The background of the cover is a photograph of a calm lake. The water is dark blue and reflects the sky and the surrounding trees. The trees on the far bank are in full autumn foliage, with many leaves turned bright yellow and orange. The sky is a clear, pale blue. The text is overlaid on the top half of the image.

REVISED
WATER DEVELOPMENT
2001 BIENNIAL REPORT
a supplement to the
1999 State Water Management Plan

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North Dakota State Water Commission



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**WATER
DEVELOPMENT
2001
BIENNIAL REPORT**
a supplement to the
**1999 State Water
Management Plan**

December 15, 2000

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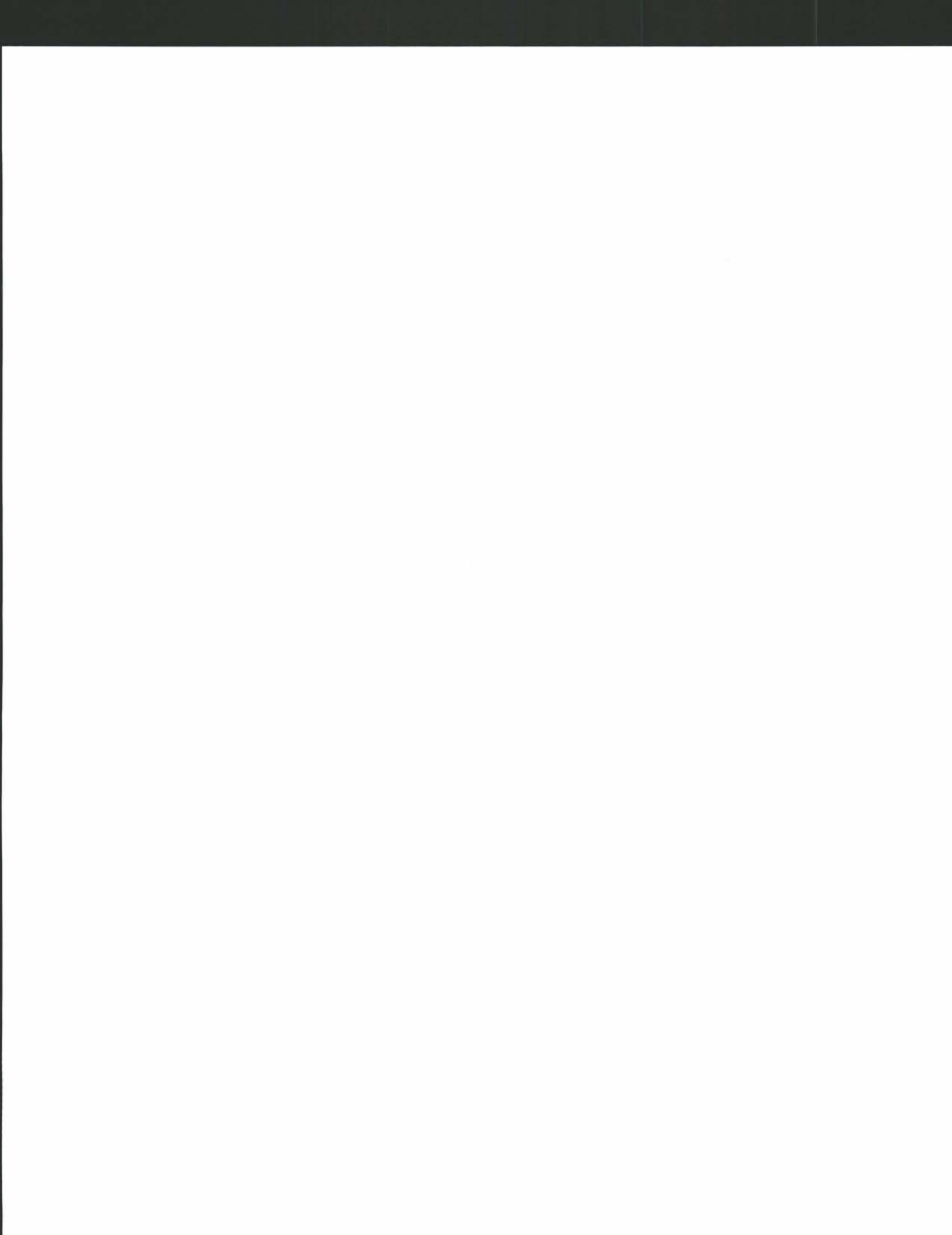
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Introduction

The year 1999 was one of many great accomplishments in water development. The State Water Commission (SWC) completed its most recent update to the state water management plan. The Legislature approved of the plan and granted authority for bonding for water development and devoted 45 percent of the tobacco settlement funds to meet water needs and bond requirements. Furthermore, the awareness of water development project needs in the state may be at an all-time high.

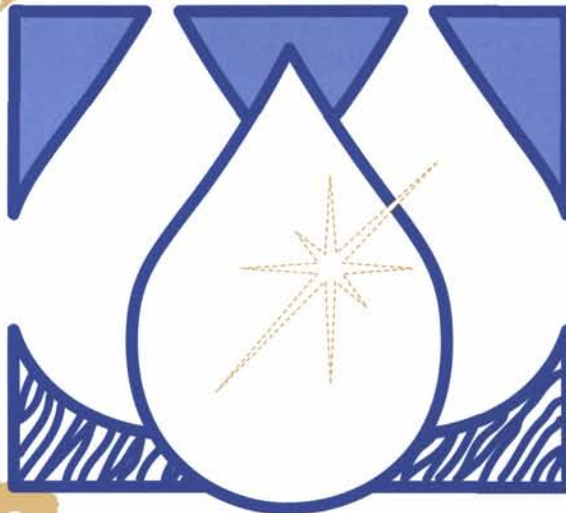
The 1999 State Water Management Plan (SWMP) is likely the most comprehensive water plan developed for North Dakota. Much of the background effort of collecting information about water needs was completed while the memory of the 1997 floods was fresh in the minds of state residents. The new plan documented the water development project needs of the state and reviewed water management policies. Some of these policies had never been documented. Also, the plan showed a funding shortfall to address the identified needs.

When the 1999 State Water Management Plan was submitted to the legislature, they responded by developing legislation supporting expanded water development. Senate Bill 2188 and House Bill 1475 were passed into law via chapter 535 of the Session Laws (SB 2188) and now guide water development into the new millennium.

Purpose and Authority

The purpose of this report is threefold. First, the SWC has an ongoing effort to keep abreast of the water development needs in

the state. The periodic updating of the state water management plan, as defined in the North Dakota Century Code Section 61-02-26 and Section 61-02-14, is the most visible aspect of this effort. Beyond that, the Planning and Education Division of the SWC has maintained a potential projects list since the 1983 State Water Management Plan. Much of the work



encompassed by this report is the updating of the water development database. The second purpose of this report is to meet the requirements of NDCC 57-51.1-07.1, to request funds from the Resources Trust Fund. The third purpose is to meet the requirements of NDCC 61-02-26 and NDCC 61-02-14 (SB 2188).

SB 2188 provides several critical components in the development of our state's water resources. The SWC is now authorized to issue up to \$84.8 million in bonds to help fund flood control projects at Grand Forks, Wahpeton, Grafton, and Devils Lake, water supply projects for Garrison Diversion and Southwest Pipeline

Project, and to fund other general projects identified in the 1999 State Water Management Plan. The bill also set up a Water Development Trust Fund (WDTF) as a primary means of repaying the bonds. House Bill 1475 allocates 45 percent of the funds received by the state from the 1998 tobacco settlement agreement into the Water Development Trust Fund.

Another important provision of SB 2188 is the requirement for the SWC to develop a new comprehensive statewide water development program with priorities based on expected funds available from the Water Development Trust Fund. It was the intent of the legislature that the delivery of water for usable purposes be a priority.

This report has been developed to meet these requirements. The new comprehensive statewide water development program has been developed by expanding the role of the SWMP. Essentially this evolution was accomplished by developing a prioritization process to rank water development projects to match available funding. The projects listed in the database will be continually updated as knowledge about projects becomes available. The priority of any project may be reassessed as projects evolve and as new projects are entered. As the title of this report suggests, this report will be produced every two years.

Another essential component of a water development program is securing a reliable, adequate funding source. This report highlights this need and shows projected funding abilities and costs through 2050.

Check the SWC Website, www.swc.state.nd.us, for State Water Management Plan news and updates.

General Concepts for Funding

Contained in this section are discussions of State Water Commission cost-share policy changes and the need for the Water Development Trust Fund.

Cost Share for Water Supply Projects

A great back log of water projects throughout the state and the increasing costs of these projects are causing many changes in the way projects are being funded and built. One such change was adding a limit to the amount of cost-share a drainage project could receive in any one biennium, thereby allowing more projects to access state aid. The ND Water Coalition, through their involvement in developing this report, has identified a potential change for the State Water Commission's cost-share policy for domestic water supply to address the growing need.

Federally-mandated standards for the level of constituents in drinking water has caused the need for a substantial number of communities to upgrade their water

supply systems. Unfortunately, this mandate is largely unfunded. Lack of action by the federal government to adequately fund the state's Municipal, Rural and Industrial Water Supply Program (MR&I) has forced project managers to come to the state for financial help.

As an interim measure, the State Water Commission will begin cost-sharing up to 65 percent of the cost for domestic water supply projects. The State Water Commission will seek reimbursement of this cost-share should federal MR&I dollars become available. To be eligible for the state cost-share, these projects must be built according to federal MR&I guidelines. This will help ensure that if MR&I receives additional funding, the state's investment could be reimbursed. The 2001-2003 biennial budget request contains \$15 million to cost-share on domestic water supply projects.

Continued Support From Tobacco Settlement

The key to developing North Dakota's water resources is to ensure adequate

funding into the future. The 55th Legislative Assembly took a great step forward by committing 45 percent of the tobacco settlement funds to the Water Development Trust Fund. It is essential that this level of funding for water development continues into the future, in order to provide for needed water development across the state.

This is evident by the \$2.2 billion of water project needs contained in the SWMP database. To ensure water development receives its necessary share of funding, the Water Development Trust Fund must maintain its current allocation of the tobacco settlement. With current funding available to the SWC, including the current allocations to the WDTE, the state may still have to bond to cover the priority needs in 2001-2003.

Fully utilizing the Water Development Trust Fund will help to reduce the backlog of water development projects the state has amassed. Once the state has caught up, the WDTE could be scaled back to just cover maintenance of existing infrastructure and allow a reasonable level of new development.

Statewide Water Development Program

This section will show the total water development needs for the next biennium and the corresponding funding shortfall and suggests a means of funding a set of priority projects. Expected levels of state funding from several sources will be described in this report. This SWMP report presents a newly developed project prioritization process designed to rank projects to match funding capabilities. An interim process was used to help shape the list of projects that will be recommended for funding in the 2001-2003 biennium.

Water Projects

The complete list of water development projects compiled for this report shows the breadth of needs for water development in the state in the upcoming biennium. The list was compiled from survey forms sent to water interests throughout the state. The survey form requested information about the status of projects included in the 1999 State Water Management Plan and provided an opportunity to include new projects into the state water management plan update.

INFORMATION GATHERING

The primary information provided by project sponsors included estimates of project costs and a funding timetable. Other information gathered included expected funding sources, need for and status of studies and permits, expected sponsors, and location by watershed.

The survey was sent to all water resource districts, joint water resource districts, cities, as well as the ND Water Coalition members. The managers of the major water projects, including the Garrison Diversion Project, the Southwest Pipeline Project, and

Northwest Area Water Supply project, were also surveyed.

As the forms were returned, the submitted projects were checked against the information in the 1999 SWMP project database. Any changes to project status were updated in the database. New projects submitted were reviewed and added directly to the database.

Projects from the immediate timeframe in the 1999 SWMP database that were not identified in the survey process were put into the 2001-2003 biennium for funding. Projects without updated information from the intermediate or late timeframe of the 1999 SWMP were brought into the updated database under a "to be scheduled" timeframe. As with the 1999 SWMP, some projects that were lacking information had their timeframes adjusted.

These adjustments usually moved projects into later timeframes and were based on status of permits and funding.

The updated SWMP database now has a category for completed projects. The SWC will maintain completed projects in the database to document the time required to finish

projects. Of the 120 potential projects listed for the 1999-2001 timeframe in the 1999 SWMP, 19 have been completed (Table 1). At least another 32 are being implemented.



Table 1: Water Development Projects Completed 1999-2001

| PROJECT NAME | WATERSHED |
|---|-------------|
| NW City of Lakota - Flood Control | Devils Lake |
| Sweetwater-Morrison Outlet Structure Modif. | Devils Lake |
| Fish Creek Dam, Morton County | Missouri |
| McKenzie County Rural Water - Planning | Missouri |
| Mountrail County Irrigation Project - Study | Missouri |
| Williams County Flood Study | Missouri |
| Cass County Drain #35 - Channel Improv. | Red |
| Grafton (Park River) Intake Replacement | Red |
| Hillsboro WTP Expansion - Planning | Red |
| Midtown Dam Project (City of Fargo) | Red |
| Richland County Drain #65 | Red |
| Steele County Drain #13 | Red |
| The International Coalition | Red |
| Tri-County Flood Control #1894 - Studies | Red |
| Northwest Area Water Supply Studies | Souris |
| Sawyer Highway 52 Crossing | Souris |
| ND Water Education Foundation Magazine | Statewide |
| ND Water Education Foundation 1999 Tours | Statewide |
| ND Wetlands Trust | Statewide |

Table 2: Currently Active Water Projects in 1999-2001

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|--|-------------------|---------------|---------------------|---------------------|---------------------|----------------------|
| Missouri | Buford-Trenton Irrigation District Expansion-Phase I | | | \$ 28,672 | \$ 19,115 | | \$ 47,787 |
| Missouri | Elk/Charbon Irrigation Project | yes | no | | 1,000,000 | | 1,000,000 |
| Missouri | Horsehead Irrigation Project | ongoing | ongoing | 114,485 | 75,515 | | 190,000 |
| Missouri | Mercer/Oliver Irrigation Project - Study | ongoing | no | 77,000 | 77,000 | | 154,000 |
| Missouri | Missouri River Coordinated Resource Mgmt. Study | no | no | 19,800 | 19,800 | | 39,600 |
| Missouri | NDCMP- Safeguards/Scientific Concepts Reassess. | | | | 70,000 | | 70,000 |
| Missouri | Nesson Valley Irrigation | yes | ongoing | | 1,500,000 | | 1,500,000 |
| Missouri | Southwest Pipeline Project (Mott-Elgin) | | | | 6,000,000 | 7,000,000 | 13,000,000 |
| Missouri | Williston Transmission Line Impr. - Phase I | yes | ongoing | 82,000 | | | 82,000 |
| Missouri | Williston WTP - Phase II & III | yes | yes | 375,000 | | | 375,000 |
| Red | Baldhill Dam - Five Foot Flood Pool Raise | yes | ongoing | 349,500 | 349,500 | | 699,000 |
| Red | Cass Co. Drain #13 Outlet Improvements | yes | no | | 125,000 | | 232,000 |
| Red | Grafton Flood Control Project | | | 157,500 | 157,500 | 585,000 | 900,000 |
| Red | Grand Forks - Clearwell Tie-back Water Mains | yes | yes | | | | 5,383,000 |
| Red | Grand Forks - Interim Water Reclamation Facility | ongoing | ongoing | 800,000 | | | 800,000 |
| Red | Grand Forks - Transmission Lines | yes | ongoing | 3,501,000 | | | 7,781,000 |
| Red | Grand Forks - Water Dist. System Improvements | yes | ongoing | 10,917,226 | | | 16,637,413 |
| Red | Grand Forks - WTP | n/a | ongoing | 1,012,500 | | | 1,012,500 |
| Red | Grand Forks WTP Intake, Caisson, and Trans. Lines | yes | ongoing | 2,175,000 | | | 2,175,000 |
| Red | Grand Forks/East Grand Forks Flood Control | | ongoing | 22,836,000 | 22,000,000 | 11,657,000 | 56,493,000 |
| Red | Grand Forks/East Grand Forks Recreation | | | 173,000 | | 172,000 | 345,000 |
| Red | Hillsboro WTP Expansion - Design/Constr. | yes | | 70,000 | | 130,000 | 200,000 |
| Red | Maple River Dam | yes | ongoing | 2,500,000 | 3,500,000 | | 6,000,000 |
| Red | Nelson Co. Drain #12 Phase I (Enterprise, Sarnia Twp.) | yes | yes | | 112,000 | 208,000 | 320,000 |
| Red | Overland Flood Protection - South Fargo (Sheyenne River to Wild Rice River Diversion) | ongoing | ongoing | 3,000,000 | 3,000,000 | 4,000,000 | 10,000,000 |
| Red | Ransom-Sargent Rural Water | yes | | 5,360,534 | | 14,300,000 | 19,660,534 |
| Red | Swan Creek Watershed Improvements - Phase II | yes | yes | 50,000 | 50,000 | | 100,000 |
| Red | Tolna Dam Repairs | yes | ongoing | 8,700 | 8,700 | 14,000 | 40,000 |
| Souris | All Seasons Water Users - System IV Exp. Phase III - Planning/Design | ongoing | ongoing | 1,400,000 | | 2,600,000 | 4,000,000 |
| Souris | All Seasons Water Users System V | yes | ongoing | 980,000 | 980,000 | 3,640,000 | 5,600,000 |
| Souris | Minot - Northwest Drainage Area | yes | no | 130,000 | 70,000 | | 200,000 |
| Souris | Northwest Area Water Supply - Rugby Pipeline | | | 433,500 | | 805,000 | 1,238,500 |
| TOTALS | | | | \$56,551,417 | \$39,114,130 | \$45,111,000 | \$156,275,334 |

PROJECTS REQUESTED FOR 1999-2001 BIENNIUM

Projects listed for funding in the 1999-2001 biennium have either already received funding or submitted status sheets that indicated the project sponsor would be requesting funding from the SWC sometime this biennium. Funding

for these projects is assumed to be accounted for, so the costs are not included in the future needs estimates. Table 2 shows a listing of projects listed in the SWMP database that are in progress.

The State Water Commission is involved with many more active projects than those

listed in Table 2. Many projects already had funding secured when the information was being gathered for the SWMP update. Since the SWMP is primarily concerned with project needs, those projects with funding in order were not pursued. Table 3 shows the projects the SWC is currently funding.

Table 3: Current Contract Fund Active Water Projects in 1999 - 2001

| WATERSHED | PROJECT NAME | STATE COST |
|-----------|--|--------------------|
| Missouri | Antelope Creek Snagging and Clearing Project (Mercer County) | \$ 428 |
| Missouri | Belfield Flood Control | 38,800 |
| Missouri | Buford-Trenton Irrigation - Williams County | 19,115 |
| Missouri | Horsehead Irrigation Project (Feasibility Study) (Emmons) | 75,515 |
| Missouri | Mercer/Oliver Counties Irrigation Project Feasibility Study | 77,000 |
| Missouri | Missouri River Coordinated Resource Management Program | 19,797 |
| Missouri | Montana EIS for County Sponsored Cloud Modification Program | 70,000 |
| Missouri | Mountrail County Irrigation Project Feasibility Study | 28,750 |
| Missouri | Tvenge Associates Architect & Planners | 9,000 |
| Missouri | Twelve Mile & Traux Township Pipeline (Williams) | 87,800 |
| Red | Antelope Creek Snagging and Clearing (Richland) | 8,500 |
| Red | Baldhill Dam (Sheneye River Joint WRD 1999) | 250,000 |
| Red | Baldhill Dam (Sheneye River Joint WRD 1998) | 33,043 |
| Red | Cass County Drain No. 21 | 136,000 |
| Red | Cass County Drain No. 29A | 136,000 |
| Red | Cass County Drain No. 13 Reconstruction | 150,000 |
| Red | Cass County Drain No. 14 | 136,000 |
| Red | Cass County Drain No. 40 | 136,000 |
| Red | Cass County Drain No. 13 | 136,000 |
| Red | Cass County Joint Water Resource District | 95,300 |
| Red | City of Neche, Channel Cut-off of Pembina River | 20,000 |
| Red | Cooperstown Area Drain Project (Griggs) | 5,200 |
| Red | Digital Aerial Survey - Laser Terrain Mapping - Cass County | 45,150 |
| Red | Feasibility and Engineering study for lowering of Sanborn Lake | 5,000 |
| Red | Floodplain Mapping for Red River Area South of Fargo | 49,350 |
| Red | Grand Forks Ring Dikes No. 2 | 25,000 |
| Red | Homme Dam (Walsh 1995) | 28,000 |
| Red | Homme Dam (Walsh 1999) | 26,500 |
| Red | International Drainage | 1,725 |
| Red | Langdon Floodplain Management Study (Cavalier) | 4,100 |
| Red | Meadow Lake Flood Control (Barnes County) | 4,825 |
| Red | Midtown Dam Project (City of Fargo) | 1,416 |
| Red | Phase 1, Rural Ring Dike Project (Walsh County WRD) | 175,000 |
| Red | Red River Wetlands/Watersheds Study (USGS) | 16,750 |
| Red | Red River Basin Board | 100,000 |
| Red | Richland County Drain No. 97 | 62,000 |
| Red | Richland County Drain No. 14 | 63,334 |
| Red | Richland County Drain No. 95 | 136,000 |
| Red | Ring Dike Cost-Share North Cass WRD | 162,500 |
| Red | Rural Ring Dikes Project Grand Forks County WRD | 37,500 |
| Red | Sanborn Lake/Barnes County | 5,000 |
| Red | Steele County Drain No. 4 | 136,000 |
| Red | Swan Creek Diversion (Cass) | 70,000 |
| Red | Trail County Drain No. 57A (1999) | 150,000 |
| Red | Traill County Drain No. 57A (1999) | 74,934 |
| Red | Upper Maple Retention Dam | 20,000 |
| Red | Walhalla Township Drain No. 2 - Cavalier /Pembina | 95,311 |
| Red | Walhalla Township Drain No. 3 - Cavalier /Pembina | 52,490 |
| Statewide | North Dakota Irrigation Caucus | 40,000 |
| Statewide | Will and Carlson Contract (237-03) | 50,000 |
| | Total Cost | \$3,306,133 |

The 1999 ND Legislative Assembly specifically provided bonding authority for six projects: Southwest Pipeline, Garrison Diversion, and flood control projects at Grand Forks, Devils Lake, Wahpeton and Grafton. Of these six projects, Southwest Pipeline (SWPP), Grand Forks, and Grafton have started using allocated funding. The \$4.5 million of bonding authority for the SWPP has been spent for construction by the State Water Commission. The SWC also allocated \$23 million to date of its bonding authority for the Grand Forks flood control project. A total of \$167,000 has been allocated for Grafton. Wahpeton is expected to start using funding in 2001.

PROJECTS REQUESTED FOR 2001-2003 BIENNIUM

The list of projects in Table 4 contains the projects expected to request a SWC cost-share in the 2001-2003 biennium. This is a non prioritized list of needs as submitted by water managers. The list is separated into nine categories based on SWC cost-share policies. The total financial need to implement these projects is about \$436 million. The state's share of this total, based on traditional cost-share funding levels, is \$100 million. The federal government and local project sponsors are expected to pay the balance.

PROJECTS BEYOND THE 2001-2003 BIENNIUM

Beyond the 2001-2003 biennium, projects fall under one of two categories, scheduled and non-scheduled, depending on the amount of information available from the project sponsor. If projects are far enough along to have expected funding needs determined for the next several bienniums, their associated costs were scheduled into those bienniums. Water needs without detailed project planning were put into a 'to be scheduled' category. Table 5 shows the estimated cost summary of the next several bienniums and the 'to be scheduled' water development needs.

Table 4: Water Development Needs in the 2001-2003 Biennium

Water Supply

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|---|-------------------|---------------|---------------------|---------------------|---------------------|---------------------|
| Devils L | Central Plains Water (South Benson) | | | \$ 1,750,000 | | \$ 3,250,000 | \$ 5,000,000 |
| Devils L | Langdon RWU - Phase IV - Design/Constr. | yes | | 3,960,000 | | 7,350,000 | 11,310,000 |
| Devils L | Ramsey County Rural Water 2 | yes | | 2,710,000 | | 5,030,000 | 7,740,000 |
| James | Stutsman Rural Water Users Improvements | | | 70,000 | | 130,000 | 200,000 |
| Missouri | Bismarck - Raw Water Intake Replacement | yes | yes | 756,000 | | 1,404,000 | 2,160,000 |
| Missouri | Bismarck-West End Reservoir Exp./Disinfection Contact Basin | yes | yes | 2,100,000 | | 3,900,000 | 6,000,000 |
| Missouri | McKenzie County Rural Water - Design/Constr. | yes | yes | 600,000 | | 1,120,000 | 1,720,000 |
| Missouri | Parshall Rural Water | | | 520,000 | | 980,000 | 1,500,000 |
| Missouri | Southwest Pipeline Project (Bowman-Scranton) | yes | yes | | \$ 7,300,000 | 3,700,000 | 11,000,000 |
| Missouri | Williams Rural Water Impr. | | | 700,000 | | 1,300,000 | 2,000,000 |
| Red | Grand Forks - Clearwell Tie-back Water Mains | yes | yes | 100,000 | | | 100,000 |
| Red | Grand Forks - Clearwell/Pump Station | yes | ongoing | 7,649,300 | | 2,850,700 | 10,500,000 |
| Red | Grand Forks - Interim Water Reclamation Facility | ongoing | ongoing | 4,675,000 | 3,825,000 | | 8,500,000 |
| Red | Grand Forks - New Water Reclamation Facility | ongoing | | 175,000 | | | 175,000 |
| Red | Grand Forks - Transmission Lines | yes | ongoing | 4,850,000 | | 4,900,000 | 9,750,000 |
| Red | Grand Forks - Water Dist. System Improvements | yes | ongoing | 4,100,000 | | | 4,100,000 |
| Red | Grand Forks - WTP | n/a | ongoing | 175,000 | | | 175,000 |
| Red | Grand Forks WTP Intake, Caisson, and Trans. Lines | yes | ongoing | 5,610,000 | 4,590,000 | | 10,200,000 |
| Red | Hillsboro WTP Expansion - Design/Constr. | yes | | 1,820,000 | | 3,380,000 | 5,200,000 |
| Red | Mill Dam Repairs - Valley City | | | 25,000 | 25,000 | | 50,000 |
| Red | Sheyenne Water Supply | | | 230,000 | | 420,000 | 650,000 |
| TOTALS | | | | \$42,575,300 | \$15,740,000 | \$39,714,700 | \$98,030,000 |

Drainage/
Channel Improvement

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|--|-------------------|---------------|--------------------|--------------------|------------------|--------------------|
| James | Meadow Lake Water Management | yes | ongoing | \$ 97,500 | \$ 52,500 | | \$ 150,000 |
| Missouri | Island Removal - Little Missouri River | ongoing | ongoing | 100,000 | 100,000 | | 200,000 |
| Red | Cass Co. Drain #13 Improvements | yes | no | 1,625,000 | 875,000 | | 2,500,000 |
| Red | Christine Dam - Channel Obstruction - Richland Co. | no | no | 39,800 | 21,450 | \$ 113,750 | 175,000 |
| Red | City of Petersburg Flood Control Project | ongoing | ongoing | 16,250 | 8,750 | | 25,000 |
| Red | Cole Creek Channelization | yes | ongoing | 191,750 | 103,250 | | 295,000 |
| Red | Grey Twp. Drain #1 | no | no | 22,750 | 12,250 | | 35,000 |
| Red | Ibsen Twp. Flood Control #97 | no | ongoing | 132,600 | 71,400 | | 204,000 |
| Red | Kidder Dam - Modify Waterway - Richland Co. | ongoing | ongoing | 93,800 | 46,200 | | 140,000 |
| Red | McLeod Flood Control Project | yes | ongoing | 130,000 | 70,000 | | 200,000 |
| Red | Shenford Flood Control Project | yes | yes | 32,500 | 17,500 | | 50,000 |
| Red | Steele County Drain #2 | no | no | 260,000 | 140,000 | | 400,000 |
| Red | Steele, Grand Forks and Traill Counties, Drain #4 | yes | no | 315,250 | 169,750 | | 485,000 |
| Red | Traill Co. Drain #57A | yes | yes | 426,400 | 229,600 | | 656,000 |
| Red | Traill Co. Drain #627 Improvements | ongoing | ongoing | 552,500 | 297,500 | | 850,000 |
| Red | Upper Rush Lake Basin Clean-Out | ongoing | ongoing | 85,000 | 45,000 | | 130,000 |
| TOTALS | | | | \$4,121,100 | \$2,260,150 | \$113,750 | \$6,495,000 |

Recreation

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|---|-------------------|---------------|--------------------|----------------|--------------------|--------------------|
| Red | Grand Forks/East Grand Forks Recreation | | | \$ 1,164,000 | | \$ 1,163,000 | \$ 2,327,000 |
| Red | Warsing Low Level Outlet - Eddy Co. | yes | yes | 9,000 | \$ 3,000 | | 12,000 |
| TOTALS | | | | \$1,173,000 | \$3,000 | \$1,163,000 | \$2,339,000 |

Irrigation

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|---|-------------------|---------------|---------------------|--------------------|---------------------|---------------------|
| Missouri | Buford - Trenton Irrigation District Expansion- Phase I | | | \$ 900,000 | \$ 600,000 | | \$ 1,500,000 |
| Missouri | Elk/Charbon Irrigation Project | yes | no | 5,250,000 | 1,200,000 | | 6,450,000 |
| Missouri | Horsehead Irrigation Project | ongoing | ongoing | 15,000,000 | 1,500,000 | \$15,500,000 | 32,000,000 |
| Missouri | Nesson Valley Irrigation | yes | ongoing | 5,710,000 | 1,490,000 | | 7,200,000 |
| TOTALS | | | | \$26,860,000 | \$4,790,000 | \$15,500,000 | \$47,150,000 |

Flood Control

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|---|-------------------|---------------|---------------------|---------------------|----------------------|----------------------|
| Devils L | Devils Lake Emergency Outlet - Peterson Coulee | | | | \$35,000,000 | \$65,000,000 | \$100,000,000 |
| Devils L | Emergency Outlet - Peterson Coulee - Operations | ongoing | ongoing | \$1,250,000 | 1,250,000 | | 2,500,000 |
| Devils L | Stump Lake Discharge to Sheyenne River - Study | ongoing | no | 25,000 | 25,000 | | 50,000 |
| James | Upper Bear Creek Water Management | ongoing | ongoing | 4,800 | 3,200 | | 8,000 |
| Missouri | Belfield Watershed Project (Heart River) | yes | ongoing | 78,500 | 78,500 | | 157,000 |
| Missouri | Burnt Creek Project | ongoing | ongoing | 90,000 | 60,000 | | 150,000 |
| Missouri | Linton Flood Control - Spring Creek Diversion | ongoing | ongoing | 50,000 | 50,000 | | 100,000 |
| Missouri | White Earth Dam Modification | ongoing | ongoing | 75,000 | 75,000 | | 150,000 |
| Red | Baldhill Dam - Five Foot Flood Pool Raise | yes | ongoing | 1,255,500 | 1,255,500 | 7,290,000 | 9,801,000 |
| Red | Brummond Lubke Dam T-1A Repairs | n/a | n/a | 12,500 | 12,500 | | 25,000 |
| Red | Dam #5 - Middle Branch of the Park River | ongoing | | 225,000 | 225,000 | 4,050,000 | 4,500,000 |
| Red | Downtown Floodwall - Fargo | no | no | 3,700,000 | | | 3,700,000 |
| Red | Farmstead Ring Dikes - Noble & Wiser Twps - Cass Co. - Phase I | yes | yes | 225,000 | 150,000 | | 375,000 |
| Red | Farmstead Ring Dikes - Raymond, Berlin, and Harwood Twps - Cass Co. - Phase I | yes | yes | 240,000 | 160,000 | | 400,000 |
| Red | Grafton Flood Control Project | | | 1,207,500 | 1,207,500 | 4,485,000 | 6,900,000 |
| Red | Grand Forks/East Grand Forks Flood Control | | ongoing | 21,294,000 | 20,459,000 | 23,933,000 | 65,686,000 |
| Red | Homme Dam Safety | | | 95,000 | 95,000 | 18,810,000 | 19,000,000 |
| Red | Maple River Dam | yes | ongoing | 5,750,000 | 4,750,000 | | 10,500,000 |
| Red | Nelson Dam Repairs | n/a | n/a | 12,500 | 12,500 | | 25,000 |
| Red | Oak St. Dike Improvements - Fargo | no | no | 1,200,000 | | | 1,200,000 |
| Red | Overland Flood Protection - South Fargo (Sheyenne River to Wild Rice River Diversion) | ongoing | ongoing | 3,000,000 | 3,000,000 | 4,000,000 | 10,000,000 |
| Red | Overland Flood Protection South Fargo - West Fargo (Wild Rice River) | ongoing | ongoing | 3,000,000 | 3,000,000 | 8,000,000 | 14,000,000 |
| Red | Ridgewood Dike - Fargo | ongoing | no | 970,000 | | | 970,000 |
| Red | Second St. Floodwall - Fargo | no | no | 800,000 | | | 800,000 |
| Red | South Acres Area Dike - Fargo | no | no | 1,000,000 | | 1,000,000 | 2,000,000 |
| Red | Wahpeton Flood Protection | ongoing | no | 1,873,000 | 1,872,000 | 6,955,000 | 10,700,000 |
| Souris | Puppy Dog Coulee | ongoing | ongoing | 1,140,000 | 760,000 | | 1,900,000 |
| TOTALS | | | | \$48,573,300 | \$73,500,700 | \$143,523,000 | \$265,597,000 |

Snagging/Clearing

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|---|-------------------|---------------|------------------|------------------|--------------|--------------------|
| Red | Antelope Creek Snagging & Clearing | n/a | n/a | \$ 131,000 | \$ 44,000 | | \$ 175,000 |
| Red | Forest River Snagging & Clearing | ongoing | | 94,000 | 31,000 | | 125,000 |
| Red | Morais River Snagging & Clearing | ongoing | | 100,000 | | | 100,000 |
| Red | Sheyenne River Snagging & Clearing - Barnes Co. | yes | ongoing | 67,500 | 22,500 | | 90,000 |
| Red | Wild Rice River Snagging & Clearing | no | no | 356,000 | 119,000 | | 475,000 |
| Souris | Souris River Snagging and Clearing | n/a | n/a | 37,500 | 12,500 | | 50,000 |
| TOTALS | | | | \$786,000 | \$229,000 | | \$1,015,000 |

Bank Stabilization

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|---|-------------------|---------------|------------------|------------------|--------------------|--------------------|
| Missouri | Little Missouri River Bank Stabilization - Medora | ongoing | ongoing | \$375,000 | \$375,000 | | \$750,000 |
| Missouri | Missouri R. Bank Stabilization - Burleigh, McLean Co. | yes | ongoing | | | \$6,700,000 | 6,700,000 |
| Souris | Willow Cr. Bank Stabilization/Channel Improvement | no | no | 18,000 | 12,000 | | 30,000 |
| TOTALS | | | | \$393,000 | \$387,000 | \$6,700,000 | \$7,480,000 |

Studies/Planning

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|---|-------------------|---------------|--------------------|--------------------|--------------------|--------------------|
| Devils L. | Devils Lake Flood Related Programs/Studies | | | | \$1,500,000 | | \$1,500,000 |
| Devils L. | Langdon RWU - Phase IV - Rural Distribution - Plan | | | \$130,781 | 43,594 | | 174,375 |
| Missouri | Jackman Coulee Flood Study - Bismarck | no | no | 203,400 | 135,600 | \$1,017,000 | 1,356,000 |
| Missouri | NDCMP - Environmental Impact Study | | | 55,000 | 110,000 | | 165,000 |
| Missouri | NDCMP - Safeguards/Scientific Concepts Reassess. | | | | 35,400 | | 35,400 |
| Missouri | New Town - WTP Replacement - Planning | yes | | 56,250 | 18,750 | | 75,000 |
| Red | Drayton Dam - Study | | | 62,500 | 62,500 | 125,000 | 250,000 |
| Red | Drayton - WTP Advanced Treatment - Planning | | | 55,875 | 18,625 | | 74,500 |
| Red | Eastern Dakota Water Supply Study | | | | 150,000 | | 150,000 |
| Red | Grafton - WTP Replacement - Planning | | | 112,500 | 37,500 | | 150,000 |
| Red | G. Forks-Traill Water Users Distribution Impr. - Plan. | | | 176,400 | 58,800 | | 235,200 |
| Red | G. Forks-Traill Water Users - Exp. - IMG Clearwell - Plan. | | | 24,075 | 8,025 | | 32,100 |
| Red | G. Forks-Traill Water Users - RWS Interconnect - Plan. | | | 8,122 | 2,708 | | 10,830 |
| Red | G. Forks-Traill Water Users - WTP Exp. - Planning | | | 40,950 | 13,650 | | 54,600 |
| Red | Langdon - Mt. Carmel Supply Line- Planning | | | 37,600 | 12,500 | | 50,100 |
| Red | Langdon WTP Exp. & Impr. - Planning | | | 103,600 | 34,500 | | 138,100 |
| Red | Mayville Advanced Treatment - Planning | | | 46,900 | 15,600 | | 62,500 |
| Red | Preliminary Engineering of Water Channels, Natural and Legal Drains Study | no | n/a | 25,000 | 25,000 | | 50,000 |
| Red | Walsh RWU Expansion and WTP Impr. - Planning | | | 30,000 | 10,000 | | 40,000 |
| Statewide | Effects of Cloud Seeding on Rainfall - Study | | | | 125,000 | | 125,000 |
| Statewide | Evaluation of the Effects of Cloud Seeding on Ranching Industry - Study | | | | 17,500 | | 17,500 |
| TOTALS | | | | \$1,168,953 | \$2,435,252 | \$1,142,000 | \$4,746,205 |

Multi-Purpose

| WATERSHED | PROJECT NAME | FEASIBILITY STUDY | DESIGN STATUS | LOCAL COST | STATE COST | FEDERAL COST | TOTAL COST |
|---------------|-------------------------------|-------------------|---------------|--------------------|------------------|--------------------|--------------------|
| Missouri | Harmon Lake - Dam #6 | yes | yes | \$300,000 | \$300,000 | \$1,750,000 | \$2,350,000 |
| Missouri | ND Cloud Modification Project | | | 851,000 | 441,000 | | 1,292,000 |
| TOTALS | | | | \$1,151,000 | \$741,000 | \$1,750,000 | \$3,642,000 |

Table 4: Summary of Water Development Needs, 2001-2003 Biennium

| PROJECT CATEGORY | LOCAL COSTS | STATE COSTS | FEDERAL COSTS | TOTAL COSTS |
|------------------------|----------------------|----------------------|----------------------|----------------------|
| Irrigation | \$ 26,860,000 | \$ 4,790,000 | \$ 15,500,000 | \$ 47,150,000 |
| Flood Control | 48,573,300 | 73,500,700 | 143,523,000 | 265,597,000 |
| Snagging/Clearing | 786,000 | 229,000 | — | 1,015,000 |
| Water Supply | 42,575,300 | 15,740,000 | 39,714,700 | 98,030,000 |
| Drainage/Channel Impr. | 4,121,100 | 2,260,150 | 113,750 | 6,495,000 |
| Recreation | 1,173,000 | 3,000 | 1,163,000 | 2,339,000 |
| Bank Stabilization | 393,000 | 387,000 | 6,700,000 | 7,480,000 |
| Studies/Planning | 1,168,953 | 2,435,252 | 1,142,000 | 4,746,205 |
| Multi-Purpose | 1,151,000 | 741,000 | 1,750,000 | 3,642,000 |
| TOTAL | \$126,801,653 | \$100,086,102 | \$209,606,450 | \$436,494,205 |

Table 5: Water Development Needs Beyond 2001-2003 Biennium

| TIMEFRAME | STATE COSTS (in millions) | TOTAL COSTS |
|--------------------------|------------------------------|-------------------|
| Scheduled 2003-2011 | \$ 32.4 | \$ 295.2 |
| To Be Scheduled | \$ 242.9 | \$ 1,512.4 |
| TOTAL Beyond 2003 | \$ 275.3 | \$ 1,807.6 |

Funding Sources

Water development projects in North Dakota are funded at many different levels. Private projects, such as stock ponds or household wells, are the responsibility of the landowner or user. Projects sponsored by a political subdivision often come to the state for cost-share assistance. Projects with regional or statewide impacts typically are eligible for some type of federal

funding assistance. In these cases, the state cost-shares only on the non-federal portion of the costs.

North Dakota funds water development projects through the State Water Commission. The SWC receives funding for projects from several sources: state's General Fund, Resources Trust Fund, MR&I loan repayments, and the newly created Water Development Trust Fund. Besides these sources, the SWC has

authority to issue revenue bonds for water projects. Table 6 shows expected funding levels from all state sources that should be available for cost-sharing on water development projects. Using the four sources of potential funding to the SWC, without using the bonding authority provided by SB 2188, the SWC can fund about \$56 million of cost-sharing for water development projects in the 2001-2003 biennium.

Table 6: Expected Revenues to the State Water Commission from all State Sources

| Fiscal Year | WATER DEVELOPMENT TRUST FUND | | | TRADITIONAL SOURCES | TOTAL |
|---------------|------------------------------|-----------------------|--------------------------------|-----------------------------------|---|
| | A Tobacco Revenue | B Debt Service | C = A - B Available Balance | D RTF, General Fund and Other* | E = C + D Total Funds Available Yearly |
| 2000 | \$ 13,478,530 | - | \$ 13,478,530 | - | - |
| 2001 | 11,900,000 | - | 25,378,530 | \$ 3,100,000 | \$ 28,478,530 |
| 2002 | 11,900,000 | \$ 2,715,000 | 9,185,000 | 7,800,000 | 16,985,000 |
| 2003 | 11,900,000 | 2,715,000 | 9,185,000 | 4,700,000 | 13,885,000 |
| 2004 | 10,300,000 | 4,115,000 | 6,185,000 | 4,700,000 | 10,885,000 |
| 2005 | 10,300,000 | 4,900,000 | 5,400,000 | 4,700,000 | 10,100,000 |
| 2006 | 10,300,000 | 5,859,000 | 4,441,000 | 4,784,000 | 9,225,000 |
| 2007 | 10,300,000 | 5,859,000 | 4,441,000 | 4,869,680 | 9,310,680 |
| 2008 | 16,600,000 | 5,859,000 | 10,741,000 | 4,957,074 | 15,698,074 |
| 2009 | 16,600,000 | 5,859,000 | 10,741,000 | 5,046,215 | 15,787,215 |
| 2010 | 16,600,000 | 5,859,000 | 10,741,000 | 5,137,139 | 15,878,139 |
| 2011 | 16,600,000 | 5,859,000 | 10,741,000 | 5,229,882 | 15,970,882 |
| 2012 | 16,600,000 | 5,859,000 | 10,741,000 | 5,324,480 | 16,065,480 |
| 2013 | 16,600,000 | 5,859,000 | 10,741,000 | 5,420,969 | 16,161,969 |
| 2014 | 16,600,000 | 5,859,000 | 10,741,000 | 5,519,389 | 16,260,389 |
| 2015 | 16,600,000 | 5,859,000 | 10,741,000 | 5,619,777 | 16,360,777 |
| 2016 | 16,600,000 | 5,859,000 | 10,741,000 | 5,722,172 | 16,463,172 |
| 2017 | 16,600,000 | 5,859,000 | 10,741,000 | 5,826,616 | 16,567,616 |
| 2018 | 11,800,000 | 5,859,000 | 5,941,000 | 5,943,148 | 11,884,148 |
| 2019 | 11,800,000 | 5,859,000 | 5,941,000 | 6,062,011 | 12,003,011 |
| 2020 | 11,800,000 | 5,859,000 | 5,941,000 | 6,183,251 | 12,124,251 |
| 2021 | 11,800,000 | 5,859,000 | 5,941,000 | 6,306,916 | 12,247,916 |
| 2022 | 11,800,000 | 3,144,000 | 8,656,000 | 6,433,054 | 15,089,054 |
| 2023 | 11,800,000 | 3,144,000 | 8,656,000 | 6,561,715 | 15,217,715 |
| 2024 | 11,800,000 | 1,744,000 | 10,056,000 | 6,692,950 | 16,748,950 |
| 2025 | 11,800,000 | 959,000 | 10,841,000 | 6,826,809 | 17,667,809 |
| Totals | \$ 350,778,530 | \$ 117,180,000 | \$ 247,077,060 | \$ 139,467,246 | \$ 373,065,776 |

* 2001 total available of \$3.1 million unobligated and moved into 2002 RTF.

Other revenues are \$3.7 million from Resources Trust Fund, \$0.5 million MRI repayment, and \$0.5 General Fund, a 2% annual increase begins FY2006. MRI repayments end around 2017.

RESOURCES TRUST FUND

The Resources Trust Fund is funded with 20 percent of the revenues from the oil extraction tax. A percentage of the Resources Trust Fund has been designated by constitutional measure to be used for water-related projects and energy conservation. The SWC budgets money for cost-share based on a forecast of oil extraction tax revenue for the biennium, which is provided by the Office of Management and Budget.

The SWC has also been receiving \$1.1 million per biennium in MR&I program loan repayments. One of these debts was recently paid off when a debtor restructured their debts. The SWC will now be receiving about \$1 million per biennium through the year 2017, at which time most of the loans will be retired.

Revenues into the Resources Trust Fund for the current biennium are expected to total nearly \$11.2 million. Future revenues from the oil extraction tax are highly dependent on world oil prices, which makes it difficult to predict future funding levels. The State Water Commission estimates new revenues of \$9.4 million for the 2001-2003 biennium. Thereafter, \$9.4 million per biennium will be used for planning water development cost-share ability.

BONDING AUTHORITY

The SWC has bonding authority (NDCC 61-02-46) to issue revenue bonds of up to \$2 million for projects. The Legislature must authorize revenue bond authority beyond \$2 million per project. In 1991, the Legislature authorized full revenue bond authority for the Northwest Area Water Supply (NAWS) project and in 1997 it authorized \$15 million of revenue bonds for the Southwest Pipeline Project. The North Dakota Constitution requires general obligation bond issues greater than \$2 million to be secured by first mortgages upon real estate or upon real and personal property of state-owned utilities, enterprises, or industries.

The SWC is also authorized to issue up to \$84.8 million dollars in appropriation bonds under provisions of SB 2188. The Legislature's intent is to partially fund flood control projects at Grand Forks, Devils Lake, Wahpeton, and Grafton, to continue funding for the Southwest Pipeline Project, and to provide partial funding for the Garrison Diversion Project. SB 2188 also recognizes the need to provide funding for other projects identified in the 1999 State Water Management Plan in future bienniums.

WATER DEVELOPMENT TRUST FUND/TOBACCO FUNDS

Senate Bill 2188 set up a Water Development Trust Fund as a primary means of repaying the bonds it authorized. House Bill 1475 allocates 45 percent of the funds received by the state from the 1998 tobacco settlement agreement into the Water Development Trust Fund. The Water Development Trust Fund, as of April 2000, has a balance of \$13.5 million. An additional \$11.9 million will be deposited in the account during 2001 to bring the balance up to \$25.4 million. The SWC does not have the authority to begin using this fund during the 1999-2001 biennium. Payments into the fund are scheduled through 2025 at a level based on tobacco consumption and inflation (Table 6). It is currently projected the receipts into the fund will total about \$350 million.

STATE GENERAL FUND

Each biennium the Legislature allocates money to the State Water Commission to help fund general water development throughout the state.

OTHER STATE FUNDING

The ND Department of Health administers the Drinking Water State Revolving Fund Program (DWSRF) for the financing the construction and improvement of drinking water systems. The DWSRF provides below market-rate interest loans to public water systems for capital

improvements aimed at increasing public health protection and compliance under the federal Safe Drinking Water Act. Allotted federal funds are provided by the U.S. Environmental Protection Agency through capitalization grants and are matched 20 percent by the state. As of July 1, 2000, 19 loans totaling \$52.4 million have been approved for drinking water infrastructure improvement projects in North Dakota since 1997. Approximately \$28 million of additional federal funds and state match funds will be available to North Dakota through fiscal year 2003. Federal capitalization grants will cease beginning fiscal year 2004 unless Congress authorizes additional funds for the DWSRF.

Loans for additional projects will be possible using repayment funds from current loans. This revolving feature of the DWSRF will ensure that North Dakota has funds for future drinking water projects. The maximum repayment period for DWSRF loans is 20 years following project completion. The present loan interest rate is 2.5 percent for public water systems that qualify for tax-exempt financing, and 4 percent for those that do not. The DWSRF represents an additional source of potential funding for public water systems planning drinking water infrastructure improvements.

FEDERAL FUNDING

A main source of federal funding for water development in North Dakota is the Municipal, Rural, and Industrial Water Supply Program (MR&I). The total MR&I budget is \$200 million, all but \$5 million of which has been obligated to future projects. Efforts to obtain additional funding for the MR&I program are being pursued under the Dakota Water Resources Act. The Dakota Water Resources Act would provide resources for the Southwest Pipeline Project, the Northwest Area Water Supply Project, general MR&I projects, and a project to bring water to eastern North Dakota. If enacted as written, an additional \$600 million would

be available for state water development projects. Federal funding would include \$200 million for state MR&I, \$200 million for Indian MR&I, and \$200 million for Red River Valley Water Supply.

Use of MR&I program funding for water development projects in the state depends on U.S. Congressional appropriation of funding. Funds are appropriated annually, which may result in potential delays in each authorized project.

The U.S. Army Corps of Engineers provides significant funding to North Dakota for flood control projects. The Environmental Protection Agency, U.S. Geological Survey, and the Natural Resources Conservation Service also contribute to the state's water development.

State Water Development Funding Process

The Legislature has made general statements to guide the State Water Commission's development of the state's water resources. Under NDCC 61-02-14, the SWC is to consider if a development project is necessary and if it is advisable. More recently, the passage of SB 2188 identifies the need for a water development plan that utilizes tobacco revenues and includes a priority process that emphasizes water supply.

The SWC historically has not always had shortfalls in meeting the needs of those requesting cost-share. This has slowly changed. The number, type, and size of projects requesting cost-share is expanding. As the cost of projects increases and local sponsors' resources decline, more projects are being submitted for state funding.

Using the four sources of potential funding to the SWC and the revenue provided by the Water Development Trust Fund, the SWC can fund about \$56 million of cost-

sharing for water development projects in the 2001-2003 biennium. Since the documented need (\$100 million), greatly exceeds the expected amount of revenues available (\$56 million), a prioritization of projects is necessary.

SUMMARY OF OTHER WESTERN STATES

In developing a prioritization process for North Dakota water projects, information was solicited from other western states. There are currently several western states implementing some form of prioritization process for funding water-related projects. However, Utah, Wyoming, and South Dakota's processes were the most helpful in developing North Dakota's process.

The following are general descriptions of the prioritization processes currently being implemented in Utah, Wyoming, and South Dakota.

Utah

In Utah, water projects must first meet general guidelines administered by the Utah Board of Water Resources. If projects meet those guidelines, it is then determined if they are sponsored by political subdivisions or nonprofit organizations. Once this information has been established, projects are then prioritized based on the following criteria:

- 1.) Projects that involve public health problems, safety problems, or emergencies.
- 2.) Projects that have received a large portion of their funding from other sources.
- 3.) Projects not included in 1 or 2, but have been authorized by the Board, are funded on a first-come-first-serve basis.
- 4.) Projects from individuals, small groups, or for-profit organizations.
- 5.) The Board will not fund projects sponsored by developers.

Wyoming

Project sponsors in Wyoming must first submit an application to get their project included in the Wyoming Water Develop-

ment Program (WWDP). Once applications are accepted and projects are included in the WWDP, they are then placed into three broad categories based on need. These include:

- 1.) Projects developing water for a present or defined need.
- 2.) Projects developing water for present needs and generating a surplus for future needs.
- 3.) Projects developing water for which there is not a present need sufficient to warrant immediate expenditure of design construction dollars.

After projects have been separated into the aforementioned categories, they are prioritized based on their focus. *General* priorities in Wyoming include:

- 1.) Multipurpose projects;
- 2.) Storage projects;
- 3.) Supply projects;
- 4.) Hydropower projects; and
- 5.) Recreation projects.

Rehabilitation projects for existing structures and programs are prioritized in a slightly different manner.

South Dakota

The South Dakota Board of Water and Natural Resources and water development districts use the following eligibility criteria as guidelines to determine project merit for inclusion into the State Water Facilities Plan:

- 1.) Health and safety projects that correct serious health hazards.
- 2.) Economic development projects.
- 3.) Consolidation of existing facilities or reorganization of projects.
- 4.) Expansion of existing systems which provide an increase in services and promote the objectives contained in 1 through 3 above.
- 5.) Local support for the project, including a proposed level of local project funding and in-kind services.
- 6.) Long-term planning that would enable a local project to provide for future maintenance, replacement, or expansion.

More specifically regarding criteria, South Dakota does not allocate funding for flood control projects. For water supply projects, the state considers the rates that will be charged to the benefiting parties for the delivery of the water. The general standards that the state follows for their water billing requirements are \$20 per 5,000 gallons for municipal systems, and \$50 per 7,000 gallons for rural water systems. If these minimum rates are not charged by the sponsor, the project will not likely meet the criteria for state funding.

PRIORITIZATION PROCESS DEVELOPMENT

Though there was a great deal of beneficial information provided in the Utah, Wyoming, and South Dakota prioritization processes, it was necessary to sculpt a unique prioritization process specific to North Dakota. That way, the process would best suit North Dakota's water-related needs and cater to the state's objectives as spelled out by the Legislature under NDCC 61-02-14.

The process for North Dakota began by using information from other states. To have a statewide perspective in developing the process, the ND Water Coalition was asked for input. A filter mechanism for projects asking to be listed as potential candidates for state cost-share and a prioritization process for ensuring the limited state funds are put to their best use was defined.

To satisfy the requirements of the North Dakota Legislature, a better accounting of potential projects is necessary. As such, the SWC tracks projects for cost share by listing them in the updated SWMP database. This allows for better planning to fit the state's needs. To keep the size of the biennial need manageable, the following filter and prioritization process was developed and will be applied to the updated State Water Management Plan database.

Filter Mechanism for Database Inclusion

The first step was to define a filter mechanism. The intent of a filter is to ensure projects being listed each biennium will benefit the state and are ready to proceed. All projects must pass through the filter before they can be included in the SWMP database. Projects must meet the criteria in one of the following three categories to pass through the filter.

A. The project addresses a current or future water supply need.

OR

- B. Each of the following must be met in this category:
- The project has a positive benefit-cost ratio from the state's perspective (general guidelines will be developed).
 - All required permits are obtainable.
 - Local funding mechanisms to fund the project are in place or approved.
 - Negative effects from the project will be identified and mitigated.
 - Fits into a Regional Watershed Plan, if developed.

OR

C. The project is data collection, research, or a feasibility study.

Rationale for Filter Criteria

Projects need to be in the SWMP database to provide information for budget development and budgeting decisions throughout the biennium. Emergencies are an exception, but these, with good planning, should be very limited. Newly developed projects may be added throughout the biennium.

The overriding goal of this process is to ensure the projects that come forward for cost-share are economically justifiable for the state. However, some issues go beyond quantifiable economics and may be given a higher status. For instance, having a safe,

clean, adequate supply of water is very important to North Dakota citizens.

Additionally, many water supply projects are looking to meet the future water needs of the state. Quantifying these benefits with any level of confidence is problematic. Since developing a more reliable, higher quality water supply is a high priority of the state, water supply projects are given special consideration.

With water supply needs addressed, the second criteria for admission into the plan focuses on the overall feasibility of the project. The primary filter for this is having a positive benefit-cost ratio. The benefit-cost ratio analysis will be the responsibility of the project sponsor, using guidelines to be established by the State Water Commission. Beyond being economically viable, the project must have substantial local support and be far enough along in planning and design to have cost share needs scheduled. This will be determined by the remaining four criteria in the second category: all required permits are obtainable, local funding mechanisms are in place or approved, negative effects from the project will be mitigated, and fits into the regional watershed plan, if developed.

A third category is to include projects that are information gathering. It is important to help share the costs of planning for a better future. This will maintain the quality of projects being submitted for cost-share.

Prioritization Criteria for Project Cost-Share

Once a project has made it through the filter mechanism, it will be added to the database. Only projects that are on the database are eligible for cost-share. When funding is limited, as determined by the State Water Commission, the following prioritization criteria will be considered. A project will have priority if the project:

1. Addresses a water supply need;
2. Fits into a Regional Watershed Plan, if developed;
3. Is sponsored by a political subdivision or special purpose organization with authority to construct a water resource project;
4. Provides the state the greatest return on investment;
5. Provides infrastructure for potential economic development;
6. Provides benefits to areas with low household income levels; or
7. Is data collection, research, or a feasibility study.

**Rationale for
Prioritization Criteria**

As mentioned earlier, water supply projects will be given a priority. In an effort to keep water supply cost-share equitable, a minimum price for water for users must be met by the water system or district to receive priority. Initially, a minimum user fee of \$30 per 6000 gallons for municipal and \$50 per 6000 gallons for rural users will be used. These costs are the upper bound of the middle category for the existing Municipal, Rural, and Industrial Water Supply Program's point rating system for prioritizing projects. Monthly fees were related to a set number of gallons to keep comparisons fair. Setting minimum user fees will help ensure that some water users are not receiving water at a lower cost than others at the state's expense. This essentially balances the state subsidy level. Exceptions to the minimum rates may be granted if it can be shown that the project sponsor has invested a large percentage of the non-project financed money into the project to keep user costs down.

Regional watershed planning is an important aspect to water development.

Developing water projects that complement one another increases the efficiency of the entire watershed. A regional watershed plan will also give the region the ability to focus their water development effort. For example, the Red River Valley may place emphasis on flood control works, while the Missouri River watershed may focus on increasing rural water supply availability. Since priorities may vary across regions, this process allows regional planning to influence the type of projects that receive priority.

Locally supported projects will also be given a priority if sponsored by a political subdivision or a special purpose organization with authority to construct a water resource project. This will help ensure that projects with organized local support get priority. Special purpose organizations were included specifically for development of water supply systems, irrigation or domestic. Cost-share for projects sponsored by private organizations will still be available.

The fourth criterion for prioritizing cost-share funding, return to the state, will be the means for ranking most of the projects. By prioritizing projects that provide the greatest return to the state, state funding will be put to its most efficient use. This helps level the playing field for all types of projects, excluding emergencies and water supply, giving them equal access to cost-share based on the project's ability to generate a return to the state. Those projects that provide the greatest return to the state's investment will be given priority.

A benefit-cost analysis will need to be completed for each project. Guidelines acceptable to the State Water Commission will be developed to assist the analysis. The analysis will contain a list of items that are not easily quantifiable in dollar terms, such as aesthetic value, wildlife habitat value, or the enhancement of economic growth potential. These items will be described narratively

as positive or negative effects of the project for the consideration of the SWC. Although the analysis will be done from the state's perspective, regional, local, and private effects will be identified. The factors that cannot be quantified will be concisely listed for consideration by the SWC. Furthermore, the quantifiable effects will be analyzed with *The North Dakota Input-Output Model*, as described in Coon et al. 1990, or an equivalent model, to gain an understanding of the business activity generated.

With this prioritization criterion, irrigation, recreation, drainage, and flood control projects will be ranked according to the level of benefits the state receives from having each project completed and the investment the state contributed to receive those benefits. The ranking of projects will be based on the magnitude of their benefit-cost ratio.

Since the benefit-cost ratio will be calculated from the state's perspective (i.e., benefit to the state and the cost to the state), projects having a larger percentage of the costs paid by non state sources would have a more favorable benefit-cost ratio and, therefore, would receive priority. Any project can increase its chance of getting cost-share by asking for a lesser amount of cost-share relative to its total project cost. It may be argued that localities with the ability to pay more will have an edge in getting state dollars. However, this is not the case. Points awarded for low median household incomes will help ensure state funding is distributed equitably.

Water infrastructure is a key component of many economic development projects. Although these projects may not have a large direct benefit to the state, which ranks them low under the benefit-cost criterion, they do increase the potential for expanded economic development, which may result in large returns to the state. Because of this potential, projects providing water infrastructure for future

Table 7: Prioritization Criterion for Water Projects Ranking System

economic development will receive priority. Comparing drinking water supply projects to irrigation projects poses some problems. Drinking water systems that are designed to only meet the current usage will rank low for economic development potential. Those with excess capacity to market to industry will receive a middle ranking. Since irrigation projects provide direct economic development, they will rank high. Rankings for each project will vary relative to economic development potential of other projects of the same type.

The state has placed emphasis on maintaining its rural communities. Often smaller towns cannot generate revenue adequate enough to cover the high costs of water resource projects. The proposed state cost-share policy recognizes this situation by giving priority to those areas with less ability to pay. Although many indicators could be used, median household income is readily available and is representative of an area's ability to pay for a project, whether revenue is raised through taxes, special assessments, or user fees.

The final criteria for priority is if the cost-share request is for data collection, research, or a feasibility study. These activities lay the groundwork for better projects in the future.

Ranking the Projects

A point system will be used to weight each category and rank the projects. A total of 100 points will be available. The project that accumulates the most points will be given priority for funding, although the commission reserves the right to consider other factors in the final cost-share decision. Other factors may include number of persons to benefit, the nature of the benefits, environmental considerations, readiness to proceed, or other considerations. Points will be awarded as shown in Table 7.

By generalizing typical projects, sample point rankings were generated to show

| CATEGORY DESCRIPTION | POINTS |
|--|-----------------------------------|
| 1 Addresses a water supply need (minimum user fee not met) | 20 (5) |
| 2 Fits into regional watershed plan | 20 |
| 3 Sponsored by a political subdivision (or special purpose organization) | 10 (5) |
| 4 Return on state's investment | 20 - 0 (according to ranking) |
| 5 Infrastructure for economic development | 10 - 0 (ranked by size of impact) |
| 6 Benefits areas with low household incomes | 10 - 0 (ranked by percentage) |
| 7 Data collection, research, feasibility study | 10 |

Sample Projects Using Point System for Ranking

| SAMPLE PROJECT | CATEGORY NUMBER | | | | | | | TOTAL POINTS |
|--------------------------------|-----------------|----------|-------------|------------|-------------|------------|-----------|--------------|
| | 1 (supply) | 2 (plan) | 3 (sponsor) | 4 (return) | 5 (infras.) | 6 (income) | 7 (study) | |
| Rural Water | 20 | 20 | 5 | 12 | 2 | 9 | 0 | 68 |
| Flood Control | 0 | 20 | 10 | 18 | 0 | 7 | 0 | 55 |
| Water Supply Feasibility Study | 10 | 0 | 10 | 0 | 2 | 0 | 10 | 32 |
| Irrigation Project | 8 | 0 | 10 | 2 | 8 | 0 | 0 | 28 |
| Flood Control (not economical) | 0 | 0 | 10 | 0 | 9 | 9 | 0 | 28 |
| Snagging and Clearing | 0 | 0 | 10 | 5 | 0 | 8 | 0 | 23 |

possible rankings (Table 7). As information about projects is received, the point system will be evaluated to ensure satisfactory weighting of categories.

Based on these general categories, projects in the database will be prioritized. The list of prioritized projects will be cut off at the expected level of funding for the biennium. Projects on this list will be funded on a first-come-first-served basis. Projects that were ranked below the cutoff will be considered on a case-by-case basis, which will be highly dependent on the progress of the listed projects.

Projects of SB 2188

SB 2188, which directed the creation of a statewide water development program,

also listed projects, or phases of projects, to be completed in the next several bienniums.

For the 1999-2001 biennium, SB 2188 specified state funding provisions for the Southwest Pipeline, Northwest Area Water Supply, Grand Forks flood control, and Devils Lake flood control. Of these projects, Southwest Pipeline and Grand Forks flood control are on schedule and have used the provided funding. The Northwest Area Water Supply project and the Devils Lake flood control project are working for final project approval. Funding provisions will be requested to continue into the 2001-2003 biennium, in addition to the projects already listed for 2001-2003 biennial funding in SB 2188.

Priority Funding for the Next Biennium

Table 8: Comparison of Water Development Project Needs from SWMP Database and Recommended Projects for 2001-2003 Biennium

Outlined here is what the SWC and the ND Water Coalition believe to be the best course of action for water development in the state. This section discusses water development projects and funding for the next biennium.

BIENNIAL WATER DEVELOPMENT PROJECT BUDGET

Since the recently defined state water development funding process is new, virtually none of the project sponsors had all the information necessary to answer the funding process' questions. As such, SWC staff and the ND Water Coalition task force were forced to use personal knowledge of the projects to determine funding levels for projects or categories of projects for the 2001-2003 biennium. The projects identified as priorities have state cost-share expectations that exceed \$40 million. Although \$40 million of projects is substantially more than the State Water Commission typically cost-shares, it represents only about 40 percent of the 2001-2003 biennial need identified by project sponsors in the updated SWMP database (Table 8). Senate Bill 2188 authorizes an additional \$31.5 million of projects, bringing the total biennial need to \$72.34 million (Table 9).

To meet the financial commitment these projects require, the state will have to bond for another \$16.04 million in addition to maintaining historical levels of funding from the MR&I program, General Fund, Resources Trust Fund, MR&I repayments, and full use of the Water Development Trust Fund (Table 9).

| PROJECT CATEGORY | PRIORITIZED NEED | SWMP NEEDS |
|-----------------------------|----------------------|-----------------------|
| Water Supply | \$ 15,000,000 | \$ 8,440,000 |
| Irrigation | 3,290,000 | 4,790,000 |
| General Water Management | 5,000,000 | 5,321,902 |
| Flood Control | 5,750,000 | 35,725,700 |
| Eastern Dakota Water | 150,000 | 150,000 |
| Devils Lake | 4,000,000 | 37,775,000 |
| Missouri River Management | — | — |
| Northwest Area Water Supply | — | — |
| Southwest Pipeline | 7,300,000 | 7,300,000 |
| Weather Modification | 350,000 | 583,500 |
| TOTAL | \$ 40,840,000 | \$ 100,086,102 |

Note: Project categories are not exactly the same, so the total serves as the best comparison.

Table 9: Funding of Biennial Water Development Priorities

| PRIORITIZED PROJECTS | FEDERAL COSTS (in millions) | STATE COSTS (in millions) |
|-------------------------------------|--------------------------------|------------------------------|
| 1. Municipal and Rural Water Supply | | \$ 15.00 |
| 2. Irrigation | | 3.29 |
| 3. General Water Management | | 5.00 |
| 4. Flood Control | | 5.75 |
| 5. Eastern Dakota Water Supply | | 0.15 |
| 6. Devils Lake | | 4.00 |
| 7. Missouri River Management | \$ 6.70 | 0 |
| 8. Northwest Area Water Supply | | 0 |
| 9. Southwest Pipeline | | 7.30 |
| 10. Weather Modification | | 0.35 |
| SUB-TOTAL | | 40.84 |
| SB 2188 Authorized Projects | | 31.50 |
| TOTAL | | \$ 72.34 |

Note: These priorities are for new funding only.

| AVAILABLE REVENUES | STATE COSTS |
|--|-----------------|
| 1. Resources Trust Fund | \$ 12.50 |
| 2. Water Development Trust Fund | 43.80 |
| 3. Bonding (as needed to cover the difference) | 16.04 |
| TOTAL | \$ 72.34 |

DESCRIPTION OF PROJECTS

As Table 9 shows, the prioritized water development needs for the next biennium are grouped into 10 main categories. Of these 10 categories, eight involve state cost-share funding. The projects contained in each category are explained below.

Municipal, Rural, and Industrial Water Supply

There are 11 MR&I projects that received priority in this biennium with a total state cost of \$19 million. Unobligated funds from the current biennium will cover \$4 million of the 2001-2003 need, leaving \$15 million remaining to fund. Although the Southwest Pipeline Project is considered an MR&I project, it will be discussed independently. Some of the potential water supply projects that could be considered for funding are:

Central Plains Water (South Benson) - This \$5 million project would provide rural water to areas in central and southern Benson County through the existing Central Plains Water District. The project would serve 150 rural users. The water supply could come from the existing water capacity in Minnewaukan or Maddock.

Langdon Rural Water (Central Benson) - This \$2 million project would provide rural water to an area of central and northern Towner County through existing Langdon Rural Water. The project would serve 90 rural users. The water supply would come from the existing water capacity in Langdon through a series of new pipelines.

Langdon Rural Water (Munich) - This \$3.95 million project would provide water to Munich and minor branches in the existing Langdon system in Cavalier County. Also, improvements would be made in the Langdon water treatment plant. The project would serve 130 users through the existing Langdon Rural Water District. The water supply would come

from the Langdon through a series of new pipelines, booster stations, and reservoirs.

Langdon Rural Water (Rural Munich) - This \$3.72 million project would provide rural water to an area of western Cavalier County through existing Langdon Rural Water. The project would serve 90 users, including Clyde, Calvin, and Sarles. The water supply would come from the existing water capacity in Langdon through a series of new pipelines.

Langdon Rural Water (North Rural) - This \$1.63 million project would provide rural water to an area of north-central Cavalier County through existing Langdon Rural Water. The project would serve 40 users, including Mount Carmel and Wales. The water supply would come from the existing water capacity in Langdon through a series of new pipelines.

McKenzie Rural Water - This \$1.72 million project would provide rural water to an area of central McKenzie County through McKenzie Rural Water which would be operated by the McKenzie County Water Resource District. The project would serve 215 users and provide livestock watering. The water supply would come from Watford City through a series of new pipelines.

Parshall (Rural) - This \$1.5 million project would provide rural water to an area of southern Mountrail County. The project would serve 50 users and a dairy operation. The water supply would come from Parshall through a series of new pipelines.

Ramsey Rural Water (Eddy/Foster) - This \$7.74 million project would provide rural water to areas in Eddy, Foster, and Ramsey Counties through the existing Ramsey Rural Utilities. The project would serve 348 users, including Grace City, Glenfield, and McHenry, and provide for livestock watering. The water supply would come from the existing Ramsey water treatment plant through a series of

new pipelines and reservoirs. Carrington may provide water to 101 rural users in the area of Carrington.

Sheyenne Water Supply - This \$650,000 project would provide water to Sheyenne with a new pipeline from New Rockford.

Stutsman Rural Water - This \$200,000 project would provide rural water to an area of southern Foster County through Stutsman Rural Water. The project would serve 12 users. The water supply would come from Stutsman's existing pipelines.

Williams Rural Water - This \$2 million project would provide rural water to an area of southeastern Williams County through Williams Rural Water. The project would serve 140 users. The water supply would come from Williston through Williams's pipelines. Livestock watering maybe part of the project.

Irrigation

Three projects comprise the \$3.29 million funding request under the irrigation category: Buford/Trenton Irrigation District Expansion - \$600,000; Elk/Charbon Irrigation Project - \$1.2 million; and the Nesson Valley Irrigation project - \$1.49 million. Each project will use the Missouri River as its source of water.

General Water Management

General water management projects include rural flood control, snagging and clearing, channel improvement, recreation, and planning and studies. The SWMP database has \$5.3 million of general needs identified for 2001-2003. The \$5 million requested will allow most of these projects to move forward. Other projects will encounter delays that push their funding need beyond the next biennium. Projects will be funded according to current policy as the State Water Commission begins implementation of a prioritization process.

Flood Control

The Maple River Dam and the Baldhill Dam flood control projects have been identified to receive \$5.75 million in funding in this category. Other flood control projects are contained in the General Water Management and the Devils Lake project descriptions.

The Maple River Dam will be a 70-foot high earthen embankment dry dam capable of retaining 60,000 acre-feet of floodwater. Unlike most large flood control projects, there is no federal funding associated with this project.

The Baldhill Dam project consists of raising the flood pool elevation by five feet, which will provide an additional 30,700 acre-feet of temporary storage. This will be accomplished by replacing the main spillway gates and protecting property along the reservoir from the elevated water levels.

Eastern Dakota Water Supply

Funding amounting to \$150,000 is requested to cost-share with the Bureau of Reclamation in funding a water supply assessment of the Red River Valley. This information will be used in determining the best course of action for meeting the Valley's water supply need.

Devils Lake

Flood control at Devils Lake is a continuing problem. Even though work toward an emergency outlet has been ongoing for years, much work remains. The \$4 million requested will be used to help develop an outlet for the lake. Environmental studies, planning, and design are still awaiting completion.

Southwest Pipeline

The Bowman/Scranton service area of the Southwest Pipeline Project would receive \$11 million. The project cost estimate includes \$7.3 million of additional state funding to match the \$3.7 million of Rural Development funding.

The project will provide water to areas of Bowman and Slope County. The project would serve an estimated 335 rural users and the community of Scranton. The water supply would come from the Southwest Pipeline Project through a series of new pipelines and storage reservoirs. The project includes upgrades for water service to areas south of Dickinson and Perkins County, South Dakota.

Construction plans for the Bowman-Scranton area, while not yet finalized, include 30 miles of 10 inch and 12 inch secondary transmission pipeline, water storage reservoirs at New England and Davis Buttes, two additional pumps at the intake pump station, and a pump each at the Dodge and Richardton pump stations.

Weather Modification

The \$350,000 budget request from the Atmospheric Resource Board includes two programs to be funded. The Atmospheric Resource Board currently cost-shares weather modification operations with participating counties at an average ratio of 20 percent state to 80 percent county. Weather modification costs have increased significantly. For the last two bienniums, the Resources Trust Fund has provided \$125,000 to support the cost-sharing. A \$189,600 increase in state funding is needed, which brings the request for this program to \$314,600. This amount will not reduce the funding contributed by the participating counties, but would allow an update of the technology employed in North Dakota, including real-time aircraft position telemetry, and would support anticipated project operating costs.

Second, \$35,400 is needed to develop a Safeguards Committee and Seeding Concepts Committee for North Dakota. The committees would conduct an independent re-assessment of criteria used to suspend cloud seeding opera-

tions, and concepts employed in actual seeding methodology, respectively. Each was last reviewed in 1985.

EXPECTED SOURCES OF REVENUE

Funding to meet the \$72 million need will come from several sources. The Resources Trust Fund traditionally provides water development funding in North Dakota. For the 2001-2003 biennium, revenues into the Resources Trust Fund are expected to exceed \$12.5 million. This includes new money in the amount of \$7.3 million to be deposited from 20 percent of the oil extraction tax revenue, \$1 million from MR&I loan repayments, \$800,000 from Southwest Pipeline Project loan repayments, and \$300,000 of interest revenue. An estimated unobligated revenue of \$5.1 million will be carried forward into the 2001-2003 biennium to bring the total Resources Trust Fund monies available to \$12.5 million.

The recently-created Water Development Trust Fund is receiving revenue from the tobacco settlement. It currently has a balance of \$13.5 million and will grow to \$25.4 million by the start of the 2001-2003 biennium. Additional payments in 2002 and 2003 of an estimated \$11.9 million per year will bring the total available next biennium to \$49.2 million. From this, \$2.715 million per year is already obligated to pay the debt service on bonds sold under SB 2188, leaving a balance of \$43.8 million for new projects.

The difference between the need and the available funding is about \$16 million. Since many projects meet with unforeseen delays that often push their funding need back, the remaining \$16 million will be generated through the sale of bonds as needed to meet the need. The bonds would be secured by future payments into the Water Development Trust Fund. Table 10 shows how the prioritized projects could be funded.

TABLE 10: Projected Water Development Funding

| Fiscal Year | WATER DEVELOPMENT TRUST FUND (WDTF) | | | | WATER DEVELOPMENT FUNDING | | | | | |
|---------------|-------------------------------------|------------------------|---------------------------|------------------------------------|-----------------------------------|----------------------|---|------------------------------|------------------------------|--------------------------------|
| | A Tobacco Revenue | B Bond Debt Service | C Debits For Projects* | D = sum of A - B - C Balance | E RTF, Gen Fund & Other* | F = C WDTF | G = E + F G = H + I - J Total Funds Available | H General Project Funding | I SB 2188 Project Funding | J Additional Bonds Needed** |
| 2000 | \$13,478,530 | - | - | \$13,478,530 | - | - | - | - | - | \$27,500,000 |
| 2001 | 11,900,000 | - | - | 25,378,530 | \$3,100,000 | - | \$3,100,000 | - | - | - |
| 2002 | 11,900,000 | \$2,715,000 | \$28,120,000 | 6,443,530 | 7,800,000 | \$28,120,000 | 35,920,000 | \$20,420,000 | \$15,500,000 | - |
| 2003 | 11,900,000 | 2,715,000 | 15,628,530 | - | 4,700,000 | 15,628,530 | 20,328,530 | 20,368,530 | 16,000,000 | 16,040,000 |
| 2004 | 10,300,000 | 4,115,000 | 6,185,000 | - | 4,700,000 | 6,185,000 | 10,885,000 | 6,085,000 | 13,800,000 | 9,000,000 |
| 2005 | 10,300,000 | 4,900,000 | 5,400,000 | - | 4,700,000 | 5,400,000 | 10,100,000 | 9,100,000 | 12,000,000 | 11,000,000 |
| 2006 | 10,300,000 | 5,859,000 | 4,441,000 | - | 4,784,000 | 4,441,000 | 9,225,000 | - | - | - |
| 2007 | 10,300,000 | 5,859,000 | 4,441,000 | - | 4,869,680 | 4,441,000 | 9,310,680 | - | - | - |
| 2008 | 16,600,000 | 5,859,000 | 10,741,000 | - | 4,957,074 | 10,741,000 | 15,698,074 | - | - | - |
| 2009 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,046,215 | 10,741,000 | 15,787,215 | - | - | - |
| 2010 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,137,139 | 10,741,000 | 15,878,139 | - | - | - |
| 2011 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,229,882 | 10,741,000 | 15,970,882 | - | - | - |
| 2012 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,324,480 | 10,741,000 | 16,065,480 | - | - | - |
| 2013 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,420,969 | 10,741,000 | 16,161,969 | - | - | - |
| 2014 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,519,389 | 10,741,000 | 16,260,389 | - | - | - |
| 2015 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,619,777 | 10,741,000 | 16,360,777 | - | - | - |
| 2016 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,722,172 | 10,741,000 | 16,463,172 | - | - | - |
| 2017 | 16,600,000 | 5,859,000 | 10,741,000 | - | 5,826,616 | 10,741,000 | 16,567,616 | - | - | - |
| 2018 | 11,800,000 | 5,859,000 | 5,941,000 | - | 5,943,148 | 5,941,000 | 11,884,148 | - | - | - |
| 2019 | 11,800,000 | 5,859,000 | 5,941,000 | - | 6,062,011 | 5,941,000 | 12,003,011 | - | - | - |
| 2020 | 11,800,000 | 5,859,000 | 5,941,000 | - | 6,183,251 | 5,941,000 | 12,124,251 | - | - | - |
| 2021 | 11,800,000 | 5,859,000 | 5,941,000 | - | 6,306,916 | 5,941,000 | 12,247,916 | - | - | - |
| 2022 | 11,800,000 | 3,144,000 | 8,656,000 | - | 6,433,054 | 8,656,000 | 15,089,054 | - | - | - |
| 2023 | 11,800,000 | 3,144,000 | 8,656,000 | - | 6,561,715 | 8,656,000 | 15,217,715 | - | - | - |
| 2024 | 11,800,000 | 1,744,000 | 10,056,000 | - | 6,692,950 | 10,056,000 | 16,748,950 | - | - | - |
| 2025 | 11,800,000 | 959,000 | 10,841,000 | - | 6,826,809 | 10,841,000 | 17,667,809 | - | - | - |
| 2026 | - | - | - | - | 6,963,345 | - | 6,963,345 | - | - | - |
| 2027 | - | - | - | - | 7,102,612 | - | 7,102,612 | - | - | - |
| 2028 | - | - | - | - | 7,244,664 | - | 7,244,664 | - | - | - |
| 2029 | - | - | - | - | 7,389,557 | - | 7,389,557 | - | - | - |
| 2030 | - | - | - | - | 7,537,348 | - | 7,537,348 | - | - | - |
| 2031 | - | - | - | - | 7,688,095 | - | 7,688,095 | - | - | - |
| 2032 | - | - | - | - | 7,841,857 | - | 7,841,857 | - | - | - |
| 2033 | - | - | - | - | 7,998,695 | - | 7,998,695 | - | - | - |
| 2034 | - | - | - | - | 8,158,668 | - | 8,158,668 | - | - | - |
| 2035 | - | - | - | - | 8,321,842 | - | 8,321,842 | - | - | - |
| 2036 | - | - | - | - | 8,488,279 | - | 8,488,279 | - | - | - |
| 2037 | - | - | - | - | 8,658,044 | - | 8,658,044 | - | - | - |
| 2038 | - | - | - | - | 8,831,205 | - | 8,831,205 | - | - | - |
| 2039 | - | - | - | - | 9,007,829 | - | 9,007,829 | - | - | - |
| 2040 | - | - | - | - | 9,187,986 | - | 9,187,986 | - | - | - |
| 2041 | - | - | - | - | 9,371,745 | - | 9,371,745 | - | - | - |
| 2042 | - | - | - | - | 9,559,180 | - | 9,559,180 | - | - | - |
| 2043 | - | - | - | - | 9,750,364 | - | 9,750,364 | - | - | - |
| 2044 | - | - | - | - | 9,945,371 | - | 9,945,371 | - | - | - |
| 2045 | - | - | - | - | 10,144,279 | - | 10,144,279 | - | - | - |
| 2046 | - | - | - | - | 10,347,164 | - | 10,347,164 | - | - | - |
| 2047 | - | - | - | - | 10,554,108 | - | 10,554,108 | - | - | - |
| 2048 | - | - | - | - | 10,765,190 | - | 10,765,190 | - | - | - |
| 2049 | - | - | - | - | 10,980,493 | - | 10,980,493 | - | - | - |
| 2050 | - | - | - | - | 11,200,103 | - | 11,200,103 | - | - | - |
| Totals | \$350,778,530 | \$117,180,000 | \$233,598,530 | | \$362,505,272 | \$233,598,530 | \$596,103,802 | \$55,973,530 | \$57,300,000 | \$36,040,000 |

Bond Principal (excluding costs) and Payments:

FY2000: \$27.5m = \$2.715m/year, payments deferred until FY2002

FY2003: \$16.04m = \$1.4m/year

FY2004: \$9m = \$785,000/year

FY2005: \$11m = \$959,000/year

Terms of Bonds:
20 years, 6% interest;
Issuance costs not included.

* 2001 total available of \$3.1 unobligated and moved into 2002 RTF. Other revenues are \$3.7 million from Resources Trust Fund, \$0.5 million MRI repayment, and \$0.5 General Fund; a 2% annual increase begins FY2006. MRI repayments end around 2017.

** Issuance costs will add to the bond totals and slightly increase the yearly payments.