

ABOUT THE PROGRAM

LOCATION

The Seminar will be held in Nolte Center for Continuing Education which is located on the Minneapolis Campus of the University of Minnesota, near the corner of 17th Avenue Southeast and University Avenue Southeast.

APPLICATION AND FEES

The fee for the Seminar is \$40.00 which includes daily luncheons and coffee breaks as well as instructional materials. Applicants may, if they wish, register for the first day session (November 20th) only, at a fee of \$20.00. Registrations for the second day only, however, will not be accepted. Registration is personal and non-transferable. A full refund of the fee will be made if the registration is cancelled in advance of the Seminar, not accepted, or if the Seminar is not held. The University reserves the right to cancel if necessary.

ACCOMMODATIONS AND PARKING

No lodgings are available on the University Campus. Registrants should arrange directly with the hotel or motel of their choice for lodging and for meals other than the scheduled luncheons. A list of hotels and motels is available upon request.

Reserved parking is available on campus. Reservations made on the attached form will be filled in the order received and confirmed with your receipt. The fee for 24 hour reserved parking with exit and re-entry privileges is \$1.00 per day. The parking fee is not refundable except when space is not available or if the Seminar is not held.

PLANNING COMMITTEE

Floyd J. Lauman, Committee Chairman, Hancock Concrete Products Company, Minneapolis

C. Edward Bowers, St. Anthony Falls Hydraulic Laboratory, University of Minnesota

Peter A. Fischer, U.S. Corps of Engineers, St. Paul
Allan Gebhard, Barr Engineering Company, Minneapolis

Lowell Guetzkow, U.S. Geological Survey, Minnesota District

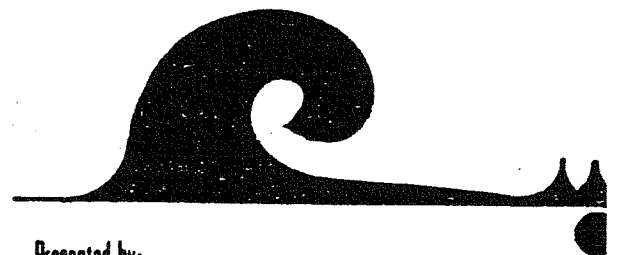
Emanuel T. Jensen, Civil Engineering Consultant, Minnetonka

Arthur F. Pabst, St. Anthony Falls Hydraulic Laboratory, University of Minnesota

Edward Silberman, St. Anthony Falls Hydraulic Laboratory, University of Minnesota

"The University of Minnesota adheres to the principle that all persons shall have equal opportunity and access to facilities in any phase of University activity without regard to race, creed, color, sex, or national origin. Under this principle, educational, cultural, social, housing, extra curricular, and employment opportunities are available to all on an equal basis."

Water Resources Seminar Hydrology— Methods and Applications November 20—21/1972 Nolte Center for Continuing Education



Presented by:
Department of Conferences

 Continuing Education and Extension
UNIVERSITY OF MINNESOTA

in cooperation with

American Society of Civil Engineering
Northwest Section
Water Resources Group

WATER RESOURCES SEMINAR
Hydrology-Methods and Applications
November 20-21, 1972

Comprehensive planning for water and land resource management as well as individual design problems associated with storm runoff requires a proper understanding of Hydrology and of design procedures associated with the subject.

This Seminar is designed to provide information on recent developments in Hydrology, with special emphasis on procedures and methods used by Federal, State, and private organizations active in this field. It will consist of two sessions. The first session, on November 20th, will involve a general review of developments and design procedures. The second session, on November 21st, will be a work session. Its objective is to provide a detailed review of some current design procedures in Hydrology and to present typical problems and solutions. Handouts will be made available for some of the problems. The review will include (1) criteria used as a basis for design, (2) available data such as annual flood data, generalized runoff data, and generalized precipitation data, and (3) variations associated with rural, urban and flood plain studies. The session will also include a brief treatment of commonly accepted procedures for determination of peak rates of runoff followed by hydrograph analysis and urban runoff analysis.

PROGRAM

Chairman: Floyd Laumann
November 20, 1972

- 8:45 Engineering Applications of Hydrology to Design of Water Resources Systems
.... Leo R. Beard, Technical Director, Center for Research in Water Resources, University of Texas
- 9:45 Coffee Break

- 10:15 Availability and Use of Hydrologic Data
.... Donald M. Thomas, Acting Chief, Surface Water Branch, Water Resources Division, U.S. Geological Survey, Washington D.C.
- 11:15 Meteorology of Intense Rainstorms
.... Lawrence A. Hughes, Regional Meteorologist, National Weather Service, Kansas City, Missouri
- 12:15 Lunch
- 1:15 A Parametric Approach to Rural Watershed Hydrology
.... Robert E. Rallison, Chief, Hydrology Branch, Engineering Division, Soil Conservation Service, Washington, D.C.
- 2:00 A Hydrographic Method vs The Rational Method in Urban Hydrology
.... Lawrence R. Molsather, Barr Engineering Co., Minneapolis
- 3:00 Coffee Break
- 3:15 Hydrologic Methods for Highway Drainage Design
.... Frank L. Johnson, Chief, Hydraulics Branch, U.S. Department of Transportation, Federal Highway Administration, Washington D.C.
- 4:00 Discussion and Questions
.... C. Edward Bowers, Professor of Civil Engineering, St. Anthony Falls Hydraulic Laboratory, University of Minnesota

HYDROLOGY WORK SESSION
November 21, 1972

PEAK RATES OF RUNOFF

- 8:30 Introduction — Objectives and Overview
.... C. Edward Bowers
- 9:00 Statistical Analysis of Floods — Log Pearson Type III
.... Arthur F. Pabst, Research Fellow, St. Anthony Falls Hydraulic Laboratory
- 9:20 Generalized Runoff Data — Minnesota Highway Department
.... Leonard Sandstrom, Senior Engineer, Hydraulic Section, Minn. Highway Department

- 9:45 The Rational Method
.... Daniel J. Dunford, Acting Director, St. Paul Public Works Department
- 10:10 Coffee Break
- 10:25 Federal Highway Administration — Potters Method
.... C. Edward Bowers

HYDROGRAPHIC ANALYSIS

- 10:50 General Concepts: Measured and Synthesized Hydrographs; Precipitation Data, Including Time Distribution of Precipitation; Loss Rate Analysis
.... C. Edward Bowers
.... Arthur F. Pabst
- 12:00 Lunch
- 1:00 Corps of Engineers Design Procedures — Example
.... Peter Fischer, Chief, Hydraulic Branch, St. Paul District Corps of Engineers
- 1:45 Soil Conservation Service Procedures — Example
.... John Torgerson, Hydraulic Engineer, River Basin — Watershed, Soil Conservation Service, St. Paul
- 2:30 Computer Programs
.... Arthur F. Pabst
- 3:00 Coffee Break

URBAN HYDROLOGY

- 3:15 Unit Hydrograph — Colorado Method
.... C. Edward Bowers
- 3:45 Flood Plain Studies — Regional Flood, Flow Profile Analysis, and Floodway Definitions
.... Lowell Guetzkow, Chief, Hydrologic Studies Unit, Minnesota District, U.S. Geological Survey
- 4:30 Recent Developments
.... C. Edward Bowers

WATER RESOURCES SEMINAR
Hydrology — Methods and Application

REGISTRATION FORM
(Duplicate for Additional Registrations)

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November 20-21, 1972
Nolte Center for Continuing Education

Mr. _____
Ms. _____
NAME (Please Print or Type)

(Phone)

ADDRESS

(Street and Number)

(City)

(State)

(Zip)

AGENCY OR ORGANIZATION

POSITION TITLE

- I enclose \$40.00 (check or money order payable in U.S. funds to the University of Minnesota) in payment of Seminar fee.
- I enclose \$20.00 in payment of fee for the first day of the Seminar only.
- Please reserve a parking space for which I enclose an additional \$2.00 (\$1.00 if registered for first day only.)
- Fees are to be paid by my agency or organization. Enclosed is a letter of authorization to bill and/or a purchase order number (please specify on billing authorization whether registration is for both days or first day only.)
- Please send hotel/motel list.

SIGNATURE

DATE

Mail to: Director, Department of Conferences, Nolte Center for Continuing Education