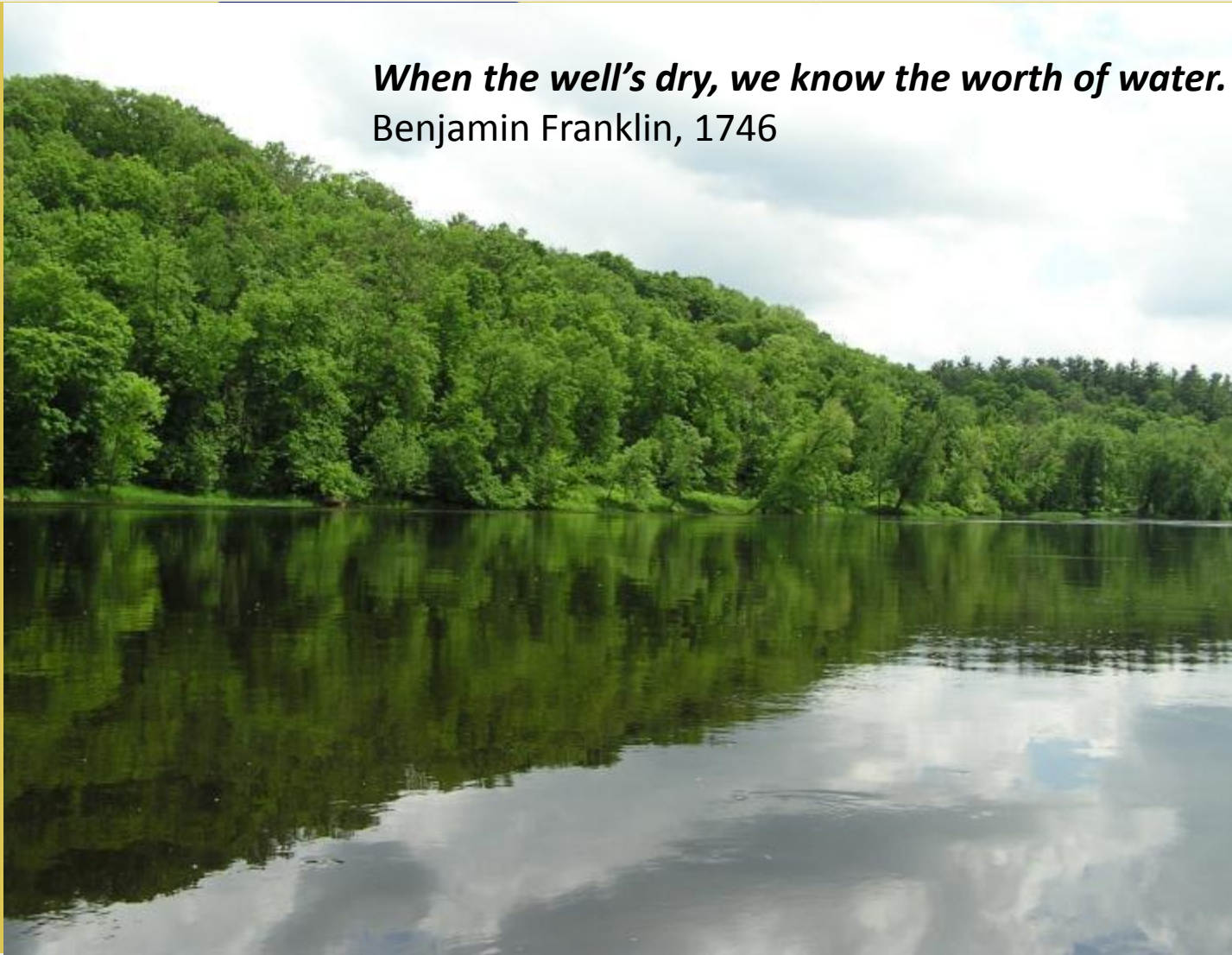


When the well's dry, we know the worth of water.
Benjamin Franklin, 1746



DNR 2015

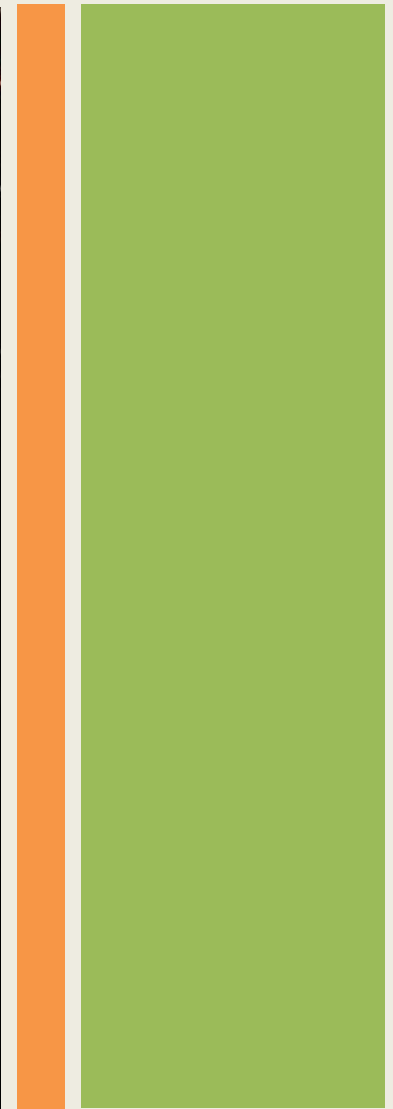
Local Water Supply Plans



Overview

1. MN Water Use & Permitting
2. Purpose of Local Water Supply Plans
3. Demand Reduction Measures – Jan. 2015
4. White Bear Lake & GWMA's
5. Future Efforts





Water Appropriation Permitting



History of Water Management

- 1937 law established water policy for the state
- DNR permit program created to regulate water use
- Permit program is to balance development and protection

DNR's Water Appropriation Program

- Permit >10,000 gpd or 1,000,000 gpy
- Both surface water & groundwater
- Goal of sustainable water resource management is to balance competing objectives
 - economic development
 - recreational use
 - natural resource protections





Who Needs a Permit

More than 1 million gallons per year = permit from the DNR

- Municipal water suppliers
- Agricultural Irrigation
- Golf Course, Landscape, Ballfields
- Industrial, Ethanol, Mining, Pulp Processing
- Power generation (primarily surface water)

Less than 1 million gallons per year or 10,000 gallons per day:

= No permit required

- majority of private wells

How much is 10,000 gpd?

Always!



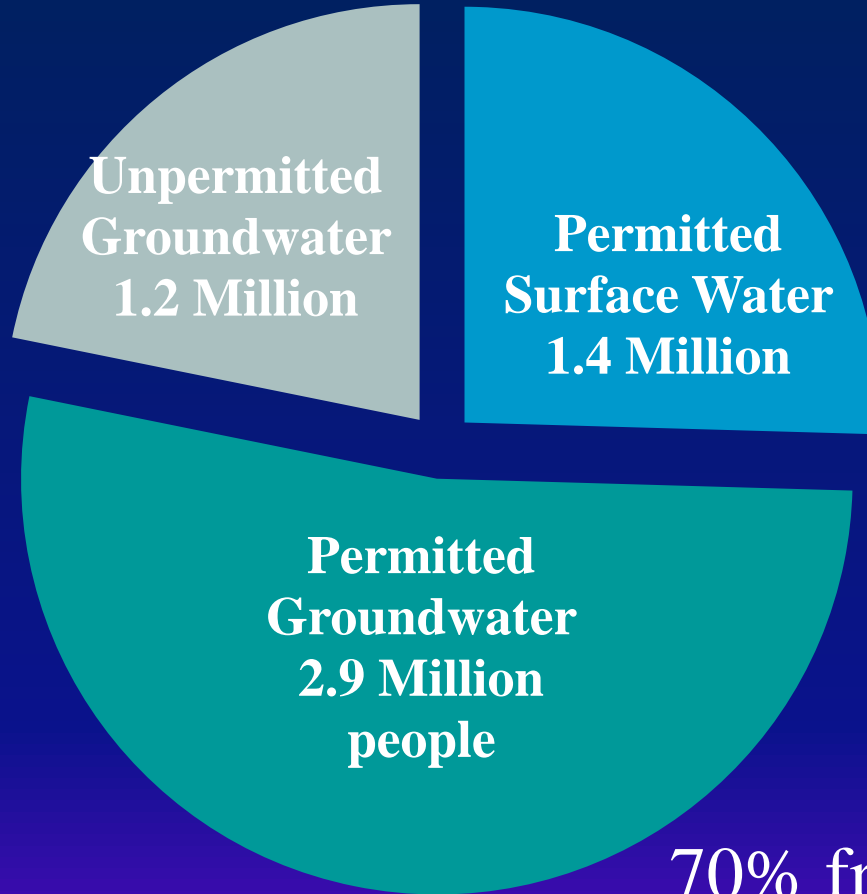
How much water does the average household use in a year?

Roughly 70,000 gallons

No DNR Appropriation Permit Needed



Drinking Water Sources in Minnesota

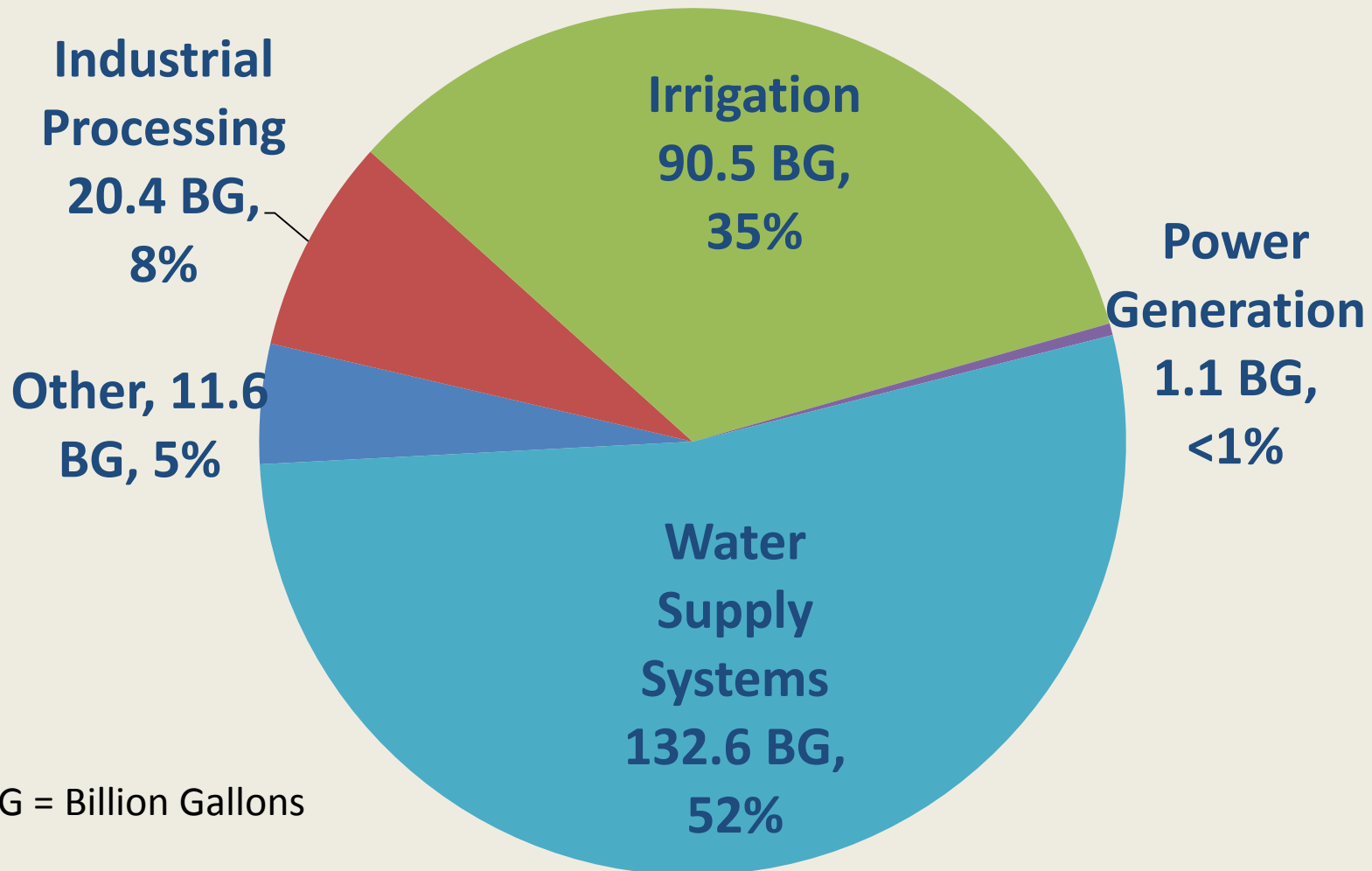


70% from groundwater
30% from surface water
FY 2015

Groundwater Use Percentages

By Major Category

5 Yr. Avg. from '10- '14





DNR Responsibility...

Statute 103G.287

When establishing limits DNR must consider the sustainability of the resource, including:

- Current and projected water levels
- Water quality
- Protect ecosystems
- Future generations to meet their needs

Overview of water appropriation permits

- Over 9,000 active permits
- 6,700 are for agricultural irrigation
- 7,686 use groundwater
- 1,187 use surface water
- 213 use both



How is a Permit Maintained?

- Annual reporting of monthly water use & metering to 10% accuracy
 - Meters
 - Timing devices
 - Weirs, flumes, etc.
- Annual water use fees
- Amendments/transfers/terminations as needed



Permitting Priorities

- DNR implements stronger sustainability laws when granting permits
- Our messaging and decisions will incorporate water conservation concepts into our work, our words and our direction
- Use will not harm ecosystems, degrade water, or reduce water levels beyond the reach of public water supply and private domestic wells





M.S. 103G291

Local Water Supply Planning

Statutory Purpose of WSP

Plan must address:

- Projected demands
- Adequacy of the water supply system
- Planned improvements
- Existing and future water sources
- Natural resource impacts or limitations
- Emergency preparedness
- Water conservation
- Supply and demand reduction measures
- Allocation priorities





Local Water Supply Plans

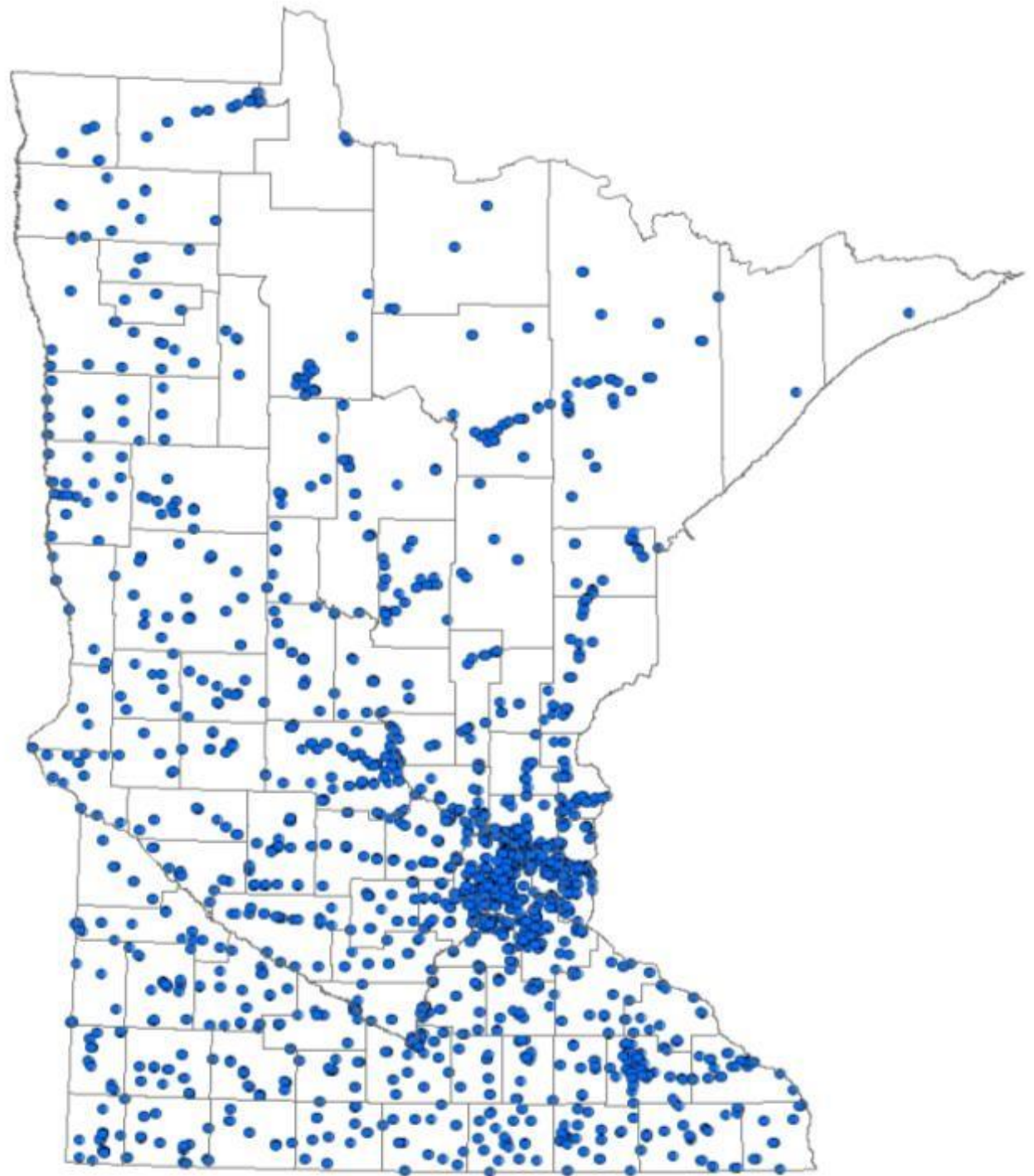
- Local Water Supply Plans will be due 2016-2018
- Communities over 1,000 people & all Metro
- These are completed every 10 years – last ones were 2006-2008
- Template has 4 parts – inventory, emergency planning, water conservation & metropolitan area (when relevant)



Benefits of WSP

- Helps water suppliers prepare for droughts and water emergencies
- Creates eligibility for MDH Drinking Water Revolving Fund
- Can submit request to DNR for new wells or expanded capacity
- Fulfills the contingency plan provision required in MDH wellhead protection plans
- Fulfills the demand reduction requirement of MS 103G.291 subds 3 & 4

360
Community
Water
Supply
Wells



WSP – A Pathway Forward

- 127 plans due 2016
- 132 plans due 2017
- 97 plans due 2018

TOTAL WSP PLANS 356



What's New – Water Supply Plans



- Stronger conservation measures
- Easier to complete
- Plans submitted through MNDNR Permitting And Reporting System-MPARS
- Meet with clusters of communities
- Part IV – reflects Met Council Master Water Supply Plan



103G.291 Water Supply Plans “the commissioner of natural resources and the water supplier shall use a collaborative process to achieve demand reduction measures as a part of a water supply plan review process.”

Water Supply Plan Workshops



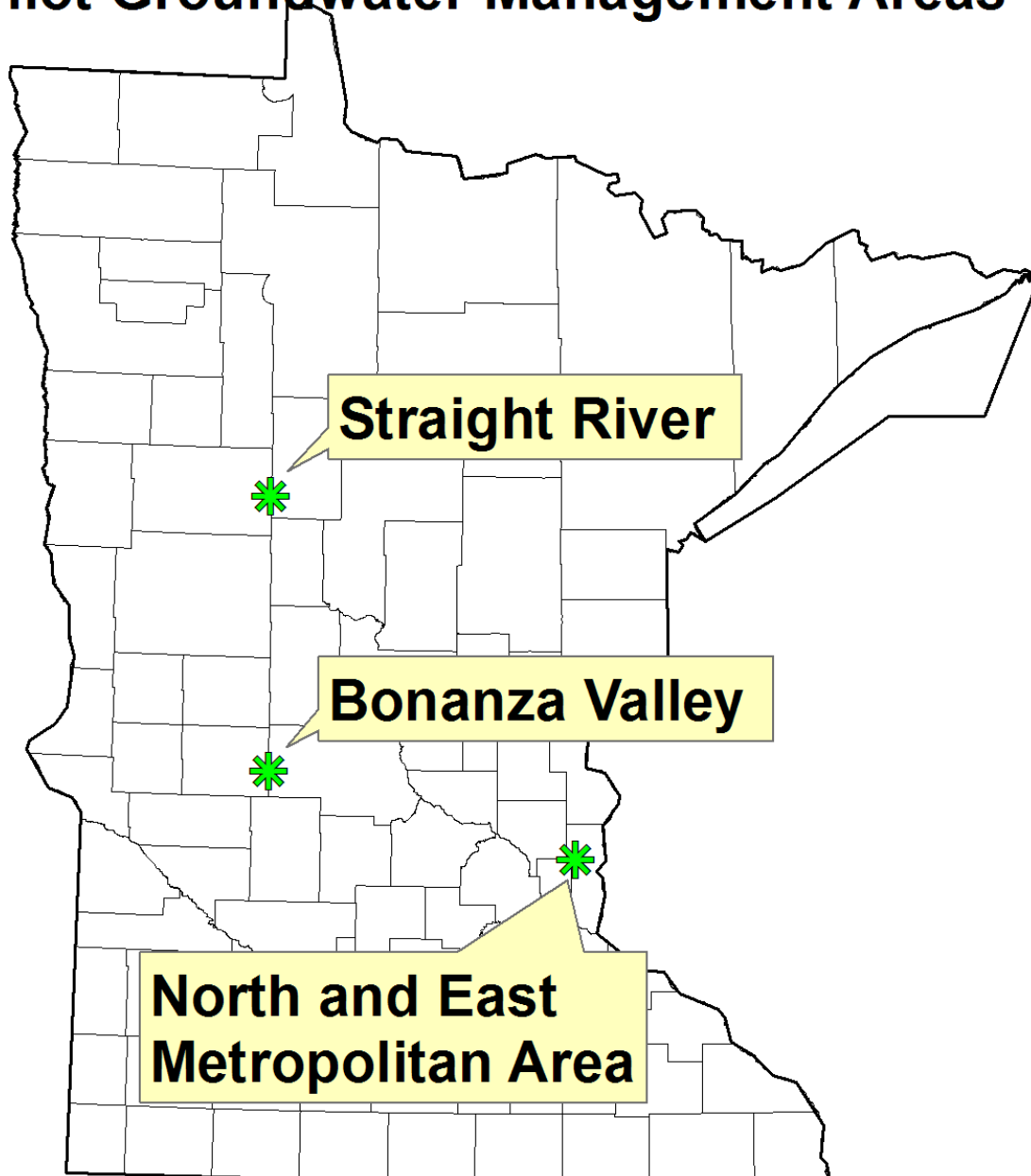
Sept. 29- Nov. 6

- White Bear Lake
- Woodbury
- Blaine
- Lakeville
- Monticello
- Brainerd
- Duluth
- Carlton
- Moorhead
- Glenwood
- Park Rapids
- Mankato
- Gaylord
- Worthington

Comments from Workshops

- Workshops have been very helpful
- Provided a lot of good resources
- Good to meet staff
- Appreciate the cooperation with DNR & Met Council
- Would like to have more well monitoring in their area
- Concerns about private wells inside city limits
- Need funding to pay for infrastructure improvements & leak repairs
- Dislike summer use penalty when it is for flushing hydrants – a BMP

Minnesota DNR Pilot Groundwater Management Areas



What's New – Demand Reduction

- As of Jan. 15, 2015 all public water suppliers serving over 1,000 people must implement Demand Reduction Measures.
- Cannot construct a new well or request an increase in appropriations without these measures in place.

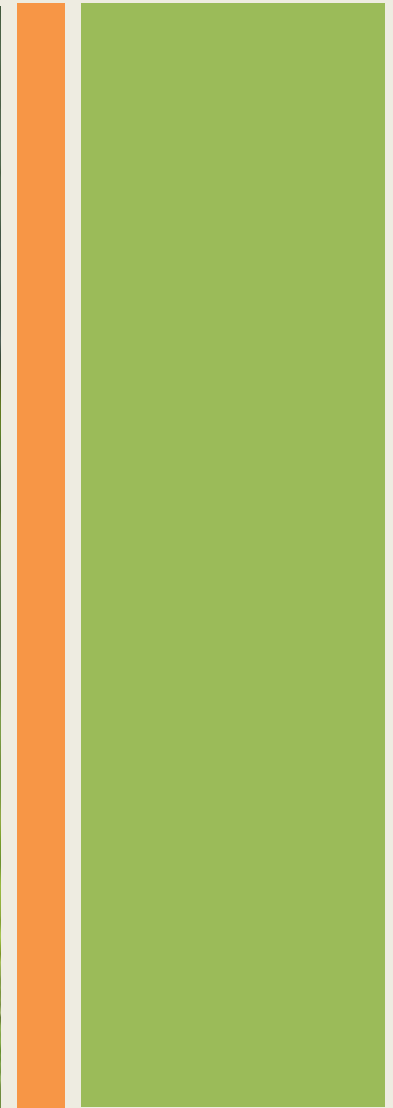


Completing the WSP template fulfills this law

Annual Reporting Requirement

Public water suppliers serving more than 1,000 people must submit records that indicate the number of connections and amount of use by customer category and volume of water unaccounted for with the annual report of water use required under section [103G.281, subdivision 3.](#)





Demand Reduction Measures



What are Demand Reduction Measures?

- Reduce water loss – supply side
- Reduce water demand
- Reduce peak demand
- Reduce nonessential use

Supply Side Conservation

The WSP Template established 8 Conservation Objectives

1. Reduce unaccounted (non-revenue) water loss to less than 10%

By improved metering, calibration, water audits & leak detection, and system upgrades



Demand Side Conservation

2. Achieve less than 75 gpcd
3. Achieve 15% reduction for institutional, industrial, commercial & agricultural



Demand Side Conservation

4. Achieve a decreasing trend in per capita demand
5. Reduce peak day demand to less than 2.6



- Smart controllers in a typical summer will reduce water use by 30%-50%
- Just changing the spray nozzle to new efficient models can reduce water use by 40%

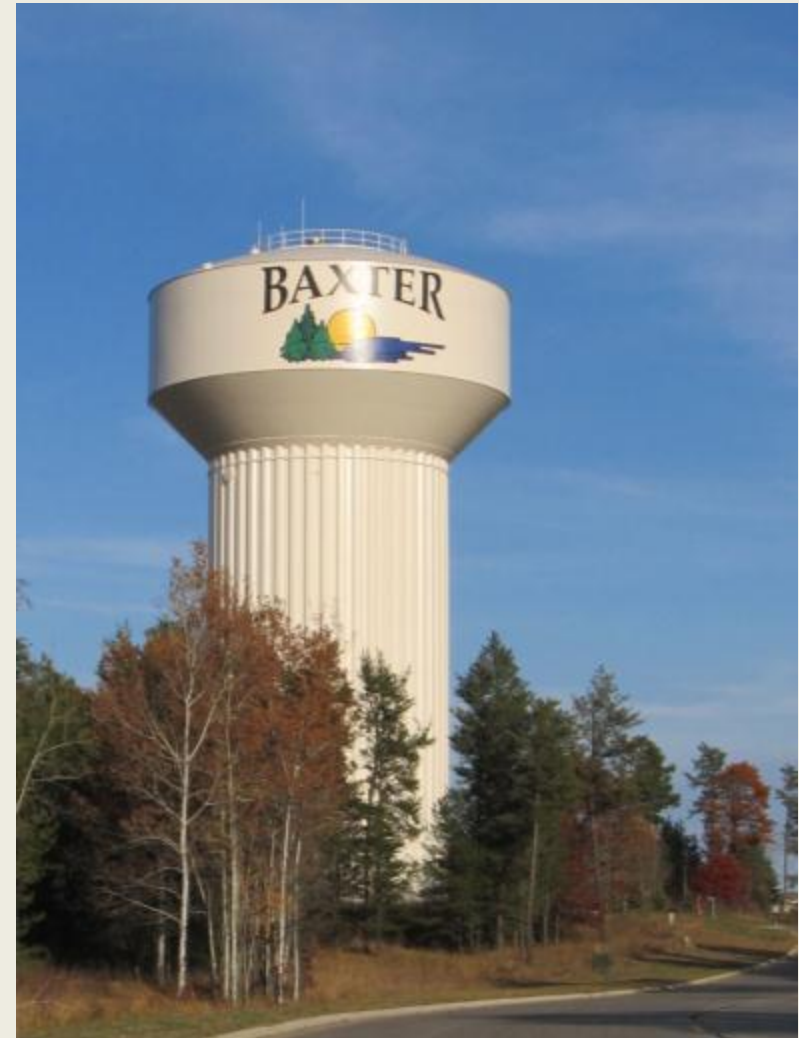
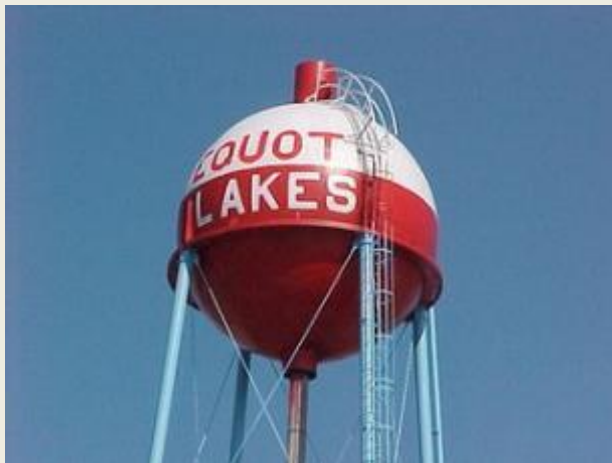


6. Demand reduction measures must include:

- A Water Conservation Rate Structure OR
- A Uniform Rate Structure *WITH* a conservation program
- By completing this plan, they will have a conservation program

Additional Supply & Demand Objectives

7. Additional strategies to reduce water use and support wellhead protection
8. Tracking success in next ten years



WSP Review Process

- Plan submitted to MPARS sends notice to hydrologist
- Forwards to Met Council if appropriate
- Use checklist for completeness & consistency
- One joint letter of approval or changes
- Goal of approval in one year
- Certificate of Adoption



Implementation



Goal is to contact the water suppliers within 2-3 years of completing their water supply plan, to informally assess how conservation measures are working.

How will DNR use the information submitted in these plans?

Currently to create eligibility for:

- New well requests
- Requesting expanded capacity of existing wells
- Funding requests to the MN Department of Health (MDH) for the Drinking Water Revolving Fund
- A DNR approved WSP does not guarantee approval of the above requests



Rainwater Harvesting System Sustain with Rain

Project Description

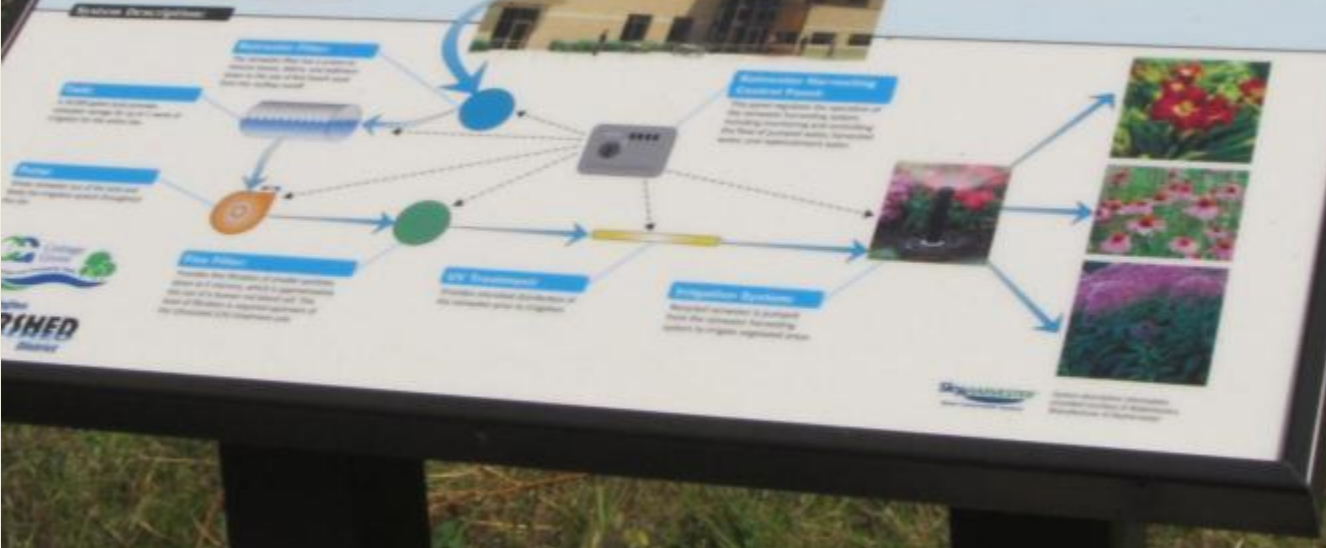
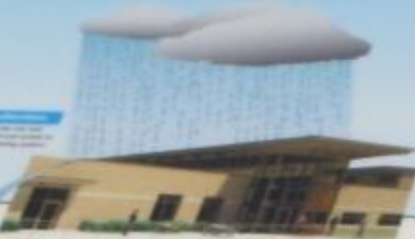
The Rainwater Harvesting System (RHS) is a sustainable water management system designed to capture and store rainwater for use in various applications. This system is a key component of the University of Maryland's commitment to environmental stewardship and resource conservation. The RHS is designed to capture rainwater from the roof of the building and store it in a large underground storage tank. The water is then filtered and treated before being used for irrigation, flushing toilets, and other non-potable uses. This system helps to reduce the demand on the city's water supply and provides a sustainable source of water for the building's operations.

Key Features

- Captures rainwater from the roof of the building
- Stores water in a large underground storage tank
- Filters and treats water before use
- Provides a sustainable source of water for irrigation and other non-potable uses

Rainwater Harvesting System Goals

- Water Conservation**
 - Save up to 30% of water used for irrigation and other non-potable uses
 - Reduce the city's annual water usage by up to 100,000 gallons
 - Reduce the need for groundwater extraction at City Hall by up to 20% annually
- Cost Reduction Goals**
 - Reduce water bills by up to 20% annually
 - Reduce the need for water treatment and distribution
 - Reduce the need for water treatment and distribution
 - Reduce the need for water treatment and distribution



Future Efforts

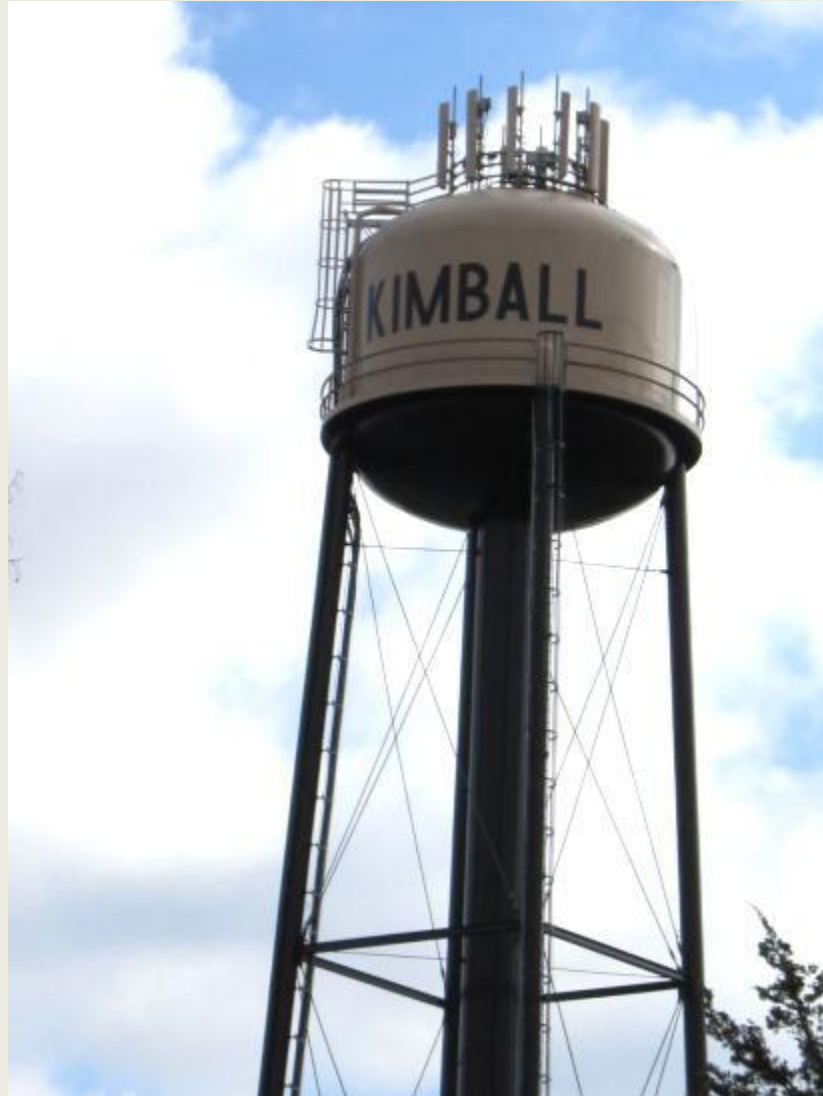
Collaborating for Conservation

- Metropolitan Council
- PCA – GreenStep Cities
- Freshwater Society
- Groundwater Management Areas
- BWSR/SWCD
- MN Rural Water Association
- U of MN
- MDH
- MDA
- League of MN Cities
- MN American Water Works Association
- Many others



Future Efforts –

Provide small towns an EZ template



Future Efforts – Working with Agriculture & Other Sectors



Drought Planning

- Includes members from:
 - State agencies
 - University
 - Federal partners
 - Local government
 - Business sector
- Convened April, August & October 2012
- Previously convened in 2006 & 2007

Lake Bella, close to Worthington, October 2012

Start with Carrots

Three Key Strategies:

1. Encourage rebates and subsidies for water conservation with concrete benefits to firms and households.
2. Focus on direct standards and policy for water suppliers, commercial and industry users (rather than broad, shallow ones)
3. Support water conservation technology and industries



One Example of Incentives: Metropolitan Council Water Efficiency Grant Program



Education and Outreach



RACE 2 REDUCE
BECAUSE WATER MATTERS

Race 2 Reduce, implemented by local non-profit H2O for Life, introduces targeted classroom and after-school activities to K-12 students in the White Bear Lake and Malmgren school districts, to educate students about local water resources and introduce water conservation into the community through youth as leaders of change.

2,155 students and 870 adult educators/community members have been engaged in Race 2 Reduce educational programs during year one.

As a key leader in implementing the educational programs of the Race 2 Reduce new community collaborative on water resources and conservation, I have developed the program in the White Bear Lake, MN area. In the launch of the Race 2 Reduce initiative, I have worked with the school districts and the community to implement programs in an effective and sustainable manner; taught programs on aquifers groundwater and water conservation, facilitated clubs for students to take action to protect local water resources, performed community outreach and stakeholder development, and given students the means to be leaders of change for community water use behaviors in the future. Finally, I worked to create a replicable model for educational programs that other communities state and nation-wide can use to address water resource issues.

By the numbers:

- 761 — commitments to change behaviors
- 241 — student entries for Poster Contest
- 92 — social media posts
- 78 — training, resource, educational, and outreach materials created
- 17 — schools engaged
- 15 — blogs and electronic newsletters
- 14 — best management practices for saving water implemented
- 11 print and 2 cable spots received
- 1 — Minnesota GreenCorps Living Green Member

Water Conservation Toolbox

A tapestry of programs to reach all ages and interests.

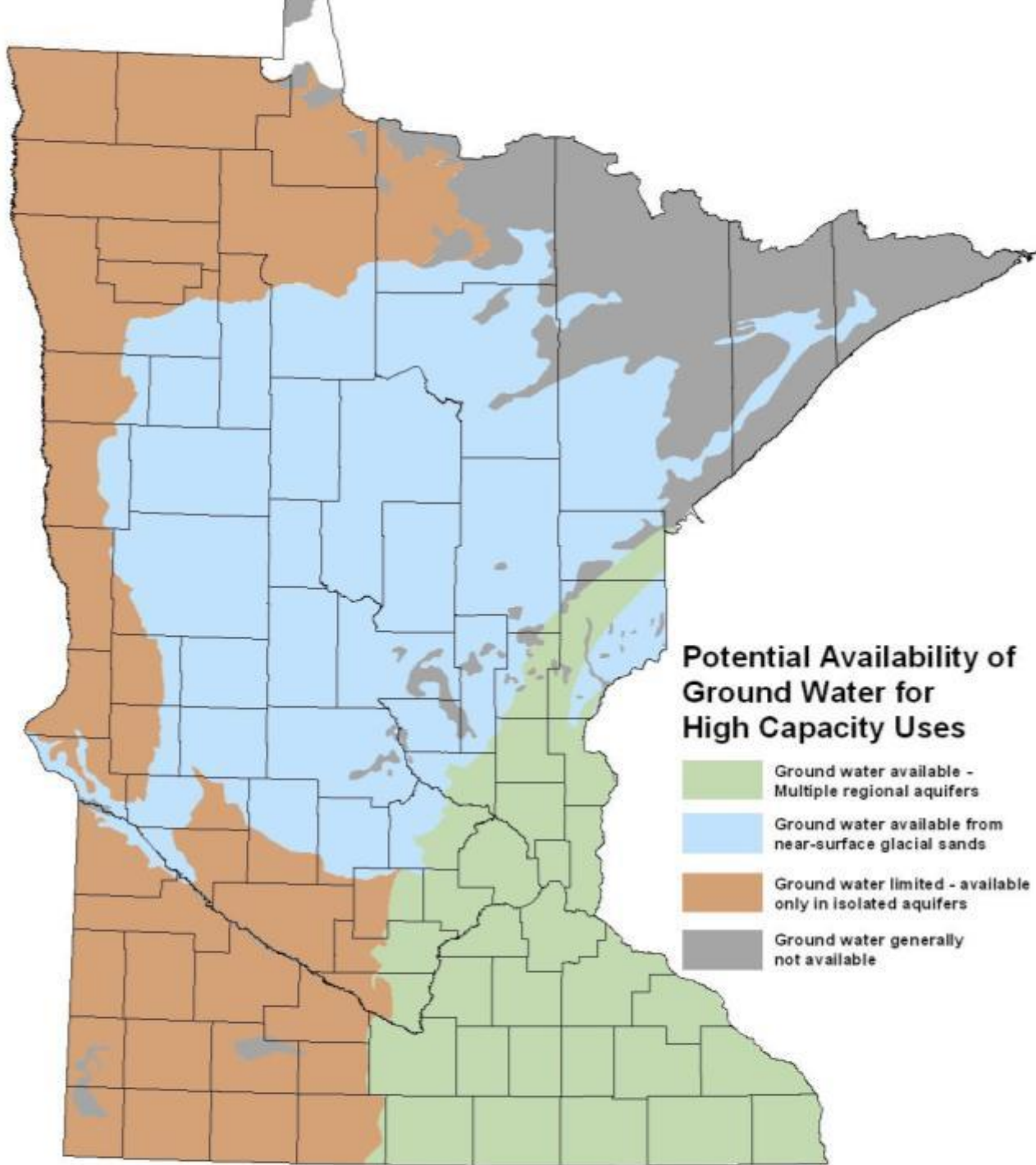
We all need water. We all need to be mindful of how we use water.



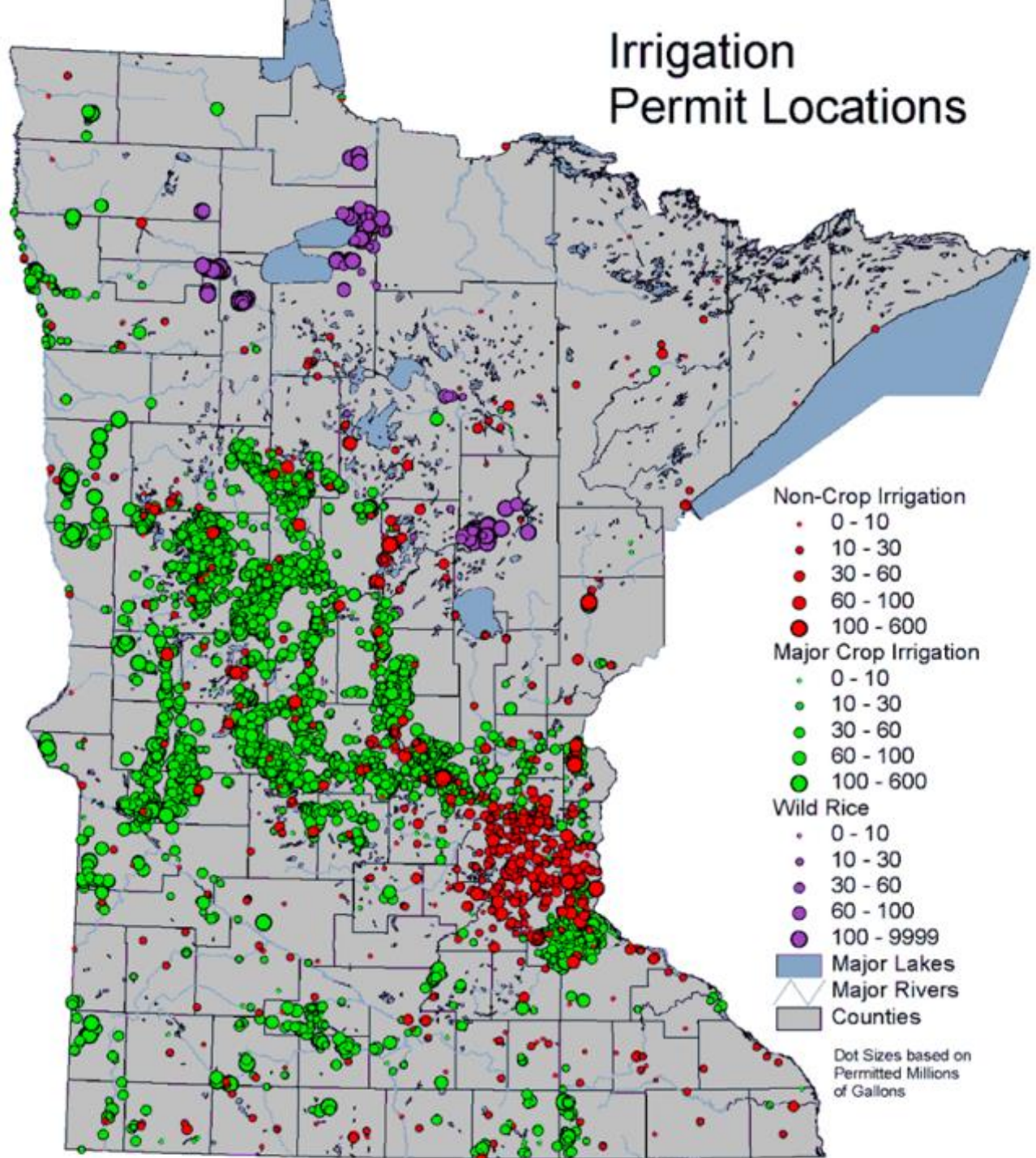
Using Minnesota's water resources wisely will require the concerted effort of all citizens.



Thank You!



Irrigation Permits



Ground Water Contamination Susceptibility in Minnesota

Minnesota Pollution Control Agency
1989

