

Building Strong Collaborative Relationships for a Sustainable Water Resources Future:

STATE OF SOUTH DAKOTA
SUMMARY OF STATE WATER PLANNING

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The findings contained in this report are based on the information collected from the literature search and interviews for this initiative and should not be construed as an official Department of the Army position, policy or decision unless so designated by other official documentation.

STATE OF SOUTH DAKOTA

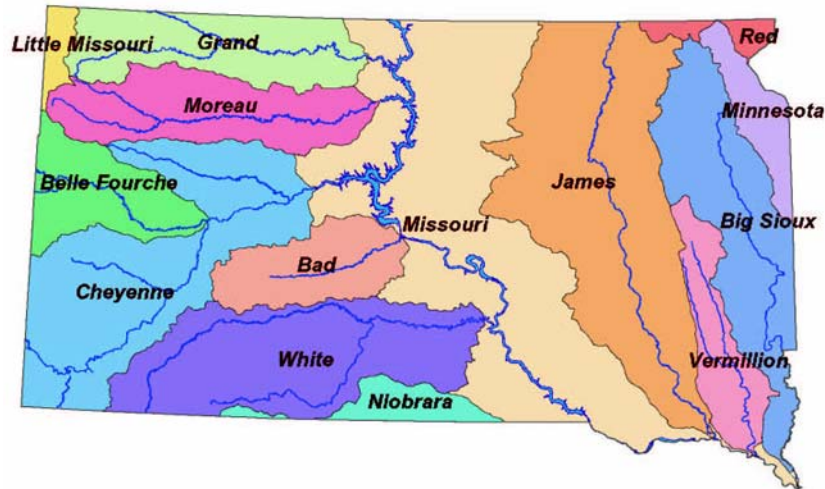


Figure 1. Major Watersheds in South Dakota (DENR, 2009d)

1. RESPONSIBLE STATE AGENCIES/REGIONAL ENTITIES

The Department of Environment and Natural Resources (DENR) is responsible for water resources management and administration. DENR is divided into two divisions (DENR, 2009b): Environmental Services (DES) and Financial and Technical Assistance (DFTA). Within DES there are seven main programs: air quality, drinking water, groundwater quality, minerals and mining, surface water quality, waste management, and water rights. Within DFTA there are four programs: fiscal management, the geological survey, information services, and water resources assistance that includes water and waste funding as well as watershed protection.

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In addition to the BWNR, South Dakota has a second separate and distinct board, the Water Management Board (WMB), which oversees the development, conservation and allocation of state's waters. The WMB is described as a "quasi-legislative and quasi-judicial citizen's board" that has statutory and rule-making authority in the following areas (DENR, 2009f):

- Drinking water and surface water quality standards
- Above ground and underground storage tanks
- Ground water quality standards and discharge permits
- Petroleum contaminated soils
- Environmental financial assurance
- Water rights
- Well construction standards
- Well driller/pump installer licensing
- Dam safety
- Chemigation
- Fences crossing navigable streams
- Ordinary high and low water marks on lakes
- Weather modification

2. STATE/REGIONAL WATER PLANNING STATUS

South Dakota's Department of Environment and Natural Resources (DENR) manages the state's water resources. However, the state's water resources plan, State Water Plan (SWP), is developed by DENR's Board of Water and Natural Resources (BWNR).

BWNR is a seven member board appointed by the Governor for four-year terms. The BWNR has the authority and responsibility to (DENR, 2009a):

1. Establish a State Water Plan (South Dakota Codified Laws (SDCL) 46A-2-2).

2. Prepare and submit a yearly progress report to the Governor and legislature on the SWP (SDCL 46A-2-2), and all activities during the preceding year and to make funding recommendations necessary to implement the SWP (SDCL 46A-1-14).
3. Establish policies for water resources management (SDCL 46A-1-7).
4. Make rules and award funds from:
 - o Consolidated Water Facilities Construction Program (CWFCP) (SDCL 46A-1-63)
 - o Solid Waste Management Program (SDCL 46A-1-83)
 - o Clean Water State Revolving Fund Program (CWSRF) (SDCL 46A-1-60.1)
 - o Drinking Water State Revolving Fund Program (DWSRF) (SDCL 46A-1-60.1)
5. Issue bonds through State Revolving Fund programs (SDCL 46A-1-31)
6. Make recommendations to the Governor and Legislature for placement of projects on the State Water Resources Management System (SWRMS), recommendations for state construction authorizations including cost sharing commitment for SWRMS projects, and recommendations for annual special appropriations through the Omnibus Bill.

To fulfill its duties, BWNR submits a joint annual report and annual water plan; most recently the 2008 Annual Report and 2009 State Water Plan.

The SWP consists of two parts: the State Water Facilities Plan (SWFP) and the SWRMS. The SWFP is a list of potential water projects approved by the Board such as projects for rural, municipal, and industrial water supply; wastewater facilities; storm sewers; water conservation; watershed management and restoration; solid waste management; ground water contamination; pollution prevention or remediation; and dam safety. To be considered, potential projects must have completed preliminary engineering design and be ready for construction within two years. Once on the SWFP, the project remains on the plan for two years and is considered for funding during those two years.

The SWRMS identifies large water projects that seek significant federal and state cost-share participation and serve as the preferred, priority water development projects of the state. Potential SWRMS projects are identified by the BWNR who then recommends these projects to the State Legislature. Only the State Legislature has the authority to place projects on the SWRMS component of the plan.

3. WATER MANAGEMENT VISION AND GOALS

DENR's mission is "to protect public health and the environment by providing environmental monitoring and natural resource assessment, technical and financial assistance for environmental projects, and environmental regulatory services; all done in a manner to protect South Dakota's environment and natural resources for today and tomorrow while treating everyone as our customer and exceeding their expectations (DENR, 2009b)."

When the Legislature mandated the SWP, it intended for the SWP to ensure optimum use of all the state's water resources through coordinated and integrated planning, conservation, development, and management (SDCL 46A-1-1).

4. SCOPE OF WATER RESOURCES PLANNING AND MANAGEMENT

BWNR must consider the following planning objectives when developing the State Water Plan (46A-2-2):

- To provide for future economic welfare and prosperity of the state's citizens.
- To provide for the irrigation of lands within the sections of a district periodically afflicted with drought, and to stabilize the production of crops.
- To replenish and restore the depleted waters of lakes, rivers, streams, and underground waters in the district, and to stabilize the flow of streams, levels of lakes, and levels and pressures of underground waters.
- To reserve within the district for present or future beneficial uses, all waters and particularly waters impounded on the Missouri River, within the boundaries of the state, except to the extent that the construction of facilities for the diversion of water outside this state will make substantial water available for use within this state not otherwise available or will directly benefit the people of this state economically or otherwise.
- To provide and enhance for beautification, flood protection, recreation, fish and wildlife benefits, municipal and industrial water supply, water quality enhancement, scenic rivers, navigation, erosion control, and in all other ways to conserve, regulate, and control the waters in this state.
- To protect and improve the quality of the waters of the state as opportunity permits.
- To provide for the generation and sale of hydroelectric power from projects that may include provisions for irrigation and municipal, rural, or industrial water supplies.
- To plan and coordinate with any Indian tribe of this state, the joint development of water resources whenever such joint action is possible, appropriate and in the best interests of the state and of the respective tribe.

In addition, BWNR considers the following eligibility criteria when considering projects for inclusion in the SWFP (DENR, 2009c):

1. Health and safety projects which correct serious health hazards
2. Economic development projects which encourage and strengthen the economy of the state
3. Consolidation of existing facilities or regionalization of projects which stabilize or improve the economy of the state and the quality of life through sound fiscal, land, and water management
4. Expansion of existing systems which provide an increase in services and promote the objectives contained in criteria 1 through 3 above
5. Local support for the project which would include a proposed level of local project funding and the use of in-kind services in the proposed project
6. Long term planning which would enable a local project to provide for future maintenance, replacement, or expansion of the proposed project

Projects focusing on the rehabilitation of existing systems are considered to meet the eligibility criteria if it addresses the following criteria:

1. Provides a commitment of local funds for the maintenance and repair of the system for its expected life including amortization costs
2. Provides an annual maintenance and repair schedule to ensure maintenance and repair of the system

Each year, BWNR solicits project applications for placement in the SWFP. The Board has the authority to approve projects and incorporate them into the Facilities Plan. Once a part of the Facilities Plan, these projects are eligible for state and federal financial assistance. In addition to simple listing on the Plan, each project is linked to a proposed funding source from the CWFCP, CWSRF and/or DWSRF.

The second part of the SWP, SWRMS, identifies large water projects that require specific state or federal authorization and financing, and serves as the state's list of water resources management priorities. Projects are incorporated into the SWRMS by the Governor and Legislature based on recommendations of the BWNR. Once listed in the SWRMS, projects remain there until removed by legislation. To be eligible for inclusion in the SWRMS, projects must meet one of the following criteria (DENR, 2009c):

1. The project is necessary for the needs and general welfare of the people of South Dakota.
2. The project preserves a free-flowing stream or river possessing unique natural beauty, or outdoor recreational values of present and future benefit to the people of the state.

There are 12 projects listed in the 2009 SWRMS:

1. Big Sioux flood control study—Study was conducted by USACE. The Corps is currently re-evaluating flood control alternatives and will provide their recommendations in a General Re-Evaluation Report due in 2010.
2. Black Hills hydrology & water management study—The hydrology study assessed quantity, quality, and distribution of surface and groundwater resources in the Black Hills area. USGS provided funds to establish a hydrologic monitoring system, collect data and complete data analysis. The study, completed in 2003 focused on needs assessment and management alternatives. The on-going water management study focuses on the development of regional water supply systems in and around the Black Hills.
3. CENDAK irrigation project—Project to supply Missouri River water to 474,000 acres in central South Dakota.
4. Gregory County pumped storage site—Development of a peak generation hydroelectric facility in northern Gregory County.
5. Lake Andres-Wagner/Marty II irrigation unit—A research demonstration program to determine best management practices for irrigation in glacial till soils containing selenium.
6. Lewis & Clark regional water system—Bulk delivery system to provide treated Missouri River water to rural communities in southeastern South Dakota, northwestern Iowa, and southwestern Minnesota. Currently under construction.
7. Mni Wiconi rural water system—Water supply system that delivers high quality water from the Missouri River to 50,000 citizens in western South Dakota, including the Pine Ridge Indian Reservation. Currently under construction.

8. Perkins County rural water system—Provides quality drinking water to communities of Lemmon, Bison, and Lodgepole. Currently under construction.
9. Sioux Falls flood control project—USACE project to improve 100-year flood protection on the Big Sioux River and on Skunk Creek. Currently under construction.
10. Slip-up Creek—Construction of a dam, reservoir, and pumping plant on Slip-Up Creek, a pumping plant on the Big Sioux River, and pipelines connecting river pumping plant to the reservoir and Sioux Falls water treatment plant. Reservoir to store municipal water for Sioux Falls and provide for recreation, fish and wildlife activities.
11. Southern Black Hills water system—Construction of a rural regional water supply system to deliver quality drinking water to residents of the Southern Black Hills area. Phase I planned for construction in summer of 2009.
12. Vermillion Basin flood control project—Project to address severe flooding problems in the Vermillion River Basin.

In South Dakota, water rights are administered by a system known as the “Doctrine of Prior Appropriation (DENR, 2009e).” Water uses established first in time (senior priority) is first in appropriative rights, except for individual domestic use which takes precedence over any appropriative rights. WMB regulates water use, approves and denies permits, validates vested rights, and cancels water right permits and rights.

As part of the state’s non-point source (NPS) pollution prevention program, DENR’s Watershed Protection work group conducts water quality assessments within each of the state’s 14 major river basins (Figure 1). Water quality assessments, however, are not conducted at the scale of the entire watershed. After assessments are completed, DENR then develops total maximum daily loads (TMDL) for 12-digit hydrologic unit or larger watersheds (DENR, 2007). Originally, the department’s goal was to “develop 11 TMDLs and implement five work plans each year to achieve TMDLs for all of the state’s impaired waters over a 13 year period (DENR, 2008),” such that all TMDLs would be completed in 2011. This goal has since been revised to “develop an average of 11 TMDLs each year so that the TMDL for a listed waterbody is completed within 13 years of listing (DENR, 2008).”

The state Department of Public Safety’s Office of Emergency Management (OEM) develops the state’s “Multi-hazard Mitigation Plan (OEM, 2005).” The goal of the Hazard Mitigation Plan is to “prevent and/or minimize the loss of life and suffering and prevent and/or minimize damage to property caused by natural and/or man-made disasters.” According to the mitigation plan, natural hazards that pose the greatest threats statewide include floods (flash floods, long-duration precipitation floods, snowmelt floods, and dam failure floods), severe winter storms, tornadoes, wildfires, landslides and mudflows, and earthquakes.

The Hazard Mitigation Plan establishes two goals for flooding:

1. Reduce injuries and the loss of life
2. Reduce flood damage to flood-prone properties and structures

To achieve these goals, the plan sets the following as mitigation priorities:

- Structural hazard control or protection projects on existing structures or control systems
- Development of comprehensive mitigation programs with implementation as an essential component
- Construction activities that result in hazard protection
- Retrofitting of facilities
- Development of State or local mitigation standards
- Debris removal and channel clearance
- Development or improvement of warning systems
- Acquisition or relocation
- Other mitigation activities

Droughts in South Dakota are considered more of a threat to farmers than to urban residents, and are not considered in the *Multi-Hazard Mitigation Plan* (OEM, 2005). During droughts, the state generally seeks disaster relief assistance from the USDA. In 2004, the Governor established a Drought Task Force whose responsibilities include:

- Examining state and federal programs
- Assembling and analyzing data
- Creating a mechanism for monitoring the development and seriousness of drought
- Establishing a plan for drought damage assessment
- Measuring the severity of the situation on the economic and social sectors of the state
- Despite the formation of the Task Force, the state does not have a drought mitigation plan or a mitigation strategy.

5. PARTNERSHIPS, STAKEHOLDER, AND PUBLIC INVOLVEMENT

The state's key federal partners include the USEPA, USACE, USGS and the Bureau of Reclamation.

Through the Governor's Drought Task Force, DENR partners with numerous state agencies including the Governor's Office, Department of Public Safety; Department of Agriculture; Game, Fish and Parks; Military and Veterans Affairs; South Dakota Association of County Commissioners; SDSU Cooperative Extension Service; SD Association of Rural Water Systems; SD Association of County Commissioners and Bureau of Information and Telecommunications.

South Dakota is also represented by Governor Rounds in the Western States Water Council (WSWC). Through WSWC, South Dakota and 17 other western states work together in the conservation, development and management of water resources.

6. PLAN IMPLEMENTATION STRATEGY

BWNR uses the SWP to identify and prioritize needed water management projects and improvements. Once named in the SWFP, projects are qualified to receive funding for implementation through the state revolving loan fund, grants and loans for two years. If projects are not completed in two years, sponsors must re-submit an application for consideration in the plan. The application review process and updates to the SWFP occur annually.

7. OUTCOMES ASSESSMENT PROCESS

In conjunction with the SWP, BWNR submits an Annual Report to the Governor and Legislature each year. The Annual Report provides progress updates on each of the state's funding programs and other BWRM activities during the year. In 2008, BWNR awarded ~\$95.8 million in grants and loans to finance municipal drinking water systems, rural water systems, wastewater facilities, watershed restoration, solid waste disposal, recycling, and Brownfield's revitalization (BWNR, 2008).

8. NEEDS, CHALLENGES AND CRITICAL PRIORITIES - INTERVIEW INSIGHTS

The Missouri River is the key to South Dakota's present and future. Hydropower, flood control, water supply and recreation are all important issues in the state. The Missouri River provides water supplies to about 50 percent of the state (see Figure 2); maintaining access to and use of the Missouri River is vital for the present and future. About $\frac{3}{4}$ of municipalities are connected to rural water systems. Developing and maintaining these water delivery systems is also important.

To date population growth has not been a major driver for planning. In general the eastern side of the state has the greatest population and has good supplies and good water deliver capabilities. In the west side of the state there is less population but some additional need for water distribution. Issues associated with endangered species especially on the Missouri River have the potential to create some uncertainty in regard to water management and development. Also the state will continue to work with Tribal water needs and rights.

The operation of the Missouri River reservoirs should be reevaluated based on today's needs and trends. The 1944 Flood Control Act established flood control, navigation, hydropower, and irrigation as primary purposes. Irrigation and navigation were never fully developed. The upper basin areas were slated to get additional irrigation water. Today recreation is an important use and revenue source to the state. Releases for downstream navigation is driving some decision in the Master Manual which causes impacts to recreation and reservoir storage levels; these issues have been exacerbated during drought.

The Sioux Falls area may need some additional federal funding for flood protection/control. Flood protection structures are also needed for the city of Watertown.

Addressing drinking water standards, especially arsenic, and manganese is creating challenges for individual systems that will need funding to comply with the standards. Please see earlier sections of this summary for more information on specific priority projects.

Finally, obtaining and maintaining access to surface water and groundwater data is essential for good water management. The United States Geologic Survey river gauging program is facing increasing difficulties in obtaining the necessary funding and the program should be fully funded.

South Dakota Missouri River Rural Water Systems

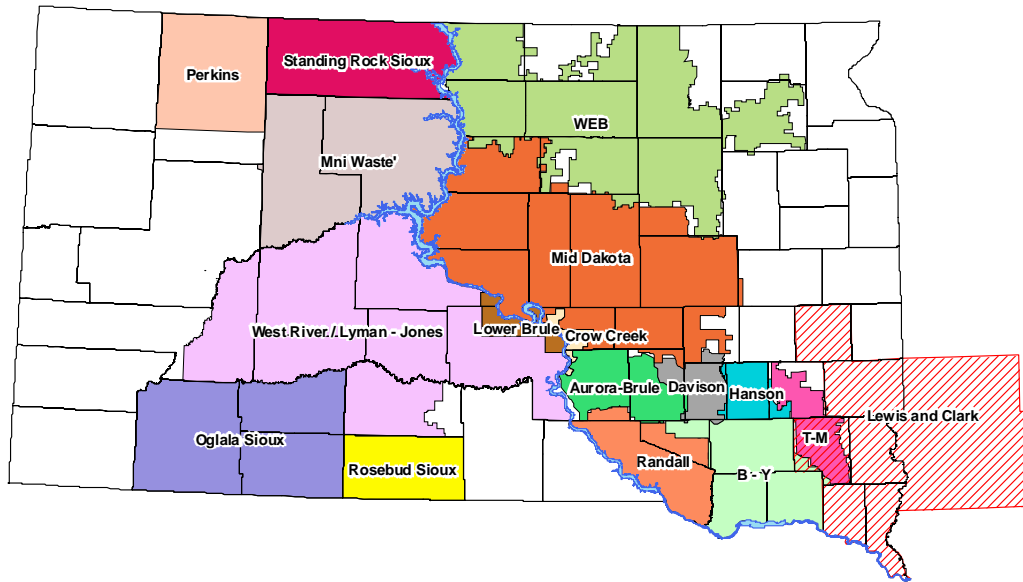


Figure 2. Rural Water Supply Systems that Utilize Water from the Missouri River

9. REFERENCES

Much of the language and information in this summary comes directly from reports published by the South Dakota Department of Environment and Natural Resources.

DENR (2008). 2008 Annual Report and 2009 State Water Plan. Retrieved January 23, 2009 from <http://www.state.sd.us/denr/DFTA/WWFunding/StateWaterPlan/08annualbwnr.pdf>

DENR. Board of Water and Natural Resources. Retrieved January 23, 2009(a) from <http://www.state.sd.us/DENR/DFTA/WWFunding/BWNR.htm>

DENR. DENR Organization. Retrieved January 23, 2009(b) from http://www.state.sd.us/denr/denr_organization.htm

DENR. State Water Plan. Retrieved January 26, 2009(c) from <http://www.state.sd.us/DENR/DFTA/WWFunding/StateWaterPlan/statewaterplan.htm>

DENR. Nonpoint Source Pollution Total Maximum Daily Loads (TMDLs) Schedule & Summaries. Retrieved January 26, 2009(d) from <http://www.state.sd.us/DENR/DFTA/WatershedProtection/tmdlpage.htm>

DENR. Summary of South Dakota Water Laws and Rules. Retrieved January 26, 2009(e) from <http://www.state.sd.us/denr/des/waterrights/summary.htm>

DENR. Water Management Board. Retrieved January 26, 2009(f) from <http://www.state.sd.us/denr/des/waterrights/wmb.htm>

DPS. Office of Emergency Management. Retrieved January 26, 2009 from <http://www.oem.sd.gov/>

Governor's Drought Task Force. Retrieved January 23, 2009 from <http://www.state.sd.us/applications/MV31DroughtTaskForce/index.htm>

OEM (2005). South Dakota Statewide Multi-Hazard Mitigation Plan. Retrieved January 26, 2009 from <http://oem.sd.gov/publications/mitigation/sdmhmp.pdf>

South Dakota Legislature. Retrieved January 23, 2009 from <http://legis.state.sd.us/index.aspx>