

Indiana Water Resources Research Center Annual Technical Report FY 2001

Introduction

Efforts at the Indiana Water Resources Research Center (IWRRC) over the last year 2002-2003 have focused on a revitalization of our in-state programs and the development of efforts in Urban watershed protection. The IWRRC is now co-located with the Environmental Sciences and Engineering Institute (ESEI) on the main campus of Purdue University. The co-location affords both organizations benefits. In the case of IWRRC we are able to use the administrative components of the ESEI to run our programs and projects. This has minimized administrative costs will maximizing the potential for project support. The IWRRC is now returning to supporting project in a more traditional manner and has run a grants competition for this years funding (2003).

This report, 2000-2001, covers the support for the development of the NIWR data base and web interface. The objective of this project was to develop the under-lying client/server computer infrastructure to support the development of the information network. The network is now fully functional and being used for the development of NWIR projects. The result of this work is the central NIWR information (software) server that serves as the information system supporting the NIWR Water Science Support Network which has been developed and fully implemented at the National level.

As a result the following are now in place: 1. The NIWR 5-year reporting subsystem. 2. Phase I and II of the 104G application system. 3. Completion of the annual reporting subsystem.

Research Program

Information Transfer Program

Information Infrastructure for the NIWR Water Science Support Network

Basic Information

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|---------------------------------|---|
| Title: | Information Infrastructure for the NIWR Water Science Support Network |
| Project Number: | 2001IN3561B |
| Start Date: | 3/1/2001 |
| End Date: | 2/28/2002 |
| Funding Source: | 104B |
| Congressional District: | 7 |
| Research Category: | Not Applicable |
| Focus Category: | Management and Planning, Models, None |
| Descriptors: | networking,information technologies, database management |
| Principal Investigators: | Jeff R. Wright |

Publication

1. www.niwr.org The actual reporting system is now in use.

State: Indiana

Project Number: IN3561

Title: Information Infrastructure for the NIWR Water Science Support Network

Project Type: Information Management System

Focus Category: Management and Planning, Education

Keywords: networking, information technologies, database management

Start Date: 03/01/2001

End Date: 02/28/2002

Congressional District: 7

PI: Jeff R. Wright (Report filed by R. F. Turco)

Professor, Purdue University

Abstract

The member organizations of the National Institutes for Water Resources (NIWR) comprise a national network of scientific organizations whose mission is to conduct and facilitate research that will improve the management of our nation's water resources. Collectively, this organization represents an important national resource of people and information with a nearly 40 year history of scientific accomplishment. The information infrastructure created by this organization and its member organizations is extensive, and has resulted from individual contributions by Institutes, each with its own unique procedures, protocols, and information formats. While the volume of information is considerable, it lacks a framework within which comprehensive review and evaluation is possible. The objective of this project was to develop the under-lying client/server computer infrastructure to support the development of this information network.

Information Infrastructure for the NIWR Water Science Support Network

Statement of Results or Benefits

The result of this research is a central NIWR information (software) server that serves as the information system supporting the NIWR Water Science Support Network which has been developed and fully implemented at the National level.

This system now contains a number of subsystems:

User Authentication Subsystem: Users of the network are maintained in a user profile. This database allows user authentication as appropriate, and based on the authentication levels determined by each Institute administrator.

User Access Control Subsystem: Depending on the authentication level of the user, the appropriate access to system content and functionality is determined by the access control subsystem.

Personnel Database: The personnel databases that have been developed for past and existing NIWR information systems has been replaced with a comprehensive system that is under the control of each Institute's administrator.

References Database: A comprehensive references database has replaced the databases that have previously been used within the NIWR distributed information management system.

User Monitoring Subsystem: Tools were developed to allow individual users or groups of users to establish monitoring systems for specific applications. For example, if an application requires administrators to monitor access to a particular document within the information system, tools are provided allowing the user to specify that level of control (monitoring).

User Interface Design/development Subsystem: Each Institute now has the ability to fully control its own user interface for those dimensions of the system that permit individual Institute control.

User Communications Subsystems: Tools have been provided to enable custom communication systems, including but not limited to e-mail, document sharing, discussion groups/lists, etc. The result is a centralized information management system that allows infinite control by individual Institutes.

Translation of Existing NIWR Information System: The initial focus was the re-design and re-development of the NIWR Information Management System; the system that has been under development on behalf of the National Institutes for Water Resources by the Indiana Water Resources Research Center at Purdue University. The project was completed and the system is now in place.

In addition, the individuals involved with the project have mastered the new development tools and procedures employed in the development of the Water Science Support Network, and have the necessary insight to facilitate the integration of these two systems. The subsystems of the NIWR database that have been translated include:

1. The Annual 104b Application System
2. The National Competitive Grants (104g) System
3. The Annual Reporting System

Student Support

| Student Support | | | | | |
|------------------------|-----------------------------------|-----------------------------------|---------------------------------|--------------------------------|--------------|
| Category | Section 104 Base Grant | Section 104 RCGP Award | NIWR-USGS Internship | Supplemental Awards | Total |
| Undergraduate | 0 | 0 | 0 | 0 | 0 |
| Masters | 0 | 0 | 0 | 0 | 0 |
| Ph.D. | 0 | 0 | 0 | 0 | 0 |
| Post-Doc. | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 |

Notable Awards and Achievements

Publications from Prior Projects