

19th Annual Water Resources Conference

PROGRAM DESCRIPTION

The Water Resources Conference provides an opportunity to examine current water resources topics and issues. Approximately one-third of this year's topics relate to lakes and lake management. Other topics include soil revegetation, shoreline erosion protection, waste management, instream flow analysis, and available computer software. Also scheduled is an entertaining dinner presentation on the future of the engineering profession.

This conference combines educational formats of general sessions and workshops. Concurrent workshops, scheduled on Thursday afternoon, will provide a classroom-style in-depth look at four selected design, analysis, and management techniques. Friday afternoon's optional workshop on the use of HEC-1 on microcomputers will be held in the Earle Brown Center's Computer Laboratory.

This year's conference is again offered at a moderate fee, which includes meals and refreshments. Conference attendees will be awarded one CEU (Continuing Education Unit).

PROGRAM SCHEDULE

Thursday, November 20, 1986

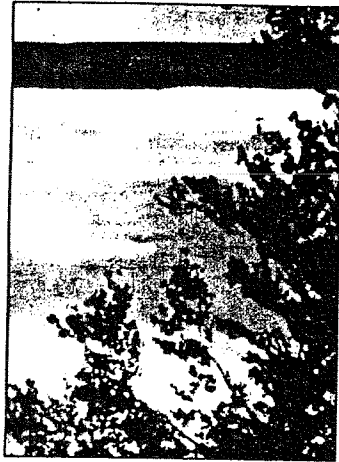
- 8:00 a.m. Final Registration
- 8:30 a.m. Welcome and Introductions
Al Fandrey, Conference Chair
- 8:45 a.m. **PRECIPITATION TRENDS**
Recent precipitation levels in Minnesota are as pronounced as any observed in past periods. Constraints on the intensity and the duration of the current wet condition are implied by historical records used as a model of the climate. The adequacy of such a model is compromised if the climate is changing.
James A. Zandlo, Assistant State Climatologist, Minnesota Department of Natural Resources, Division of Waters
- 9:30 a.m. **HIGH GREAT LAKES WATER LEVELS: CAUSES AND MAN'S ATTEMPTS TOWARD MODIFICATION**
This presentation will center around the long-term as well as short-term factors which influence the levels of the Great Lakes. Climateological changes and the limited role of man-made controls will be discussed. Past studies which investigated Niagara River control structures, and diversions to the southwest, are presented along with the new efforts currently underway to decrease the record high levels and lessen shoreline damages.
Anthony J. Eberhardt, P.E., Assistant Chief, Water Control Section, Buffalo District, Corp of Engineers
- 10:15 a.m. Break
- 10:30 a.m. **LOCAL HIGH LAKE LEVELS: PROBLEMS & SOLUTIONS**
The past several years approximately 40 lakes in Minnesota have and continue to experience significant rising in water levels, resulting in major damages to private development and public facilities as the lake reclaims its own. The solutions to these rising water level problems are often very complex and require balancing the public's resource interests with the private interests within the scope of state policies and regulations.
Ronald D. Harnack, Minnesota Department of Natural Resources, Division of Waters
- 11:15 a.m. **OHW DETERMINATION: ART OR SCIENCE**
Resource management and riparian rights pertaining to Minnesota inland lakes are dependent upon identification and establishment of that lake's Ordinary High Water (OHW)

Co-sponsored by:
Minnesota Section, A.S.C.E.

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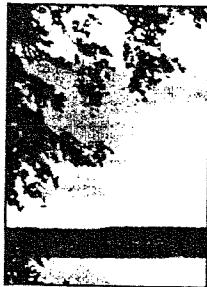
Presented by:
Earle Brown Continuing Education Center
November 20-21, 1986

19th Annual Water Resources Conference



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Minneapolis, MN 55455

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associated shore processes. Types of shore protection measures will be identified and their pros and cons discussed. The regulatory requirements for shoreline protection will also be briefly presented, as well as sources of additional information.

Allan M. Kean, Hydraulic Engineer, St. Paul District, Corps of Engineers

- 2:30 p.m. Break
- 3:00 p.m. Repeat Concurrent Sessions A, B, C, and D
- 4:30 p.m. Social Hour
- 5:30 p.m. Dinner

THE FUTURE IS NOT WHAT IT USED TO BE!
Nelson Otto, Futurist, Anticipatory Sciences, Inc.

Friday, November 21, 1986

8:30 a.m. Presentations and Panel

A. INTERNAL DYNAMIC PROCESSES AND LAKE MANAGEMENT

Lakes respond differently to management efforts. Variation in the size and depth of lake basins determines the timing and magnitude of internal dynamic processes. These processes will be considered as they influence phosphorus dynamics in Twin Cities Metropolitan Area lakes. Several models will be presented which will allow the lake manager to evaluate general management scenarios for a range of lake types.
Dick Osgood, Limnologist/Environmental Planner, Metropolitan Council

B. TROPHIC STATUS OF MINNESOTA LAKES

An analysis of the trophic status of Minnesota lakes was conducted using data from STORET, U.S.-EPA's national water quality data bank. Total phosphorus and secchi disk data, collected between 1980-1985, for approximately 1,000 lakes was used in this analysis. This analysis assesses regional patterns in lake trophic status and lake morphometry. Implications pertaining to lake management and lake restoration are discussed relative to these regional patterns.

Steven A. Heiskary, Senior Biologist, Minnesota Pollution Control Agency

C. REVIEW OF MINNESOTA'S LAKE RESTORATION PROJECTS

The Minnesota Pollution Control Agency has been administering lake restoration projects from 1976 to the present. The presentation will include a description of restoration techniques implemented during this period, as well as a review of reasons for the success or failure of specific restoration techniques. The focus of future lake restoration projects relative to MPCA guidelines and programs will also be discussed.

Mark D. Tomasek, Clean Lakes Program Technical Coordinator, Minnesota Pollution Control Agency

10:15 a.m. Break

10:30 a.m. **INSTREAM FLOW ANALYSIS USING THE INSTREAM FLOW INCREMENTAL METHODOLOGY**

In recent years, the Federal Energy Regulatory Commission has required instream flow analysis to set minimum stream flows for fisheries at hydroelectric projects. In many cases the FERC requires that the instream flow analysis be performed using the Instream Flow Incremental Methodology (IFIM) and as a result, the IFIM has become somewhat of a standard and is used by many agencies principally in eastern and western states. This presentation will provide an introduction to the IFIM analysis. An example of the use of the method will also be provided.

Thomas J. Sullivan, P.E., Stetson-Harza Inc.

elevation. Identification of the OHW comes from an examination of the bed and banks of a lake to ascertain the highest elevations where the presence and action of water has occurred for a sufficient length of time to leave recoverable evidence.

Kenneth D. Reed, Minnesota Department of Natural Resources, Division of Waters

11:45 a.m. Lunch

THE JIM FALLS HYDRO REDEVELOPMENT PROJECT

This project is underway on the Chippewa River near Eau Claire, Wisconsin. When completed in 1988, the hydro project will increase the peak output at the Jim Falls site from 11.4 to over 48 megawatts. A summary of project features and construction development will be presented.

David F. Guyot, Managing Project Engineer, Black & Veatch Engineers-Architects

AFTERNOON CONCURRENT SESSIONS

1:00 p.m.

A. REVEGETATION OF DISTURBED SOIL

This session will present information useful in establishing turf in various situations. Topics include soil testing, soil preparation, seed mixtures, fertilizers, watering, mulching, sodding, and temporary erosion control measures.

Leo J. Holm, P.E., Agricultural Engineer, State of Minnesota Department of Transportation

B. SOIL CONSERVATION SERVICE HYDROLOGY: ASSUMPTIONS AND SENSITIVITY

Discharge and hydrograph computations based on SCS techniques have become widely used and accepted. Understanding the methods and assumptions used in formulating these procedures is a must for their proper application.

Sonia Jacobsen, Soil Conservation Service

C. STRATEGIES FOR WASTE MANAGEMENT

1) **THE WHY, WHAT AND HOW OF HAZARDOUS WASTES**

This presentation will provide a summary of the key components of hazardous waste regulations, including a) What is hazardous waste? b) Who is impacted by the regulations? c) Proper procedures for containerization and storage, d) Proper transportation/manifesting, e) Options for disposal, and f) Civil and criminal liabilities for mismanagement (enforcement policies). The presentation will emphasize proper management procedures to be used to comply with the hazardous waste regulations. Recent amendments and modifications to the regulations will be addressed.

Larry Deeney, Environmental Toxicologist, PACE Laboratories Inc.

2) **SOLID WASTE DISPOSAL TECHNOLOGIES**

This presentation will discuss the engineering design principles employed in three land disposal technologies (Zone of Aeration Land Disposal, Zone of Saturation Land Disposal, and Controlled Gradient Land Disposal) which ensure minimum impact to the site-specific ground water system by producing as little leachate as possible and maximizing the collection of leachate which is produced. The presentation also demonstrates the importance of defining the proposed land disposal site's specific hydrogeologic conditions in order to ensure that the appropriate technology is applied and to develop an effective ground water monitoring program to monitor site performance. Case studies will be presented.

Mark E. Smith, P.E., Engineering Manager-Land Disposal Section, RMT, Inc.

D. SHORELINE EROSION PROTECTION

This presentation is a primer on coastal engineering, with a focus on shoreline erosion protection for inland lakes, including the Great Lakes. The many variables affecting shoreline erosion (including high lake levels) will be discussed, along with