



AFMA - Advanced FLO-2D Training Class

May 17 – 19, 2021

Via GoToWebinar

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AGENDA

Monday, May 17, 2021

8:00 – 8:30 am	Check-in, introductions, and overview agenda
8:30 – 9:30 am	Module 1: Debug Tool and Troubleshooting Overview of the debug tool and complementary debug layers, and a review of troubleshooting methods and files. Hands on: Debug FLO-2D Model QGIS Run debug mode, review internal checks, import debug.out, review techniques for solving data errors, discuss conflict matrix.
9:30 – 3:00 pm	Module 2: Advanced Hydraulic Structures Generalized culvert equations for inlet and outlet control. Bridge component for computing discharge using bridge features and channel geometry. Eliminates the need for hydraulic structure rating tables. Break at 10 am Hands On: QGIS Lesson 6+ Hydraulic structure review and troubleshooting overview in QGIS. Review data input and output. Discuss troubleshooting for hydraulic structures and review the hydraulic structure warning and revised rating table output data. Generalized equations. Lunch from 12 – 1 pm Hands On: QGIS Lesson 7 Develop bridge data, create a working model and review results.
3:00 – 3:15 pm	Break
3:15 – 5:00 pm	Module 3: Levee and Dam Failure Simulating levees and dams in FLO-2D. Predicting levee and dam failure breach discharge with prescribed vertical and horizontal rates of breach widening. Hands on: QGIS Lesson 8 Create prescribed breach model for a dam.

Tuesday, May 18, 2021

8:00 – 10:00 am	Module 4: Sediment Transport Conventional sediment transport modeling. Overview, background and review of FLO-2D model sediment transport capacity equations. Hands on: QGIS Lesson 9 Sediment transport modeling for overland flow.
10:00 – 10:15 am	Break
10:15 – 12:00 am	Module 5: Mudflow Simulation Hyperconcentrated sediment flow theory, modeling methods and practical volume approach. Hands on: QGIS Lesson 10 Create a watershed mudflow model and review results.
12:00 – 1:00 pm	Lunch
1:00 – 3:00 pm	Module 6: Dam Breach Erosion Predicting dam breach erosion. Simulating the physical processes of dam failure sediment scour and analyze breach development as an alternative to estimating prescribed breach rates. Hands on: QGIS Lesson 11 Add breach erosion to the prescribed dam failure model.
3:00 – 3:15 pm	Break
3:15 – 5:00 pm	Module 7: Tailings Dam Tool and Two-Phase Flow Tailings dam breach tool for estimating breach volumes. Predicting breach discharge and runout using both FLO-2D sediment transport scour and deposition and mudflow components. Hands on: Lesson 12 Tailings dam tool lesson. Set up a tailing dam failure model.

Wednesday, May 19, 2021

8:00 – 10:00 am	Module 9: Advanced Storm Drain Modeling Overview of FLO-2D integrated surface water and storm drain modeling. Improvements and recent enhancements. Break at 10 am Hands On: QGIS Shapefile Preparation Identify the required storm drain model attributes. Create a set of shapefiles for storm drain modeling. Review the elevation datums and identify the datum converter required for a project.
10:00 – 10:15 am	Break
10:15 – 12:00 am	Module 10: Data Development Inlet and outlet options, gutter flow, data assignment, troubleshooting, and output review. Hands On: QGIS Lesson 3+ Create a complex urban storm drain model. Review rim elevations. Inlet and outfall grid interface. Submerged outfalls. Run model.
12:00 – 1:00 pm	Lunch
1:00 – 3:00 pm	Module 11: Advanced Storm Drain Review Storm drain results and graphical display. Break at 3 pm Hands On: Review storm drain model Review model results and generate output graphics and animation.
3:00 – 3:15 pm	Break
3:15 – 4:45 pm	Module 12: Advanced Storm Drain Review Common issued related to storm drain modeling. Dry cells, surging, volume conservation. Break at 3 pm Hands On: QGIS Load Results Identify dry inlets or outfalls. Eliminate numerical surging and volume conservations issues that typically plague SWMM models.
4:45 – 5:00 pm	Training class wrap-up.