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M.W.R.R.I. DIRECTOR NAMED EXECUTIVE SECRETARY OF UNIVERSITIES COUNCIL ON WATER RESOURCES

On January 1, 1971, Dr. Warren Viessman, Jr. will become Executive Secretary of the Universities Council on Water Resources. This is a voluntary organization of the universities actively engaged in education and research in fields related to water resources development and utilization. Organized for the purpose of concerted action in whatever ways may seem desirable for the encouragement of such education and research. There are currently 61 American university members and affiliate memberships in Australia, Canada, Israel, Thailand, and the Netherlands. UCDWR has been an important factor in the development of such legislation as the Water Resources Research Act of 1964 and in proposals for new legislation relating to university involvement in water resources.

1971 SUMMER INSTITUTES PLANNED

The Water Resources Research Institute will sponsor two one-week Summer Institutes to be held this summer. The first Institute, entitled "Optimal Analysis of Water Resources Systems", will be held from July 18-23. The second Institute, entitled "Simulation of Water Resources Systems", will be held from July 25-30. Detailed information on program content will be included in a later issue of the Newsletter.

RESEARCH AND DEVELOPMENT SOURCES SOUGHT

Firms are invited to submit their qualifications for consideration to "Develop a Procedure for Acquiring and Disseminating Information on Water Use". The objective of this program is to create a system based upon the determination to user needs for information on water supply, efficiency of water, water demand, extent of reuse, and change in quality and quantity through use.

Prospective offerors must show extensive experience in planning and design of water resources data systems with demonstrated competence in economic evaluation of water data needs. Telephone inquiries will not be honored. Responses shall be in one copy to the following address:
N.W.R.R.I. PROPOSALS SUBMITTED

N.W.R.R.I. matching grant proposals submitted to Washington for consideration for funding for Fiscal Year 1972 include:

Otis E. Cross, University of Nebraska, "Animal Waste Utilization for Pollution Abatement -- Technology and Economics. Phase 2"

Loyd K. Fischer, University of Nebraska, "Problems and Potentials of Multipurpose Districts as Agencies for Managing Water and Related Resources -- the Natural Resource Districts of Nebraska, A Case Study"

Dale R. Henning, University of Nebraska, "Prehistoric Reaction to Climatic Change - A Guideline for Contemporary Water Resources Planning"

Norman J. Rosenberg, University of Nebraska, "Alteration of the Surface Energy Balance with Reflectant Materials to Increase Water Use Efficiency in Irrigation Agriculture"

James R. Steadman, University of Nebraska, "Pollution of Irrigation Waters by Plant Pathogenic Organisms"

Alvin J. Surkan, University of Nebraska, "Dynamic Model for Urban Hydrologic Systems"

Charles R. Wallace, Kearney State College, "Ecologic Implications of Large Scale River Water Diversion"

N.W.R.R.I. Title II proposals submitted to Washington for consideration for funding for Fiscal Year 1972 include:

Dr. Edward J. McPartland, Doane College, "Measuring and Developing Methods of Attitude and Motivational Change In Implementing the Big Blue River Basin Water Plan"

FWQA BOOKLET ON FISH MORTALITIES

The Federal Water Quality Administration has published a new booklet, entitled "Investigating Fish Mortalities". The 21-page pamphlet is a comprehensive guide for the field investigator in procuring samples, preparing specimens for analysis and evaluating data to determine the cause of fish deaths.

The FWQA has established voluntary reporting procedures with the States through its nine regional offices to provide a swift response to fish kills. Although the States exercise primary responsibility for investigating fish kills within their boundaries, the FWQA shares this responsibility where interstate waters are affected.

Copies of "Investigating Fish Mortalities" may be obtained from the Office of Public Information, Federal Water Quality Administration, U.S. Department of the Interior, Washington, D.C. 20242.
The House has agreed to Senate amendments to a bill (HR.18260) which would establish educational programs to encourage understanding of policies and support of activities designed to preserve and enhance environmental quality and maintain ecological balance.

Under this measure, the Commissioner of Education would award grants and contracts to institutions of higher education and other public and private non-profit agencies for research, pilot programs, demonstrations, and operational programs to educate the public on the problems of environmental quality and ecological balance. This includes: development of curriculums; preservice and inservice undergraduate and postgraduate training programs for educational personnel to prepare them to teach in areas related to environmental quality; community education programs; and dissemination of information about environmental education.

Authorizations of $6 million for Fiscal Year 1972 and $10 million for each of the succeeding Fiscal Years through 1974 would be provided to carry out the provisions of the bill.

Walter J. Hickel, Secretary of the Interior, recently announced the selection of 20 additional research projects for Fiscal Years 1971, authorized under Title II of the Water Resources Research Act of 1964. He also stated that these 20 projects are directed
primarily at urban and metropolitan water problems.

The Title II program provides funds to support the work of highly skilled and knowledgeable water research organizations and individuals, both academic and non-academic, in undertaking research that seeks solutions to urgent water problems throughout the Nation.

A list of the proposed research awards follows:

The Dow Chemical Company, Midland, Michigan -- An Economic Analysis of Erosion and Sediment Control Methods for Watersheds Undergoing Urbanization - $72,427

North American Rockwell Corporation, Canoga Park, California -- Urban Water Development and Management in Arid Environments - $63,655

West Virginia University, Morgantown, West Virginia -- Water Service Prices: A Principal Component and Regression Analysis of Determinants - $30,428

Engineering-Science, Inc., Arcadia, California -- Management of Surface Runoff in Urban Areas - $75,000

Battelle Memorial Institute, Columbus, Ohio -- Urban Policy and Political Institutions in Managing Water Quality for Lake Erie - $60,930

Analytic Sciences Corporation, Reading, Massachusetts -- Develop a Model of Institutional Relationships in Highly Urbanized Areas - $80,600

ENWATS, Cambridge, Massachusetts -- Control Methodology for Storm-Drainage Systems - $100,000

Urban Systems Research and Engineering, Inc., Boston, Massachusetts -- Relationship Between Housing and Water Resources Planning and Development - $97,993

Metropolitan Washington Council of Governments, Washington, D.C. -- Analysis of the Joint Interactions of Water Supply, Public Policy, and Land Development Patterns in an Expanding Metropolitan Area - $109,808


Massachusetts Institute of Technology, Cambridge, Massachusetts -- Forecasting and Control of Urban Runoff - $94,992


Indiana University, Bloomington, Indiana -- Institutional and Legal Prescriptions of Urban Water Use and Management - $34,152

Regional Science Research Institute, Philadelphia, Pennsylvania -- Optimal Patterns of Urban Land Use for Preservation of Water Resources - $90,000

Environmental Dynamics, Inc., Los Angeles, California -- Synthesis and Evaluation of Urban-Regional Hydrologic Rainfall Runoff Criteria - $85,000

Utah State University, Logan, Utah Social Impact of Water Resource

Development Projects and Their Implications for Urban and Rural Development: A Post-Audit Analysis - $82,869


Colorado State University, Fort Collins, Colorado -- Metropolitan Water Intelligence Systems: The Development of Criteria and Rationale for the Establishment of Centralized Metropolitan Water Intelligence Systems in Urbanized and Urbanizing Areas - $100,000

Desert Research Institute, Reno, Nevada -- Development and Management of Ground-Water and Related Environmental Factors in Arid Alluvial and Carbonate Basins in Southern Nevada - $24,950

CASE STUDIES IN WATER RESOURCES SYSTEMS ANALYSIS

The Hydraulics Division of the Water Resources Systems Committee is developing a program for the publication in ASCE journals and for conference presentation of papers describing case studies in water resource systems analysis. The case study papers should involve the direct application of the mathematical techniques of systems to actual water resources problems. Emphasis is to be on examples where the use of systems analysis has been implemented and has influenced the planning, design and/or operation of a water resource system.

Case studies in the systems areas of ground water, surface water, water quality, desalination, power generation, and similar areas are desired. Case studies which include other disciplines such as ecology and biology as they affect water resource systems are also encouraged. Papers or abstracts should be submitted directly to Professor John A. Dracup, Publications Committee, Hydraulics Division, 7620 Boelter Hall, University of California, Los Angeles, California 90024.

NATIONAL ENVIRONMENTAL POLLUTION CONFERENCE

The U.S. Department of the Interior, in cooperation with other Departments and agencies, sponsored a four-day National Environmental Conference and Exposition in the Nation's Capital on September 29-30 and October 1-2. The objective: Through timely discussion and related exhibits to develop positive, constructive and cooperative actions of government, organizations, educators, industry, scientists and the general public to halt this national crisis.

During the four-day Conference and Exposition, government officials-federal, state and local--considered environmental standards, legislation and enforcement measures. Industry leaders presented technological equipment and techniques for combating pollution. Scientists and educators discussed anti-pollution requirements and ethics. Organizations and institutions determined ways and means to mobilize public action and influence for improving
our total environment. Speakers at the sessions represented all levels of government, industry, organizations, institutions and public interests. Exhibitors included manufacturing, servicing and consulting firms, organizations and institutions involved in pollution abatement and research.

**UCOWR ANNUAL MEETING HELD IN VIRGINIA**

The Universities Council on Water Resources held its 1970 Annual Meeting in Blacksburg, Virginia. The theme of the meeting was "The University's Role in National Water Policy". Dr. Gilbert F. White of the University of Colorado gave the keynote address -- "The University and National Water Policy."

The Annual Business Meeting of the Universities Council on Water Resources was held on Tuesday, July 29. In addition to its regular business, the Council passed a number of resolutions resulting from the discussions of the previous two days:

1. Resolution on National Policy Concerning Safety of Public Water Supplies
2. Resolution on Pollution from Industrial Wastes
3. Resolution on Water Pollution Control Legislation
4. Resolution on Water Resources Evaluation
5. Resolution on Technology Assessment
7. Resolution on The Support and Use of the Behavioral Sciences in Water Resources
8. Resolution on Interdisciplinary Discussion
9. Resolution on Interdisciplinary Approach to Water Resources and Social Goals
10. Resolution on Water Resources Planning Principles and Guidelines
11. Resolution on Appraisals of the Alternatives Approach
12. Resolution on Water Quality Bench Marks

**REORGANIZATIONAL PLANS FOR ENVIRONMENTAL PROGRAMS**

The President has submitted to the Congress Reorganizational Plans Nos. 3 and 4 of 1970, establishing the Environmental Protection Agency (EPA) as a new, independent agency within the Executive Branch, and the National Oceanic and Atmospheric Administratic (NOAA) in the Department of Commerce.

The creation of EPA will have the following advantages:

-- It will upgrade the effectiveness of the Federal Government's major pollution control programs.

-- It will provide a central focus for an evaluation of all pollution-related activities of the Federal Government.
-- It will service to upgrade the importance of environmental considerations and pollution programs within the Federal Government, and over a period of time tend to have a similar effect on program priorities within state and local governments.

-- It will clarify industry responsibility by providing consistent standards and a single enforcement agency.

-- State and local pollution control agencies will be able to look to one federal agency for all their financial support and technical assistance.

-- It will insulate pollution abatement standard-setting from the promotional interests of other departments.

The EPA will have an estimated FY 1971 budget of $1.4 billion and 5,500 personnel, and consist of the following:

-- The Federal Water Quality Administration (FWQA), now in the Department of the Interior;

-- the National Air Pollution Control Administration (NAPCA), now in the Department of Health, Education and Welfare;

-- parts of the Environmental Control Administration (Bureaus of Solid Waste Management, Water Hygiene and a portion of the Bureau of Radiological Health), also from HEW;

-- the pesticides research and standard-setting program of the Food and Drug Administration, HEW;

-- the pesticides registration authority of the Department of Agriculture;

-- Authority to perform general ecological research, from the Council on Environmental Quality (CEQ);

-- certain pesticide research authorities of the Department of Interior;

-- the environmental radiation protection standard-setting function of the Atomic Energy Commission;

-- the functions of the Federal Radiation Council (FRC).

The mission of NOAA is to organize a unified approach to the problems of the ocean and the atmosphere and to create a center of strength within the civilian sector of the Federal Government for this purpose.

The NOAA will have an estimated 1971 budget of about $270 million and over 12,000 personnel and will consist of the following:

-- The Environmental Science Administration, already a part of the Department of Commerce;

-- most of the Bureau of Commercial Fisheries, now in the Department of the Interior;

-- the Marine Minerals Technology Program of the Bureau of Mines in the Department of the Interior;

-- the marine sports fishing program of the Bureau of Sports Fisheries and Wildlife in the Department of the Interior;

-- the Office of Sea Grant Programs of the National Science Foundation

-- elements of the United States Survey of the Department of the Army.

Upon establishment of NOAA, the following programs will be
transferred to it by executive action. (No legislative authority is required to effect these transfers):

--- The National Oceanographic Data and Instrumentation Centers of the Department of the Navy;

--- the National Data Buoy Program of the Department of Transportation.

--- National Water Commission Studies

The original tentative program of 31 "Special Studies" developed early in 1969 by the National Water Commission was reviewed and revised by the Commission at its December 1969 meeting. The revised program calls for 22 Special Studies, a number of which will be carried out by contract, and numerous report development studies which will be carried out largely by the staff. The "outside" studies underway are primarily Special Studies. The following table lists the outside studies initiated to date.

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<th>Subject of Study</th>
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RESEARCH REVIEW

Project Title: Influence of Fertilizer Practices on Water and the Quality of the Environment

Principal Investigator: Professor Robert A. Olson

Dates: July, 1970 to June, 1972

Nation-wide concern about the quality of our streams and lakes is growing. A problem which is particularly troublesome is that of the increasing rate of eutrophication of many of our prized waters. The removal of nutrients which stimulate algae and other forms of plant life is not a simple matter. Nutrients which are derived from sewage disposal systems, livestock feedyards, and from the agricultural enterprise in general all contribute to the problem. The news media are filled with claims and counterclaims of responsibility. All agree, however, that the Number One culprit in this respect is soluble Phosphorus.

It is imperative that a thorough understanding be developed concerning the source of nutrients responsible for eutrophication. If farmer fertilizer use practices are contributing significantly to the problem, this should be fully elucidated so that corrective measures can be developed. In view of the very large contribution that fertilizers make to our total agricultural productivity, it would be disastrous to our food production chain if a misinformed public were to impose ill-conceived controls which restricted the efficient use of fertilizer chemicals.

It is very important that the manner and magnitude of nitrogen and phosphorous movement be understood from the zone of placement in the soil. Particular attention should be paid to the "gray zone" between the soil profile and the water table. Practices which will retain the nutrients in the rooting zone for maximum crop utilization and minimum loss to drainage waters should be evaluated and promoted; similarly, those management practices responsible for greatest losses should be brought into focus and discouraged.

This research is designed to determine the fate of nitrogen and phosphorous fertilizer applied to soils under various conditions of management. The results should be of considerable practical value to those vitally engaged in water quality management.

Nebraska has an ideal environment for conducting the type of study proposed. It has a climatic range of semi-arid to sub-humid. Associated are vast areas of native range, of dry-farming, of intensive sub-humid cropping, and of very intensive irrigation agriculture. Results obtained should prove distinctive for these ecological regions and are expected to have full application for similar land types in adjacent states of the northcentral U.S. This research is considered to be of regional and national significance.
NEW PUBLICATIONS RECEIVED
BY INSTITUTE - NOVEMBER


5. "Man and Aquatic Communities", Water Resources Research Institute, Oregon State University, Spring Quarter 1970.


NEWSLETTER ITEMS

Newsletter items and inquiries should be sent to: Dr. Warren Viessman, Jr., Director, N.W.R.R.I., 212 Agricultural Engineering Building, East Campus, Lincoln, Nebraska 68503.