



Applied Soils for ESC and SW Professionals

6 Contact hours



Module 1.

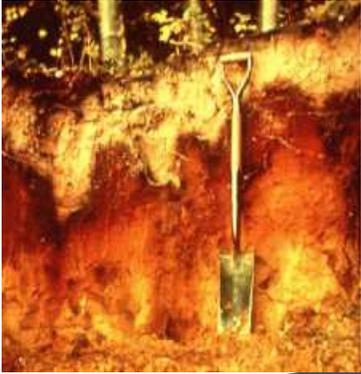
INTRODUCTION TO THE COURSE



Soils

“Standing on soil feels so much different than standing on city pavement; it lets you look inward and reflect.... It allows your inner life to grow.”

--Ricardo Montalban





Introduction

8:30 – 9:00	Module 1. Introduction to the Course
9:00 – 10:00	Module 2. Introduction to Soils
10:00 – 10:15	Break
10:15 – 11:00	Module 3. Soil Handling and Fertility
11:00 – 11:45	Module 4. Soil Hydrology
11:45 – 12:45	Lunch
12:45 – 1:30	Module 5. Soil Engineering
1:30 – 2:15	Module 6. Site Suitability and Soil Testing
2:15 – 2:30	Break
2:30 – 3:15	Module 7. Soil Protection and BMP Installation





Ground Rules

- Keep cell phones off during the training
- Questions and comments are encouraged
- Everyone will have an opportunity to speak and share their thoughts at the appropriate times
- Be supportive of all participants



Module 1a.

Soils in ESC and SW



Amsterdam, the Netherlands



Portland, OR



Soil 101

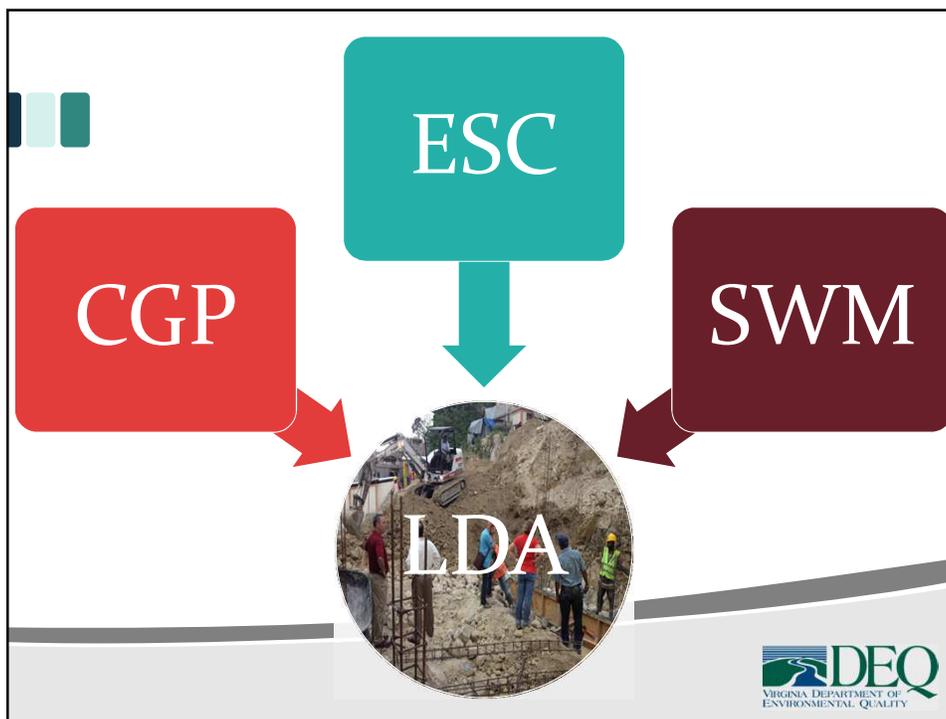
$$\text{Building or Development} = \text{Land disturbance} + \text{Soil disturbance}^2$$



Soil and Construction

$$\text{Building or Development} = \text{Land disturbance} + \text{Soil disturbance}^2$$

	(1) Clearing		(2) Grading
	(3) Structural		(4) Stability
	(5) Hydrology		



Construction General Permit

Part II.A.2.c.(3): Minimize the amount of soil exposed during the construction activity

Part II.A.2.c.(7): Minimize soil compaction and, unless infeasible, preserves topsoil

Part II.A.5.b.: Permanent or temporary stabilization is required within 7 days to denuded areas after final grade had been reached on any portion of a site (also MS-1 of the ESCR)

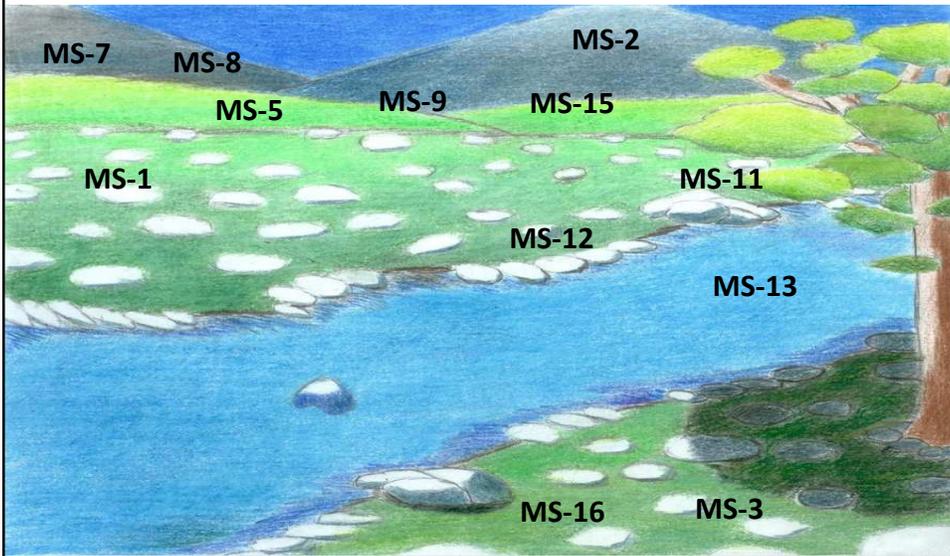
Part II.F. SWPPP inspections subsections 2.c.(1) and (3) address utility lines and soil stabilization. Subsection 3.a.(4)(b) addresses with topsoil stockpiles and borrow areas

9 Performance Requirements of the SWPPP (9VAC25-870-54)

Stormwater volume and velocity	Stormwater discharges	Soil exposure ★
Steep slopes ★	Sediment discharges ★	Natural buffer and vegetated areas ★
Soil compaction and topsoil ★	Stabilization ★	Outlet structures

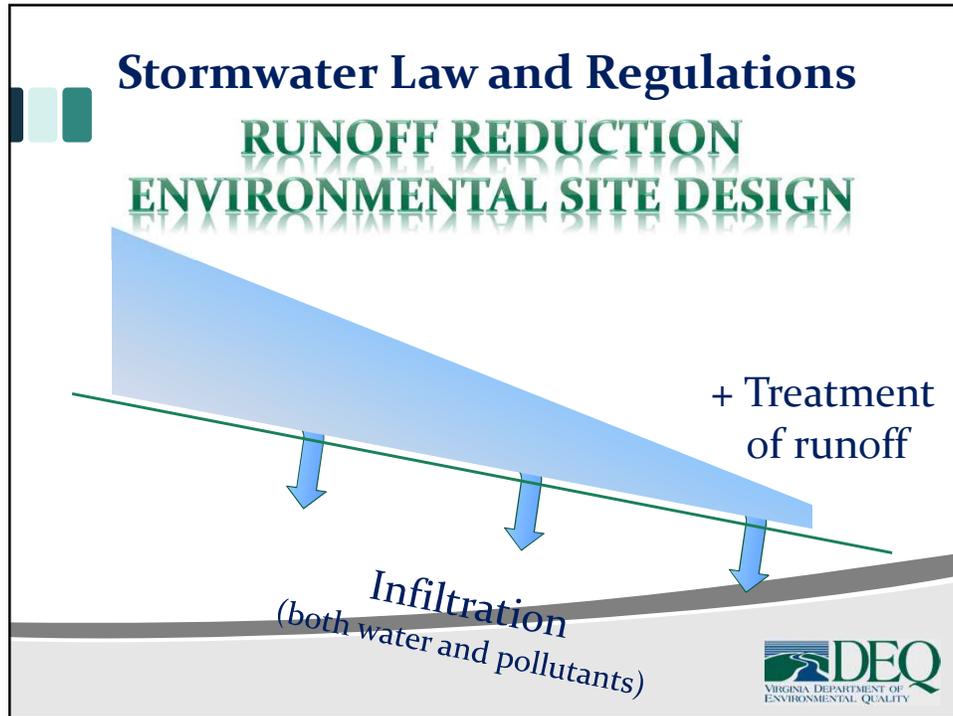


Erosion and Sediment Control Law and Regulations



The illustration shows a landscape with a river and various erosion control measures. The measures are labeled as follows:

- MS-1: A series of circular stone structures in a grassy area.
- MS-2: A grassy slope.
- MS-3: A series of circular stone structures in a grassy area.
- MS-5: A series of circular stone structures in a grassy area.
- MS-7: A grassy slope.
- MS-8: A grassy slope.
- MS-9: A series of circular stone structures in a grassy area.
- MS-11: A series of circular stone structures in a grassy area.
- MS-12: A series of circular stone structures in a grassy area.
- MS-13: A series of circular stone structures in a grassy area.
- MS-15: A series of circular stone structures in a grassy area.
- MS-16: A series of circular stone structures in a grassy area.



But Construction is More than Laws and Regulations!

Construction:

- Removes ground cover (vegetation)
 - Makes the soils more erodible
- Removes the topsoil and exposes the subsoil
 - Subsoil is usually more compacted
 - Subsoil is also often more erodible
 - Subsoil is generally less fertile
- Construction vehicles and activity compact the soil
 - Alter the soil's hydrology
- The site is generally flattened and becomes more impervious
 - Alter the site's hydrology



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