know where it goes
take simple steps to reduce STORMWATER POLLUTION

Soil Erosion, Runoff, and Sedimentation Overview

Updated 2017

You've been informed about the necessity of soil erosion, runoff, and sedimentation control measures, but you're still wondering about the details. Why is it so important?

What is Soil Erosion?

Soil erosion is the detachment and movement of soil particles by water, wind, ice, or gravity.

What is Sedimentation?

Sediment is the result of erosion. **Sedimentation** is the build-up of eroded soil particles that are transported in **runoff** from their site of origin and deposited in drainage systems, on other ground surfaces, or in bodies of water or wetlands.

Why Should I Care?

- It's the law: Federal, State, and local regulations require construction sites to be compliant with the Clean Water Act.
- Water quality: Erosion from construction projects can be a non-point source pollutant that deteriorates the health of our lakes, streams and Narragansett Bay.
- Soil loss- Much of the total sediment loss that occurs each year is generated by highway construction and land development projects.
- Quality of life: If you enjoy fishing, eating local shellfish, or swimming at one of Rhode Island's beautiful beaches, this pollution can threaten your quality of life.

What Problems Happen on Construction Sites?

- Safety and Nuisance Issues: Sediment on roadways and in the air can cause safety hazards.
- Flooding: Excessive sediment accumulation in drainage systems can create blockages that promote flooding.
- Sediment Build-Up: Sediment that accumulates in streams, lakes, and bays can only be remediated by costly dredging.
- Increased Costs: Uncontrolled erosion and sedimentation requires costly maintenance and repair. ***It is cheaper and easier to prevent erosion than to fix sedimentation problems.***
- Negative Public Perception: Observing muddy water flowing from construction sites negatively affects how the public feels about your work.

Sediment-filled runoff from a construction site

What can be done to control soil erosion, runoff, and sedimentation?

Install, maintain, and inspect control measures on your construction site according to the site's Soil Erosion and Sediment Control (SESC) Plan or Stormwater Pollution Prevention Plan (SWPPP).

Types of Controls

Erosion Controls

- The primary defense against sediment pollution
- Installed to prevent sediment from being detached by natural causes
- Examples: Keeping exposed soil covered with mulch or temporary vegetation; covering soil stockpiles; slope surface roughening

Runoff Controls

- Used to slow the velocity of flowing stormwater
- Diverts water towards a stabilized outlet or treatment practice
- Examples: check dams; pipe slope drains

Sediment Controls

- The last line of defense against moving sediment
- Prevents sediment from leaving construction sites and entering environmentally sensitive areas
- Examples: construction entrances; sediment traps; inlet protection; compost filter socks; wheel wash system

Compost filter socks used as check dams to control runoff

Where Can I Get Help?

- Your construction project's site-specific **SESC Plan** or **SWPPP** has measures identified specifically for your construction site.
- **RI Erosion and Sediment Control Handbook:** Suitable control measures exist for every conceivable erosion, runoff, and sediment control challenge. Refer to the *RI Soil Erosion and Sediment Control Handbook* at:

  www.dem.ri.gov/programs/bnatres/water/pdf/riesc-handbook16.pdf

Even if control measures are correctly installed and maintained according to the approved SESC Plan/SWPPP, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site.

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