

STORMWATER MANAGEMENT

Objective:

Provides a general overview of stormwater management including: drainage, flood control, and water quality improvements. The role of the various regulatory agencies and the associated regulations will be explained. (8 hours)

I Instructor Introduction

II Basic Hydrology

- A. Rainfall
- B. Runoff
- C. Variables (perviousness, antecedent rainfall, infiltration, etc.)

III Basic Stormwater

- A. Collection – Purpose of,
 - 1. Gutter
 - 2. Catch Basins Types
 - 3. Sewer/Drains
 - 4. Materials – Pipe Types
 - 5. Outfalls
 - 6. Ditches
- B. BMP's – Purpose of,
 - 1. Non-Structural
 - a. Street Sweeping, Legislation
 - 2. Structural
 - a. Retention/Detention
 - b. Ultra-Urban BMP's
 - c. Grass swales, infiltration trenches, etc.
- C. Low Impact Design Methods

IV Maintenance of Stormwater Facilities

- A. Why maintain
- B. Where it comes from (soil and erosion)
- C. Bank Stabilization
- D. Bioengineering

V Equipment Used in Stormwater Management

- A. Vacuum Trucks
- B. Street Sweepers
- C. Grass Mowing Equipment
- D. Dredges – Types, hydraulic, mechanical
- E. Grade – All

VI Regulations

- A. Wetlands
- B. DEQ – Soil and Erosion, water quality, volume
- C. Soil and Erosion, VDOT
- D. CBLAD
- E. Peak Discharge Reduction

VII Review

- A. Questions and Answers
- B. Written Test

Stormwater Management

Objective: Provide a general overview of stormwater management including: need, design of facilities, philosophy, storm system components, maintenance, governmental agencies,

- I Introduction**
 - A. Outline
 - B. Terminology

- II Basic Hydrology**
 - A. Hydrologic Cycle
 - B. Watershed
 - C. Precipitation
 - D. Important Factors
 - E. Calculations
 - F. Collection System
 - G. Impervious Cover
 - H. Quantity & Quality

- III Urban Pollution**
 - A. What does it look like?
 - B. Problems
 - C. Three Major Types
 - D. Bacterial

- IV Best Management Practices**
 - A. Types
 - B. Bio-Retention

- V Erosion & Sediment Control**
 - A. Types
 - B. Factors that influence
 - C. Tools Preventative Measures

- VI Low Impact Development**
 - A. Defined

- VII Dredging**
 - A. Purpose
 - B. Equipment

VIII Drainage Maintenance

- A. Why Maintain
- B. Requirements
- C. Street Sweeping
- D. Equipment Used
 - Bank Stabilization
 - BMP Maintenance
- E. Vegetative Management

IX Federal & State Regulatory Agencies

- A. Corp of Engineers, EPA
- B. Department of Environmental Quality
- C. Department of Conservation and Recreation
- D. Chesapeake Bay Local Assistance Department

X Review

- A. Questions and Answers
- B. Exam

Public Works Academy
Stormwater Management Quiz

Please answer the following questions based on the information presented in today's course:

1. What is the objective of today's Stormwater Management course?

2. Name one BMP structural component?

3. Name one type of Erosion?

4. What is the purpose of dredging?
