

Storm Sewer Detention System Design Using Detention Design Spreadsheet Model:

UD-DETENTION

Presented by:

**Dr. James C.Y. Guo, Professor and P.E.
Department of Civil Engineering
College of Engineering and Applied Science
University of Colorado at Denver**

On

**January 16 and 17, 2003
(Thursday and Friday)**

At

**Academic Computer Laboratory, Room 104,
Technology Building, Auraria Campus,
Light-Rail Stop at W. Colfax Avenue and S. Speer Blvd., Denver, CO**

Sponsored by:

**University of Colorado at Denver,
Urban Drainage and Flood Control District,
and
Colorado Association of Stormwater and Floodplain Managers**

January 2003

Objective

In 2001, the UD-DETENTION model was developed for the purpose of storm water detention system designs. The model includes a set of spreadsheet operations for detention volume calculations, basin shaping, outlet sizing, and reservoir routing. The design procedures used in UD-DETENTION comply with the design protocols recommended for urban areas such as Denver metropolitan areas.

This seminar emphasizes the applications of UD-DETENTION on practical storm water storage designs. This two-day seminar covers the necessary topics, including urban impacts, hydrograph routing theory, types of detention facilities, detention design criteria, determination of detention volume, basin shaping, outlet sizing under inlet and outlet control, and reservoir routing. The workshop sessions provide discussions of how to prepare the input parameters and how to interpret the computer output.

Location

The seminar will be presented at the Academic Computer Laboratory, Room 104, Technology Building, Auraria Campus, downtown Denver. Take I-25 and enter the campus at the Auraria Parkway exit. Ample parking spaces are available at a nominal charge. *The Technology Building is located near the light-rail stop at the northwest corner of Mariposa Street (two blocks west of S. Speer Blvd.) and West Colfax Avenue, Downtown Denver.*

Sponsors and Instructor

The University of Colorado at Denver (CU-Denver), Urban Drainage and Flood Control District, and Colorado Association of Stormwater and Floodplain Managers (CASFM) jointly sponsor this seminar using the latest version of UD-DETENTION for design examples.

Banks of computers will be available to the class for hands-on operations. Dr. James C.Y. Guo will present the seminar and provide the training notes and computer software. Other experts may be invited to give timely responses to the latest developments in the subject. Dr. Guo is the author of several urban storm water design computer models that have been accepted and recommended by the metro-Denver Cities and Counties.

Topics and Schedule (January 16 and 17, 2003)

This two-day seminar emphasizes the applications of hydrologic and hydraulic principles and criteria for storm water storage design. Topics are as follows:

First Day 16 (Thursday)

Time	Subject
8:30-9:00	Registration
9:00- 9:30	Urbanization Impacts on Storm Water
9:30-10:00	Various Facilities for Stormwater Storage
10:00-10:15	Break
10:15-11:00	Layout of Storm Water Detention System
11:00-12:00	Detention Volume by Hydrograph Method
12:00-1:00	Lunch (on your own)
1:00-1:30	<i>Workshop on Hydrograph Method</i>
1:30-2:30	Detention Volume by Volumetric Method
2:30-3:15	Break
3:15-4:00	<i>Workshop on Online and Off-line Detention Volume</i>
4:00-5:00	<i>Workshop on Detention Volume with Multiple Events</i>

2nd Day (Friday)

8:30-9:30	Reservoir Routing Concept (Stage-Storage-Outflow)
9:30-10:00	Basin Pre-shaping and grading for Stage-Storage Curve
10:00-10:15	Break
10:15-11:00	Orifice, Weir, Culvert, and Riser Hydraulics
11:00-12:00	<i>Workshop on Inlet/Outlet Control</i>
12:00-1:00	Lunch (on your own)
1:00-2:00	<i>Workshop on Stage-Outflow Curve</i>
2:00-3:00	Hydrograph Routing Using Storage-Outflow Curve
3:00-3:15	Break
3:15-4:00	Safety and Maintenance
4:00-4:30	Wrap-up

Enrollment and Fees

The registration fee is \$525 per person, which covers a copy of the software, two-day seminar and class notes. Members of the Colorado Association of Stormwater and Floodplain Managers will receive a \$50.00 discount. Please fill out the enrollment form below and mail it to the address shown below. Enrollment is limited to 30 registrants and will be accepted on a first-come, first-served basis.

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ENROLLMENT FORM THE STORM WATER DETENTION SEMINAR

Yes, I would like to register in the above seminar. Attached is a check for [\$525], [CASFM members \$475] (CIRCLE ONE) payable to:
Water Resources Program, University of Colorado at Denver.

Name: Mr./Ms. _____

Company: _____

Mailing Address: _____

Telephone Number: _____ (day/work)

_____ (night/home)

Email Address: _____ (fill in correctly)

mail to: Attn: Dr. James C.Y. Guo, Professor
Water Resources Program, Civil Engineering,
University of Colorado at Denver
P.O. Box 173364, Campus Box 113,
Denver, CO 80217-3364

Your enrollment will be confirmed by E-mail or Phone. For further information, please contact Dr. Guo at 303-556-2849 or E-mail: jguo@carbon.cudenver.edu