

Legislative Water Commission Review

This packet of materials summarizes Legislative Water Commission (LWC) learning to date and includes a small percentage of materials received by LWC members since October 2014. These excerpts provide a “big picture” overview of MN water issues and the governance structure that surrounds them.

1. LWC

- Work to date
- Statute
- Procedures

2. Governance

- Spending on water (FY2014)
- MN Water Management Framework (which state agencies do what)
- Cities
- Service areas for Soil and Water Conservation Districts, watershed districts, and watershed management organizations
- One Watershed One Plan participating watersheds

3. Surface Water

- Major river basins, with counties
- Major watersheds (within each major river basin)
- MN Pollution Control Agency (MPCA) intensive watershed monitoring map (2008-2017 & 2017-2027)
- MPCA impaired waters map (4/15)
- MPCA Watershed Restoration and Protection Strategies status maps

4. Groundwater

- Department of Natural Resources (DNR)-MN Geological Survey (MGS) County Geologic Atlas status map, with high density well use areas and designated groundwater management areas
- DNR groundwater provinces (underlain by surface water watershed boundaries)
- United States Geological Survey (USGS) potential groundwater recharge (in inches per year and as a % of precipitation)
- DNR groundwater appropriations and all water appropriations by use category
- DNR irrigation permit locations by type and volume
- DNR memo on age of MN groundwater
- DNR water appropriations permits status table
- MN Department of Health (MDH) location of community water supply systems by surface water and groundwater sources
- MDH status of wellhead protection planning
- Location of private wells as of 7-30-15

5. Other

- 2016 Clean Water Fund Report Card
- DNR active mine locations map
- Matrix of Issues

**LWC Members: if further clarification is needed,
please contact Barb Huberty (barb.huberty@lcc.leg.mn or 651/284-6431)**

Work to Date – GATHER Data

- Overview Presentations by:
 - Former LWC Senator and staff
 - Inter-Agency Coordination Team
 - Clean Water Council
 - Association of MN Counties & League of MN Cities
 - Freshwater Society, MN Center for Environmental Advocacy, MN Environmental Partnership
 - MN AgriGrowth Council, MN Farm Bureau, MN Farmers' Union & MN Agricultural Water Resources Center
 - MAWD & MASWCD

Work to Date – GATHER Data

- Topical Presentations by:
 - White Bear Lake HOA, WBL Restoration Association & DNR: White Bear Lake Agreement
 - DNR: Groundwater Management Areas, buffers & buffer mapping, RDO EAW (pines to potatoes), water supply planning, Groundwater Thresholds Project, and County Geologic Atlas (with MGS)
 - BWSR: 1W1P, buffer implementation, PTMApp
 - MDA: Ag Water Quality Certification Program
 - Water technology industries
 - State Auditor, PFA, MPCA, MDH & local units of government: infrastructure issues

Work to Date – GATHER Data

- Topical Presentations by:
 - Golf Course Superintendents' Ass'n: water reuse
 - EQB: 2015 Water Policy Update Report
 - Metropolitan Council: Master Water Supply Plan
 - MDH: wellhead protection plans
 - DNR, SWCDs & MDA: Pineland Sands area work
 - U of MN: water-ag research
- Field Tours:
 - St Cloud Area
 - MN River Basin (Mapleton to Blakely)

3.886 LEGISLATIVE WATER COMMISSION.

Subdivision 1. **Establishment.** A Legislative Water Commission is established.

Subd. 2. **Membership.** (a) The Legislative Water Commission consists of 12 members appointed as follows:

(1) six members of the senate, including three majority party members appointed by the majority leader and three minority party members appointed by the minority leader; and

(2) six members of the house of representatives, including three majority party members appointed by the speaker of the house and three minority party members appointed by the minority leader.

(b) Members serve at the pleasure of the appointing authority and continue to serve until their successors are appointed or until a member is no longer a member of the legislative body that appointed the member to the commission. Vacancies shall be filled in the same manner as the original positions. Vacancies occurring on the commission do not affect the authority of the remaining members of the Legislative Water Commission to carry out the function of the commission.

(c) Members shall elect a chair, vice chair, and other officers as determined by the commission. The chair may convene meetings as necessary to conduct the duties prescribed by this section.

Subd. 3. **Commission staffing.** The Legislative Coordinating Commission must employ staff and contract with consultants as necessary to enable the Legislative Water Commission to carry out its duties and functions.

Subd. 4. **Powers and duties.** (a) The Legislative Water Commission shall review water policy reports and recommendations of the Environmental Quality Board, the Board of Water and Soil Resources, the Pollution Control Agency, the Department of Natural Resources, the Metropolitan Council, and other water-related reports as may be required by law or the legislature.

(b) The commission may conduct public hearings and otherwise secure data and comments.

(c) The commission shall make recommendations as it deems proper to assist the legislature in formulating legislation.

(d) Data or information compiled by the Legislative Water Commission or its subcommittees shall be made available to the Legislative-Citizen Commission on Minnesota Resources, the Clean Water Council, and standing and interim committees of the legislature on request of the chair of the respective commission, council, or committee.

(e) The commission shall coordinate with the Clean Water Council.

Subd. 5. **Compensation.** Members of the commission may receive per diem and expense reimbursement incurred doing the work of the commission in the manner and amount prescribed for per diem and expense payments by the senate Committee on Rules and Administration and the house of representatives Committee on Rules and Legislative Administration.

Subd. 6. **Expiration.** This section expires July 1, 2019.

History: 2014 c 312 art 4 s 3

- (12) renewal of registered accounting practitioner firm permits, except for sole practitioners, \$100 per year;
- (13) renewal of registered accounting practitioner firm permits for sole practitioners, \$35 per year;
- (14) CPA examination application, \$40;
- (15) CPA examination, fee determined by third-party examination administrator;
- (16) renewal of certificates with an inactive status, \$25 per year; and
- (17) renewal of CPA firm permits for firms that have one or more offices located in another state, \$68 per year.

Sec. 24. Minnesota Statutes 2012, section 363A.44, subdivision 1, as added by Laws 2014, chapter 239, article 2, section 6, is amended to read:

Subdivision 1. **Scope.** (a) No department, agency of the state, the Metropolitan Council, or an agency subject to section 473.143, subdivision 1, shall execute a contract for goods or services or an agreement for goods or services in excess of \$500,000 with a business that has 40 or more full-time employees in this state or a state where the business has its primary place of business on a single day during the prior 12 months, unless the business has an equal pay certificate or it has certified in writing that it is exempt. A certificate is valid for four years.

(b) This section does not apply to a business with respect to a specific contract if the commissioner of administration determines that application of this section would cause undue hardship to the contracting entity. This section does not apply to a contract to provide goods and services to individuals under chapters 43A, 62A, 62C, 62D, 62E, 256B, 256I, 256L, and 268A, with a business that has a license, certification, registration, provider agreement, or provider enrollment contract that is prerequisite to providing those goods and services. This section does not apply to contracts entered into by the State Board of Investment for investment options under section 352.965, subdivision 4.

EFFECTIVE DATE. This section is effective August 1, 2014.

Sec. 25. LEGISLATIVE WATER COMMISSION INITIAL APPOINTMENTS AND FIRST MEETING.

Initial appointments to the Legislative Water Commission established in section 3 must be made by September 1, 2014. The first meeting of the Legislative Water Commission shall be convened by the chair or a designee of the Legislative Coordinating Commission by October 15, 2014. The Legislative Water Commission shall select a chair from its membership at its first meeting.

Sec. 26. STUDY OF SPECIAL REVENUE ACCOUNT FOR CENTRAL ACCOMMODATION.

The commissioner of management and budget, in consultation with the Commission of Deaf, DeafBlind and Hard-of-Hearing Minnesotans, must report to the chairs and ranking minority members of the senate Finance Committee, the house of representatives Ways and Means Committee, the house of representatives State Government Finance Committee, the senate State Departments and Veterans Budget Division, and the governor by January 5, 2015, on advantages and disadvantages of creating an account for the special

PROCEDURES OF THE
LEGISLATIVE WATER COMMISSION
As adopted December 11, 2014

1 **1.0. AUTHORIZED PROCEDURAL MANUAL.** Except as otherwise provided by these
2 procedures, the rules of parliamentary procedure contained in Mason's Manual
3 of Legislative Procedure govern the Legislative Water Commission
4 (Commission).

5
6 **2.0. OFFICERS.** The Commission shall elect co-chairs by majority vote of those
7 members present. Officers serve two year terms.

8
9 **2.1.** One co-chair must be a member of the House of Representatives, and
10 one must be a member of the Senate. The co-chairs may not be members
11 of the same political party. The members of the Commission should
12 consider geographic balance when electing the co-chairs.

13 **2.2.** The co-chairs must agree on the agenda, the date, and the time for each
14 meeting.

15 **2.3.** The co-chairs will alternate chairing each meeting of the Commission.

16
17 **3.0. MEETINGS.** All meetings of the Commission are open to the public.

18
19 **3.1.** The Commission shall, as far as practicable, give three days' notice of any
20 meeting. The notice shall include the date, time, place and agenda for the
21 meeting.

22 **3.2.** The co-chairs shall, to the extent practicable, schedule a meeting of the
23 Commission each month.

24
25 **3.3.** A majority of Commission members constitutes a quorum.

26
27 **3.4.** The co-chairs of the Commission shall cause minutes to be kept. The
28 minutes shall include:

29 (a) The time and place of each hearing or meeting;

30 (b) Commission members present;

31 (c) The name of each person appearing, together with the name of the
32 person, agency or employee organization represented;

33 (d) The language of each motion, the name of the member making the
34 motion, and the result of any vote upon the motion, including the
35 ayes and nays when a roll call is demanded;

36 (e) Other important matters related to the work of the Commission.

37 Minutes shall be approved at the next regular meeting of the Commission.

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4.0. STAFF. The co-chairs, in consultation with the other members of the Commission, will provide work direction to the Legislative Coordinating Commission staff assigned to support the work of the Commission.

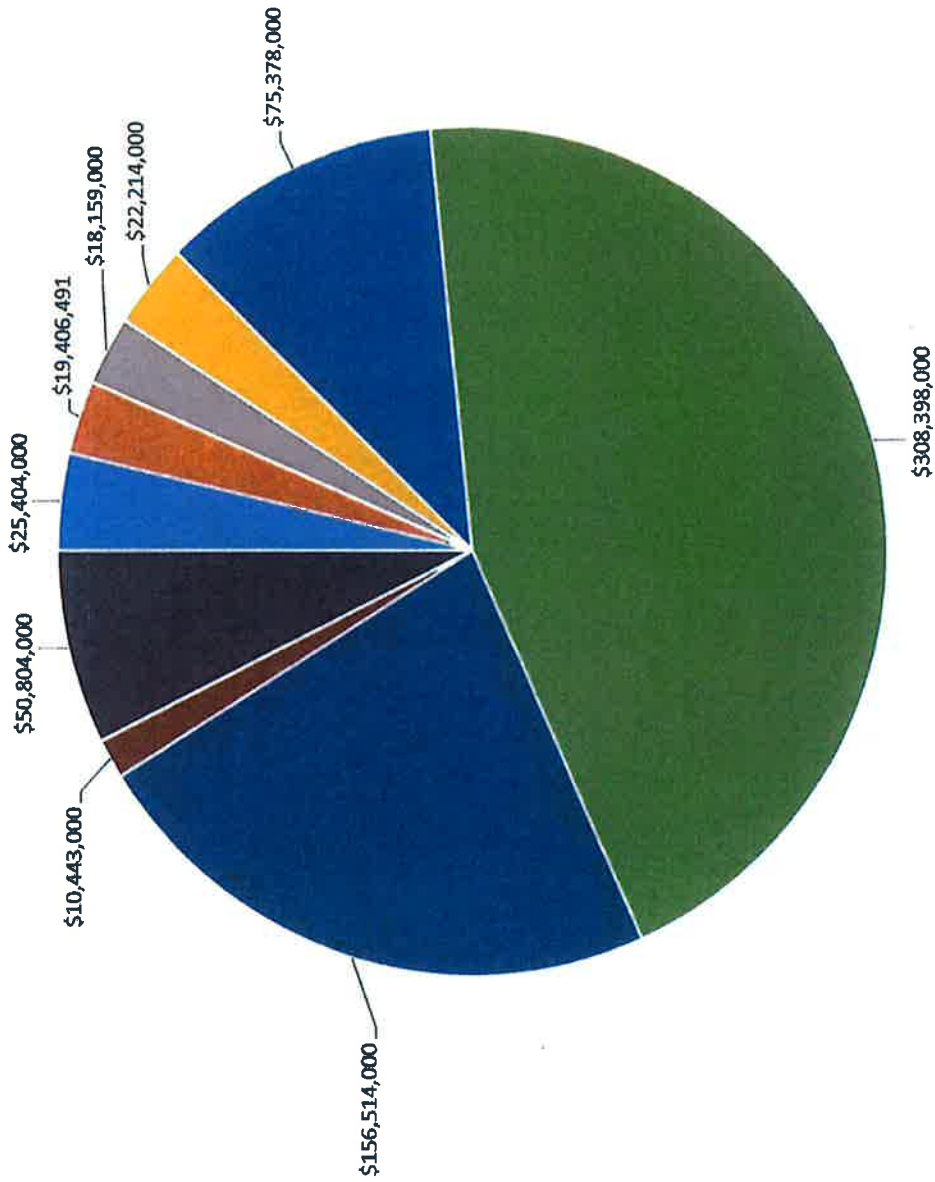
5.0. EXPENSES. The co-chair who chairs a meeting of the Commission is authorized to approve expense reimbursement and per diems for members attending that meeting.

6.0. VOTING REQUIREMENTS. Commission action in the form of advice, comments, or recommendations requires the vote of a majority of members present.

6.1. Any member may demand a roll call vote on any motion before the Commission or a Commission. Only upon a demand being made shall the roll be called and the vote of each member on the motion be recorded, together with the name of the member demanding the roll call.

7.0. PROCEDURES. The concurrence of two-thirds of the Commission membership is required to adopt, suspend, alter, or amend any Commission procedure.

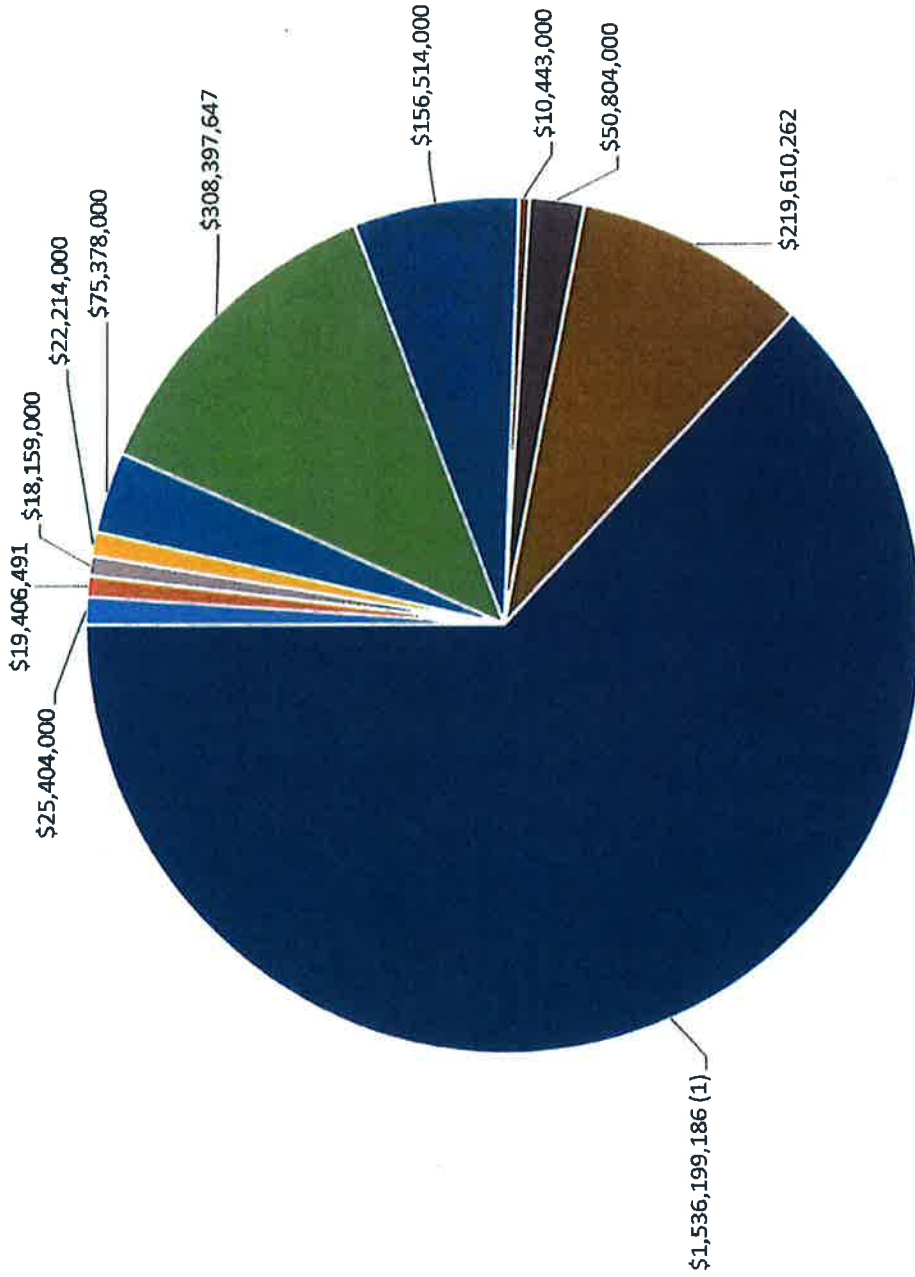
State Expenditures for Water-Related Programs in MN (~686.7M for FY2014)



- BWSR
- DNR
- MDA
- MDH
- MPCA
- Met Council
- PFA
- LCCMR
- LSOHC

Local, State, and Federal Expenditures for Water Related Programs in MN

(~\$2.4B for FY2014, except for municipalities, which were in 2012 & 2013)



(1) municipal expenditures excludes local cash match dollars on grants administered by other agencies.

- BWSR
- DNR
- MDA
- MDH
- MPCA
- Met Council
- PFA
- LCCMR
- LSOHC
- Federal
- Municipalities

Public Water Program Expenditures (2014 unless otherwise noted)

(2/9/15)

Agency	Fund	Program	Expenditures	Description
SR	CWF	Projects and Practices	\$4,267,000	Grants for on-the-ground water quality projects
BWSR	CWF	Accelerated Implementation	\$2,181,000	Grants for LGUs to accelerate on-the-ground water quality projects and exceed standards for water protection & compliance
BWSR	CWF	Community Partners	\$511,000	Grants to LGUs to leverage interest of NGOs to install on-the-ground projects to retain water
BWSR	CWF	Targeted Watershed Demonstration Program	\$2,853,000	Sub-watershed scale grant projects to LGUs with multi-year plans for significant water pollution reduction
BWSR	CWF & Bonding	Riparian Buffers	\$10,091,000	Permanent conservation easements to establish native buffers adjacent to public waters
BWSR	CWF	Wellhead Protection	\$899,000	Permanent conservation easements in high/very high priority wellhead protection areas
BWSR	CWF	Soil Erosion and Drainage Law Compliance	\$565,000	LGU grants to ensure compliance with drainage law and soil erosion control provisions
BWSR	CWF	One Watershed, One Plan	\$41,000	Grants to LGUs engaging in 1W1P process, transitioning from county-based to watershed-based water planning
SR	General	Red River Basin Commission Administration	\$100,000	Funds to RRBC for administration and management of water quality and floodplain management programs
BWSR	General	Area II Administrative Services	\$120,000	Financial/technical assistance to LGUs in southern MN River Basin Area II for flood protection structures/floodplain management
BWSR	General	DNR Shore land	\$377,000	Funds to counties to administer the Shore land Management Programs (overseen by DNR)
BWSR	General	Local Water Management	\$1,139,000	Grants to counties to develop/implement local water plans
BWSR	General	Nonpoint Engineering Assistance	\$1,060,000	Funds to JPBs of SWCDs to provide technical assistance to landowners applying conservation practices
BWSR	General	State Cost Share	\$1,200,000	Grants to SWCDs to offset the cost of conservation practice installation by landowners

SUBTOTAL \$25,404,000

Public Water Program Expenditures (2014 unless otherwise noted)

(2/9/15)

Agency	Fund	Program	Expenditures	Description
DNR	General		\$3,690,253	GW management, Geologic Atlas, Fish Contaminants, WQ BMPs on Forested Lands
DNR	Special Revenue		\$326,925	Lake, GW, & streamflow measurements
DNR	ENRTF		\$206,845	Geologic Atlas, Trout Stream springheads
DNR	Water Recreation Account		\$82,041	Lake level monitoring
DNR	Forest Management Investment Account		\$433,003	WQ BMPs on forested lands
DNR	EWR fees		\$385,239	Develop electronic water permitting system
DNR	Water Management Account		\$4,560,958	GW & SW management, water permitting activities
DNR	Game and Fish Fund		\$174,512	Fish contaminant monitoring, lake IBI monitoring, sentinel lakes monitoring, fish IBI surveys
DNR	Heritage Enhancement		\$152,874	Lake IBI, stream channel, and sediment monitoring
DNR	CWF		\$8,909,875	Watershed monitoring/assessment (TMDL support to MPCA), Geologic Atlas, Electronic water permitting development, TA for Healthy Watershed Project Implementation, water supply planning, WQBMPs on forested lands, WRAPs data collection/interpretation, watershed characterization, fish contaminants, fish sampling/surveys, DO/Temp monitoring in lakes/streams
DNR	Federal		\$483,966	Long term Mississippi River monitoring
SUBTOTAL			\$19,406,491	
MDA	General		\$289,000	pesticide/fertilizer NPS programs
MDA	Special Revenue		\$2,507,000	Ag BMP Loan program, misc grants/agreements
MDA	Agricultural Fund		\$5,737,000	pesticide/fertilizer Ps & NPS programs, ACCRA
MDA	CWF		\$3,124,000	Pesticide/nitrate monitoring in GW, irrigation WQ protection, TA, MAWQCP, academic research/evaluation, research Inventory db
MDA	Gift		\$24,000	McKnight MAWQCP funding
MDA	Environmental Fund		\$1,335,000	MERLA
MDA	Federal		\$230,000	EPA Pesticide program grant, USDA MAWQCP grant, other federal NPS grants
MDA	Federal - SRF		\$4,913,000	Ag BMP loan program
SUBTOTAL			\$18,159,000	

Public Water Program Expenditures (2014 unless otherwise noted)

(2/9/15)

Agency	Fund	Program	Expenditures	Description
MDH	SGSR Service Connection Fee	Drinking Water Protection	\$7,518,000	Compliance assistance to ensure SDWA requirements are met
MDH	EPA - PWSS Grant	Drinking Water Protection	\$2,871,000	Compliance assistance to water supply systems to ensure SDWA requirements are met
MDH	EPA - DWRF Admin Set-aside	Drinking Water Protection	\$548,000	Administer Drinking Water Revolving Fund
MDH	EPA DWRF Tech Assist Set Aside MRWA	Drinking Water Protection	\$291,000	Pas through to MN Rural Water Association to provide technical assistance to non-municipal systems
MDH	EPA DWRF WHP Set Aside	Drinking Water Protection	\$2,015,000	Assist water supply systems with wellhead protection planning, audit compliance
MDH	EPA DWRF PWSS Set Aside	Drinking Water Protection	\$2,104,000	Compliance assistance to ensure SDWA requirements are met
MDH	CWF	Drinking Water Protection	\$269,000	Source Water Protection Activities, grants to systems to implement plans (FY 12/13)
MDH	CWF	Drinking Water Protection	\$770,000	Source Water Protection Activities, grants to systems to implement plans
MDH	CWF	Drinking Water Protection	\$400,000	Virus Study - ID occurrence & epidemiological impact of viruses in groundwater
MDH	CWF	Drinking Water Protection	\$0	\$300K for FY 15 to expand source water protection in groundwater management areas (to LGUs)
MDH	General Fund	Environmental Surveillance and Assessment	\$320,000	Health Risk Limit Development
MDH	CEC Funds	Environmental Surveillance and Assessment	\$1,300,000	Contaminants of Emerging Concern Program
MDH	SGSR Well Management Fees	Well Management	\$3,121,000	Regulate the construction/sealing of wells and borings
MDH	CWF	Well Management	\$254,000	Update/enhance the County Well Index (basis for geology/gw info in state)
MDH	CWF	Well Management	\$102,000	Private Well Protection - evaluate occurrence of contaminants in private wells; develop efforts to reduce risks to private well owners
MDH	CWF	Well Management	\$134,000	Well Sealing - cost share to seal unused wells
MDH	CWF	Infectious Disease, Epidemiology, Prevention and control	\$0	Lake Superior Beach Monitoring-\$210K appropriated for use in FY 15
MDH	EPA		\$197,000	Monitor Lake Superior beaches for bacteria; provide notification/education and assess sources

SUBTOTAL \$22,214,000

Public Water Program Expenditures (2014 unless otherwise noted)

(2/9/15)

Agency	Fund	Program	Expenditures	Description
CA	General		\$3,658,000	surface water ambient, feedlots, NPS/watershed and wastewater municipal
MPCA	Special Revenue		\$78,000	wastewater municipal
MPCA	Restricted Miscellaneous Special Revenue		\$422,000	stormwater municipal, wastewater municipal, and wastewater SSTS
MPCA	Other Miscellaneous Special Revenue		\$8,000	surface water ambient and NPS/watershed
MPCA	CWF		\$26,942,000	groundwater ambient, surface water ambient, feedlots, NPS/watershed, stormwater municipal, wastewater industrial, wastewater municipal, wastewater SSTS
MPCA	Environmental		\$21,577,000	surface water ambient, feedlots, NPS/watershed, stormwater-construction/Industrial/municipal, wastewater - Industrial/municipal/SSTS
MPCA	Federal		\$20,779,000	groundwater ambient, surface water ambient, feedlots, NPS/watershed, stormwater-industrial/municipal, wastewater-Industrial/municipal
MPCA	Clean Water Revolving		\$1,914,000	stormwater municipal, wastewater municipal
SUBTOTAL			\$75,378,000	
Met Council	Municipal Wastewater Charge & other WW fees		\$1,064,489	surface water
Met Council	CWF		\$691,052	water supply
Met Council	Tax Levy		\$107,952	water supply
Met Council	Bond Proceeds		\$22,527	water supply
Met Council	MWC & WW fees		\$1,503,685	monitoring and assessment
Met Council	State watershed outlet monitoring program grant		\$232,427	monitoring and assessment
Met Council	MWC & WW fees		\$87,873,970	wastewater operating costs
Met Council	MWC & WW fees		\$1,750,002	payment of capital projects from current operating funds
Met Council	MWC & WW fees		\$101,606,184	Debt service - capital costs
Met Council	MWC & WW fees		\$3,195,859	wastewater planning
Met Council	MWC & WW fees		\$12,434,319	wastewater support services
Met Council	MWC & WW fees		\$813,699	permitting & environmental compliance
Met Council	MWC & WW fees		\$23,954,511	WW Admin & Operational OH (excludes debt service)
Met Council	state bond fund		\$1,890,000	Inflow and Infiltration grants
Met Council	CWF		\$376,000	Inflow and Infiltration grants
Met Council	GO Bonds & PFA Loans		\$70,880,971	capital projects
SUBTOTAL			\$308,397,647	

Public Water Program Expenditures (2014 unless otherwise noted)

(2/9/15)

Agency	Fund	Program	Expenditures	Description
PFA	CWF	Pt Source Impl Grants	\$7,975,000	Grant to cities to help meet TMDL and more stringent WW discharge limits to meet restoration and protection goals
PFA	CWF	Sm Community WW Treatment	\$214,000	Grants/loans to small unsewered communities to address failing septic systems
PFA	Bond Proceeds Grants	State Match to EPA Capitalization Grants - clean water	\$5,174,000	Req 20% state match to fed capitalization grants for revolving loan program for WW and stormwater infrastructure projects
PFA	Bond Proceeds Grants	State Match to EPA Capitalization Grants - drinking water	\$2,826,000	Req 20% state match to fed capitalization grants for revolving loan program for drinking water infrastructure projects
PFA	Bond Proceeds Grants	WW Infrastructure Funding	\$9,573,000	Grants to cities for high cost wastewater treatment project, based on affordability criteria
PFA	CWRF	Clean Water Revolving Fund	\$109,020,000	Low interest loans to cities for WW and stormwater infrastructure projects; included fed funds, loan repayments, & PFA revenue bond proceeds
PFA	DWRF	Drinking Water Revolving Fund	\$21,732,000	Low interest loans to cities for drinking water infrastructure projects; included fed funds, loan repayments, & PFA revenue bond proceeds
SUBTOTAL			\$156,514,000	
LMR	ENRTF	Grants	\$10,443,000	water related grant projects
LSOHC	OHF	Grants	\$50,804,000	water related habitat projects

Public Water Program Expenditures (2014 unless otherwise noted)
(2/9/15)

Agency	Fund	Program	Expenditures	Description
		Conservation Reserve Program	\$108,845,471	sensitive land removed from ag production in exchange for payments (annual, cost-share and incentives)
NRCS		Environmental Quality Incentive Program	\$17,922,559	Financial and technical assistance to ag producers to plan/implement conservation practices (e.g., animal waste treatment, fertilizer/pesticide use, soil erosion/sedimentation and vegetation management)
NRCS		Conservation Stewardship Program	\$76,264,067	Maintain/improve existing conservation systems & adopt more conservation practices to address priority resource concerns; earn payments for conservation performance
NRCS		Conservation Security Program	\$3,572,434	replaced by the Conservation Stewardship Program, but still have finally payout years under CSP
NRCS		Agricultural Conservation Easement Program (replaced Wetland Reserve Program)	\$10,774,472	funding easement acquisitions
NRCS		Agricultural Conservation Easement Program (replaced Wetland Reserve Program)	\$2,231,259	funding for voluntary restoration activates
SUBTOTAL			\$219,610,262	
Municipalities		sewer utilities	\$741,586,325	724 counties, townships, cities and special districts reporting (for years 2012 or 2013)
Municipalities		water utilities	\$699,229,149	731 counties, townships, cities and special districts reporting (for years 2012 or 2013)
Municipalities		stormwater utilities	\$95,383,712	169 cities reporting for year 2013
SUBTOTAL			\$1,536,199,186	

GRAND TOTAL \$2,442,529,586

The Minnesota Water Management Framework

A multi-level, multi-agency perspective on managing Minnesota's water resources

Water is essential for our health, jobs, quality of life, and ecosystem.

Effective management of Minnesota's waters is challenging and complex. This complexity demands:

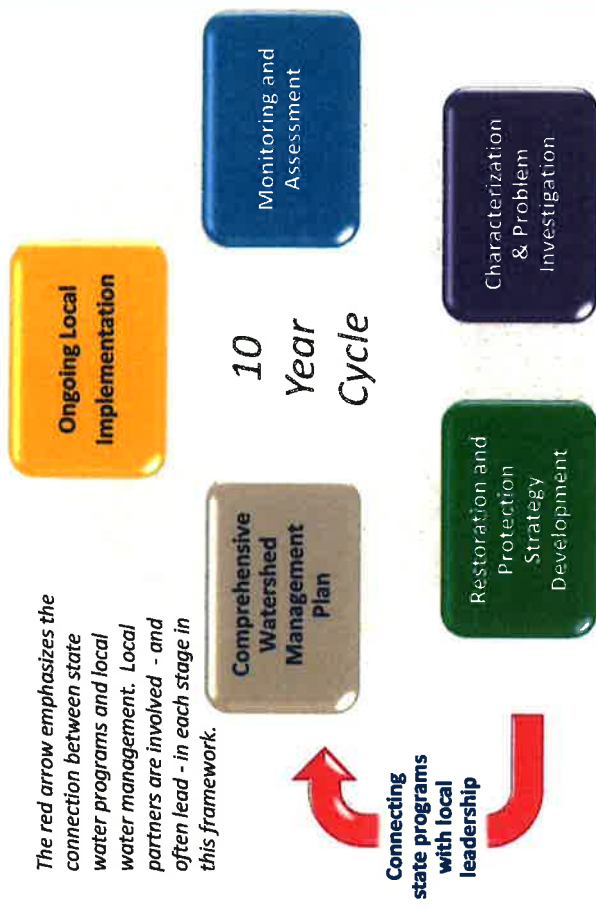
- expertise spanning the biological, physical and social sciences,
- collaboration among agencies with distinct roles, and
- partnerships that extend from citizens and local governments to state and federal agencies.

As the state continues to embrace the watershed approach to managing Minnesota's waters, state agencies have adopted a strategic and systematic cycle that allows for adaptive adjustments as needed. State level interagency teams coordinate data collection and analysis which is then translated into water protection and restoration strategies for implementation by local partners.

Built on a classic "plan - do - check" adaptive management approach, the framework uses 5 "boxes" to outline the steps Minnesota's agencies are taking toward our goals of clean and sustainable water. Through this process, state agencies aim to streamline water management by systematically and predictably delivering data, research, and analysis, to empower local action.

Ongoing Local Implementation is at the heart of the state's overall strategy for clean and abundant water. Actions must be prioritized, targeted, and measurable in order to ensure limited resources are spent where they will be most effective. The rest of the cycle supports implementation.

Monitoring and Assessment determines the condition of the state's ground and surface waters and informs future implementation actions. The state's "watershed approach" systematically assesses the condition of lakes and streams on a 10-year cycle. Groundwater monitoring and assessment is more varied in space and time.



The red arrow emphasizes the connection between state water programs and local water management. Local partners are involved - and often lead - in each stage in this framework.

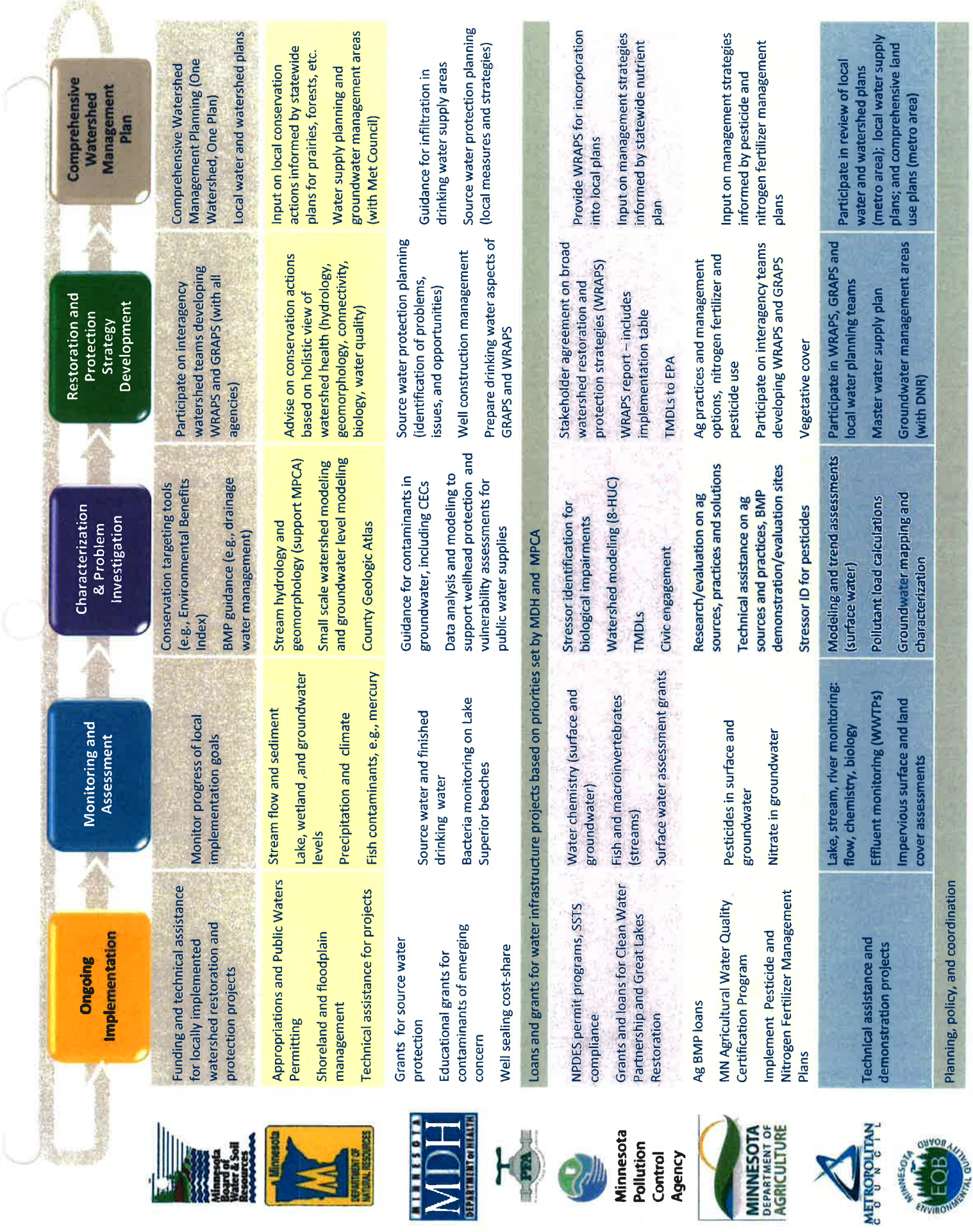
10 Year Cycle

Connecting state programs with local leadership

Characterization and Problem Investigation delves into the science to analyze and synthesize data so that key interactions, stressors, and threats are understood. In this step, watershed and groundwater models and maps are developed to help inform strategies.

Watershed Restoration and Protection Strategies (WRAPS) and Groundwater Restoration and Protection Strategies (GRAPS) include the development of strategies and high level plans, "packaged" at the 8-digit HUC scale for each of the 81 major watersheds in Minnesota. These strategies identify priorities in each major watershed and inform local planning.

The **Comprehensive Watershed Management Plan** is where information comes together in a local commitment for prioritized, targeted, and measurable action. Local priorities and knowledge are used to refine the broad-scale strategies into locally based actions to protect and restore Minnesota's waters.

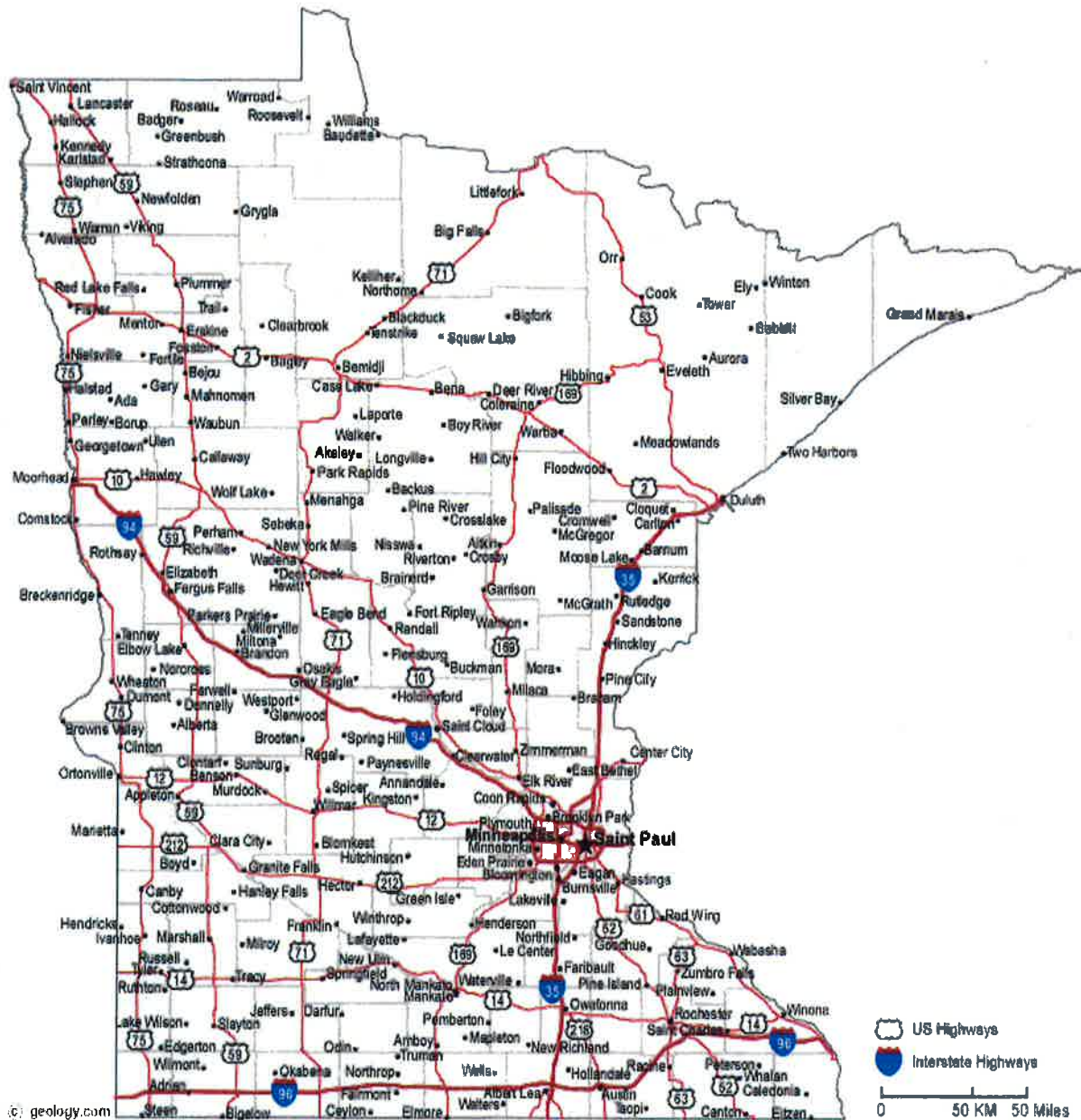


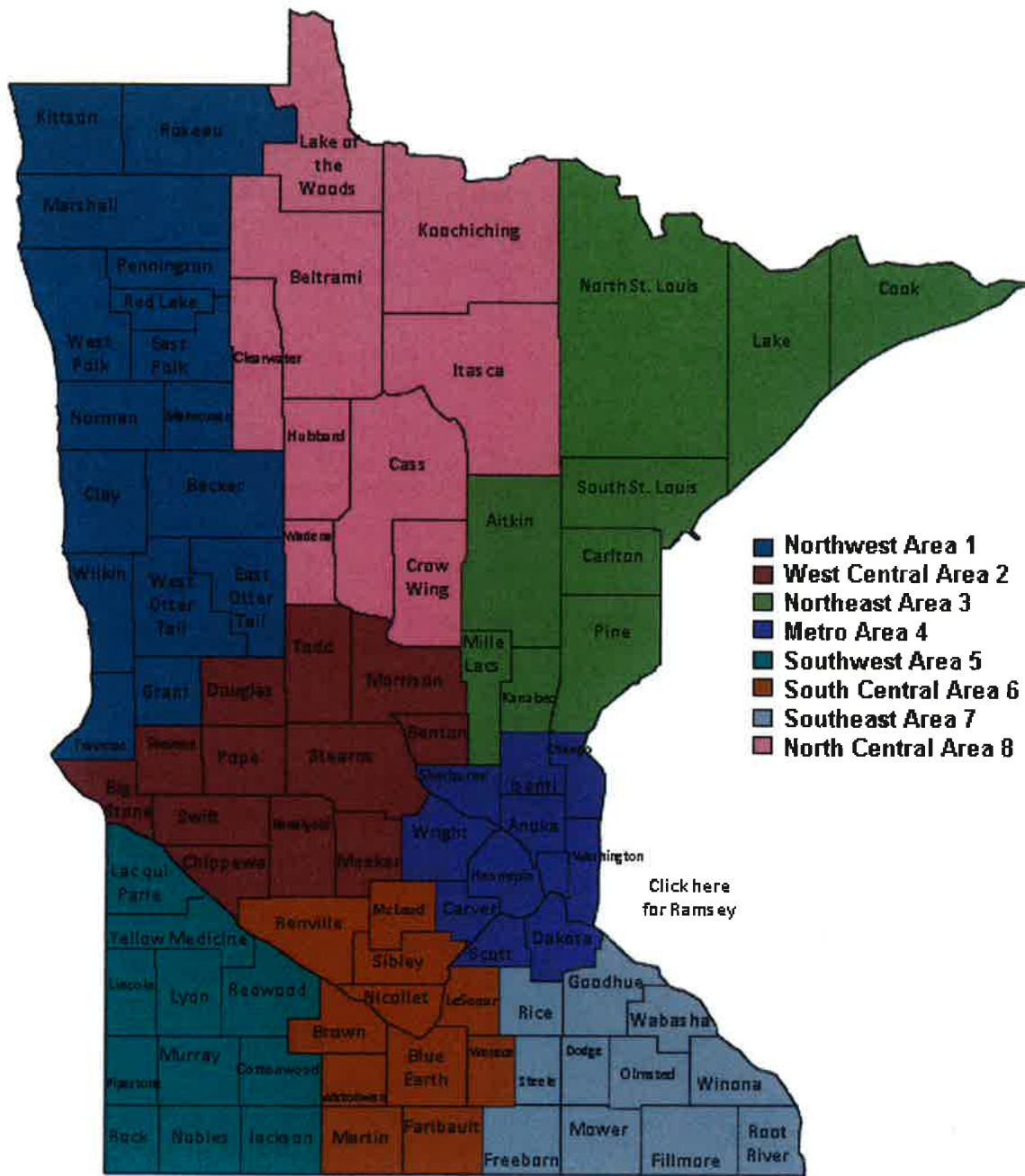
Minnesota Pollution Control Agency



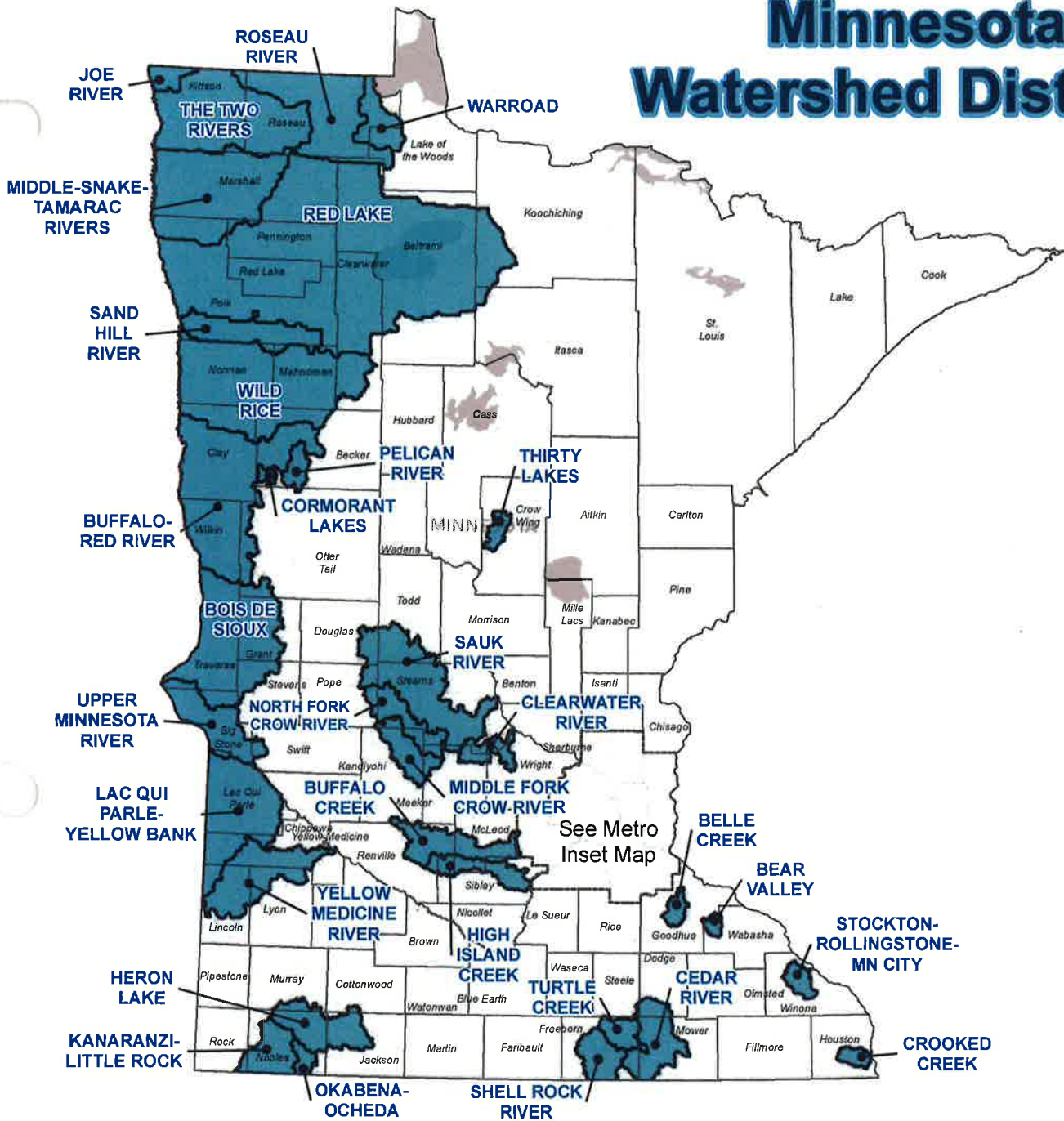
Cities

Most Minnesota cities operate wastewater treatment facilities and stormwater managements systems to control point source pollution according to the provisions of National Pollutant Discharge Elimination System permits from the MN Pollution Control Agency, as authorized by the federal Clean Water Act. They also manage water supply systems according to regulations administered by the MN Department of Health, as authorized by the federal Safe Drinking Water Act.

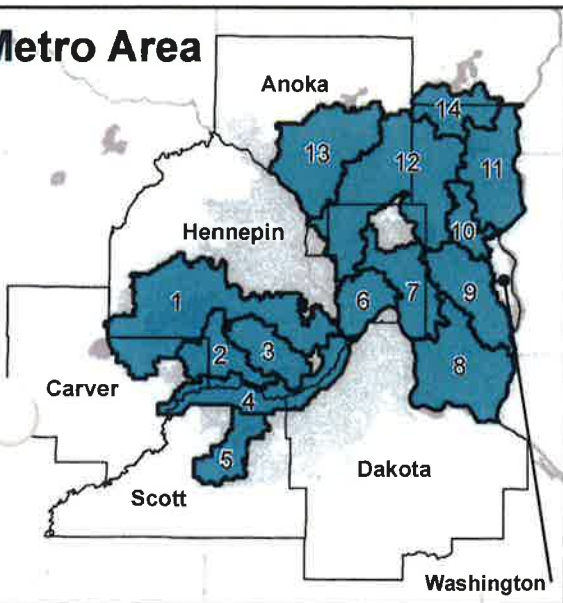




Minnesota Watershed Districts



Metro Area



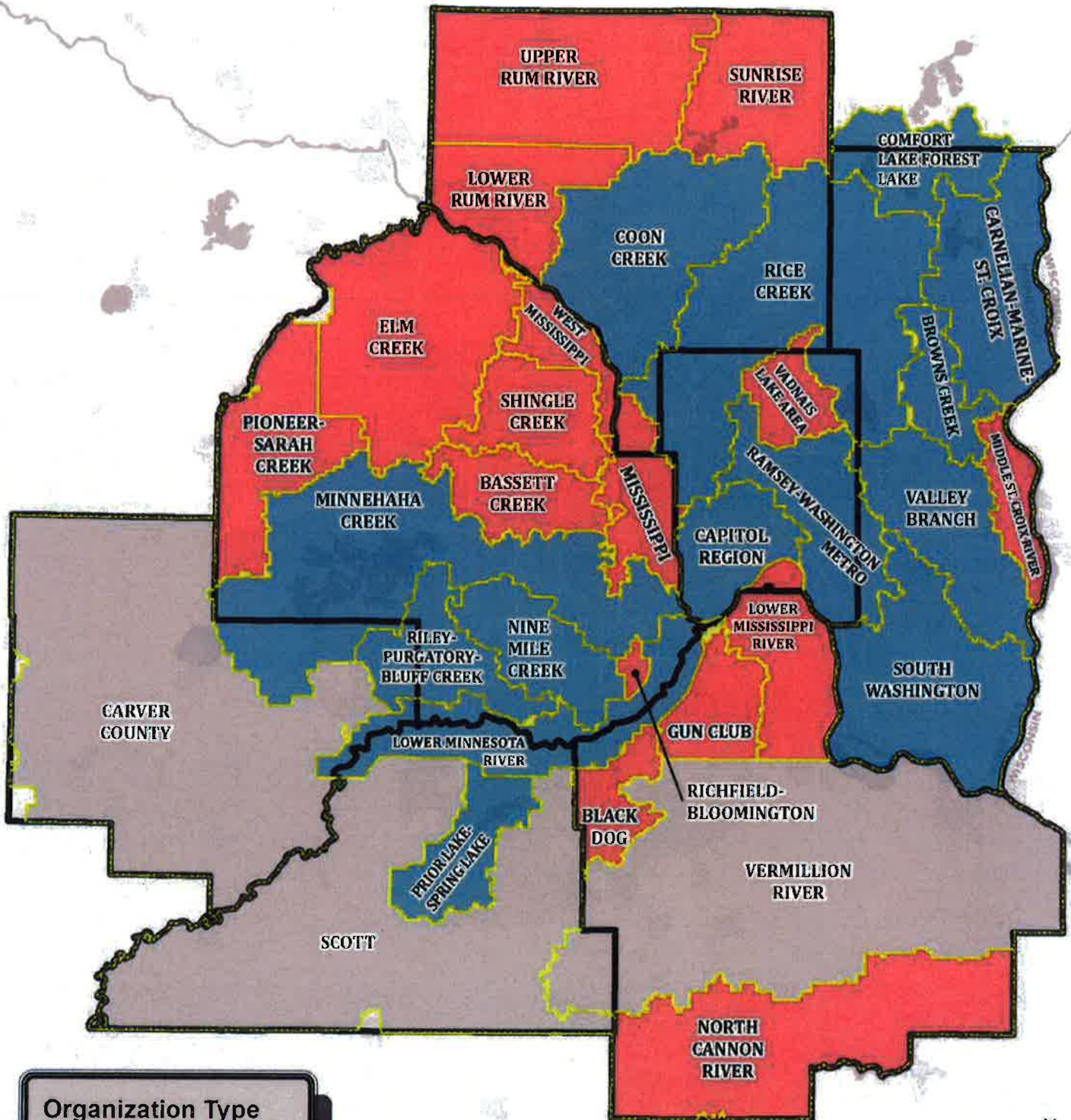
Metro Watershed Districts

- 1, MINNEHAHA CREEK
- 2, RILEY-PURGATORY-BLUFF CREEK
- 3, NINE MILE CREEK
- 4, LOWER MINNESOTA RIVER
- 5, PRIOR LAKE-SPRING LAKE
- 6, CAPITOL REGION
- 7, RAMSEY-WASHINGTON METRO
- 8, SOUTH WASHINGTON
- 9, VALLEY BRANCH
- 10, BROWNS CREEK
- 11, CARNELIAN-MARINE-ST. CROIX
- 12, RICE CREEK
- 13, COON CREEK
- 14, COMFORT LAKE FOREST LAKE



Updated July 2012

Watershed Districts and Management Organizations in the Twin Cities Metropolitan Area



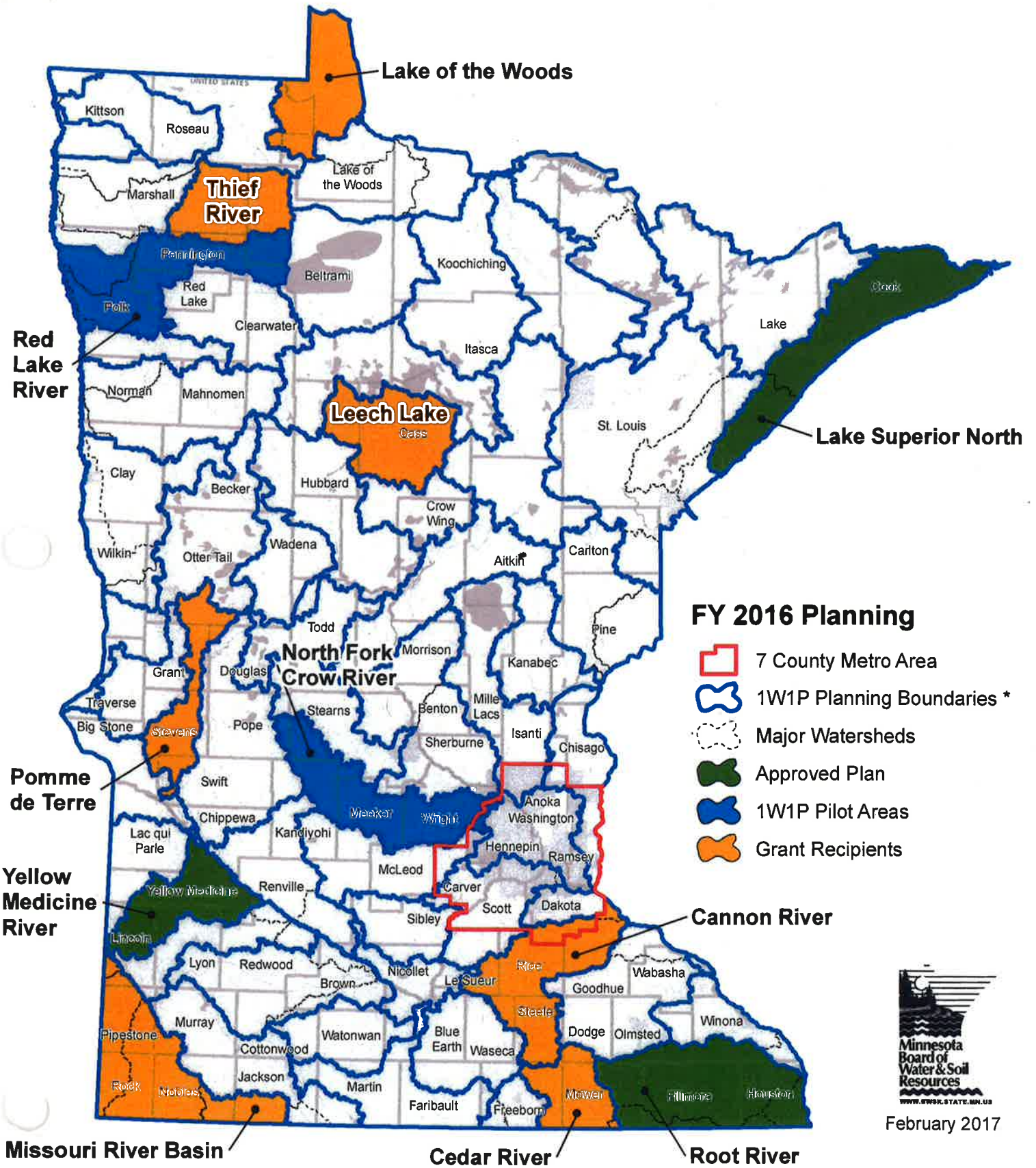
Organization Type

- Watershed District
- Joint Powers WMO
- County



One Watershed, One Plan

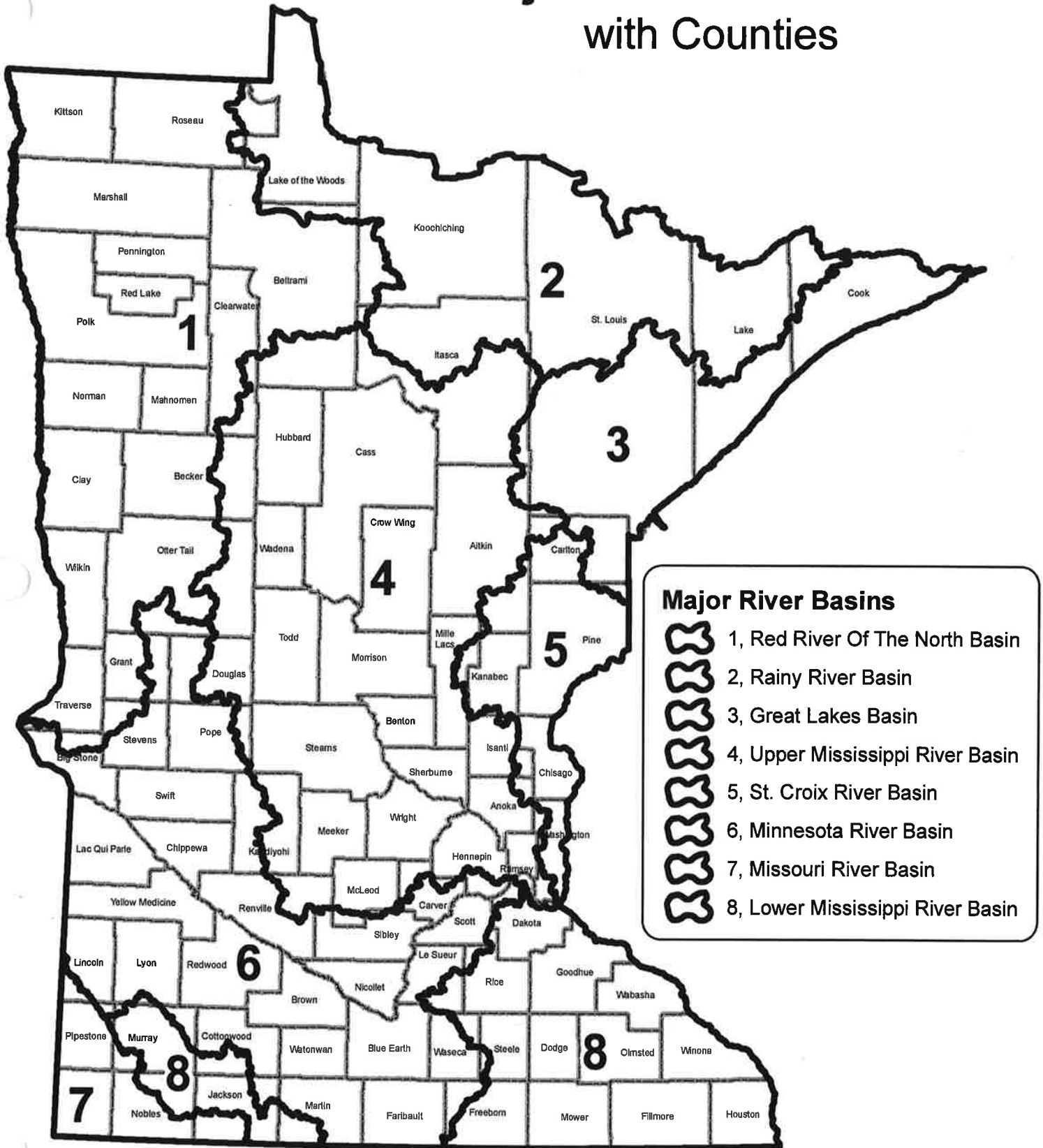
Participating Watersheds



February 2017

*Not legal boundaries; intended for planning purposes through One Watershed, One Plan only.

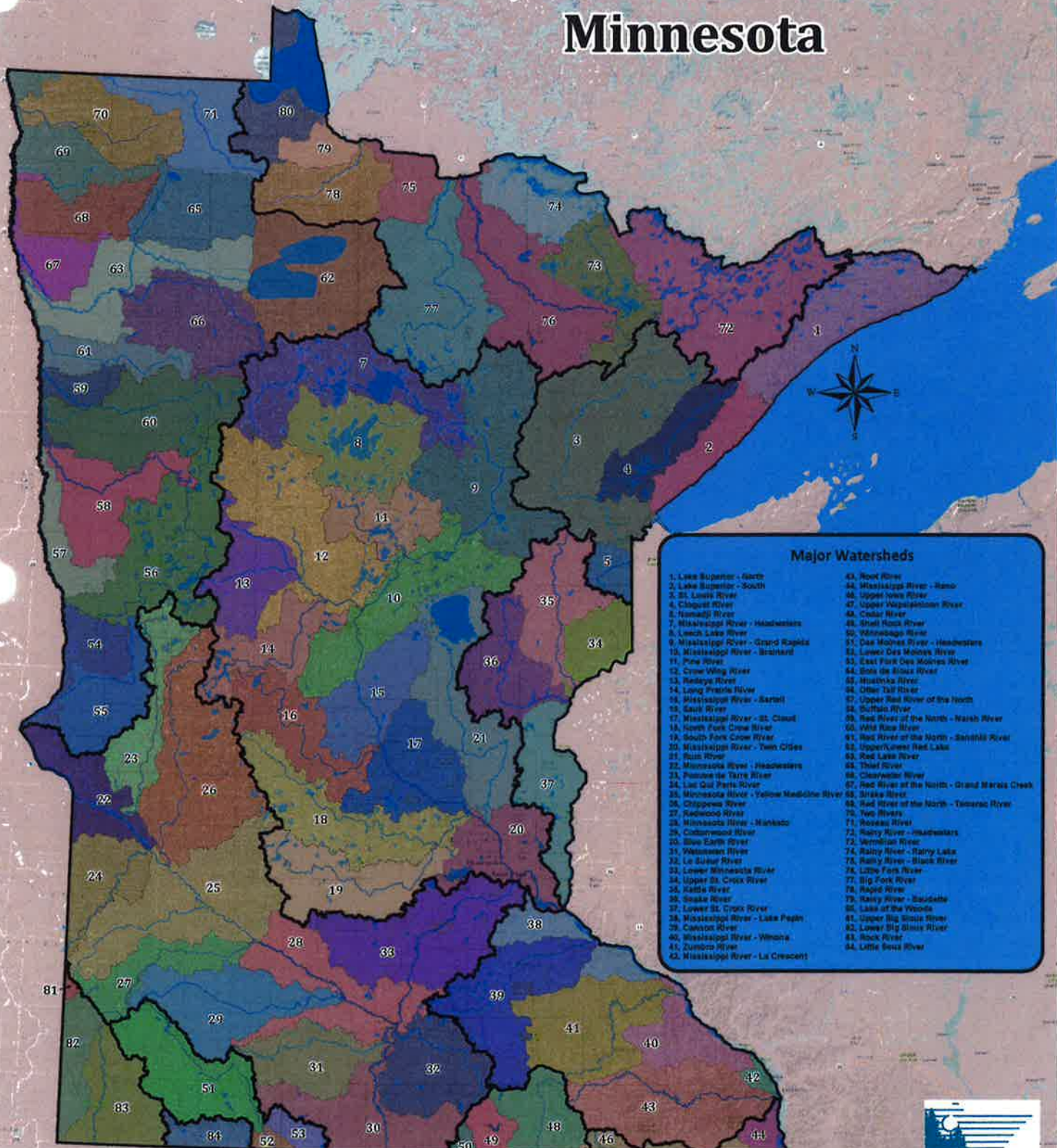
Major River Basins with Counties



Major River Basins

-  1, Red River Of The North Basin
-  2, Rainy River Basin
-  3, Great Lakes Basin
-  4, Upper Mississippi River Basin
-  5, St. Croix River Basin
-  6, Minnesota River Basin
-  7, Missouri River Basin
-  8, Lower Mississippi River Basin

Major Watersheds of Minnesota

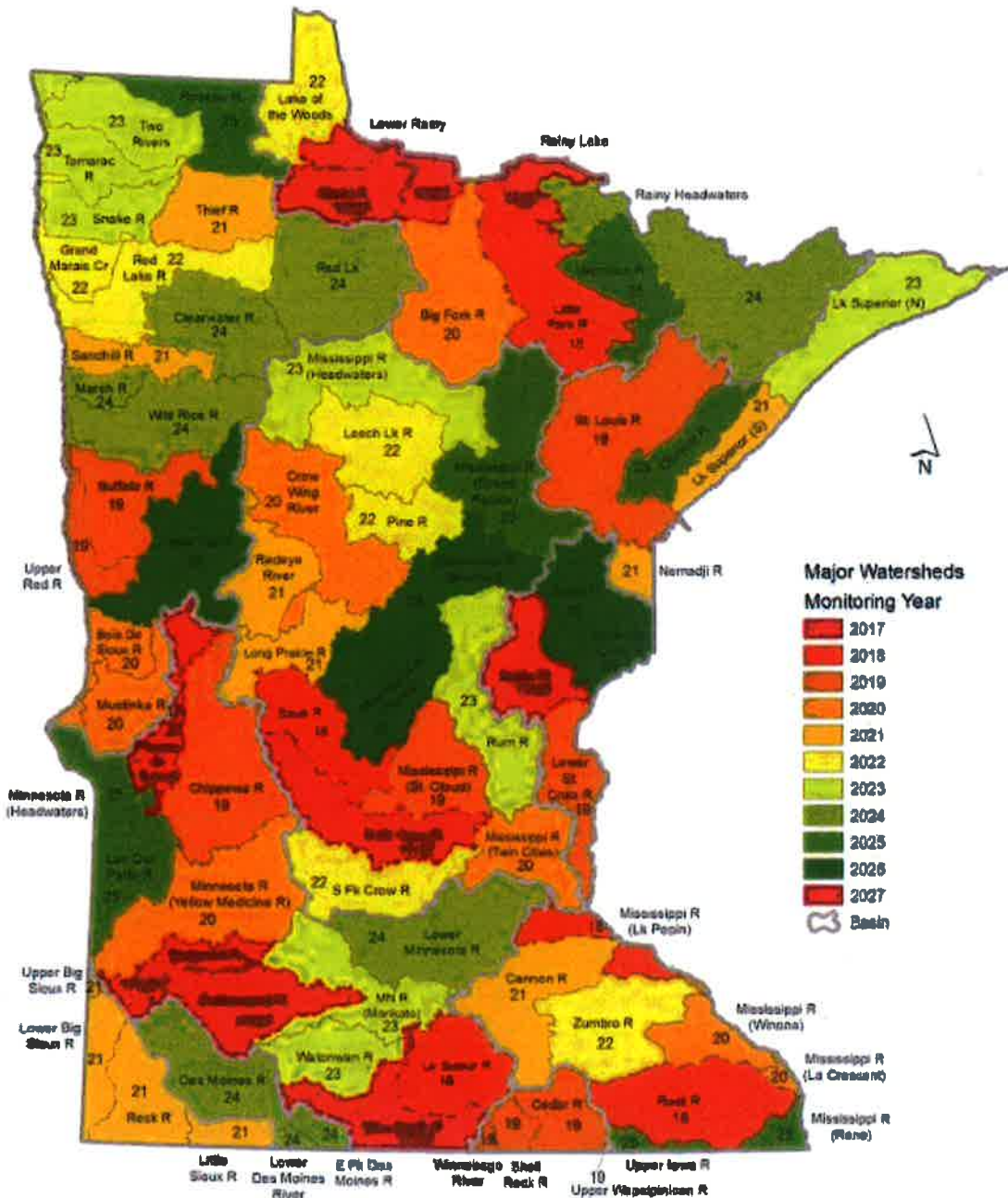


- Major Watersheds**
1. Lake Superior - North
 2. Lake Superior - South
 3. St. Louis River
 4. Cloquet River
 5. Ironsides River
 6. Mississippi River - Headwaters
 7. Leech Lake River
 8. Leech Lake River - Headwaters
 9. Mississippi River - Grand Rapids
 10. Mississippi River - Brainerd
 11. Pine River
 12. Crow Wing River
 13. Rainy River
 14. Long Prairie River
 15. Mississippi River - Bartel
 16. Sauk River
 17. Mississippi River - St. Cloud
 18. South Fork Crow River
 19. South Fork Crow River
 20. Mississippi River - Twin Cities
 21. Root River
 22. Minnesota River - Headwaters
 23. Pigeon Lake River
 24. Lac Qui Parle River
 25. Minnesota River - Yellow Medicine River
 26. Chippewa River
 27. Redwood River
 28. Minnesota River - Mankato
 29. Cedarwood River
 30. Blue Earth River
 31. Watonwan River
 32. Le Sueur River
 33. Lower Minnesota River
 34. Upper St. Croix River
 35. Kettle River
 36. Snake River
 37. Lower St. Croix River
 38. Mississippi River - Lake Pepin
 39. Cannon River
 40. Mississippi River - Winona
 41. Zumbro River
 42. Mississippi River - La Crescent
 43. Root River
 44. Mississippi River - Reno
 45. Upper Iowa River
 46. Upper Mississippi River
 47. Upper Mississippi River
 48. Cedar River
 49. Shell Rock River
 50. Minnesota River
 51. Des Moines River - Headwaters
 52. Lower Des Moines River
 53. East Fork Des Moines River
 54. Iowa de Sioux River
 55. Muschoka River
 56. Other Tail River
 57. Upper Red River of the South
 58. Suthwaite River
 59. Red River of the North - Nash River
 60. Mole River
 61. Red River of the North - Sandhill River
 62. Upper/Lower Red Lake
 63. Red Lake River
 64. Thief River
 65. Clearwater River
 66. Red River of the North - Grand Marais Creek
 67. Snake River
 68. Red River of the North - Tamarac River
 69. Two Rivers
 70. Redwood River
 71. Rainy River - Headwaters
 72. Vermilion River
 73. Rainy River - Rainy Lake
 74. Rainy River - Blank Lake
 75. Little Fork River
 76. Big Fork River
 77. Road River
 78. Rainy River - Sauquoite
 79. Lake of the Woods
 80. Upper Big Stone River
 81. Lower Big Stone River
 82. Rock River
 83. Little Sioux River



July, 2012

Intensive Watershed Monitoring*

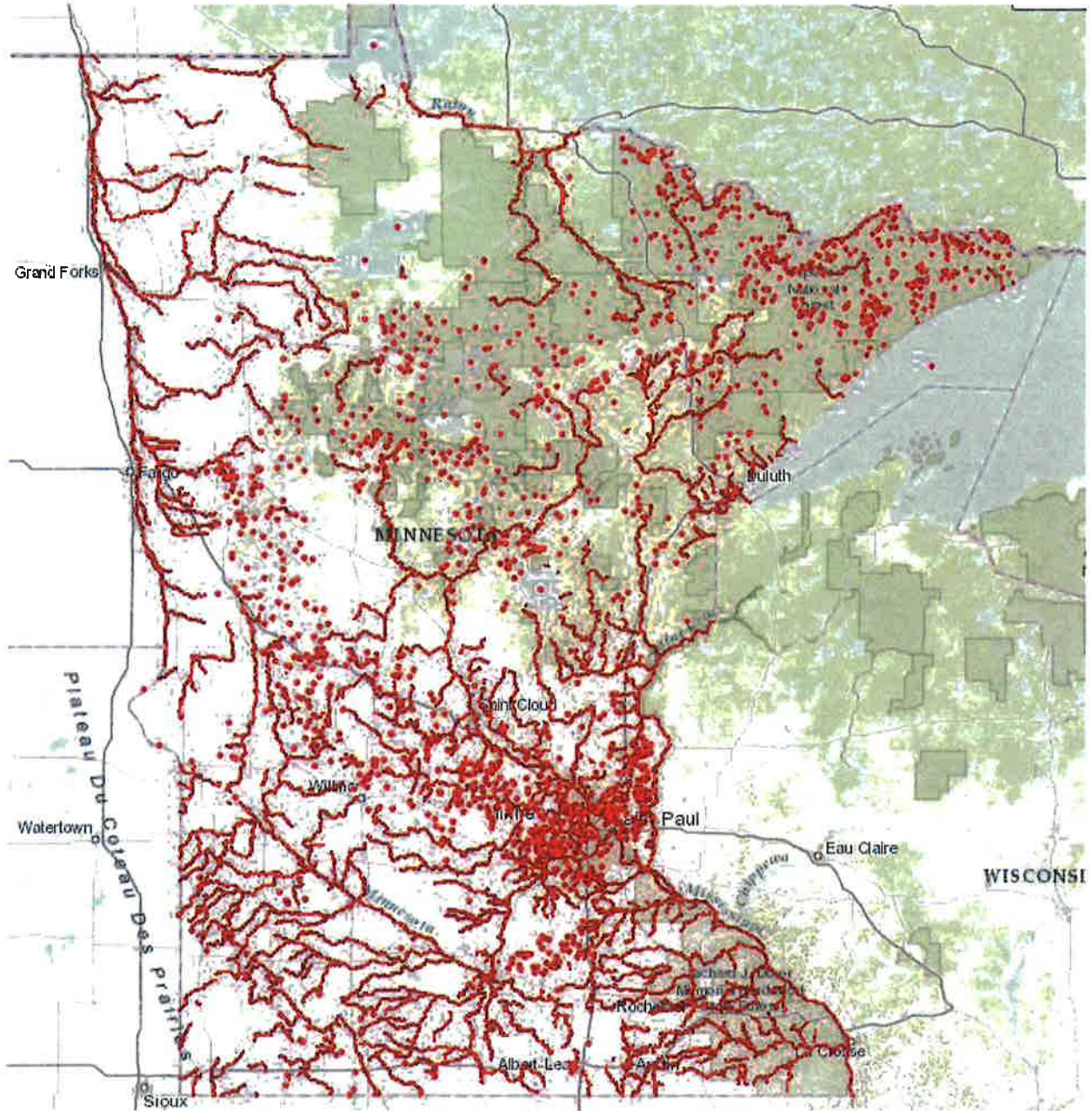


*Intensive Watershed Monitoring is closely coordinated with stressor identification and the development of Watershed Restoration and Protection strategies. This monitoring schedule is subject to change pending changes in timing of these related activities.

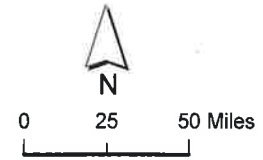
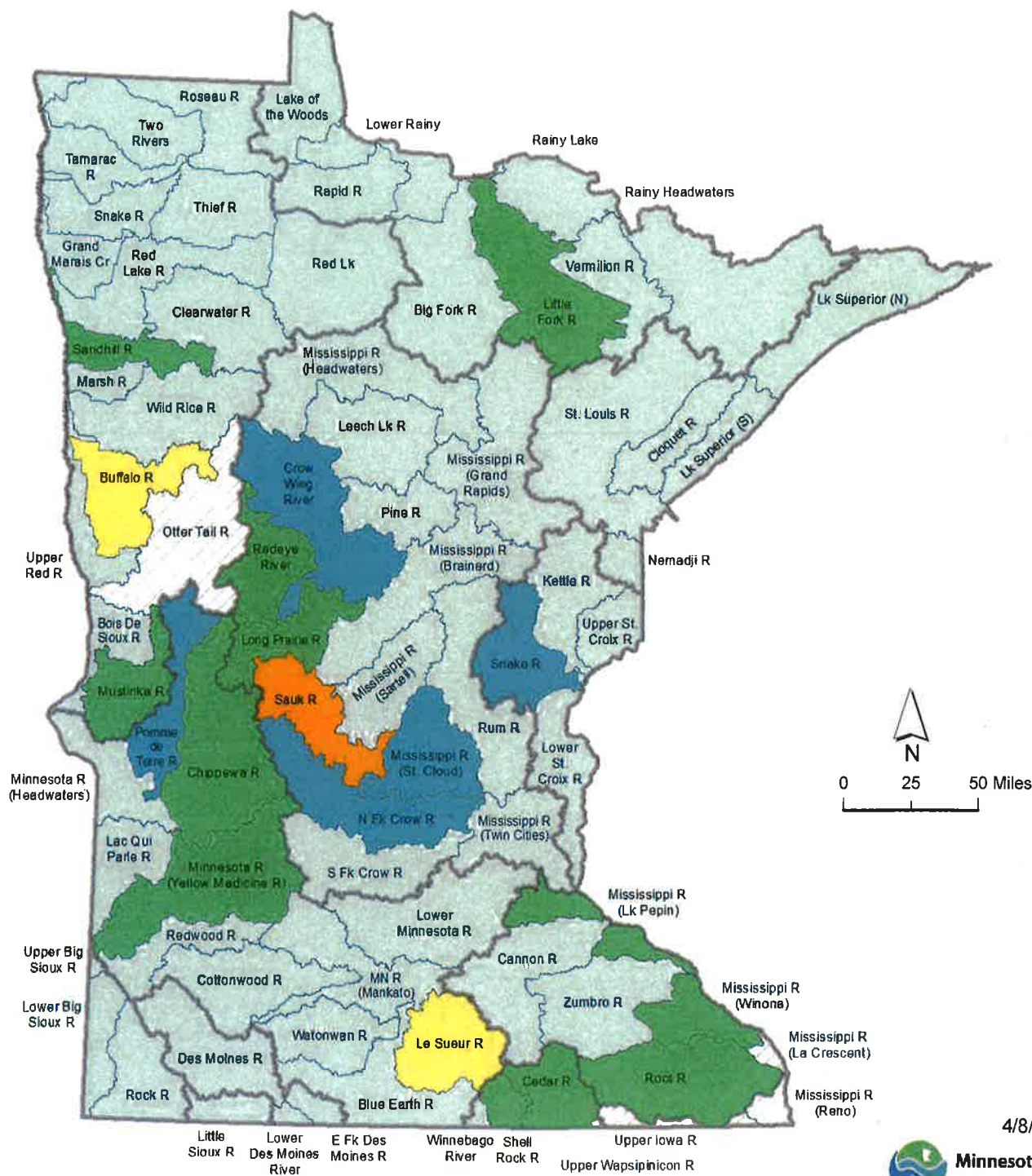


July 2016
 Minnesota Pollution Control Agency

Impaired Waters in MN (April 2015)



Watershed Restoration and Protection Strategies (WRAPS) Completed and Upcoming Major Milestones



4/8/2015



WRAPS Milestone Dates


- Future Start
- In Progress - IWM/HSPF Underway
- Anticipated Public Notices - 2015**
- 4/20/2015, Mississippi River Lake Pepin
- 6/1/2015, Little Fork River
- 6/5/2015, Mustinka River
- 6/10/2015, Mississippi River - Winona
- 6/15/2015, Root River
- 6/30/2015, Chippewa River
- 7/1/2015, Long Prairie River

- 7/1/2015, Redeye River
- 8/7/2015, Red River of the North - Sandhill River
- 10/30/2015, Shell Rock River
- 11/2/2015, Minnesota River - Yellow Medicine River
- 12/1/2015, Cedar River
- Currently On Public Notice (Closing Date)**
- 4/29/2015, Buffalo River
- 4/29/2015, Le Sueur River

- Currently Under Review (Target MPCA Signature Date)**
- 4/19/2015, Sauk River
- Approved by MPCA (MPCA Signature Date)**
- 3/1/2013, Pomme de Terre River
- 8/11/2014, Snake River - St. Croix Basin
- 1/5/2015, North Fork Crow River
- 2/2/2015, Crow Wing River
- 3/5/2015, Mississippi River - St. Cloud


Watershed Restoration and Protection Strategies (WRAPS) Completed and Upcoming Major Milestones - METRO Areas


Metro WRAPS Milestones


 Future Start


 WRAPS Underway

Anticipated Public Notices - 2015

 4/20/2015, Vermillion River


 6/25/2015, Elm Creek


 7/1/2015, Coon Creek

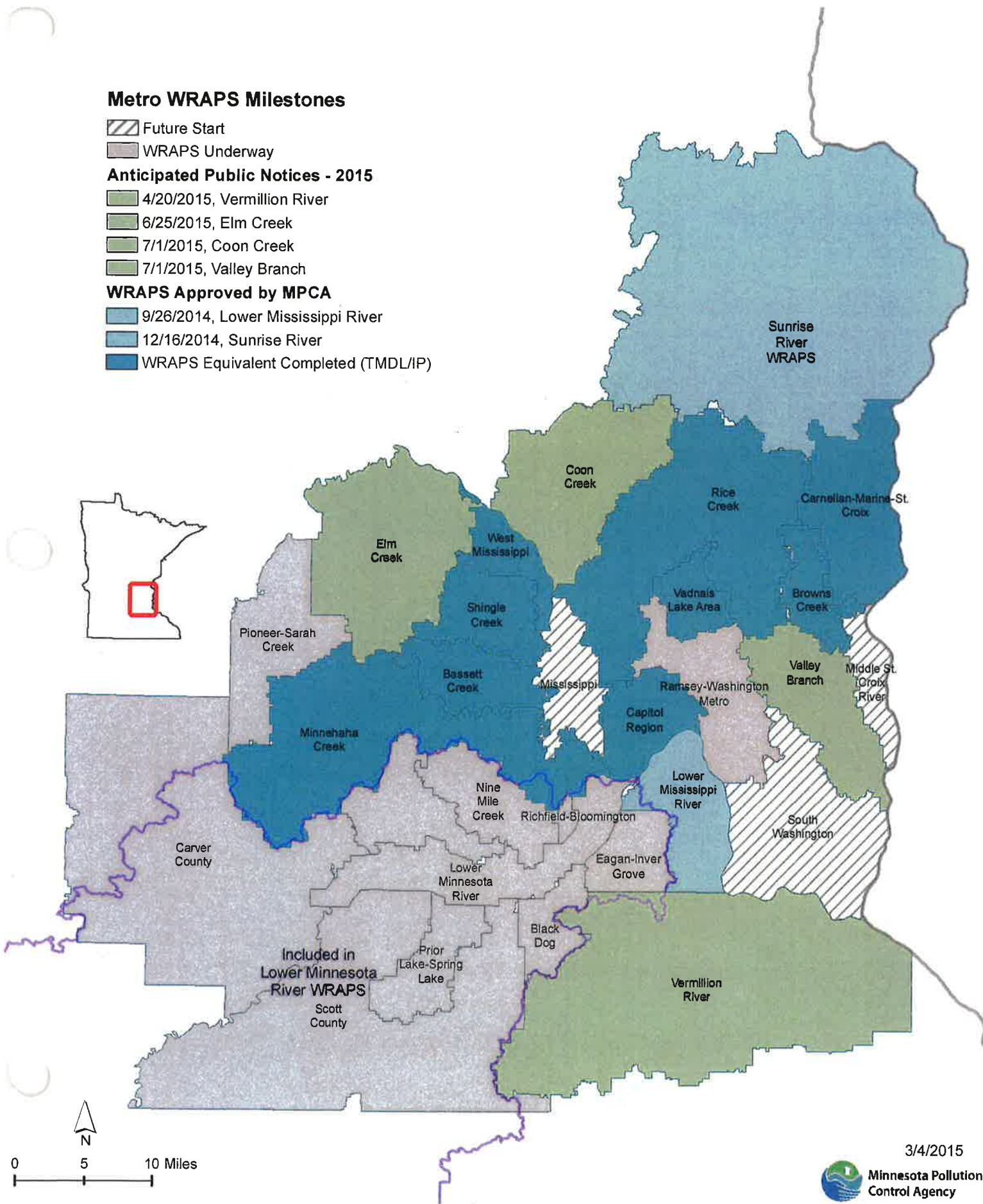
 7/1/2015, Valley Branch

WRAPS Approved by MPCA

 9/26/2014, Lower Mississippi River

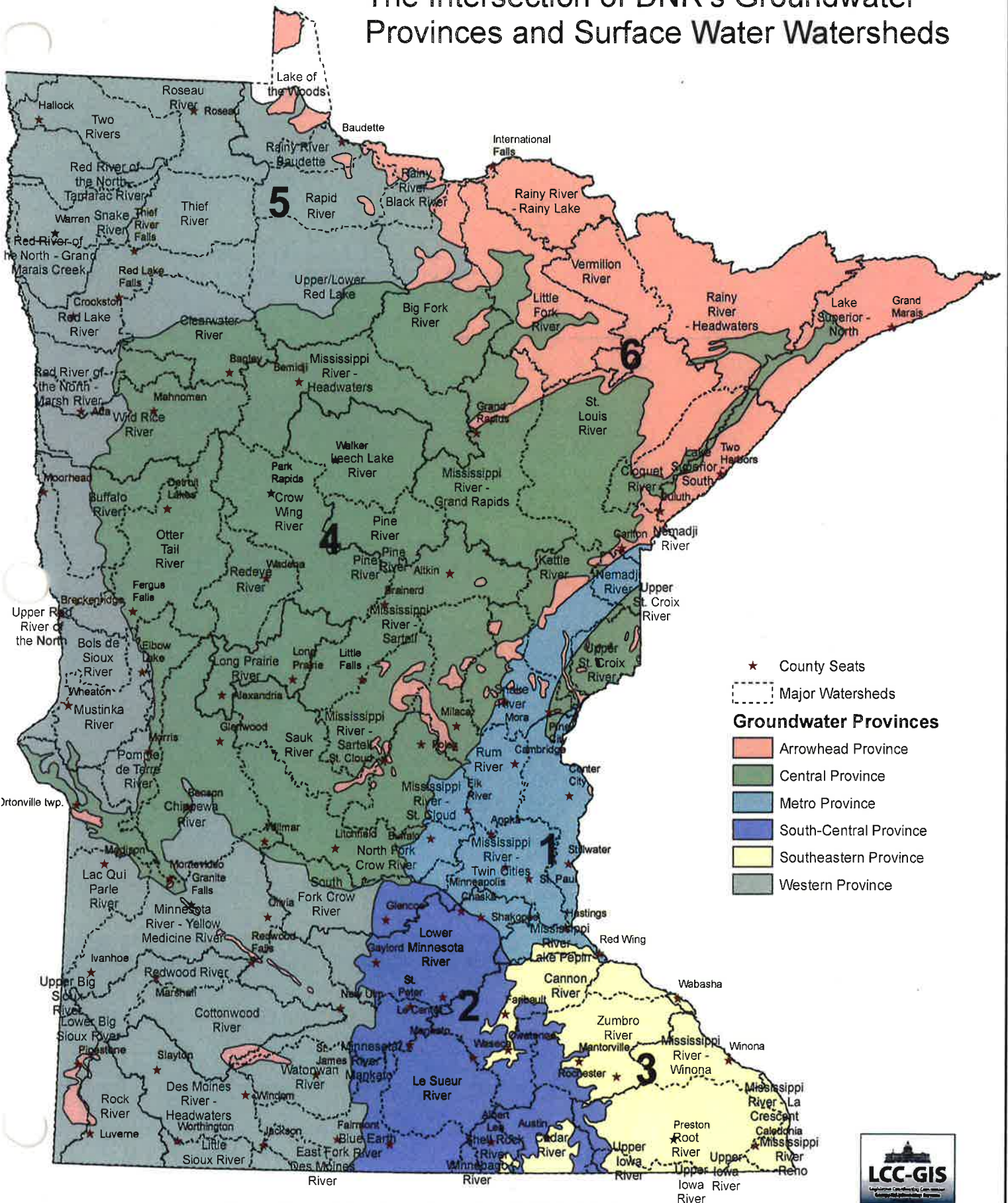
 12/16/2014, Sunrise River

 WRAPS Equivalent Completed (TMDL/IP)



3/4/2015

The Intersection of DNR's Groundwater Provinces and Surface Water Watersheds



Note: Data provided by Minnesota Department of Natural Resources. County seats provided by the U. S. Census Bureau.



April 2015

Figures extracted from Potential Groundwater Recharge for the State of Minnesota Using the Soil-Water-Balance Model, 1996–2010, USGS Scientific Investigations Report 2015–5038, 2015.

28 Potential Groundwater Recharge for the State of Minnesota Using the Soil-Water-Balance Model, 1996–2010

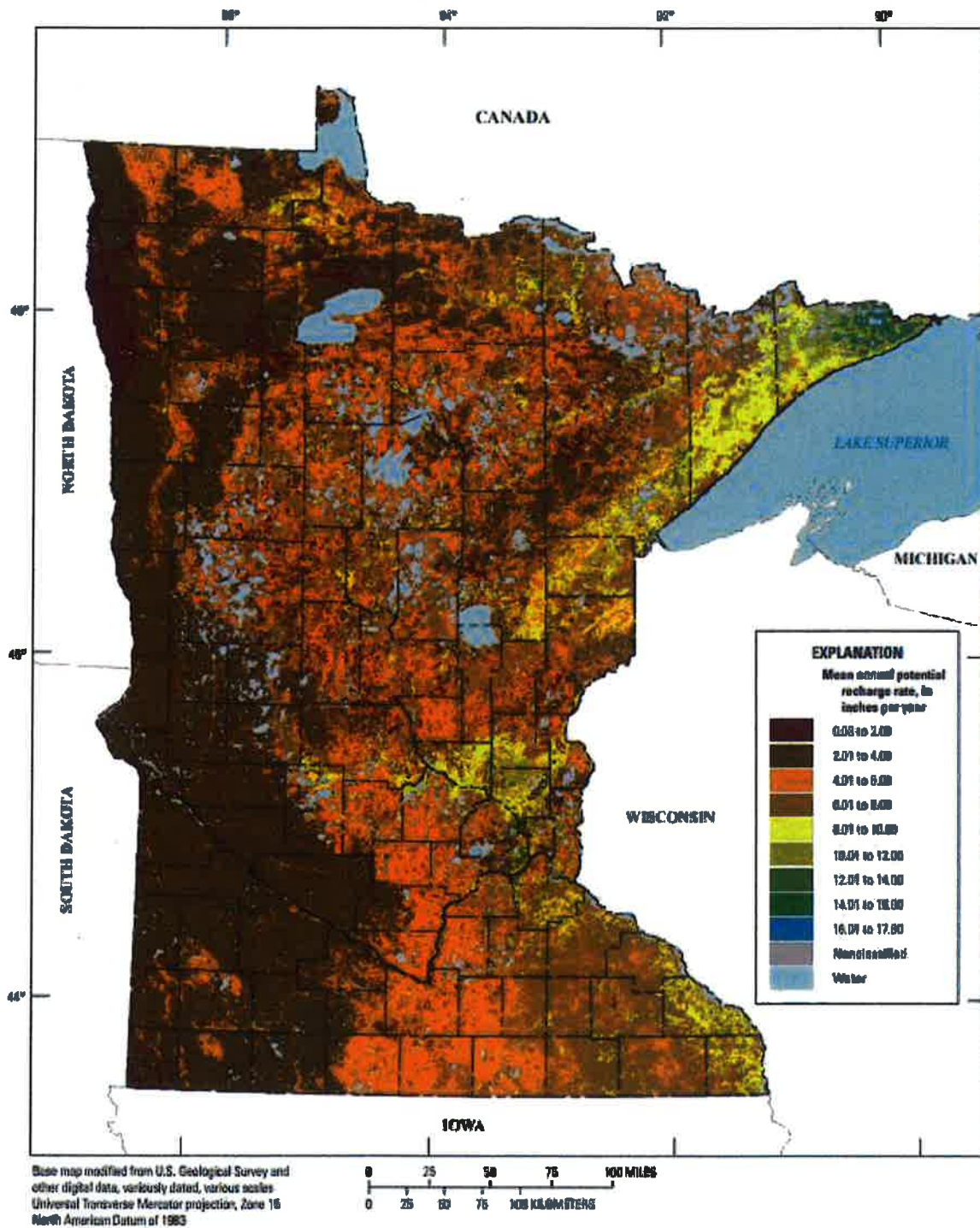


Figure 9. Mean annual potential recharge rates from 1996–2010 based on results from the Soil-Water-Balance (SWB) model for Minnesota.

30 Potential Groundwater Recharge for the State of Minnesota Using the Soil-Water-Balance Model, 1996–2010

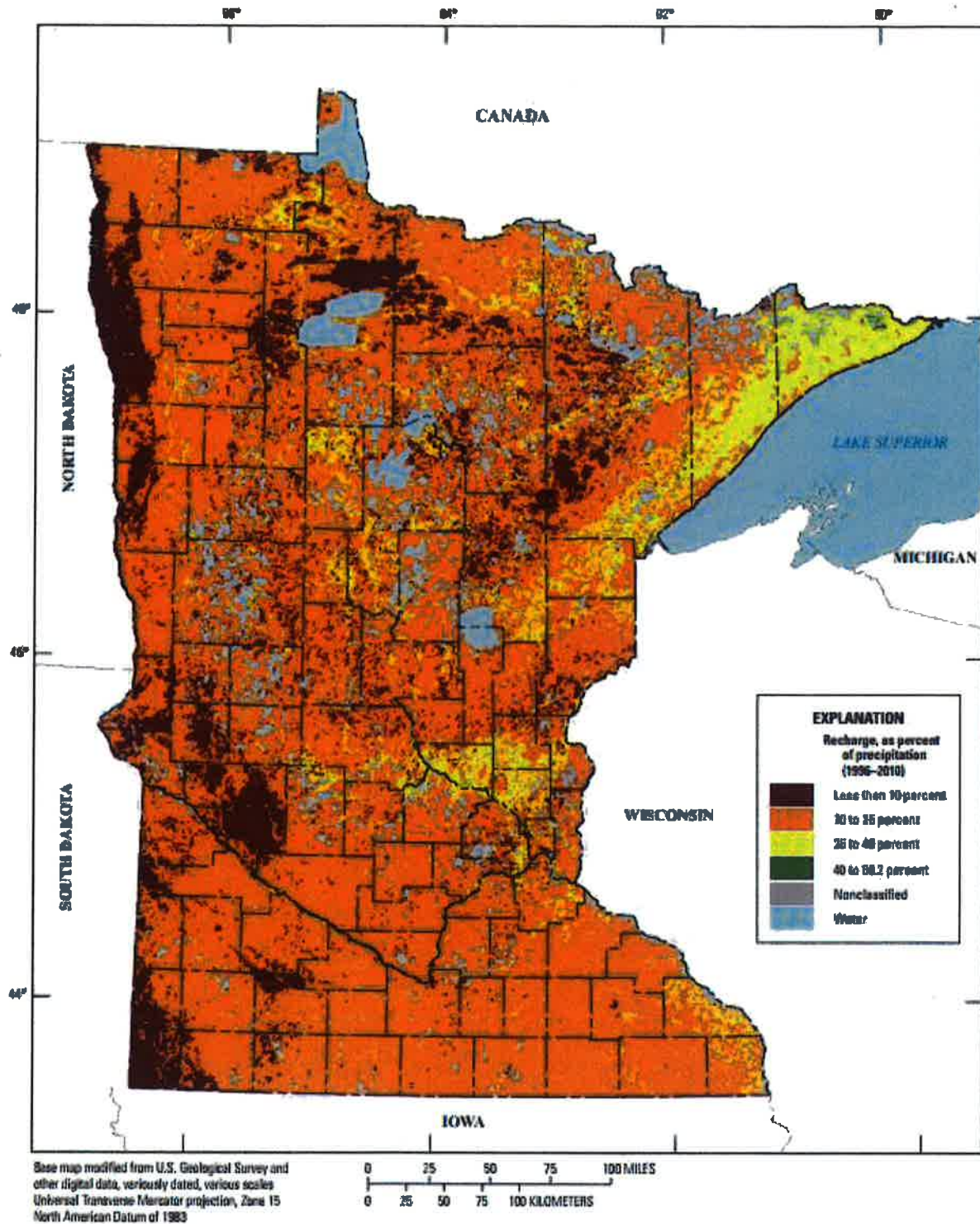
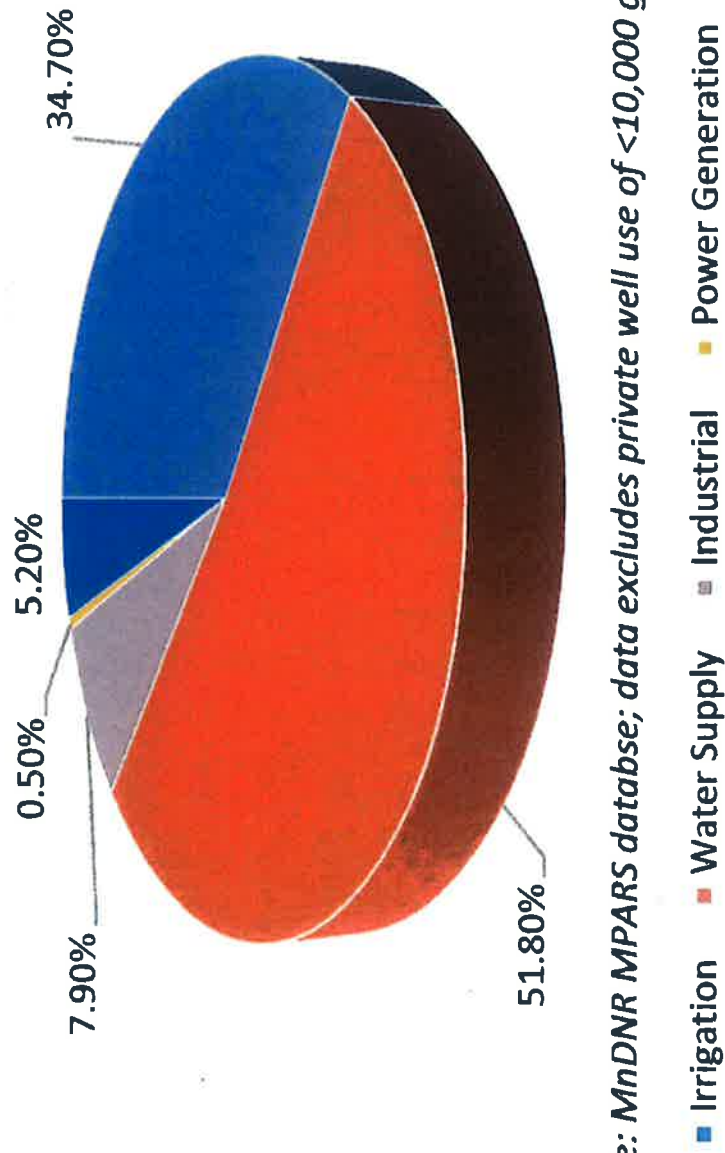


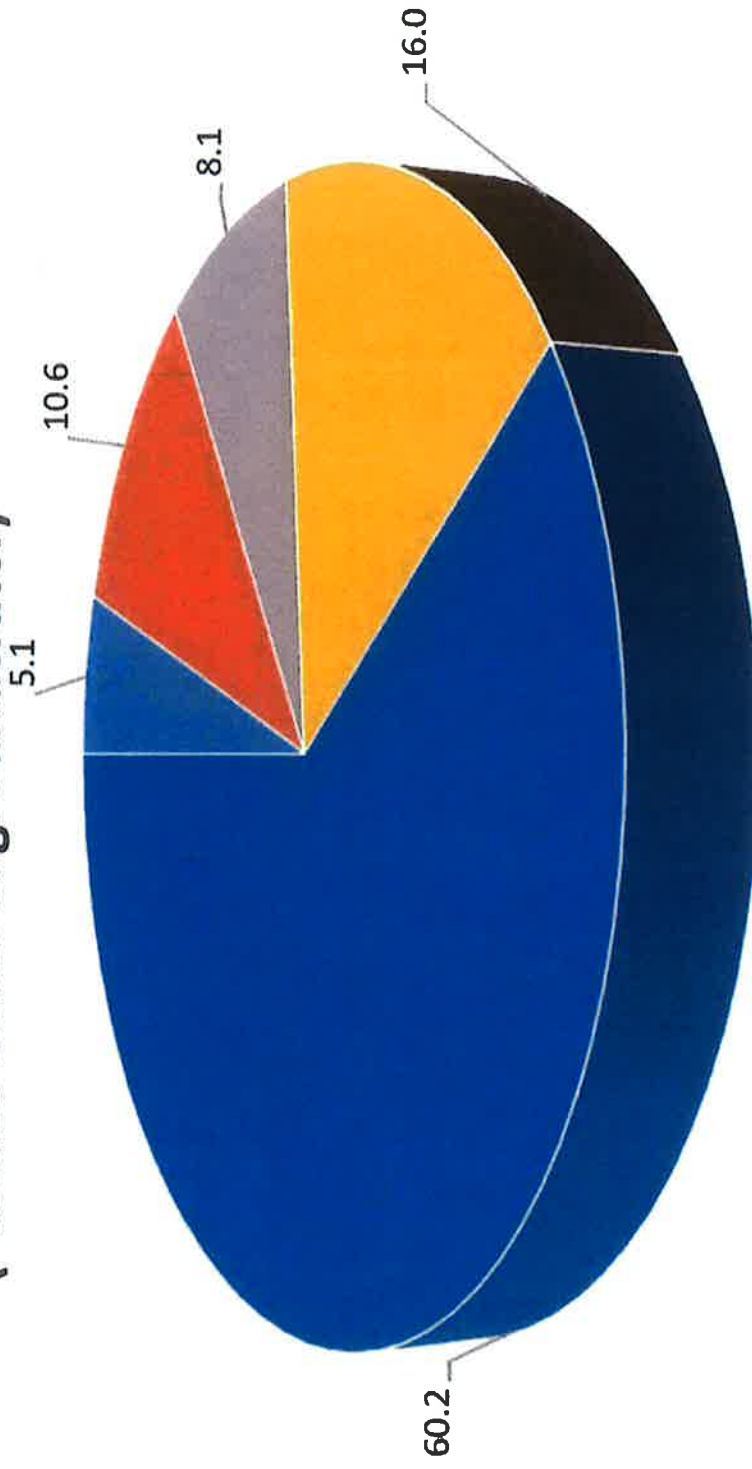
Figure 13. Mean annual potential recharge estimates from the Soil-Water-Balance (SWB) model, shown as a percentage of mean annual gross precipitation from 1996–2010.

Groundwater Appropriations for 2014



Source: MnDNR MPARS database; data excludes private well use of <10,000 gpd or 1M gpy

MN Water Appropriations for 2013 (%) (surface water & groundwater)

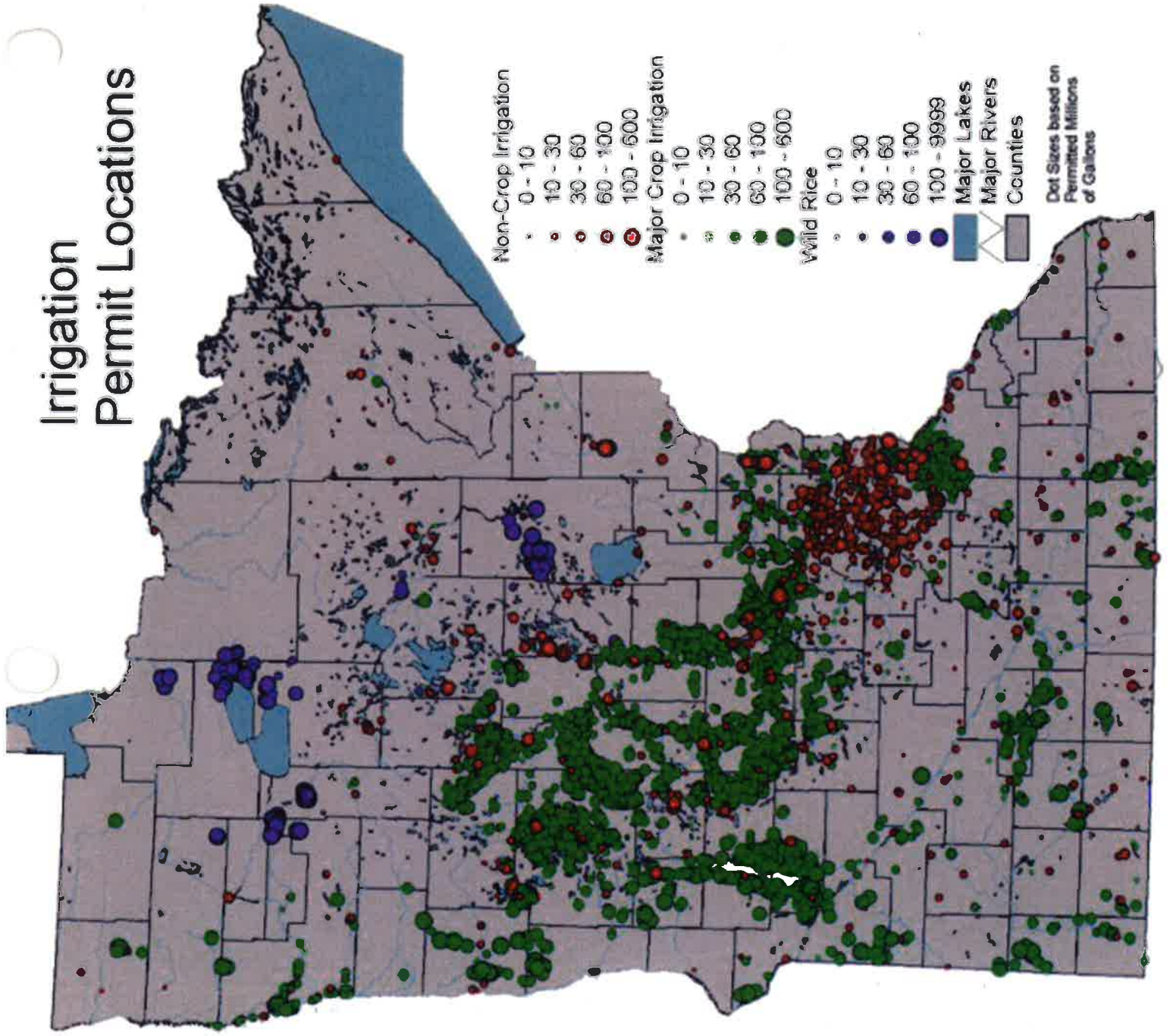


Source: MnDNR; data excludes private well use of <10,000 gpd or 1M gpy

- other
- irrigation
- industrial processing
- water supply
- power generation

Irrigation Permits

Irrigation Permit Locations



Office Memorandum



DEPARTMENT: Natural Resources - Ecological and Water Resources Division

DATE: December 3, 2015

TO: Barb Huberty, Director
Legislative Water Commission
Minnesota State Legislature

FROM: Stephen Thompson, Hydrogeology and Groundwater Unit Supervisor
Ecological and Water Resources Division
MNDNR

SUBJECT: Question regarding age of groundwater in Minnesota

Introduction

This memo is in response to a question asked following a Nov. 16th Clean Water Council presentation about the DNR County Geologic Atlas (CGA) program by Stephen Thompson, MNDNR. As part of the presentation, Mr. Thompson included a brief description of age dating activities conducted by the CGA program. The question asked was, "...whether the DNR knows (or could determine) what percentage of the state's appropriated groundwater is vintage vs. recent water."

Methods for dating groundwater (groundwater residence time)

Both the DNR's CGA program and Minnesota Department of Health (MDH) sample wells for estimating water residence time (age dating). Groundwater residence time is the approximate length of time that has elapsed from the moment water infiltrates the land surface to the time it is pumped from a well or discharged at a spring. Groundwater residence time can be estimated from the amount of tritium in the sampled water. Tritium is a naturally occurring radioactive isotope of hydrogen. Concentrations of tritium greatly increased in the atmosphere between 1953-1963 due to above-ground nuclear testing. Because tritium has a half-life of 12.32 years, the proportion of recently recharged water (less than 60 years) can be estimated by its tritium content.

- Tritium values of 8 or greater tritium units (TU) indicate recent aged groundwater (less than 60 years old).
- Intermediate tritium values of greater than 1 and less than 8 TU indicates a mixture of recent and vintage water
- Tritium values less than or equal to 1 TU indicate vintage aged groundwater (greater than 60 years old).

DNR groundwater sampling and analysis shows a general relationship between the types of aquifers and the residence time of its groundwater as determined by tritium analysis:

- Recent and mixed tritium values are common in water-table aquifers.
- Vintage and mixed values are common in confined sand and bedrock aquifers.
- Groundwater can have a recent or a mixed signature where bedrock is shallow or at the surface in southeastern and east-central Minnesota or in locations where increased pumping allows younger water to migrate to deeper depths

The DNR further refines groundwater residence time of a subset of vintage tritium-age groundwater samples collected in the CGA program using carbon-14. The program estimates groundwater residence time of roughly ten vintage tritium-age samples per county. This method uses the naturally occurring carbon-14 isotope and its half-life of 5730 years to estimate groundwater residence time from roughly 100 to 40,000 years. Carbon-14 dating of groundwater residence time is primarily performed by the DNR CGA program, although previous investigations by the Minnesota Geological Survey and University of Minnesota Department of Earth Sciences have added to the statewide dataset.

Results

Aquifers are classified by type (hydrogeology and geology) and permitted use in the state's well database – the County Well Index (CWI). The following table shows that most permitted public water supply wells and commercial or industrial wells are in bedrock aquifers where vintage water is most common.

Use Category	Number of Wells in CWI	Aquifer Type		
		Unconfined Water-Table Aquifer (Recent & Mixed Tritium-Age)	Confined Sand and Gravel Aquifer (Mixed & Vintage Tritium-Age)	Bedrock Aquifer (Recent, Mixed, & Vintage Tritium-Age)
Irrigation	6199	1998 (32%)	2424 (39%)	1777 (29%)
Commercial/Industrial	2426	174 (7%)	718 (30%)	1534 (63%)
Public	15,448	1100 (7%)	4702 (30%)	9646 (63%)

MDH encourages groundwater use for human consumption from confined aquifers, if possible, because these aquifer types are generally better protected from surface contamination than water-table aquifers. MDH samples public wells for tritium analysis as part of their Source Water Protection program. The public water supply wells sampled by the MDH represent nearly all of the appropriation wells for which there are tritium data available. The table below shows that from 2,538 MDH records, 45% of public water supply wells use vintage water. In addition, through the MDH well permit program, domestic well owners are encouraged to drill wells into aquifers that are confined, better protected, and commonly contain older water with vintage tritium conditions.

Groundwater residence time for Public Water Supply Wells (MDH data)	
Tritium classification	# of wells and percentage
Recent >8 TU	483 (19%)
Mixed >1 to <8 TU	900 (35%)
Vintage < or equal to 1 TU	1155 (45%)



The DNR chemistry database comprises data mostly from domestic wells sampled as part of the CGA program. The 2,348 DNR records suggest that most domestic water supply wells use vintage tritium-aged water.

Groundwater residence time for private, residential water supply wells (DNR data)	
Tritium classification	# of wells and percentage
Recent >8 TU	360 (15%)
Mixed >1 to <8 TU	656 (28%)
Vintage < or equal to 1 TU	1332 (57%)

High-capacity industrial and municipal groundwater users that require a DNR permits often prefer to use deeper (and typically older) water to minimize interference with shallower domestic wells. The confining layers that separate aquifers range in their ability to protect the underlying aquifers due to differences in material properties and distribution. In addition, high-volume pumping increases groundwater gradients in the vicinity of the well (cone of depression), which in many cases allows younger water to move to depths through the confining layers.

The table below summarizes the use categories for carbon-14 ages in the DNR database. Of the 237 wells currently in the database, 97 wells are completed in unconsolidated Quaternary deposits (96 in confined sand and gravel aquifers) with the remaining 140 wells completed in bedrock aquifers. Of the use categories presented below, the public supply and irrigation uses would likely require a DNR appropriation permit. The figure on the following page presents the carbon-14 residence time data spatially, showing the distribution of data points and the range of well depths and estimated residence time per use category.

Groundwater residence time as estimated using carbon-14			
Use Category	Number of wells in database and percentage	Completed well depth range (ft.)	Estimated residence time range (years)
Domestic	154 (65%)	60 – 660	50 – 40,000
Monitoring	41 (17%)	70 – 718	60 – 22,000
Public Supply	4 (17%)	100 - 1070	7,000 – 30,000
Irrigation	2 (1%)	484 - 671	150 – 35,000

In the past the state has recognized that there are important aquifers that recharge very slowly and need special protection. There are special DNR restrictions regarding the use of the deep Mt. Simon/Hinckley aquifer

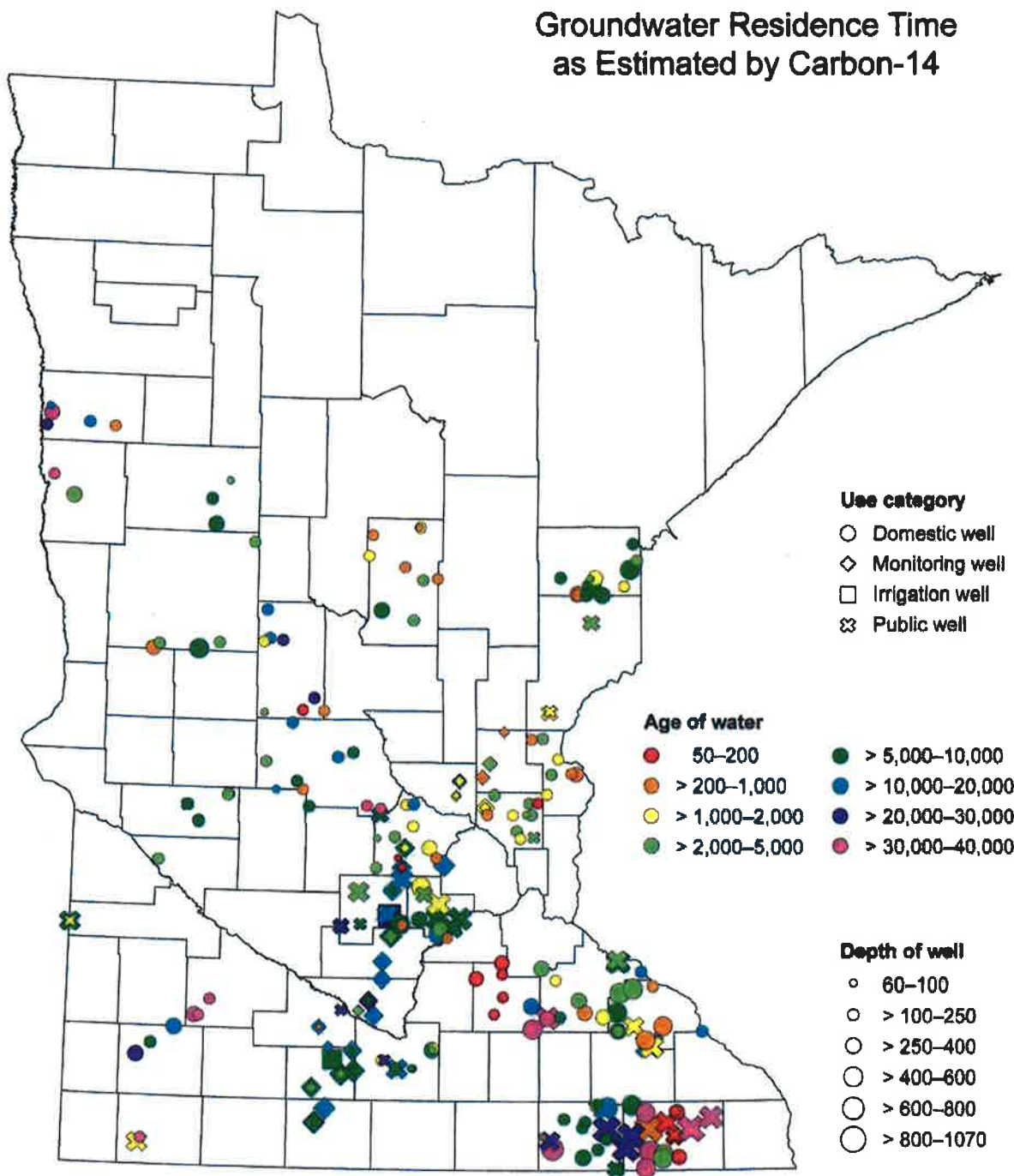
(http://files.dnr.state.mn.us/waters/watermgmt_section/appropriations/mt_simon_hinckley_guidance.pdf).

This recognition prompted a regional investigation of the Mt. Simon aquifer recharge characteristics that extensively used tritium and carbon 14 residence time data. The reports and related videos can be found at the following link:

http://www.dnr.state.mn.us/waters/groundwater_section/mapping/projects.html



Groundwater Residence Time as Estimated by Carbon-14



Minnesota DNR Water Appropriation permits by State Fiscal Year

Number of issued permits	FY 2012	FY 2013	FY 2014	FY 2015
Agricultural Irrigation	205	289	470	398
Industrial Processing	19	12	13	16
Non-Crop Irrigation	18	18	13	16
Power Generation	3	0	0	0
Special Categories	57	82	119	177
Water Level Maintenance	276	220	367	261
Water Supply	10	7	4	4

Number of delayed permits	FY 2012	FY 2013	FY 2014	FY 2015
Agricultural Irrigation	5	5	36	51
Industrial Processing	0	0	0	2
Special Categories	0	0	2	1
Water Level Maintenance	0	3	0	3

Number of denied permits	FY 2012	FY 2013	FY 2014	FY 2015
Agricultural Irrigation	0	2	1	0
Non-Crop Irrigation	0	1	0	0

Notes:

(1) This is summary information on permits issued, but not amendments, etc.

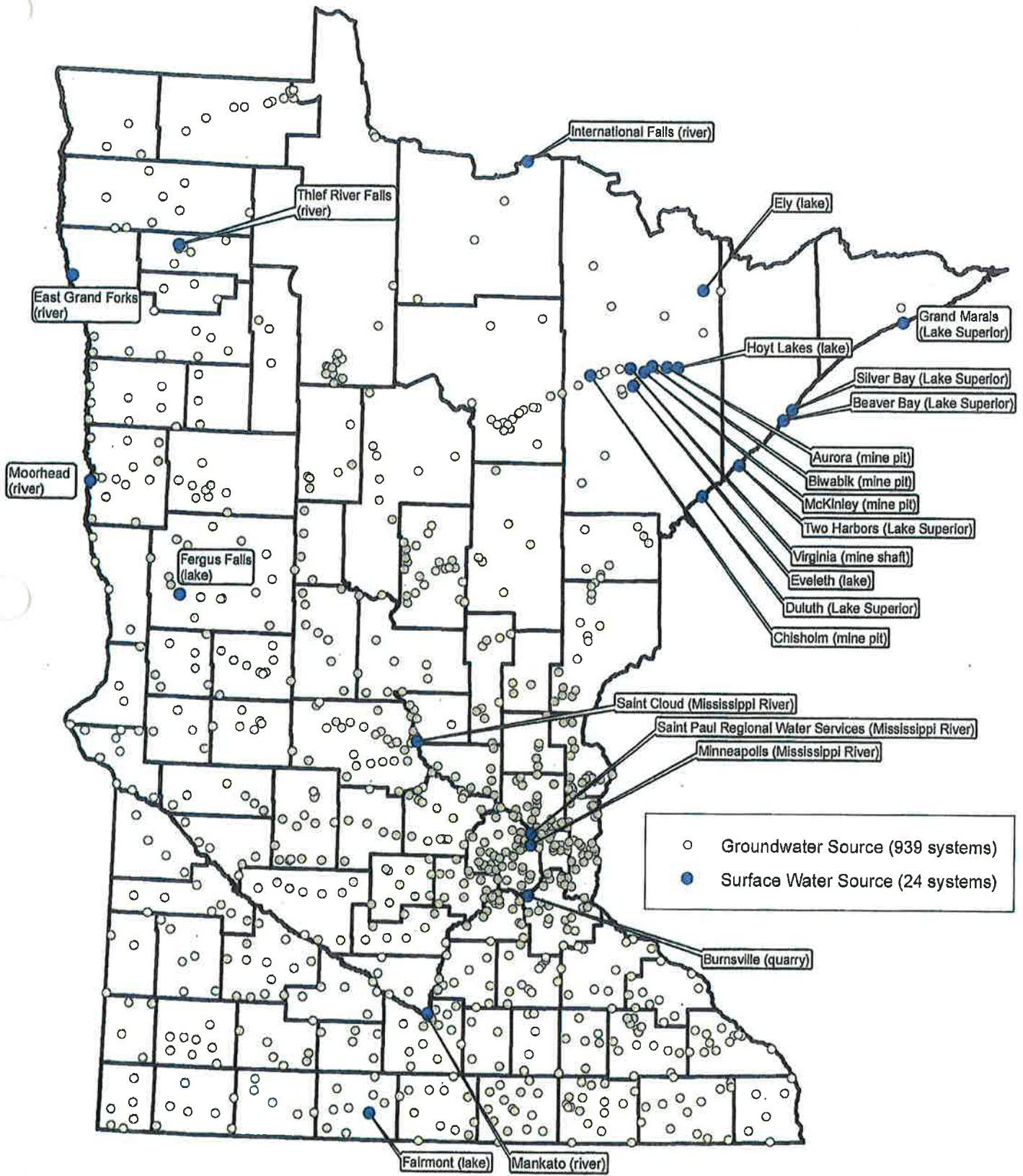
(2) Delayed permits are those where decision not made in 150 days of complete application.

(3) Special Categories include snow-making, pollution confinement, livestock watering, dust control, etc.

(4) Water Level Maintenance includes construction dewatering, mine pit dewatering, basin level maintenance, etc.

(5) Reasons for delayed permits can be found in Environmental Permit Performance reports on the DNR website.

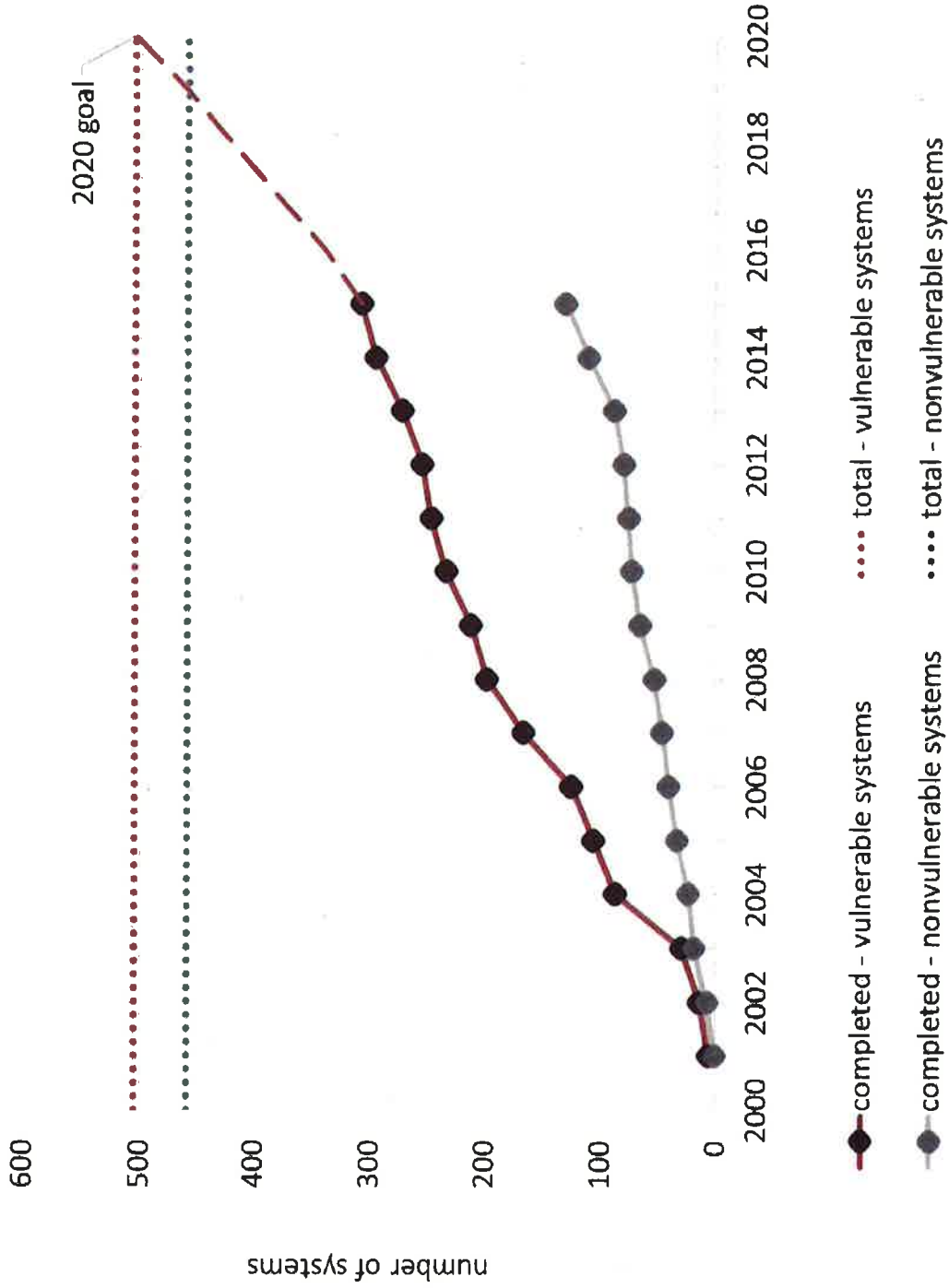
Community Water Systems – by groundwater or surface water sources



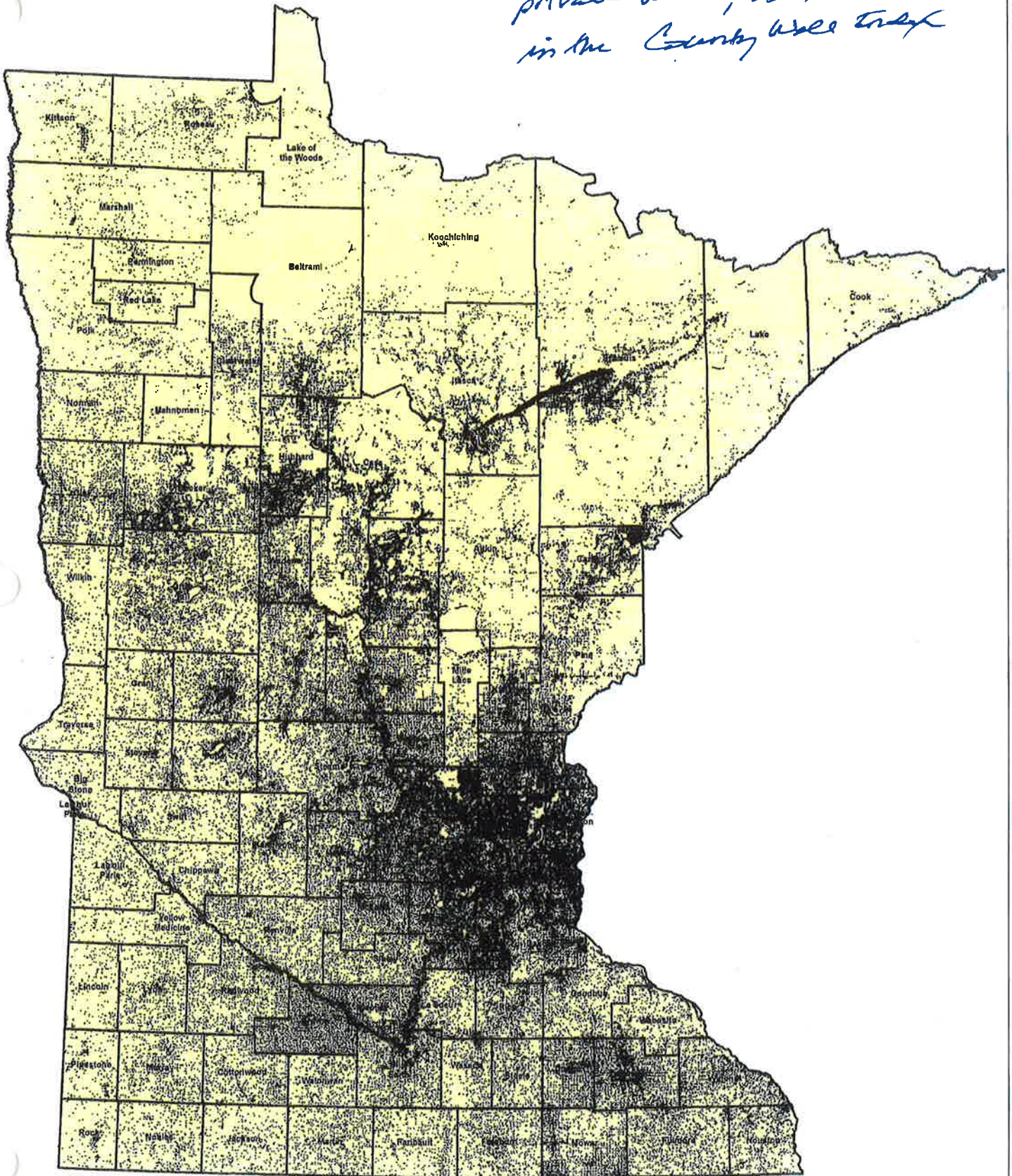
Community Water Systems that use both groundwater and surface water include Burnsville, Fergus Falls, Moorhead, and Saint Paul Regional Water Services. Mankato uses wells that are closely connected to the Minnesota River and is treated as a surface water system.

4.4 Million People to Protect

Source Water Protection Strategies



LOCATION OF 299,960
private wells, as found
in the County Well Index



7-30-15



2016 Clean Water Fund Report Card

Minnesotans care deeply about the state's natural resources and cultural heritage. In 2008, we voted to increase our sales tax and pass the Clean Water, Land and Legacy Amendment, providing 25 years of constitutionally-dedicated funding for clean water, habitat, parks and trails, and the arts.

The following report card highlights work done using Legacy amendment dollars for Minnesota's many water resources. The Report Card tracks a suite of performance measures that are described in the full report that follows. It provides a qualitative assessment of how well actions are being implemented and what outcomes are being achieved.

The legend shows the symbols used to describe how measures were scored. Measures are scored according to their status as of the end of fiscal year 2015 (FY15) and for their trend over time. Scores were developed using data-informed professional judgment of agency technical staff and managers.

Report Card Legend

Action Status Scores	
	We are making good progress/meeting the target
	We anticipate difficulty; it is too early to assess; or there is too much variability across regions to assess
	Progress is slow/we are not meeting the target; or the activity or target is not commensurate with the scope of the problems

Outcome Status Scores	
	Water quality is high – we are on track to meet long-term water resource needs and citizen expectations
	Water quality needs improvement or it is too early to assess – it is unclear if we will meet long-term water resource needs and citizen expectations; and/or water quality varies greatly between regions
	Water quality is under intense pressure – long-term water resource needs and/or citizen expectations exceed current efforts to meet them






























Trend	
	Improving trend
	No change
	Declining trend





Clean Water Fund Report Card

Measure	Status	Trend	Description	
Investment measures				
INVESTMENTS	Total Clean Water Fund dollars appropriated by activity	FY10-11: \$152.2M FY12-13: \$179.4M	FY14-15: \$182.5M FY16-17: \$228.3M	Appropriation levels will vary by biennium and the strength of the economy. FY10-15 funds have been allocated, while FY16-17 allocations are in progress.
	Total Clean Water Fund dollars per watershed or statewide for 1) monitoring/assessment, 2) watershed restoration/protection strategies, 3) protection/restoration implementation activities, and 4) drinking water protection	Most watersheds in the state are benefiting from local and statewide projects.		For FY10-15, all 80 watersheds benefited from Clean Water Fund supported activities. Implementation activities comprise the largest portion of spending in watersheds statewide.
	Total Clean Water Fund dollars awarded in grants and contracts to non-state agency partners	\$240.1M was awarded in grants and contracts to non-state agency partners in FY10-15.		About 80% of grant and contract awards are for implementation activities; 47% of total FY10-15 appropriations were awarded to non-state agency partners.
	Total dollars leveraged by Clean Water Fund	\$154M was leveraged by Clean Water Funds in FY10-15, or 96 cents for every implementation dollar invested.		Required Clean Water match funds were met and exceeded.
Surface water measures				
ACTION	Percent of major watersheds intensively monitored through the watershed approach			Steady progress is being made at the pace set in 2008.
	Local partner participation in monitoring efforts			Since 2012, all programs have met local participation goals.
	Number of nonpoint source best management practices implemented with Clean Water funding and estimated pollutant load reductions			Although funding has increased and there is a continued increase in practices and projects being implemented, the total request for projects has remained three times greater than available funds.
	Number of municipal point source construction projects implemented with Clean Water Funding and estimated pollutant load reductions			Pace of awards is linked to permit cycles and compliance schedules; demand is growing with the improving economy and expanded eligibilities.
OUTCOME	Rate of impairment/unimpairment of surface water statewide and by watershed	Stream/lake swimming Stream aquatic life	Not enough information for a trend determination at this time.	Water quality varies greatly by region. Watersheds yet to be assessed will influence the statewide impairment/unimpairment rate. It is unclear whether long-term goals will be met.
	Changes over time in key water quality parameters for lakes and streams	Lake clarity	Not enough information for a trend determination at this time.	Lake clarity: There are improving trends in lake water clarity in more lakes than not.
		Stream fish		Stream fish: Fish community health varies greatly by region, but statewide percents of poor vs. good fish community health are similar.
		Pesticides in streams		Pesticides in streams: Detections in streams vary greatly as a result of hydrologic and agronomic conditions; concentrations above water quality standards are rare.
		Pesticides in lakes		Pesticides in lakes: Detections in lakes vary by region; detections in lakes have been well below water quality standards.
	Number of previous impairments now meeting water quality standards due to corrective actions			Although many projects are making progress in improving water quality, more waterbodies are being listed as impaired relative to the slower rate of waterbodies being restored.
	Trends of mercury in fish in Minnesota			Mercury in game fish over the last 30 years shows an improving trend despite large fluctuations during shorter periods, demonstrating the need for long-term and consistent monitoring.
Trends of mercury emissions in Minnesota			Significant progress has been made reducing mercury emissions from power plants and is expected from the mining sector. To meet Minnesota's 2025 emissions goal, further reduction of mercury use in various products will be necessary.	

Measure	Status	Trend	Description	
Surface water measures				
Municipal wastewater phosphorus discharge trend			Significant phosphorus load reductions have been achieved through regulatory policy, infrastructure investments, and improved technology. Further reductions will continue to be challenging and expensive as small systems receive limits and tighter discharge permits.	
Drinking and groundwater measures				
ACTION	Number of community water supplies assisted with developing source water protection plans			Met target for FY14-15. On track to meet long-term target of every vulnerable community public water system engaged in source water protection by 2020.
	Number of grants awarded for source water protection			Increased funds accelerate implementation of proven strategies for source water protection.
	Number of local government partners participating in groundwater nitrate-nitrogen monitoring and reduction activities			New local partnerships continue to be established for nitrate-nitrogen monitoring and reduction activities.
	Number of new health-based guidance values for contaminants of emerging concern			Met target for FY14-15. On track to meet goal of 10 guidance values developed each biennium.
	Number of counties completing a county geologic atlas for groundwater sustainability			Significant progress has been made. Counties continue to step up to participate but substantial work remains before all counties are done.
	Number of long-term groundwater monitoring network wells in Minnesota			Many areas of the state still lack important groundwater information. Long-term monitoring accelerated by Clean Water Fund investments is filling gaps.
	Number of unused groundwater wells sealed			While Minnesota leads the nation in the number of sealed wells, continued effort is needed to address the estimated 250,000 to 500,000 unused, unsealed wells remaining.
OUTCOME	Changes over time in pesticides, nitrate-nitrogen and other key water quality parameters in groundwater	Pesticides 		Variable trends for five common pesticides indicate a mixed signal. Low levels are still frequently detected in vulnerable groundwater.
		Nitrate-Nitrogen statewide 	Not enough information for a trend determination at this time.	In many areas, drinking water aquifers are not vulnerable to surficial contamination. Wells may have low levels of nitrate-nitrogen. In some areas it can be a significant concern.
		Nitrate-Nitrogen Central Sands 		A significant percentage of wells from the township testing program exceed the drinking water standard for nitrate in localized sensitive areas in the Central Sands.
		Nitrate-Nitrogen southeast region 		In one county with considerable karst geology, two of 11 townships in the township testing program had more than 10% of wells exceed the drinking water standard for nitrate.
	Changes over time in source water quality used for community water supplies		Not enough information for a trend determination at this time.	Identifying correlations between drinking water contaminants is a significant step in trend analysis of source water quality.
Nitrate concentrations in newly constructed wells			Although nitrate levels in less than 2% of new wells violate the drinking water standard, there has been a slight increase in recent years.	
Changes over time in groundwater levels			Most observation wells show no significant trend, but many areas of the state lack important groundwater information while some areas experienced groundwater declines.	
Social measures and external drivers				
DRIVERS	Social measures		Not enough information for a trend determination at this time.	In recent years, state agencies have developed and piloted the Social Measures Monitoring System. This work integrates social science into Clean Water Fund projects.
	External drivers			The external drivers identified continue to alter land-water interactions across Minnesota impacting how Clean Water funds need to be invested.



2016 Clean Water Fund Report: Highlights

In the first six years of Clean Water funding, state agencies have distributed the funds across Minnesota with major investments in all 80 watersheds. Restoration and protection spending was focused in watersheds with more significant water quality challenges.

Agencies are making solid progress in both surface water and groundwater quality. Examples include improving sewer systems and implementing activities to reduce nitrate in drinking water.

The Legacy Amendment has accelerated the implementation of practices to improve and protect Minnesota's water resources, although funding is not keeping pace with demand. In total, more than 4,600 best management and conservation practices have been installed, resulting in a reduction of about 79,000 pounds of phosphorus and 120,000 tons of sediment going to waters across the state.



Clean Water funding has ramped up efforts to collect key information statewide needed to develop restoration and protection strategies, and to target implementation dollars:

- The Minnesota Dept. of Natural Resources has completed 22 County Geologic Atlases with new or updated atlases in progress for 27 additional counties. At the current level of funding, atlases should be completed statewide in 10 to 15 years.
- The Minnesota Pollution Control Agency is on track to complete intensive water monitoring of all 80 major watersheds by 2018. Since the 2014 Performance Report, the agency has started monitoring in 19 more watersheds.
- The Minnesota Department of Agriculture began the Township Testing Program for well water in 2013 and is on track to complete the first round of nitrate testing in private wells by 2019. By 2019, the MDA will offer free nitrate testing in 250-300 townships with vulnerable groundwater.

Changes in human behavior, such as decisions on land use and product selection, are needed to change water quality for the better, as demonstrated by these measures:

- Water monitoring is showing correlations between impaired waters and agricultural land use.
- To reach the state goal for mercury reductions in order to decrease levels in fish, Minnesota will need to see further reductions of mercury in products such as fluorescent lamps and dental amalgam.
- Chloride is increasing in urban areas across the state, emphasizing the need to reduce salt in winter road and water softener treatments.

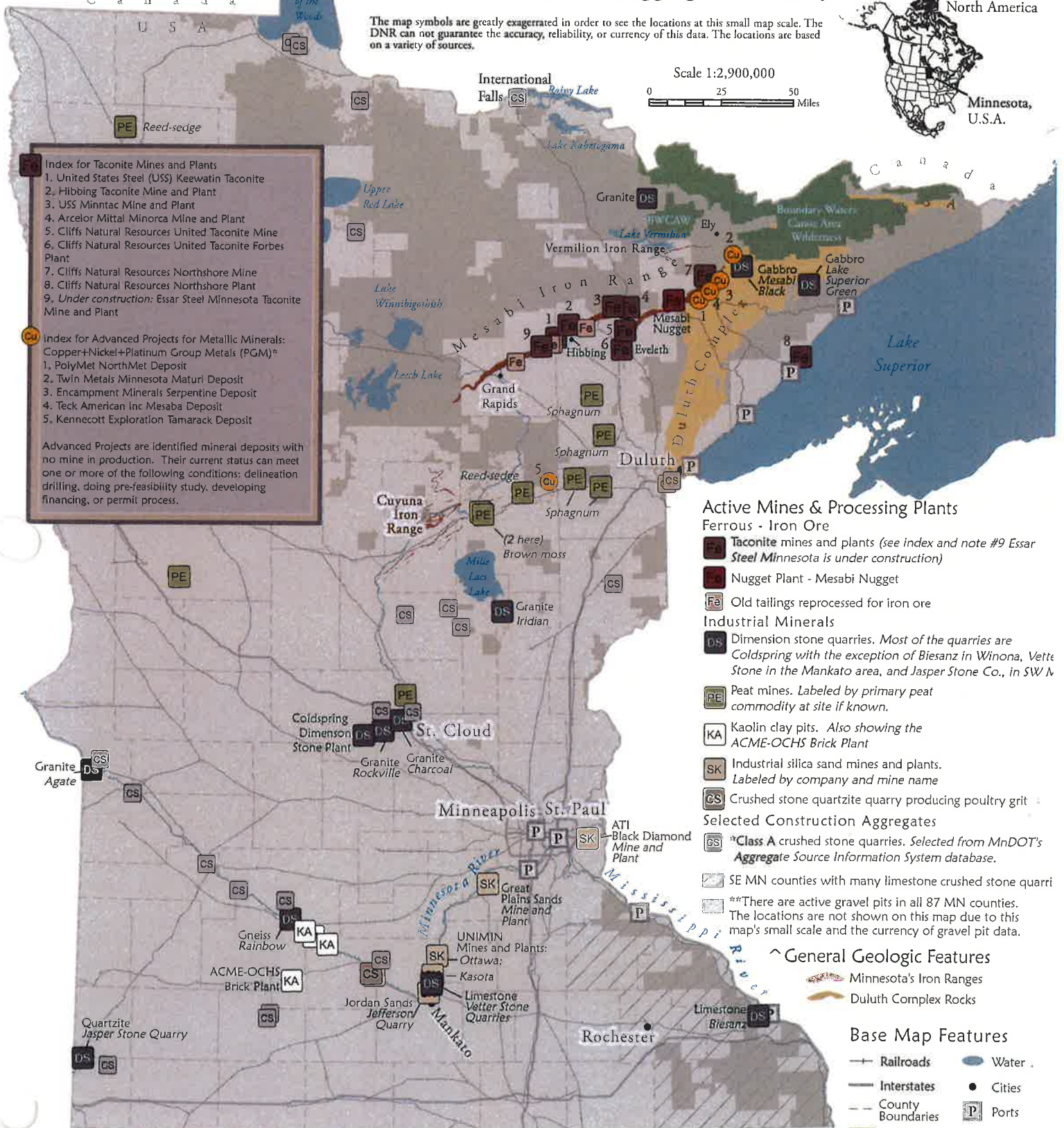
Because water quality is so dependent on human behavior, the Performance Report includes more information on social measures this year, providing a baseline for tracking social science data in meeting Minnesota's clean water goals. This section highlights four specific efforts undertaken to strengthen the capacity of Minnesota communities to take on this work.



MINNESOTA MINERALS

Active Mines & Advanced Projects of Iron Ore, Metallic Minerals, Industrial Minerals, and Selected Construction Aggregates- January 2014

The map symbols are greatly exaggerated in order to see the locations at this small map scale. The DNR can not guarantee the accuracy, reliability, or currency of this data. The locations are based on a variety of sources.



- Index for Taconite Mines and Plants**
1. United States Steel (USS) Keewatin Taconite
 2. Hibbing Taconite Mine and Plant
 3. USS Minntac Mine and Plant
 4. Arcelor Mittal Minnoria Mine and Plant
 5. Cliffs Natural Resources United Taconite Mine
 6. Cliffs Natural Resources United Taconite Forbes Plant
 7. Cliffs Natural Resources Northshore Mine
 8. Cliffs Natural Resources Northshore Plant
 9. *Under construction:* Essar Steel Minnesota Taconite Mine and Plant
- Index for Advanced Projects for Metallic Minerals: Copper+Nickel+Platinum Group Metals (PGM)****
1. PolyMet NorthMet Deposit
 2. Twin Metals Minnesota Maturi Deposit
 3. Encampment Minerals Serpentine Deposit
 4. Teck American Inc Mesaba Deposit
 5. Kennecott Exploration Tamarack Deposit
- Advanced Projects are identified mineral deposits with no mine in production. Their current status can meet one or more of the following conditions: delineation drilling, doing pre-feasibility study, developing financing, or permit process.

- Active Mines & Processing Plants**
- Ferrous - Iron Ore**
- Taconite mines and plants (see index and note #9 Essar Steel Minnesota is under construction)
 - Nugget Plant - Mesabi Nugget
 - Old tailings reprocessed for iron ore
- Industrial Minerals**
- Dimension stone quarries. Most of the quarries are Coldspring with the exception of Biesanz in Winona, Vette Stone in the Mankato area, and Jasper Stone Co., in SW A
 - Peat mines. Labeled by primary peat commodity at site if known.
 - Kaolin clay pits. Also showing the ACME-OCHS Brick Plant
 - Industrial silica sand mines and plants. Labeled by company and mine name
 - Crushed stone quartzite quarry producing poultry grit
- Selected Construction Aggregates**
- Class A** crushed stone quarries. Selected from MnDOT's Aggregate Source Information System database.
 - SE MN counties with many limestone crushed stone quarries
 - **There are active gravel pits in all 87 MN counties. The locations are not shown on this map due to this map's small scale and the currency of gravel pit data.

- General Geologic Features**
- Minnesota's Iron Ranges
 - Duluth Complex Rocks

- Base Map Features**
- Railroads
 - Water
 - Interstates
 - Cities
 - County Boundaries
 - Ports
 - BWCAW
 - National & State Forests

*According to the Minnesota Department of Transportation (Mn/DOT) Class A quarries consist of basalt, diabase, gabbro, quartzite, or granite.**For more information about aggregate resources visit the DNR's aggregate resource mapping webpage or MnDOT's ASIS database webpage. ^Geologic features sourced from Minnesota Geological Survey's State Map Series S-21, 2011.

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198	Hanson	Legacy -> laid over	18	Klein	ENRP&LF -> laid over	\$5M CWF to Met Council for grants/loans for local inflow/infiltration reduction programs in metro area
178	Fischer	ENRPF	25	Wiger	ENRP&LF	\$ GF to DNR for grant to Kohlman Lake Assoc for aquatic vegetation removal
47	Garafolo	ENRPF	48	Little	Cap Invest	\$6M bond proceeds to DNR for Dakota Co to improve hydro facility at Byllesby Dam on Cannon River
48	Garafolo, Bly	Job Growth	47	Little	Cap Invest	\$726K bond proceeds to PFA for Dennison to improve sewage lift station and pond
49	Garafolo	Job Growth	46	Little	Cap Invest	\$300K bond proceeds to DEED for New Trier to replace water infrastructure and add stormwater pond
74	Quam	Job Growth	None	None	None	Commissioner of Revenue retains, within the special revenue fund, 5% of the local government aid formula in a new water renovation account for PFA loans issued to rural municipalities for wastewater and water renovation projects, following the MPCA & MDH project priority lists
75	Quam	Job Growth	None	None	None	a new water renovation account is created for PFA loans to rural municipalities for wastewater and water renovation projects, following the MPCA & MDH project priority lists
78	Quam	Job Growth	None	None	None	the PUC must evaluate its process and develop a system to issue/deny pipeline routing permits within 150 days of application submission and report on permitting efficiency semiannually
110	Hanson	ENRPF	30	Klein	Cap Invest	\$10M bond proceeds to Met Council for inflow/infiltration reduction programs in metro area
169	Uglem	ENRPF	34	Hoffman, Ruud	Cap Invest	\$3.3M to DNR for City of Champlin to make Mill Pond improvements
None	None	None	45	Rest	Taxes	tax provisions modifications (see line 47.26 where riparian protection aid is added and line 99.8 allows taxes to be used for water quality improvement projects in Blue Earth and Nicollet Counties)
151	Murphy, M	Legacy -> laid over	179	Simonson	ENRP&LF -> laid over	\$350K from CWF to Admin for grant to Lake Superior Center Authority for new river systems exhibit (dba the Great Lakes Aquarium)
158	Murphy, M	Job Growth	136	Bakk	Cap Invest	\$1.2M from general fund to PFA for grant to Duluth N Shore Sanitary District to retire debt to bring rates into alignment with other facilities
167	Green, Poston	ENRPF	None	None	None	Repeal MN Stat 103F.48, eliminating riparian buffer requirement
200	Lien, C Johnson, Bly	Ag Policy -> Prop Tax -> laid over	111	Eken	Ag & Rural Dev -> taxes	Ag and Revenue Departments to study the impact of taxing ag lands based on production value (including identifying types of ag properties not directly used in ag production and approaches for valuing them)
190	Wagenius, Bly	Ag Policy	297	Dziedzic	ENRP&LF	\$1.683M general fund to MPCA (plus amounts to be determined to MDH, DNR, & MDA, plus \$1.212M to MPCA in tails for 2020-2021) for actions to protect the Upper Mississippi River Watershed as a drinking water source for Minneapolis, St Paul and St Cloud
203	Backer	ENRPF	412	Westrom	ENRP&LF	modifies drainage system repair procedures by allowing updated land values based on the county assessor's most recent estimated market value
220	Ecklund	Job Growth	242	Bakk	Cap Invest	\$2M bond proceeds to PFA for grant to Koochiching Co for part of the Voyageur's National Park clean water project
221	Davids	ENRPF	290	Miller	Cap Invest	\$4.8M bond proceeds to DNR for grant to Lanesboro to repair/renovate the Stone Mill Dam
229	Metsa	Job Growth	334	Tomassoni	Cap Invest	\$4M bond proceeds to DNR for grant to Aurora for a water supply system to serve Aurora, Hoyt Lakes, Biwabik and White
782	Franson	ENRPF	169	Ingebrigsten	Cap Invest	\$50K bond proceeds to DNR for grant to Ottertail co for West Leaf Lake dam renovation

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303	Davnie	Ag Policy	431	Dziedzic	Ag & Rural Dev	pesticide control ordinances adopted and enforced by cities of the 1st class are not preempted by the state
337	Ecklund	Job Growth	241	Bakk	Cap Invest	\$7.55M bond proceeds to PFA for a grant to Stewart River Subordinate Service District for new WWTF in Silver Creek Township
338	Green	ENRPF	None	None	None	establishes alternative wetland mitigation options in >80% areas and authorizing rulemaking to amend MN Stat 103G.222
353	Cornish	Job Growth	635	Rosen	Cap Invest	\$3.699M bond proceeds to PFA for grant to Waldorf for wastewater, water treatment, and stormwater drainage systems
370	Marquart	ENRPF	329	Eken	Cap Invest	\$2.55M bond proceeds to DNR for flood hazard mitigation grant to Halstad
None	None	None	210	Senjem, Eken	Cap Invest -> Finance -> gen ord	omnibus bonding bill; \$213.225M in bond proceeds DNR, MPCA, BWSR, MDA, Met Council, MDH, DEED and PFA to fund various capital investment programs and projects, including those related to water infrastructure and water resources
457	Howe	ENRPF -> laid over	233	Fischbach	ENRF -> laid over	Extends availability of grant money to remove and prevent aquatic invasive species
546	Gruenhagen	ENRPF	260	Newman	Cap Invest	\$500K bond proceeds to DNR for grant to Gaylord to replace Lake Titlow dam
710	Uglem	ENRPF -> Legacy > laid over	262	Ingebrigsten, Ruud	ENRP&LF -> laid over	\$103,978,000 in 2018 and \$585,000 in 2019 from the outdoor heritage fund to various recipients
596	Poppe	ENRPF	271	Sparks	Cap Invest	\$3M bond proceeds to DNR for grant to Austin to improve the Ramsey Mill Pond and associated amenities
595	Poppe	ENRPF	272	Sparks	Cap Invest	\$600K bond proceeds to DNR for grant to Austin to improve the 4th Avenue Mill and Dam and associated amenities
594	Poppe	ENRPF	273	Sparks	Cap Invest	\$4.2M bond proceeds to DNR for state share of flood hazard mitigation grant to the Cedar River Watershed District for improvement to prevent or alleviate flooding
454	Olson, Torkelson, Bly	ENRPF	282	Rest, Ruud	Cap Invest	\$25.4M bond proceeds to MPCA for cleanup activities of St Louis River estuary and Duluth Harbor
413	Torkelson	ENRPF	294	Dahms, Lang, Weber	Cap Invest	\$7.825M bond proceeds to MPCA for grant to Redwood-Cottonwood Rivers Control Area to reclaim the Lake Redwood Reservoir
452	Kiel	ENRPF	296	Johnson	Cap Invest	\$1.45M bond proceeds to DNR for flood hazard mitigation grant to Nielsville for improvement to prevent or alleviate flooding
284	Hamilton	Ag Finance	315	Westrom	Ag, RDP -> Ag, RDF -> Finance	\$2.218M general fund to MDA to equip ag laboratory
2330	Loeffler	ENRPF	316	Dziedzic	Energy & Utilities -> laid over	\$___ general fund to DOC to establish a green roof advisory task force
398	Torkelson	ENRPF	348	Dahms, Weber	ENRF -> laid over	\$378K from gen fund to BWSR for grant to Area II Mn River Basin floodplain management projects

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431	Normess, Johnson, Torkelson	ENRPF	371	Ingebrigsten, Ruud	ENR&LF -> ENRF	\$5M gen fund to BWSR to acquire wetland banking projects for road projects and \$10M bond proceeds to purchase land or easements for the wetland banks
434	Fabian, Torkelson	ENRPF -> W&M (1st Engt) -> gen reg - passed, signed by Gov	326	Ingebrigsten, Lang	ENR&LF -> Transp F&P -> ENRF -> Finance -> gen orders - passed, signed by Gov	where road replacement wetland bank credits are not available, BWSR must use credits from other service areas as permitted by state/fed law and wetland disturbances up to 10K sq ft for roads previously authorized by ACE Sec 404 are exempt from WCA [note: SF 326 amended to include \$1.4M fire remediation for Madelia and \$296K fire remediation for Watonwan Co; see HF468/SF627]
447	Torkelson	ENRPF	588	Dahms, Weber, Lang	Cap Invest	\$1M bond proceeds to BWSR for grant to MN River Basin flood hazard mitigation projects in Area II
468	Cornish	Job Growth -> W & M -> incorp into 434	627	Rosen	Jobs -> laid over -> incorp into 326	\$101K gen fund to DEED for grant to reimburse Madelia for infrastructure repair costs from 1/16 fire
478	Erickson	Job Growth	384	Matthews	Cap Invest	\$1.975M bond proceeds to PFA for grant to Pease for water and sewer system improvements
495	Sundin	Job Growth - laid over	361	Lourey	Cap Invest	\$2.2M bond proceeds to PFA for grant to Big Lake Area Sanitary District for wastewater connection to WLSSD connector in Cloquet
509	Gunther	Job Growth	632	Rosen	Cap Invest	\$6M bond proceeds to PFA for grant to Winnebago for drinking water, sanitary and storm sewer system upgrades in the NW utility improvement area
512	Rarick	Job Growth	None	None	None	\$2M bond proceeds to PFA for grant to Pine City for water and wastewater infrastructure projects
551	Green, Poston	ENRPF	None	None	None	Eliminates rulemaking authority for DNR & MPCA and provides sunset or enactment of existing rules
552	Green, Poston	Gov Ops -> laid over	None	None	None	Grant of authority in law required for adoption of rules, and threshold for conducting a public hearing on expedited rules reduced
560	Kiel	Legacy -> laid over	399	Johnson, Eken	ENRF -> ENR&LF -> laid over	\$300K over 2 yrs from CWF to MPCA for grant to Red River Mgmt Bd for River Watch monitoring and education program
566	Haley	Transp Fin	154	Miller	Cap Invest	\$10M bond proceeds to DOT for port development assistance
568	Howe	Job Growth	332	Fischbach	Cap Invest	\$4.66M bond proceeds to PFA for grant to Cold Spring for water infrastructure improvements
575	Urdahl	Cap Invest -> W & M -> gen register	396	Senjem	Cap Invest	Lanesboro dam project exempted from a nonstate contribution
580	Fabian	ENRPF	398	Johnson	Cap Invest	\$2.5M bond proceeds to DNR for flood hazard mitigation grants to Two River Watershed District for Klondike, Roseau River Watershed District for Roseau and Whitney Lakes, Red Lake Watershed District for Pine and 4 Legged Lakes, and to Middle Snake Tamarac Watershed District for Newfolden
581	Backer	ENRPF	473	Westrom	Cap Invest	\$9.94M bond proceeds to DNR for flood hazard mitigation grants; of this \$750K to Browns Valley, \$7M to Redpath Township, \$390K to Bois de Sioux Watershed District for Big Lake Herman

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651	Marquart	ENRPF	385	Eken	Cap Invest	\$1.25M bond proceeds to DNR for flood hazard mitigation grants to Perley and Hendrum
653	Gunther, C. Johnson, Poston	Job Growth → laid over	391	Jasinski, Lang	Cap Invest	\$1.5M bond proceeds to DEED for grants under the Greater MN business development public infrastructure program
954	Sanstede	Job Growth	427	Bakk	Cap Invest	\$6M bond proceeds to PFA for grant to Keewatin to demolish a WWTF in Nashwauk to be replaced with new wastewater treatment ponds
1859	Miller	ENRPF	465	Draheim, Lang, Weber	ENRP&LF	extends deadlines to install buffers on public waters and public ditches by 2 years
669	Youakim	Job Growth	467	Latz	Cap Invest	\$2.25M bond proceeds to PFA for grant to St Louis Park for water treatment facility improvements
657	Backer	Job Growth	471	Westrom	Cap Invest	\$13.08M bond proceeds to PFA for Breckenridge to demolish and replace its water treatment plant
649	Backer	Job Growth → laid over	472	Westrom	Cap Invest	\$11.495M bond proceeds to PFA for Morris to demolish and replace its water treatment plant to reduce chloride discharges to Pomme de Terre River from its WWTF
635	Hamilton	Job Growth → Cap Invest	543	Weber	Cap Invest	existing bond authorization purposes modified for the Lewis & Clark Regional Water System & \$5M bond proceeds authorized for Phase 3
642	Urdahl, Poston	Cap Invest	684	Dahms, Eken	Cap Invest	Water Infrastructure Funding program allows grants up to \$5M/project or \$20K/existing connection; PSIG grants to LGUs have max of \$7M to cover up to 80% of project costs; \$167M bond proceeds to PFA for water infrastructure grants , of which \$25M is to match federal clean water and drinking water revolving funds and of which \$80M is for grants to eligible municipalities for the water infrastructure funding program and \$55M is for wastewater projects and \$25M is for drinking water projects and \$62M is for PSIG grants
650	Gunther, C Johnson	Job Growth	549	Sparks	Cap Invest	\$2M bond proceeds to DEED for innovative business development public infrastructure grants
680	Quam	Job Growth	512	Senjem	Cap Invest	\$18.996M bond proceeds to PFA for Oronoco to construct a WWTF
683	Backer	ENRPF	938	Westrom, Weber	ENRP&LF	buffer implementation deadlines extended 2 yrs and enforcement may not occur unless gov't assistance is available to pay 100% of costs or landowner denies assistance
684	Backer	ENRPF	None	None	None	SWCDs must approve DNR's buffer protection maps and subsequent modifications for their jurisdictional area
698	Green	Legacy	None	None	None	amends article XI of the MN Constitution and replaces the legacy amendment with funding for deficient roads and bridges and for clean water
702	O' Driscoll, Poston, Gruenhagen	ENRPF	695	Newman, Eken	ENRP&LF → state gov't → ENRF → laid over	provides for expert review of agency actions and prohibits use of unadopted rules
706	Gunther	Legacy → W&M → gen reg	565	Ruud	ENRP&LF → ENRF → gen orders	no more than 95% of the projected balance for each of the Legacy funds may be appropriated in a fiscal year
707	Gunther	Legacy → laid over	566	Ruud	ENRP&LF	\$50K from the Legacy and Environmental Trust Funds to LCC in FY18 to maintain the dedicated funding website

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708	Cornish	Job Growth	661	Rosen	Cap Invest	\$13.230M from bond proceeds to DEED for a grant to St James for stormwater, wastewater, water and other infrastructure improvements
717	Green	Legacy -> laid over	643	Johnson, Ruud	ENRP & LF	\$___ CWF and \$___ gen fund to DNR for grants to road authorities or WDs for replacing culverts as part of water quality or environmental improvement projects, respectively
727	Hilstrom	ENRPF	716	Rest	ENRP&LF	regulates chemicals of high concern in children's products
None	None	None	542	Utke	Cap Invest	\$___ bond proceeds to PFA for Clearbrook to make wastewater infrastructure investments
1265	Heintzeman	ENRPF -> Gen Reg	550	Westrom	ENRF -> Finance	\$8.428M in FY2017 and \$50.728M in FY2018 from the ENRTF to various recipients (LCCMR bill)
766	Swedzinski	ENRPF -> laid over	672	Ruud, Weber, Eken	ENRP&LF -> State Gov't	Modifies public comment period requirements for draft impaired waters list notices, provides process to challenge impaired waters lists, and requires notice to publicly owned wastewater treatment facility applicants
776	Backer	ENRPF	None	None	None	Modifies definition of "public waters" in the buffer law
779	Kiel	Job Growth	621	Johnson	Cap Invest	\$5.3M bond proceeds to PFA for East Grand Forks to connect wastewater system to Grand Forks ND
821	Loonan	ENRPF	701	Hall	ENRF -> laid over	\$960K gen fund to BWSR for grant to Lower MN River WD to defray dredge site O & M cost
829	Hornstine	Transp & Reg Gov -> laid over	641	Dibble	Local Govt	Established sewer availability charges stakeholder group
833	Grossell	Job Growth	None	None	None	\$850K bond proceeds to PFA for grant to Clearbrook for wastewater infrastructure improvements
867	Hanson, Bly	Ag Policy	None	None	None	MDA & MDH provide bond-funded grants to private domestic well owners to mitigate nitrate or pesticide contamination via upgrading or replacing wells, installing water treatment systems and capping wells; bonds repaid via fertilizer and pesticide fees and other revenues pledged for the bond payments; emergency bottled water provided
888	Fabian	ENRPF -> Ways & Means	723	Ingebrigsten	ENRF -> Finance -> gen orders	Appropriates \$200.559M from various funds for environment and natural resources programs and modifies policy provisions (MPCA, DNR, BWSR, Met Council budget bill); includes \$ to address gw threats from demo landfills
891	Gunther	Legacy	708	Ruud	ENRP & LF -> laid over	Appropriates \$214.124M in Legacy funds, including Clean Water Funds (Legacy Bill)
None	None	None	717	B Anderson, Weber	ENRF - no action	MPCA must review wastewater treatment projects receiving financial assistance to ID wastewater discharge impact on geographic aquifer; definitions added
890	Loon	Ed Finance	718	Nelson	E-12 Finance	\$614 gen fund to Dept of Ed for grants to expand Race 2 Reduce water conservation programming; grants to H2O for Life (\$143K), ISD 624-White Bear Lake (\$98K) and ISD 832-Mahtomedi (\$66k) for 2018 and repeated in 2019
966	Fabian	Job Growth	724	Johnson	Cap Invest	\$627K bond proceeds to DEED for a grant to Thief River Falls for water, sewer, electrical, & road infrastructure along 1st St W of Westview Ave
1003	Lueck	ENRPF -> Gov Ops -> Gen Reg	737	Weber, Ruud, Eken	ENRP&LF -> state gov't -> laid over	MPCA shall amend MnR 7001.0150 using the MnStat 14.388 good cause exemption to allow a municipality that builds a WWTF to comply with new/modified effluent limits compliance with any new/modified limits adopted after construction onset if it would require additional capital investment until the new/modified WWTF is 80% depreciated

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902	Fabian	ENRPF	740	Johnson	Cap Invest	\$2.5M bond proceeds to DNR to repair the Lake Bronson dam
975	Franke	ENRPF	755	Schoen	Cap Invest	\$695K bond proceeds to BWSR for a grant to St Paul/IGH/W St Paul to improve Seidl Lake's water quality, including a stormwater lift station to discharge excess stormwater to the city's stormwater system to mitigate fluctuating lake levels/
1230	Swedzinski	ENRPF	761	Dahms	Cap Invest	\$500K bond proceeds to BWSR for grant to Lac qui Parle Yellow Bank WD for engineering analysis for 2 floodwater retention projects
1285	Pugh	Gov Ops-> laid over	769	Kiffmeyer	State Govt -> laid over	Agencies can't adopt rules without legislative approval
895	Hamilton	Ag Finance -> Ways & Means	780	Westrom	Ag, Rural Dev -> Finance -> gen orders	modifies ag provisions & appropriates \$103.675M from various funds to MDA (MDA budget bill)
897	Hilstrom	Health & HS	795	Eaton	Health & HS	requires pharmacies to maintain collection boxes for disposal of legend drugs as pharmaceutical waste
790	Gruenhagen	Gov Ops	822	Newman	State Govt -> laid over	Agencies must submit all contested case hearings to the Office of Administrative Hearings for disposition
1858	Miller	ENRPF	835	Draheim, Weber	Ag & Rural Dev -> ENRP&LF	buffer law compliance practices must use only seed mixes grown & processed in MN
1004	P Anderson	ENRPF	None	None	None	revises buffer and buffer map requirements
1016	Hausman	ENRPF	None	None	None	establishes certified salt applicator program, limits liability, & authorizes rulemaking
1041	Marquart	Job Growth	973	Eken	Cap Invest	PFA shall provide \$15M more for a PSIG grant to an entity in a compliance schedule & on the PPL that requires advanced tertiary treatment via MBRs to achieve 0.08 ppm effluent limits
1051	Backer	ENRPF	None	None	None	DNR must issue a permit to the Bois de Sioux WD to maintain Big Lake at 1,073' from 5/1 to 10/1 and draw the lake down to 1,072 before it freezes
1054	Layman	Job Growth	979	Eichorn	Cap Invest	\$3M bond proceeds to PFA for grant to Deer River for wastewater and water improvements
1058	Hamilton	ENRPF	1516	Eken	ENRP&LF	\$100K gen fund to LWC to convene independent scientific reviews of MPCA regulatory decisions
1042	Youakim	Health & HS	896	Latz	Health & HS	Establishes a registry for cooling towers to assist MDH with Legionella investigations
1210	Shomaker	Job Growth	949	Weber	Cap Invest	\$4.056M bond proceeds to PFA for grant to Currie for sewer and water infrastructure improvements
1076	Bly, C Johnson	Ag Finance -> laid over	2250	Marty	Ag, Rural Dev	\$10M gen fund to MDA for grant to U of MN for Forever Green program to protect natural resources while supporting ag economy via development of perennial and winter annual crops
1095	Fischer	ENRPF	1968	Wiger	ENRP&LF	establishes Right to Water Policy where every human has right to safe, clean, affordable and accessible water adequate for human consumption and sanitation
1151	Bahr	Job Growth	None	None	None	pipelines transporting crude oil, petroleum fuels or oil, their derivative or natural gas are exempt from obtaining a certificate of need prior to construction
1156	Bernardy	ENRPF	None	None	None	\$___ gen fund to MPCA to assess state superfund sites in Anoka Co bordering the Mississippi to assess vapor intrusion risks and contaminated groundwater movement

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761	Hamilton, C Johnson	Ag Policy -> Gov ops -> gen register, incorporated in HF1717	960	Westrom	Ag, Rural Dev -> general orders	extends the ag fertilizer research and education program and council
1240	Rarick	Job Growth	962	Lourey	Cap Invest	\$1M bond proceeds to PFA for grant to Pine City for water and wastewater infrastructure improvements
1456	Swedzinski	Ag Policy	1016	Weber	Ag, Rural Dev -> ENRP&LF	modifies public comment and environmental review provisions for CAFOs; mandatory EAW not required for CAFOs <2K animal units; public notice concurrent with CUPs notice by LGU
1622	Hansen	ENRPF	1027	Ruud	ENRP&LF	renames the MPCA the Dept of Environment
2098	Bennett	Job Growth	1062	Sparks	Cap Invest	\$3M bond proceeds to PFA for grant to Blooming Prairie for wastewater improvements
1291	Fabian	ENRPF -> Civil Law -> Gov Ops > W&M	1087	Ingebrigsten, Ruud	ENRP&LF -> Judiciary -> state govt -> ENRF -> Finance	modifies permitting, rules, and environmental review processes for DNR & MPCA; eliminates the EQB & transfers duties to the MPCA and gives some duties to the CWC
1297	Bennett	Job Growth	275	Sparks	Cap Invest	\$1M bond proceeds to PFA for grant to Albert Lea for sewer and water infrastructure to serve the Stables neighborhood in the NW city limits
1317	Newberger	Job Growth -> laid over	1933	Mathews	Cap Invest	\$1.2M bond proceeds to PFA for Clear Lake-Clearwater Sewer Authority to remove/replace WWTF to control P discharges to the Mississippi River
1387	Newberger, Torkelson	ENRPF -> laid over	1290	Mathews	ENRP&LF -> ENRF	modifies groundwater appropriation permit requirements and well interference claim requirements
1433	Kresha, Torkelson	Gov Ops -> State Gov Finance	None	None	None	regulates rulemaking, reviews/peals EAW/EIS, restricts implementation and enforcement of policies/guidelines/statements; increases rule oversight; modifies notice requirements; requires impact analysis; modifies SONAR requirements
1441	Miller	ENRPF	1236	Lang	Cap Invest	\$3.2M bond proceeds to DNR for a flood hazard mitigation grant to Montevideo
1465	Torkelson	Transp & Reg Gov	1595	Newman	Transp F&P	provides for emergency preparedness for RR oil & haz mat spills
1466	Torkelson	ENRPF -> Taxes > laid over	1395	Westrom, Eken	ENRF -> gen ord	\$10M gen fund to Dept of Revenue to make payments to LGUs that assume jurisdiction for implementation and enforcement of the buffer law
1485	Ecklund	Legacy -> laid over	1360	Bakk, Ruud	ENRP&LF -> laid over	\$2M from CWF to MPCA for grants to LGUs for sanitary sewer projects included in the VNP Clean Water Comprehensive Plan to restore waters of VNP
1498	Loonan	ENRPF	1131	Hall	ENRF -> ENRP&LF	\$4.5M from CWF to BWSR to coordinate the development & implementation of goals and strategies for sediment, flow & nutrient reduction in the MN River Basin; with \$2M to local grants, \$2M to research, & 500K to BWSR for oversight
1528	Hamilton	Job Growth	1388	Weber	Cap Invest	\$1.4M bond proceeds to PFA for grant to Windom for WWTF improvements
1557	Drazkowski	ENRPF -> laid over	1351	Goggin	ENRP&LF -> laid over	When a court has ruled that there has been no violation of a wetland restoration or replacement, recording of the order on a deed is prohibited

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1568	Hoppe	ENRPF	1486	<i>Ruud</i>	Cap Invest	\$45M bond proceeds to BWSR for RIM and other conservation easements protecting wetlands and riparian lands & to restore rivers & their uplands to protect soil, WQ, & habitat and reduce flooding
1582	Marquart	ENRPF	1484	<i>Eken</i>	Cap Invest	\$16.19M bond proceeds to DNR for flood hazard mitigation grant to Buffalo-Red River WD
275	<i>Bly</i>	ENRPF	1269	Dibble	ENRP&LF	\$_____ gen fund to LCC to create Health and Climate Resiliency Commission to develop strategic plan, including an assessment of climate change implications on water quality & quantity and development of associated mitigation strategies
<i>None</i>	<i>None</i>	<i>None</i>	1283	Newman, <i>Eken</i>	ENRP&LF	MPCA must obtain legislative approval for WQ stds/rules if the financial impact to affected permittees is >\$50M or >\$5M for a single permittee within the 1st 5 yrs of implementation; stds/rules affecting WWTFs adopted on 1/2/14 are suspended until the cost analysis is completed
1687	Layman	Job Growth	1301	Eichorn	Cap Invest	\$1.7M bond proceeds to PFA for grant to Coleraine-Bovey-Taconite Joint Water Commission for sanitary and storm sewer improvements between those cities
1644	Pryor	ENRPF	1536	Eaton	Commerce	nonwoven personal care disposable products (i.e. "wipes") must not be advertised, packaged or labeled as flushable, septic safe, or sewer safe
1673	Fabian	ENRPF -> gen reg	1695	<i>Ruud</i>	ENRP & LF -> laid over	DNR game and fish bill; includes a change to 103G.411 re: stipulation of low water mark no longer requires approval of attorney general
1675	Green	Legacy	<i>None</i>	<i>None</i>	<i>None</i>	legacy funds can't be used to pay for statewide or agency indirect costs
1780	Fabian	ENRPF	1330	Johnson, <i>Eken</i>	Cap Invest	\$20M bond proceeds to DNR for flood hazard mitigation grants for capital improvements to prevent or alleviate flood damages
<i>None</i>	<i>None</i>	<i>None</i>	1349	Houesly, <i>Ruud</i>	ENRP & LF -> laid over	\$400K CWF to MPCA for coordination with WI & NPS on comp P reduction activities in MN portion of Lake St Croix, working with St Croix Basin Water Resources Planning Team & the St Croix River Assoc to implement the water monitoring and P reduction activities
2200	Schultz	ENRPF	1381	Simonson, <i>Ruud</i>	ENRP&LF	modifies mining policy to make DEED responsible for mineral research, exploration, development, production, and commercialization and DNR responsible for mineral evaluation, resource conservation & environmental protection
893	Dauids	Taxes -> laid over	726	Chamberlain	Taxes	Tax bill; includes provision for farmers to receive \$40/acre convertible to a public waters buffer
916	Hilstrom	Public Safety - Security P&F -> laid over	743	Eaton	Judiciary - Public Safety F&P	requires county sheriffs to maintain collection boxes for drugs
1796	<i>C Johnson, Bly</i>	ENRPF	1417	<i>Ruud</i>	ENRP&LF -> laid over -> SF865 (OEP) -> ENRF	establishes 25% water pollution reduction goal by 2025
2029	<i>Fischer</i>	Job Growth	1450	<i>Wiger</i>	Cap Invest	\$178K bond proceeds to DEED for grant to Willernie it improve sewers (& streets & city hall)
1863	Dettmer, <i>Fischer</i>	ENRPF -> laid over	1458	Chamberlain	ENRP&LF -> laid over -> SF865 (OEP) -> ENRF	modifies wetland replacement requirements by defining 80% wetland bank replacement areas
<i>None</i>	<i>None</i>	<i>None</i>	1462	<i>Lang</i>	Cap Invest	\$500K bond proceeds fund to DEED for grant to Lake Lillian to construct a water tower

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1807	Lueck	ENRPF	1482	Tomassoni	ENRP&LF -> laid over -> SF865 (OEP) -> ENRF	ENRP&LF -> laid over -> SF865 (OEP) -> ENRF	surplus wetland replacement credits obtained in association with a mining permit issued on/after 7/1/91 to may be used to off-set future mining-related wetland impacts under any permits to mine held by the permittee or their associates
None	None	None	1569	Westrom	None	ENRP&LF	At least 25% of OHF and CWF must be appropriated for buffer easement acquisition
None	None	None	1570	Westrom	None	ENRP&LF	buffer compliance deadlines extended by 2 yrs
None	None	None	1571	Westrom	None	ENRP&LF	\$20M CWF to BWSR for grants to SWCDs to reduce water pollution from rural lands via water conservation measures addressing local needs determined by farmer-led councils appointed by SWCDs
1717	P Anderson	Ag Policy -> gen reg	1674	Weber	Ag, RD & HP -> gen ord	Ag, RD & HP -> gen ord	Omnibus Ag bill; includes modification of MnStat Ch 18B provisions related to experimental pesticide use and treated seeds
1729	Fabian	ENRPF	1592	Ingebrigsten	ENRF	ENRF	\$400K gen fund to BWSR to negotiate draft agreements to negotiate draft agreements with EPA & ACE to assume administration of the CWA's Section 404 wetland permit program
1731	Torkelson	ENRPF -> Legacy -> laid over	1734	Ruud	ENRP&LF -> laid over	ENRP&LF -> laid over	\$220.514M CWF to MDA, PFA, MPCA, DNR, BWSR, MDH, Met Council, U of MN, LCC
1747	Wagenius	Transp & Reg Gov -> Gov Ops	1877	Torres-Ray	Local Govt	Local Govt	Met Council must not impose a sewer availability charge on a LGU for existing eating/drinking establishment due to expansion of outdoor seating unless the # of fixtures discharging to the sanitary sewer increase or the capacity of the pipes are increased; the charge must be proportionate to increase on demand
1813	Thissen	Legacy	1923	Hayden	ENRP&LF	ENRP&LF	when a recipient receives >\$25K in Legacy funding, they must prepare a disparities impact report to identify actions taken to decrease or not increase relevant disparities
1846	Thissen, Bly	Ed Innov -> amended to HF890 in Ed Fin -> taxes	None	None	None	None	MDH & MDE to develop a model plan to test for Pb in water in K-12 buildings, referencing EPA standards and MDH guidance; each ISD/charter school to adopt model plan or alternative by 7/1/18
1698	Fenton, Fischer	Health & HSR	1561	Nelson	Health & HS F&P	Health & HS F&P	MDH & MDE to develop a model plan to test for Pb in water in K-12 buildings, testing shall be done annually for the 1st 3 yrs and every 5 yrs thereafter
1939	Kresha	Job Growth	1584	Gazelka	Cap Invest	Cap Invest	\$3.6M bond proceeds to PFA WIF program for grant to Grey Eagle for wastewater system improvements
None	None	None	1646	Weber, Ruud	ENRF -> laid over	ENRF -> laid over	\$300K gen fund to MPCA for a grant to Shell Rock River WD for a pilot project for a water quality credit trading program for stormwater
None	None	None	1647	Weber, Ruud	ENRF -> laid over	ENRF -> laid over	\$300K CWF to MPCA for a grant to Shell Rock River WD for a pilot project for a water quality credit trading program for stormwater
1943	Nelson	Transp & Reg Gov	None	None	None	None	reenacts sewer availability charge transfer provisions of MnStat 473.517; clarifies application to 7 metro counties
1994	Torkelson, Gruenhagen	ENRPF -> Ag Pol -> ENRPF	1693	Weber	ENRP&LF -> gen ord	ENRP&LF -> gen ord	modifies buffer law, limiting APO authority to BWSR, 50' buffer applies to public waters with shoreland classification; 16.5' to those without and to public ditches; extends compliance date for both to 11/1/18; enforcement can only occur if 100% of cost to establish buffers is provided

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2028	Fischer, Torkelson, C Johnson	ENRPF -> laid over	1731	Ruud, Wiger	ENRP&LF -> laid over -> SF865 (OEP) -> ENRF	exempts stormwater reuse projects from water-use permit requirements
1949	Sundin, C Johnson	Civil Law	None	None	None	provides for abandonment of pipelines in a manner that protects water quality
1977	Ecklund	Job Growth	1740	Bakk	Cap Invest	\$1.3M bond proceeds to DEED for grant to Ely for sewer, water, et al infrastructure for business & industrial parks and Vermillion Community College
1986	Bernardy	Legacy -> laid over	1992	Laine, Wiger	ENRP&LF	\$15K CWF to DNR for grant to New Brighton for aquatic invasive species control & education
1987	Bernardy	ENRPF	1993	Laine	ENRF	\$900K gen fund to DNR for grants to LGUs & lake associations to control invasive plants under an invasive aquatic plant management permit
2015	Gunther	ENRPF	1952	Rosen	ENRP&LF	DNR must waive the limits for appropriations from water basins serving as the primary municipal water supply source if the basin volume has been increased >20% or the basin watershed is >10 sq mi
2228	Becker-Finn	Job Growth	None	None	None	no portion of a pipeline may be constructed or rerouted within 1 mi of a wild rice water
2283	Hausman	ENRPF	2204	Eaton	ENRP&LF	DNR can't issue permit to mine a sulfide ore body until it verifies an example mine has operated or been closed for 10 yrs without water pollution
2292	Gruenhagen	ENRPF	2040	Newman	ENRP&LF	nonwoven disposable products for sale in MN can't be advertised, packaged or labeled as septic or sewer safe unless it meets the associated definition; several exceptions apply
2301	Lueck	Higher Ed	2103	Tomassoni	ENRF -> laid over	\$1M in 2018, \$3M in 2019 and each yr thereafter from bond proceeds to the DNR to transfer to the U of MN Bd of Regents for the Natural Resources Research Institute for ops, maintenance, research and staff for applied research in water and other key areas
2411	Lueck	ENRPF	2031	Ruud	ENRF	\$3M gen fund to DNR for U's MN Aquatic Invasive Species Research Center for solutions to reduce aquatic invasive species impacts
2400	P Anderson	ENRPF	2160	Westrom	Ag, Rural Dev	establishes riparian-buffer compensation program; \$11K FY18, \$434K FY19 from general fund to DOR for administration; \$286K to DOR base budget for FY20-21
2417	Hamilton	ENRPF	2114	Weber	ENRF	\$5M gen fund to MPCA for grants to delegated counties to administer the county feedlot program
1752	Torkelson	ENRPF	1542	Dziedzic	ENRF -> taxes	establishes riparian-buffer compensation program; \$11K FY18, \$434K FY19 from general fund to DOR for administration; \$286K to DOR base budget for FY20-21
1711	Loonan	Taxes -> property taxes	1368	Pratt	Taxes -> laid over	modifies the definition of agricultural purpose to include local conservation programs
1483	B Johnson	ENRPF	865	Ruud	ENRP&LF -> ENRF	modifies blaze orange hunting requirements to allow for blaze pink; amended in the Senate to become the OMNIBUS ENVIRONMENT POLICY BILL
2384	Hausman, Fischer, C Johnson	Cap Invest	2154	Pappas	Cap Invest	Capital Investment bill

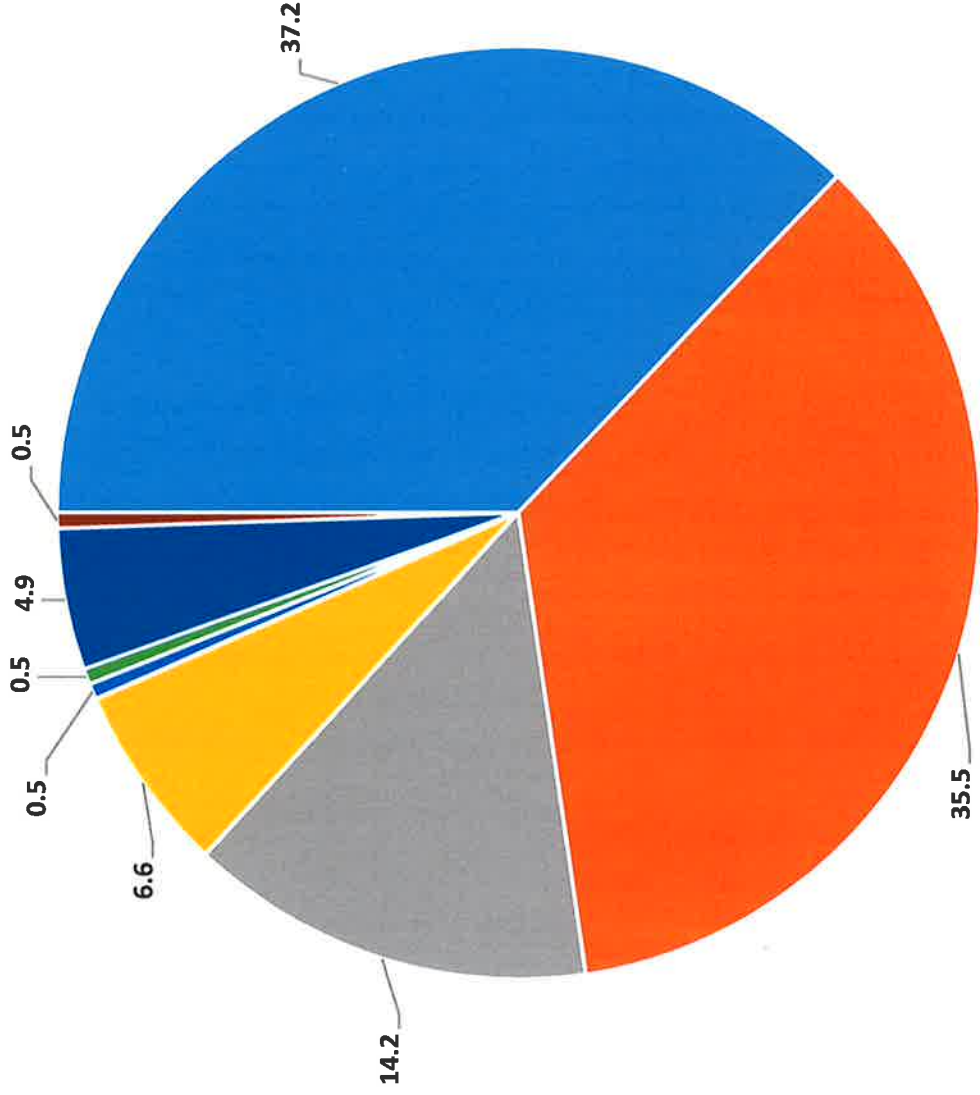
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2432	C Johnson	ENRPF	None	None	None	affected party may ask SWCD to make a determination on whether an alternative practice would meet the applicable buffer requirements; 90 day lead time needed to avoid noncompliance findings
2446	Newberger	ENRPF	2239	Mathews	ENRF	\$250K gen fund to DNR to compensate hydroelectric facilities impacted by Little Rock Lake-Sartell Pool drawdown project
2456	Baker	Taxes	None	None	None	allows watershed districts to levy taxes to pay for projects funded by grants or loans
None	None	None	2217	Dibble	Transp F&P	pipeline companies excavating a pipe segment for inspection must notify MPCA and DPS and provide notice of any contamination found during the inspection
None	None	None	2219	Osmek	ENRF	\$100K CWF in FY2018 to DNR for grant to MN Clean Marina Program for ed and tech assistance on reducing marina and boating impacts on waters and shoreline environments
None	None	None	2234	Utke, Eken	Jobs	\$1.282M gen fund to PFA for grant to Mahnomen to improve city's water infrastructure; this grant not subject to the PPL

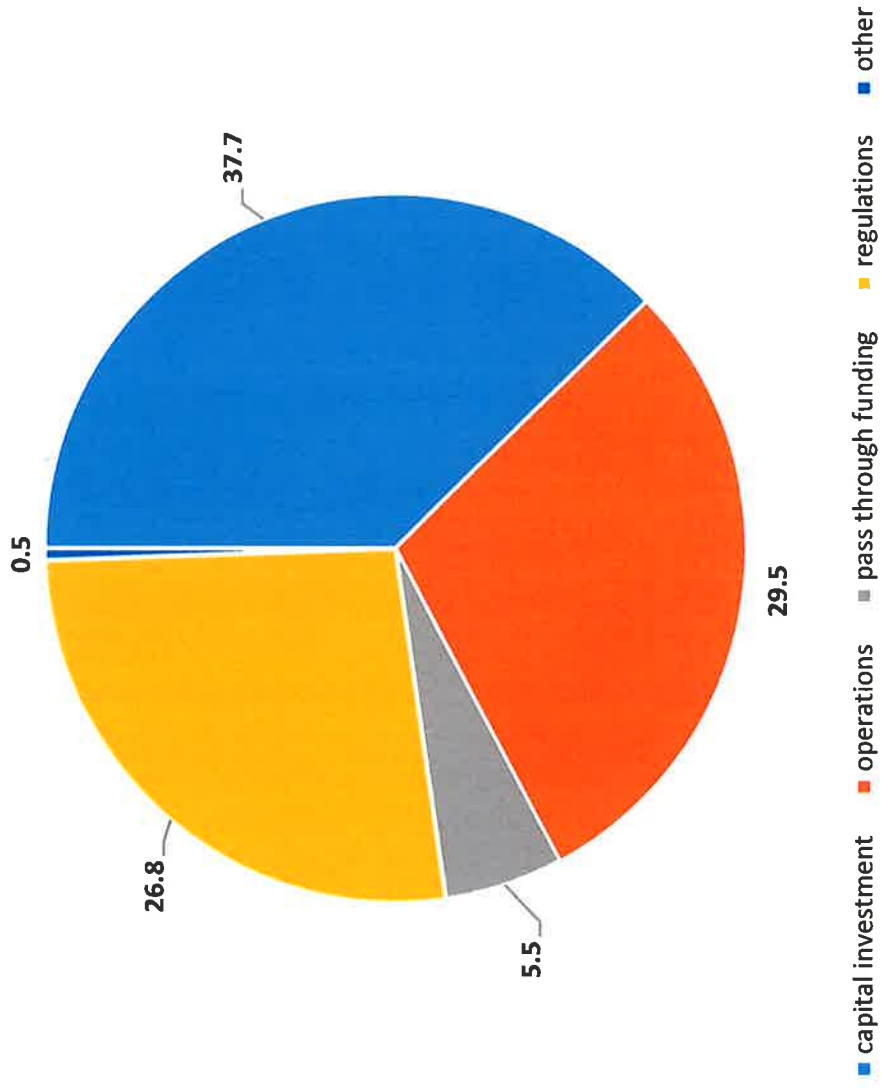
% of water bill rows in each funding category

as of 3/23/17

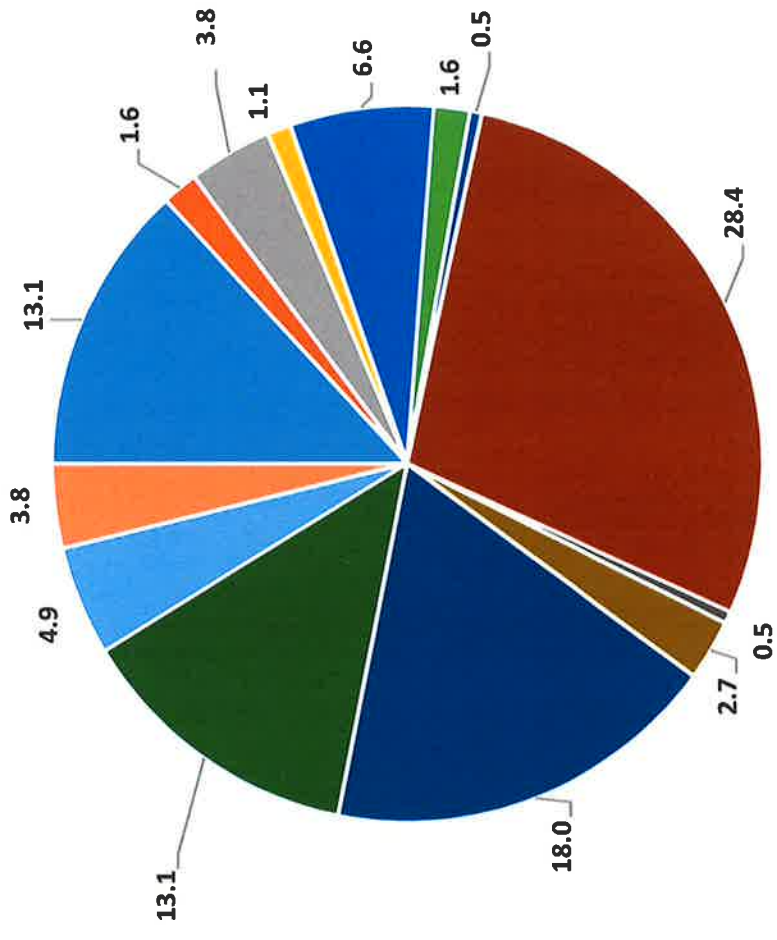


■ no appropriation ■ bonding ■ general fund ■ clean water fund ■ lottery fund ■ outdoor heritage fund ■ multiple funds/bill ■ not specified

% of water bill rows by category
as of 3/23/17



% of bill rows by water target
as of 3/23/17



- administration
- agriculture
- dams
- education
- flooding
- groundwater
- invasive species
- multiple
- ports
- stormwater
- surface water
- wastewater
- wastewater supply
- wetlands

Collaborative for Sediment Source Reduction – Greater Blue Earth River Basin Summary of Findings

The Collaborative for Sediment Source Reduction (CSSR) was a five-year effort to evaluate strategies for sediment source reduction in the Greater Blue Earth River Basin. With support from local, state, agribusiness, and environmental organizations, a diverse stakeholder group met nine times to evaluate watershed strategies for reducing sediment loading to the Minnesota River and beyond.

CSSR Goal: *To identify a strategy for reducing sediment loading in the Greater Blue Earth watershed using a decision framework that incorporates the best available scientific information, accounts for uncertainty, and provides a model for decision making throughout the Minnesota River Basin. We hope that the strategy developed will be effective, cost-efficient, fair, and supported by all stakeholders.*

There are numerous reasons to be concerned about sediment loading from the Blue Earth River Basin. The Minnesota River and many of its tributaries, including the Blue Earth, are known to be impaired for suspended solids. This causes problems downstream. Sediment causes deposition problems on the lower Minnesota River, degrades water quality in the Mississippi River, and increases the rate at which Lake Pepin is filling. Although the Minnesota River delivers only about one-third of the water to the Mississippi River and Lake Pepin, it delivers more than two-thirds of the sediment. The largest source of sediment to the Minnesota River is the Blue Earth River Basin, which includes the Watonwan and Le Sueur Rivers.

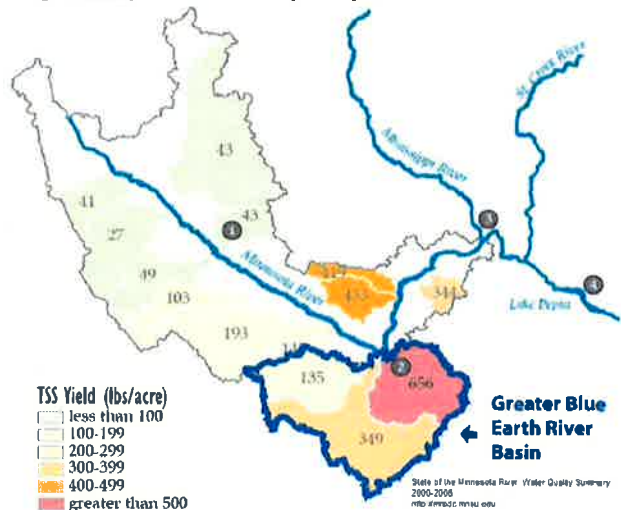
The citizens of Minnesota are committing considerable public funding to improve water quality in the Minnesota River, particularly with the passage of the 2008 Clean Water Land and Legacy Amendment. It is important that these funds are spent effectively, such that the benefit of cleaner water is realized for all. In terms of sediment and turbidity, that means we need to identify the most cost-effective conservation practices and locations for reducing excess soil and sediment erosion, along with associated phosphorus. We also need to think more broadly in order to set priorities for conservation investment throughout the watershed.

The Collaborative for Sediment Source Reduction (CSSR) was launched with the goal of developing an agreed-upon strategy for reducing sediment delivery from the Blue Earth River Basin. At the heart of CSSR was a group of local, state, and industry stakeholders with whom we developed a model to forecast changes in sediment loading in response to different combinations of conservation practices. Combined with information on the cost and effectiveness of different management options, the group used the model to evaluate watershed strategies for reducing sediment loading.

In addition to identifying the best methods and locations for reducing excess erosion and sediment delivery, solving the loading problem depends on a shared understanding of the issues among stakeholders, including farmers, producer groups, conservation groups, and regulatory agencies. CSSR provided a forum for different interests to work together to evaluate different conservation strategies. We focused on understanding how the landscape works, rather than assigning responsibility for its current condition or tackling the social challenges of funding and implementation. We hoped that a common understanding would lead to an agreed-upon strategy that would drive action to address this important problem. The watershed is large and there were many considerations. A key question concerned the best balance between directly reducing erosion of local sources (fields, ravines, streambanks, and bluffs) and indirectly reducing erosion by controlling runoff and reducing high river flows.

Total Suspended Solids

Average Total Suspended Solid Yield in pounds per acre



CSSR Findings

A final CSSR workshop was held on March 7, 2017 at Minnesota State University in Mankato, Minn. The meeting included stakeholders who had participated throughout the five year project, as well as invited attendees who broadened the perspective and experience of the group. After a recap of the primary findings of the supporting research, the group explored different conservation scenarios with the simulation model and discussed the outcomes. The meeting concluded with a discussion of findings, reported here.

Some ravines produce very large amounts of sediment from a small area. Conservation practices that reduce flow and erosion from ravines are among the most cost-effective. A range of practices can be considered, including water storage and stabilization at ravine tips and stabilization and revegetation within ravines with a large amount of stored sediment. Although ravines are locally prolific sources of sediment, their number is not large enough to account for more than about 10% of the sediment loading to the Blue Earth River and its tributaries.

Ravines that are large local sources of sediment can be targeted. Investment in stabilizing these ravines is worthwhile, but not sufficient to reduce sediment loading to meet water quality standards.

A solution to the sediment loading problem must address the largest source of sediment: the steep bluffs along the incised lower portions of the Blue Earth River Basin. Bluffs contribute about 60% of the sediment delivered from the watershed to the Minnesota River. Sediment loss from bluffs can be reduced by mechanically stabilizing the bluff toe or by reducing the frequency and magnitude of flood flows that erode the bluff. Either of these approaches may be cost effective, although other factors must also be considered. For example, toe stabilization, like any engineered solution, will have a limited lifespan. Also, the river channel may shift away from a protected bluff and initiate erosion elsewhere. Some bluffs are relatively inaccessible, making construction work difficult. Bluff protection may be worthwhile in specific locations, particularly where homes or roads and bridges are threatened by rapid bluff retreat, but it is neither desirable nor feasible to address sediment supply from bluff erosion through mechanical protection alone.

Eroding bluffs that threaten infrastructure and produce exceptionally large amounts of sediment can be targeted. Investment in stabilizing these bluffs is worthwhile, but bluff stabilization is not the most effective solution for long-term reduction in sediment loading across the watershed.

Although targeted treatment of particularly erosive ravines and bluffs is worthwhile, water management actions that reduce peak river flows offer a potentially long-term solution that targets the cause of the problem. Sediment erosion from persistently higher flood flows produces the majority of the elevated sediment supply. Water storage for reducing high flows is most likely to be effective when placed in upland areas above the lower, incised parts of the watershed. Water storage (including short and longer term detention) can include a wide range of practices, including wetland restoration and various types of detention basins and impoundments. Cover crops, winter annual crops, and perennials can also contribute to flow reductions. Many water storage practices also offer other benefits, such as increased wildlife habitat and nutrient load reduction.

Achieving water quality standards will require priority investment in more temporary water storage to reduce high river flows and bluff erosion. This is a critical component of a strategy to reduce sediment in the Minnesota River.

Optimism was expressed at the final workshop that many within the agricultural community may be open to water storage practices, especially when activities that increase water holding capacity of productive farmlands are combined with targeted practices such as storage basins and wetlands. It is now possible to evaluate the effects of upstream water storage on downstream erosion and to target conservation practices with more precision. It was stressed that implementation plans should support precision targeting and streamlined coordination among agencies and with front-line practitioners in order to direct conservation investment to the most promising and effective locations.

