



Wisconsin Water Star Focus on Groundwater

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Rock River Coalition
March 31, 2010



*Guiding, inspiring
and recognizing
municipalities for
exemplary efforts in:*

- **Surface Water**
- **Groundwater**
- **Recreation**



- ★ **GOLD** Water Star Community
- ★ **SILVER** Water Star Community
- ★ **BRONZE** Water Star Community

after April 22, 2010 at

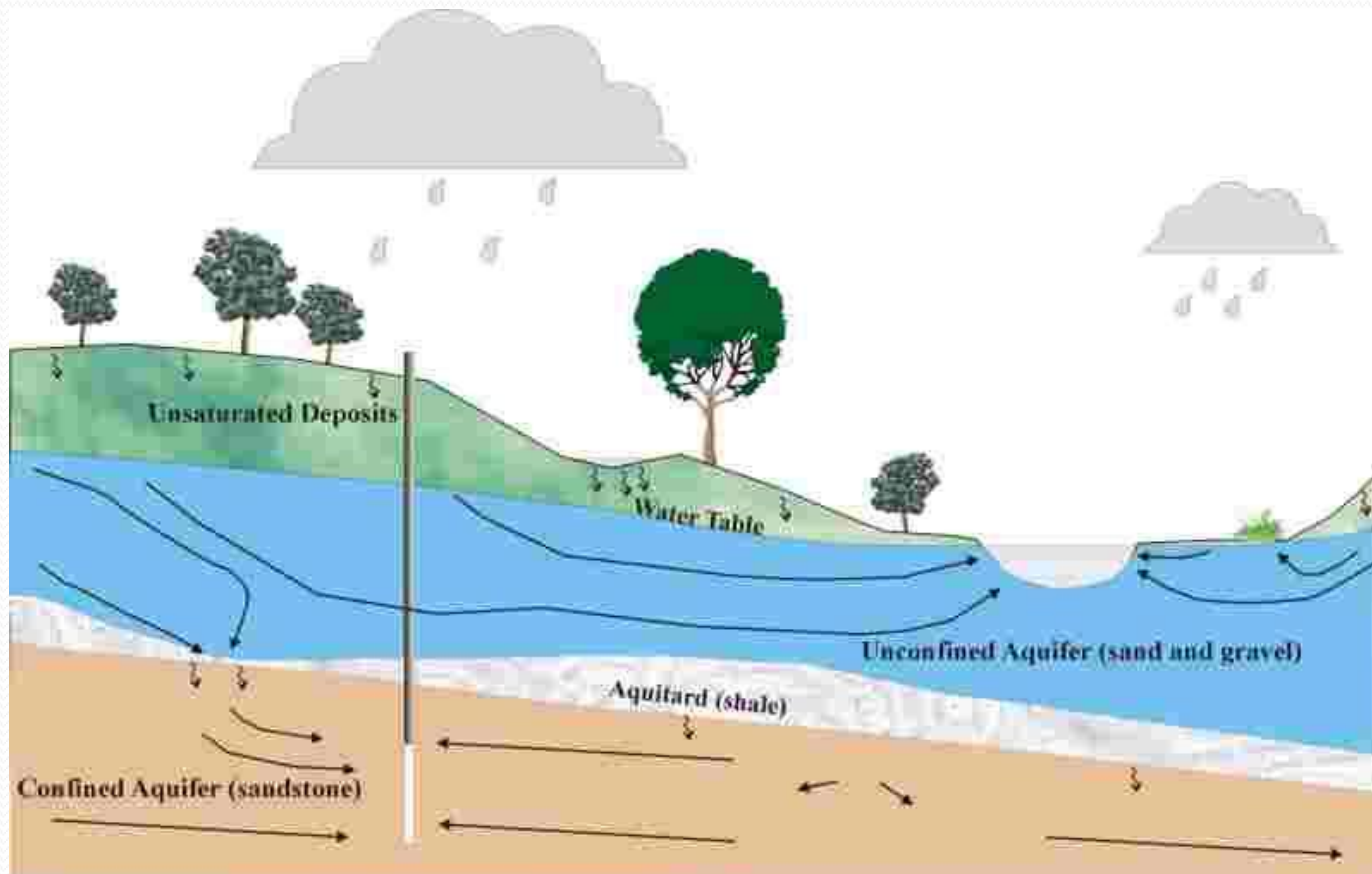
www.waterstarwisconsin.org





Understanding Groundwater/Surface Water

- Recharge → Groundwater Flow → Discharge to Wells or Surface Waters

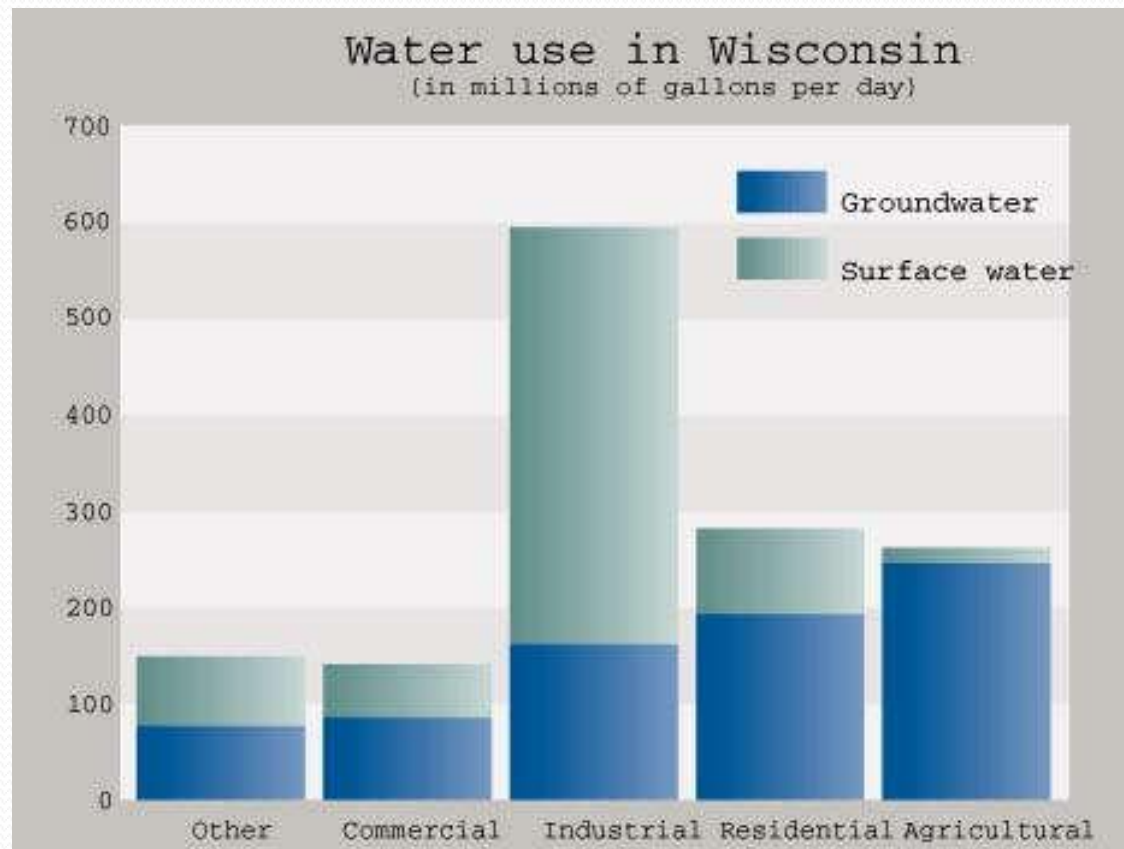






Groundwater is an important resource

- More than 70% of Wisconsin residents depend on groundwater for their drinking water



Surface Water Impacts



**Big
Spring**

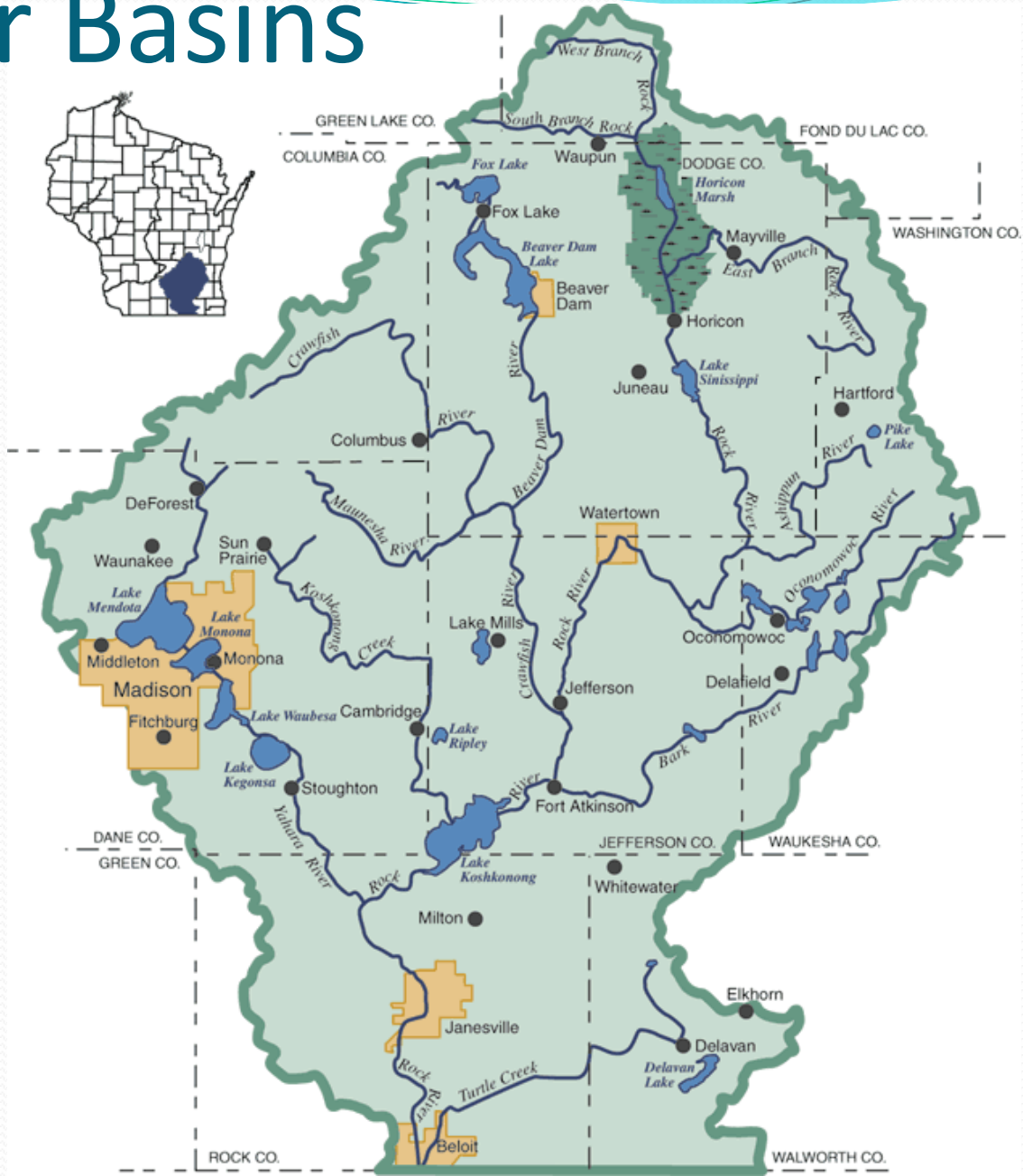


**Little Plover
River**



**Madison
Spring**

Rock River Basins



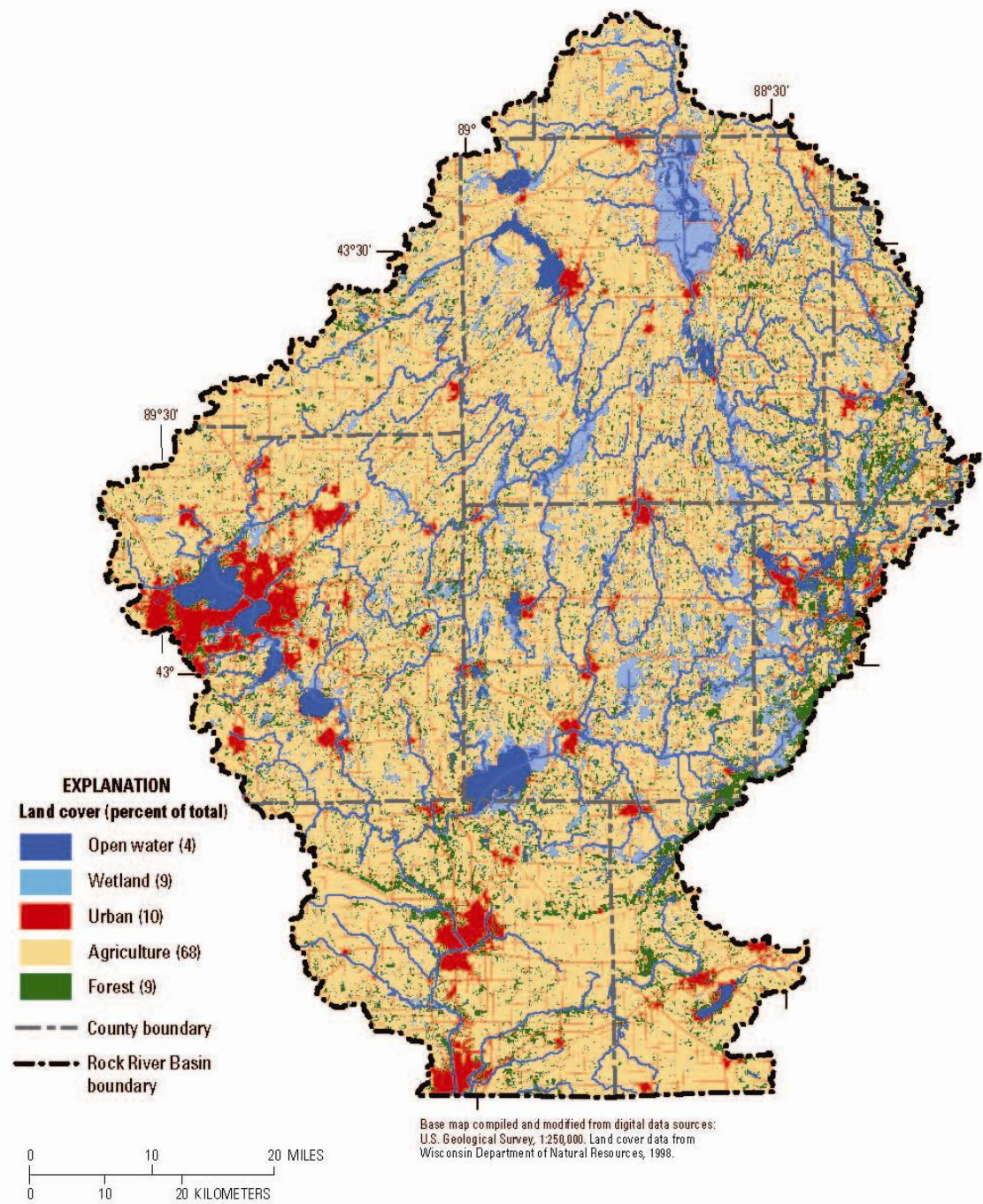
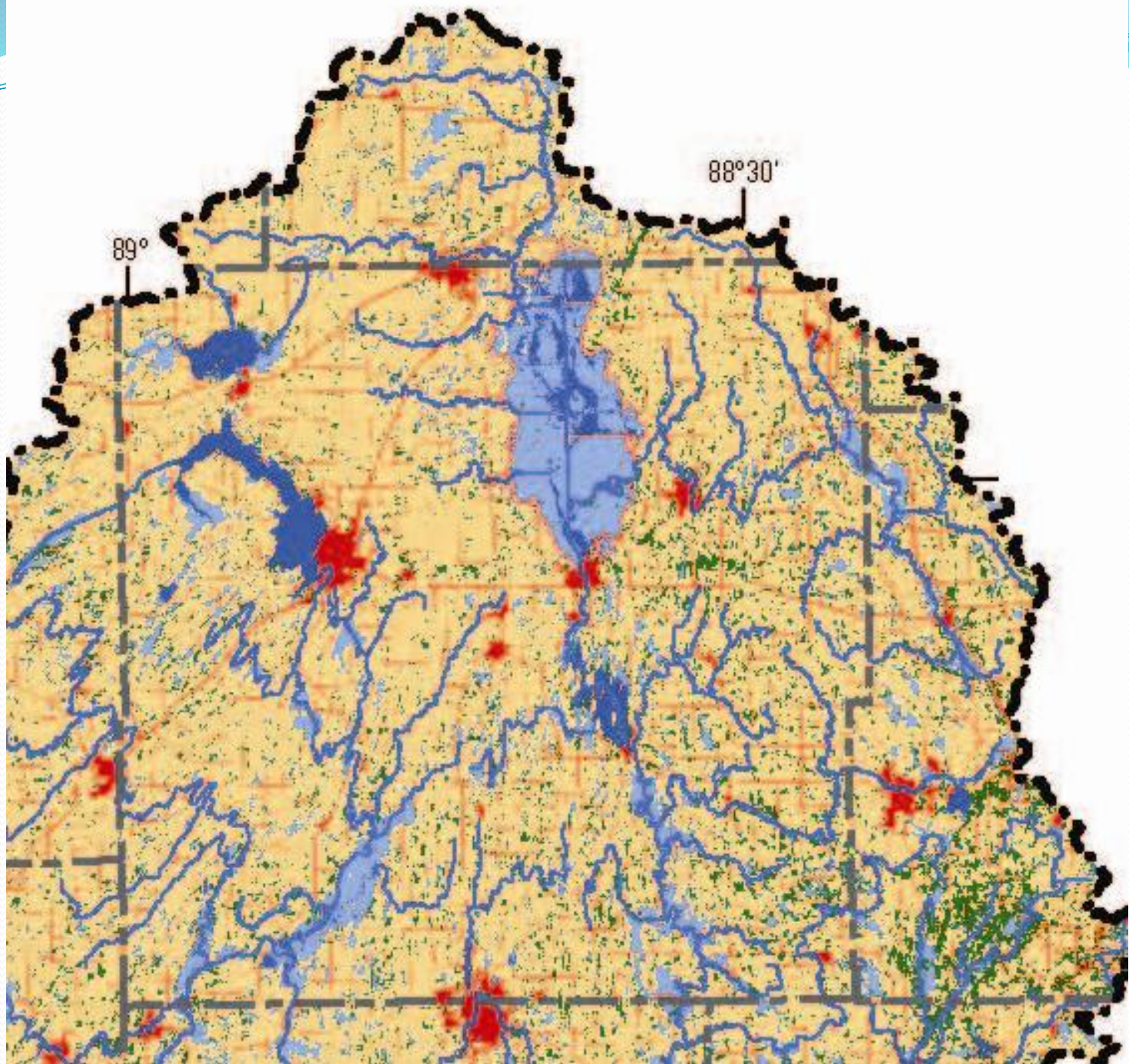
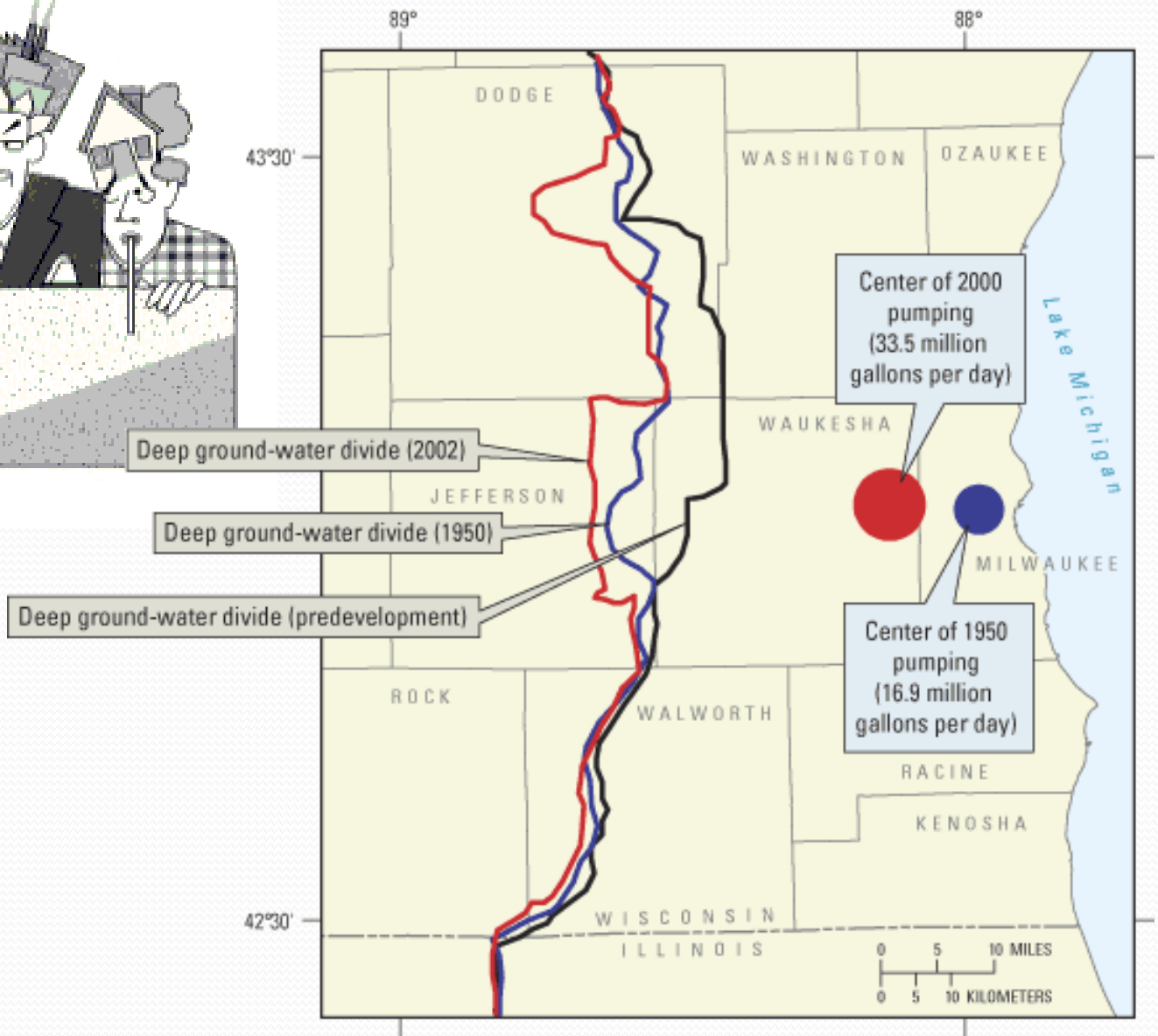
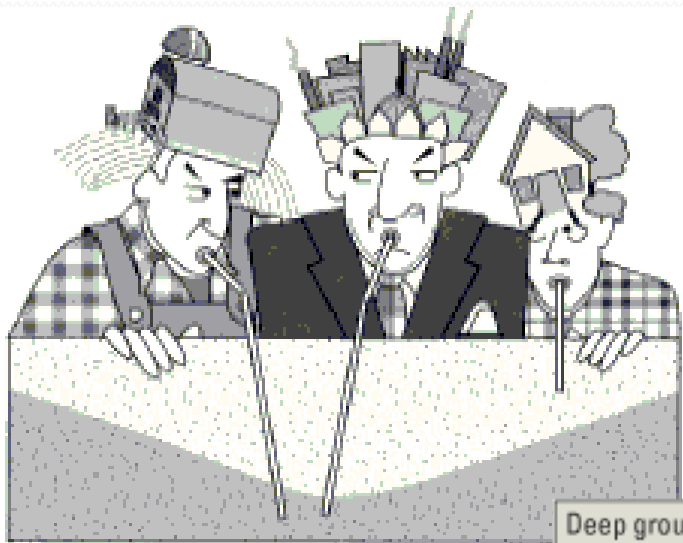


Figure 2. Land cover in the Rock River Basin.





Deep ground-water divide (2002)

Deep ground-water divide (1950)

Deep ground-water divide (predevelopment)

Center of 2000
pumping
(33.5 million
gallons per day)

Center of 1950
pumping
(16.9 million
gallons per day)

Rock River Basin GFLOW Model

- How can you make important decisions without having pertinent information?
- Rock River Basin was missing key basic knowledge about groundwater
- And most importantly groundwater surface water interactions!



Prepared in cooperation with the Rock River Coalition

**Simulation of the Regional Ground-Water-Flow System and
Ground-Water/Surface-Water Interaction in the
Rock River Basin, Wisconsin**

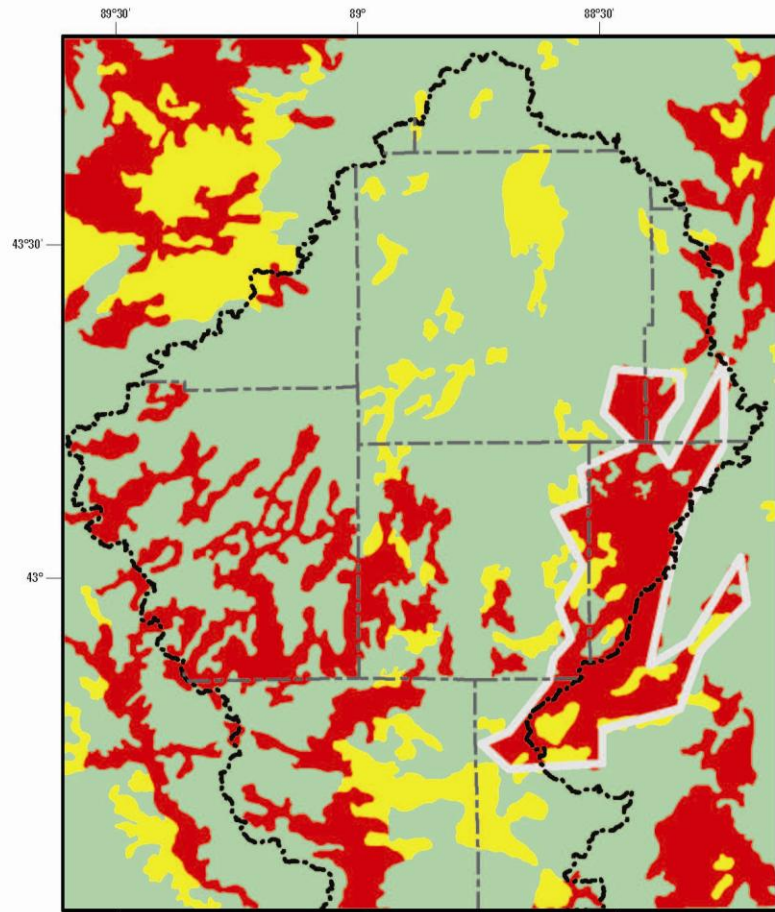


Scientific Investigations Report 2009–5094

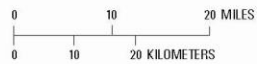
U.S. Department of the Interior
U.S. Geological Survey

Rock River Basin GFLOW Model

- 39 funders including
 - Fox Lake Inland Protection District
 - Friends of Horicon Marsh
 - Lake Sinissippi Association
 - Lake Sinissippi Improvement District
 - Rock Lake Improvement Association



Base map compiled and modified from digital data sources:
 U.S. Geological Survey, 1:250,000. Infiltration data modified
 from Schwarz and Alexander, 1986.



EXPLANATION

Infiltration rate, inches per hour
 less than 3
 3 to 6
 greater than 6

County boundary
 Rock River Basin boundary
 High-recharge zone boundary

Figure 8. Estimated infiltration rates for soils in the Rock River Basin. Also shown is a zone of high recharge rate simulated in the GFLOW model.

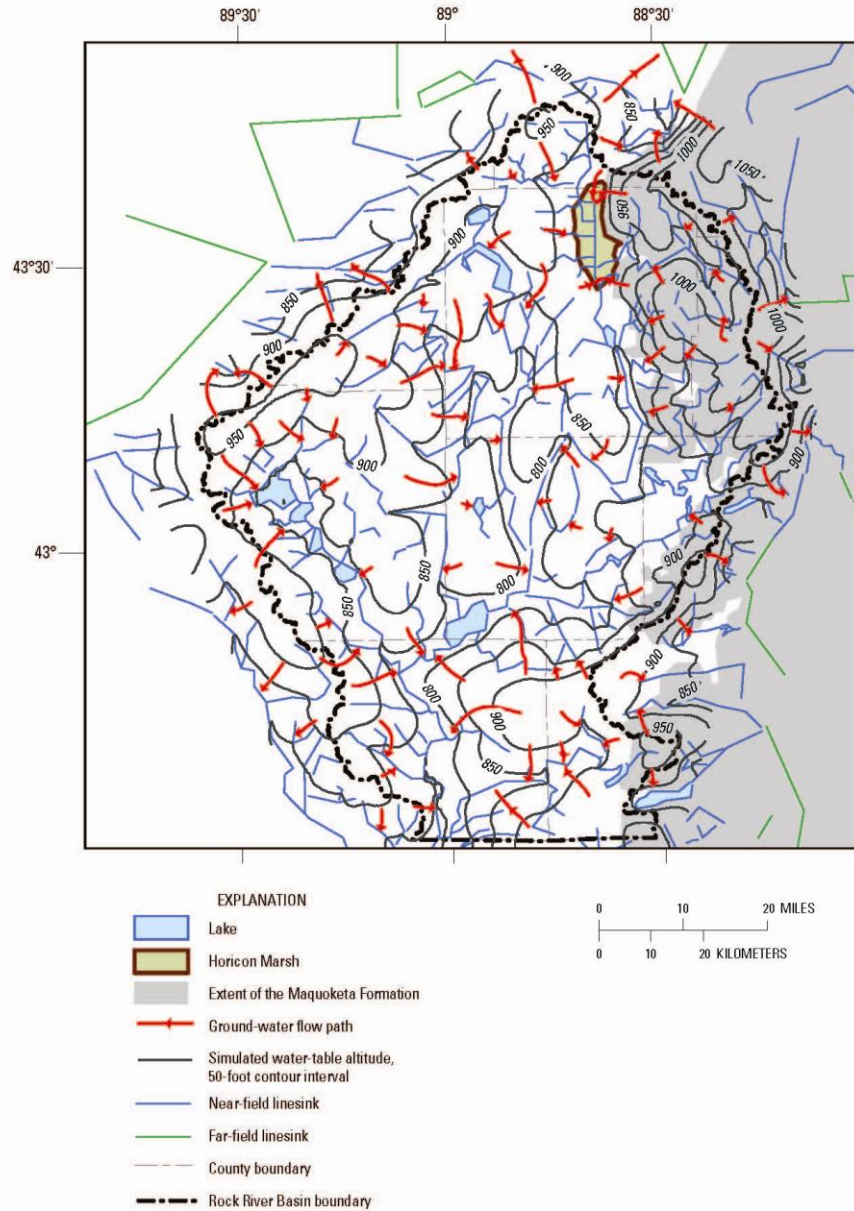
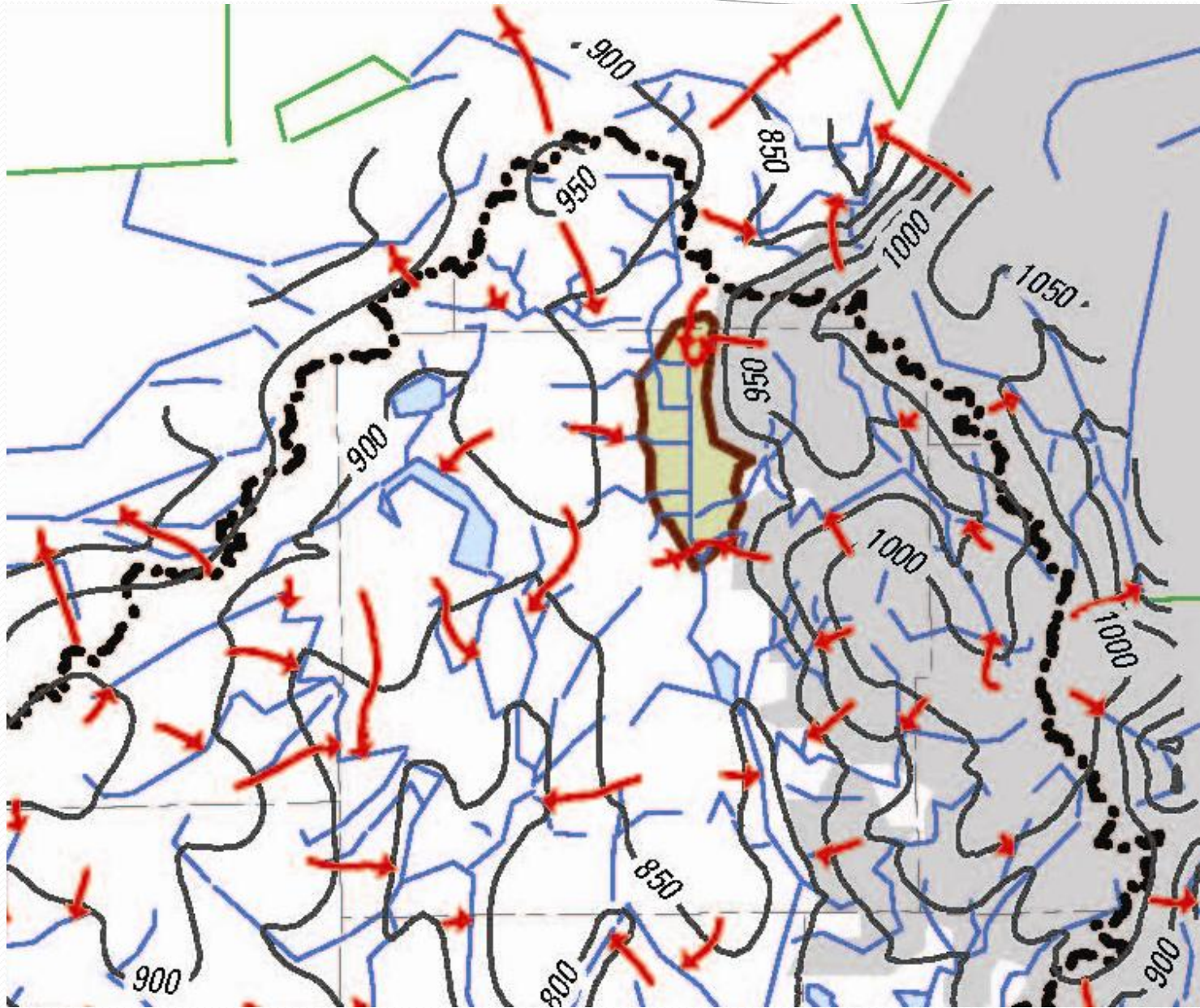
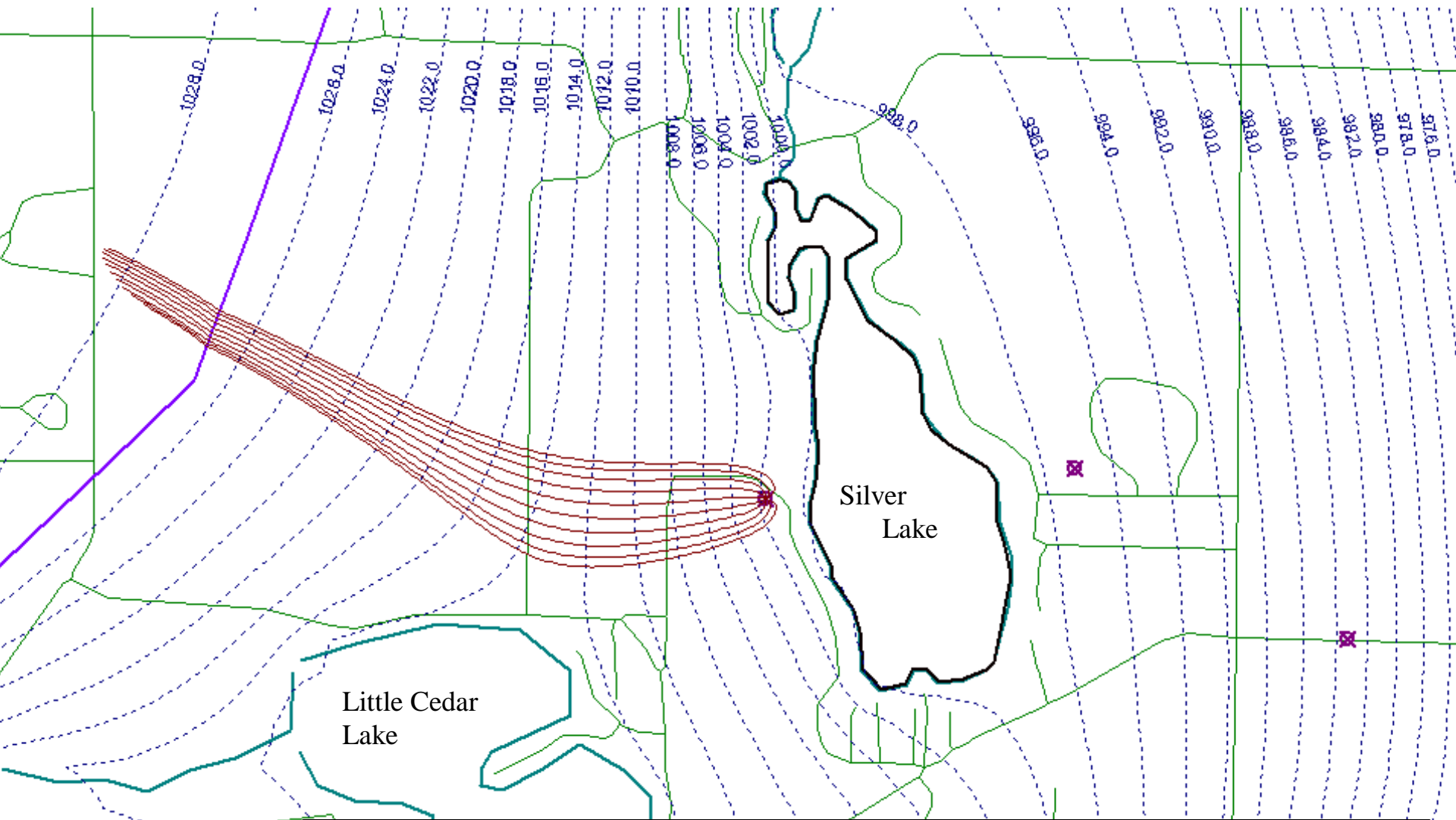


Figure 15. Simulated water-table altitude and ground-water flow directions from the GFLOW model in the Rock River Basin.







Model simulation of a single well pumping at 75 gpm

Simulated stage of Silver Lake lowered by 0.013 feet

Simulated flow from Silver Lake to Silver Creek reduced by 0.14 cubic feet per second



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after April 22, 2010 at

www.waterstarwisconsin.org







<http://waterstar.cfmxtest.uwex.edu/>

After April 22

<http://www.waterstarwisconsin.org>

Tell us about your community, your answers here will help reduce the number of questions that do not pertain to your municipality. If you are unsure about what to answer check yes and you will be able to answer each question individually as not applicable.

Groundwater

a) Where do people in your municipality get their drinking water from: (check all that apply)

- Municipal wells
- Private wells
- Lake Michigan
- Lake Superior

Other (please identify)

b) Do you have a public water utility?

- Yes No

Surface water

a) Do you have a WPDES stormwater permit with the Department of Natural Resources? (often called Phase I or Phase 2).

- Yes No

b) Do you have a municipal waterwater treatment plant?

- Yes No

c) Do you have a storm sewer system or any storm drains that go to a river, lake or stream (versus swales)?

- Yes No

d) Are there any nurseries, landscaping, or lawn care companies located in your jurisdiction?

- Yes No

e) Is there any cropland or animal agriculture in your jurisdiction?

- Yes No

Land use

a) Do you oversee any development including residential subdivision development of three houses or more or the development of commercial or industrial areas?

- Yes No

b) Do you oversee the development or redevelopment of commercial or industrial sites or do you contract with a municipal governmental entity to provide this



[Home](#) - Application

Application

You can complete the sections in any order. Click on the section name to view and answer the questions. You can also [print out a copy of the application](#) to view ahead of time.

Section	Answered	Completed
Administration: Policy, Board, Budget	0 of 10 potential questions answered	NOT COMPLETED
Community Actions, Programs, Awards	14 of 32 potential questions answered	NOT COMPLETED
Teachers, Youth Group Leaders and Youth Program and Actions	0 of 7 potential questions answered	NOT COMPLETED
Emergency Management	0 of 19 potential questions answered	NOT COMPLETED
Public Land Management	0 of 39 potential questions answered	NOT COMPLETED
Land Use	0 of 24 potential questions answered	NOT COMPLETED
Land Development or Redevelopment	0 of 30 potential questions answered	NOT COMPLETED
Stormwater: Streets and Parking Lots	0 of 28 potential questions answered	NOT COMPLETED
Stormwater: System Management	0 of 28 potential questions answered	NOT COMPLETED
Stormwater: General Industry and Business Programs	0 of 11 potential questions answered	NOT COMPLETED
Stormwater: Landscaping and Lawn Care Industry	0 of 4 potential questions answered	NOT COMPLETED
Stormwater: Agriculture and Agricultural Businesses	0 of 6 potential questions answered	NOT COMPLETED
Wastewater Treatment	0 of 10 potential questions answered	NOT COMPLETED
Public Water Supply: Rate and Regulations	0 of 6 potential questions answered	NOT COMPLETED
Public Water Supply: Management and Infrastructure	0 of 7 potential questions answered	NOT COMPLETED
Water Conservation: Public Buildings	0 of 8 potential questions answered	NOT COMPLETED
Water Conservation: Industry and Business Programs	0 of 8 potential questions answered	NOT COMPLETED

★ HISTORY

The following people have worked on this survey:

Suzanne Wade

Don't see your name? [Sign up here.](#)



Land Use

The questions for this section appear below. **Be sure to click on the "SAVE" button on the bottom of your page to save your answers.** You do not need to answer all of the questions before your click on Save, you can save and return and edit your answers at any time.

1. Are staff with scientific training in water issues involved in development of your land use plans? ?

- Sometimes
- Always
- No, or municipality does not have comprehensive planning.

2. Are all municipal plans available on the web or other accessible location? ?

- Yes
- No

3. Are groundwater and surface water concerns emphasized during plan development and during public participation activities? ?

- Yes
- No

4. Do you have a [comprehensive plan](#) that establishes areas for protection of surface water and for groundwater recharge, as well as identifying areas for development with zoning codes that enforce the plan? ?

- Yes
- No

5. Do you identify key green infrastructure areas during plan development? ?

- Yes
- No

6. Have you implemented a plan to acquire and protect key green infrastructure areas? ?

- Yes
- No

7. Do you link water conservation and protection goals to other long-term goals such as land conservation, habitat protection, compact development, utility planning and nonpoint source pollution reduction? ?

★ **NEED HELP ?**
Ask us a question

★ GO TO ANOTHER SECTION

Administration: Policy, Board, Budget

Community Actions, Programs, Awards

Teachers, Youth Group Leaders and Youth Program and Actions

Emergency Management

Public Land Management

Land Use

Land Development or Redevelopment

Stormwater: Streets and Parking Lots

Stormwater: System Management

Stormwater: General Industry and Business Programs

Stormwater: Landscaping and Lawn Care Industry

Stormwater: Agriculture and Agricultural Businesses

Wastewater Treatment

Public Water Supply: Rate and Regulations

Public Water Supply: Management and Infrastructure

Water Conservation: Public Buildings

Water Conservation: Industry and Business Programs

Charter Member



A Silver Wisconsin
Water Star
Community

Charter Member



A Bronze Wisconsin
Water Star
Community

Charter Member



A Gold Wisconsin
Water Star
Community

It's Our



...Water

Watertown, Wis.



Questions?

Suzanne Wade

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