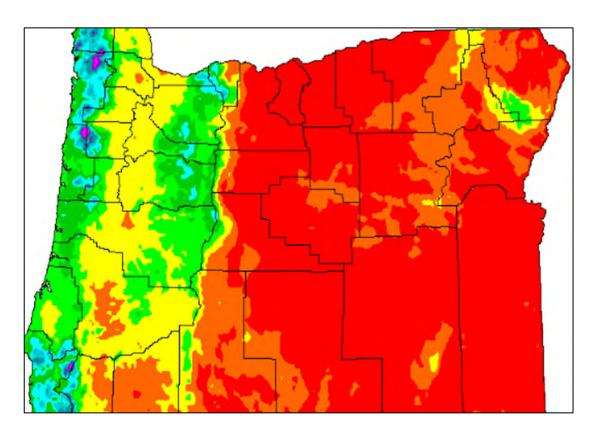






Oregon Climate





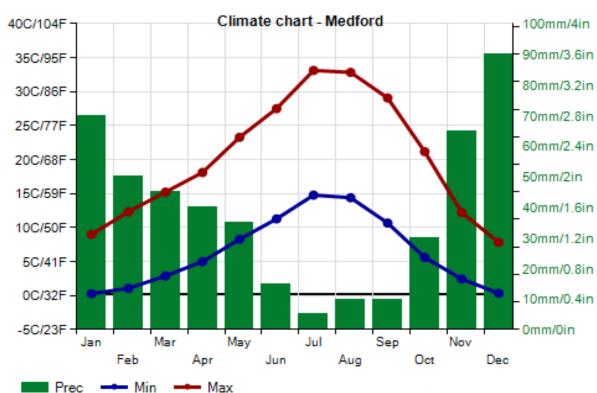
Precipitation, temperature, wind, and humidity vary greatly across the state

Know and prepare for the weather in your area!



Project Timing







October - May: Wet Season in the Rogue Valley



Topography (Slope)







Vegetation – #1 Best Management Practice (BMP)



0-4% Runoff



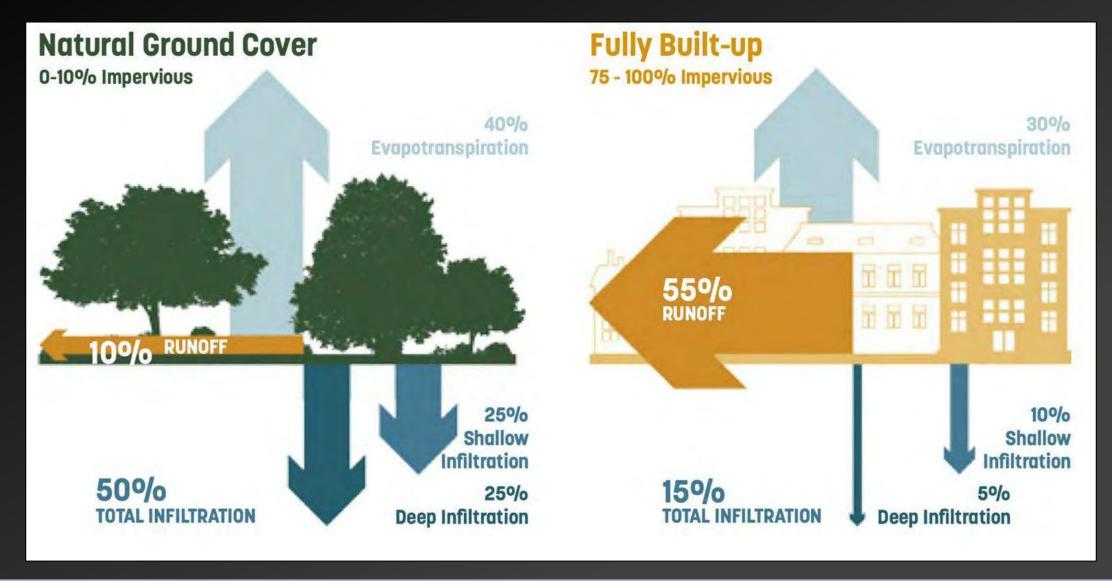
30-50% Runoff
Now you have an Erosion Problem!



Stormwater is precipitation that runs off impervious surfaces like streets and roofs

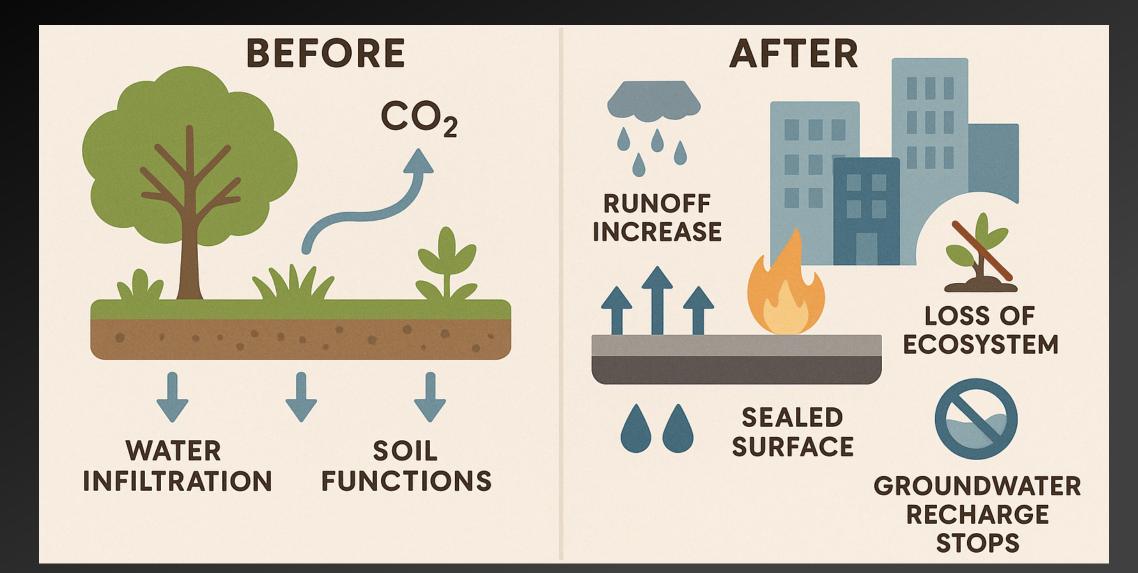
Stormwater runoff creates volume, rate, and quality problems

Volume & Rate Problems





Volume & Rate Problems







Where Stormwater Flows, Everything Goes





Water Quality Problems: Common Pollutants in Stormwater

Excess Nutrients:

Nitrogen **Phosphorus**

Pet Waste

Motor Oil

Fertilizers

Pesticides

Gasoline

Insecticides

Chlorine

Soaps & Detergent

Sewage

SEDIMENT

Arsenic Caffeine

Polycyclic aromatic

hydrocarbons (PAHs):

Napthalene (NPH)

Phenanthrene (PHN)

Pyrene (PYR)

Benzapyrene (BaP)

Fecal Coliform

Fecal Streptococci

6PPD-quinone (6PPD-q) **PFAS & PFOS**

E. coli

Paint

Nicotine

Trash & Litter

Heavy Metals:

Lead

Cadmium

Chromium

Copper

Mercury

Nickel

Zinc









Temp / 02



Bacteria



Toxins



Bear Creek – Local Impacts

Turbidity

pН

Temp / 02

Bacteria

Toxins

RVSS Parameter Action Levels:

Turbidity: 15 NTU

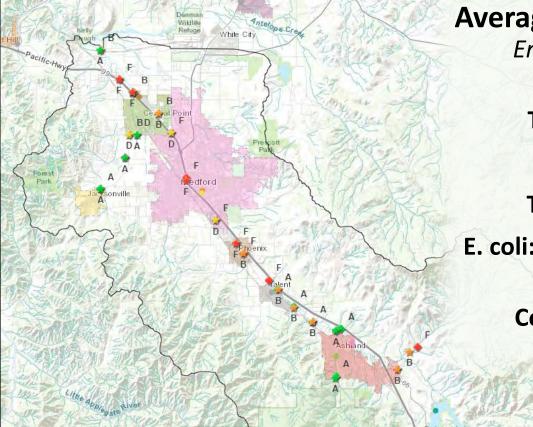
pH: 6.5-8.5

Temp & DO: N/A

E. coli: 406 MPN

Conductivity: >450 μS/cm





Average Bear Creek WQ Changes

Emigrant Lake → Rogue River (~30 miles)

Turbidity: ↑ 10–500 NTUs

pH: 个 >1 unit

Temperature: ↑ up to 6 °F

E. coli: from <100 MPN \rightarrow >2419 MPN

(maxed out)

Conductivity: ↑ >300 μS/cm

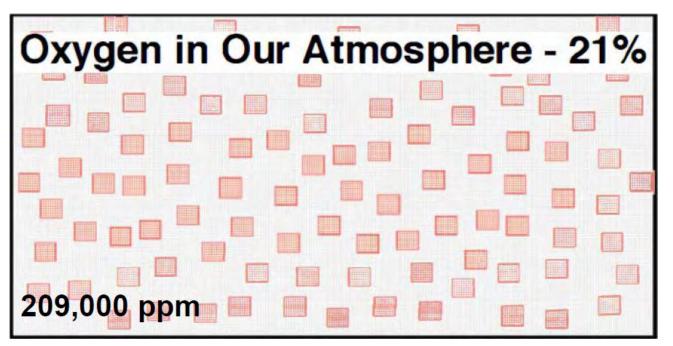


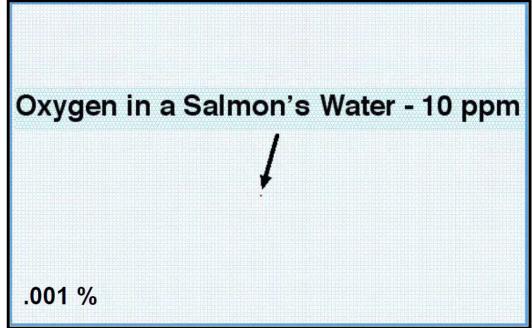
Dissolved Oxygen

Dissolved oxygen is the amount of oxygen present in the water

DO is often cited as the most important water quality metric

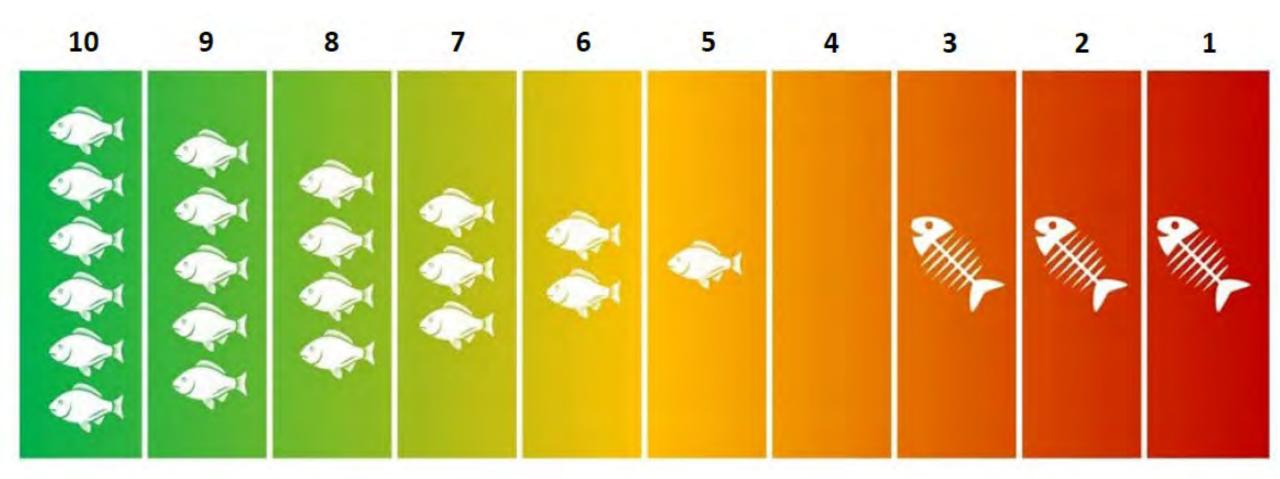
How much oxygen is in the air you breathe?







Dissolved Oxygen (DO) = Life





Temperature & Water Quality

Cold Water = Healthier Water

Aquatic species can't escape heat or regulate body temp

Urban drivers:

- Lack of shade
- Hot impervious surfaces → heated runoff



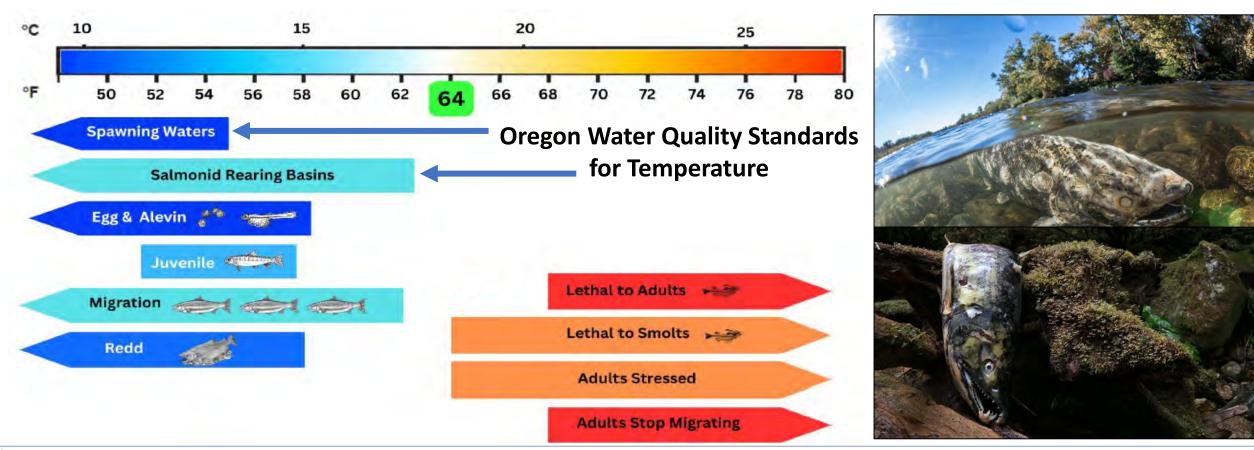




Temperature & Water Quality

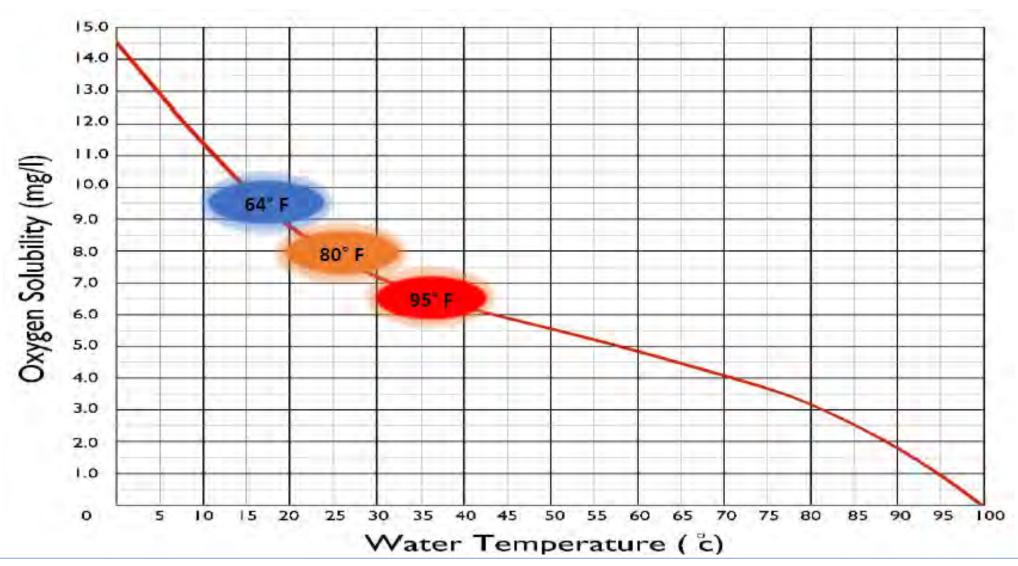
Cold Water = Healthier Water

Aquatic species can't escape heat or regulate body temp





What happens to DO as water warms up?





What is the most common pollutant in rivers, streams, lakes and reservoirs?





Turbidity & Sedimentation Both are caused by <u>EROSION!</u>

Turbidity

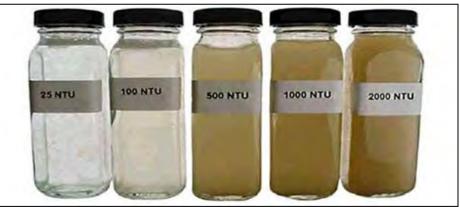
Turbidity is a metric for water quality that indicates how clear the water is.

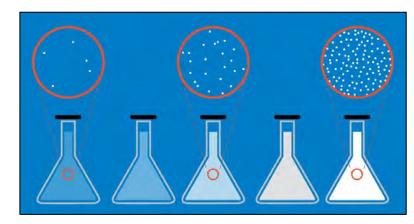
For ESC Permits: Turbid = Cloudy -> Usually Suspended Sediment

Increase in Suspended Sediment = Increase in Turbidity = Bad

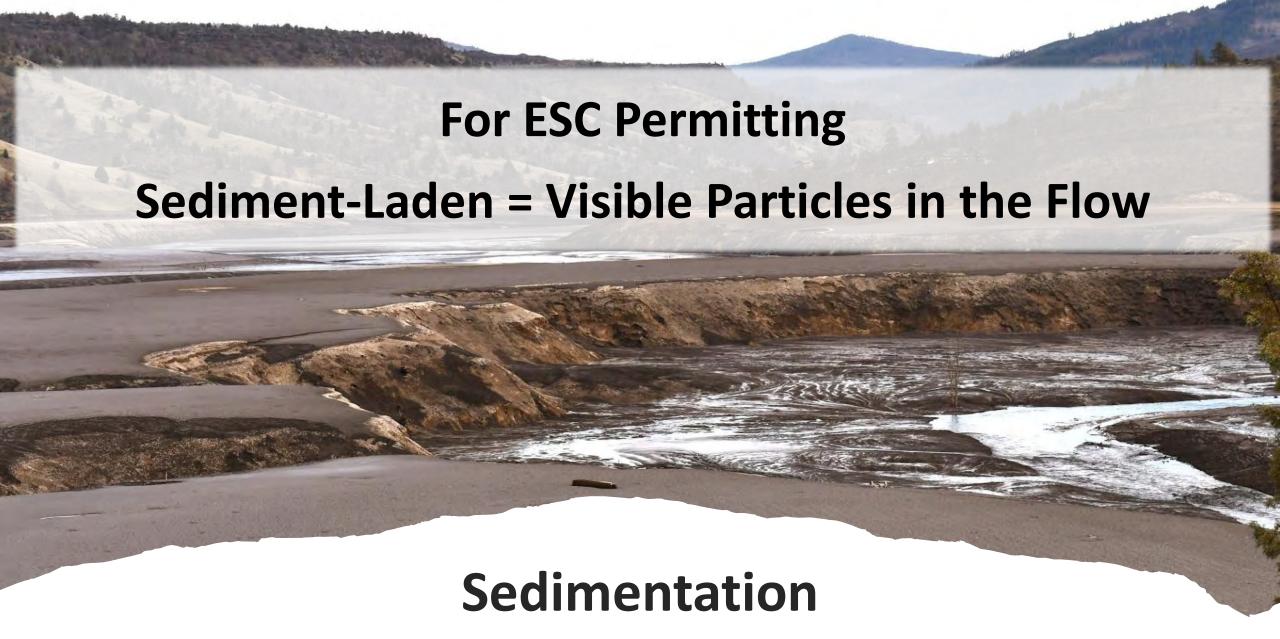
Nephelometric Turbidity Units (NTU) = FNU = FTU = FAU







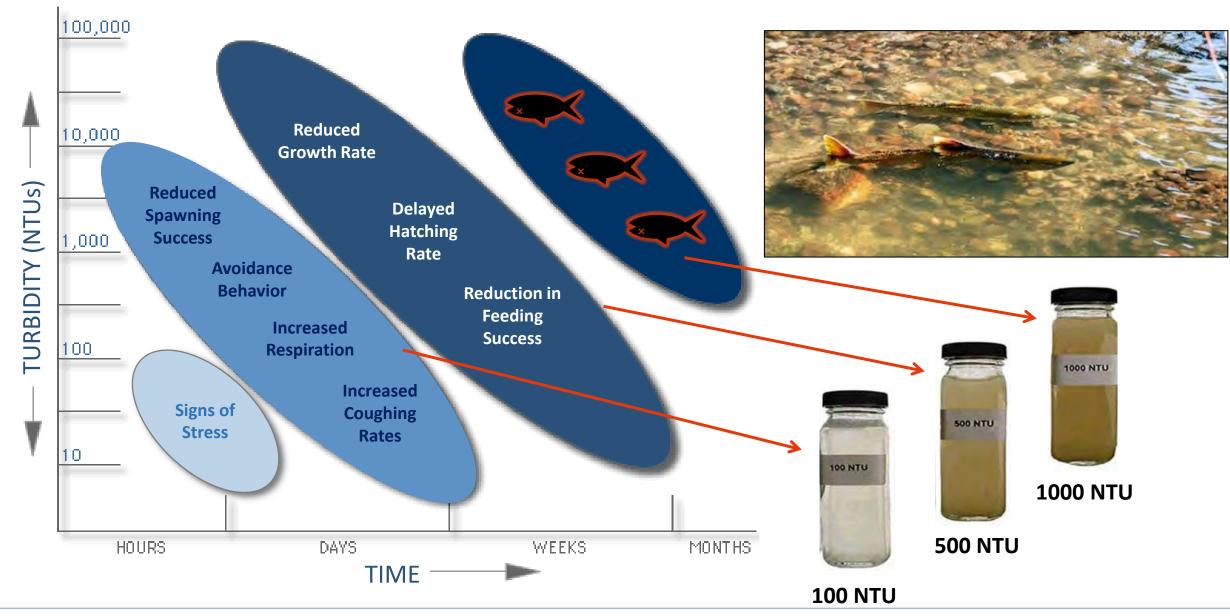




The deposition or settling of the suspended material – where it all ends up



Turbidity & Sedimentation Effects on Salmonidae





Turbidity = Water's AQI

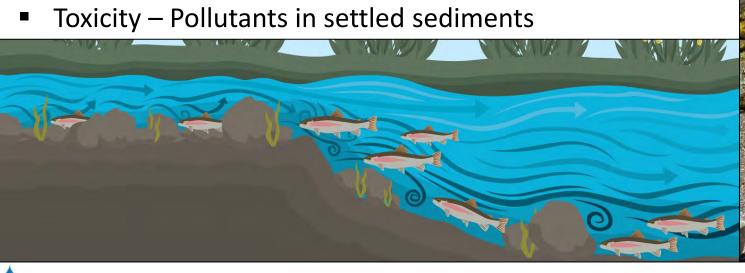
Like smoke in the air → constant exposure harms life

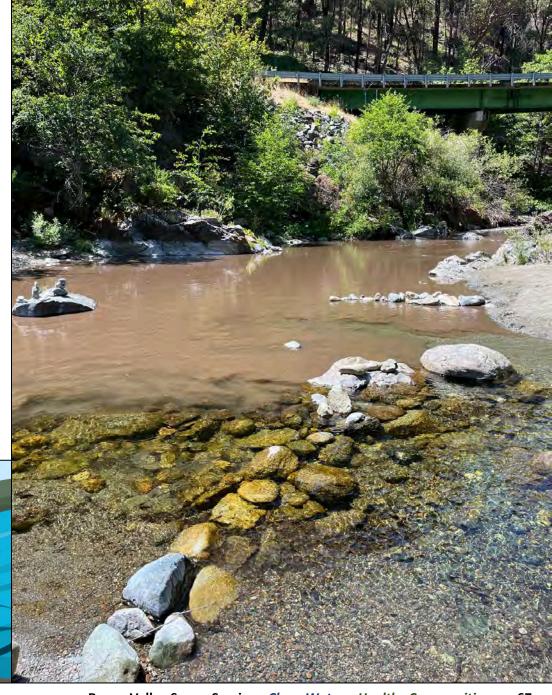
- Clogs fish gills & filter-feeders
- ↓ Light penetration = ↓ plant growth, ↓ photosynthesis
 → ↓ Dissolved Oxygen, ↓ Life
- ↑ Stress

Sedimentation = Degraded Stream Structure

Reduced Depth → fills pools where fish rest & stay cool

- \uparrow Water Temperature $\rightarrow \downarrow$ Dissolved Oxygen
- ↓ Biodiversity
- Gravel Bottom → Muck Bottom
 - → Smothers bottom life, barren channels



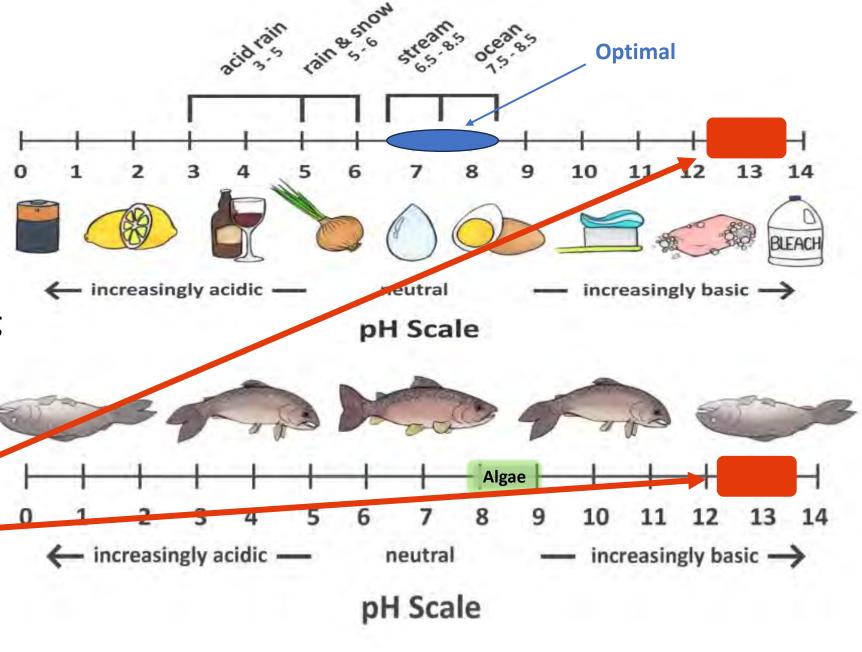


pН

- Measures how acidic or alkaline water is
- pH ↑ 1 full unit → 10× change

Change in pH = something is in the water

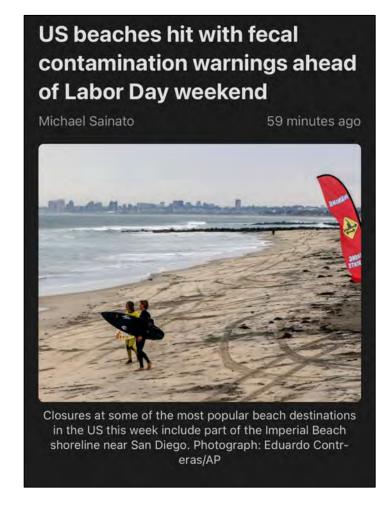






Is it safe to swim?





Toxicity



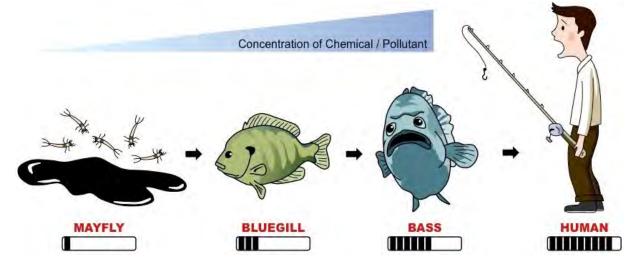






- Acute Exposure: short-term, high dose (e.g., first flush → fish kills)
- Bioaccumulation: toxins build up in an organism over time
- **Biomagnification:** toxins multiply up the food chain \rightarrow apex predators (including us)

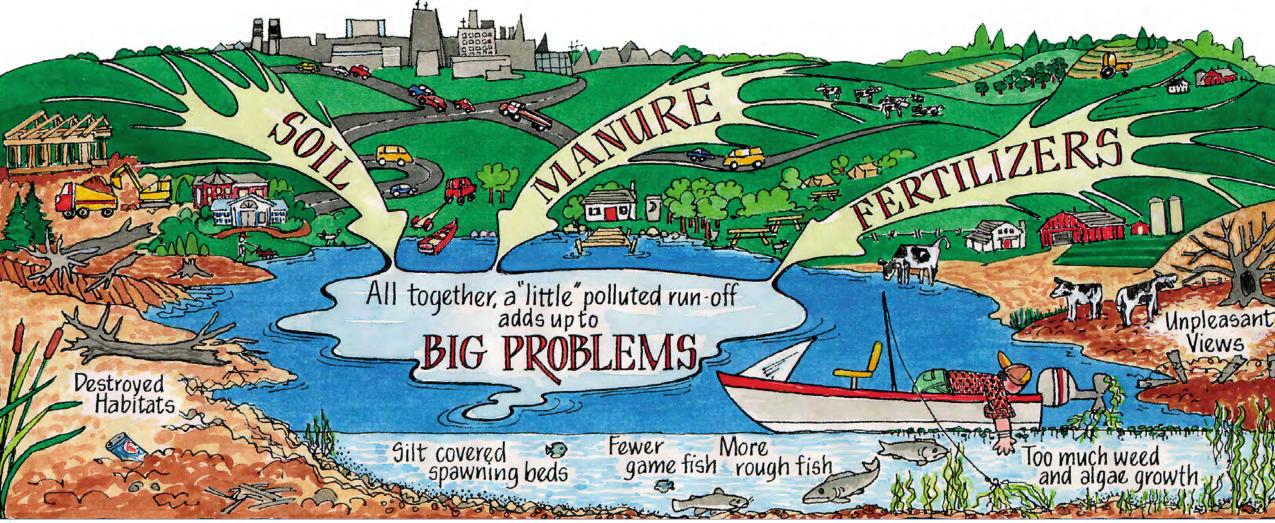






What may seem insignificant to you, adds up across the whole watershed!





Two Very Different Rivers

Both are U.S. rivers → outcomes shaped by choices



Regulation and Permitting







Federal – Environmental Protection Agency (EPA)



State - Department of Environmental Quality (DEQ)



Local Jurisdiction - RVSS / County / City

Federal and state permitting regulate for <u>water quality</u>, <u>volume</u>, <u>and rate</u> both during and after construction.

During Construction

Erosion and Sediment Controls

aka

Best Management Practices (BMPs)





Post Construction

Stormwater Facilities
Swales, SW Planters, Etc.







NPDES 1200 Series Construction Permit General Use Requirement *Big Highlights*

Can NOT discharge visually turbid water or sediment.
Can NOT cause or contribute to an exceedance of any applicable water quality standard.
Must install and maintain BMPs to control stormwater volume, velocity, and peak flow rates.
Protect riparian areas and/or provide equivalent sediment controls.
Must visual monitor/inspect the site AND record the inspections.
Meet Final Stabilization Criteria prior to Permit Termination.



What is a riparian area?

The land that borders rivers, lakes, streams, and floodplains

Why are they important?

Riparian Areas - Vital & Vulnerable

Less than 1% of Oregon's land → supports 85% of wildlife

Functions:

- ✓ Filtration trap pollutants, sediment, nutrients
- ✓ **Stabilization** reduce erosion, improve clarity
- ✓ Temperature Regulation shade from trees/vegetation
- ✓ Habitat land + aquatic species
- ✓ Value recreation, scenic beauty, economic benefit





What does a healthy riparian area look like?

- ✓ Diverse native vegetation
- ✓ Stable streambanks
- ✓ Shaded water
- √ Clear channel
- ✓ Habitat complexity
- ✓ Supports fish, birds, and wildlife





Restoring and protecting riparian areas is the most crucial thing we can do for water quality



In the ESC Permit – Riparian Areas are protected as the 50ft Natural Buffer Zone (NBZ)

Rule: Post-construction riparian conditions must meet or exceed pre-construction conditions!









Shifting from Grey to Green Infrastructure

Green Infrastructure

- Uses vegetation, soils, natural processes to manage stormwater
- City scale: connected green spaces, natural corridors
- Site scale: rain gardens, bioswales, infiltration planters

Grey = Move water away quickly
Green = Bioretention
Slow It, Spread It, Sink It!



Why Plants Are The Preference



- ✓ Erosion Control: Stabilizes soil
- ✓ Soil: Maintains soil health, structure, and porosity
- ✓ Flow Control: Slow, spreads, evapotranspiration
- ✓ Water Quality: Uptake, use, and storage of pollutants
- ✓ Resilience: Reduce maintenance needs

Other Benefits

- ✓ Cooling & Shade
- ✓ Biodiversity & Habitat
- ✓ Air Quality Improvements
- ✓ Mental & Physical Health Improvements
 - ✓ Social Pride & Interaction
 - ✓ **Financial**: Higher property values

Plant Hierarchy: **Natives** → Non-natives → Invasives



So What?



New or Redeveloped Impervious Surface ≥ 5,000 sf = A Stormwater Facility is REQUIRED!

Facility must be built per approved plans. Must pass acceptance inspection before ESC permit can close.

If you have to do it, do it well—make it an asset, not a burden



Erosion & Sediment Control (ESC) Permits







What Does The 1200-C Permit Cover?

1200-C NPDES Construction Stormwater General Permit

An ESC Permit authorizing discharges in Oregon

Covers:

- Clearing, grading, excavating, grubbing, stumping, demolition
- Stockpiling & other land-disturbing activities
- Construction support activities tied to the project

Does NOT Cover:

- Post-construction discharges → MS4 Permit or 1200-Z Permit
- Underground injection control (UIC) systems → UIC Permit
- In-water work or activities \rightarrow Other Federal & State permits



In Water Permits & ESA Critical Habitat



Fresh Waters Section 404 Uplands Section 10-(if navigable) Ordinary High Water Fresh Water Wetlands Marshes, swamps, bogs, & similar areas

These must be obtained before ESC Permit issuance



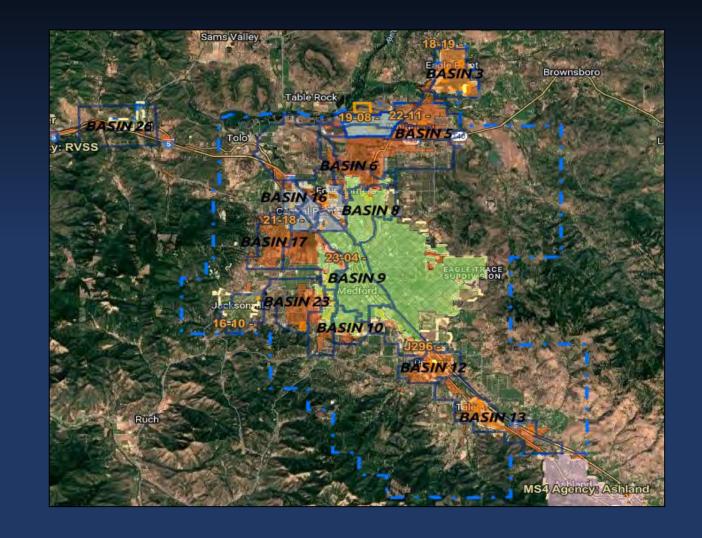
Do You Need an ESC Permit?

Question 1

Does your construction project disturb one or more acres of land through *ALL* Phases and *ALL* construction activity?

Question 2

Is any portion of the project located within a MS4 jurisdiction?



Do You Need an ESC Permit?

Question 1

Does your construction project disturb one or more acres of land through *ALL* Phases and *ALL* construction activity?



You need a DEQ 1200-C Permit

Question 2

Is any portion of the project located within a MS4 jurisdiction?



Check with MS4 Jurisdiction: If over 7000sf, the MS4 must review the ESCP.

→ You will likely need a permit

Do You Need an ESC Permit?

Fill / Dumping / Grading



Over 7000sf? You need a permit!



Applying for a Permit

Submit all required documents at least 30 days before project start

No construction activity is authorized until an ESC permit is issued

All documents submitted via Your DEQ Online (YDO)

Local MS4 Small Site

- Application
- ESCP

Check with local jurisdiction

DEQ Small Site

- Application
- ESCP
- LUCS

DEQ or Agent 1200-CN/C

- Application
- ESCP
- LUCS

DEQ or Agent 1200-C for 5+ Acres

- Application
- ESCP
- LUCS
- 14-Day Comment Period



1200-C Agents

DEQ delegates certain local entities to act on its behalf for stormwater permitting.

There are only 4 Agents in Oregon:

City of Eugene

City of Troutdale

Clean Water Services (CWS)

Rogue Valley Sewer Services (RVSS)

Agents are a one stop shop for:

- ✓ Erosion and Sediment Control Plan (ESCP) Review and Approval
- ✓ Permit Issue
- ✓ Compliance Oversight
- ✓ Enforcement



RVSS ESC Permits

*Total Disturbed Area/Ground	ESC Permit Required	Initial Fee	Annual Fee
7,000sf to 0.99 acres	Medium Storm Drain Protection Permit (SDPP-M)	\$250	\$250
1.0 to 4.99 acres	RVSS ESC Permit for 1-5 Acres (DEQ 1200-CN)	\$1,500	\$750
5.0+ acres	RVSS ESC Permit for 5+ Acres (DEQ 1200-C)	\$2,815	*\$1,388

^{*} DEQ will issue Renewal Notice and collect annual renewal fees for 1200-C permits.



What an ESC Permit Allows You To Do

May discharge stormwater and authorized non-stormwater discharges so long as the site follows all conditions set forth in the permit

Your Erosion & Sediment Control Plan (ESCP) is how you show that you are meeting those conditions

Prohibited Discharges:

- Visually turbid or sediment-laden water
- Wastewater
- Soaps, solvents, and detergents
- Hydro-demolition water

- Fuels, oils, and other operation and maintenance pollutants
- Saw-cutting slurry
- Toxics or other hazardous substances



A plan in action...

1200-C Permit Conditions

Erosion & Sediment Control Measures

Best Management Practices (BMPs)



Best Management Practices (BMPs)

Activities, prohibitions, maintenance procedures, and physical/structural/managerial practices to prevent or reduce pollution of waters of the state.

Categories:

Erosion Controls – Keep dirt in place → <u>Priority</u>

Sediment Controls – Keep dirt on site

Managerial Practices – Prevent and contain pollution

Resources:

ACWA Construction Site Guide
DEQ BMP Manual
EPAs SWPPP Guide











Permit & Posting Requirements

1200-C Condition 1

You Must Have a Permit

- All construction activity is prohibited until you have been issued a permit.
- NO clearing, grading, excavating, grubbing, stumping, demolition, stockpiling, or other land disturbing activities.

Post Notice of Permit Coverage

- Sign or notice must be posted:
 - At a safe, publicly accessible location near the site
 - Visible from public road and readable from right-of-way

Must include:

- Permit Number
- Contact Information (Name & phone number)
- > Statement: "If you observe stormwater pollution..." or QR code



Pre-Construction Requirements

1200-C Schedule A.2

After you have a Permit, but <u>BEFORE</u> construction:

- Onsite pre-construction meeting with key personnel
 - General Contractor Rep (e.g. the superintendent)
 - Pertinent Sub-Contractors
 - Site ESC Inspector
 - MS4 ESC Oversight Inspector
- Dated Sign-in Sheet must be kept in site logbook
- Discuss the ESCP and Planned Stormwater Facilities

Prior to the pre-construction meeting:

- All ESC measures for the first phase must be installed
- Material & waste storage areas are established
- ID and mark off clearing limits & sensitive areas to include natural buffer areas and the location of future stormwater facilities

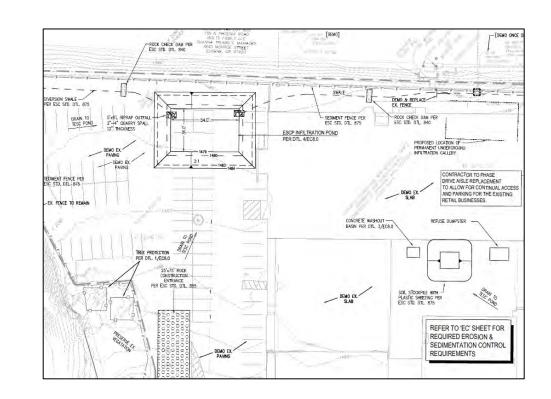


Erosion and Sediment Control Plan (ESCP)

1200-C Schedule A.21

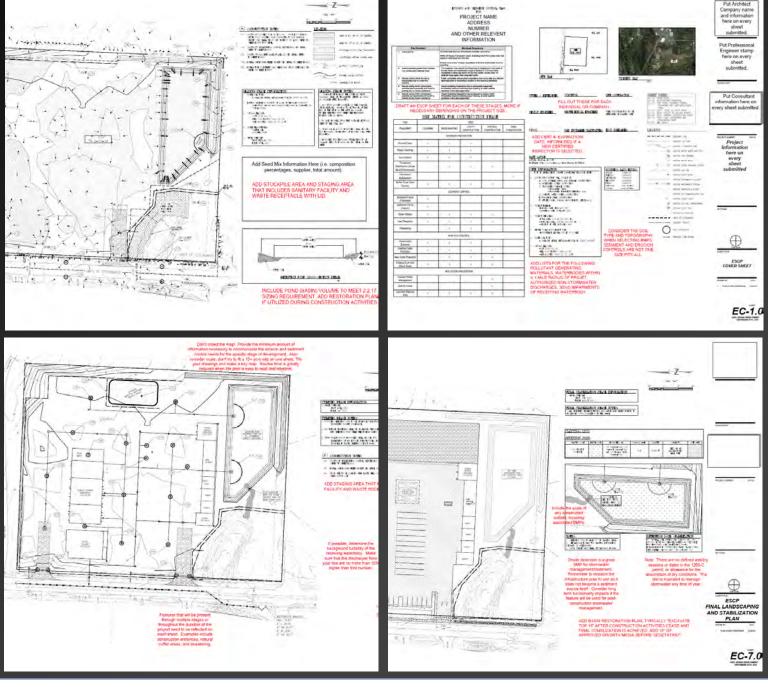
The ESCP is Required!

- Site-specific
- Account for wet weather
- Accessible to all personnel
- Minimize soil exposure
- Install stormwater controls for discharge treatment, volume, and rate
- Run-on becomes your responsibility!
- Living Document → Must be current & updated





The Erosion & Sediment Control Plan (ESCP)

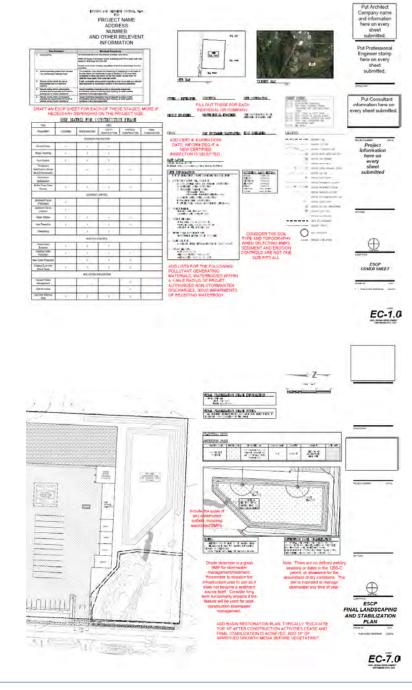


ESCP Contents

1200-C Schedule A.20

Full list of ESCP requirements are in Appendix C

- Cover Sheet(s) all administrative information
- Separate sheets with clearly depicted ESC measures for each of the following stages:
 - Existing conditions
 - Demolition, clearing, grading, excavating and land development
 - Street and utilities
 - Vertical construction
 - Final landscaping and site stabilization.
- Details for of all proposed BMPs on the ESCP



Cover Sheet(s)

1200-C Appendix C

- Vicinity Map
- Legend
- **Contact Information**
- DEQ Notes (42)



N.T.S.





VICINITY MAP

N.T.S.

- 1. Once known, include a list of all contractors that will engage in construction activities on site, and the areas of the site where the contractor(s) will engage in construction activities. Revise the list as appropriate until permit coverage is terminated (Section 4.4.c.i). In addition, include a list of all personnel (by name and position) that are responsible for the design, installation and maintenance of stormwater control measures (e.g. ESCP developer, BMP installer (see Section 4.10), as well as their individual responsibilities, (Section
- 2. Visual monitoring inspection reports must be made in accordance with DEQ 1200-C permit requirements. (Section 6.5)
- Inspection logs must be kept in accordance with DEQ's 1200-C permit requirements. (Section 6.5.g)
- 4. Retain a copy of the ESCP and all revisions on site and make it available on request to DEQ, Agent, or the local municipality. (Section 4.7)
- 5. The permit registrant must implement the ESCP. Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit. (Sections 4 and 4.11)
- 6. The ESCP must be accurate and reflect site conditions. (Section 4.8)
- 7. Submission of all ESCP revisions is not required. Submittal of the ESCP revisions is only under specific conditions. Submit all necessary revision to DEQ or Agent within 10 days. (Section 4.9)
- 8. Sequence clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion.
- 9. Create smooth surfaces between soil surface and erosion and sediment controls to prevent stormwater from bypassing controls and ponding, (section 2.2.3)
- 10. Identify, mark, and protect (by construction fencing or other means) critical riparian areas and vegetation including important trees and associated rooting zones, and vegetation areas to be preserved. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas. (Section 2.2.1)
- 11. Preserve existing vegetation when practical and re-vegetate open areas. Re-vegetate open areas when practicable before and after grading or construction. Identify the type of vegetative seed mix used. (Section 2.2.5)
- 12. Maintain and delineate any existing natural buffer within the 50-feet of waters of the state. (Section 2.2.4)
- 13. Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers prior to land disturbance. (Sections 2.1.3)



SURVEYOR

SITE CONTRACTOR

DESIGN ENGINEER

GEOTECHNICAL ENGINEER

*SITE SUBCONTRACTORS TO BE DETERMINED AT A LATER DATE

CESCL:

BMP INSTALLER/MAINTAINER:

ESCP PREPARER:

LEGEND



BOUNDARY LINE

ADJACENT LOT LINE

EXISTING 1' CONTOUR LINE

EXISTING STORM DRAINAGE SYSTEM

EXISTING GAS LINE

EXISTING CATCH BASIN

EXISTING STORMWATER CULVERT



Cover Sheet(s)

1200-C Appendix C

- Inspection Frequency
- BMP Matrix
- Site Information
- Spill Plan Information

Frequency option 1	At least once every seven (7) calendar days.						
Frequency option 2	Once every 14 calendar days and within 24 hours of the occurrence of:						
	 A storm event that produces 0.25 inches or more of rain within a 24-hour period. 						
	A. If a storm event produces 0.25 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.25 inches but together produce 0.25 inches or more in 24 hours), you are required to conduct one inspection within 24 hours of when 0.25 inches of rain or more has fallen.						
	B. If a storm event produces 0.25 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.25 inches or more of rain on subsequent days, you must conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.25 inches or more of rain (i.e., only two inspections would be required for such a storm event).						
	ii. A discharge caused by snowmelt from a storm event that produces 3.25 inches or more of snow within a 24-hour period. You are required to conduct one inspection once the discharge of snowmelt from a 3.25-inch or more snow accumulation occurs. Additional snowmelt inspections are only required if following the discharge from the first snowmelt, there is a discharge from a separate storm event that produces 3.25 inches or more of snow.						

Year:									. 4			
BMPs Month:	3	l T						1 - 1	D.	1		11 11 1
Biobags			ini=						3	p.	1	HΞ
Bioswales/sediment basins								X	1			
Check Dams							0		1	No.		LE I
Perimeter Control	x											
Concrete Truck Washout		Ш				1		1		:		1 = 1
Construction Entrance	x				£			1				
Dewatering					X	dr.	- 1	11"		1 10 1	1	1 = 1
Conveyance Structures			11/-	L	-1	L.		1 4		1 41		
Energy Dissipaters				1		1						1111
Erosion Control Blankets & Mats (Specify type)				٦,	70	4				1 = 1		
Hydroseeding		100			`					11 11 1		111.6
Inlet Protection	-	1	1010	70		1100				1 11		1191
Mulches (Specify Type)		1	9									HE C
Chemical Treatment System			h.									
Natural Buffer Zone		1										
Outlet Protection												

BUSINESS	DAYS/HOURS:
MONDAY	7:00-5:00
TUESDAY	7:00-5:00
WEDNESDAY	7:00-5:00
THURSDAY	7:00-5:00
FRIDAY	7:00-5:00
SATURDAY	-NO WORK-
SUNDAY	-NO WORK-

RAIN GAUGE:

ASTORIA REGIONAL AIRPORT

HYPERUNK: https://w1.weather.gov/data/obhistory/KAST.html

C)	IΤE	TAT	ᇟᄼ	DM	V 111	0N:
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- TYPE OF DEVELOPMENT: PRIVATE COMMERCIAL RESOURCE CENTER
- 2. CONSTRUCTION ACTIVITY WILL CONSIST OF:
 - A) CURB, ASPHALT PAVING, AND SIDEWALK CONSTRUCTION
 - B) WASTEWATER SYSTEM COSTRUCTION
 - C) STORMWATER DRAINAGE SYSTEM:
 - -STORMWATER PIPING
 - -STORMWATER TREATMENT DETENTION POND
 - D) DOMESTIC WATER SYSTEM CONSTRUCTION
 - E) FRANCHISE UTILITY CONSTRUCTION
 - F) OFFSITE PUBLIC ROADWAY IMPROVEMENTS (SEE EC-4.0)
- PROJECT TIMELINE:

BEGINNING DATE: FEBRUARY 2021 COMPLETION DATE: NOVEMBER 2021

- PROJECT SITE AREAS:
 - -TOTAL AREA: 5.32 AC (231,847 SF)
 - -DISTRUBED AREA: 4.48 AC (195,250 SF)
 - -PERCENT OF SITE DISTURBED: 84%
- OFFSITE PUBLIC IMPROVEMENT AREA:

-IMPROVEMENT LENGTH: 550 LF (0.10 MILE)

- 6. ONSITE SOIL TYPES:
 - A) WALLUSKI MEDIAL SILT LOAM-HYDROLOGIC GROUP C-100%
- 7. CUT AND FILL DATA:
 - -CUT: 9,155 CU. YD.
 - -FILL (1.20 FACTOR): 4500 CU. YD.
 - -NET ADJUSTED: 4,655 CU. YD. (CUT)

IN THE EVENT OF A SPILL:

- FIND SITE SPILL KIT, LOCATION CLEARLY MARKED; FOLLOW DIRECTIONS, TAKE STEPS TO STOP AND MAINTAIN SPILL, AND INITIATE PRELIMINARY CLEANUP MEASURES
- 2. CONTACT: -____(BMP IMPLEMENTATION)

- ____(1200C PERMITEE)

PHONE:

· ____(INSPECTOR)

PHONE: (541) 772-5807

3. WITHIN 24 HOURS, NOTIFY OREGON EMERGENCY RESPONSE SYSTEM: (800) 452-0311

Cover Sheet(s)

1200-C Appendix C

- Narrative Information
- Any Other Required Notes

CONSTRUCTION NOTES AND MATERIAL SPECIFICATIONS FOR STORMWATER FACILITIES THESE NOTES MUST ACCOMPANY ALL STANDARD DRAWINGS.

GENERAL STORMWATER CONSTRUCTION NOTES

- 1. All Stormwater facilities must be constructed per the Design Manual, or as approved by the local jurisdiction.
- Call the reviewing agency 48 hours in advance of constructing this facility so construction observation may be performed to identify variations in the field that may affect design and verify proper construction.
- For infiltration facilities, exposed facility subgrade shall be fenced to prohibit impacts from construction (including materials and equipment storage). If unprotected subgrade has been exposed to rainfall, scarify the surface to a depth of 4 inches to restore filtration capacity.
- 4. Placement of amended native or imported soil mix shall occur as follows:
 - Conduct excavation, fine grading and placement work only when the facility and soil to be placed is dry. Do
 not place if soil is saturated.
 - Place soil in 8 inch maximum lifts.
 - Lightly compact each lift, (e.g. a water filled landscape roller) to achieve 85% compaction. Do not compact
 with heavy machinery or vibratory compaction.
- All ground within the facility must be stabilized with one of the options below, also see Material Specifications for Stormwater Facilities.
 - Hydroseeding Hydroseeding with tackifier.
 - Matting Matting shall be used to hold the soil in place until vegetation becomes established. If hand
 seeding, place seed and then install erosion control matting. If planting, install erosion control matting and
 then install plants through the matting. Matting is not required on slopes 4H:1V or shallower, or on slopes
 that have been hydroseeded. Matting must be biodegradable.
 - Mulch Mulch is not allowed below the water quality ponding depth or within the flow path of an inlet or outfall. Mulch shall be spread over bare soil or in a ring around plants. Ensure that mulch does not touch older stems.
- 6. If soil is placed during the wet season the facility must be stabilized within one week of soil installation.

CONSTRUCTION NOTES FOR VEGETATED STORMWATER BMPS

- 7. Build and vegetate as early as possible to establish plantings prior to directing stormwater runoff to the BMP.
- Contact approving jurisdiction 48 hours in advance of planting so that the jurisdiction can review soil installation and plant placement prior to plant installation.

CONSTRUCTION NOTES FOR PERVIOUS SURFACE STORMWATER BMPS

Contact the approving agency 48 hours prior to placing geotextile fabric. The approving agency may call the engineer
of record in advance of constructing this facility so construction observation may be performed to identify variations in
the field that may affect design and verify proper construction.

MATERIAL SPECIFICATIONS FOR STORMWATER FACILITIES

 Growing media must be Imported Planting Soil or Amended Native Soil at the depths shown on the Standard Drawings and meet the following specifications:

ESCP NARRATIVE INFORMATION

EXISTING CONDITIONS:

OPEN GRASS AND GRAVEL LOT

DEVELOPED CONDITIONS;

13 DUPLEXES AND 1 COMMON BUILDING WITH PAVED PARKING

POST-CONSTRUCTION IMPERVIOUS AREA: APPROX, 0.88 ACRES

PROPERTY AREA = 1.52 ACRES

DISTURBED/PROJECT AREA = 1.52 ACRES (EXPECTED TO BE DISTURBED FOR DURATION OF CONSTRUCTION PERIOD)

RAIN GAUGE: LDDAL OFFICIAL DATA TO BE USED TO ASSESS SIGNIFICANT RAIN EVENTS (MEDFORD INT'L AIRPORT, APPROX. 10. MILES AWAY)

RECEIVING WATER BODY: WAGNER CREEK, APPROX. 0.35 MI FROM SITE DISCHARGE FOINT

AUTHORIZED NON-STORMWATER DISCHARGES (ANTICIPATED/POSSIBLE):

- WATER AND ASSOCIATED DISCHARGES FROM EMERGENCY FIREFIGHTING ACTIVITIES;
- FIRE HYDRANT FLUSHING:
- WATER FOR WASHING DOWN EQUIPMENT AND VEHICLES WITH NO CONTAMINANTS:
- . WATER FOR OUST CONTROL & ACHIEVING SUBGRADE COMPACTION;
- PAVEMENT WASH WATERS WITH NO CONTAMINANTS, DIRECTED TOWARDS TREATMENT FACILITIES
- UNCONTAMINATED AIR CONDITIONING DR COMPRESSOR CONDENSATE

POLLUTANT-GENERATING ACTIVITIES:

- TRANSPORTING, INSTALLING, GRADING, & COMPACTING SUBGRADE IMPORTED GRAVEL & NATIVE MATERIAL (DUST AND PARTICULATES)
- POURING CONCRETE (CONCRETE, GROUT, TRUCK/EQUIPMENT RINSING, ETC.)
- POURING ASPHALT STREET (ASPHALT, TACKIFIER, ETC.)
- VEHICLES & EQUIPMENT POWERED BY DIESEL OF GASOLINE, INCLUDING VARIOUS OILS, GREASES, ANTIFREEZES, EXHAUST GASES, ETC.
- PIPE INSTALLATION SEALANTS & LUBRICANTS
- SHAVINGS FROM UTILITY PIPE CUTTING & FITTING (PVC. HDPE, POLYPROPYLENE, OR POLYETHYLENE)

EXISTING SOIL TYPES:

34B COLEMAN LOAM, 0% TO 7% SLOPES APPROX, 0.4 ACRES (36% TOTAL PROJECT AREA)
139A PADIGAN CLAY, 0% TO 3% SLOPES APPROX, 1.1 ACRES (64% TOTAL PROJECT AREA)

SOIL SURVEY AREA:

JACKSON_COUNTY AREA, OREGON, PARTS OF JACKSON AND KLAMATH COUNTIES (OR632)

SURVEY AREA DATA

VERSION 23, SEPT 8, 2023

SOURCE OF MAP: NATURAL RESOURCES CONSERVATION SERVICE

HTTPS://WERSOILSURVEY.SC.EGOV.USQA.GOV/APP/WERSOILSURVEY.ASPX

NATIVE FILL TO BE USED FOR GRADING; IMPORTED CRUSHED ROCK FOR ROAD SUBGRADE MATERIAL & BUILDING PAD FOUNDATIONS

TEMPORARY SEED COVER MIX:

EWING 90/10 FESCUE/BLUE MIX

NATURAL BUFFER ZONE: COMPLIANCE ALTERNATIVE 3 (NO BUFFER ZONE)

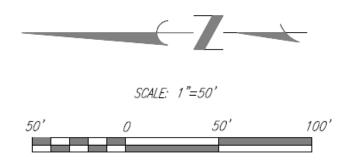
JUSTIFICATION: RUNOFF WILL FILTER THROUGH VARIOUS BMP'S (SEDIMENT FENGE/COMPOST SQCK, BIOBAGS, OUTFALL PROTECTION, ETC) PRIOR TO STORM DRAIN TREATMENT SYSTEM INSTALLATION, AND WILL BE TREATED BEFORE ENTERING MUNICIPAL STORM SYSTEM AFTER INSTALLATION OF TREATMENT SYSTEM NEAREST WATERS OF THE STATE ARE APPROX. 0.35 MILE FROM SITE.

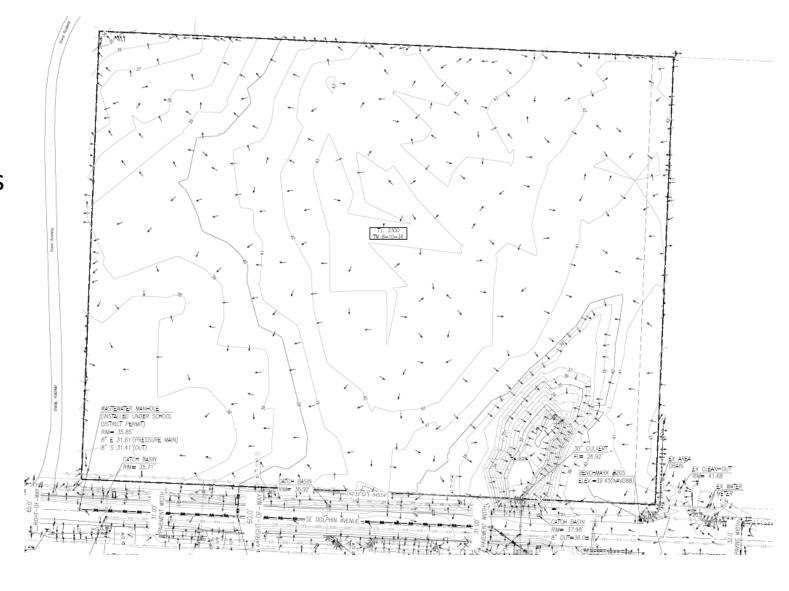


Existing Conditions Sheet

1200-C Appendix C

- North Arrow, Scale, Legend
- Limits of Disturbance
- Grade, Drainage, Discharge Points



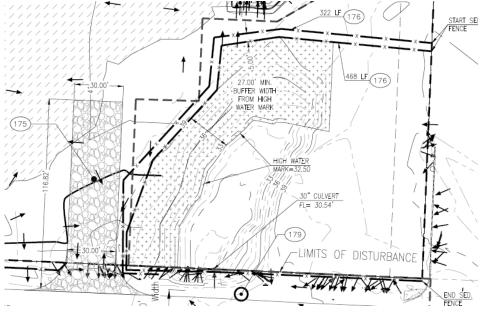


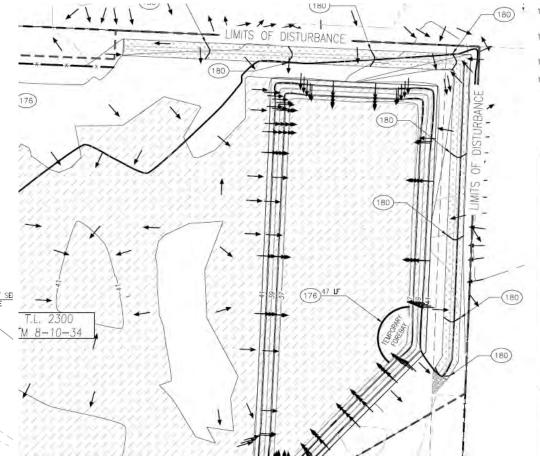


Grading, Clearing, Initial BMP Sheet

1200-C Appendix C

- North Arrow, Scale, Legend
- Limits of Disturbance
- Grade, Drainage, Discharge Points
- All Perimeter, Slope, and Internal BMPs





- 176. CONSTRUCT SEDIMENTATION CONTROL SILT FENCING PER DETAIL
- 178. CONSTRUCT CONCRETE WASHOUT AREA AS PER DETAIL. REFER
- 9. INSTALL CATCH BASIN FILTER INSERT PER DETAIL ON SHEET EC-
- 180. INSTALL TYPE 3 BIOFILTER BAG CHECK DAM AT 50' INTERVALS PE DETAIL ON SHEET EC-8.0.

GRADING PHASE INFORMATION:

ONSITE SOIL TYPE

A) WALLUSKI MEDIAL SILT LOAM—HYDROLOGIC GROUP C-10

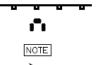
- EXISTING VEGETATION CONSISTS OF A MIX OF HERBACEOUS—WOOD' UNDERSTORY SHRUBS AND GROUNDCOVERS AND IS DOMINATE SCOTCH BROOM
- CUT AND FILL DATA:
- -CUT: 9,155 CU. YO
- -FILL (1.20 FACTOR): 4500 CU. YD.
- -NET ADJUSTED! 4,655 CU. YD. (CUT
- ONSITE FILL MATERIALS
- -CRUSHED ROCK
- PHASE SCHEOULE: START: FEBRUARY 2021 FINISH: APRIL 2021

Add Seed Mix Information percentages, supplie

EROSION CONTROL LEGEND

- (1) INSTALL ROCKED CONSTRUCTION ENTRANCE AT ALL WORK ZONE ENTRY POINTS PER DETAIL RD1000
- INSTALL SEDIMENT FENCE ALONG DOWNHILL PERIMETERS OF WORK ZONE PER DETAIL RD1040.
- (3) INSTALL INLET PROTECTION PER DETAIL RD1010
- PROVIDE CONCRETE WASHOUT STATION PER DETAIL RD1070
- STAGING & STOCKPILING AREA, SANITARY FACILITIES, WASTE AREA, SPILL CLEANUP KIT, ETC
- (SUGGESTED LOCATION SHOWN*)

*ALL POTENTIAL CONTAMINANT-CREATING MATERIALS SHALL BE LOCATED AWAY FROM STORM DRAINS & INLETS



PROPOSED SEDIMENT FENCE

BIO FILTER BAGS

EROSION CONTROL NOTE

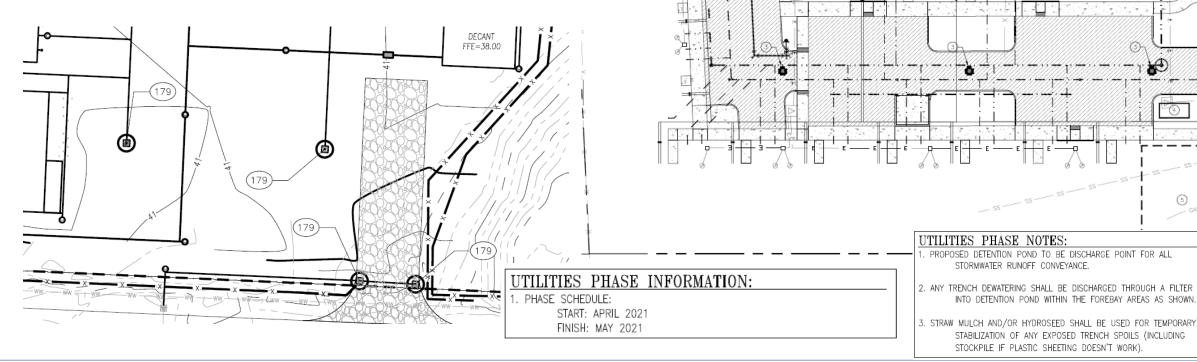
SURFACE FLOW DIRECTION



Utilities, Roads, Vertical Constructions Sheets

1200-C Appendix C

- North Arrow, Scale, Legend
- Narrative Overview of Stage
- Post- Grade Drainage & Discharge Points
- Location of All BMPs for Stage

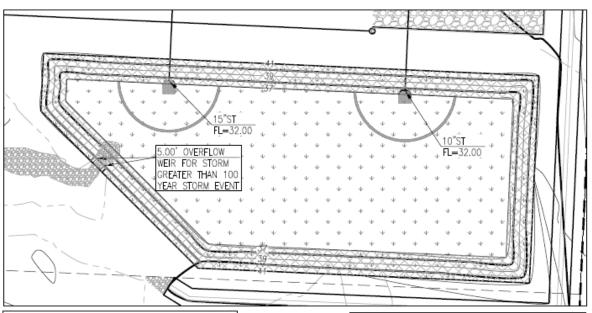




Final Stabilization Sheet

1200-C Appendix C

- North Arrow, Scale, Legend
- Narrative Overview of Stage
- All areas and types of permanent stabilization



OTES:

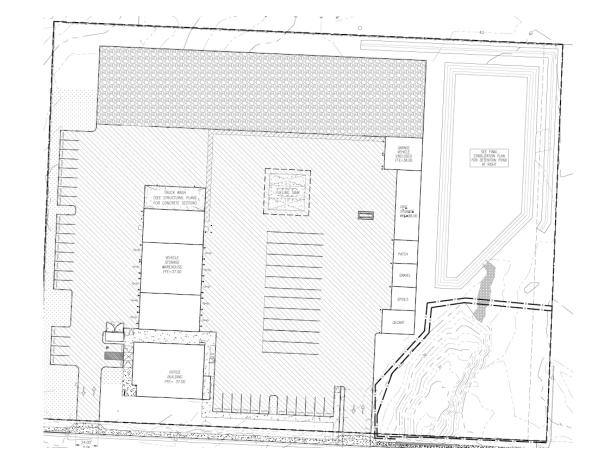
 DETENTION POND TO HAVE 12" OF PLANTING MEDIA
 SEE LANDSCAPE PLAN FOR PLANTING INFORMATION PREPARED BY GREENWORKS.

. ROCK SPLASH PADS SHALL BE CLASS-50 RIP-RAP.

DETENTION POND STABILIZATION

*1. INSTALL JUTE MATTING PER OREGON STD. DWG RD1055 SLOPE AND CHANNEL MATTING AS PRESCRIBED FOR TEMPORARY SOIL STABILIZATION DURING ESTABLISHMENT IF CONSTRUCTION TAKES PLACE DURING

PLANTINGS LISTS	<u>S</u>					
DETENTION PON	D					
PLANTING ZONE	HATCH/CODE	HYDROSEED MIX	COMMON NAME	QUANTITY	COMMENTS	JUTE MAT*
100 PERCENT COVERAGE	* * * * * * * * * * * * * * * * * * *	1/3 Perennial Rye, 1/3 Patriot II Perennial Rye and 1/3 Evening Shade Perennial Rye.	N/A	8,000 SF	SEED MIX AT MANUFACTURES HIGH RATE	

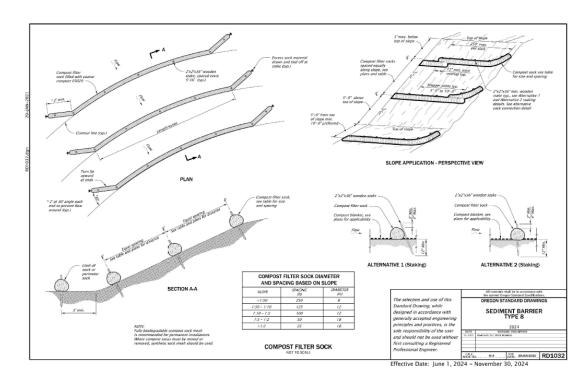


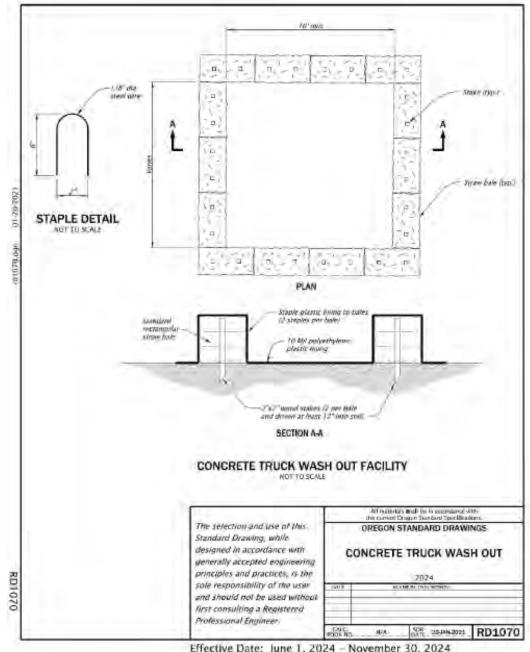


BMP Details Sheet

1200-C Appendix C

- Provide type, description, and schematic of all proposed BMPs represented in the ESCP
- Details for Special ESCP Items (e.g. sediment basin dimensions, treatment systems, etc.)





Effective Date: June 1, 2024 - November 30, 2024

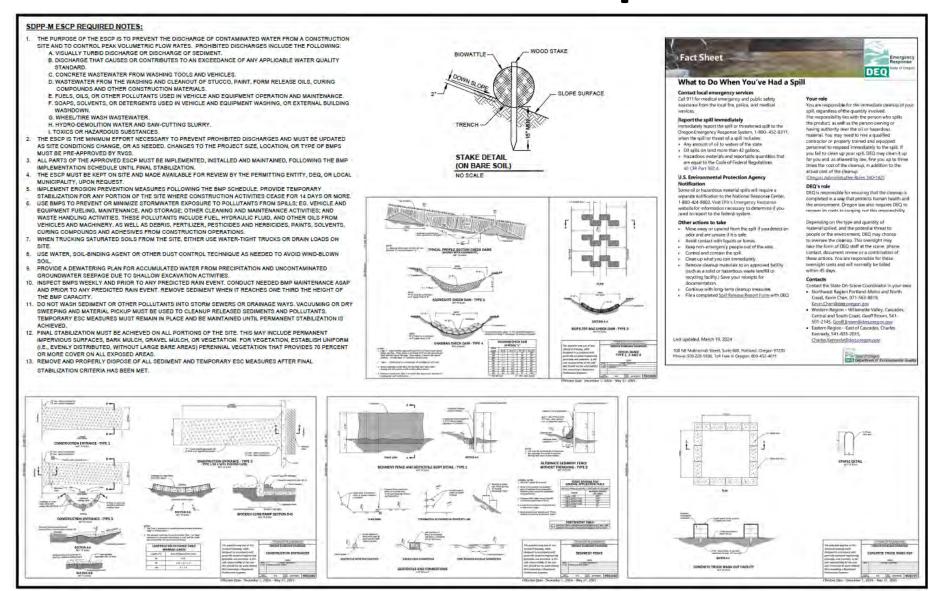


RVSS SDPP-M Template

EROSION AND SEDIMENT CONTROL PLAN RVSS SDPP-M SITE TEMPLATE SITE PLAN PROJECT NAME: PROJECT CONTACT INFO: NAME: PHONE: EMAIL: PROJECT ADDRESS: MAP&TAX LOT: LOT SIZE (SF): DISTURBED AREA (SF): CONTACT FOR EROSION CONTROL ITEMS: NAME: PHONE: EMAIL: SITE PLAN CHECKLIST: ■ SITE PLAN VIEW (DRAW OR COPY/PASTE) ■ NORTH ARROW ■ PROPERTY LINE ■ WATERBODIES (WITHIN 50FT) LEGEND ■ GROUND SLOPE DIRECTION ■ PERIMETER SEDIMENT CONTROL GROUND SLOPE DIRECTION STORM DRAIN INLET PROTECTION MATERIAL STORAGE / STOCKPILE ■ CONSTRUCTION SITE ENTRANCE SEDIMENT FENCE CONCRETE WASHOUT XXXXXXX STRAW WATTLE STORM DRAIN INLET PROTECTION CONSTRUCTION SITE ENTRANCE WASH LOCATION ■ WASTE & STORAGE AREAS



RVSS SDPP-M Template



ESCP Updates & DEQ Notification

1200-C Schedule A.20

The ESCP is a living document and must be updated any time site conditions warrant adjustments to the project or the BMPs

You must notify DEQ or Agent for within **7 days** for:

- Prohibited discharge has occurred
- Significant BMP failure or repair
- Significant change to BMP
- Additional BMPs required
- Increase or decrease in the size of the disturbed area
- Change of the ESC Inspector



ESCP Review Thoughts

No "one-size-fits-all" ESCP or BMP Permit sets performance standards

Objectives

- 1. Only clear, non-polluted discharge leaves the site
- 2. Discharge occurs at **near pre-disturbance volumes & rates**

Priorities

- 1. Erosion Prevention (Keep in Place)
- 2. Sediment Control (Contain On Site)
- 3. Discharge Points (Last Chance!)

RVSS Requirements for Nearly EVERY Site:

Downslope Perimeter Protection

Discharge Location Control

Inlet Protection

Trackout Prevention



ESCP Review Thoughts

No "one-size-fits-all" ESCP or BMP Permit sets performance standards

Erosion Prevention > Sediment Control

Erosion Prevention should be the primary focus of the ESCP.









Minimize Soil Exposure

1200-C Schedule A.1/A.4

- Sequence activities clear, grade, and disturb land in phases (when practical)
 - Preserve existing vegetation wherever possible
- Stabilize exposed soil not actively being worked (erosion prevention)
 - Required where construction is complete or inactive ≥ 14 days



Stabilize Exposed Soils – Timelines

1200-C Schedule A.10/A.16

Normal Timeline:

- Start immediately, finish ASAP
- Complete stabilization ≤ 14 days

Accelerated Timelines:

- 1) ≥ 5 acres disturbed, sediment-listed TMDL, or upslope of 50-ft NBZ:
 - Start immediately, finish ASAP
 - Complete stabilization ≤ 7 days
- 2) Within the 50ft NBZ:
 - Start immediately, finish ASAP
 - Complete stabilization ≤ 3 days





Stabilize Exposed Soils – Timelines

1200-C Schedule A.10/A.16

"Start Immediately" for Stabilization = No later than end of next business day

Actions may include:

- Soil prep for vegetation (only if seeding)
- Seeding or planting
 - Must rehabilitate compacted soils so plants can actually grow!
- Applying mulch or non-vegetative product (e.g. erosion matting)



Stabilize Exposed Soils – Timelines

1200-C Schedule A.10/A.16

Stabilization is complete when:

- Seeding + protective cover applied to prevent erosion
- Vegetation planted at uniform density per final stabilization criteria
- Non-vegetative measures are fully and properly installed



Stockpile Management

1200-C Schedule A.7

- Do not place piles on or adjacent to stormwater conveyances
- Keep piles ≥ 10 ft from storm inlets
- Install a sediment barrier around stockpiles
- Cover piles at the end of each workday
- Stable cover required after 7 days (e.g., anchored)









Dust Control

1200-C Schedule A.8

Prevent wind-blown soil & dust emissions

- Light application of water
- Reduce vehicle speeds on unpaved roads
- Use street sweepers to clean paved areas
- Stabilize soils early

DO NOT use oil as a dust suppressant!









1200-C Schedule A.3 / Appendix B

Must identify & maintain NBZs or enhanced ESCs for discharges within 50ft of Waters of the State

- Covered in Detail in Appendix B
- Post-construction riparian conditions must meet or exceed pre-construction conditions

In area with a 303d/TMDL for Sediment/Turbidity, the Natural Buffer Zone increases by what?

5 ft for every 1° of slope



1200-C Schedule A.3 / Appendix B

Must identify & maintain NBZs or enhanced ESCs for discharges within 50ft of Waters of the State

- Measured from the ordinary high-water mark OR edge of bank (whichever is further)
- No waiver if local jurisdiction allows development closer than 50ft

3 Compliance Options:

- 1) 50-ft undisturbed NBZ Simplest & most effective option
- 2) Reduced NBZ (5-50 ft)
 - Must install additional ESCs to achieve equivalent sediment reduction
- 3) < 5 ft NBZ (infeasible)
 - Must collect & treat stormwater prior to discharge



1200-C Schedule A.3 / Appendix B

Compliance Option 2 – Reduced NBZ (5–50ft)

- ESCP must be developed by a licensed professional
- Rule Runoff must pass through ≥ 2 control devices in series (≥ 5 ft apart):
 - Sediment fence (two fences in series only allowed if separated by 5 ft grassy strip)
 - Compost berm or compost sock
 - Engineered sediment trap, basin, or swale
 - Other DEQ-approved equivalent BMP
 - X Straw wattles are **not** considered substantially equivalent for redundant controls

Additional Requirements:

- Temporarily stabilize bare soils at the end of each day
- Accelerated timelines for final stabilization of upslope areas
- Maintain sufficient ESC products on site (must be shown on ESCP)



1200-C Schedule A.3 / Appendix B

Compliance Option 3 – NBZ < 5ft

- ESCP must be developed by a licensed professional
- Capture & treat all stormwater before discharge:
 - Impermeable barrier
 - Sediment basins or similar impoundments
 - Intercept & divert stormwater
- Passive or active treatment system May require an Environmental Management Plan
- Treated discharges must be visually clear & free of sediment
- Maintain sufficient ESC products on site (location shown on ESCP)



Environmental Management Plans (EMPs)

1200-C Appendix A

Separate DEQ Submission & Review Process!

Chemical Treatment Plan (CTP) is required when:

 A chemical treatment system for sediment, pH neutralization, or other pollutant removal is planned or implemented at the project site

Contaminated Media Management Plan (CMMP) is required when:

 Contaminated soils, contaminated groundwater, or hazardous materials will or have the potential to be encountered during construction activities



The Appendix A Narrative must be on the ESCP Cover Sheet!



1200-C Appendix B Compliance Examples



Compliance Option 2



Compliance Option 3

The Appendix B Narrative must be on the ESCP Cover Sheet!



Perimeter Controls

1200-C Schedule A.5

- Must install controls downslope from any exposed soil, stockpiles, staging areas, or other disturbed areas
- Ensure stormwater cannot bypass or flow around controls
- Integrate into site access points
- Remove accumulated sediment once it reaches ¼ of barrier height



BMP: Vegetated Buffer / Vegetated Area

- Cheap, easy, effective!
- Natural or established vegetation filters & infiltrates runoff
- Can be located within the site or on the perimeter (in place of structural controls)
- Works best for:
 - Sheet flow on shallow slopes
 - Flow infiltration areas onsite
- Do not overwhelm with fast or concentrated flows
- Sizing for perimeter use:
 - Width = ½ the sheet flow distance, up to 50ft



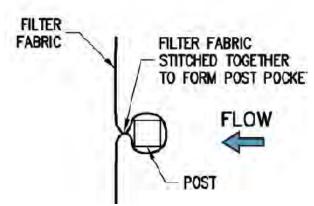


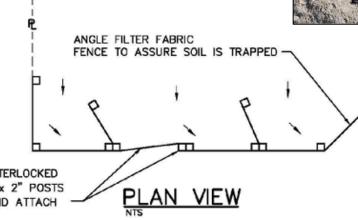


BMP: Sediment Fence

- **Temporary sediment trap** geotextile fabric + support posts
- For sheet & rill flow only
 - X Not for concentrated flow
 - X Never across waterways
- Drive posts securely; bury fabric hem in 6-inch trench
- At fence end: turn uphill & extend 1 full panel (6 ft)













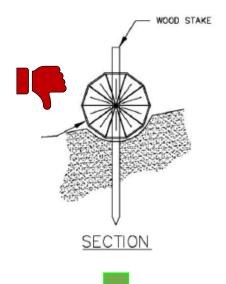


BMP: Fiber Rolls/Wattles

- Lightweight, easy-to-install rolls
- Intercept & capture sediment

Installation Tips:

- Ensure good soil contact
- For slopes → bury to ⅓ thickness of wattle
- Add extra downslope stakes on steep soils
 - X No straw wattles on hard surfaces













Track-out

1200-C Schedule A.6

Prevent sediment track-out onto public & private roads

- Establish controlled access points before land disturbance
- **Do not locate** within 10 ft of storm inlets
- Cover sediment loads leaving the site
- Adjust controls as site develops
 - Example: subdivision roads \rightarrow each active lot must have track-out controls









BMP: Construction Entrance

- Typically stabilized rock pads at each entry/exit point
- Alternatives: steel plates, panels, or structural systems
- Requirements: Proper Length, Liner Installed, Uses Clean Rock

Do NOT use 34" minus rock (clogs, ineffective)

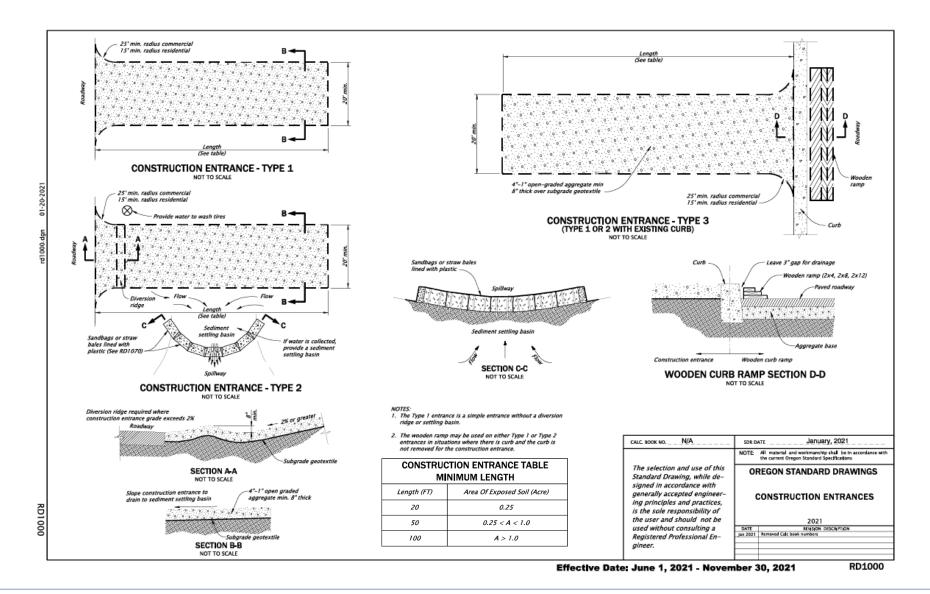


CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH		
Length (FT)	Area Of Exposed Soil (Acre)	
20	0.25	
50	0.25 < A < 1.0	
100	A > 1.0	





BMP: Construction Entrance





BMP: Wheel Wash, Shaker or Rumble Track

For ADDED Protection

Shaker or Rumble Track: Steel structures with rows of angle iron or bars that shake debris from vehicle tires

Wheel Wash: Simple pressure washers placed at access points and used to remove sediment clinging to the vehicles.

Wheel wash water = wastewater and must be properly managed!







Steep Slopes

1200-C Schedule A.7

Slopes are high-risk areas → ESC measures are critical

≥ 15% Grade = You must install ESC measures

Slow the water

- Break up slope length with wattles, fiber rolls, or check dams
- Install along contour lines to interrupt sheet flow

Cover the soil

- Temporary stabilization (mulch, blankets, mats) immediately after grading
- Permanent vegetation as soon as possible

Control concentrated flow

- Never let water "find its own path" downslope
- Use diversion ditches, slope drains, or benches to safely convey runoff





BMP: Vegetative Stabilization

- Hydroseeding: Slurry of mulch + seed + fertilizer.
- Mulching: Compost, straw, or plant material. Must be ≥ 2 in depth to be effective Be careful using loose straw if high wind conditions are expected!
- Tackifiers: Biodegradable adhesive. Used in combination with mulch or seeding
- **Sod: Instant cover** → immediate erosion control
- Planting (Shrubs/Trees/Native Vegetation): Provides long-term stabilization
 - Slower to establish → often paired with temporary cover







BMP: Erosion Matting

Materials: jute, coconut fiber (coir), synthetics

Purpose:

- Provide immediate slope protection
- Stabilize soil until permanent cover is established
- Reduce or eliminate erosion & sediment in runoff

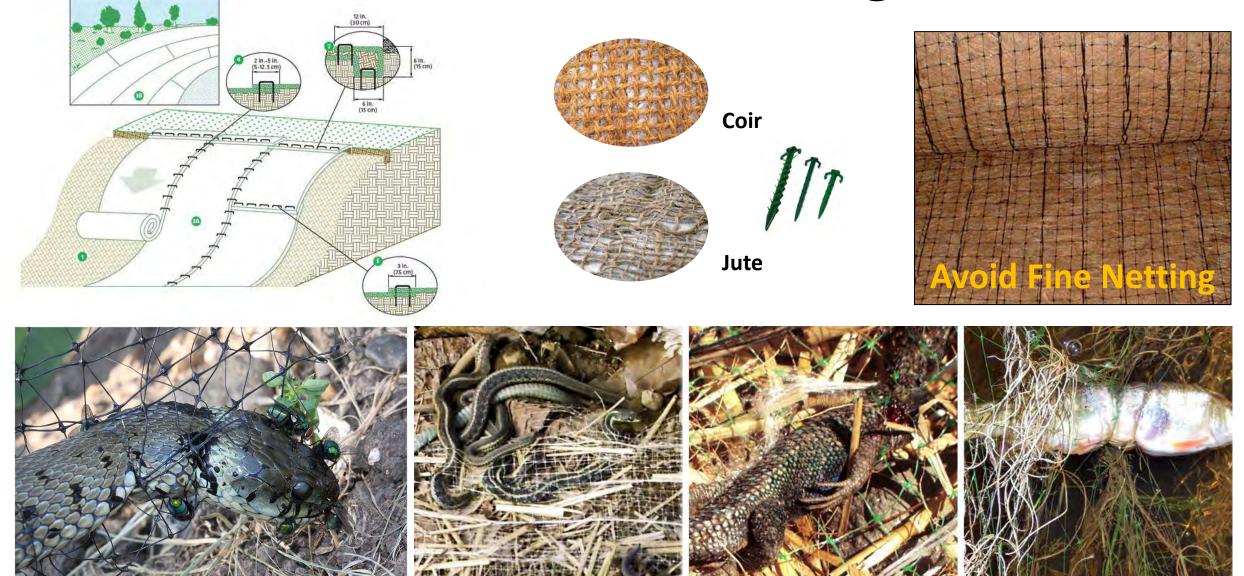
Installation Tips:

- Apply seed/fertilizer before matting (if used)
- Install mats in full soil contact (drape, don't stretch)
- Trench mat at top of slope to prevent undercutting
- Overlap mats downslope (like shingles)
- Biodegradable mats are required





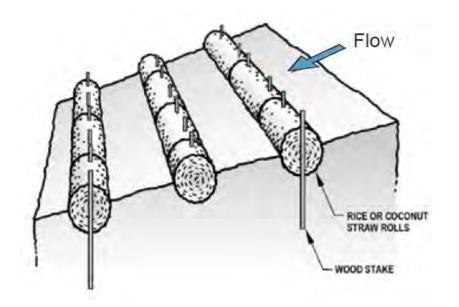
BMP: Erosion Matting

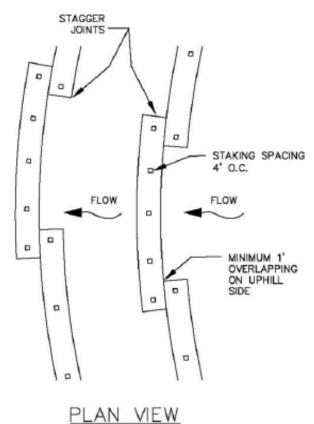


BMP: Fiber Rolls/Wattles

Installation Tips:

- Place in shallow trenches along contour of slope
- Bury up to 1/3 thickness of wattle
- Great for rills!







BMP: Check Dams

- Velocity dissipaters → water flows through & over
- Made from various materials
- Also act as sediment controls
- Recommended on grades ≥5%
- Spacing = Check Dam Height / Slope

$$S = \frac{\text{height}}{\text{slope}}$$

Installation Tips:

- Extend dam fully across swale/ditch on a level contour
- Prevent flow around edges; ensure good soil contact
- Create a low point to control where and flows over
- Check dams can often remain in place after the project



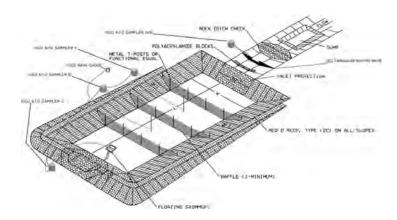




Sediment Basin

1200-C Schedule A.14

- Must be prepared & stamped by an Oregon Registered Professional Engineer
- Capacity: Sized for 2-year storm event or 3,600 cubic feet per acre
- Provide sufficient treatment capacity
- Outlet withdraws water from the surface
- Includes maximum trapped sediment depth







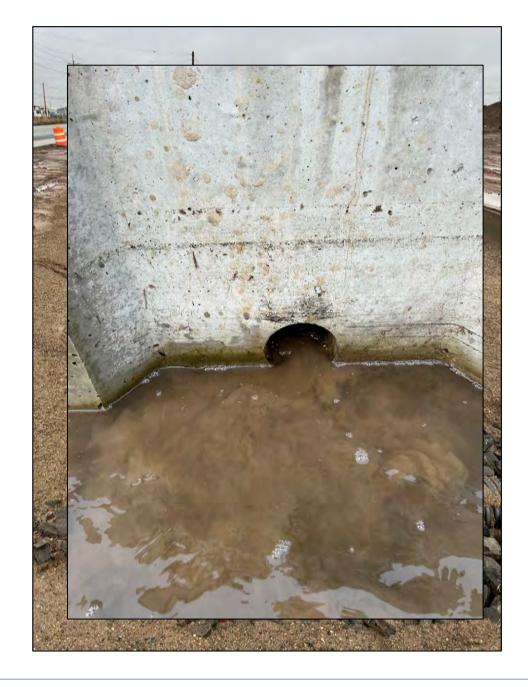
Sediment Basin

1200-C Schedule A.14

- Settling pond that releases runoff at a controlled rate
- Purpose: Detains water long enough for sediment to settle out
- Often converted to a post-construction stormwater management facility

Maintenance

- Remove accumulated sediment when it reaches ½ of maximum depth
- Must protect the outlet during construction!



BMP: Sediment Trap

Sediment Trap ≠ **Sediment Basin**

- Small, temporary basins that collect and holds sediment-laden runoff
- Prevents sediment from leaving site
- No planned discharge
- May include overflow for large storms
- Establish early in construction using natural drainage/topography







Built Structure

Downcutting

Pit / Berm

Discharge Location Protection

1200-C Schedule A.13

Protect all discharge points

- Secondary BMP → <u>last ditch effort!</u>
 - Picture required for EVERY inspection
- Storm Inlets are often a discharge location
- Must control for:
 - Peak flow rates
 - Total stormwater volume
 - Erosion & scour
- Inspect & maintain regularly

Every outlet requires energy dissipation!









Storm Drain Inlet Protection

1200-C Schedule A.11

Must have storm drain inlet protection

- Removes sediment before it enters the storm system
- Must be sized & installed to prevent bypass
- Temporary REMOVE after the project

Maintenance:

- Clean/replace when clogged or performance compromised
- Clean catch basin inserts when ≥ 50% capacity lost
- Do not wash sediment or debris into storm inlets









Concrete Management

1200-C Schedule A.12

- Establish designated washout areas before work begins
- Install clear signage
- Direct all wash water & waste into <u>impermeable, lined pit or leak-proof container</u>
- Clean or replace washout when 75% full
- Handle wash water as waste
- Never dump concrete, mix, or wash water on the ground





Place washouts ≥ 50ft from storm drains & waterways



Runoff Treatment for Engineered Soils

1200-C Schedule A.15

- Engineered soils (cement-treated base, kiln dust, fly ash) → raise pH of soil & runoff
- Must Install engineered sediment basin to capture runoff
- Must treat high-pH runoff before discharge
- Approved methods: CO₂ sparging or dry ice
- Any other chemical treatment requires an CTP (Chemical Treatment Plan)





Dewatering

1200-C Schedule A.19

- Direct dewatering water through an appropriate sediment control measure
- Control measure must reduce visual turbidity in discharge
- Discharge only to vegetated, upland areas
- Never discharge muddy water into storm drains, streams, lakes, or wetlands







CTP Required!



Pollution Prevention

1200-C Schedule A.18

Implement controls to prevent pollutant discharges to stormwater

- Spill Prevention & Response Plan is required
- Key sources to manage:
 - Equipment & vehicle fueling/maintenance
 - Hazardous or toxic materials & wastes storage
 - Sanitary wastes
 - Washing applicators & containers
 - CONCRETE!
 - Pesticides, herbicides, fertilizers
 - Trash & debris



Locate ≥ 50ft from storm drains and waterways!





Things will happen...

Self-reporting actually builds trust. Perfection is suspicious.



We are here to help!



Inspections, Monitoring, and Recordkeeping

1200-C Schedule B

Inspections must be conducted by a Certified Inspector

DEQ Approved Certifications (Section 6.1.1-5):

- a. Certified Erosion, Sediment and Stormwater Inspector (CESSWI)
- b. Certified Professional in Erosion and Sediment Control (CPESC)
- c. Certified Professional in Storm Water Quality (CPSWQ)
- d. Certified Inspector of Sediment and Erosion Control (CISEC)
- e. Washington Department of Ecology's Certified Erosion and Sediment Control Lead (CESCL) Certification
- f. Rogue Valley Sewer Services Erosion and Sediment Control Inspector (ESCI)

Registrants with multiple site inspectors must appoint <u>ONE</u> as the Primary Inspector

A site can have no more than 3 inspectors



Inspections, Monitoring, and Recordkeeping

1200-C Schedule B

The Inspector ensures compliance with the 1200-C Permit:

- The ESCP is implemented, effective, and updated
- Assess site conditions & recommend where additional BMPs or ESCP changes are needed
- Correct BMP installation & maintenance
- Oversee corrective action
- Fill out inspection reports

Just giving reports to the site IS NOT enough!



Continuous Compliance Violations = Negligence = Inspector Liability



Inspection Frequency

1200-C Schedule B.2 & B.3

Two Options - You must select one and keep it throughout the project:

- Option 1: Inspect once every 7 days.
- Option 2: Inspect once every 14 days & within 24hrs of a .25-inch rain event

The selected frequency must be identified in the ESCP

Reduction in Inspection Frequency

- Stabilized Area: Every 14 days for the first month, then monthly
- Frozen Conditions: May suspend inspections when construction activities are suspended <u>and</u> discharges are unlikely to occur



Inspection Requirements

1200-C Schedule B.4

The ESC Inspection

Ensure signage is present and logbook is present with all contents.
Check all stormwater controls are properly installed and functioning properly.
Check all points of discharge from site.
□ Walk the perimeter of the site.
Look for conditions that could lead to spills, leaks, or discharge.
Check for presence of visible erosion and sedimentation (e.g. rills).
Check washout, hazardous material storage, and waste collection areas.
Identify locations where new or modified stormwater controls are necessary.
Identify where land disturbing activities have ceased, permanently and temporarily.
If construction activity involves the use of engineered soils, conduct and document pH monitoring of stormwater captured in the sediment impoundment.



Inspection Reports

1200-C Schedule B.5

<u>Th</u>	ne Inspection Report: No Report, No Inspection (Must be completed within 24 hours)
	Identification information: Date, inspector name (listed and certified), and contact information.
	Site information: DEQ (and RVSS) permit ID number.
	Trigger for the inspection: 7 or 14-day , post-rain event, complaint, etc. Weather station and rain gauge measurement.
	Any unauthorized discharges from the site or evidence of (this includes spills and response).
	All pH sampling results (for engineered soils).
	A summary of the inspection, including the observations made, specifically:
	BMPs in need of maintenance or corrective actions.
	Where additional BMPs are needed.
	Observations of the stormwater discharges from the site (Visual, smell, source, etc.)
	□ Changes or modifications to the ESCP.
	Photos – A photo says 1000 words. Photos are required at all discharge points and on installation of BMPs.



Inspection Reports

1200-C Schedule B.5

- □ Each inspection report must be signed by the Inspector with the following statement:
 - "I certify that this report is true, accurate, and complete to the best of my knowledge, abilities, and belief."
- The Primary Inspector must sign all reports.

There is no specified report template.

You may make and use your own form, or use/adjust an existing template.

It is your responsibility to ensure all required elements are on the report.

All required items can be found in the 1200-C Permit.



Inspection Reports

1200-C Schedule B.5

SITE INFORMATION:	
Site Name:	Inspection Date:
RVSS SWQ Permit ID:	Inspector Name:
Inspector Email:	Inspector Phone:
Inspector Company:	Primary Site Contact:
Inspection Trigger: Initial	Routine Rain Event Complaint Termination O
Project Status / Phase:	
Current Weather Conditions:	
Approximate amount of precipitation	during the last 24 hours (inches):
Approximate amount of precipitation	since the last inspection (inches):
Which rain gauge was used?	
SITE INSPECTION:	
Is the site active?	Yes
	ypect? on summary and inspect nearby downstream locations set from the site to the extent that such inspections are
Is permit coverage posted and a cor	mplete site logbook available?
Are all BMPs correctly installed and	working as intended? Yes
Are hazardous materials (including	washouts) being properly managed?
Is trash and other waste being colle	cted and stored appropriately?
Does the ESC implementation on the If not, ensure that the on-ground ESC in have the site update their ESCP.	
Are there any BMPs in need of mair	ntenance? Yes
Are there areas where new or modif	ied BMPs are necessary?
Is there evidence of erosion and sec	dimentation occurring on site?
Are there areas where hazardous m	aterial spills or leaks appear likely?
	bilization? ave permanently ceased or will be temporarily inactive initial date of cessation in the inspection summary.
kiln dust, or fly ash. Runoff from areas basins/impoundments and must be mor	ut not limited to Portland cement-treated base, cement s with engineered soils must be captured in sediment ilitored for pH. If the site uses engineered soils, ensure documentation to ensure compliance. Requirements

DISCHARGE LOCATIONS: If discharge has left the site, or there is evidence that it has, include observations of the stormwate turbid, sheen, odor, foam, etc.) in the inspection summary. Attach photos of all discharge locations or not a discharge has occurred. If there is evidence that there was a spill on site, ensure approprise.	s to this report, whether
Is discharge currently leaving the site?	Yes No
Is there evidence that discharge has left or is likely to leave the site?	Yes No
Is there any evidence of unauthorized discharges from the site? If it appears that a spill or leak is currently occurring, conduct spill response procedures.	Yes No
Since the last inspection, have there been any unauthorized discharges from the site? If so, add comments in the inspection summary. If a reportable spill has occurred, attach all related documents to this report. Reportable spills are listed under 40 CFR Part 302.4.	Yes No
INSPECTION SUMMARY:	
Are there imminent erosion or sediment concerns for this site?	Yes No
Are there imminent hazardous material, waste, or trash concerns for the site?	Yes No
Were any significant permit violations observed during the inspection?	Yes No
In the section below, write a summary of the inspection. Include: - Comments on any permit discrepancies noted above and as applicable, include de facilitate corrective and follow-up actions. - Start and end dates for alternative inspection frequencies or any changes to stabilic Changes to the ESCP, and reasoning for modifications. - Visual observations (e.g. clear, turbid, sheen, odor, foam, etc.) of the stormwater d site, or if a discharge from the site did not occur within 24 hours of a storm event. - Any repeat violations or violations that haven't been corrected since the last inspection.	ization schedules. lischarges from the
I certify that this report is true, accurate, and complete to the best of my knowledge	, abilities, and belief.
Primary Inspector Signature Date	
All inspection reports should be kept in chronological order at the site or at an easil (electronically is acceptable) and made available at the time of inspection or upon request notes, sampling records and inspection reports must be kept for three years from the coverage expires or is terminated.	. All visual monitoring



Recordkeeping

1200-C Schedule B.7

Site Logbook

- Must retain an on-site logbook
 - ☐ May be **electronic** if accessible to DEQ, Agents, and on-site personnel
 - ☐ Legible and kept in chronological order
 - Copy of the 1200-C Permit
 - Current ESCP
 - Appendix B Narrative & Documentation
 - EMP (if applicable)
 - Pre-Construction Meeting Sign-In Sheet

- Photos of Initial BMP Installation
- Inspection Frequency
- Inspection Reports
- All water quality sampling results (if applicable)
- Additional Relevant Records

Records must be kept for three years from permit termination.



Corrective Action

1200-C Schedule A.25

What happens when you find a problem?

□ Act immediately to address the condition

Immediately = Now

Convenience is

NOT a valid

reason

- Clean up contaminated surfaces (including sediment)
- Determine appropriate corrective action
- ☐ Update ESCP if needed
- **□** Complete within 24 hours
 - If not possible → document why
- Report to DEQ, Agent, or OERS as required
- Effects Human Health → OERS within 24 hours and submit Corrective Action Report within 5 days





Where's the Spill Response Kit!



Spill Prevention and Response Plan

General Steps

1) Safety: Clear area

2) **Report:** Contact local emergency services

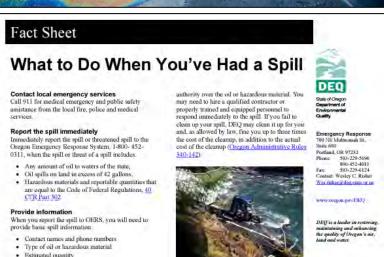
3) Control & Contain: Prevent spill from reaching water

4) **Clean Up** what you can immediately

Legal Requirement

- Failure to report (oil) = up to \$250,000 fine & 5 years in prison
- DEQ Failure to report or clean up = up to \$25,000 per day
- Plan must be known, complete, & accessible
- Standard sheet for simple sites
- Site-specific plan for hazardous materials





EPA, DEQ, Agent, or MS4 Oversight Inspections

An RVSS, DEQ, or MS4 Inspector can show up at your site at any time

Visits are normally unannounced

You <u>MUST</u> maintain controls at all times, not only in response to inspections!

Reports must be made available at the time of inspection or upon request by Inspector



Non-Compliance and Enforcement

1200-C Schedule F

- Enforcement agencies: RVSS, DEQ, City/County, EPA
- Compliance is REQUIRED by law
- Violations = breach of:
 - Clean Water Act (CWA)
 - State & Local Ordinances
- Who is Legally Responsible?
 - Permit Registrant ultimate responsibility for compliance
 - **ESC Inspectors** accountable for oversight & reporting
 - Contractors/Subcontractors their actions in the field

All parties can be held legally responsible for violations







Non-Compliance and Enforcement

1200-C Schedule F

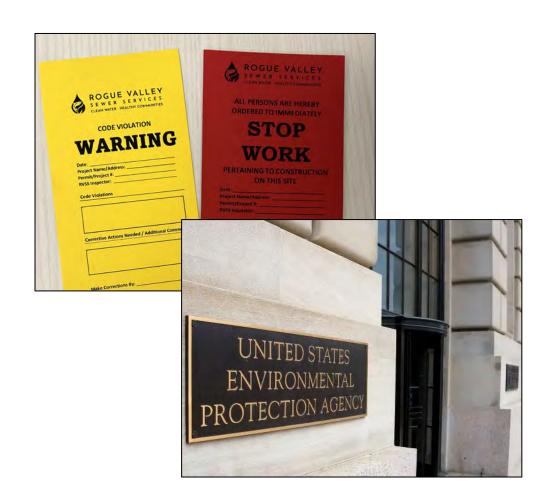
Consequences of Non-Compliance

Informal

Verbal Correction On-Site

Formal

- Code Violation Warnings
- Stop Work Orders
- Citations
- Escalating Fines
- Civil Action
- Criminal Penalties



Not knowing is NOT an excuse!



Non-Compliance and Enforcement

1200-C Schedule F

Under ORS 468.946, unlawful water pollution in the first degree is a Class B felony and is punishable by a fine of up to \$250,000, imprisonment for not more than 10 years, or both.

The Clean Water Act provides that any person who violates permit condition, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation.

The Clean Water Act provides that any person who *negligently* violates any condition, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both.

In the case of a second or subsequent conviction for a *negligent* violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both.

Any person who *knowingly* violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both.

In the case of a second or subsequent conviction for a *knowing* violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.

Any person who *knowingly* violates section any permit condition, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both.

In the case of a second or subsequent conviction for a *knowing* endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both.

An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

Any person may be assessed an administrative penalty by the Administrator for violating any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act.

Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000.

Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

Not knowing is NOT an excuse!





How Enforcement is Determined

Nature of the Violation:

- Impact on health and/or the environment
- Quantity and type of pollution
- Violation intentional/malicious or accident
- Precautions taken to prevent the violation

History of the Violator:

- First violation or repeat offender
- Demeanor during interactions

Actions Taken to Correct

- Level of cooperation
- Was non-compliance repaired promptly?
- Were multiple notices required?



RVSS Common Compliance Issues

- 1) No ESCP On Site or **No Inspection Records**
- BMPs not installed prior to construction or No Preconstruction Meeting
- 3) Improper inlet protection and maintenance
- 4) Silt fence installed incorrectly or **not maintained**
- 5) Track-out and construction entrance maintenance
- 6) Poorly managed or non-existent concrete washouts
- 7) Improper dewatering procedures





Permit Termination

1200-C Condition 1.10

Registrants are required to pay the annual fee until DEQ or Agent approves the termination of permit coverage

Submit Notice of Termination (NOT) to the Issuing Agency

- ✓ All earth-disturbing activity complete
- ✓ Site meets final stabilization criteria
- ✓ All construction materials & waste removed & properly disposed
- ☐ A DEQ or Agent (RVSS) Inspector will conduct final termination inspection and issue a termination letter

Permit Transfer

☐ Permits can be transferred when the original applicant is no longer responsible for the project



For NPDES Ger	tice of Term neral Permit to D ted With Constr	ischarge Storr	nwater
Use this form to end permit coverage stabilization of expos Submit photos that depict site stal PERMIT REGISTRANT	sed soils has occur	red. Please print i	n ink or type.
Name (authorized person meeting the signate	ure requirements on	the application):	Telephone:
Company (Legal Name - Permit Registrant):			
Mailing Address:		City, State, Zip Co	de
			de: ted on face page of permit);
Mailing Address: E-mail Address: SITE LOCATION/ADDRESS		File Number (loca	



Final Stabilization Criteria

1200-C Schedule A.17

- ✓ Establish uniform perennial vegetation (excluding noxious or invasive weeds) that provides at least 70% cover on all exposed areas
- ✓ Ensure there is no reasonable potential for construction-related sediment or turbidity discharges to surface waters
- ✓ RVSS: Termination of 1200-CN permits is allowed so long as all exposed soils are stabilized
- ✓ RVSS: Prior to termination, all stormwater facilities must be completed and inspected





