

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 larger than 1 acre

Course Objectives:

- Understand water quality permitting history & science
- Learn key regulatory elements of the 1200-C permit
- Conduct and document ESC inspections
- Identify compliance violations
- Recognize conditions that may lead to violations
- Support compliance with corrective & preventive actions



Schedule



8:30 - 11:00 Morning Instruction

History and Regulation, Stormwater Basics, Permit Highlights, Permit Conditions

11:00 - 11:30 Lunch

11:30 – 1:00 Afternoon Instruction & Inspections

Continue Permit Conditions, Schedule B - Inspections. Pre-Construction & Inspection Walkthrough

1:00 – 2:30 Field Practical Application and Skills Demonstration and Review

Non-Compliance & Enforcement, Permit Termination, Final Stabilization, and Review

2:30 – 3:00 Inspector Certification Test



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



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 considered Waters of the State



Section 303(d) and TMDLs

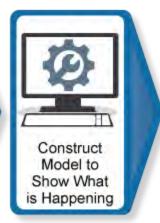
303(d) List = Impaired waters not meeting standards

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

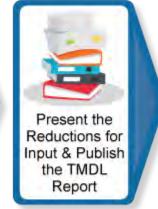
The TMDL sets a pollutant "budget" (max load allowed)







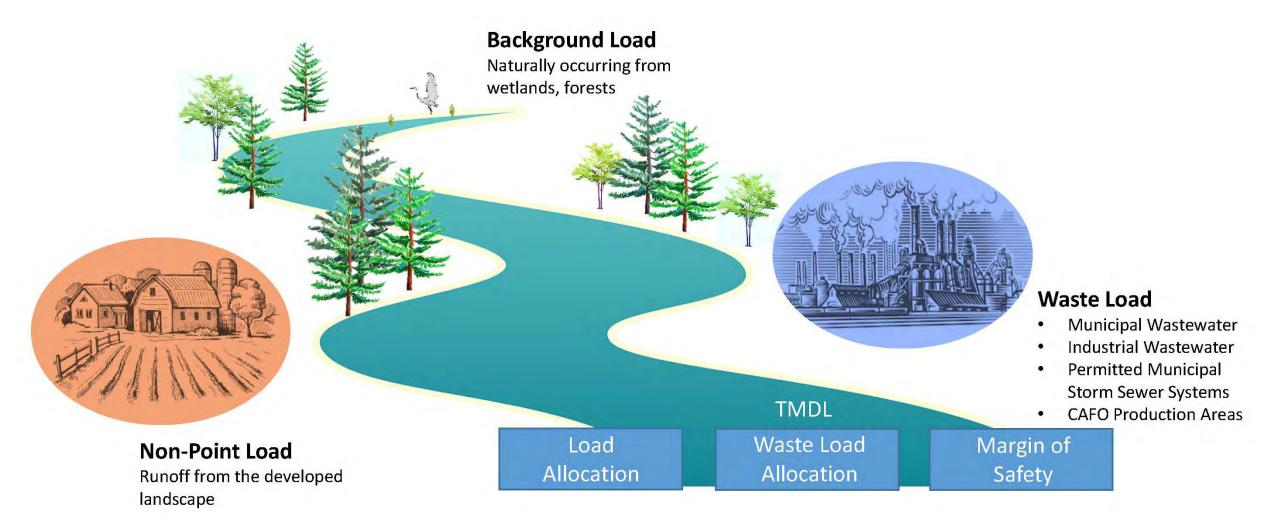








The TMDL Budget





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

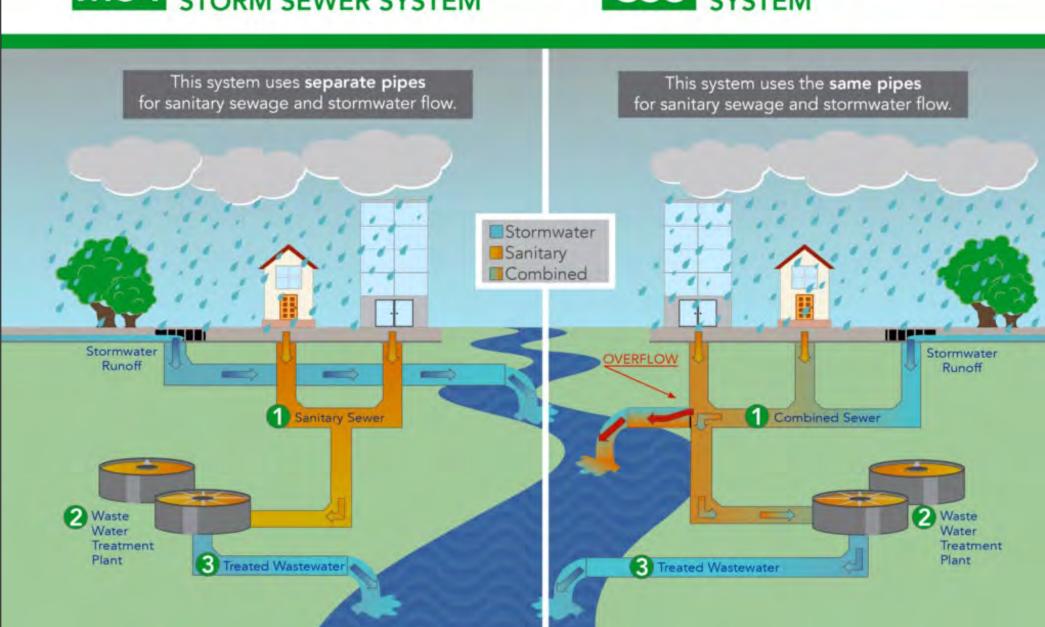
■ 1200-C General Permit → Construction sites





MS4 MUNICIPAL SEPARATE STORM SEWER SYSTEM



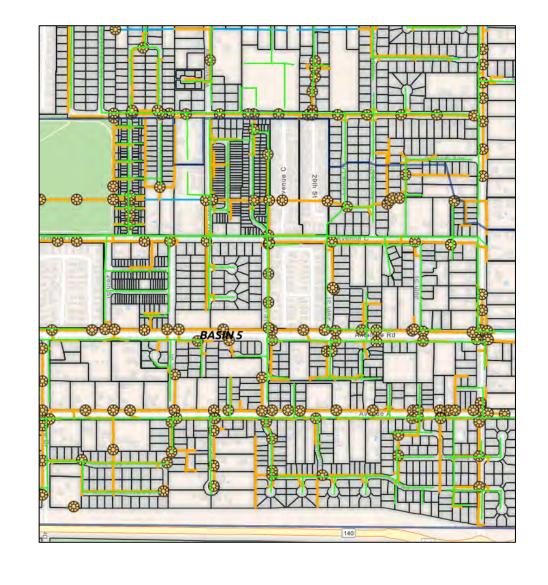




Municipal Separate Storm Sewer System (MS4)

- 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 <u>any</u> construction activity that disturbs ≥1 acre

5-Year Permit Term – New permit in effect this month!

ALL SITES MUST BE IN COMPLIANCE BY MARCH 2026

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

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 turbidity/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

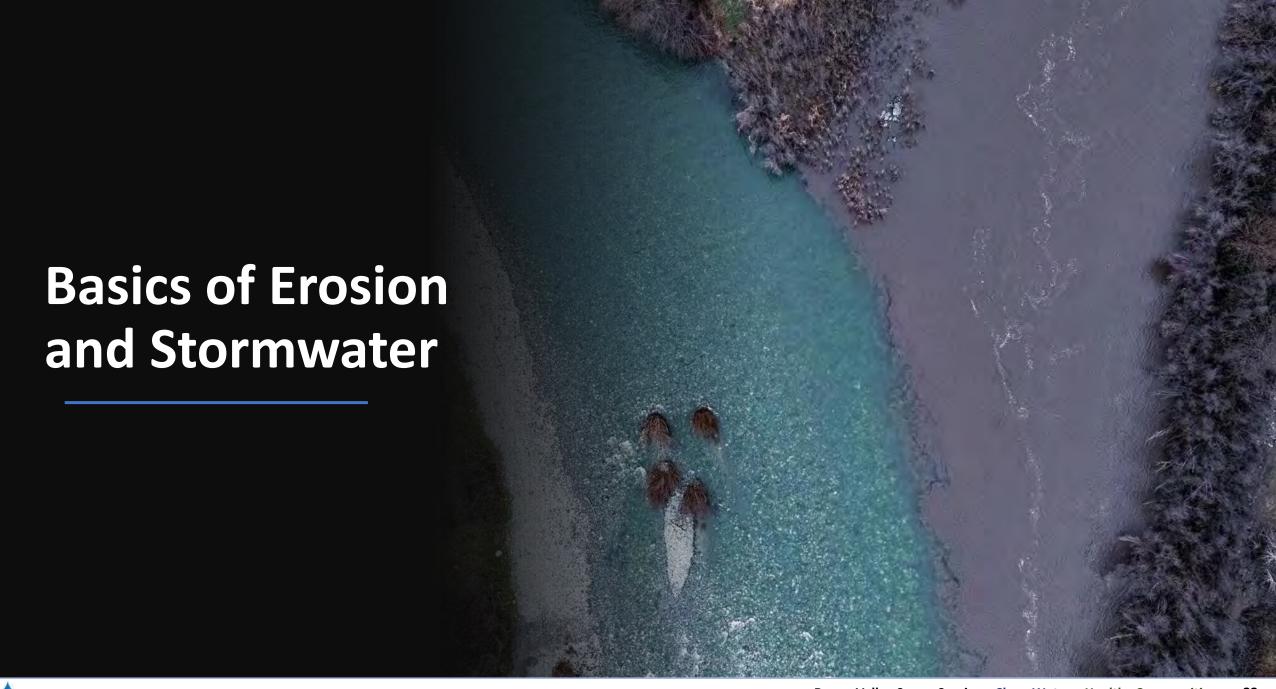
Mandates Oversite of Construction Sites



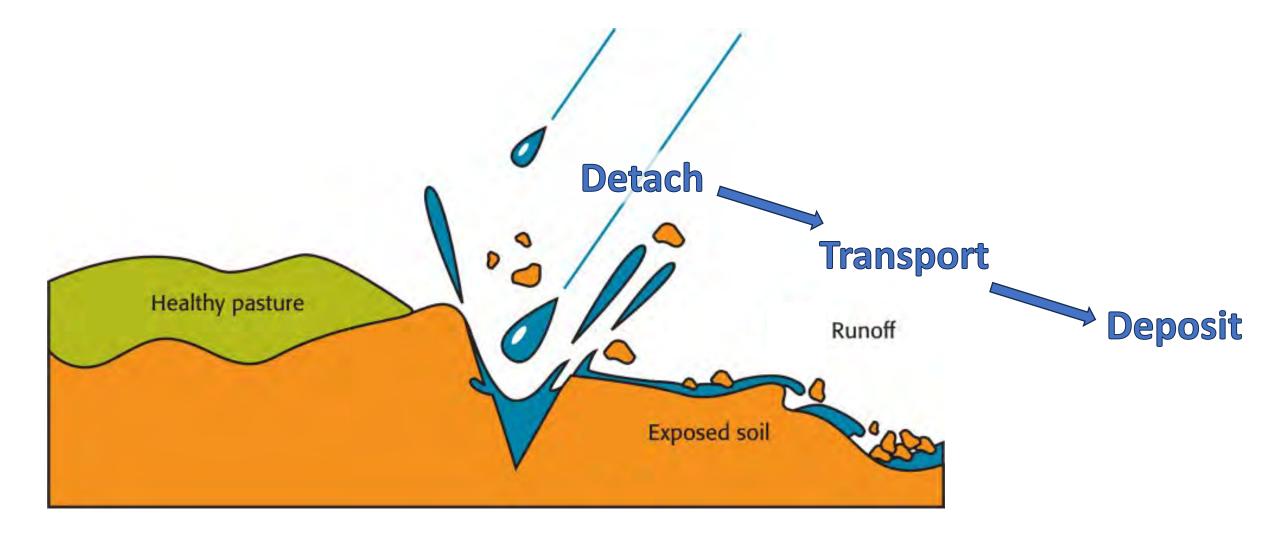




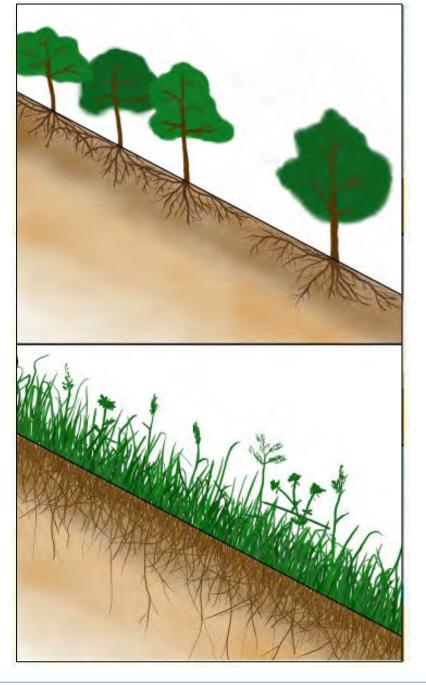




What is Erosion?







What causes erosion?

Vegetation Removal + Rain + Grade

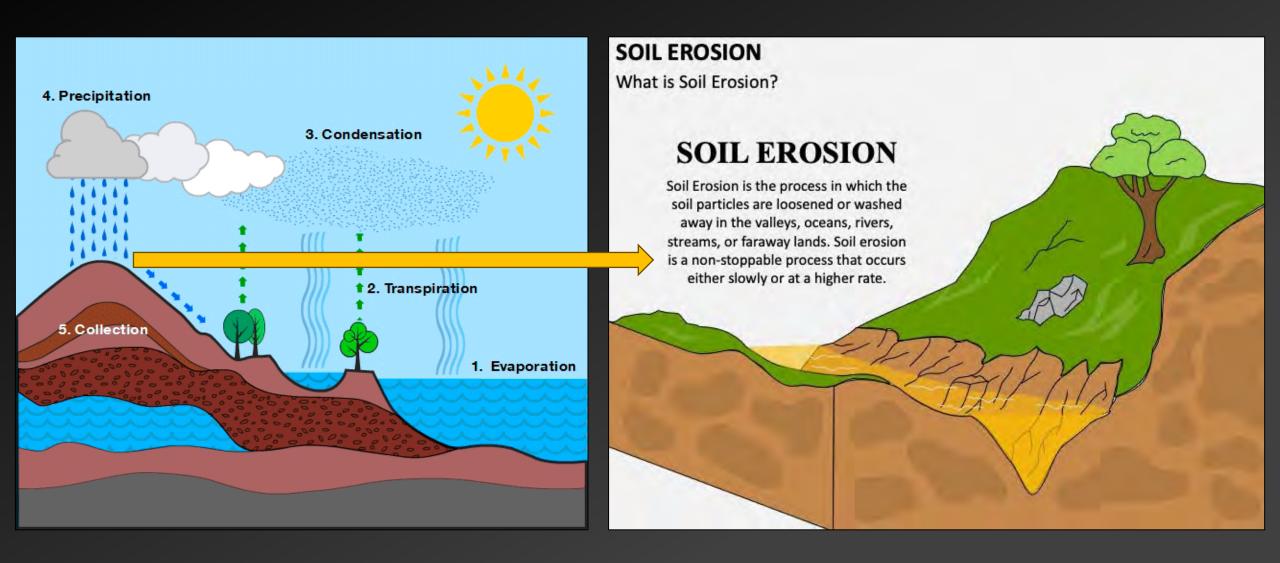
What prevents erosion?

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

Vegetation

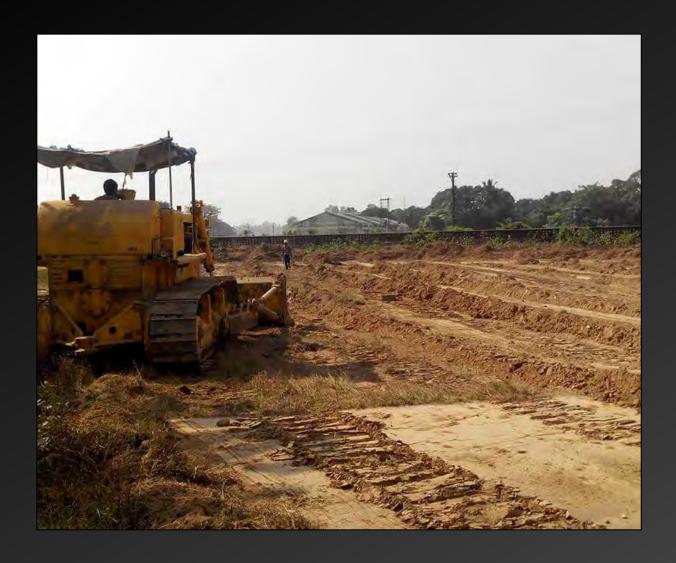


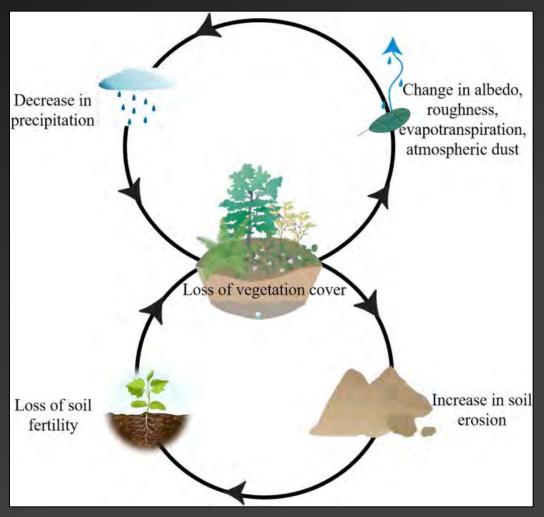
What Are We Talking About?





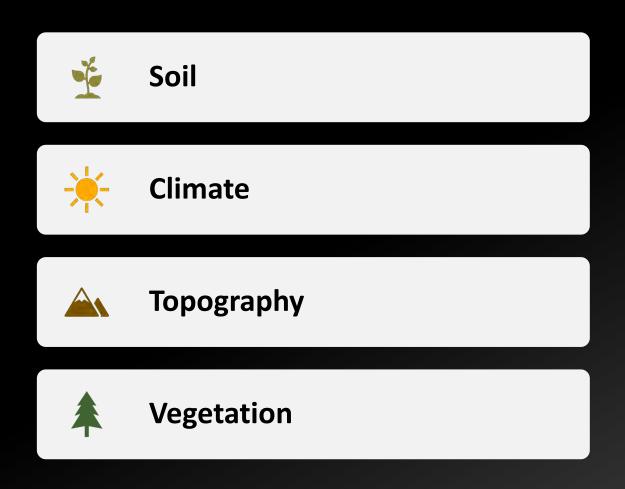
What Are We Talking About?







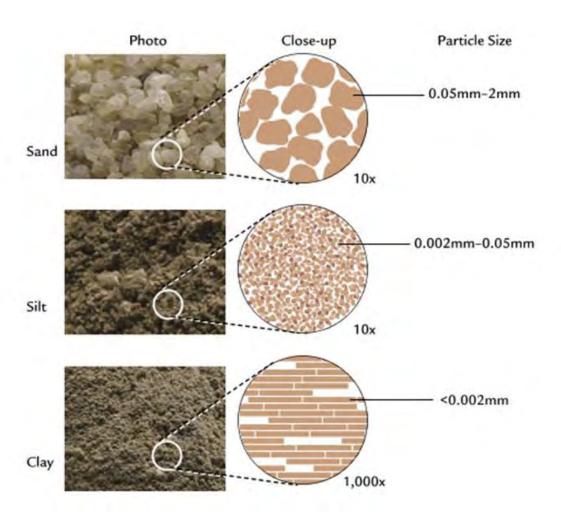
Factors Influencing Erosion Potential

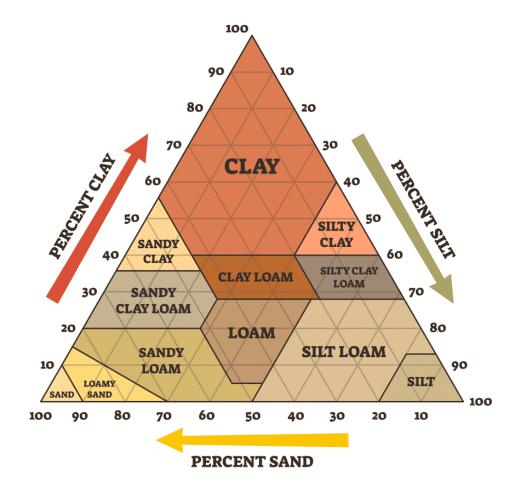






Soil Types

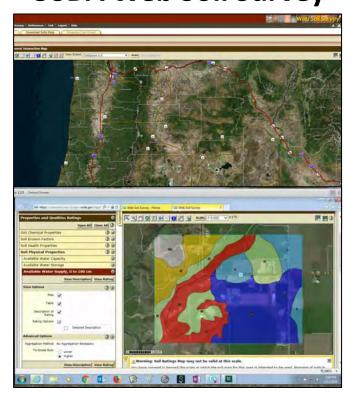




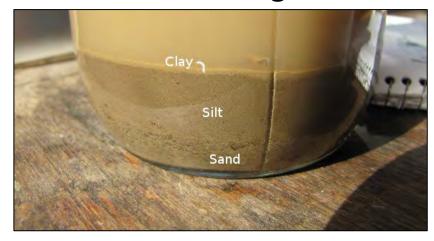


What Type of Soil Is On Your Site?

USDA Web Soil Survey



Jar Testing



Ribbon Testing



Geotechnical Testing





What Type of Soil Is On Your Site?

Ribbon Testing



Step 1: Pulverize soil, remove debris

Step 2: Moisten

- Gritty = Sand
- Smooth = Silt/Loam
- ➤ Slick = Clay

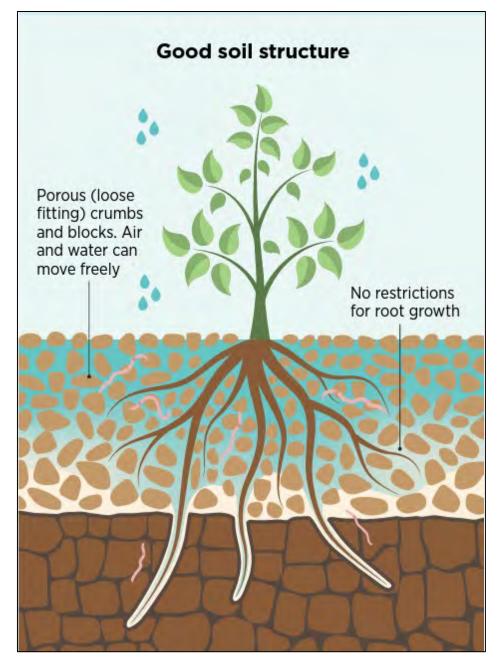
Step 3: Form a ball

> If it won't hold, soil is very sandy

Step 4: Roll into a ribbon:

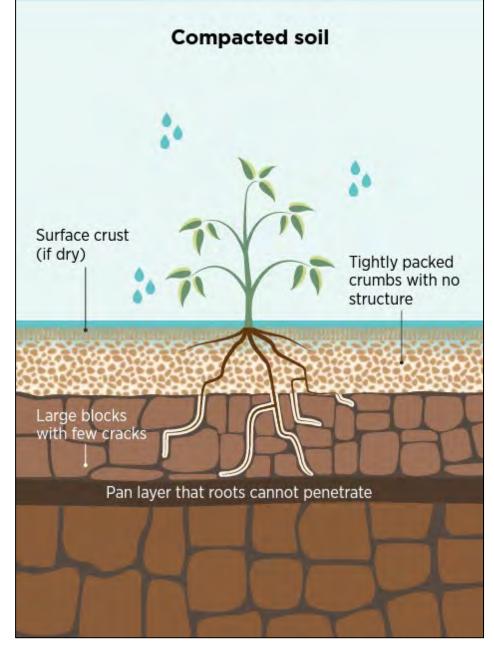
- ➤ <1 inch → Sandy/Silty
 </p>
- \triangleright 1–2 inches \rightarrow Clayey
- \triangleright 2 inches \rightarrow Clay





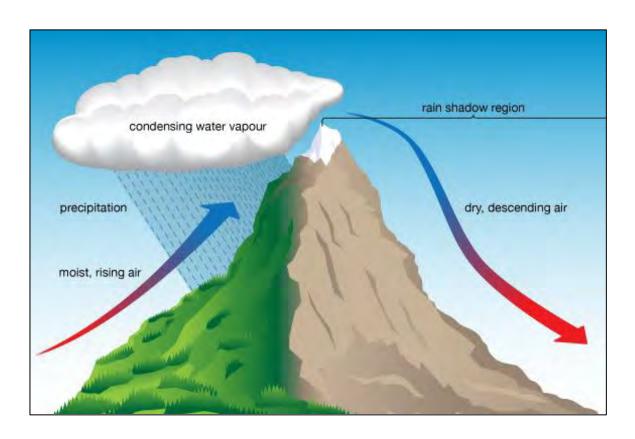
Soil Compaction

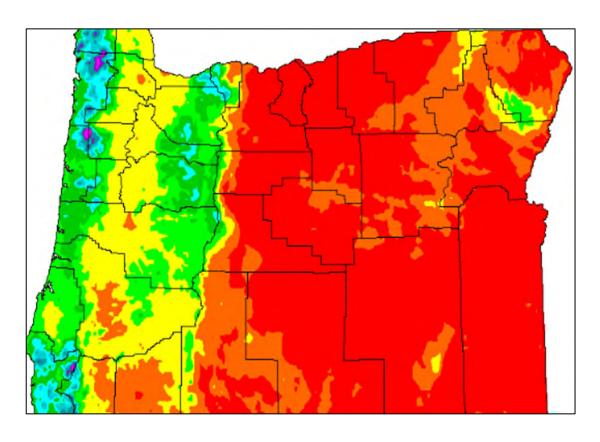






Oregon Climate





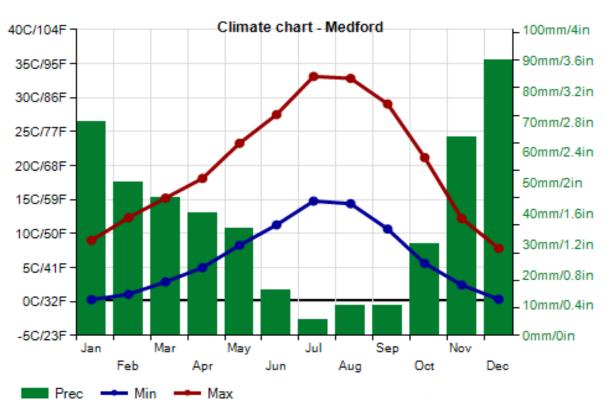
Precipitation, temperature, wind, and humidity vary greatly across the state

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)

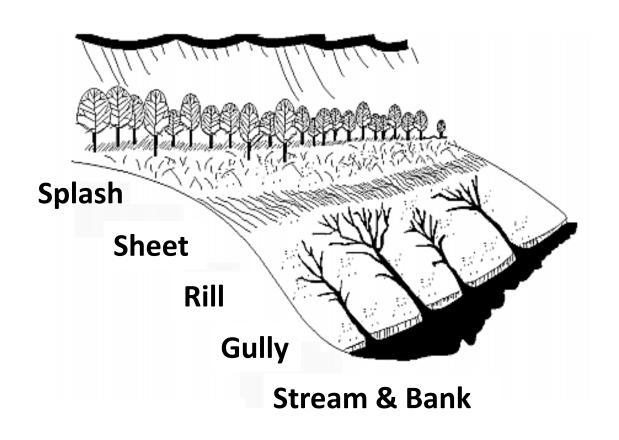


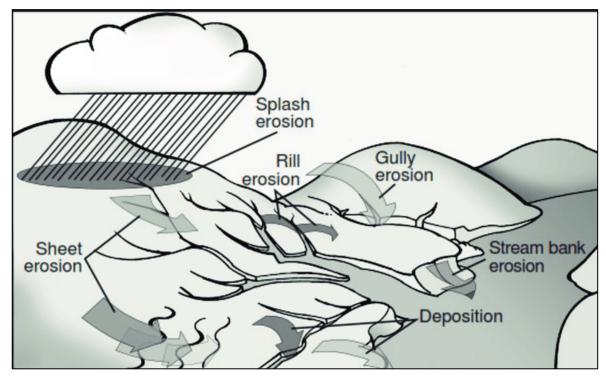
0-4% Runoff



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

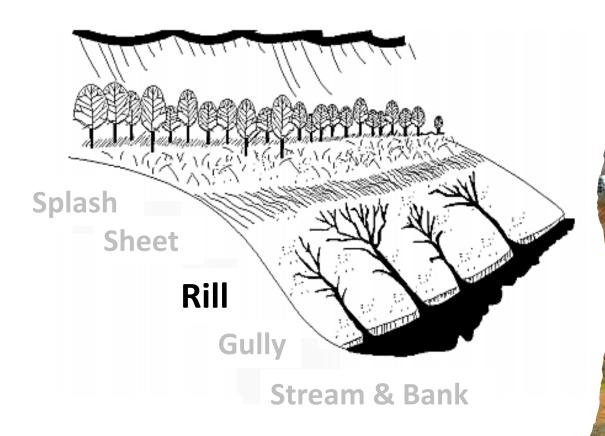
Erosion Continuum







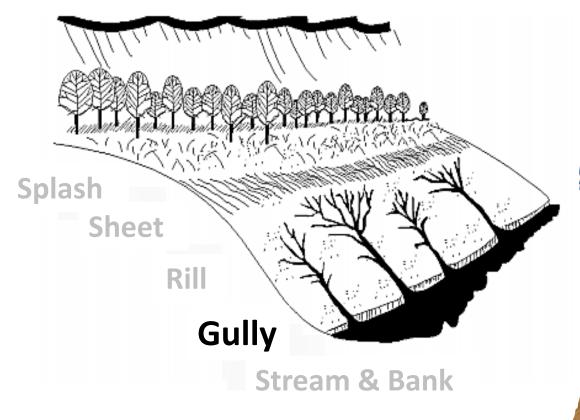
Erosion Continuum



Rills are a call to action!



Erosion Continuum





Other Types of Erosion

Dry Weather -> Dust = Wind Erosion





Mass Destabilization → Mass Wasting (Landslides)







What is eroding away?

Topsoil

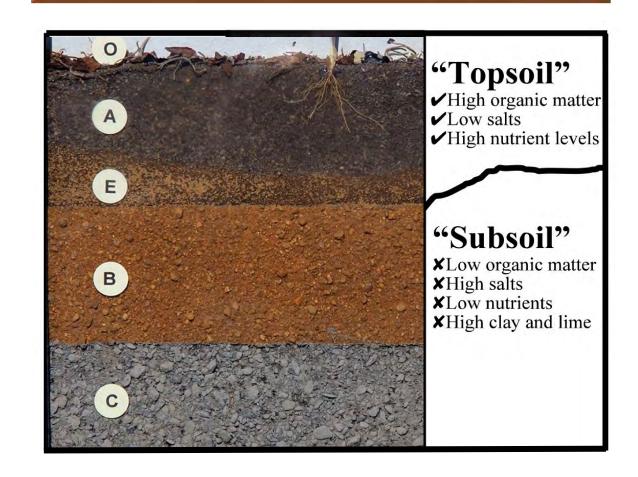
How long does it take to naturally produce 1 inch of topsoil?

500-1000 years!

19th Century Soil Loss

Topsoil loss > natural soil formation

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







What is Stormwater?

Undeveloped areas:

Rain infiltrates into soil

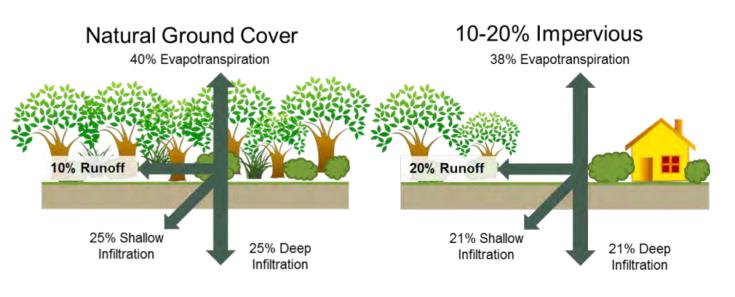
Developed areas:

- Vegetation removed
- Soil compacted
- Impervious surfaces added (roads, roofs, parking lots)

Result

- Water cannot soak in → becomes stormwater runoff
- Flows into streets, drains, and water bodies

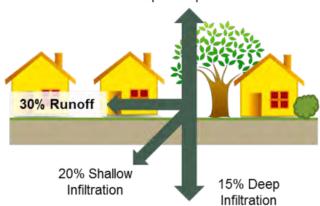
Volume & Rate Problems: So What?





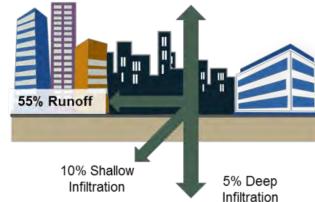
30-50% Impervious

35% Evapotranspiration



75-100% Impervious

30% Evapotranspiration



Increased runoff → higher volume & velocity in streams

- More erosion & flooding
- Groundwater depletion
 - → low summer flows
- First Storm = surge of pollutants

All of this = Increased Costs





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



Turbidity pH Changes



Temp Increase
O2 Decrease



Bacteria







Bear Creek – Local Story

Turbidity

pH Changes

Temp Increase
O2 Decrease

Bacteria

Toxins

RVSS Parameter Action Levels:

Turbidity: 15 NTU

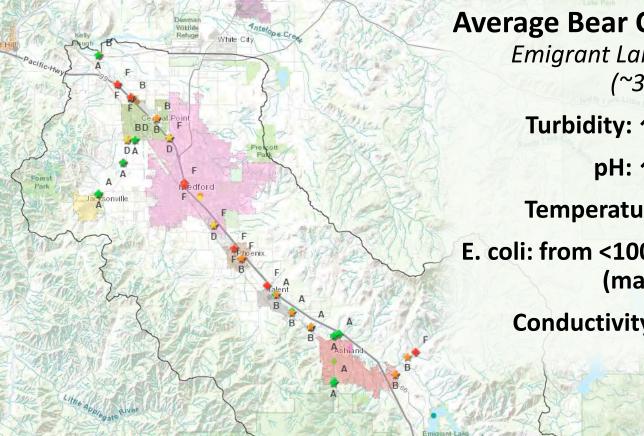
pH: 6.5-8.5

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: 个 up to 6 °F

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

(maxed out)

Conductivity: $\uparrow > 300 \,\mu\text{S/cm}$



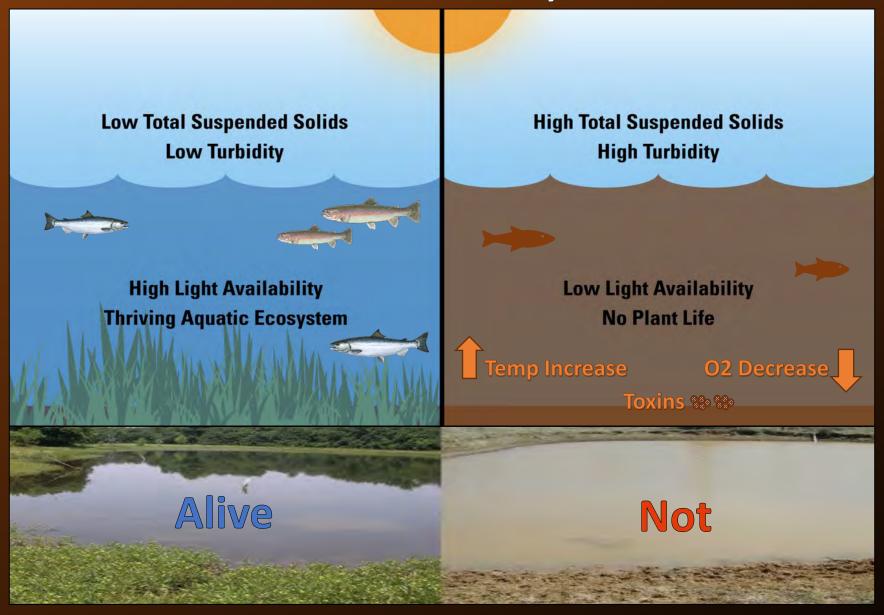
What is the most common pollutant in rivers, streams, lakes and reservoirs?





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

Cold, clear water = alive Muddy, warm water = not





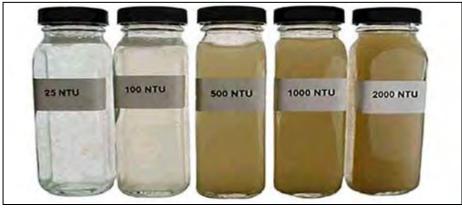
Turbidity

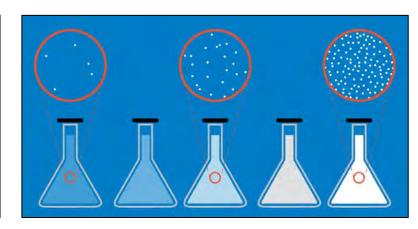
Turbidity is a metric for water quality that indicates how clear the water is.

Increase in Erosion & Sediment = Increase in Turbidity = Bad

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









Effects of Turbidity

Turbidity = Water's AQI

Like smoke in the air → constant exposure harms life

Impacts of high turbidity:

- Clogs fish gills & filter-feeders (like breathing smoke)
- Reduces visibility → predators can't find prey
- \downarrow Light penetration $\rightarrow \downarrow$ photosynthesis, \downarrow plant growth
- \uparrow Water temperature $\rightarrow \downarrow$ dissolved oxygen
- ↓ Oxygen from reduced photosynthesis
- \uparrow Turbidity $\rightarrow \uparrow$ costs for treatment





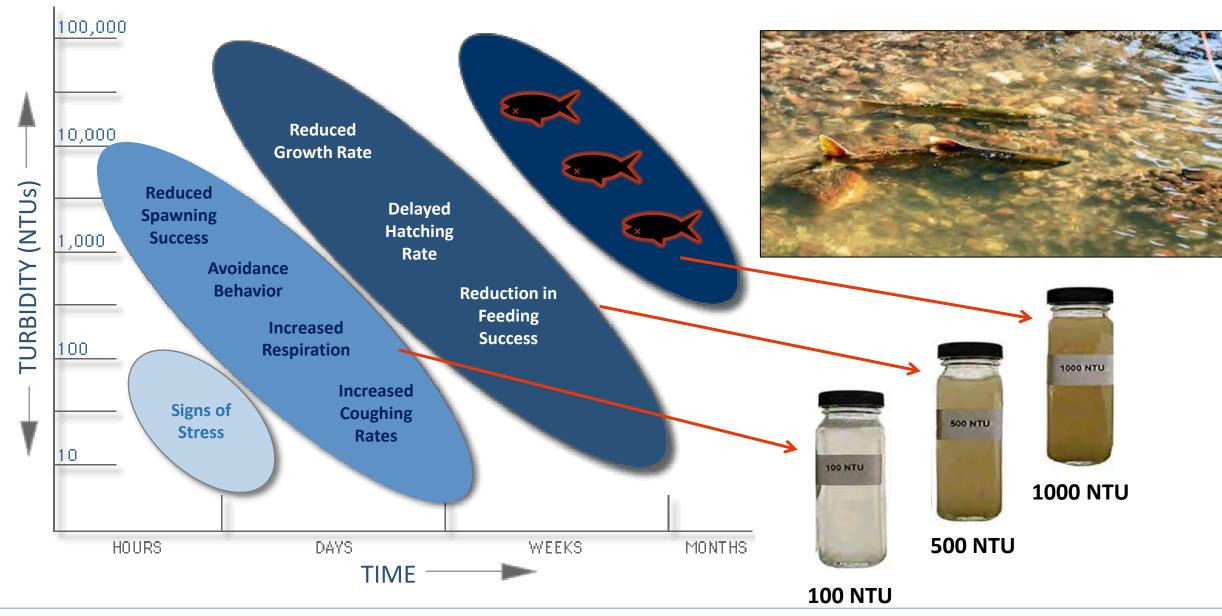
Effects of Sedimentation

- ➤ Loss of Topsoil → resource washed to oceans, upland soils depleted
- ➢ Risk of Flooding → clogs storm drains and pipes
- ➤ Reduced Water Depth → fills pools where fish rest & stay cool
- ➤ Decreased Stream Structure → smothers plants, barren channels
- ➤ Algal Blooms → fueled by excess nutrients
- ➤ Increased Temperature → lower dissolved oxygen (O₂)



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

Turbidity & Sedimentation Effects on Salmon

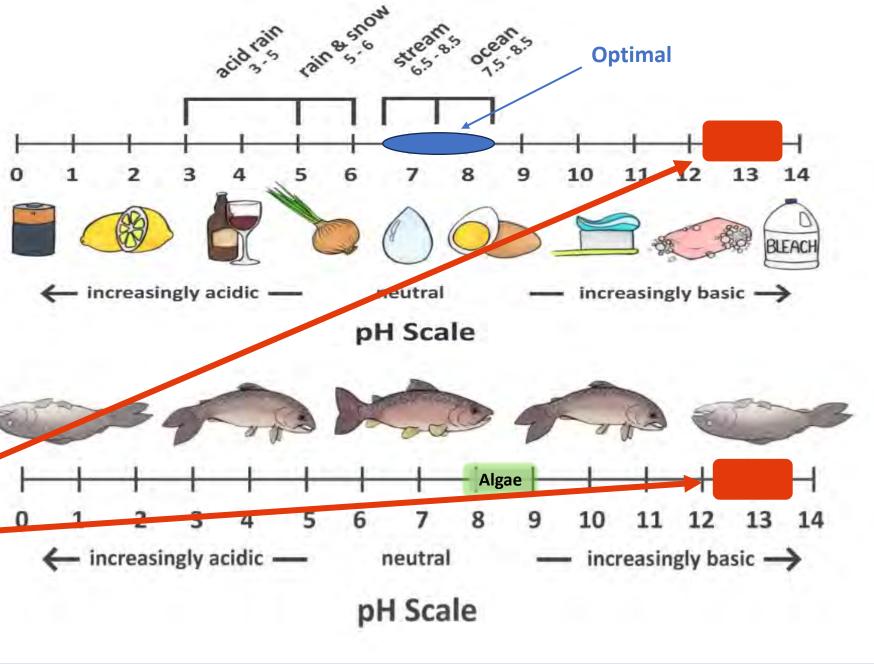




pН

- Measures how acidic or alkaline water is
- pH \uparrow 1 full unit \rightarrow 10× change





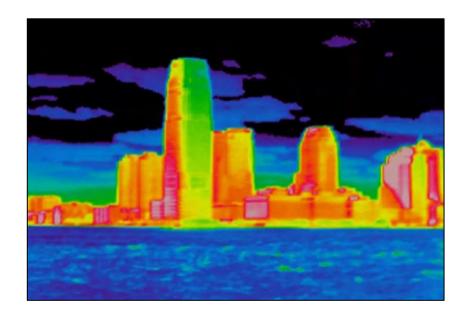
Temperature & Water Quality

Cold Water = Healthier Water

Aquatic species can't escape heat or regulate body temp

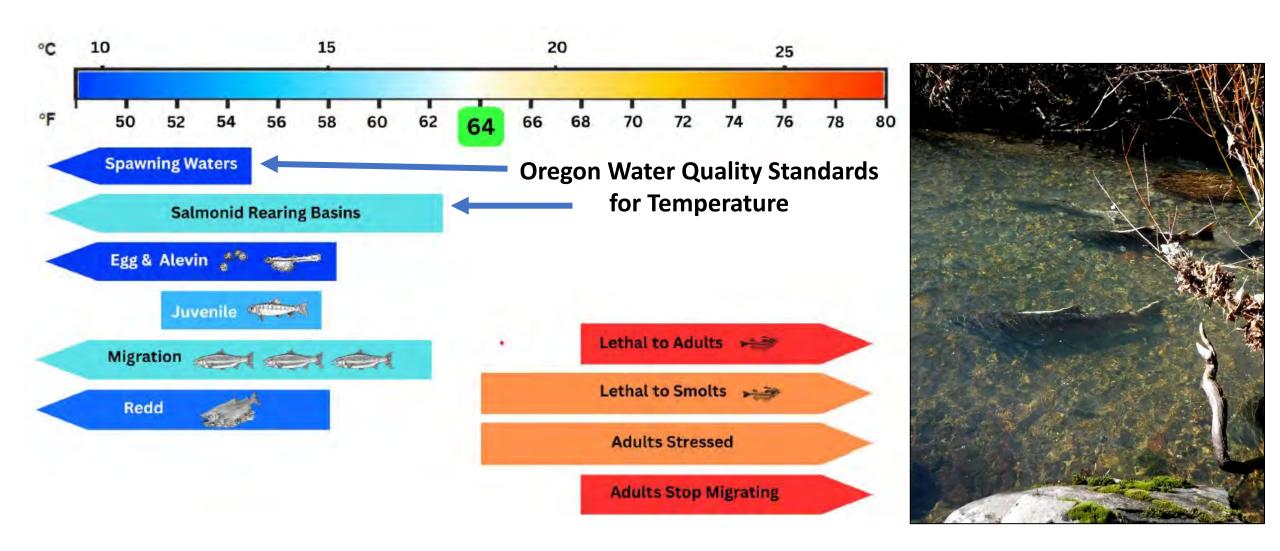
Urban drivers:

- Lack of shade
- Hot impervious surfaces → heated runoff



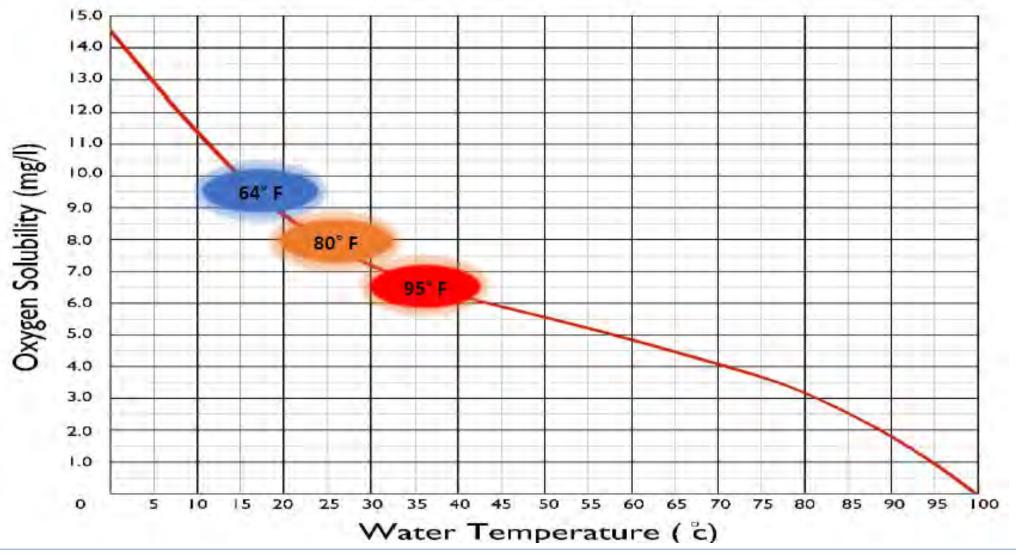


Optimum Temperature Limits for Salmon





What is the relationship between dissolved oxygen levels and temperature?



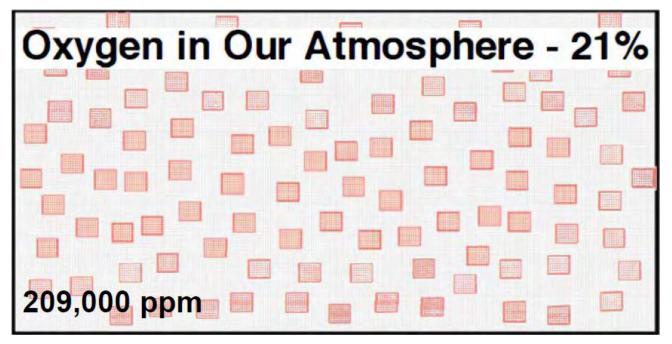


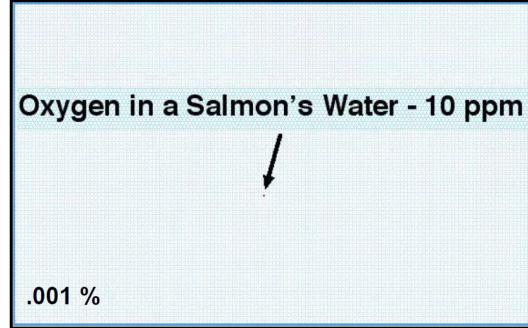
Dissolved Oxygen

Dissolved oxygen is the amount of oxygen present in the water

DO is often cited as the most important water quality metric

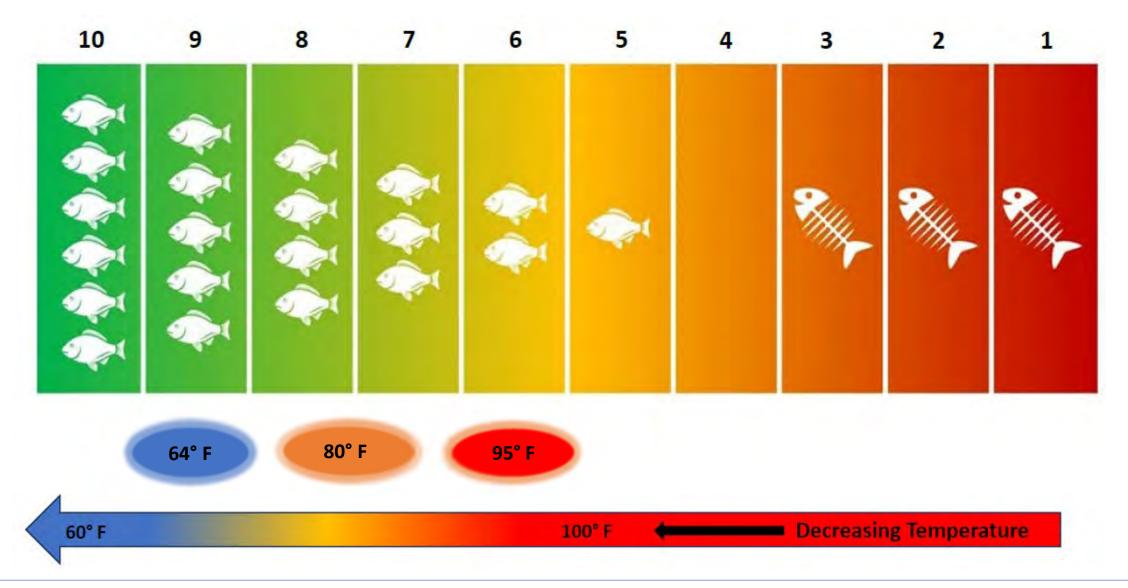
How much oxygen is in the air you breathe?







Dissolved Oxygen (DO) - Think Cold Beer

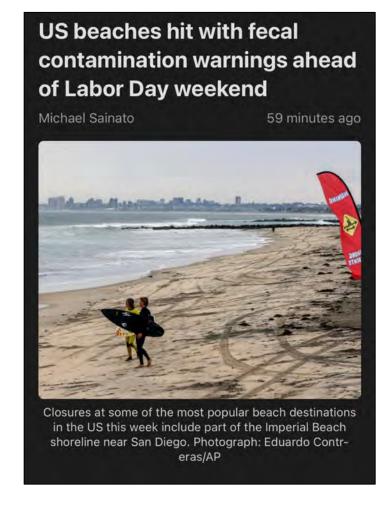




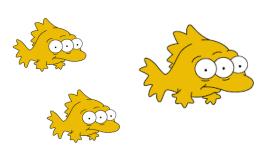


Is it safe to swim?



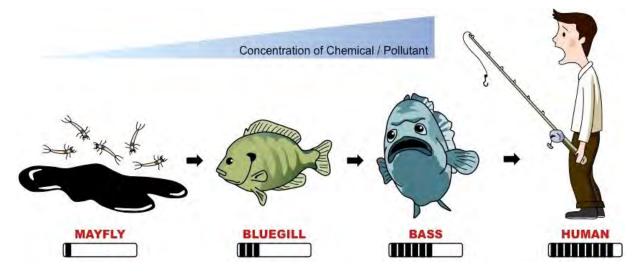


Toxicity and Biomagnification



- Toxins: substances harmful to health
- Lethal Dose (LD): smallest amount that can cause death
- 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)
- Stormwater = toxic cocktail of chemicals

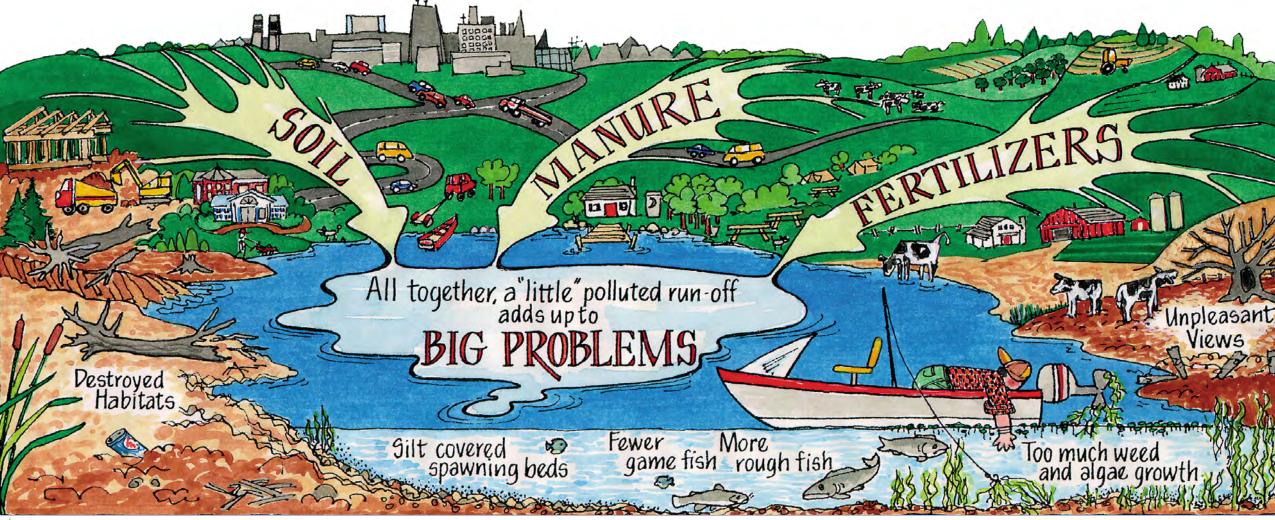






What may seem insignificant to you, adds up across the whole watershed!





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.







Regulation and Permitting













State - Department of Environmental Quality (DEQ)



Local Regulatory Jurisdiction RVSS / County / City



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

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





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





Cuyahoga River Fire Ohio, June 1969

Urban development is as inevitable as it is necessary.

While beneficial for the community, it also comes with an environmental cost

How do we mitigate that loss?









Shifting from Grey to Green Infrastructure

Green Infrastructure

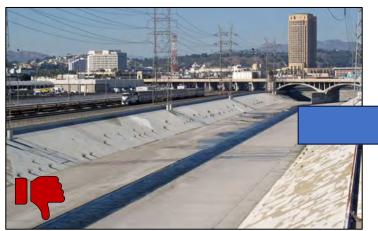
- Uses vegetation, soils, natural processes to manage stormwater
- City scale: connected green spaces, natural corridors
- Site scale: rain gardens, bioswales, infiltration planters

Grey = move water away quickly

Green = Bioretention

Slow It, Spread It, Sink It!







Shifting from Grey to Green Infrastructure

Effectiveness of Bioretention







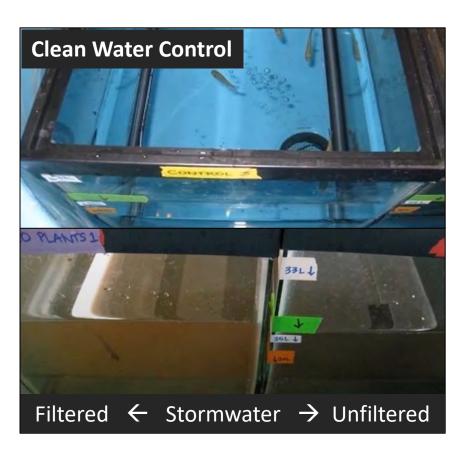
Effectiveness of Bioretention

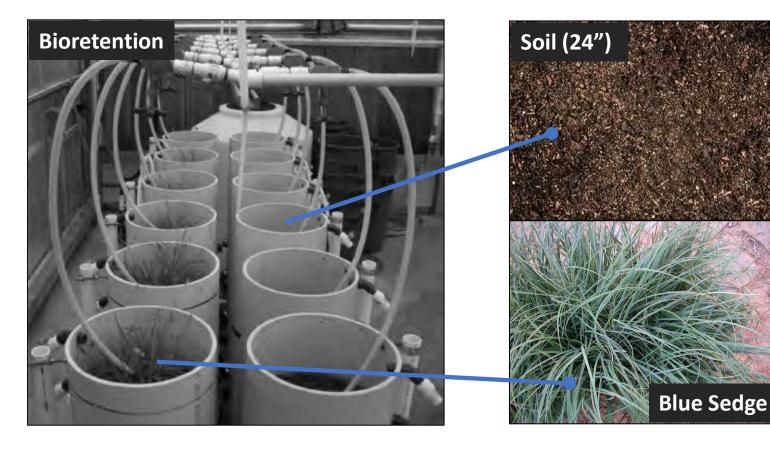


WSU Study – Bioretention & Salmon (2011)



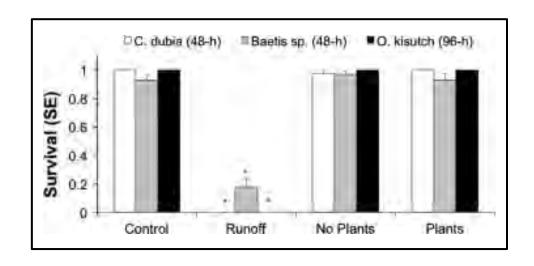
Effectiveness of Bioretention







Bioretention Results – WSU Study (2011)





Mayfly Nymph

Juvenile Coho Salmon

Survival Rates:

- Control, soil, soil+plants → 100% survival
- Unfiltered runoff → 100% mortality

Filtered water analysis:

- Heavy metals ↓ 30–90%
- PAHs (oil & gas chemicals) ↓ below detection
- Organics ↓ up to 40%

Once runoff enters a storm drain, there is no more treatment A little bit of healthy soil can go a long way



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

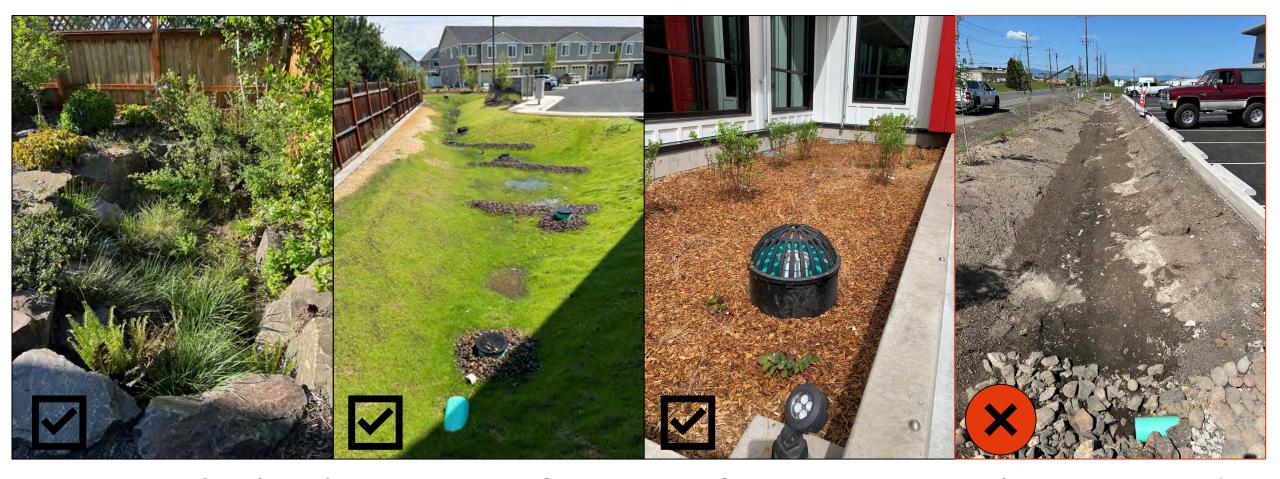
Other Benefits

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

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



Bioretention, Stormwater Facilities: 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



ESC Permits







What Does The 1200-C Permit Cover?

1200-C NPDES Construction Stormwater General Permit

An Erosion & Sediment Control (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:

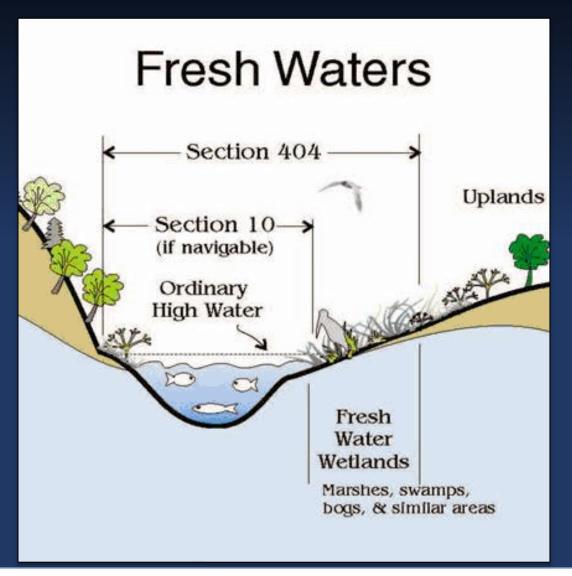
- Post-construction discharges → MS4 Permit or 1200-Z Permit
- Underground injection control (UIC) systems → UIC Permit
- In-water work or activities -> Other Federal & State permits



In Water Permits & ESA Critical Habitat



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?



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



1200-C Agents Are Awesome

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



What Permit Do You Need?

*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.



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)

Responsible Official (RO) – Permit Registrant

- Must have operational control over construction plans OR day-to-day control to ensure compliance
- Typically the owner of the site, owner's agent, project engineer, or the general contractor.
- This person has overall legal responsibility for permit compliance.



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.

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



Permitted Activities

- 1. Install and operate ESC measures and stormwater treatment and control facilities.
- 2. May discharge **stormwater** and **authorized non-stormwater discharges** so **long as the site follows all conditions set forth in the permit.**

Specifically authorized non-stormwater discharges are listed in the permit and can NOT be:

- Visually turbid or sediment-laden
- Cause or contribute to an exceedance of any applicable water quality standard

Prohibited Discharges:

- Visually turbid or sediment-laden water
- Wastewater
- Soaps, solvents, and detergents
- Fuels, oils, and other operation and maintenance pollutants
- Hydro-demolition water
- Saw-cutting slurry
- Toxics or other hazardous substances



Erosion & Sediment Control Plan (ESCP)

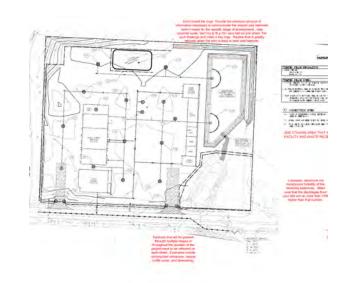
- 1) Discharge will leave your site
- 2) Compliance with 1200-C permit conditions = that discharge is expected to comply with WQ standards established in OAR 340-041
- 3) The ESCP is how you show that you are meetings those conditions



The ESCP is required.

The ESCP must be accessible.

The ESCP must be up to date.



ESCP Requirements

1200-C Schedule A.20

Full list of ESCP requirements are in Appendix C

- Site-specific
- Account for wet weather
- Cover page(s) all administrative information
- Separate pages with clearly depicted ESC measures for:
 - 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 represented in the ESCP



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 Development Thoughts

No "one-size-fits-all" BMP list.
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 & Source Control
- 2. Sediment Control (Contain On Site)
- 3. Treat and Control Discharge Points

RVSS Requirements for Nearly EVERY Site:

Downslope Perimeter Protection

Discharge Location Control

Inlet Protection

Trackout Prevention



ESCP Development Thoughts

No "one-size-fits-all" BMP list.
Permit sets performance standards.

Erosion Prevention > Sediment Control Erosion Prevention should be the primary focus of the ESCP.









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:

Sediment Controls – keep dirt in place (first line of defense) **Sediment Controls** – keep dirt on site (second line of defense) **Managerial Practices** – prevent and contain pollution

Resources:

ACWA Construction Site Stormwater 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
 - Pertinent Sub-Contractors
 - ESC Inspector
 - MS4 ESC Oversight Inspector
- Dated sign-in sheet

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, and natural buffer areas.





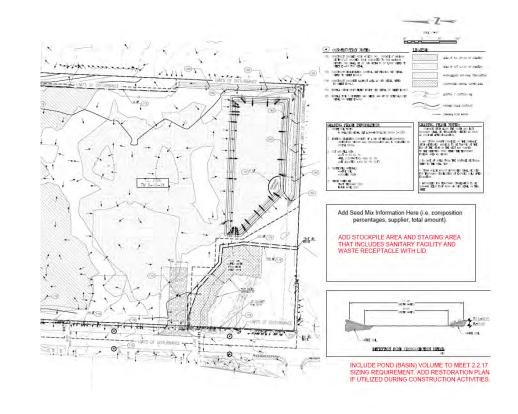
General Design, Installation, and Maintenance

1200-C Schedule A.1/A.4

Have and follow a plan!

Your plan = Erosion and Sediment Control Plan (ESCP)

- Minimize soil exposure.
- Install stormwater controls for discharge treatment, volume, and rate.
- Maintain controls at all times and not only in response to inspections!
- Immediately initiate repairs or replace controls.
 - Complete the work by the end of the next business day.



General Design, Installation, and Maintenance

1200-C Schedule A.1/A.4

Minimize soil exposure by:

- Sequence activities clear, grade, and disturb land in phases when practical
- Preserve existing vegetation wherever possible
- Direct runoff toward vegetated areas
- Stabilize cleared areas not actively being worked (erosion prevention).
- Install downgradient sediment controls before starting work in that portion





Preserve Soil Condition for Revegetation

1200-C Schedule A.10

Where final vegetative stabilization will occur:

- Preserve native topsoil for onsite re-use
- Restrict vehicle/equipment traffic to avoid compaction
- Rehabilitate compacted soils so vegetation can establish and grow



Stabilize Exposed Soils

1200-C Schedule A.16

Required where construction is complete or inactive ≥ 14 days

Timelines:

- < 5 acres disturbed:</p>
 - Start immediately, finish ASAP
 - Complete stabilization ≤ **14 days**
- ≥ 5 acres disturbed, sediment-listed TMDL, or upslope of 50-ft NBZ:
 - Start immediately, finish ASAP
 - Complete stabilization ≤ 7 days
- Within 50ft NBZ encroachment:
 - Start immediately, finish ASAP
 - Complete stabilization ≤ 3 days





Stabilize Exposed Soils

1200-C Schedule A.16

Required where construction is complete or inactive ≥ 14 days

"Start Immediately" = Compliance Clock

No later than end of next business day

Actions may include:

- Soil prep for vegetation (only if seeding)
- Seeding or planting
- Applying mulch or non-vegetative product



Stabilize Exposed Soils

1200-C Schedule A.16

Required where construction is complete or inactive ≥ 14 days

Stabilization is complete when:

- Seeding + protective cover applied to prevent erosion
- Vegetation planted at uniform density per final stabilization criteria
- Non-vegetative measures (e.g., matting) are fully and properly installed



Natural Buffer Zone (NBZ) Protection

1200-C Schedule A.3 / Appendix B

Must identify & maintain NBZs or enhanced ESCs for discharges within 50 ft of receiving waters

- 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?

5 ft for every 1° of slope



1200-C Appendix B

Natural Buffer Zone Requirements

Provide & maintain NBZ or equivalent ESCs within 50 ft of Waters of the State No waiver if local jurisdiction allows development closer than 50ft

Measured from: Ordinary high-water mark OR Edge of bank (whichever is further from water's edge)

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 Appendix B

Natural Buffer Zone Requirements

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

- ESCP must be developed by a licensed professional
- 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 equivalent for redundant perimeter 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 Appendix B

Natural Buffer Zone Requirements

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)



1200-C Appendix A

Environmental Management Plans (EMP)

Separate DEQ Submission & Review!

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

Natural Buffer Zone Requirements



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
- Remove accumulated sediment once it reaches ¼ of barrier height

Vegetated Buffer
Sediment Fence
Fiber Rolls / Wattles

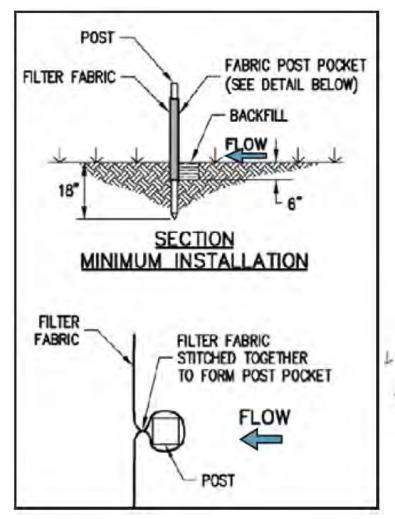


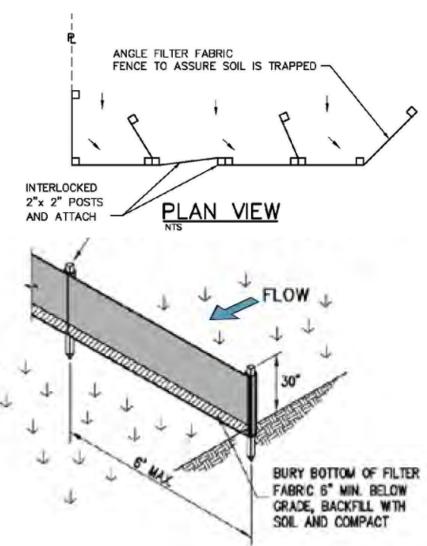
BMP: Sediment Fence

- **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 in6-inch trench
- At fence end: turn uphill & extend 1 full panel (6 ft)
- Remove sediment when it reaches ¼ of fence height



BMP: Sediment Fence



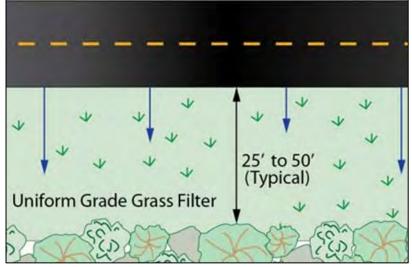




BMP: Vegetated Buffer / Vegetated Area

- 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: Fiber Rolls or Wattles

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

Uses: Steep slopes, Inlet protection, Perimeter protection, Check dams

Installation Tips:

- Place in shallow trenches along contour of slope
 - Gentle slopes → ensure good soil contact
 - Steeper/sandy slopes → bury up to ⅓
 thickness of wattle
- Add extra downslope stakes on steep/erodible soils
- No straw wattles on hard surfaces

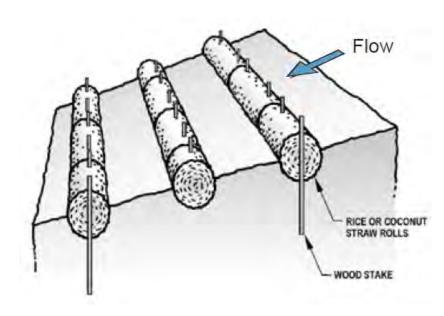


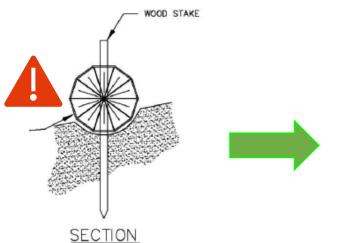


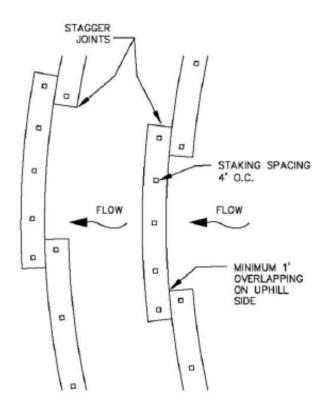
BMP: Fiber Rolls or Wattles



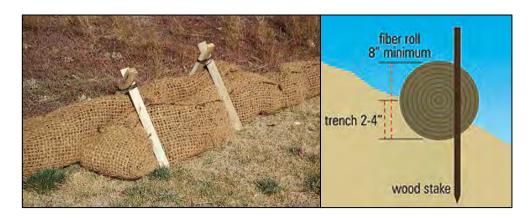








PLAN VIEW





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 → each active lot must have track-out controls.

Construction Entrance
Rumble Track
Wheel Wash



BMP: Construction Entrance

- Prevents soil track-out onto public & private roads
- Typically stabilized rock pads at each entry/exit point
- Alternatives: steel plates, panels, or structural systems

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

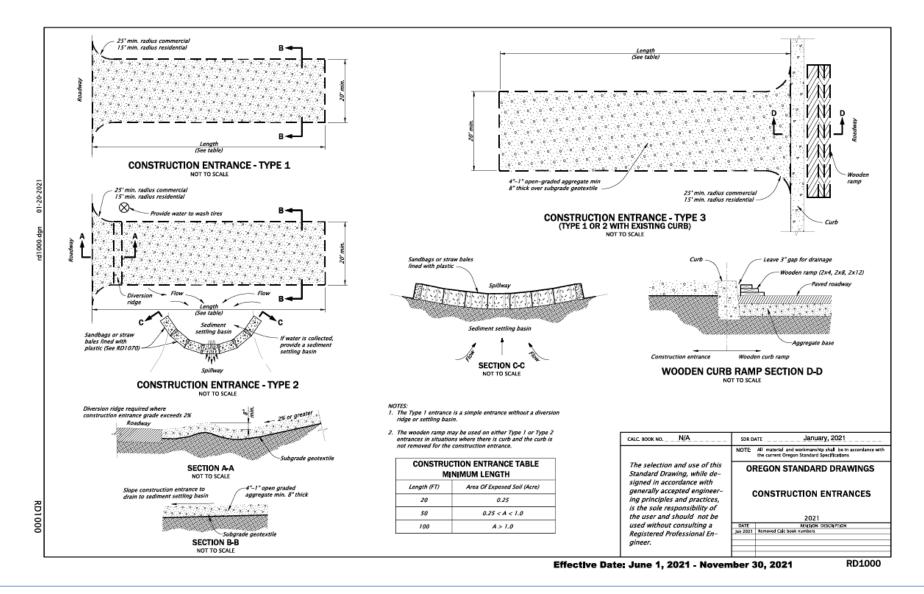


CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH			
Length (FT)	Area Of Exposed Soil (Acre)		
20	0.25		
50	0.25 < A < 1.0		
100	A > 1.0		





BMP: Construction Entrance



BMP: Wheel Wash, Shaker or Rumble Track

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

- Reuseable
- Added protection for a gravel entrance

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

- Used when gravel entrance is not sufficient
- Wheel wash water = wastewater (must be managed properly)







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

Composite Sock / Wattles
Vegetative Stabilization
Surface Roughening
Pipe Slope Drain
Diversion Controls
Stabilize the Slope
Erosion Matting
Check Dams

BMP: Check Dams

- Velocity dissipaters → water flows through & over
- Can use various materials
- Also act as sediment controls → require regular inspection & maintenance

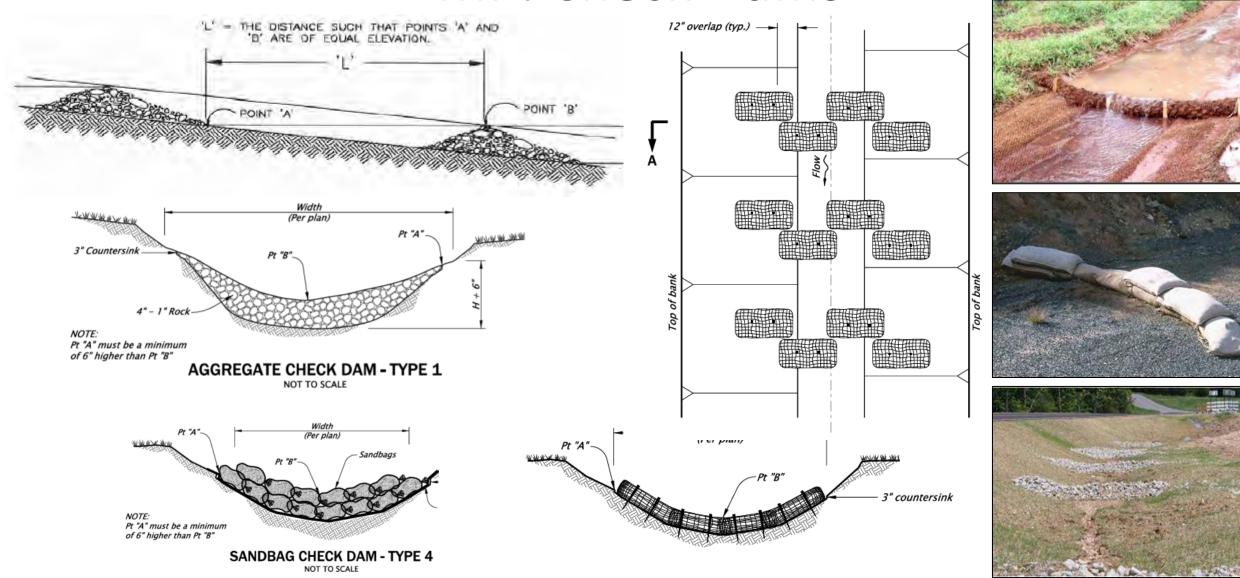
Installation Tips:

- Extend dam fully across swale/ditch on a level contour
- Prevent flow around edges; ensure good soil contact
- Extend downstream portion as splash block
- Flow-through rock check dams (3–6in clean rock) often recommended by DEQ





BMP: Check Dams

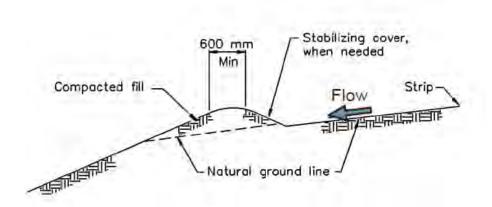


BMP: Diversion Controls

Berm, swale, ditch, channel, or pipe used to:

- Prevent off-site or upstream water from entering site
- Control the flow of water on-site
- Prevent sediment-laden water from leaving site









BMP: Rolled Erosion Control Products (RECPs)

Types: netting, meshes, blankets, turf reinforcement mats

Materials: jute, coconut fiber, straw, synthetics, plastics, or blends

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

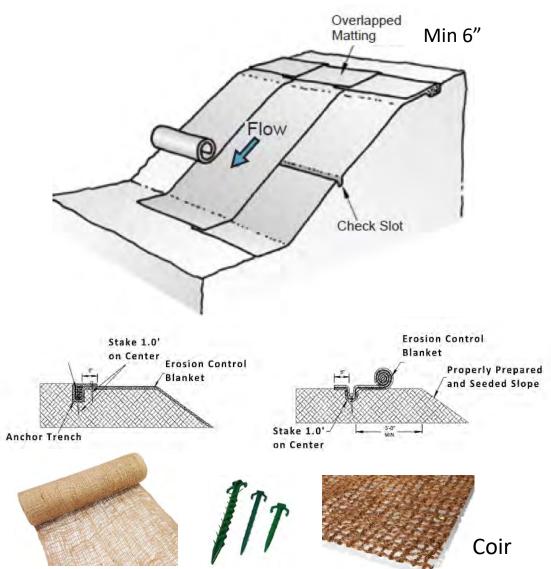


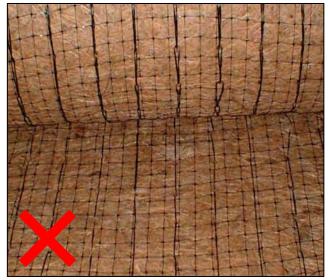


RECPs











Jute

BMP: Vegetative Stabilization

- Hydroseeding: Slurry of mulch + seed + fertilizer.
- Mulching: Compost, straw, or plant material. Must be ≥ 2 in depth to be effective
 - No straw mulch near water or 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

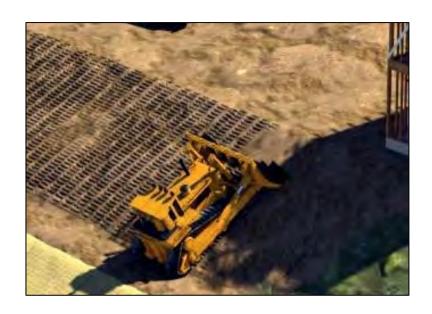






BMP: Surface Roughening

- Provides erosion protection on bare soil
- Reduces runoff velocity & soil detachment
- Creates micro-pockets for seed, mulch, or water retention
- Inexpensive & simple measure while vegetation establishes







BMP: Pipe Slope Drain

- Temporary structure to safely convey clean water slopes
- Prevents erosion by carrying flow in a closed pipe instead of over bare soil
- Used with berms at slope edges to capture and direct runoff
- Can also transport run-on across a site then you don't have to account for it.







Storm Drain Inlet Protection

1200-C Schedule A.11

Design, install and maintain storm drain inlet protection.

- Temporary barrier
- Must remove sediment from discharges
- Must be sized & installed to prevent bypass
- Secondary BMP → always used with erosion control BMPs

Maintenance:

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









Discharge Location Protection

1200-C Schedule A.13

- Control all stormwater discharges:
 - Peak flow rates
 - Total stormwater volume
- Prevent erosion & scour at discharge points
- Use energy dissipation measures
- Inspect & maintain regularly



Check Dams Energy Dissipation

Sediment Traps Sediment Basins



BMP: Energy Dissipation

- Every outlet requires energy-dissipation
- Reduces velocity of runoff to prevent scour and erosion









BMP: Sediment Trap

- 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

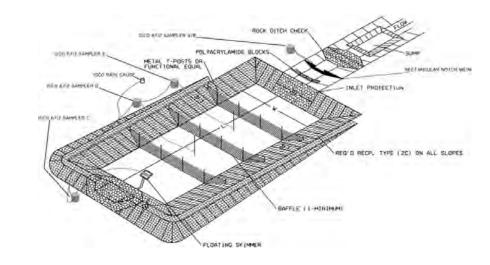






BMP: Sediment Basin

- Settling pond that releases runoff at a controlled rate
- Purpose: Detains water long enough for sediment to settle out
- Components:
 - Dam or embankment
 - Pool area for water & sediment storage
 - Principal & emergency spillways
 - Controlled dewatering device (e.g., skimmer)
 - Usually has multiple bays for improved settling
- Can be removed after construction & stabilization but is more often converted to a detention basin for post-construction stormwater management.







Sediment Basin

- Must be prepared & stamped by an Oregon Registered Professional Engineer
- Capacity: Sized for 2-year storm event, or 3,600 cubic feet per acre of drainage.
- Provide sufficient treatment capacity for sediment inputs
- Outlet structures must withdraw water from the surface
- Design must include maximum trapped sediment depth
- Remove accumulated sediment when it reaches ½ of maximum depth





Concrete Management

1200-C Schedule A.12

- Establish designated washout areas before work begins
- Install clear signage
- Direct all wash water & waste into impermeable, lined pit or leak-proof container
- 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 to prevent accidental spills and contamination of stormwater!



Runoff Treatment for Engineered Soils

- 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

- 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!



Stockpile Management

- 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









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 used oil as a dust suppressant!









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
 - Pesticides, herbicides, fertilizers
 - Trash & debris



Locate ≥ 50ft from storm drains and waterways!







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 **ONE** as the Primary Inspector

A site can have no more than 3 inspectors



Inspections, Monitoring, and Recordkeeping

1200-C Schedule B

Inspectors Must:

- ✓ Skills to assess site conditions & BMP effectiveness
- ✓ Knowledge of correct installation & maintenance of BMPs
- ✓ Understand project scope & timeline
- ✓ Authority to request resources for corrective actions
- ✓ Coordinate with contractors and subcontractors to implement the ESCP



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

<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.	
	ite information: DEQ (and RVSS) permit ID number.	
	ger 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:	
	☐ The location of BMPs in need of maintenance or corrective actions, and any BMPs that failed to operate as designed or proved inadequate for a particular application.	
	☐ The location of where additional BMPs are needed.	
	 Observations of the stormwater discharges from the site (Visual, smell, source, etc.) 	
	□ Reasons for 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.



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

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



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







Spill Prevention and Response Plan

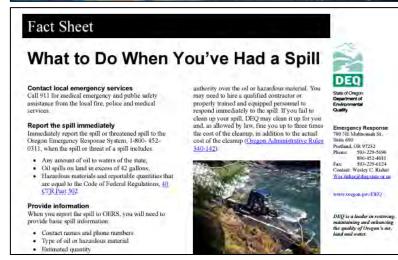
General Steps

- 1) Safety First: Move away/upwind if unsafe
- 2) Report immediately: Contact local emergency services
- 3) Control & contain: Prevent spill from reaching water
- 4) Clean up what you can immediately

Legal Requirement

- Failure to report = up to \$250,000 fine & 5 years in prison
- Plan must be known, complete, & accessible
- Standard sheet for simple sites; site-specific plan for hazardous materials







Self-Reporting & Trust

- Things will happen issues are inevitable
- Self-reporting builds trust with regulators
- Perfection is suspicious honesty shows diligence
- Inspectors are here to help, not shut you down



Call us if you have issues!



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

RVSS Code

Consequences of Non-Compliance

Informal

Verbal Correction On-Site

Formal

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



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 Gener	ce of Termination ral Permit to Discharge Storr d With Construction Activity	nwater
Use this form to end permit coverage or stabilization of exposed Submit photos that depict site stabili PERMIT REGISTRANT	soils has occurred. Please print	n ink or type.
ame (authorized person meeting the signature requirements on the application):		Telephone:
Company (Legal Name - Permit Registrant):		
Mailing Address:	City, State, Zip Co	de:
E-mail Address:	File Number (loca	ted on face page of permit):
SITE LOCATION/ADDRESS	STATUS OF CO	NSTRUCTION ACTIVITY
Site Common Name:	All soil disturbance activities by or for the registrant bave been completed.	
Street Address (or Location Description):	☐ The site has undergone stabilization of all exposed soils through vegetation, paving, or building construction (for a common plan of development or sale, all remaining disturbe	



Final Stabilization Criteria

- ✓ 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





