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WATER RESOURCES NEWS

NEBRASKA WATER RESOURCES RESEARCH INSTITUTE
212 AGRICULTURAL ENGINEERING BUILDING

THE UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA 68503

Volume 4 Number 7 September Issue 1972

DEADLINE FOR ALLOTMENT PROPOSALS

The deadline for filing research proposals has now been established. Basic Allotment proposals must be received not later than December 15, 1972.

It is suggested that prospective principal investigators make an appointment to discuss their research proposals with the Institute Director before they begin writing.

For furthur information contact:

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NORTH LOUP PROJECT AUTHORIATED

On September 6, 1972 the Senate Interior Committee approved the following bills: S. 2350, authorizing construction of the North Loup division of the Missouri River Basin Project in Nebraska; S. 353, approving construction of the O'Neill unit of the Missouri River Basin Project, Nebraska; and S. 2901, specifying a 13-1/2 mile segment of the Colorado River near the Utah-Colorado border as a part of the national wild and scenic rivers system.

NWC ENDORSES COST-SHARING FOR ALL FEDERAL WATER RESOURCE PROJECTS

The National Water Commission (NWC) recommends shifting to

local interests and/or beneficiaries a greater portion of the cost of Federal flood control projects. The Commission would require "complete cost-sharing" for navigation, irrigation and other water resource programs. "Where practical, flood control taxing districts should be used as a means of collecting user charges from beneficiaries of flood control projects." The prevention of direct and indirect subsidization of all water projects is the goal of the National Water Commission proposal.

An unreleased policy paper entitled "Sharing the Cost of Water Development Projects," based on two reports prepared under the contract, contains the Commission's pending recommendation. One of the reports, by Economists Steve H. Hanke of Johns Hopkins University and Robert K. Davis of George Washington University, argues that ton-mile taxes on inland waterways would "not only promote equity but would reallocate some low-valued traffic from high-cost portions of the system." The second report, by the National Bureau of Standards, says "a navigation user charge per barge-ton-mile or a fuel tax seems appropriate to associate the costs of navigation services directly with the beneficiaries.***It is suggested that user fees be considered both in project design and in allocation of cost shares."

TUITION FOR TRAINING COURSES IMPOSED BY EPA

Departing from twenty years' precedent of tuition-free training courses for state and local employees working for environmental agencies, the Environmental Protection Agency has published a tuition schedule to be used for attendance at technical and managerial training courses conducted by the Agency under its air, water quality, water hygiene, solid wastes, radiation, and pesitcides program. All fees must be paid in advance.

In some cases, if the Agency finds that it is in the best interests of the government, the charges may be waived. Tuition fees will range from $40 to $115 per student day depending upon the program involved.

WATER PROBLEMS EMPHASIZED BY EPA

The Environmental Protection Agency's Office of Air and Water Programs is placing more emphasis on water pollution control. EPA Administrator William D. Ruckelshaus announced the key change is the creation of two deputy assistant administrator posts for water programs.

Assistant Administrator for Air and Water Programs, Robert L. Sansom, said Deputy Assistant Administrator Eugene T. Jensen would be in charge of Water Programs Operations and that another deputy, not yet named, would be responsible for water planning and standards.

Water Programs Operations will be divided among four major divisions: (1) municipal waste water systems, (2) oil and hazardous materials, (3) water quality and non-point source control, and (4) water supply. The Water Programs Operations Office will also have a manpower development staff to arrange for the training of treatment plant operators and water pollution control specialists.

The Planning and Standards Office will have three divisions: (1) effluent guidelines, (2) monitoring and data support, and (3) water planning.

"We are making these changes in order to give greater emphasis to water pollution control strategy and in order to monitor nationwide cleanup progress," Ruckelshaus said. "The Air and Water Programs Office will also continue to emphasize the development and provisions of states and other implementing bodies of expert technical guidance in the water control field."

ENVIRONMENTAL PROTECTION AGREEMENT SIGNED BY U.S.-U.S.S.R.

An "Agreement on Cooperation in the Field of Environmental Protection," the first comprehensive agreement on the environment between two major nations, was signed by President Nixon and President Podgorny of the U.S.S.R. in May, 1972.

The agreement provides for research, mutual cooperation, and exchange of information on: air and water pollution; agricultural pollution; improvement of the urban environment; preservation of nature and organization of national parks; marine pollution; biological and genetic consequences of environmental pollution; influence of environmental changes on climate; arctic and subarctic ecological systems; earthquake prediction; and administrative measures for protecting environmental quality.

A U.S.-U.S.S.R. Joint Committee on Cooperation in the Field of Environmental Protection will meet once a year in Washington and Moscow, alternately. Two coordinators--one Soviet and one American--will maintain contact between sessions. The joint committee will meet to discuss details of bilateral programs which would involve exchange of scientists, experts, and research scholars; organization of bilateral conferences, symposia,

and meetings of experts; exchange of information and research findings; and the development and implementation of joint programs and projects.

This unique agreement will demonstrate the relative effectiveness of legal and administrative measures to protect the environment as practiced by two very different forms of government. Control is exercised through legislative measures in the U. S. and through a state-control mechanism in the U.S.S.R.

HAZARDS LINKED WITH LARGE-SCALE WATER DEVELOPMENTS

Long-term regional and continental environmental hazards that could result from large-scale water developments are often glossed over, warned a scientist of the U. S. Geological Survey, Department of the Interior.

In a recent paper presented to the Water Resources Symposium, International Geographical Congress, at the University of Victoria British Columbia, Canada, Dr. Raymond L. Nace, a research hydrologist, USGS, Raleigh, North Carolina office, said that "traditionally, planners and developers have given little thought to potential side effects and long-term ecological consequences of water manipulations," and that "often, when they occur, have come as surprises.

Some of the "surprises," Nace noted, are earthquakes caused by dams and impounded water, land subsidence caused by groundwater pumping, and epidemic spread of water-borne disease in irrigation projects.

"Adequate means are not available to cope with many environmental hazards," the Survey scientist emphasized, "and their occurrences are warnings of disastrous consequences that may result from ever larger assaults being planned upon the environment in many parts of the world."

"Endangered biological species, disrupted landscapes, and other environmental effects are symptoms of inadequate application of science," Nace told the symposium. "When the 'Face-lifters' of Mother Earth alter natural systems, they disturb the natural dynamics, and set in motion forces that follow, not necessarily their wishes, but the inexorable laws of physics, chemistry, and biology."

In a concluding statement, Nace said that "in natural systems, organisms adjust to environmental 'niches' over long periods of time. When a single factor in the balance is disturbed or removed, it sets up a whole series of interactions. Entire populations of specific organisms may be

eliminated or harmed. When several or many factors are disturbed, the effects often are so far-reaching that they can hardly be evaluated after they occur, let alone be predicted."

NWC RECOMMENDS ENACTMENT OF WATERWAY USER CHARGES

A strongly worded policy statement supporting waterway user charges has been proposed by the National Water Commission (NWC) as follows: "Congress should impose a system of charges on the users of the Nation's inland waterways which, consistent with the types of charges imposed on highway users, would not discriminate among different waterways. Charges should be set at a level to recover costs of operation and maintenance and should be imposed on a step basis over a period of five years to permit gradual adjustment to the charges."

After discussing the situation, the Commission urged the adoption of variable user charges reflecting actual operation and maintenance costs, such as ton-mile taxes calculated for each waterway segment, rather than uniform charges like fuel taxes or lockage fees. The Commission's final report, to be released this fall, will include the policy recommendation on user charges. Congress established the National Water Commission in 1968 to make a five-year study of national water resource problems and programs and to recommend new policies to the President and Congress.

REFUSE FOR RECREATIONAL GROUNDS

To avoid problems associated with sanitary landfills in areas with high water tables, Virginia Beach and Norfolk, with EPA financial assistance, have worked upward from the land surface with sequential layers of compacted refuse and soil. The refuse will form a 65-foot hill which is being pressed into use as part of a large park. An amphitheater, coasting ramp, and landscaping will transform the refuse mountain into a valuable resource. The cost is less than the conventional sanitary landfill (less than $2 a ton of solid wastes under average cost of $1-$5).

WATER DEVELOPMENT AND POPULATION DISPERSAL

The Department of the Interior recently announced that a study to determine the influence of water resource development on population dispersal and its effect on the economic well-being of urban areas and small towns will be performed under an $88,000 contract from the Bureau of Reclamation. The study is being done by Rivkin/Carson, Inc., a Washington, D.C.

consulting firm. Research will atempt to identify those factors that cause certain areas and communities to survive and prosper, the relationships between those variables, and how this knowledge may be used to improve our national quality of life.

ENGINEERING SHORT COURSE

The University of Wisconsin, Department of Engineering, will sponsor a short course on "Waste Water Treatment and Disposal," from October 23-27, 1972.

The course will present the latest information on principles and design of waste water treatment processes and consider methods for the appraisal and analyses of receiving environs. Laboratory and field data will be related to design principles and applications. Discussion, problem-solving and laboratory sessions will complement structured lectures.

Advanced registration is important, as participation is limited to a maxium of 40. The enrollment fee is $250.

For further information write John T. Quigley; University of Wisconsin Extension; Department of Engineering; 432 North Lake Street; Madison, Wisconsin 53706. Telephone (608) 262-2061 or 262-1122.

RARE BREED OF FISH MAY GET DAM FOR HOME

Threatened with extinction in its Devil's Hole home in Death Valley, the tiny pupfish will get a foster home and possible new lease on life below Hoover in the Colorado River. It is believed that the warm water springs below the dam will provide a habitat similar to the water in Death Valley National Monument.

The pupfish are threatened by lower water levels resulting from irrigation pumping by private parties in the Ash Meadows section of the Death Valley area. Only some of the tiny fish will be transplanted in the experiment.

WORLD RECORD FLOW MEASURED ON AMAZON

The largest river flow ever measured -- about four billion gallons per minute (about 9 million cubic feet per second) -- was recently clocked on the Amazon River by a team of U.S. and Brazilian hydrologists.

The measurement, conducted by George F. Smoot, hydrologist with the U.S. Geological Survey, Department of the Interior, was made on June 5, 1972 at the request of Brazil's National Department of Water and Energy. The joint project was aimed at confirming flow data previously collected by the USGS and the Brazilian Government on the Amazon and at further testing the Geological Survey's recently developed "moving-boat" techniques for measuring large river discharges.

"The average flow of the Amazon," Smoot said, "is some 2.6 billion gallons per minute, more than four times the average discharge of the Congo River, and about ten times that of the Mississippi's average discharge. The Amazon's flow accounts for about 15 percent of all the fresh water discharged into the oceans by all the rivers of the world."

"In our new measurement," Smoot continued, "we found the moving-boat method (though by no means rendering other methods obsolete) to be much quicker. It is particularly desirable for measurements of large rivers, as it takes only about 17 minutes per measurement, as opposed to about 18 hours of continuous work required by conventional methods."

"The data collected during June has made earlier estimates of the Amazon's Water resources obsolete." said Smoot.

DAM INSPECTION BILL SIGNED BY PRESIDENT

President Nixon signed a measure (H.R. 15951) to authorize the Army Engineers to inspect up to 28,000 non-federal dams. The measure could cost up to $100 million because some states are already conducting effective safety programs.

"The objective of this bill--to reduce the risk of dam failures-- is highly desirable, as we have learned from painful experience," Nixon said in a recent statement. "I think the particulars of this bill are most unfortunate, however, for they depart from the sound principle that the safety of non-federal dams should primarily rest with the states."

Nixon said the bill is marred because "it was enacted hastily" without public hearings or agency comments.

FLOOD INSURANCE

It has been moved that the Department of Housing and Urban Development (HUD) require mandatory flood insurance on homes with FHA-insured mortgages in flood danger areas.

Under the ruling, single family homes would be required to carry flood insurance if the property is located in a "special flood hazard" area and if the first floor elevation of the home doesn't exceed by at least one foot the area's worst record water level over a 100-year period.

CHARACTERISTICS OF WATER RESOURCES RESEARCH CENTERS

A study of the organization and management characteristics of the water research centers established in each of the 50 states and Puerto Rico has just been completed by the Institute for Research on Land and Water Resources at Pennsylvania State University. The study was undertaken by G. Lester Anderson and Stanley O. Ikenberry of the Center for the Study of Higher Education, and John C. Frey and W. Marvin Swope of the Institute for Research on Land and Water Resources.

Data for the study were obtained from all 51 water centers, and 38 of the directors were personally interviewed. Many variations were found in methods of administration and in organizational structure of the water centers within the land-grant universities.

The report indicated that the structure should and does vary according to the individual university. However, the researchers found that most of the directors and college administrators believe that water centers should perform multi-functional purposes: teaching (specifically, graduate student training), research, and public information.

Funding

Each water center receives a basic allotment from the Office of Water Resources Research, USDI, of $100,000 a year. However, total operating expenditures for 1969-70 averaged $257,234. Grants from other agencies and assistance from universities account for the wide variation in amounts spent per center.

The report recommended that increased funding be provided from state resources. Tests of relationships showed that the amount of state support provided was significantly related to the number of research reports distributed and to the number of new research scientists brought to the universities by the centers. Some directors thought that an increase in state funds would make it possible for the centers to respond more effectively to state research needs.

Size

Measures of size were directly related to the number of research proposals processed. There was a direct relationship

between the director's length of service in the water center and the size of the center, and also the amounts of floor space made available to the centers.

Accomplishments

A key consideration for obtaining high levels of OWRR funding was for the centers to become highly involved in intercollege and interdepartmental research. The amount of funding appeared to be related to the position of the center in the structure of the university and to the chain of command through which the director reports.

Recommendations in line with these observations were that the water center directors assume primary responsibilty for the coordination of interdisciplinary research projects; that they actively encourage program development; that they be given career incentives equal to those of other academic administrators; and that the centers be integrated into the structure of the universities so as "to permit the performance of multiple service functions."

Water centers were seen as fairly permanent institutions by most of the university administrators, and the larger centers were seen as more permanent. There was general agreement that the centers perform a unique function in the university structure, and that they were doing it well.

DRINKING WATER LEGISLATION

On June 7 the House Commerce subcommittee was told by EPA Deputy Administrator Fri that national health standards for drinking water should be a federal responsibility. He said the responsibility for primary enforcement of drinking water standards should lie with state and local government and federal enforcement brought to bear only if state and local jurisdictions fail to act. The proposed drinking water legislation (HR 14899) provides for this.

The bill has the support of the American Water Works Association with the exception of provisions controlling underground waste disposal which AWWA states should be covered by water pollution control legislation.

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NEWSLETTER ITEMS

Newsletter items and inquiries should be sent to: Dr. Warren Viessman, Jr., Director, N.W.R.R.I., 212 Agricultural Engineering Building, University of Nebraska, East Campus, Lincoln, Nebraska 68503 Telephone: 472-3307