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NATIONAL WATER DATA EXCHANGE

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## THE NATIONAL WATER DATA EXCHANGE (NAWDEX)



U.S. GEOLOGICAL SURVEY  
Open-File Report 77-259



# THE NATIONAL WATER DATA EXCHANGE (NAWDEX)

By MELVIN D. EDWARDS

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U.S. GEOLOGICAL SURVEY  
Open-File Report 77-259



1977

**UNITED STATES DEPARTMENT OF THE INTERIOR**

**CECIL D. ANDRUS, Secretary**

**GEOLOGICAL SURVEY**

**V.E. McKelvey, Director**

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# THE NATIONAL WATER DATA EXCHANGE (NAWDEX)

By Melvin D. Edwards

## ABSTRACT

The National Water Data Exchange (NAWDEX) was established in 1976 to assist users of water data to identify, locate, and acquire needed data. NAWDEX is a confederation of water-oriented organizations working together to provide more timely and convenient access to their data. A directory of sources of water data and a nationwide index of available water data are maintained for the storage and dissemination of information on available water data. Assistance services are provided through a nationwide network of Local Assistance Centers.

## INTRODUCTION

The need for a viable program for the improvement of the transfer of data from collectors to users is acknowledged throughout the water-data community. The National Water Data Exchange (NAWDEX) has been established in response to this need.

The design characteristics for NAWDEX were first presented by the Federal Interagency Water Data Handling Work Group, a task group of the Federal Interagency Advisory Committee on Water Data, in October 1971. The implementation of the program was recommended by the Federal Interagency Advisory Committee on Water Data and the non-Federal Advisory Committee on Water Data for Public Use. These committees work under the auspices of the U. S. Geological Survey's Office of Water Data Coordination which implements the guidelines for the coordination of Federal activities in the acquisition, storage, and dissemination of water data as prescribed by Circular A-67 issued by the Office of Management and Budget in 1964.

The U. S. Geological Survey accepted the lead-role responsibility for implementing NAWDEX and work began on this effort in January 1973. Two years of subsequent planning and design effort resulted in the operational implementation of NAWDEX in August 1975 and the formal establishment of the program in January 1976.

## THE NAWDEX MISSION

The mission of NAWDEX is to identify sources of water data and to provide the linkage between those who acquire and those who use water data. This is being accomplished by establishing better communication between water-oriented organizations, acquiring as much information as

possible on available water data, and making this information readily available to water-data users. These efforts contribute to the improvement of the transfer of water data and information on water data between the collector and user communities.

### THE NAWDEX CONCEPT

NAWDEX is a confederation of water-oriented organizations working together to provide timely and convenient access to their data. This concept is directed at closer coordination of water-data dissemination activities, improving communication within the water-data community, more effectively utilizing the data resources, expertise, and talent within the community, improving the quality and efficiencies of techniques and procedures used for the exchange of water data, and providing water data to those who need these data in a cost-effective manner.

### THE ORGANIZATION OF NAWDEX

NAWDEX is centrally managed by a Program Office located within the U. S. Geological Survey's Water Resources Division in Reston, Virginia. This office provides the coordination for all NAWDEX activities, develops the technical systems and procedures necessary for the operation of NAWDEX, maintains the data bases and other information resources required for operation, provides operational guidelines to all service centers, and serves as a liaison between members, external organizations, advisory committees, and the users of NAWDEX services and facilities.

The basic components of NAWDEX are organizations that become participating members. They are organizations that are collectors of water data, contributors from the water-data community who provide support toward program improvement, collectors of data related to water-resources activities, and users of water data. All members contribute support toward improvements in data exchange procedures and techniques.

### NAWDEX MEMBERSHIP

Membership in NAWDEX is voluntary and open to any organization active in the field of water resources. This includes organizations from the Federal, State, interstate, local governmental, academic, and private sectors of the water-data community. There are no dues or fees associated with membership. Members are required, however, to sign a Memorandum of Understanding with the Program Office which defines that office's responsibilities and a general commitment of the member to take an active role in NAWDEX activities, to provide information on its data holdings for indexing purposes, and to provide data from its holdings upon request. The Program Office is not empowered to sign membership documents with foreign or international organizations. These organizations are invited,

however, to participate in NAWDEX through an established relationship with the Program Office and will be identified in NAWDEX as foreign affiliates.

Each member takes an active role in the planning, development, and execution of NAWDEX activities. Each member is an advisor to the Program Office and mechanisms exist to assure continued communication between members, to assure active participation of all members in an equal and equitable manner, and to maintain an awareness of the needs of the water-data community in order to achieve maximum program effectiveness.

### NAWDEX SERVICES

A variety of services are provided by NAWDEX to assist its users to identify needed water data, to locate these data and to refer users to the proper sources for obtaining the data. It is not a function of NAWDEX to become a repository of water data. Instead, the data held by NAWDEX members are indexed by the Program Office to provide a central source of information on water data available from a large number of organizations.

Local Assistance Centers: NAWDEX services are provided through the Program Office and a nationwide network of Local Assistance Centers. This network was established in January 1977 and consists of 51 Centers located in 45 states and Puerto Rico. The Centers provide convenient access to NAWDEX services as well as making local-area expertise available in the identification and location of needed data. Additional Centers will be added to the network, as needed, to meet the demands of the user community.

Identification of Sources of Water Data: NAWDEX has extensive information available that identify domestic and foreign organizations that are sources of water data. This information is provided through a computerized Water Data Sources Directory maintained in the U. S. Geological Survey's computer system in Reston, Virginia and is accessible by nearly all Local Assistance Centers by remote computer terminal.

The Water Data Sources Directory identifies organizations that collect water data, locations within these organizations from which water data may be obtained, alternate sources from which an organization's water data may be obtained, the geographic areas in which an organization collects water data, and the types of water data collected and available. Information has been compiled for over 300 organizations. An additional 200 organizations are expected to be added to the Directory by the end of 1978. The contents of the Water Data Sources Directory will be periodically published.

Indexing of Water Data: A nationwide indexing service is provided by NAWDEX through its Master Water Data Index. This is a computerized index that identifies sites for which water data are available, the location of these sites, the data-collecting organization, the types of

data available, the periods of time for which data are available, the major water-data parameters for which data are available, the frequency of measurement of these parameters, and the media in which the data are stored. The Master Water Data Index also is maintained on the U. S. Geological Survey's computer system in Reston, Virginia and is accessible by most Local Assistance Centers by remote computer terminal.

The Master Water Data Index was created in June 1976 with information on 62,000 water-data sites. Computerized interfaces being developed between the Index and data files of NAWDEX members will increase its contents to information on about 350,000 sites by the end of 1977. Information on nearly 1 million sites is anticipated by the end of 1978.

All NAWDEX members are encouraged to use the Master Water Data Index as their primary facility for water-data inventory and to contribute to its contents to the greatest extent possible. Foreign organizations also are encouraged to contribute information on their pertinent water-data holdings. Through the coordinated development of both the Master Water Data Index and the Water Data Sources Directory, NAWDEX is creating a viable and comprehensive base of information on available water data which contributes to the transfer of information on water resources throughout the water-data community.

Data Search Assistance: Through its Local Assistance Centers, Water Data Sources Directory, and Master Water Data Index, NAWDEX can readily assist users of water data in locating data meeting their specified criteria and in geographic areas of interest. Users can be quickly referred to water-data systems, bibliographic data services, other indexing services, or data-collecting organizations that can provide the information, data, or other services required. Hydrologists knowledgeable in the water resources of local areas are available to provide assistance at each Local Assistance Center. Each request is reviewed as it is received by NAWDEX to assure that the request accurately reflects the requester's needs. The request can then be referred to appropriate sources with sufficient information to assure a correct response in an efficient and timely manner. The amount of time required to locate needed information is, therefore, greatly reduced in most requests for data.

Charges for NAWDEX Service: Free services are provided to the greatest extent possible by the Program Office and Local Assistance Centers in their data-search assistance. Charges are applied, however, for services requiring computer costs, extensive personnel time, duplicating expenses, or costs accrued by NAWDEX from other sources in the course of providing services. In all cases, charges assessed by the Program Office and Local Assistance Centers will not exceed the direct costs incurred in responding to a data request. Estimates of cost are provided upon request and in all cases where costs are anticipated to be substantial.

Charges also may be assessed by organizations to which a data requester has been referred for data or services. These charges are assessed at the discretion of the responding organization and they are reimbursed directly to the assessing organization.

#### FUTURE PLANS FOR NAWDEX

Within the near future, several new projects are planned within NAWDEX. These include the preparation of a Directory of Sources of Water Related Data, the indexing of areally-related water data, and acquiring membership agreements to facilitate the handling of bibliographic references to published water data. Work will begin also on the development of recommended standards for the handling and transfer of water data. All NAWDEX members will be invited to participate in this important standardization activity. Input will be sought from all sectors of the collector and user communities.

#### SUMMARY

NAWDEX, as a confederation of water-oriented organizations working together, can do much to contribute to the transfer of water data throughout the entire water resources community. It represents a concerted effort to improve the quality and efficiency of data transfer from collectors and users. This effort will improve communication throughout the water-data community, create a better awareness of existing water data, make data-search assistance more readily available to those who need it, reduce the time required to obtain data, increase the utilization of existing water data, and help to reduce redundancy in data collection. All these benefits contribute toward making water resources programs more effective.

The support and response of member organizations has been excellent and requests for NAWDEX services are growing constantly. The Program Office, Local Assistance Centers, and members will continue to work to advance NAWDEX as rapidly as possible so that the user community may derive maximum benefit from its facilities. With continuing support and participation, the objectives of a viable and effective National Water Data Exchange will be achieved.

#### ADDITIONAL INFORMATION

For services or additional information concerning NAWDEX, please contact:

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