Module 3: History of Erosion and Sediment Control and Stormwater Management Laws

Module 3 Objectives

After completing this module, you will be able to:

- Understand the genesis for controlling erosion, sedimentation and stormwater runoff in Virginia
- Better understand the overlap between the Virginia Erosion and Sediment Control Law and the Virginia Stormwater Management Act

Module 3 Content:

3a. History of Erosion and Sediment Control Laws

3b. Integration of the Virginia Stormwater Management Program (VSMP)

3a. History of Erosion and Sediment Control Law

Erosion and sediment control at the national level

The urgency for soil conservation became acutely apparent in the 1930s during the Dust Bowl. Also known as the "Dirty Thirties", this decade was marked by a period of server dust storms across the American and Canadian prairie lands brought on by high winds and drought conditions, which were only worsened by extensive farming techniques that displaced the native, deep-rooted grasses that normally trapped soil and moisture. The Dust Bowl affected 100 million acres of farmland and forced tens of thousands of families to abandon their farms.

Figure 1. Photographs of the dust storms on April 14, 1935 (left) and 1934 (right). People reported that "*seeds were blown out of the soil*" and that "*chickens went back to roost because it was so dark in the middle of the day*." Source: http://www.livinghistoryfarm.org/farminginthe30s/water_02.html

In response to the Dust Bowl, President Franklin D. Roosevelt formed the Soil Erosion Service in 1933 as one of the US government's programs designed to conserve soil and restore the ecological balance of the nation. In 1935 the Service was reorganized under the Department of Agriculture and renamed the Soil Conservation Service (SCS). Today, the SCS is known as the National Resources Conservation Service. The agency provides technical assistance to farmers and other private landowners and managers.

"The wastage of soil and moisture resources on farm, grazing, and forest lands…is a menace to the national welfare."
Public Law 74-46, 1935

"The nation that destroys its soil destroys itself."
Franklin D. Roosevelt, 1937

The Federal Water Pollution Control Act (1948)

The Federal Water Pollution Control Act of 1948 was the first major US law to address water pollution. The Act was one of the earliest references to clean water as a resource and the importance of protecting water quality through the managed reduction of pollutants flowing into waterways. This Act also set the precedent for a federal authority to regulate water quality.

The Clean Water Act (1972)

Congress passed major amendments to the Federal Water Pollution Control Act in 1972, creating what we now know as the Clean Water Act (CWA). The amendments made a number of changes to strengthen the existing law including:

- Consolidated the control of water pollution policy under the administrator of the newly created US Environmental Protection Agency (EPA)
- Established the National Pollutant Discharge Elimination System (NPDES) Permit Program, which in Virginia is administered by the Virginia Pollutant Discharge Elimination System (VPDES), to control water pollution by regulating point sources that discharge pollutants

Stormwater discharges from land disturbing activities are permitted under the Construction General Permit (GP) through NPDES

Erosion and sediment control in Virginia

The Virginia Soil and Conservation District Law was passed in 1938. The law established Soil and Water Conservation Districts (SWCD) that were to provide local leadership for soil and water conservation programs. This law also established the Virginia Soil and Water Conservation Commission.

The impetus for a statewide regulatory erosion and sediment control program began in the '60s as sedimentation problems were becoming increasingly evident in areas undergoing fast-paced urban development such as Northern Virginia and the Tidewater region. These faster growing and more progressive localities in the state initiated local ordinances to control erosion and sedimentation in their localities. Since Virginia is a Dillon Rule state, the Commonwealth's main option was to address this issue state-wide. In 1971, the Governor's Council on the Environment created a task force to study the issue of sedimentation across the state. That same year the task force completed its report which verified the existence of statewide sedimentation problems and recommended that a statewide program be developed to address erosion and sedimentation.

The Dillon Rule states that municipal governments only have the powers that are:

1. Expressly granted to them by the state legislature;
2. Those that are necessarily implied from that grant of power;
3. Those which are essential and indispensable to the municipality's existence and functioning.

State Attorney General Andrew P. Miller added emphasis to the issue of erosion and sedimentation when he issued an opinion in response to a question from the State Water Control Board at its August 1971 meeting, saying:

> *"The problem of sediment pollution is a cause of increasing concern in the Commonwealth, and its serious proportions and effects indicate a pressing need for the development of a comprehensive state sedimentation control program."*

The Virginia Erosion and Sediment Control Law (VESCL) was adopted by the General Assembly in 1973 as an addendum to the Soil and Water Conservation District Law. The new law required the Commission to establish statewide criteria, standards, and guidelines for the effective control of soil erosion, sediment deposition, and nonagricultural runoff from regulated land-disturbing activities that must be met in any Virginia Erosion and Sediment Control Program (VESCP) to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources.

The VESCL applies to land-disturbing activities that are:

≥ 10,000 ft.^{2}
Smaller area as established in local ordinance
2,500 ft.^{2} in Chesapeake Bay Preservation Areas

★Unlike the Soil and Water Conservation District Law, the VESCL only addresses soil erosion, sediment deposition, and runoff associated with **non-agricultural** activities.

Over time it became evident to the General Assembly that modifications to the law were needed to improve the program's structure and create consistency across all state and local erosion and sediment control programs. As a result, the General Assembly passed an amendment requiring the Soil and Water Conservation Board, which replaced the Soil and Water Conservation Commission, to promulgate **regulations** for the administration, implementation and enforcement of the VESCL.

The VESCL and regulations were amended in 2012 after the passage of the Integration Bill, which requires a VESCP to be administered in conjunction with a local MS4 program and Virginia Stormwater Management Program. The Bill also requires projects of a certain size to

have an approved stormwater management plan in addition to an approved erosion and sediment control plan before the start of land disturbance.

Amendments to the VESCL were also passed in 2013 to reflect the move of the program from the Soil and Water Conservation Board and Department of Conservation and Recreation to the State Water Control Board and Department of Environmental Quality.

3b. The integration of the VSMP

As discussed in Module 2, stormwater runoff occurs when rainwater is unable to infiltrate into the soil. During construction, the removal of vegetation can lead to soil erosion, water pollution, slope failure, etc., which is why the minimum standards (MS) in the regulations include structural and non-structural practices that must be used during construction to keep sediment in place and capture any sediment that is carried by stormwater before it leaves the site.

Sedimentation resulting from missing ESC practices

During construction, stormwater runoff can also pickup and transport construction related waste which can pollute waterways and property. To address this concern, the Virginia Stormwater Management Program (VSMP) regulations require operator's of regulated LDAs to develop and implement a stormwater pollution prevention plan which consists of an erosion and sediment control plan and pollution prevention plans. These plans must detail how erosion and sediment control measures, and pollution prevention measures will be implemented on the construction site.

Trash around construction site – pollution prevention measures not in place

Even after construction stormwater runoff remains a concern. The addition of impervious surfaces such as pavement and roofs decreases a site's ability to infiltrate rainwater. As a result, there is more stormwater runoff reaching waterways, which can cause erosion, localized flooding and property damanage.

Flooding of downstream properties from inadequate post-construction stormwater management
Source: June Bailey, property owner

Starting July 1, 2014, any locality that operates a regulated MS4 is required to adopt and administer a VSMP. Non-MS4 localities may choose to adopt a VSMP or have DEQ administer the program.

Before July 1, 2014, post-construction stormwater was addressed by MS-19; however, after July 1, 2014, ESC plans must comply with the water quantity requirements in the Virginia Stormwater Management Act.

Erosion & sediment controls

(Vehicle washout)

Pollution prevention practices

(Concrete washout)

Post-construction stormwater management

(Rain garden)

Stormwater runoff – always a concern

Virginia Stormwater Management Act and Regulations

The following LDAs must follow the provisions of the Virginia Stormwater Management Act and regulations and obtain state permit coverage and local VSMP authority permit where applicable:

- ≥ 1 acre
- Part of a larger common plan of development or sale that is one acre or more
- Smaller area as established in local ordinance
- ≥ 2,500 $ft.^2$ in Chesapeake Bay Preservation Areas

Highlights of the Virginia Stormwater Management Program

Before construction, regulated LDAs must:

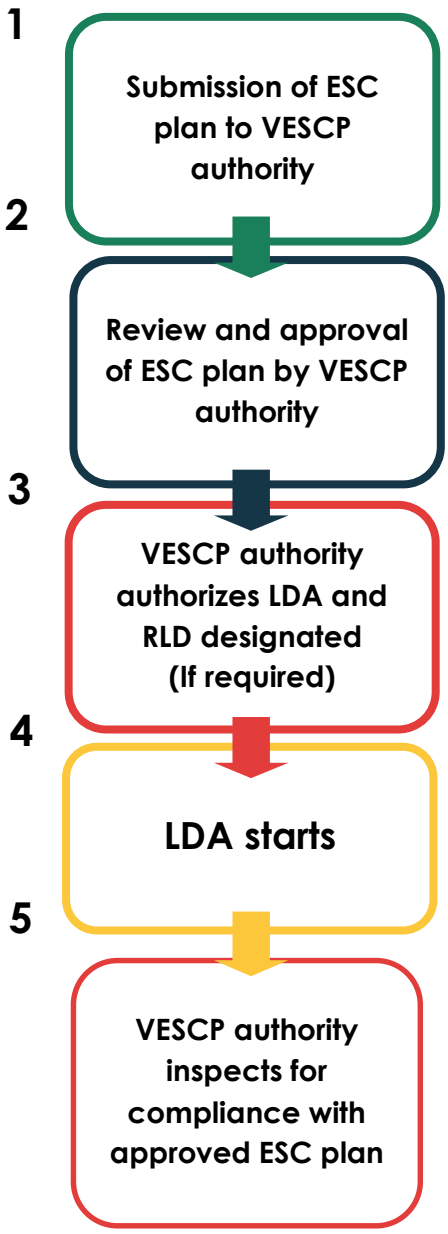
- Have approved stormwater management plan for post-construction control of stormwater quality and quantity
- Have approved erosion and sediment control plan
- Develop pollution prevention plan
- Develop long-term maintenance agreements
- Obtain local VSMP authority permit and state permit coverage where applicable

Comparison of the VESCP and VSMP Process

The flow charts on the following two pages compare the different program processes for LDAs that only fall under the authorization of the Virginia Erosion and Sediment Control Law versus those that fall under the authorization of both the Virginia Erosion and Sediment Control Law and the Stormwater Management Act.

ESC plan approval and permit process for LDA ≥ 10,000 ft.^{2} and <1 acre

(LDAs not subject to the requirements of the Virginia Stormwater Management Act)



ESC and SWM plan review and permitting process for LDA ≥1 acre

(LDAs subject to the requirements of the Virginia Stormwater Management Act)