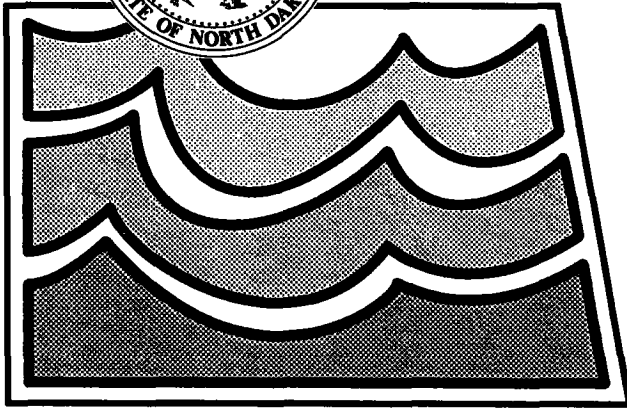


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NORTH DAKOTA STATE AGENCY



NORTH DAKOTA
State Water Commission

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**BIENNIAL REPORT
FOR THE PERIOD
July 1, 1991 to June 30, 1993**



Office of the State Engineer

December 1, 1993

The Honorable Edward T. Schafer
Governor of North Dakota
State Capitol
Bismarck, ND 58505

RE: 1991-1993 Biennial Report

Dear Governor Schafer:

In compliance with North Dakota laws, we transmit for your information and consideration the Biennial Report of the State Engineer and State Water Commission for the period July 1, 1991, to June 30, 1993.

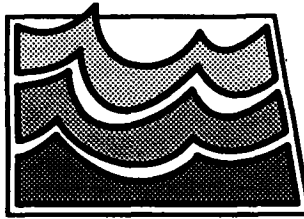
Respectively submitted,

David A. Sprynczynatyk
Secretary and State Engineer

DAS:rp

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NORTH DAKOTA STATE WATER COMMISSION

Mission

The mission of the State Water Commission and the State Engineer is to improve the quality of life and strengthen the economy of North Dakota by managing the water resources of the state for the benefit of its people.

Agency Goals

- To regulate the use of water resources for the future welfare and prosperity of the people of North Dakota.
- To develop the use of water resources for the future welfare and prosperity of the people of North Dakota.
- To educate the public regarding the nature and occurrence of North Dakota's water resources.

Organization

The State Water Commission consists of the Governor as chairman, the Commissioner of Agriculture as an ex-officio member, and seven members who are appointed by the chairman to serve terms of six years each. The terms of office for appointees are so arranged that two terms and not more than three terms shall expire on the first day of July of each odd numbered year. Executive Order 1987-6 allows for the Lieutenant Governor to serve as chairman of the Commission in the absence of the Governor or as otherwise directed. The Commission appoints a Secretary-State Engineer as their executive officer, who employs a staff as needed to carry out the aims of the Commission.

The State Water Commission is located primarily in the State Office Building near the State Capitol in Bismarck, North Dakota. In addition, the Commission has field offices in Dickinson and West Fargo.

Statutory History and Mandates

The State Water Commission was created by legislative action in 1937 as a result of the drought of the 1930s for the specific purpose of fostering

and promoting water resources development throughout the state.

The Office of State Engineer was created in 1905 to regulate and administer matters concerning allocation of the state's water and related land resources in compliance with article XI, § 3 of the North Dakota Constitution which declares all waters to be property of the state for public use. In 1937, additional duties were added to this office when the State Engineer was designated chief technical advisor to the Commission. Subsequently, in the years following, the State Engineer was assigned responsibilities for regulation of drainage, control of dikes and dams, and management of development in the floodplains of the state.

Agency Policies

The State Water Commission and the State Engineer have developed procedures and policies based upon the comprehensive legislation contained in Title 61 of the North Dakota Century Code to:

- Administer the water laws of the state and its interest in federal and international waters.
- Prepare and maintain a comprehensive plan for future growth and development of the

state, and to direct project development in accordance with that plan.

- Conduct studies to determine availability and occurrence of the ground and surface waters of the state for the purposes of allocation and management.

- Assist local entities of government in the development and construction of water resource projects.

- Assist local entities of government in management and maintenance of water resource projects.

- Assist in the organization of various legal entities through which water resource projects can be sponsored and operated.

- Prepare and maintain a state-wide communications plan which identifies communication deficiencies with regard to water resources management and to assist in water information/education programs to overcome these deficiencies.

- Coordinate activities of federal, state, and local entities in water resources development.

- Represent the interests of the state in water resources matters in national, state, and international forums.

Many of the policies in effect have evolved as a result of the agency's financial participation in project development along with local government sponsors. The amount of financial participation varies with the project purposes. The contract fund is the source of funds for assistance to local sponsors and is controlled by the Commission.

Principal Agency Activities

- Implementing the procedures for claiming this state's share of the flows of the Missouri River for our future needs as reflected in comprehensive water management planning documents and the Pick-Sloan Plan.

- Managing and developing North Dakota's water resources to enhance the economic future of North Dakota and its quality of life.

- Continued efforts for funding of the Garrison Diversion Project to provide for water distribution throughout North Dakota in return for the land given up for early development of the Pick-Sloan Plan.

- Implementing plans for the distribution of Missouri River water through regional water supply systems such as the Southwest Pipeline Project and the Northwest Area Water Supply Project.

- Planning for an inlet and an outlet, including the delivery of Missouri River water, to stabilize Devils Lake.

- Developing international flood control with the Province of Saskatchewan and Canada for solving the flood problems along the Souris River.

- Refining legislation and policies for administering the constitutional Resources Trust Fund through which needed water facilities can be constructed.

- Continued discussions with Indian representation regarding tribal reserved water rights in North Dakota. The intent being to negotiate water rights to avoid litigation.

- Developing policies and initiatives that will stimulate progress in solving flooding problems along the Sheyenne, Pembina, and Red Rivers.

- Joint administration with the Garrison Conservancy District of the federally authorized municipal, rural and industrial (MR&I) water supply program of the 1986 Garrison Diversion Reformulation Act.

- Continued funding by the legislature for advanced water resource studies. Completion of detailed studies that more precisely define the nature and occurrence of the resource is essential in order to optimize its development.

- Pursuing cooperative efforts with neighboring states and provinces for planning for mutual beneficial water management on shared water resources.

- Enforcing weather modification standards, conducting research, and supervising operational cloud seeding programs for hail suppression and rainfall enhancement.

- Continued efforts to enhance the Water Education for Teachers (WET) and the North Dakota Watercourse programs based upon the information gathered from the Commission's Communications Planning Process.

Water Commission Members as of June 30, 1993

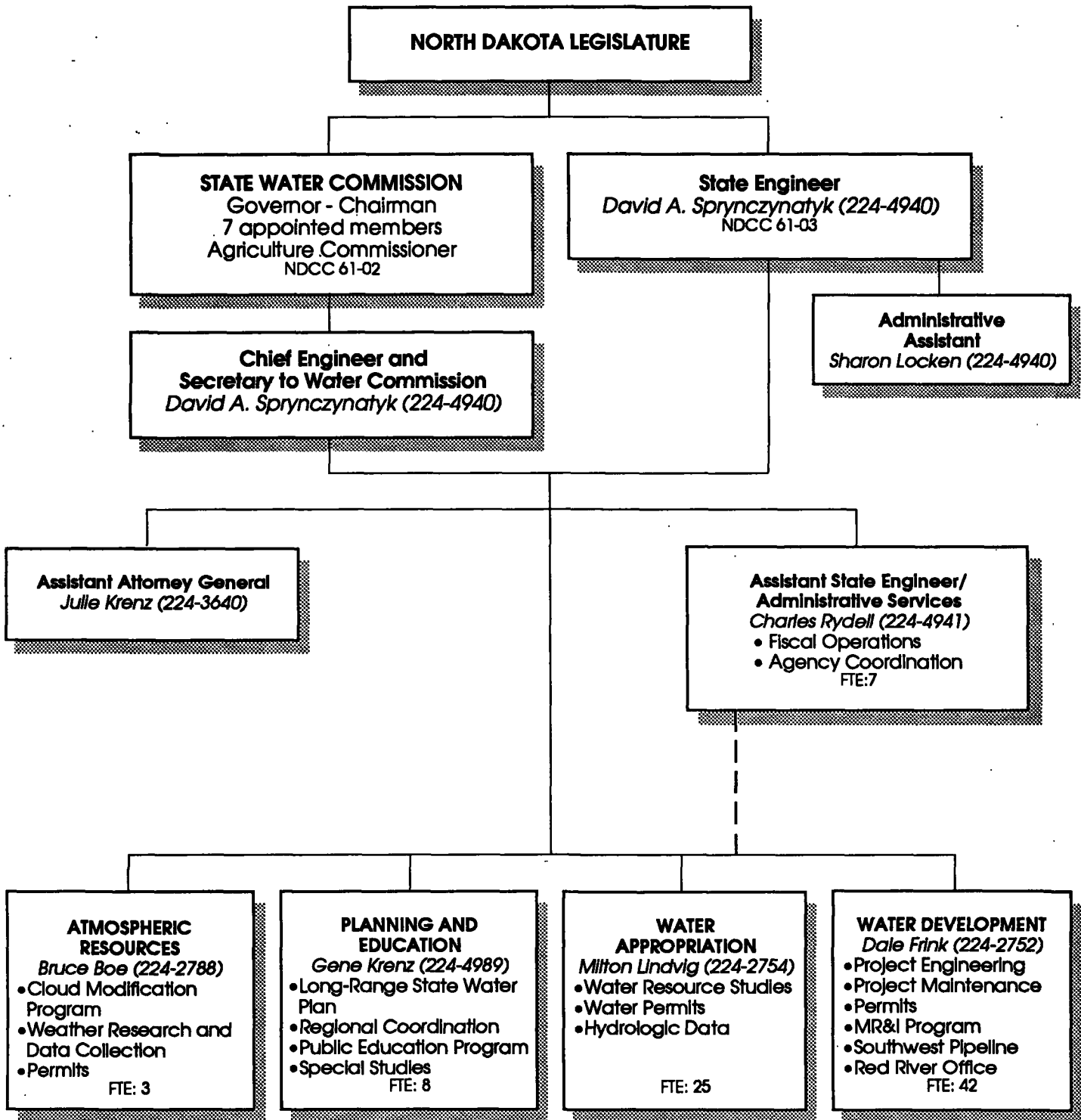
NAME	POSITION	APPOINTED	TERM ENDS
Edward T. Schafer	Governor-Chairman		
Sarah Vogel.....	Department of Agriculture		
Joyce Byerly	Member from Watford City	June 1, 1985	July 1, 1993
Daniel Narlock	Member from Grand Forks	July 1, 1987	July 1, 1993
Norman Rudel	Member from Fessenden	April 4, 1988	July 1, 1993
Elmer Hillesland	Member from Grand Forks	March 1, 1993	July 1, 1995
Robert Thompson	Member from Page	March 1, 1993	July 1, 1995
Jack Olin	Member from Dickinson	March 1, 1993	July 1, 1997
Harley Swenson	Member from Bismarck	March 1, 1993	July 1, 1997

Water Commission Meetings July 1, 1991 through June 30, 1993

DATE	LOCATION
July 31, 1991	(Telephone Conference Call)
August 22, 1991	Bismarck, ND
September 17, 1991	(Telephone Conference Call)
October 21, 1991	Bismarck, ND
October 23, 1991	(Joint meeting with Garrison Diversion Conservancy District)
December 20, 1991	Dickinson, ND
February 4, 1992.....	Dickinson, ND
March 11, 1992	Bismarck, ND
April 2, 1992	(Telephone Conference Call)
April 7, 1992	Bismarck, ND
May 12, 1992.....	(Telephone Conference Call)
May 26, 1992.....	Bismarck, ND
July 1, 1992.....	Bismarck, ND
July 2, 1992	(Joint meeting with Garrison Diversion Conservancy District)
July 6, 1992	Bismarck, ND
September 15, 1992	Dickinson, ND
November 19, 1992	Fargo, ND
December 9, 1992.....	Bismarck, ND
December 24, 1992.....	(Telephone Conference Call)
April 6, 1993	Bismarck, ND
June 9, 1993.....	(Telephone Conference Call)

**North Dakota
State Water Commission**

Organizational Chart



TOTAL FULL TIME EQUIVALENTS OF 85 PERSONNEL

June 30, 1993

**State Water Commission Employees
as of June 30, 1993**

ADMINISTRATION DIVISION

State Engineer: David A. Sprynczynatyk
Assistant State Engineer: Charles Rydell
Administrative Assistant: Sharon Locken
Accounting Budget Specialist: Kay Koch
Legal Assistant: Rosemary Pedersen
Administrative Clerk: Karen Heinert
Temporary: Laurie Backman

ATMOSPHERIC RESOURCE BOARD

Division Director: Bruce Boe
Business Manager: LeNor Dollinger
Environmental Scientist: Mark Schultz
Temporary: Tamara Carlson, Bradley Crowe, Aaron Gilstad, Darin Langerud, Rory Mitchell, Michael Proud, William Rasch, James Scarlett

PLANNING AND EDUCATION DIVISION

Division Director: Gene Krenz
Word Processing Operator: Dawn Petersen
Water Resource Planners: LeRoy Klapprodt, Bill Sharff
Environmental Scientist: Linda Weispfenning
Research Analyst: Larry Knudtson
Graphic Artist: Brenda Bosworth

WATER APPROPRIATION DIVISION

Division Director: Milton Lindvig
Administrative Secretary: Marlene Backman
Hydrologist Managers: Royce Cline, David Ripley, William Schuh, Robert Shaver
Hydrologists: Christopher Bader, Jeffrey Olson, John Paczkowski, Scott Parkin, Jon Patch, Steve Pusc, Kevin Swanson, Alan Wanek
Water Resource Engineers: Craig Odenbach, Robert White
Water Resource Program Manager: Gordon Baesler

Engineering Technicians: Michael Hove, Kelvin Kunz, James MacArthur, Merlyn Skaley
Chemist: Garvin Muri
Laboratory Technician: Mary Osborn
Rotary Drill Operator: Gary Calheim
Equipment Operator: Albert Lachenmeier
Temporary: Fred Anderson, Robert King, Joseph Krieg, Lloyd Waddingham

WATER DEVELOPMENT DIVISION

Division Director: Dale Frink
Administrative Secretary: Darlene Mund
Water Resource Engineer Managers: Cary Backstrand, Randy Gjestvang, Arland Grunseth, James Lennington, Jeffrey Mattern, Todd Sando, Ronald Swanson
Water Resource Engineers: Bradley Benson, Dwight Comfort, Bruce Engelhardt, Stan Hanson, James Lindseth, Edgar Schmidt, Gregg Thielman
Engineering Technicians: Marty Babel, Robert Bucholz, Edward Gall, Kurt Kunz, Leland Krein, Terrence McCann, Raymond Oliger, Thomas Palanuk, Eugene Sackman, Daniel Sauter
Water Resource Project Managers: Gary McDowell, Lloyd Scott
Planners: Jeffrey Klein, Bruce Lange
Account Technician: Krislyn Thompson
Data Processing Coordinator: William Miller
Temporary: Stephen Pflipsen, Theodore DeWall

Southwest Pipeline Project

Water Resource Engineer Manager: James Fay
Water Resource Senior Manager: Ray Christensen
Realty Officer: Frank Johnson
Engineering Technician: Allen Balliet
Electrician: Leland Messer
Maintenance Worker: William Petersen
Administrative Secretary: Dorothy Manley

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Administrative Services Division

The Administrative Services Division provides the overall direction of agency powers and duties as described in the state water laws. The activities include both the State Engineer's and the Water Commission's operations, as well as accounting, records, and support services for all agency programs.

Budget and fiscal control work is accomplished on within the provisions of statutory law and principles or rules of that law. Agency accounting consists of keeping adequate financial records, preparation of financial statements and reports, project or program cost accounting, preparation of budgets, and proper control of various funds appropriated by the state legislature.

A considerable portion of time is spent in coordination of water resource programs with federal agencies and other state and local entities. The division works with contracts and agreements necessary to carry out investigations, planning, and cooperation with various other agencies in water resources development. A close liaison is maintained with irrigation districts, water resource districts, and the Garrison Diversion Conservancy District.

The State Engineer serves as North Dakota's representative on various boards and associations. Presently the State Engineer is the United States co-chairman of the International Souris River Board of Control, chairman of the Missouri Basin Association, executive council member of the Western States Water Council, board of directors member of the National Water Resource Association, board of directors ex officio member of the North Dakota Water Users Association, board of directors member of the North Dakota Water Education Foundation, member of the Red River Water Resource Council, vice-president of the Association of Western State Engineers, and member of the National Project WET Advisory Committee.

During the 1991-1993 biennium the activities of the Missouri Basin Association increased considerably over previous bienniums because of drought in the Missouri River Basin. The Association continued its involvement in the annual preparation for the Corps of Engineers operating plans for the Missouri River, and the Association worked closely with the Corps on the revision of the Missouri River Master Water Control Manual.

The state was involved in several lawsuits that impact the State Water Commission or the State Engineer. The state of North Dakota cooperated with South Dakota and Montana to bring a lawsuit challenging the way the U.S. Army Corps of Engineers manages Lake Sakakawea water levels. As a result of this action, the Corps of Engineers agreed to reevaluate its management of water levels.

The state also successfully sued the state of Montana after it sought to improperly interfere with North Dakota's cloud seeding operations over Montana.

The State Water Commission paid \$36,000 to settle an action based on a contract for construction of part of the Southwest Pipeline Project.

The state was also involved in several lawsuits regarding the ownership of various pieces of land including the bed of Devils Lake, the bed of the Little Missouri River, land between the low and high water marks on a navigable river, and land that originated as an island at the confluence of the Yellowstone and Missouri Rivers. The Devils Lake case concerns the Devils Lake Sioux Tribe's claim to the bed of the lake. Settlement negotiations are underway. In a quiet title action concerning the title of the bed of the Little Missouri River, the court ruled that the river was non-navigable and, therefore, the bed of the river is not owned by the state. The state received a favorable ruling that a statute that says the landowner "takes" to the low water mark gives the landowner riparian rights but does not convey absolute ownership. The state is involved in a quiet title action regarding a tract of land at the confluence of the Yellowstone and Missouri Rivers. Part of the land appears to have had its origins as an island and thus the state owns it. A trial took place in November 1993.

The state was joined as a defendant by the federal government in a lawsuit against the Sargent County Water Resource District in an action under section 404 of the Clean Water Act. The federal government alleges that the water resource district did not obtain a 404 permit before it performed work on a drainage ditch. In the event the water resource district is restricted by law from paying the judgment, the state will have to pay the shortfall. Settlement negotiations are underway.

Atmospheric Resource Board

The Atmospheric Resource Board has been a division of the State Water Commission since 1981. Although under the direction and supervision of the Water Commission, the Board is a quasi-judicial, quasi-legislative, advisory and rule-making department. Prior to the 1991-1993 biennium, the Board's budget and appropriations legislation were adopted by legislative action independent of that of the Water Commission. In the 1991 legislative session, the Board's appropriation was combined with that of the Water Commission, and treated essentially as another division.

The primary function of the Atmospheric Resource Board is to protect the rights of the public concerning the effects of planned weather modification (cloud seeding) programs. The Board is also responsible for record keeping for all such operations, and for licensing and permitting. Research to assess and improve cloud seeding technology is also mandated by law. The Board's rules and regulations governing weather modification are periodically reviewed and updated to ensure environmental and public safety, and that the operational program remains at the forefront of the technology. The rules and regulations define the qualifications, procedures, and conditions required for the issuance of licenses and permits.

The Atmospheric Resource Board is comprised of ten members. Seven are appointed by the Governor; the other three are ex-officio and include the State Engineer, the Director of the Aeronautics Commission, and a representative from the Department of Health and Consolidated Laboratories.

North Dakota Cloud Modification Program

The North Dakota Cloud Modification Project (NDCMP) currently serves five western counties. The project has two goals: hail suppression and rainfall augmentation. Hail suppression, however, continues to be the primary concern of most of the participating counties. The project seeded clouds in two separate operations districts during each year of the biennium, in the process deploying a total of eight twin-engine aircraft and two weather radars. An independent evaluation of the program has indicated a 43.5 percent reduction in crop hail damage within the target areas.

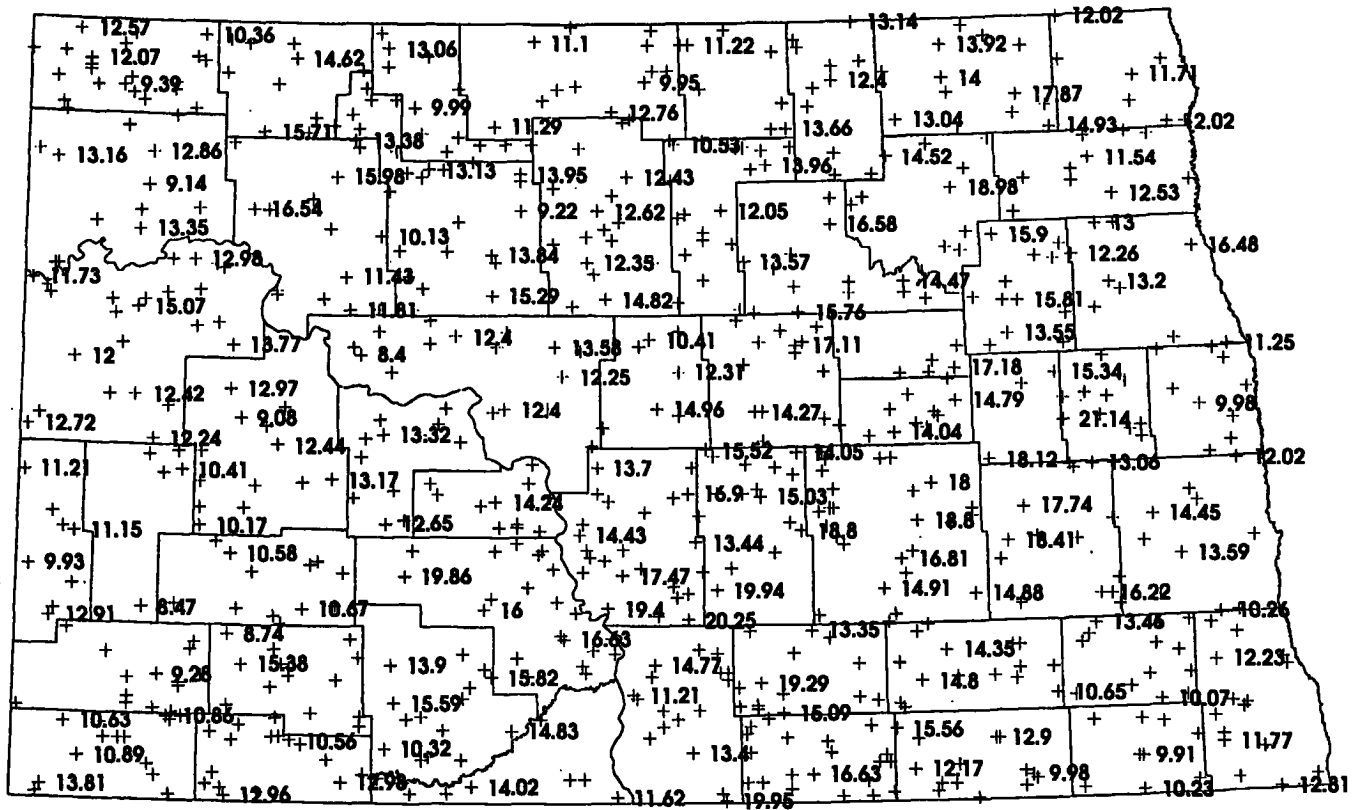
In addition to the efforts to reduce hail and stimulate rain production, the project personnel interact closely with the National Weather Service meteorologists in Williston and Bismarck, providing immediate reporting of severe weather events. Lightning-caused fires are also easily spotted and reported.

Wheat Yield Study

Another independent evaluation of the operational NDCMP was completed by scientists at the South Dakota School of Mines and Technology, Colorado State University, and North Dakota State University (NDSU). The study, which examined wheat yield statistics provided by NDSU and excluded all irrigated acreage, found that an increase of about 6 percent is realized in the target areas, when compared to adjacent non-target counties. This observed increase is over and above the statewide increase in yields associated with improved seed and farming practices.

North Dakota Tracer Experiment

Since 1980, the Board has worked with the National Oceanic and Atmospheric Administration (NOAA) within the Federal-State Cooperative Program in Atmospheric Modification



Precipitation amounts (in inches), June and July 1993
 Source: North Dakota Atmospheric Resource Board's Cooperative Rain Gauge Network

Research, now known as the Atmospheric Modification Program (AMP). This program, presently involving six states, funds cloud and precipitation research relating to documentation and demonstration of cloud seeding technology.

The Board coordinated the North Dakota Tracer Experiment (NDTE), a multi-agency thunderstorm research program aimed at better understanding of hail and precipitation development. This effort, funded jointly by the AMP, North Dakota, and the National Science Foundation, began in the Bismarck area on 21 June 1993, and continued through the first month of the next biennium. The experiment attracted scientists from across the nation, including University of North Dakota Aerospace, the South Dakota School of Mines, Colorado State University, the NOAA National Severe Storms Laboratory, NOAA Environmental Technologies Laboratory, the National Center for Atmospheric Research, the NASA Goddard Space Flight Center, and the Canadian Atmospheric Environment Service. Experiments were designed to trace circulations within developing thunderstorms which has a direct impact on the correct targeting of seeding materials used during the NDCMP.

Very active weather patterns brought an excess of severe weather to the area, and a large number of very good studies were conducted. Analysis of these data will be the focus of efforts in the next biennium.

Cooperative Rain Gauge Network

The Board continues to operate a network of over 800 volunteer rain gauge observers throughout North Dakota. The network operates during the growing season months of April through September. Rainfall and hail data are used in evaluating the operational cloud seeding program and are distributed to interested state and federal agencies. These agencies include: the North Dakota Division of Emergency Management, the National Weather Service, and other divisions within the Water Commission. The data proved to be especially useful during the flood-ravaged months of June and July, 1993. The network affords the greatest growing season rainfall coverage of any within the state, including that of the National Weather Service.

Intern Pilot Program

As part of the record keeping efforts associated with the county-sponsored operational cloud seeding program, the Board funds the presence in the field of intern copilots. These pilots fly along with the pilots-in-command of each seeding aircraft, gaining invaluable experience in seeding clouds while recording the times, locations, and nature of all seeding events. These interns are fully qualified to fly the seeding aircraft, and have completed two semesters of course work in weather modification prior to serving on the project. This program continued this biennium, providing documentation of seeding while the new pilots gained flight experience in and around thunderstorms.

Planning and Education Division

The Planning and Education Division performs a number of functions, including the development and maintenance of a State Water Management Plan. The division staff is responsible for:

- Participation in and/or coordination of studies leading to completion of local, state, regional, and national water resource and related land management plans;
- Monitoring of water resource issues to determine possible impacts on North Dakota's water resources;
- Representing the State Water Commission on regional and national planning bodies such as the Missouri Basin Association and the Red River Water Resources Council; and
- Providing opportunities for adults and students to learn about North Dakota's water resources through a program that involves workshops, displays, and a variety of publications.

State Water Management Plan Update

NDCC §61-01-26 (4) provides that it is North Dakota's policy to attain benefits from the use of the state's water resources "... through the development, execution, and periodic updating of comprehensive, coordinated, and well-balanced short-term and long-term plans and programs..." Specific power and authority to plan for the development of the state's water resources is provided for under the general powers and duties vested with the State Water Commission under NDCC §61-02-14.

In fulfilling its objective to wisely develop the state's water resources, the State Water Commission has periodically developed comprehensive state water management plans addressing both surface and ground-water management needs across the state. Previous plans were published in 1937, 1962, 1968, and 1983. The most current plan was published in 1992. The process used to produce the 1992 plan built upon the 1983 planning process. The computer data base containing that plan's specific recommendations was continually updated as formal actions of the State Water Commission dictated. This established the starting point for the 1992 planning process. Both planning efforts organized committees or boards for information, guidance, review, and input. A Steering Committee and Technical Review Committee were consulted throughout the development of the 1992 plan. Like the 1983 plan, an extensive public involvement process was conducted.

It is the position of the State Water Commission that planning for development of the state's water resource should incorporate ample opportunity for public input. The state was divided into eight public involvement regions which approximated the boundaries of major drainage basins. A Citizens Advisory Board was appointed for each region from a list of nominations provided by water resource district boards and other groups and organizations interested in water management. Four public meetings were held in each of the eight regions in order to solicit input from the general public. The boards ultimately decided which projects and programs were to be included in the State Water Management Plan.

To counteract obsolescence, all recommendations in the 1992 State Water Management Plan were added to the existing computer data base. Individuals can access the data base to view the most current information on proposed projects and programs. Proposals will be added or modified to reflect actions taken by the State Water Commission and State Engineer or other factors.

Information and Education Program

The Commission's public information and education program goal is to help North Dakotans and others better understand the importance of wise water resources management and to encourage them to become involved in the decision-making process as informed citizens. All of the Commission's projects and programs inherently include a public information and education component. The common denominator is water and its relationship to people.



Students from Milton-Osnabrock School experiment with the WET Program's ground water flow model.

During the biennium, the Commission's Planning and Education division expanded the Water Education for Teachers (WET) program. WET is an interdisciplinary and supplemental education program for K-12 teachers and other youth leaders. Classroom-ready teaching aids and other water-related educational materials are provided to participants who attend courses and workshops across the state, usually for graduate college credit. Some educational materials are available to teachers and youth leaders through non-credit educational offerings and for classroom use upon order. WET continued its successful outreach efforts to local North Dakota school districts and other youth leader programs, as well as pre-service opportunities in the state's colleges and universities. Other types of WET educational offerings were in the planning stages during the biennium. During the current biennium 535 teachers received teaching materials and credit at WET workshop while learning about the state's

water resources and management issues. Another 358 individuals were exposed to WET education materials at WET in-service and introductory seminars.

The expanded program is largely the result of funding received through a U.S. Environmental Protection Agency 319 Non-Point Source Pollution grant. As a result, 22 ground water, 7 water pollution, and 5 water quality program trunks are available to North Dakotans.

North Dakota's Water Education for Teachers program has attracted national attention. National Project WET was patterned after the North Dakota program.

Planning and Education Division staff have participated in many forums, seminars, conferences, and meetings with youth and adults to help educate and inform participants about the state's water resources and how they are managed.

The Oxbow Newsletter

The *Oxbow* newsletter is designed to inform and educate the public about State Water Commission projects and programs as well as local, state, and national water management issues. State and federal government officials and employees, water management professionals, universities, mass media, and private citizens interested in water management comprise the over 1,200 people who receive the *Oxbow* each month.

The Planning and Education Division assumed responsibility for publishing the *Oxbow* in March of 1984. A full-color, annual magazine edition is published each year.

Interbasin Water Transfer Studies Program

This program, instituted in 1986, is designed to undertake the research needed to respond to Canada's concerns about the potential transfer of certain fish species, pathogens, and parasites into Canadian waters through the operation of the Garrison Diversion Project.

To accomplish program objectives, North Dakota has assumed the leadership of a long-term, comprehensive research program involving a dozen or more state and federal agencies, scientists, and researchers from several colleges and universities (including Canadian). Funding is provided through the joint efforts of the State Water Commission, the Garrison Diversion Conservancy District, and the U.S. Bureau of Reclamation. The Division's director serves as coordinator for the program.

If Canadian concerns can be overcome through this and other research, the economic benefits that could accrue to North Dakota would be substantial. Accordingly, the program's objective is to remove Canadian concerns by discovering new knowledge where it is now lacking, by conclusively refuting concepts based on misinformation, and by developing mitigation measures where technical and scientific objections cannot be overcome.

Ninety-six percent of the state's surface water supplies are found in the Missouri River, with approximately 16 million acre-feet flowing past Bismarck on an average annual basis. With less than 4 percent of the state's total surface water supplies, the Souris River and Red River basins lack the capability to meet the growing demands for water. The key to dealing with this problem is the transfer of water from areas of surplus to areas of shortage. Linkage between basins can be achieved through the distribution system provided by Garrison Diversion; and to achieve that linkage, the removal of Canadian concerns is essential.

Special Studies

The Planning and Education Division has participated in several special studies during the biennium. Major special studies include:

Devils Lake Basin Conceptual Water Management Plan. The plan was prepared by State Water Commission staff and a special Devils Lake Task Force. It was forwarded to the U.S. Army Corps of Engineers for use in their Devils Lake Basin reconnaissance study. The report demonstrated progress towards comprehensive water management which will help protect water quality and remove the threat of floods in Devils Lake.

Governor's Water Strategy Task Force. The task force consisted of about 20 representatives of interests concerned with water management. Their assignment was to recommend a water supply development program. They recommended a series of regional projects that would create a state-wide water delivery system to meet short and long-term needs.

Garrison Diversion Special Study. The project assessed the risks, and the engineering, environmental, and economic aspects of an array of alternatives for bridging the gap between the McClusky and New Rockford Canals and for delivery of water to Devils Lake. The final report was submitted to the U.S. Bureau of Reclamation as input to their scoping analysis of alternatives to the Sykeston Canal.

Statewide Communications Plan. A statewide communications plan is being developed to determine the state's communication needs. It is being used to identify instances where poor communication or a lack of understanding may be slowing progress of a water resources project or program. The plan identifies communication deficiencies and outlines strategies to improve communication and understanding. A random survey of citizens measured North Dakotan's knowledge and attitudes on water management. Survey data is used to identify communication and knowledge deficiencies as well as the most effective methods of bridging those gaps.

Wetlands Conservation Plan. Through a grant from the U.S. Environmental Protection Agency, a comprehensive Wetlands Conservation Plan is being jointly developed by the State Water Commission, the Game and Fish Department, and the Department of Health and Consolidated Laboratories. Specific tasks are designed to enhance wetlands management in North Dakota. The recently acquired Geographic Information System will be used to map wetlands and information associated with wetlands management.

The Red River Water Resources Council. The Red River Water Resources Council is a quasi-governmental, non-profit corporation formed under North Dakota law to facilitate cooperation and coordination on water management issues in the Red River basin involving Minnesota, Manitoba, and numerous federal agencies. The states of North Dakota and Minnesota are the council's formal members, while a board of directors consisting of three from each state, directs council activities. Administration of the council is accomplished under a chairmanship that rotates annually between the two states.

A major undertaking of the council during the biennium was the development of a 200-page manuscript discussing the evolution of water problems and water management techniques in the basin over time. The publication is titled *A River Runs North*.

Funds to continue operation of the Red River Water Resources Council have not been included in the Executive Budget recommendations of either state since July 1, 1982. Board members are reimbursed for their travel expenses by the council, using carryover funds from the Souris-Red-Rainy River Basin Commission.

Water Appropriation Division

Development and management of the state's water resources to serve the needs of present and succeeding generations of North Dakota citizens is the major goal of the Water Appropriation Division. To do so, the following objectives were pursued:

- Identify the availability and quality of the state's water resources.
- Assist municipalities and other public entities in developing solutions to particular water supply problems.
- Assess impacts of existing water-supply development on ground-water levels, streamflow, and water quality for purposes of allocation and management.
- Construction and operation of predictive models that simulate hydrologic conditions for the purpose of developing viable water-management programs and assist in the allocation of the resource.
- Collect, store, and disseminate data on stream flow, ground-water levels, water quality, and water use.
- Process water permit applications and administer water permits for water resource appropriations.
- Provide recommendations to the State Engineer on individual water permit applications for the allocation and management of the resources.
- Provide for the storage and retrieval of water permit records.
- Maintain a record of the utilization of each conditional water permit and water right.

Major Activities for 1991-1993

The number of acres under irrigation continued to grow due to somewhat deficient precipitation and continued interest in high-value crops, particularly potatoes. Much of the development occurred in the eastern one-half of the state, which is nearest the traditional potato growing area. The remaining development was distributed throughout the western one-half of the state.

It is estimated that during the biennium irrigated acreage increased by approximately 28,000 acres to a total of 217,000.

The State Water Commission completed a study of the feasibility to stabilize water levels and expand water use from the Englevale aquifer using water conservation, well field modification, and artificial recharge. The study's goal was to determine the feasibility of pumping water from the Sheyenne River to artificially recharge the Englevale aquifer, thus providing water for additional irrigated acreage. Responding to local irrigators, the Ransom County Water Resource District provided partial funding for the study. The study found that artificial recharge is technically feasible. However, it is not economically justified with present crops and their prices.

The 1991 Legislature directed the State Engineer and State Geologist to conduct site suitability reviews of existing municipal waste landfills. The reports of the reviews are to be provided to the State Department of Health and Consolidated Laboratories for use in site improvement, site remediation, or landfill closure. Fifty landfill sites have been identified for review. The program is to be completed by June 30, 1995. During the 1991-93 biennium the hydrogeologic data collection was completed at 25 sites and reports were published for 15 sites.

The ongoing program for collecting water resource data continued at a relatively constant level. This program consists of four components: streamflow, ground-water levels, chemical quality, and water use. The agency supports the operation of more than 60 streamflow gages, many of which are a part of the cooperative program with the U.S. Geological Survey. Ground-water levels are measured periodically in approximately 3,000 observation wells completed in the major aquifers throughout the state. Approximately 1,000 water samples for chemical analyses are collected annually at streamflow gage stations, and from selected observation wells and production wells. The water use data is submitted by holders of approximately 3,000 water permits.

Water Permit Summary July 1, 1991 Through June 30, 1993

WATER USE	ACRE-FEET
Irrigation	
Applications filed: 95	
Acres requested: 24,325.3	
Acres granted (includes backlog): 18,092.6	
Water granted (includes backlog)	23,386.2
Ground water	12,711.1
Surface water	10,675.1
Flood Control	
Applications filed: 0	
Industrial	
Applications filed: 16	
Water granted (includes backlog)	1,614.1
Livestock	
Applications filed: 0	
Municipal	
Applications filed: 4	
Water granted (includes backlog)	704.0
Recreation, Fish, and Wildlife	
Applications filed: 79	
Storage granted (includes backlog)	10,100.8
Annual use granted (includes backlog) ..	2,502.4
Rural Domestic	
Applications filed: 13	
Water granted (includes backlog)	1,216.0
TOTAL WATER GRANTED	29,422.7
TOTAL APPLICATIONS FILED: 207	
<i>Note: Backlog includes permits applied for in previous bienniums.</i>	

During the 1991-1993 biennium, the following investigations were undertaken, continued, or completed:

- Hydrologic investigation of the ground-water resources of the West Fargo aquifer system in Cass County.
- Hydrogeologic investigation of the Minot aquifer.
- Study of the hydrologic systems in east-central McLean County.
- Assessment of the feasibility for the artificial recharge of the Englevale aquifer.
- Water supply investigation for the Ramsey rural water project.

- Investigation to identify a rural water supply in Bottineau County.

- A documentation of the severity of hydrologic conditions during 1988-1990 and comparison with conditions during past North Dakota droughts.

- Water quality monitoring at Camp Grafton South.

- Water supply investigation for the city of Westhope.

- The assessment of the suitability of solid waste disposal sites.

- A study of agricultural impacts on ground-water quality.

The following reports were published during the biennium:

- Investigation to Identify a Water Supply for a Rural Water Association in Bottineau County, North Dakota.

- Ground-Water Data: The Interaction Between Ground Water and Large Terminal Lake, Devils Lake, North Dakota.

- The Interaction Between Ground Water and a Large Terminal Lake, Devils Lake, North Dakota: Hydrogeology of the Devils Lake Area.

- Evaporation Computed by Energy-Budget and Mass-Transfer Methods and Water Balance Estimates for Devils Lake, North Dakota, 1986-88.

- Review and Experimental Evaluation of Effects of Short-Term PVC Contact and Distilled Water Wash Procedures on Measured Pesticide Concentrations in Field Samples.

- Feasibility of Stabilization of Water Levels and Expansion of Water Use from the Englevale Aquifer Using Water Conservation, Well Field Modification, and Artificial Recharge.

- Water Supply Investigation for the Ramsey Rural Water Project, Portions of Benson, Ramsey, Eddy, and Nelson Counties, North Dakota.

Water Development Division

The Water Development Division provides technical review and guidance in water management project design and in regulating project construction. The division staff has several responsibilities:

- Preparing engineering feasibility reports and designs for the construction, maintenance, and major repair of water resource projects;

- Reviewing and making recommendations on permit applications for drains, dikes, and dams;

- Providing technical assistance to water resource district boards;

- Inspecting and reporting on the safety of dams;

- Assisting communities in developing floodplain management capabilities pursuant to the National Flood Insurance Program;

- Providing joint coordination of the Municipal, Rural, and Industrial Water Supply Program;

- Managing the design, construction, and operation of the Southwest Pipeline Project.

The Water Development Division is divided into six sections: 1) Regulatory, 2) Investigations, 3) Design and Construction, 4) Municipal, Rural, and Industrial Water Supply, 5) Red River Office (located in West Fargo), and 6) Southwest Pipeline Project (includes an office in Dickinson). The following is a summary of the biennial activities of each of these sections.

Regulatory

During the 1991-93 biennium, the Regulatory Section processed 306 dam-dike permit applications and 11 applications to drain. This compares with 196 dam-dike applications and 32 applications to drain in the previous biennium. There were no drainage permit applications of statewide or interdistrict significance. The construction permits consist of 259 for fish and wildlife purposes, 4 to prevent flooding of agricultural land, 1 to prevent flooding of municipalities, 5 for surface water and sediment control of surface coal mining operations, 25 for livestock-watering, 3 for irrigation, 4 for recreation, 3 for wastewater storage, and 2 for commercial fish production.

The Regulatory Section also processed 6 nesting island applications and 57 sovereign lands permit applications. Many of the sovereign lands permit applications were for utility crossings. The Section also processed 4 utility crossings of stream channels which did not involve sovereign lands. The Section also reviewed 1 new mining permit, 25 revisions to existing mining permits, and 158 road projects.

Since passage of the no net loss of wetlands legislation, the Regulatory Section began processing wetland restoration and creation permit applications. During the biennium, the Section processed 115 restoration permits, and 142 creation permits. The Regulatory Section also provided comments on 46 Corps of Engineers, 404 permit applications.

A drought assistance program was implemented during the 1991-93 biennium. The Legislative Assembly passed a bill which called for the State Water Commission to provide drought assistance to North Dakota livestock producers. The program was modeled after a similar program in South Dakota. The program provided cost-share to livestock producers for water supply projects. The Regulatory Section processed 216 applications and provided cost-share for 183 projects. The Drought Disaster Livestock Water Assistance Program ended on June 30, 1993. The total expended funds were \$284,435.

The Regulatory Section is also responsible for floodplain management in the state and coordination of the National Flood Insurance Program. The floodplain management staff assists 231 communities in the administration of its floodplain management responsibilities. Each community designates an individual as the floodplain administrator to oversee all development. The State Water Commission staff works closely with these individuals in providing technical assistance. The floodplain management staff visits the communities on a pre-determined basis of need, and during the 1991-93 biennium, over 100 communities were visited and assisted. Approximately 75 percent of the floodplain management costs are paid through the Community Assistance Program. This program is developed annually by the State Water Commission and the Federal Emergency Management Agency.

Investigations

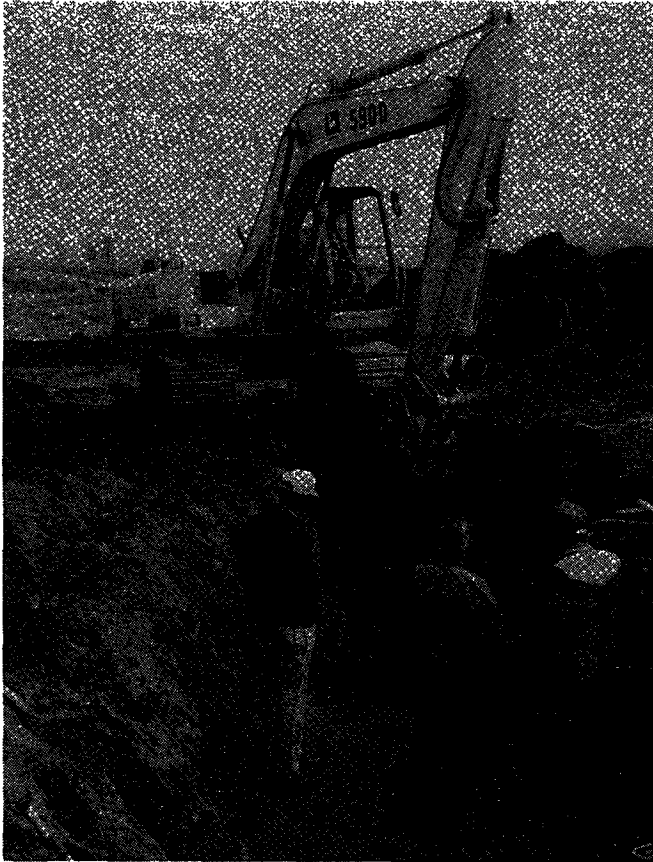
During the 1991-93 biennium, the Investigations Section completed nine major water development investigations and several smaller studies. The following is a summary of the major investigations.

Niobe Coulee Dam, Ward County. The purpose of the investigation was to determine the feasibility of constructing a dam on a tributary to the Des Lacs River for recreation. The proposed site is located on Niobe Coulee, approximately five miles northwest of Kenmare. The cost to construct the proposed project is \$2,000,000. Water rights and the loss of upland habitat are significant issues affecting development of the project.

Mount Carmel Dam, Cavalier County. The purpose of the investigation was to raise the control elevation of the reservoir for water supply, increase the recreational potential, and bring the dam into compliance with current dam safety standards. The dam is located on the Little South Pembina River, approximately 10 miles northeast of Langdon. The cost to construct the proposed project is \$600,000. Currently, the Cavalier County Water Resource District is exploring possible funding sources.

Beaver Bay Dam, Emmons County. The investigation determined the feasibility of constructing a structure to retain water upstream of Highway 1804 at Beaver Bay on Lake Oahe. Fluctuating Oahe Reservoir levels limit the use of recreational facilities surrounding Beaver Bay. The cost of the proposed project is \$3,000,000. The Emmons County Water Resource District decided not to pursue the project due to costs, fish and wildlife concerns, and the potential quality of water impounded upstream of the dam.

Puppy Dog and Larson Coulee Flood Control, Ward County. The purpose of the investigation was to determine the feasibility of providing flood control for low-lying houses in the Eastside Estates Housing Development located downstream of the confluence of Puppy Dog, First Larson, and Second Larson Coulees, southeast of the city of Minot. Several alternatives including construction of dry dams, channel diversion, and relocating or raising houses were investigated. Regardless of the alternative selected, it was recommended that the city and county should pursue a floodplain study on Puppy Dog and Larson Coulees.



Construction at Lake Hiawatha/Sykeston Dam.

Lake Hiawatha/Sykeston Dam, Wells County. The purpose of the investigation was to determine the feasibility of enhancing recreational opportunities on Lake Hiawatha. The site is located on the north edge of the city of Sykeston. Proposed improvements involve the excavation of sediment and vegetation to provide access for shoreline fishing and a desirable swimming area. A low-level draw down structure was proposed. The low-level draw down was constructed while no decision has been made on the remainder of the project.

Lake Isabel, Kidder County. The purpose of the investigation was to study the surface water hydrology and the existing outlet works on Lake Isabel and to identify methods of reducing damages from high lake levels. The site is two and one-half miles south of Dawson. It was recommended to modify the Lake Isabel outlet and to construct an embankment on Slade Refuge to store additional water. The total project costs are \$32,000. The Lake Isabel Association decided not to construct the project.

Oak Creek Streambank Stabilization, McHenry County. The purpose of the investigation was to determine the feasibility of stabilizing two erosion sites along Oak Creek. The project is located approximately one mile west of Velva. The project costs are \$32,000 for the downstream erosion site and \$20,000 for the upstream erosion site. It was determined that the project was not of public interest since it only provides protection for a private residence.

Cavanaugh Lake Diversion, Ramsey County. The purpose of the investigation was to determine the feasibility of diverting water from the Morrison Lake outlet channel into Cavanaugh Lake to provide additional water to improve the lake's fishery. The project is located about 1.5 miles south of the city of Webster. Several alternatives were evaluated with the least costly being \$52,000. The decision to proceed has been delayed due to the great summer flood of 1993.

Missouri River Bank Stabilization, Missouri River Correctional Center Project, Burleigh County. The purpose of the investigation was to determine the feasibility of stabilizing a bank erosion site on the Missouri River adjacent to the Missouri River Correctional Center (State Farm). The project is located approximately four miles south of Bismarck. The cost to construct the proposed project is \$748,000. Project costs have prohibited construction of the project.

Missouri River Master Water Control Manual. During the 1991-93 biennium, the Investigations Section has spent considerable time and resources providing input and analyzing results from the Master Water Control Manual (Master Manual) review and update study developed by the Corps of Engineers. The Master Manual study was initiated as a result of public concern regarding operations of the Missouri River main stem reservoir system. This concern centered around an unprecedented reduction in main stem reservoir water levels. The purpose of the review is to determine if the current water control plan identified in the Missouri River Master Manual appropriately meets the contemporary needs of the basin. The study's objectives include identifying alternatives to those operating criteria currently in the manual; evaluating the economic environmental and social impacts of each; and reviewing the legal constraints involved in operating the system.

Design and Construction

During the 1991-93 biennium, major construction-maintenance activities were performed at the following water resource facilities by the Commission's force account crew:

Blacktail Dam, Williams County. A low-level drawdown system was installed during the months of July and August, 1991. Total project costs of \$13,761 were shared equally by the Game and Fish Department, the Williams County Water Resource District, and the State Water Commission.

Pheasant Lake Dam, Dickey County. An improved low-level drawdown system was installed in August 1991 to replace the old system installed in 1980. Total project costs of \$9,966 were shared equally by the Game and Fish Department, the Dickey County Water Resource District, and the State Water Commission.

Heinrich-Martin Dam, LaMoure County. A low-level drawdown system was installed in August 1991. Total project costs of \$5,832 were shared equally by the Game and Fish Department, the LaMoure County Water Resource District, and the State Water Commission.

Braddock Dam, Emmons County. Repairs and improvements were made to the spillway structure in September 1991. Total project costs of \$7,926 were shared equally by the Game and Fish Department, the Emmons County Water Resource District, and the State Water Commission.

LaMoure Channel Dam, LaMoure County. LaMoure Channel Dam is a low-head channel weir on the James River. The original spillway weir and abutments were constructed of rubble masonry by the CCC in 1935. The damaged and missing portions of the old abutments were replaced by reinforced concrete in the fall of 1991 and the summer of 1992. Total project costs of \$62,064 were shared equally by the Game and Fish Department, the LaMoure County Water Resource District, and the State Water Commission.

Welk Dam, Emmons County. Structural repairs and improvements to the ogee type spillway were performed in June 1992. Total project costs of \$21,860 were shared equally by the Game and Fish Department, the Emmons County Water Resource District, and the State Water Commission.

Tolna Dam, Nelson County. A low-level drawdown system was installed in August 1992. Total project costs of \$25,285 were shared equally by the Game and Fish Department, the Nelson County Water Resource District, and the State Water Commission.

Wilson Dam, Dickey County. A 36-inch diameter polyethylene pipe was inserted inside a 48-inch diameter metal pipe and grout pumped into the space between the two pipes. This phase of operations in September 1992 cost \$19,086. Costs were shared equally by the Game and Fish Department, the Dickey County Water Resource District, and the State Water Commission. Further repairs and modifications to the spillway works in October 1992, cost the State Water Commission an additional \$13,000.

In addition to the aforementioned projects, the Commission's force account crew performed maintenance and minor repairs to the following projects:

Project Name	SWC Costs
Southwest Pipeline.....	\$13,110
Welk Dam.....	1,280
SWC-USGS	
Cooperative Projects.....	33,764
Kulm Dam.....	228
Daub Dam (Arroda Lake).....	500
Heinrich-Martin Dam.....	398
Lake Isabel.....	593
Golden Lake.....	2,594
Sweetbriar Dam.....	1,794
Froelich Dam.....	2,337

Snagging and Clearing Projects. Field investigations (stream channel surveys) and contract work inspections relative to the performance of contract work by the contractor(s) were conducted on the following projects by the Commission's force account crew:

- Wild Rice River, Richland County; project length - 22.6 river miles; contract amount - \$103,663.
- Wild Rice River, Cass County; project length - 5.5 river miles; contract amount - \$19,049.
- Sheyenne River, Barnes County; project length - 5.1 river miles; contract amount - \$31,300.
- Beaver Creek, Emmons County; project length - 10.35 river miles; contract amount - \$96,312.

The aforementioned contract work was awarded to low bidders. The State Water Commission typically provides 25 percent of the total cost of snagging and clearing projects, with the County Water Resource District providing 75 percent of the total cost.

Municipal, Rural, and Industrial Water Supply

The Garrison Diversion Municipal, Rural, and Industrial (MR&I) water supply program in federal fiscal years 1992-93 received \$35 million of federal funds for the development of water supply facilities in the state. This brought the total received from the federal government to \$83 million since the program was authorized in 1986. A total of 124 applicants have requested assistance through the MR&I program. Of these, 32 projects have been approved for MR&I funding by the Garrison Diversion Conservancy District and the State Water Commission. Sixteen projects have been completed including Abercrombie, Agassiz Water Users, Gwinner, Grandin, Englevale, Hankinson, Kindred, Cavalier, Langdon Rural Water, McLean-Sheridan Rural Water, Minto, New Town, North Valley Water Association, Riverside Park Dam, Rugby Phase I, and Tri-County Water Users. Six more projects were in the design and construction at the end of the biennium including Garrison Rural Water, Missouri West Water System, Ramsey County Rural Water, Stanley, Fargo, and Southwest Pipeline Project.

The total estimated cost of the 124 projects is \$442 million. This cost includes \$175 for the Northwest Area Water Supply Project and \$140 million for the Southwest Pipeline Project.

The State Water Commission and the Garrison Diversion Conservancy District began the "prefinal" design phase of the Northwest Area Water Supply (NAWS) project in late 1992. The prefinal design focuses on the distribution of Missouri River water to ten counties in northwestern North Dakota. An engineering team consisting of Houston Engineering, Fargo; American Engineering, Bismarck; and Montgomery Watson of Boise, Idaho, were selected as engineers for the prefinal design in December of 1992. Work on the prefinal design commenced in February 1993.

A series of ten public meetings were held in communities throughout the project area in May of 1993. Communities and rural water associations interested in the project were asked to enter into an "Agreement of Intent to Purchase Water" with the State Water Commission. This agreement states that the community or rural water association will consider entering into an agreement to purchase water from the project at the conclusion of the prefinal design. A total of 40 communities and eight rural water associations have signed agreements. Work on the prefinal design is scheduled for completion in the summer of 1994.

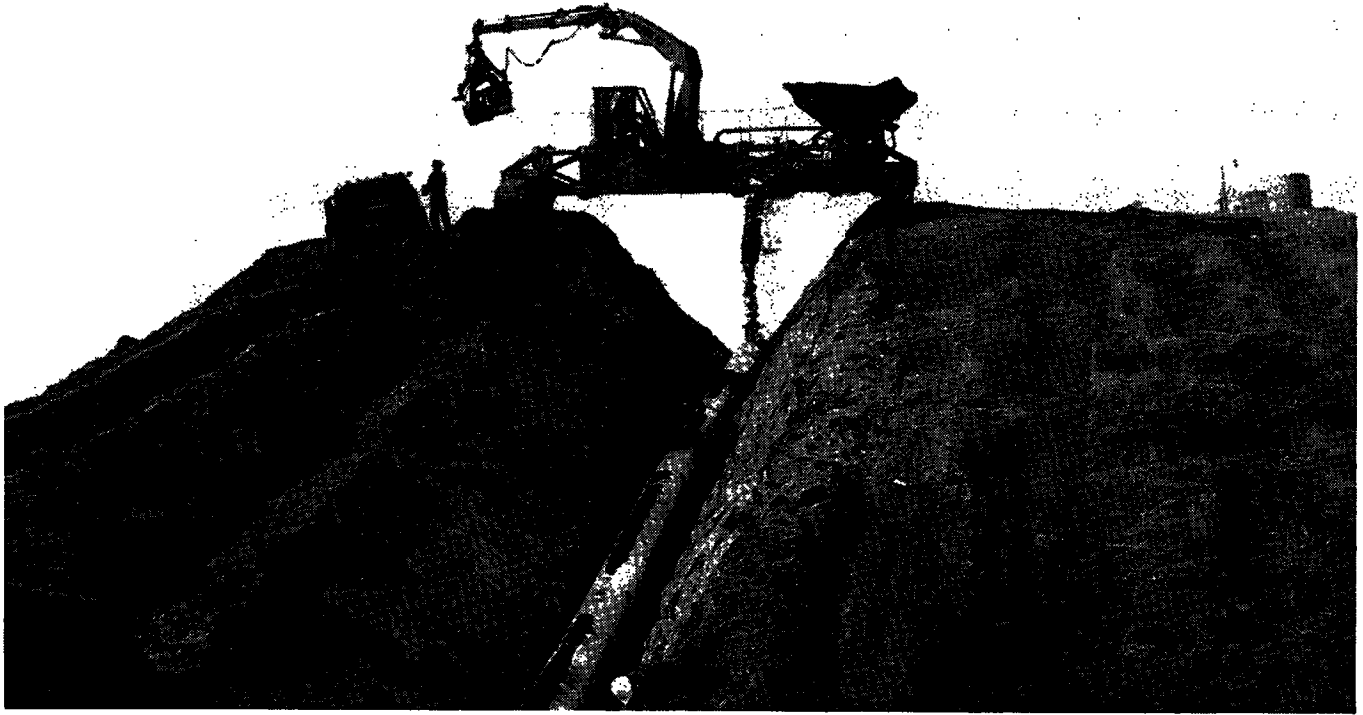
Red River Office (West Fargo)

The State Water Commission opened a Red River Office in 1984 in West Fargo to provide general coordination and support for water projects and activities in the Red River Basin. The office is jointly funded by the Red River Joint Water Resource Board and consists of one full-time employee and one part-time temporary employee. The Red River office was involved in most Red River Basin projects mentioned in other sections of this report, including Tolna Dam, Golden Lake, and several snagging and clearing projects. The office also represented the State Water Commission on the Red River Hydraulic Study Group.

Southwest Pipeline Project

Operations of the Southwest Pipeline Project began in October of 1991, with delivery of Lake Sakakawea water to the city of Dickinson. During the 1991-93 biennium 921,480,000 gallons were delivered to Dickinson. Capital repayment to the Resources Trust Fund was \$329,524. The Annual Operating Report (see Appendix A) details the first full year of operation.

In addition to service to Dickinson, the project began service to a subdivision under the Southwest Water Authority's rural water service rules. A policy governing supply of raw water for nonpotable use was also developed; and two users, the Taylor Nursery and the Sacred Heart Monastery, are currently served under this policy.



Construction of Southwest Pipeline Project.

Operation functions will ultimately be transferred to the Southwest Water Authority. During the 1991-93 biennium, all operations were the responsibility of the State Water Commission.

Construction also continued on the Southwest Pipeline Project. The major construction efforts directed toward bringing service to the cities of Golden Valley, Dodge, Halliday, Dunn Center, Taylor, Gladstone, and Mott. These cities are under orders from the U.S. Environmental Protection Agency to reduce the fluoride concentration in their drinking water. The cities of Richardton, New England, and Regent will also be served.

Of the works necessary to serve this area, only the transmission line extending from Taylor to the cities north of the Knife River was not under contract by the end of the biennium.

During the biennium, a conceptual design of the regional system integrating rural water distribution into the transmission system was completed. This conceptual design will become the foundation of a phased development plan, prioritizing service areas to guide the future sequential development of the project.

State Water Commission

Funding Sources
for Biennial Period Ending June 30, 1993

FUNDING SOURCE	APPROPRIATION	EXPENDITURES	BALANCE
General Fund	\$5,809,811	\$5,695,291	\$114,520
Federal Fund	34,966,595 ¹	15,553,620	19,412,975
Special Fund	20,753,417 ²	11,222,654	9,530,763
TOTAL	\$61,529,823	\$32,471,564	\$29,058,258

1 Actual federal revenue was \$16,573,022; unspent balance was carried forward.

2 Actual special fund revenue was \$11,772,662; unspent balance was carried forward.

State Water Commission

Program Budget Expenditures for Biennial Period Ending June 30, 1993

AGENCY PROGRAM	SALARIES & WAGES	INFORMATION SERVICES	OPERATING EXPENSE	EQUIPMENT	CONTRACTS	PROGRAM TOTAL
ADMINISTRATIVE SERVICES						
Budget	\$584,488	\$81,133	\$299,242	\$38,500	\$0	\$1,003,363
Expended	\$569,699	\$81,517	\$286,066	\$38,237	\$0	\$975,518
Percentage	97	100	96	99	0	97
PLANNING AND EDUCATION						
Budget	\$599,097	\$0	\$157,532	\$6,000	\$130,100	\$892,729
Expended	\$583,874	\$0	\$141,556	\$5,820	\$99,471	\$830,720
Percentage	97	0	90	97	76	93
WATER APPROPRIATION						
Budget	\$2,138,156	\$24,192	\$468,824	\$164,700	\$760,946	\$3,556,818
Expended	\$2,024,526	\$17,569	\$468,563	\$164,544	\$754,240	\$3,429,441
Percentage	95	73	100	100	99	96
WATER DEVELOPMENT						
Budget	\$2,451,105	\$3,500	\$385,367	\$106,800	\$13,957,514	\$16,904,286
Expended	\$2,378,909	\$1,763	\$375,773	\$106,428	\$7,613,076	\$10,475,950
Percentage	97	50	98	100	55	62
ATMOSPHERIC RESOURCES						
Budget	\$344,592	\$27,175	\$1,229,220	\$11,872	\$3,050,000	\$4,662,859
Expended	\$328,632	\$22,861	\$968,886	\$6,935	\$1,003,353	\$2,330,667
Percentage	95	84	79	58	33	50
SOUTHWEST PIPELINE						
Budget	\$614,047	\$0	\$3,772,489	\$114,100	\$27,240,000	\$31,740,636
Expended	\$524,481	\$0	\$3,190,373	\$81,588	\$10,082,140	\$13,878,581
Percentage	85	0	85	72	37	44
CONTRACT CARRYOVER						
Budget	\$0	\$0	\$0	\$0	\$2,769,132	\$2,769,132
Expended	\$0	\$0	\$0	\$0	\$550,687	\$550,687
Percentage	0	0	0	0	20	20
AGENCY TOTALS						
Budget	\$6,731,485	\$136,000	\$6,312,674	\$441,972	\$47,907,692	\$61,529,823
Expended	\$6,410,120	\$123,910	\$5,431,217	\$403,551	\$20,102,966	\$32,471,564
Percentage	95	91	86	91	42	53

State Water Commission

1991-1993 Grants Summary

PROGRAM/ PROJECT	RESOURCES TRUST FUND	GENERAL FUNDS	OTHER FUNDS	FEDERAL MR&I REIMBURSEMENT	TOTALS
MR&I Program (Fed FY 93)	\$7,501,441			\$1,219,490	\$8,720,931
Maple River Dam	500,000				500,000
Southwest Pipeline	0			2,384,219	2,384,219
General Projects	739,915		40,000		779,915
EPA Wetlands Grant			291,825		291,825
Devils Lake Feasibility Study	500,000				500,000
Na Chiin Huun-Dakota/NAWS	50,000				50,000
Souris River Flood Control	1,637,924				1,637,924
Drought Livestock Program	300,000				300,000
Hydrologic Investigations	486,446		274,500		760,946
Inter Basin Transfer Studies		100,000			100,000
SWC GRANTS TOTALS	\$11,715,726	\$100,000	\$606,325	\$3,603,709	\$16,025,760

Admin 91-93 → - 6,293 for ISD
 Appro - 17,569 MH-98
 Dev. - 1,763 8-18-98
 ARB - 22,861

 \$ 48,486

*For Admin the price of \$81,517
 is both phone & computer costs.
 The 1993-1995 Biennium
 had a 92.3% phone and 7.7%
 computer. 7.7% was used for ISD

State Water Commission

**Grants Programs/Projects Authorized
July 1, 1991 - June 30, 1993**

SWC PROJ. NO.	NAME	DATE APPROVED	AMOUNT APPROVED	PAYMENTS	BALANCE
PLANNING AND EDUCATION DIVISION					
1828	Inter Basin Transfer Studies		<u>\$100,000.00</u>	<u>\$99,470.54</u>	<u>\$529.46</u>
PLANNING AND EDUCATION DIVISION TOTALS			\$100,000.00	\$99,470.54	\$529.46
WATER APPROPRIATION DIVISION					
1395	USGS Co-op Program		<u>\$460,000.00</u>	<u>\$420,134.05</u>	<u>\$39,865.95</u>
1854	Project Contracts		<u>300,946.00</u>	<u>257,516.48</u>	<u>43,429.52</u>
WATER APPROPRIATION DIVISION TOTALS			\$760,946.00	\$677,650.53	\$83,295.47
WATER DEVELOPMENT DIVISION MR&I PROGRAM					
237-5	Ramsey County Rural Water	9-15-92	\$3,489,596.00	\$2,552,837.14	\$936,758.86
237-12	Agassiz Rural Water (Final)	3-13-91	204,750.00	204,750.00	0.00
237-15	North Valley Water Association (Final)	9-17-91	496,800.00	490,527.05	6,272.95
237-17	Tri-County Rural Water (Final)	9-15-92	120,480.00	114,258.46	6,221.54
237-27	Missouri West	9-15-92	2,625,565.00	1,151,616.02	1,473,948.98
237-38	Grandin (Final)	3-13-91	36,190.00	28,136.59	8,053.41
237-40	Kindred (Final)	9-15-92	36,050.00	30,151.41	5,898.59
237-36	Stanley	10-21-91	1,011,500.00	340,327.89	671,172.11
237-42	Garrison Rural Water	9-15-92	<u>700,000.00</u>	<u>175,770.24</u>	<u>524,229.76</u>
MR&I SUBTOTAL			\$8,720,931.00	\$5,088,374.80	\$3,632,556.20
SPECIAL PROJECTS					
237-4	Na Chiin Hunn-Dakota/NAWS	2-4-92	\$50,000.00	\$0.00	\$50,000.00
416	Devils Lake Flood Control	2-4-92	500,000.00	0.00	500,000.00
1344	Maple River Flood Control	2-4-92	500,000.00	173,390.00	326,610.00
1798	Souris River Flood Control	2-4-92	1,637,924.00	1,637,923.50	0.50
1736	Southwest Pipeline Project	2-4-92	2,384,219.00	2,384,219.00	0.00
1851	Drought Livestock Program	6-24-91	<u>300,000.00</u>	<u>284,435.00</u>	<u>15,565.00</u>
SPECIAL PROJECTS SUBTOTAL			\$5,372,143.00	\$4,479,967.50	\$892,175.50
EPA WETLANDS GRANT					
1489-5	Wetlands Education	9-15-92	\$77,550.00	\$23,725.56	\$53,824.44
	Technical Services		14,400.00	5,527.50	8,872.50
	Water Quality Analysis		14,325.00	0.00	14,325.00
	Grand Harbor		71,775.00	2,051.72	69,723.28
	Adopt-a-Pothole		24,000.00	0.00	24,000.00
	Private Lands		31,950.00	4,995.26	26,954.74
	Devils Lake Basin		48,825.00	21,164.67	27,660.33
	Attorney General		<u>9,000.00</u>	<u>1,951.48</u>	<u>7,048.52</u>
EPA WETLANDS GRANT SUBTOTAL			\$291,825.00	\$59,416.19	\$232,408.81

SWC PROJ. NO.	NAME	DATE APPROVED	AMOUNT APPROVED	PAYMENTS	BALANCE
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WATER DEVELOPMENT DIVISION (continued)
GENERAL PROJECTS

	Unallocated Balance		\$58,096.00	\$0.00	\$58,096.00
237	Garrison Consultant	8-22-91	40,000.00	32,051.42	7,948.58
237	Water/Wildlife Program		1,160.00	1,154.00	6.00
237	Garrison Coalition	12-19-92	10,000.00	10,000.00	0.00
237-99	Miller: P/E (F)	2-8-93	20,000.00	20,000.00	0.00
237-99	Miller: P/E II (F)	4-1-93	10,000.00	10,000.00	0.00
300	Baldhill Dam	9-15-92	184,000.00	0.00	184,000.00
322	Planning Consultant	6-24-91	26,100.00	26,999.28	-899.28
416	Devils Lake Water Quality (F)	12-20-91	19,800.00	19,800.00	0.00
475	Golden Lake (F)	2-9-93	865.00	865.00	0.00
662	Park River Snagging and Clearing	4-2-92	14,958.00	4,841.00	10,117.00
662	Park River Snagging and Clearing #2	5-23-92	4,625.00	0.00	4,625.00
847	Absarraka Dam (F)	12-10-91	2,098.00	2,098.00	0.00
988	Antelope Creek Cleanout (F)	1-7-92	2,400.00	1,778.00	622.00
1217	Tri-County Drain #6 (F)	12-10-91	1,556.00	1,556.00	0.00
1280	Turtle River Snagging and Clearing (F)	2-5-92	438.00	438.00	0.00
1311	Trail County (Elm)	9-15-92	5,590.00	0.00	5,590.00
1311	Trail County (Bing)	9-15-92	4,900.00	0.00	4,900.00
1346	Mount Carmel	4-2-92	14,350.00	15,295.00	-945.00
1389	Irrigation District (F)	4-2-92	2,000.00	2,000.00	0.00
1496	Lake Elsie		11,500.00	0.00	11,500.00
1751-G	Williston Floodplain	2-24-93	1,000.00	0.00	1,000.00
1588-1	International Coalition (F)	2-4-92	5,000.00	5,000.00	0.00
1701	Statewide Communication Plan (F)	2-4-92	15,000.00	15,000.00	0.00
1701	UNET/Barkaw Visit, Walsh (F)	8-1-91	1,464.00	1,464.00	0.00
1701	UNET/Walsh Co. (F)	6-23-92	3,139.00	3,139.00	0.00
1730	Section 22 (FY 92) (F)	2-4-92	32,300.00	32,300.00	0.00
1730	Section 22 (FY 91) (F)	8-29-91	3,500.00	3,500.00	0.00
1730	Section 22 (FY 92) Parshall (F)	7-28-92	3,562.50	3,562.50	0.00
1730	Section 22 (FY 92) Washburn (F)	5-29-92	1,687.50	1,687.50	0.00
1730	Section 22 (FY 93) (F)	4-6-93	10,000.00	10,000.00	0.00
1751-H	Lower Forest River Floodplain		5,200.00	0.00	5,200.00
1791	TRS 5 Percent Cost Share (F)	5-30-91	9,400.00	9,400.00	0.00
1802	Lake Irvine Outlet Structure	2-4-92	26,900.00	2,000.00	24,900.00
1804	Grand Harbor (F)	4-2-92	5,500.00	5,500.00	0.00
1804	Grand Harbor #1	4-6-93	68,826.00	48,186.00	20,640.00
1803	Belfield Flood Control	12-20-91	38,800.00	0.00	38,800.00
1813	Cass County Snagging and Clearing	11-25-91	3,750.00	3,425.00	325.00
1815-4	Sheyenne Snagging and Clearing	12-9-92	4,836.00	0.00	4,836.00
1816-3	Sheyenne Snagging and Clearing (F)	12-20-91	5,508.00	4,595.00	913.00
1816-4	Sheyenne Snagging and Clearing (F)	12-9-92	3,000.00	3,000.00	0.00
1822	Devils Lake Hydrologic Study (F)	4-6-93	15,000.00	15,000.00	0.00
1826	Wetlands	4-6-93	10,000.00	10,000.00	0.00
1842-3	Wild Rice Snagging and Clearing III	2-4-92	31,000.00	18,236.00	12,764.00
1842-4	Wild Rice Snagging and Clearing	12-9-92	725.00	0.00	725.00
1852	Water Strategy Task Force	4-26-91	13,056.00	12,083.86	972.14
1859	Water Quality Task Force	11-25-91	1,000.00	445.34	554.66
1865	Belfield Dam	4-2-92	11,000.00	1,030.80	9,969.20
1868-3	Wild Rice Snagging and Clearing (F)	12-9-92	2,600.00	352.00	2,248.00
1868	Wild Rice Snagging and Clearing (F)	12-20-91	12,725.00	994.00	11,731.00
	GENERAL PROJECTS SUBTOTAL		\$779,915.00	\$358,776.70	\$421,138.30
	WATER DEVELOPMENT DIVISION TOTALS		\$15,164,814.00	\$9,986,535.19	\$5,178,278.81
	ALL FUNDS TOTALS		\$16,025,760.00	\$10,763,656.26	\$5,262,103.74

State Water Commission

Object Expenditures for Biennial Period Ending June 30, 1993

Permanent Salaries	\$ 4,777,784
Temporary Salaries	131,156
Overtime Salaries	119,451
Fringe Benefits	1,381,729
Data Processing Service	123,710
Intergovernmental Services	13,982
Payments to State Motor Pool	254,680
Employee Travel	320,795
Utilities	259,543
Postage	42,659
Telephone Services	27,400
Leases/Rental	94,918
Dues and Professional Development	106,473
Operating Fees and Services	515,048
Repair Services - Non-Contract	24,962
Repair Services - Contract	59,889
Professional Services (Includes Southwest Pipeline)	3,052,094
Insurance	14,107
Miscellaneous Fees and Services	9,468
Office Supplies	28,145
Data Processing Supplies	88,261
Printing	61,567
Resource and Reference Materials	20,579
Scientific Supplies	219,817
Building/Equipment Supplies	177,779
Equipment Maintenance/Other Supplies	39,051
Office Equipment/Furniture	250,480
Machinery, Implements and Tools	67,844
Scientific Equipment	85,227
Land/Buildings/Other	159,988
Contract Payments (Includes Southwest Pipeline)	10,345,551
Water Resources Grants	8,594,074
Cooperative Research	<u>1,003,353</u>
TOTAL	\$32,471,564

Resources Available from the Agency

Minutes of meetings held may be obtained by writing to:

ND State Water Commission
State Office Building
900 East Boulevard Avenue
Bismarck, ND 58505-0850

Data available for public use includes:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Government Land Office Plats • Survey Horizontal and Vertical Control • Various Ground-Water Studies • Growing Season Rainfall Data | <ul style="list-style-type: none"> • Water Permit Data • Drainage Permit Data • Stream Flow Data |
|--|---|

APPENDIX A



**1992
Annual
Operating
Report**

ND STATE WATER COMMISSION

Page 28 is a blank page in the original report.

**SOUTHWEST PIPELINE PROJECT
ANNUAL OPERATIONS REPORT
1992**

I. Summary of Operations:

The Southwest Pipeline Project began service to the city of Dickinson on a test basis immediately after completion of pump tests at the Dodge and Richardton pump stations in mid-October of 1991. On November 15, 1991, service began under the terms of the water service contract. This annual report includes the period from November 15 to December 31 in the 1992 operating year.

On October 21, 1991, the State Water Commission approved water use rates. These rates were based on estimates and totalled \$1.66 per thousand gallons broken out to include \$0.80 per thousand gallons for operation costs, \$0.30 for replacement and extraordinary maintenance, and \$0.56 for treatment. The Commission also approved a capital repayment rate of \$0.62 per thousand gallons and adopted a schedule of debt service credits. Under these approvals the nominal rate was \$2.28 per thousand gallons; however, with the debt service credits the city actually paid \$2.02 per thousand gallons.

The year-end review revealed that the actual operation and maintenance cost was \$1.26 per thousand rather than \$1.66. The over-collection is currently being refunded under the terms of the water service contract. The total over-collection was \$185,864.

In November of 1991, the city of Dickinson and the State Water Commission executed an agreement whereby the city would provide treatment of all project water and the Commission would reimburse actual costs for that service.

From the beginning of service until early February the system was operated manually with personnel stationed at the pump stations during pumping. By February, the control system was operational and automatic control was possible. The control system also enables refinement of operations for efficiency. The operations staff has learned that with proper control of reservoir levels and pump runs, it is not necessary to run the Dodge pump station except in periods of very high demands. (This condition will only prevail until use of project water grows with more users added.)

In early March operators noticed a loss of water from the Zap reservoir. The cause was found to be a leak in the main transmission pipe near Dodge. When the area was excavated on March 17, a defective joint was discovered and successfully repaired.

The terms of the water service contracts call for users to be billed on either their actual use or a monthly minimum, which is 1/12 of their annual minimum water purchase, whichever is greater. For a city using the pipeline as its sole source, this will inevitably lead to over-billing on an annual basis. For the months

of January and February, Dickinson was billed for the monthly minimum. In February, the State Water Commission approved an amendment to the water service contract under which, if the city uses no other source of water, the billing is done on actual use each month. Such an amendment was executed for Dickinson's contract, and from March on billing was done on actual use.

In December of 1991, the Roshau subdivision was ready for rural water service. This subdivision is located outside the city limits of Dickinson, but is near enough to be served from the city's distribution system. Construction of the rural water system included a connection to the city's lines. This arrangement is temporary. When the Dickinson pump station is completed this area will be served by the Southwest Pipeline transmission line. For the interim period, the Southwest Pipeline Project will purchase water for the Roshau subdivision from the city under a temporary water service agreement. Although water was delivered to Roshau residents in December, no costs or collections of money occurred in 1992.

Summary of 1992 Volume by user.

City of Dickinson:	655,640,000 gallons
Roshau Subdivision:	112,000 gallons

II. Fiscal Summary:

1992 Revenue

	<u>Rate</u>	<u>Collected</u>
Operation and Maintenance	\$0.80	\$ 524,512
Treatment	0.56	367,158
Replacement & Ext. Maint.	0.30	196,692
Capital Repayment	<u>0.62</u>	<u>253,317</u>
Total	\$2.28	\$1,342,679

1992 Expenses

	<u>Disbursements</u>
Utilities (1)	\$ 120,544
Operations (2)	143,104
Treatment (3)	367,158
O&M Reserve	75,000
Replacement Account	196,692
Capital Repayment (4)	253,317
Credit for Overcharge	<u>185,864</u>
Total	\$1,342,679

- (1) Includes electricity, telephone, heat, etc.
- (2) Salaries, travel, insurance building, supplies, equipment, vehicle, maintenance, misc.
- (3) Paid to Dickinson.
- (4) Deposited in Resources Trust Fund.

1992 SOUTHWEST PIPELINE OPERATING EXPENSES

WATER DELIVERED (Kgal): 655,640

UTILITIES	cost/yr
Power (Pump stations incl. wheeling)	\$108,446
Other (O&M, Dickinson Res, Cathodic Prot.)	\$7,743
Phone	\$1,693
Heat	\$2,878
Misc. Util.	<u>(\$216)</u>
Total Utilities:	\$120,544

OPERATIONS	
Salaries	\$84,257
Travel	\$14,187
Insurance	\$7,361
Supplies	\$5,722
Building	\$10,580
Equipment	\$7,291
Vehicle Maint.	\$8,557
Fuel	\$2,698
Basin Site Serv.	(2) \$0
Maintenance	\$1,326
Misc.	<u>\$1,125</u>
Total Operations	\$143,104

Total Operating Costs **\$263,648**

Notes:

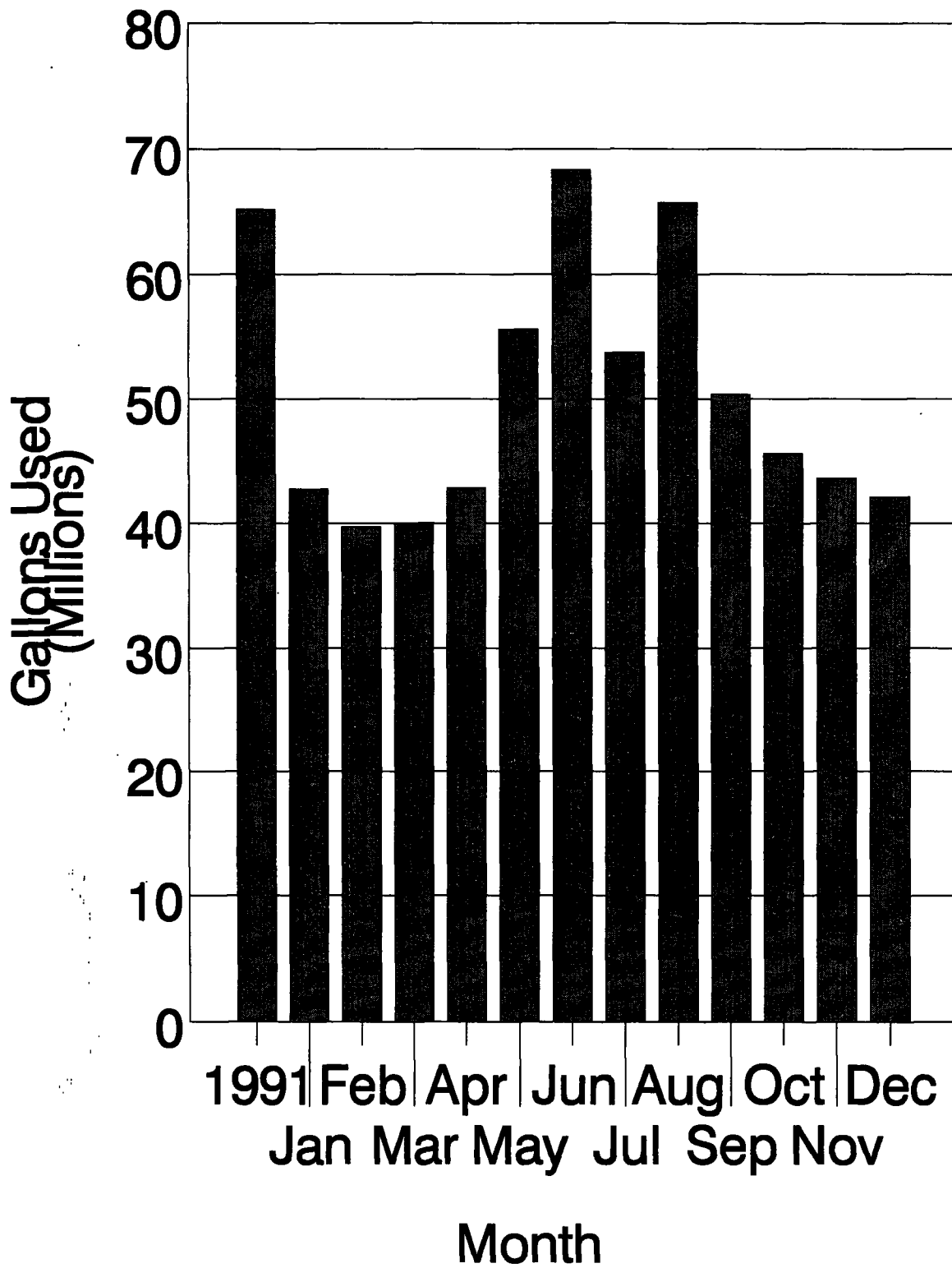
(1)

Based on service from November 1, 1991 to Dec. 31, 1992

(2)

Not assessed in billing period

MONTHLY WATER USE BY DICKINSON



**SOUTHWEST PIPELINE PROJECT
SUMMARY OF SERVICE 1992
DICKINSON**

MONTH	METER	USE (Kgal)	BILLED (Kgal)	O&M	REPL	TREAT	CREDIT	CAP	TOTAL
Start	330.1			\$0.80	\$0.30	\$0.56		\$0.62	\$2.28
1991	395.29	65,190	65,190	\$52,152	\$19,557	\$36,506	\$0	\$40,418	\$148,633
1992									
JAN	438.07	42,780	54,304	\$43,443	\$16,291	\$30,410	(\$12,765)	\$20,903	\$111,048
FEB	477.79	39,720	54,304	\$43,443	\$16,291	\$30,410	(\$12,765)	\$20,903	\$111,048
MAR	517.85	40,060	13,952	\$11,162	\$4,186	\$7,813	(\$8,650)	\$0	\$23,161
APR	560.7	42,850	42,850	\$34,280	\$12,855	\$23,996	(\$16,880)	\$9,687	\$80,818
MAY	616.28	55,580	55,580	\$44,464	\$16,674	\$31,125	(\$12,765)	\$21,695	\$113,957
JUN	684.65	68,370	68,370	\$54,696	\$20,511	\$38,287	(\$12,765)	\$29,624	\$143,119
JUL	738.38	53,730	53,730	\$42,984	\$16,119	\$30,089	(\$12,765)	\$20,548	\$109,739
AUG	804.13	65,750	65,750	\$52,600	\$19,725	\$36,820	(\$12,765)	\$28,000	\$137,145
SEP	854.47	50,340	50,340	\$40,272	\$15,102	\$28,190	(\$12,765)	\$18,446	\$102,010
OCT	900.05	45,580	45,580	\$36,464	\$13,674	\$25,525	(\$12,765)	\$15,495	\$91,157
NOV	943.63	43,580	43,580	\$34,864	\$13,074	\$24,405	(\$12,765)	\$14,255	\$86,597
DEC	985.74	42,110	42,110	\$33,688	\$12,633	\$23,582	(\$12,765)	\$13,343	\$83,246
SUMMARY		655,640	655,640	\$524,512	\$196,692	\$367,158	(\$153,180)	\$253,317	\$1,341,679

COST IN 1992 INCLUDING DEBT SERVICE CREDIT: \$2.05

EXPENSES	NOV 91	DEC 91	JAN 92	FEB 92	MAR 92	APR 92	May 92	JUNE 92	JULY 92	AUG 92	SEPT 92	OCT 92	NOV 92	DEC 92	TOTAL
A. Utilities															
INTAKE															
a. WAPA	0	3387	2526	2412	2483	2489	2413	5090	0	2488	2503	2495	2416	2873	33575
b. Wheeling	0	2183	1958	1767	1798	1964	1756	4287	0	2072	1960	1899	1725	1571	24941
c. Telephone	0	172	36	36	87			70	0	31	35	52	31	88	636
d. Fuel															0
SUBTOTAL	0	5743	4520	4215	4368	4453	4169	9447	0	4590	4498	4445	4172	4532	59152
DODGE															
a. WAPA	0	523	486	454	458	461	430	784	0	360	371	383	378	34	5132
b. Wheeling	0	2000	1000	1000	1000	1000	0	3000	0	1000	1000	1000	1000	1000	14000
c. Telephone	0	135	49	56	62	0	0	105	0	22	56	169	0	0	655
d. Fuel	0														0
e. Other	0										0	-216	4196	-4196	-216
SUBTOTAL	0	2668	1535	1510	1521	1461	430	3890	0	1382	1426	1336	5574	-3162	19570
RICHARDTON															
a. WAPA	0	1299	1176	1185	1191	1188	1184	2665	0	1271	1317	1319	1250	1289	16334
b. Wheeling	0	1000	1000	1000	1000	1000	0	3526	0	1178	1313	1304	1143	1000	14464
c. Telephone	0	0	164	0	54	0	0	92	0	25	26	70	0	0	431
d. Fuel															0
e. Other															0
SUBTOTAL	0	2299	2340	2185	2245	2188	1184	6283	0	2474	2656	2692	2394	2289	31230
O&M HQ															
a. Electricity	677506503	0	140	190	341	265	254	281	1330	391	0	298	271	254	4269
b. Gas		0	836	453	286	0	397	0	28	23	33	0	63	759	2878
c. Water															0
SUBTOTAL	0	140	1026	794	551	254	677	1330	419	23	332	271	316	1013	7147
DICKINSON RES															
a. Electricity	680400800	0	77	67	83	98	126	122	285	72	0	63	51	58	1175
b. Other															0
SUBTOTAL	0	77	67	83	98	126	122	285	72	0	63	51	58	72	1175
CATHODIC PROTECTION															
a. Ant Cr	18018101	0	0	31	15	51	0	50	18	15	15	19	25	32	299
b. Gold Val	21001100	0	0	28	9	9	0	17	12	12	12	13	12	12	149
c. Dod So	240600200	0	23	20	22	21	21	22	66	22	0	23	22	23	307
e. Hy 8	232100200	0	18	17	18	17	17	18	51	17	0	18	17	18	242
f. Alk Fl	472700100	0	13	13	16	13	14	11	34	15	0	15	15	15	188
g. East Tay	513500100	0	28	31	31	31	30	31	84	38	0	40	40	41	466
h. Gladstone	523200100	0	15	18	18	17	16	17	47	19	0	18	19	20	244
i. East Auto	671200600	0	16	21	21	20	19	20	61	18	0	26	24	31	306
j. Zap	10080100	0			0	9	0	17	9	9	9	11	10	12	97
SUBTOTAL	0	113	180	149	187	118	203	382	166	36	182	183	202	199	2299
TOTAL	0	11040	9667	8927	8970	8600	6785	21616	657	8505	9157	8979	12717	4943	120573
B. Salaries	0	2946	4161	1986	3013	11456	10477	9494	7586	4534	5485	8935	6889	7293	84257
C. Travel	12	217	119	600	1090	1596	2076	1468	2359	414	1942	405	1196	694	14187
D. Insurance						2972			4281			108			7361
E. Office Supplies			370	62		4052	49	930			155	50	43		5722
F. Building			46	135	2694	1037	1000	3209		1973		117	108	261	10580
G. Equipment					6493	760								38	7291
H. Vehicles Main		36	604		166			132	2298	5236		85			8557
I. Fuel		349	856	310	284		647					85		167	2698
J. Cathodic Pro					0				0	0					0
K. Maintenance		36	36	37	62	45	182	256		136	136	145	136	120	1326
L. Miscellaneous			49	10	28		5	7		27		6			131
					994										994
SUBTOTAL	12	3584	6240	3140	14825	21917	14436	15496	16536	12320	7718	9935	8372	8573	143104
SUBTOTAL EXPENSES	12	14624	15907	12076	23795	30517	21221	37112	17193	20825	16875	18914	21089	13516	263676
Treatment		0	0	36506	30410	30410	7813	55121	0	38287	30089	36820	28190	25525	319172
TOTAL EXPENSES	12	14624	15907	48583	54205	60927	29034	92233	17193	59112	46964	55734	49279	35041	582848
INCOME															
Treatment		36506	30410	30410	7813	23996	31125	38287	30089	36820	28190	25525	24405	22582	367158
O&M (.80)		52152	43443	43443	11162	34280	44464	54696	42984	52600	40272	36464	34864	33688	524512
Replacement Fund (0.30)		19557	16291	16291	4186	12855	16674	20511	16119	19725	15102	13674	13074	12633	196692
Capital Repayment		11166	20903	20903	0	9687	21695	29624	20548	28000	18446	15495	14255	13343	224065
TOTAL INCOME	0	119381	111048	111048	23160	80818	113957	143119	109739	137145	102010	91157	86597	83246	1312427
Replacement Fund Balance	0	19557	35848	52139	56325	69180	85854	106365	122484	142209	157311	170985	184059	196692	393384
Resources Trust Fund	0	11166	32069	52973	52973	62660	84355	113979	134527	162527	180972	196467	210722	224065	448130
Operating Income	0	88646	147876	205822	176214	180285	194947	258896	239736	311963	321313	336338	339872	347863	891670
-Expenses	12	14624	15907	48583	54205	60927	29034	92233	17193	59112	46964	55734	49279	39041	582848
	-12	74023	131969	157239	122009	119358	165913	166663	222543	252850	274349	280604	290594	308822	308822