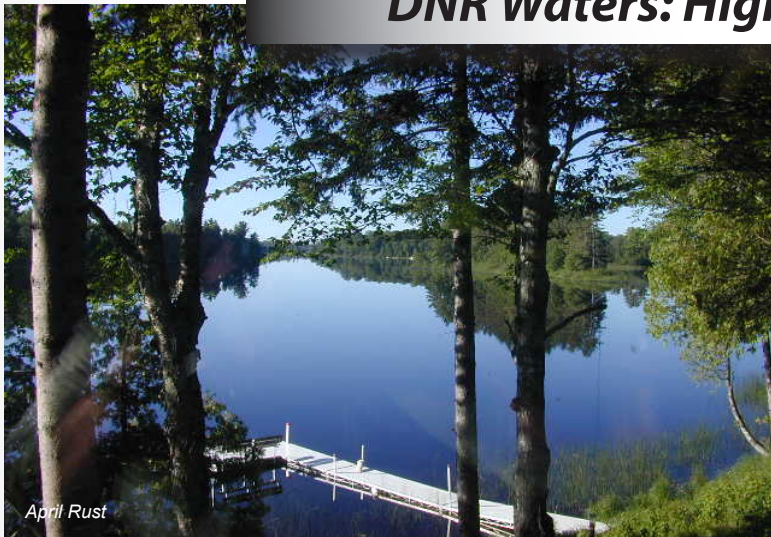


DNR Waters: Highlights of 2008



The mission of Minnesota DNR's Division of Waters is "Helping People Ensure the Future of Our Water Resources." With 4 Regional offices, 30 Area offices, and 125 total staff, the Division of Waters accomplishes our mission through managing our Core Program Areas, as described in this *Highlights of 2008* report:

- Public Waters Protection
- Water Supply Management
- Technical Information for Decision-Making

Fiscal year 2009 funding

- General Fund—operating dollars: \$11,624,000
- One-time funding for fiscal year 2008-2009
 - High-capacity water appropriation—\$500,000
 - Clean Water Legacy—\$2,250,000
- Revenue—primarily from water use fees (to General Fund)—\$5,100,000
- LCCMR—SE Springsheds – (U of M) \$125,000
- LCCMR—South-Central Ground Water Atlases and Mt. Simon Wells: \$894,000 for 3 years

Bonding Programs – 2008 Funding

- Dams—\$2,000,000
- Flood Hazard Mitigation—\$33,900,000
- Ground water monitoring wells—\$500,000

www.mndnr.gov/waters

Public Waters Protection

Public Waters Protection includes programs related to floodplains and flood mitigation, shoreland management, outreach and education programs, and special area management plans

Floodplain Management Community Assistance

- Assisted communities in Browns Valley and southeastern Minnesota with damage estimations and flood-recovery efforts.
- Participated in the Minnesota Recovers Task Force for both floods.
- Provided numerous training sessions on floodplain management administration and insurance for local officials.
- Assisted approximately 40 communities with updating their floodplain management ordinances.
- Held formal Community Assistance Visits with 5 communities, and contacted another 70 communities through mapping-related meetings or training.

Flood Hazard Mitigation—Results of funding:

- Acquired and removed approximately 100 structures from the floodplain.
- Provided grants for the construction of 14 farmstead ring dikes to protect residences, structures, and commodities.
- Administered bonding appropriations of \$85.9 million from fiscal years 2005, 2006, 2007 special sessions, and 2008 for a variety of flood damage reduction projects.

Flood Insurance Rate Map Modernization Project

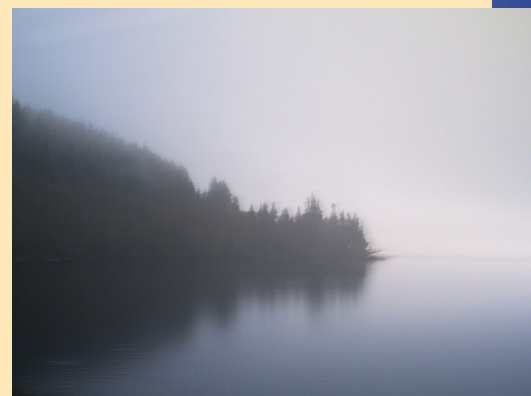
- Facilitated map modernization scoping meetings in Anoka, Freeborn, Mower, Pine, and Wright counties.
- Held open houses in Washington, Dakota, Douglas and Ramsey counties for preliminary Flood Insurance Rate Maps (FIRMs) and issued preliminary digital maps (DFIRMs) for Dakota, Douglas, and Ramsey counties.

Shoreland Management

- Planned and presented 4 Government Training Services classes on the alternative shoreland standards.
- Established a shoreland stewardship position funded under the *Clean Water Legacy*.
- Established and implemented advisory groups to develop new rules.

Mississippi River Critical Area Corridor Oversight

- Completed a legislatively-ordered study of management options for the Mississippi River Critical Area Corridor.
- Approved comprehensive plan amendments (CPAs) for Inver Grove Heights and Lilydale, and approved the critical area plan for Minneapolis.



Lower St. Croix National Recreational River

- Provided staff support to the Lower St. Croix Management Commission and the Lower St. Croix Partnership team.
- Reviewed numerous proposals and assisted communities in ordinance administration.

Upper Mississippi River Management and Coordination

- Made substantial progress constructing 7 islands for the Pool 8 Phase III Stage 2 Habitat Rehabilitation and Enhancement Project (HREP); to be completed July 2009.
- Made substantial progress on Lock & Dam 4/Clear Lake HREP alternative embankment protection and backwater dredging; to be completed June 2009.
- Completed unloading/transfer of 400,000 cubic yards of dredged 9-foot channel material from the Teepeota Point Containment site to the Bennett Pit.
- Developed a new kiosk sign (in cooperation with Trail & Waterways) to caution boaters about shoreline erosion caused by wakes; the new sign will be posted at access points in Spring 2009.
- Developed a new "River-Friendly Boating" brochure to educate boaters on minimizing impacts to the river environment.

Project WET (Water Education for Teachers)

- Conducted 19 workshops throughout the state for 302 participating educators.
- Maintained volunteer facilitator network and benefited from approximately 2500 volunteer hours.
- Provided learning opportunities for 3180 children at water festivals and natural resource fairs.

Coastal Zone Management

- Since 1999, Minnesota's Lake Superior Coastal Program has awarded nearly \$9 million to local coastal partners to preserve, protect, develop, restore, and enhance coastal resources. More than half of this funding has gone to local units of government.
- In 2008, the Coastal Program provided nearly \$560,000 in financial assistance to 15 projects in the Lake Superior coastal area and received 29 applications totaling \$1.2M for 2009. Project results include, for example, the prevention of over 1000 pounds of unwanted medications from entering Lake Superior, a design for the Split Rock River Overlook to improve safety and amenities on Highway 61, and an updated Land Use Plan for Lakewood Township.
- Hosted a very successful program evaluation visit from NOAA and peer reviewers.

Great Lakes Compact

- Minnesota was the first state to pass this interstate compact in 2007, which provides an enforceable mechanism to protect the Great Lakes from diversions. The compact became effective on December 8, 2008, after the other states, Congress and the President approved the compact.

Outreach

- Provided information on public waters protection via the Minneapolis Boat Show, Home and Cabin Show, Minnesota State Fair, newspapers, radio, television, and public meetings.



Water Supply Management programs ensure that appropriate sources of water are available for both current and future generations

Permits

- Initiated the process for revising MN Rules chapter 6115 for regulating structures in Public Waters.
- Continued the electronic record retention of issued permits and scanned nearly 80% of more than 74,000 permits issued during the past 70+ years.
- Assisted more than 800 stakeholders with permitting needs for projects involving water appropriations and work in public waters.

Water Supply and Planning

- Continued working with public water suppliers to develop 10-year Water Supply Plans for improved conservation and resource management.
- Sixty-six Water Supply Plans were approved out of 200 plans received, including 19 combination 10-year appropriation permit/water supply plans.
- Coordinated with the Minnesota Department of Health (MDH) on the review of demand reduction measures & water supply plan requirement for 24 water supply construction plan requests.

Water Use Management

- Updated the online State Water Use Database Service (SWUDS) with year 2007 water use data from nearly 7,000 permit holders.
- Informed public water suppliers of new legislation regarding water conservation rate structures and developed an information page for this on the DNR website.
- Concluded 5 well interference complaints.
- Updated our records of water use by category for 634 public water suppliers.
- Implemented real-time notification by MDH of pending well construction for irrigation and community/non-community wells allowing for pro-active interaction with water appropriators. 186 well construction notifications were reviewed between August and December.
- Water use fees generated \$4,800,000 for the State General Fund.

Water Supply Protection ...cont'd

Underground Gas Storage

- Monitored 7 billion cubic feet of natural gas stored underground near Waterville, MN.
- Began a program to modernize data collection and monitoring of the gas storage facility.
- Scanned approximately half of the projects' paper records.

Outreach

- Gave several presentations on water supply, water use and availability, and permitting; and participated as a panelist on water policy at the Freeman Forum, *Water, Water Everywhere*, at the Humphrey Institute of Public Affairs.
- Worked closely with staff of the Metropolitan Council in development of the Master Water Supply Plan for the Twin Cities Metro Area.
- Participated in annual meetings of the Irrigation Association of Minnesota and the Minnesota Rural Water Association, and in regular meetings of the Council of Great Lakes Governor's Conservation Committee and the Water Utility Council of American Water Works Assoc. Minn. Section.
- Collaborated with the University of Minnesota Water Resources Center and the Freshwater Society as well as other organizations in the first of a series of workshops on "Groundwater Sustainability: Towards a Common Understanding."
- Co-authored *Managing for Water Sustainability: Report of the EQB Water Availability Project*, Environmental Quality Board, December 2008.
- Provided information on public waters protection via the Minneapolis Boat Show, Home and Cabin Show, Minnesota State Fair, newspapers, radio, television, and public meetings.

Technical Information for Decision-Making

Hydrologic Information for Decision-Making programs ensure that decisions on water resources prevent negative impacts on the environment, yet encourage healthy economic and community growth in Minnesota

Dam Safety

- Inspected all high-hazard dams and accelerated work with owners of high-hazard dams to update their emergency action plans.
- Assisted four communities with dam safety projects, issued 17 dam safety permits, and inspected approximately 400 of the 800 dams.
- Administered \$300,000 in dam safety grants for dams owned by local governments.
- Completed feasibility study reports for the New London Dam and the Lake Bronson Dam.
- Conducted dam safety inspections following the 2008 flood in southeastern Minnesota.

Dam Maintenance

- Provided maintenance on 20 of the 500 state-owned dams.

Surface-Water Technical Studies

- Provided technical analysis for the Canisteo Mine Pit project, and two research projects for the DNR Division of Fish and Wildlife.
- Conducted hydrologic and hydraulic analyses of Lake Emily, Little Lake, O'Brien Lake, and Pelican Lake at Orr outlets.
- Completed watershed delineations for the multi-year Lake Watershed Delineation Project.
- Completed the assembly of the statewide seamless catchment dataset, which is now incorporated into the National Watershed Boundary dataset.
- Provided enhanced data and watershed-related assistance to numerous partners, including the University of Minnesota, Natural Resources Research Institute, and state and federal resource agencies.
- Provided GIS and hydrological guidance to the design and capture of watershed related data for the Minnesota portion of the Midwest Glacial lakes Partnership.
- Completed two case studies on culvert sizing for Dobbins Creek and a county ditch system using two different computer models.
- Reviewed and commented on the USACE Integrated Reservoir Operating Plan Evaluation Draft EIS (which seeks a more natural water level fluctuation in the Mississippi River reservoir system), and formally requested assistance from the USACE in evaluating their model for the Stump Lake outflow.

Outreach

- Made a presentation on Lake Watershed Delineation Project to the Minnesota Association of Watershed Districts.
- Participated in the Drainage Work Group and Drainage Management Team.
- Participated with KARST training for MPCA and in the Southeast Minnesota Flood Forum.

Surveying

- Completed 87 survey reports involving more than 80 lakes and wetlands.
- Surveyed over 50 ground water monitoring wells to determine elevations and precise locations.

Lake Level Monitoring

- Installed, surveyed, and read 1100 lake level gages.
- Compiled over 20,000 readings of lake levels and ice-in and ice-out dates submitted by more than 800 volunteer gage readers and local unit of government partners, who contributed more than 6200 hours of service.
- Responded to over 1000 requests for information including analyses of lake levels for 2008 drought conditions.

Climatology

- Managed ongoing climate monitoring program involving nearly 1500 volunteer observers and other climate data resources.
- Provided comprehensive analyses of drought conditions.
- Produced "Observing the Climate", a report examining recent and long-term climate trends in Minnesota.
- Maintained full-featured Website offering up-to-date information regarding the Division's activities.



Ground-Water Level Monitoring

- Collected data on ground-water levels from 748 monitoring wells and compiled data related to the 118 water appropriation permits that have monitoring requirements.
 - Drilled 1 deep Mt. Simon Aquifer well and began 2 more deep Mt. Simon Aquifer wells to expand the existing monitoring network.
 - Administered agreements with 72 soil and water conservation districts for reading ground-water levels in monitoring wells.
 - Participated in and provided data and funding for a state and federal agency effort that collected nearly simultaneous water-level measurements in approximately 250 metro area wells in the spring and late summer of 2008.
 - Continued a systematic assessment of the physical condition and water-level measurement history of all ground-water level monitoring wells, including 279 active wells in 36 of Minnesota's counties to date.
- Continued to define the ground-water monitoring network needs to adequately evaluate ground-water sustainability.

Ground-Water Technical Studies

- Reviewed 38 municipal water supply plans.
- Worked toward optimizing operational plans for conjunctive use of ground water and surface water at 2 ethanol plants.
- Designed and/or analyzed data from 18 aquifer tests that were conducted to evaluate ground-water availability for proposed appropriations.
- Providing well-field design assistance to a rural water district.
- Started to work with stakeholders to resolve well interferences and to ultimately establish a ground water management area in a major irrigation area.
- Investigated and evaluated groundwater withdrawal impacts at two large limestone quarries in southeast Minnesota.
- Assisted the City of Luverne with a study of how removal of a dam might impact water levels in nearby city wells.
- Participated in EAW review for 3 ethanol plant proposals.
- Conducted 14 fluorescent dye traces to map the karst basins which feed trout stream springs. Developed a temperature monitoring network at 18 springs in southeast Minnesota.
- Completed seismic refraction surveys in Carver, Benton, and Chisago counties to support development of depth to bedrock and bedrock topography maps for geologic atlases by the Minnesota Geological Survey.
- Completed several resistivity imaging surveys in Carlton county to better define surface sand thickness for use in the geologic atlas.
- Finished the Traverse-Grant Regional Hydrogeologic Assessment, Part B, and posted final report on the DNR Waters website and continued work on the Todd County Geologic Atlas, Part B.
- With the Minnesota Geological Survey, proposed acceleration funding from the Legislative-Citizen Commission on Minnesota Resources (LCCMR) for FY10-12 to start work on 2 additional Part A atlases and 3 Part B atlases. The LCCMR recommended the project to the Legislature for funding.

Mining Hydrology-Environmental Review

- Continued EIS work for the proposed mining projects: PolyMet Copper/Nickel, Mesabi Nugget Taconite, and the Keewatin Taconite Expansion.
- Continued work on the Canisteo Pit Outlet Project.
- Started work on a proposed expansion for Northshore Mining.
- Started working with 2 mining companies on the Initial Phases of Pre-EIS work for possible future Copper/Nickel mining projects.

Information Management

- Redesigned and reprogrammed the *Lakes Data Base* to improve data availability and access to data about lake numbers, size, water levels, OHWs, etc.
- Continued to make improvements to the DNR/PCA Cooperative Stream Gaging web page, permits data base, water use data base, observation well data base, and climatology data bases.
- Continued work on new GIS data layers for public waters basins, watercourses and watersheds.
- Conducted a GIS user survey of DNR Waters employees to define software and training needs.

Outreach

- Partnered with PCA to conduct a training workshop for ethanol producers and consultants.
- Made a presentation to the Crow Wing County Board on the relationship between lakes and ground water.
- Made a presentation on hydrogeology at the Minnesota Ground Water Conference.
- Prepared several new brochures for distribution and the website covering topics such as docks, vegetation buffer strips, and boat storage structures.
- Participated in the Minnesota Lake Home, and Cabin Show and the annual meetings of the Minnesota Association of Soil and Water Conservation Districts, Minnesota Association of Watershed Districts, Minnesota Rural Water Association & Minnesota Association of State Floodplain Managers.
- Produced information sheets and 10 brochures on zoning, shoreland management, and bluff protection for the 12 public meetings of the shoreland rules effort and for assistance to local governments across southern Minnesota.

Stream-Flow Monitoring

- Monitored stream flows and stage at approximately 110 locations across the state under cooperative agreements with other state agencies and watershed organizations.
- Installed 23 new stream-gaging stations, which included 16 year-round, real-time satellite telemetry stations for priority watersheds to support the Clean Water Legacy Act.
- Upgraded and maintained the MDNR/MPCA cooperative stream-gaging website.

Flood-Warning System

- Maintained and operated 38 flood-warning gages.
- Conducted flow measurements during high-flow conditions in northwest and southeastern Minnesota for the National Weather Service for flood forecasting and early warning of river stages and flows.

Geographic Names

- Provided information and assistance concerning proposals to change the names of geographic features pursuant to M.S.84A.

Water Facts

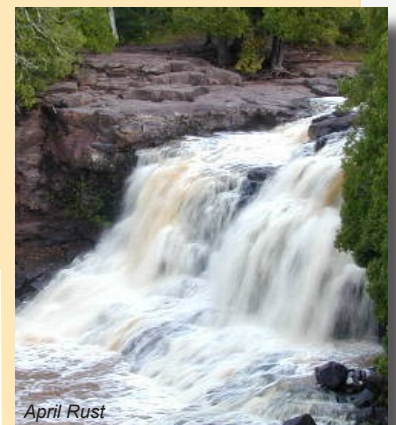
- 11,842 lakes
- 90,000 miles of streams
- 9.2 million acres of wetlands

Local Units of Government Served

- 447 cities
- 87 counties

www.mndnr.gov/waters

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April Rust