



## **Advance Sewer Design & Modeling using SewerCAD/SewerGEMS**

### **Course Curriculum (Duration: 50 Hrs.)**

#### **Chapter 1: Introduction to SewerCAD/SewerGEMS**

- Graphical User Interface
- Switch solvers within SewerGEMS
- Duplicate, edit and rename FlexTables
- Use the Sanitary Load Control Center to apply unit loads to manholes
- Setup extreme flows to apply peaking factors to unit loads
- Create and edit new scenarios, calculation options, and profiles
- Use the Unit Sanitary (Dry Weather) Loads manager to import unit loads
- Apply color coding and annotation to models

#### **Chapter 2: Gravity and Pressure**

- Open an existing (preloaded) model
- Draw pressure elements
- Enter pump characteristics
- Determine system head curves
- Model wet wells

#### **Chapter 3: Extended Period Simulations**

- Enter pattern loading data and assign patterns to manholes
- Set up diversions in a sewer model
- Enter pump definitions and inflow hydrographs
- Understand how to set up and use controls in a model
- Use the Scenario Comparison tool to easily compare any two scenarios in SewerGEMS
- Switch between SewerGEMS solvers and compare calculated results

#### **Chapter 4: Geospatial Data Tools**

- Build a sewer model from shapefiles using ModelBuilder
- Import node elevations using TRex
- Import loading data using LoadBuilder
- Import a shapefile as a background image

#### **Chapter 5: Designing a New System**

- Use a Background file (dxf) to draw a network to scale
- Set design constraints and apply SewerGEMS automated design to size pipes
- Create and view engineering profiles

#### **Chapter 6: Catchment Hydrology**

- Assign outflow nodes for catchments as well as enter and assign unit hydrographs for catchments
- Create and assign storm events to scenarios and alternatives
- Review model results using graphs and profile



#### **Chapter 7: Water Quality Analysis**

- Calculate a model using the SWMM explicit solver
- Perform a SWMM water quality analysis in the SewerGEMS interface

#### **Chapter 8: CSO Analysis**

- Model and compute dry and wet weather scenarios
- Set up diversions in a sewer network
- Analyze a combined sewer system

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