ASCE | CONTINUING EDUCATION

Learn to SWMM

Purpose and Background

SWMM is an easy to use and incredibly versatile modeling tool developed by the EPA. SWMM can be used not only for modeling stormwater systems, but also for sanitary sewer design, rainfall and runoff analysis, open channel flow systems, low impact development (LID) design and much more.

In this two day hands on workshop, you will spend all your time working with SWMM. You will work on example applications and develop your own applications from scratch. After two days you will be up and swimming and ready to use SWMM in the real world.

Topics covered include:

- Using SWMM to calculate runoff
- Storm sewer design using SWMM
- Detention basin application
- Sanitary sewer design
- Low Impact Development and Green Infrastructure modeling
- Drainage design for flood control
- Water quality calculations
- Water supply calculations using SWMM

SWMM is the most used storm water modeling software in the world. But SWMM applications can extend far beyond just storm water analysis. Engineers involved in almost any type of hydraulic analysis would benefit from being able to SWMM. So jump in today.

Seminar Instructor

SCOTT LOWE, PH.D., P.E., M.ASCE, is a professor in the Civil & Environmental Engineering Department at Manhattan College. He teaches undergraduate and graduate courses in the areas of fluid mechanics, hydraulic design, building construction, air quality modeling and coastal engineering. He also works as a consultant at local engineering firms. He has 25 years of engineering experience. He teaches SWMM as part of the undergraduate Hydraulic Design course. He is a professional engineer registered in NY and a member of ASCE.

- **For group training, contact John Wyrick (JWyrick@asce.org) or Stephanie Tomlinson (STomlinson@asce.org)**

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Summary Outline

Day One

- Introduction to SWMM interface and main elements
- A simple SWMM model application
- Working with background maps and automatic scaling
- Storm sewer design for a suburban development
- Storm pipe system layout
- Watershed delineation and connecting runoff to the storm system
- Creating and inputting a design storm
- Including streets and roads
- Examining output and interpreting results
- Resizing pipes

Day Two

- Set up of a pre-development runoff model
- Pre and post development hydrographs
- Detention basin design – volume, surface area, and outlet control sizing
- Sanitary sewer design for a suburban development
- Sanitary sewer pipe layout – mains, laterals and manholes
- Computing and inputting dry weather flow
- Adding wet weather flow
- Specifying rainfall derived inflow and infiltration
- Sewershed delineation
- Interpreting results and resizing pipes

Seminar Benefits

- Learn how to use EPA SWMM
- Gain hands on experience with SWMM
- Develop the confidence to create a SWMM model from scratch
- Be able to complete a storm sewer analysis
- Have the tools to do a sanitary sewer design
- Expand your hydraulic horizons
- Interact with fellow professionals engage in hydraulic analysis

Learning Outcomes

You will understand the various SWMM elements. This is assessed by being able to successfully set up a SWMM model in class.

- You will be able to set up and run a SWMM model from scratch. This is assessed by being able to set up and execute a SWMM model in class.
- You will be able to model a storm sewer system. This is assessed by successfully running a SWMM storm sewer model with no surcharging.
- You will be able to model a sanitary sewer system. This is assessed by successfully running a SWMM sanitary sewer model with no surcharging.

Who Should Attend?

Consulting engineers, engineers involved in land development, engineers involved in green infrastructure or low impact developments, engineers employed by local, state or federal government agencies. Participants should have an understanding of basic hydrology and hydraulics.

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