



**IRF**  
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# Roadway Drainage and 2D Flood Modeling

*Expert training by professionals, for professionals*

**Amsterdam, Netherlands**  
**March 21-25, 2022**



# Workshop



# Roadway Drainage and 2D Flood Modeling Workshop

## March 21-25, 2022

### Amsterdam, Netherlands

#### Background

2D flood modeling interprets the 2D equations of flow to find out the water depth and depth-averaged velocity on a grid or mesh. It uses digital terrain modeling and bathymetry of a water channel in the question to outline the 2D-flow of an expected flood. This course will examine how use 2D flood modelling for urban areas. It will also provides an overview of the elements and processes involved in the urban drainage systems and provides guidance on solving routine as well as exceptional issues associated with water management in urban environments. Topics covered include gutter flow, roadway inlet interception, storm drain systems, detention ponds, and stormwater management.

#### Learning Objectives

- ✓ Understanding of basic 2D flood hydraulic modeling and applications.
- ✓ Basic theory and knowledge of unsteady flow hydraulics
- ✓ Determine runoff (peak flows and volumes) from urban watersheds
- ✓ Identify the hydrologic cycle processes most important to transportation hydraulic engineering.
- ✓ Learn the basics of storm water management
- ✓ Apply basic hydraulic principles to urban drainage design.

## Target Audience

- National /State Road & Transport Engineers
- Highway Engineers and Managers
- Hydraulicspersonnel
- Private Consultants & Contractors

## Lead Instructor



**Eric Dean Cook**  
**Senior Advisor, IRF**

*Eric Dean Cook, PE* is a Senior Advisor for the International Road Federation. Since 2008, Eric has served as a trainer, speaker, moderator, facilitator and fellow colleague at numerous IRF workshops, panels, forums and trade visits. Eric is the current Chair for the IRF Committee on Alternative Finance & Procurement.

Eric is a registered professional civil engineer and has technical experience in project planning and design engineering, field experience in construction supervision and delivery audits, and management experience in infrastructure asset performance and organizational development. Eric holds a BS Civil Engineering from Virginia Tech, an MBA from the University of Manchester, and a MS in Finance from Indiana University.

# Schedule

## Monday – Friday (9:00 AM – 4:00 PM)

### March 21

- Introductions to drainage engineering
- Basic roadway drainage 101
- Basic bridge and structures drainage 101
- Overview of floodplain management, policies and procedures
- Case studies and examples

### March 22

- Urban drainage engineering
- Stormwater management
- Drainage construction methods
- Erosion and sediment control
- Case studies and examples

### March 23

- 1D-2D flood models
- Overview of drainage modeling tools and software
- Overview of flood modeling tools and software
- Practical exercises
- Site visit to Directorate-General for Public Works and Water Management (Rijkswaterstaat)

### March 24

- Remote sensing and Arc-GIS for flood mapping
- Data management for Digital Terrain Models
- Meteorological analysis and climate change affects
- Risk planning in flood plain management
- Practical exercises
- Site visit Directorate-General for Public Works and Water Management (Rijkswaterstaat)

### March 25

- Floodplain operations and management
- Floodplain emergency management
- Site visit Directorate-General for Public Works and Water Management (Rijkswaterstaat)

## Registration (hotel accommodation not included)

- 3,000 USD IRF Members
- 3,500 USD NON IRF Members
- 2,500 USD IRF Members (Groups of 3 or more)

<https://irf.wufoo.com/forms/w1scr6u0og62x7/>

### **Seminar Hotel:**

Mövenpick Hotel Amsterdam City Centre  
Piet Heinkade 11 1019 BR Amsterdam, Netherlands



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