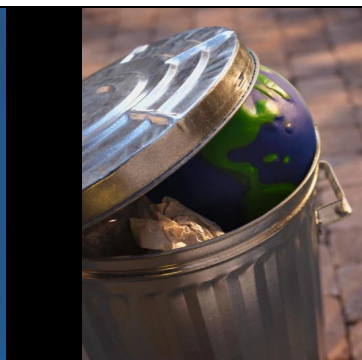
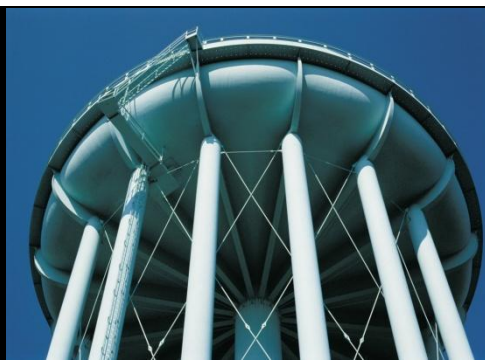


# Groundwater Protection in McHenry County

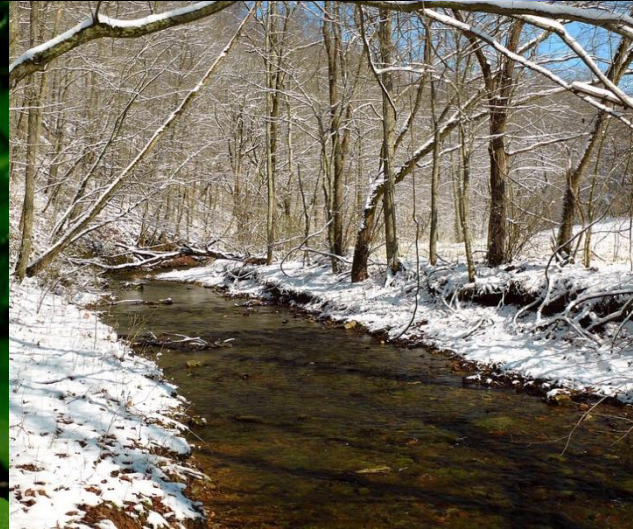


## Towards A Sustainable Water Supply

Cassandra McKinney  
McHenry County Government



# Consider this...



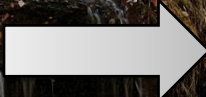
**CONDENSATION  
PRECIPITATION**



**EVAPORATION  
TRANSPIRATION**



**RUNOFF  
INFILTRATION**



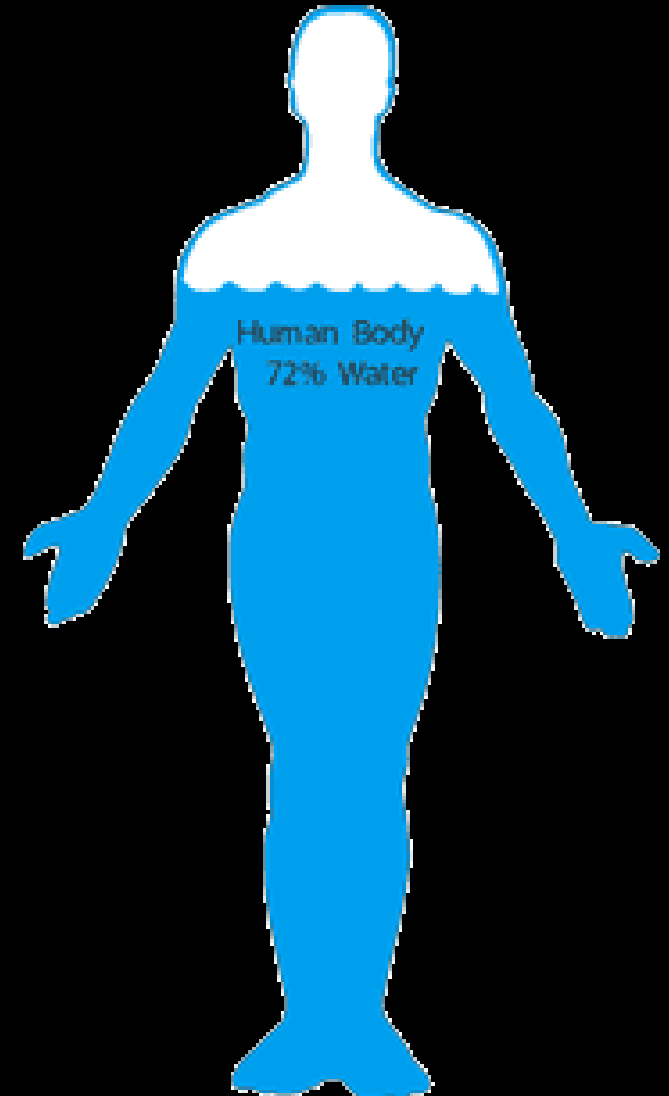
**GROUNDWATER  
SURFACE WATER  
WETLANDS/FENS**





Providing habitat for all living things

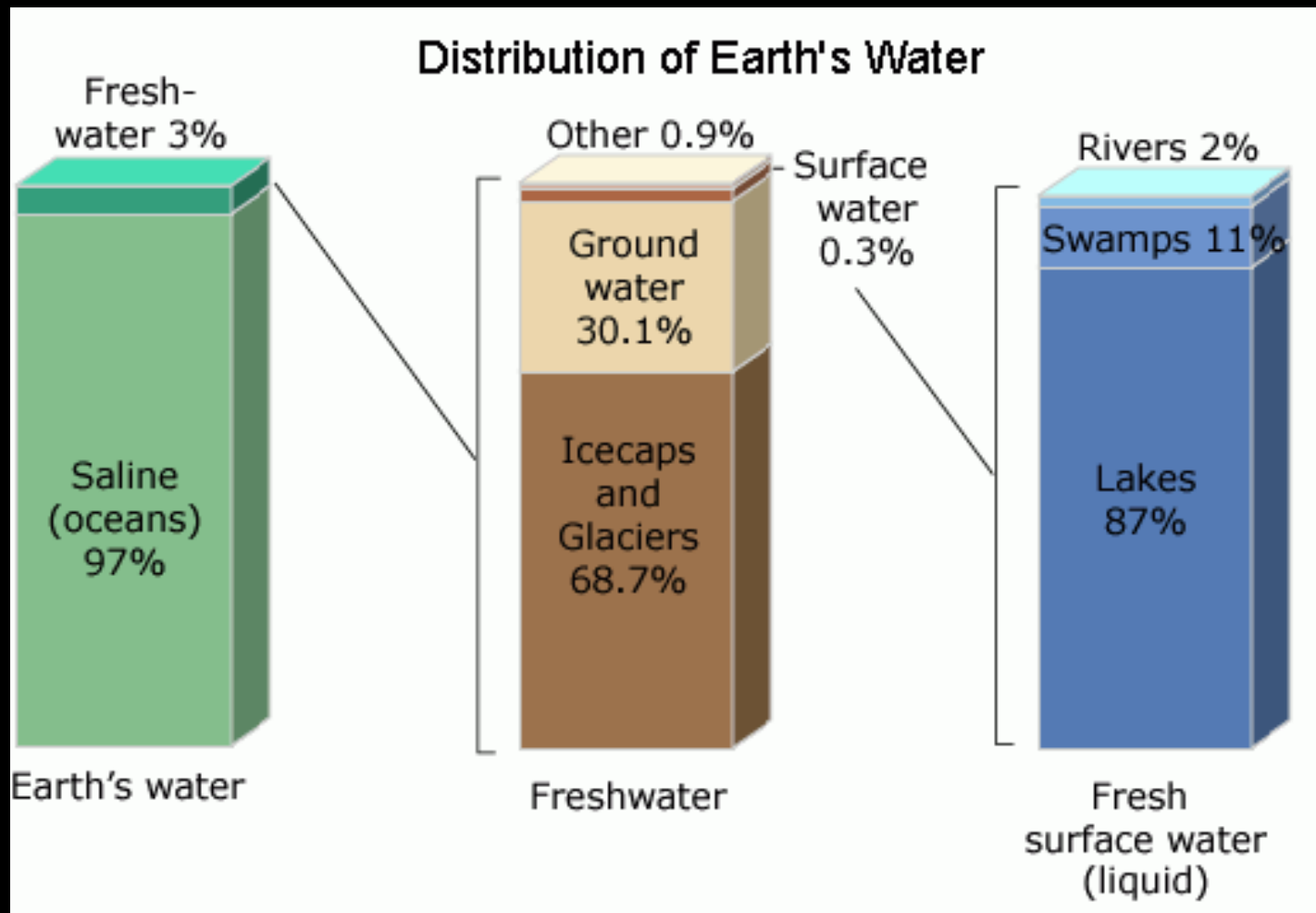
The average human requires  
10.5 cups of water per day!



# Water is a Finite Resource



# Only a tiny fraction of the water on the earth is fresh



**Water is Vulnerable...**





# Drought...

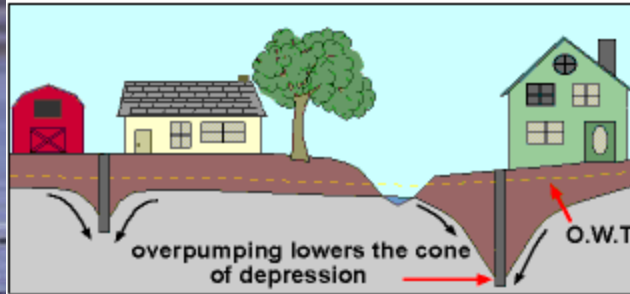
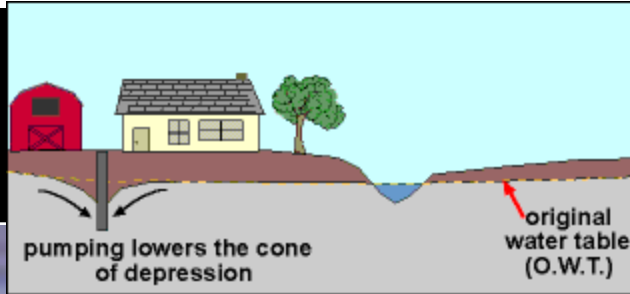


# Pollution...

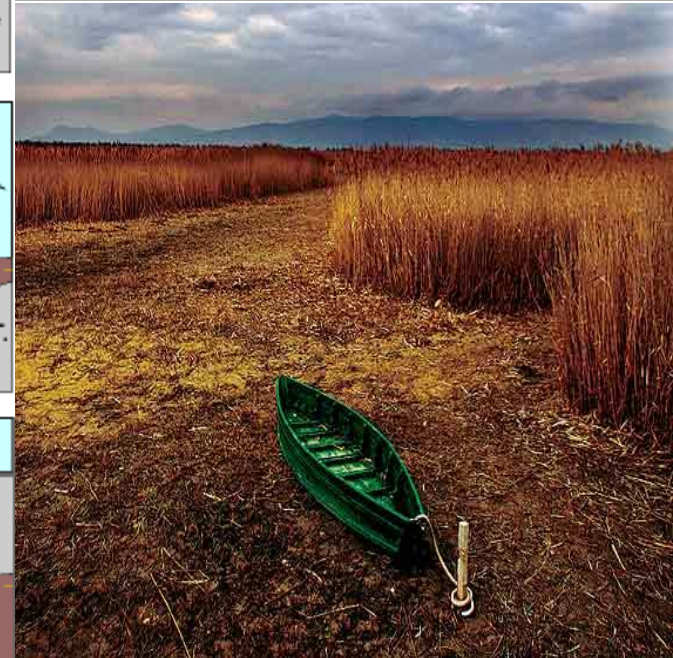


# Mismanagement

## Impervious Surfaces, Overuse & Irrigation, Sprawl



**OVERPUMPING**  
- lowers the cone of depression  
- dries up the stream  
- original home owner must spend  
\$\$\$ to drill a deeper well



**Vulnerabilities lead to...**

Potential Water Shortages



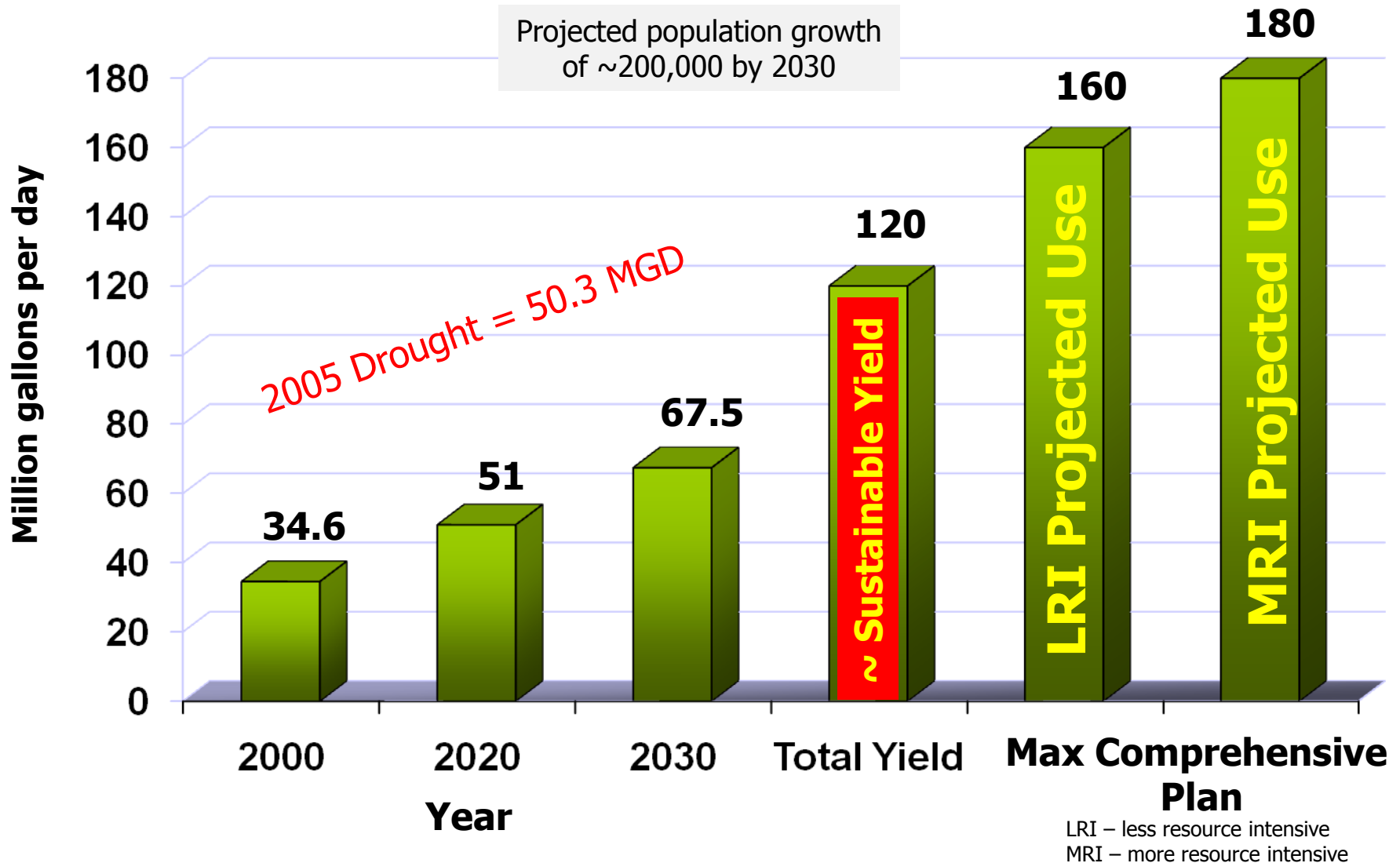


# The State of Water in McHenry County, Illinois

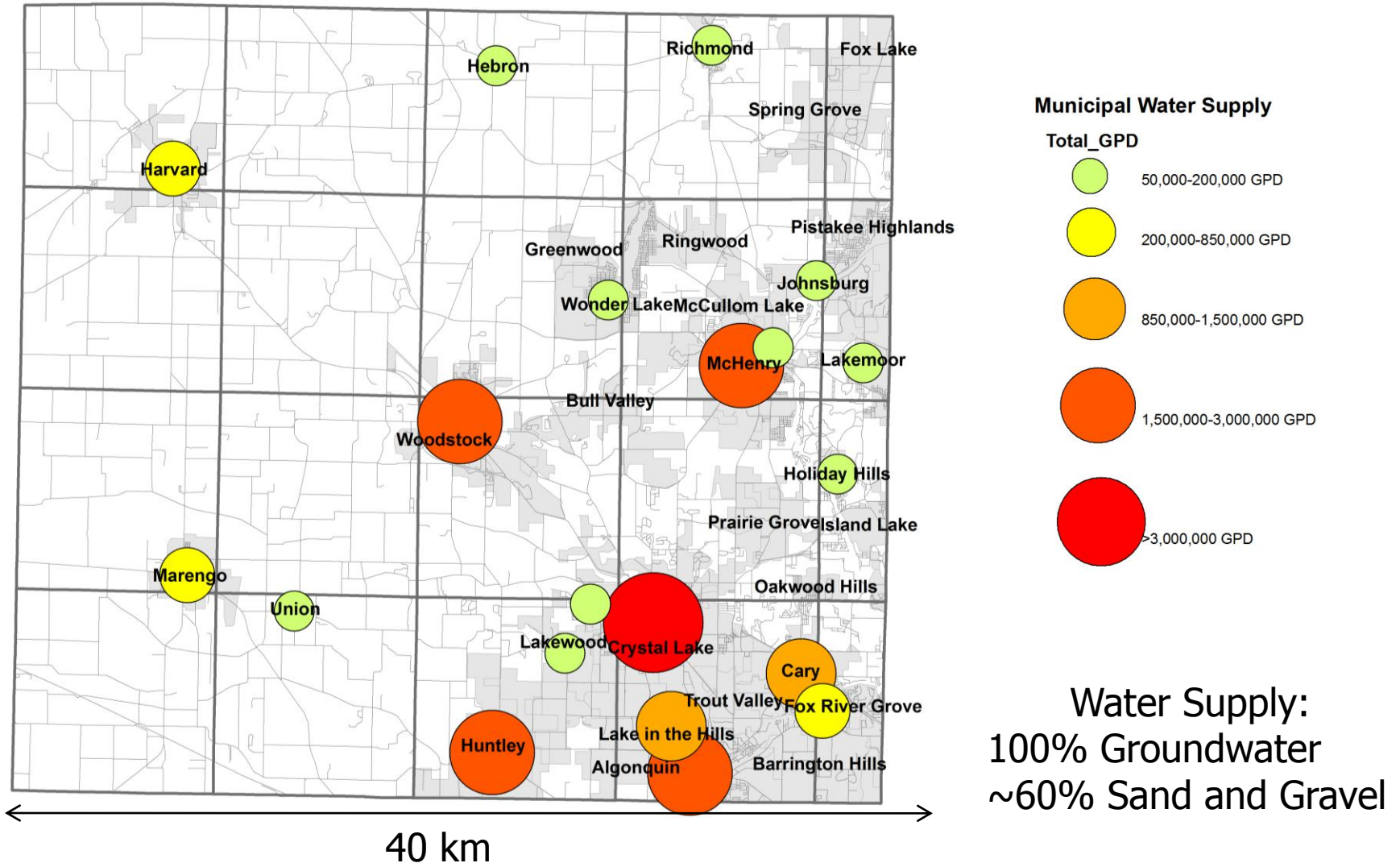
# McHenry County Challenge

- McHenry County is solely dependant on groundwater for all of its potable water needs
  - Lake Michigan Water is not an option
- Adequate groundwater quantity *and* quality is essential to the present and future well being of McHenry County residents and businesses.
  - Including things like recreation, aesthetics, food production...
- The groundwater supply is:
  - Limited
  - Vulnerable to pollution

# How Much Water Do We Use in McHenry County?

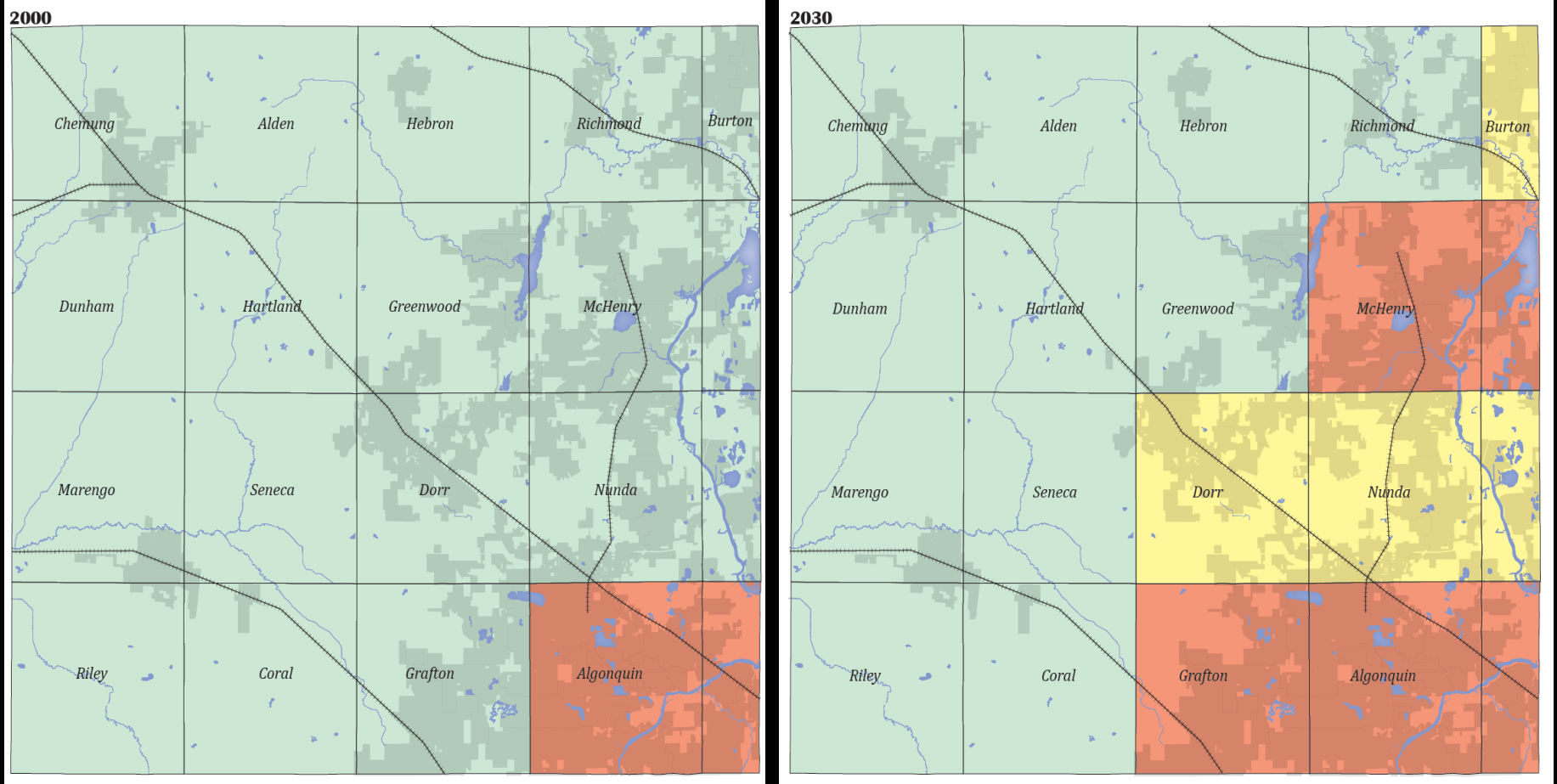


# Municipal Water Supplies











# McHenry County Water Supply Projections



## Map Legend

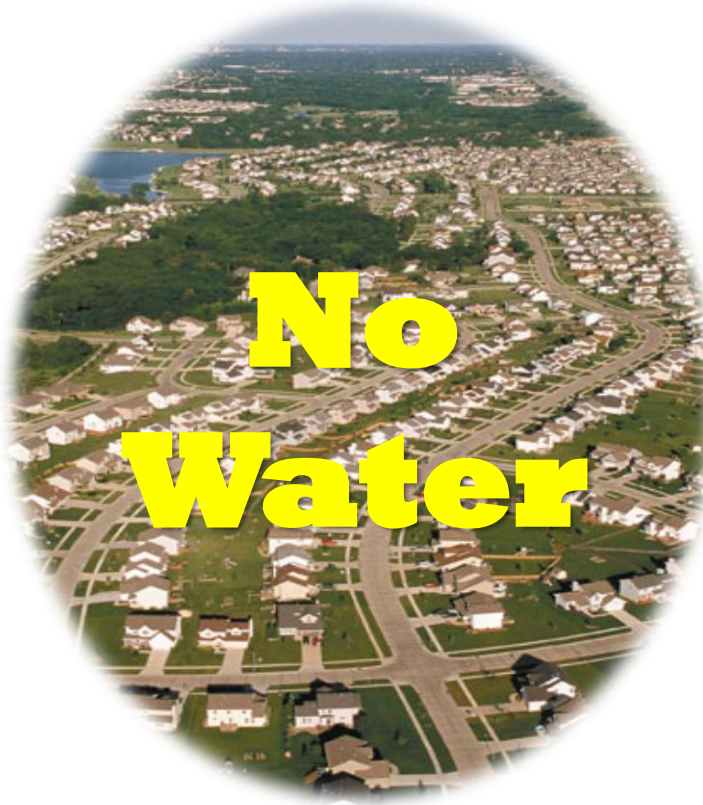
-  Townships/Areas with Surplus Groundwater Capacity (Ratio 0.0 - 0.6)
-  Townships/Areas of Groundwater Concern (Ratio 0.6 - 0.8)
-  Townships/Areas with Potential for Groundwater Shortage (Ratio > 0.8)
-  Water Features
-  Railroads
-  Incorporated Municipality

# The Future of a Community

## Water Supply Planning

- Sound & Healthy Economy
- Healthy Environment
- Open Space & Agriculture
- High Quality of Life
- Sustainable & Safe Water Supply

**Smart Growth**



**What about Public Safety  
and Fire Protection?**

## Lack of Water Supply Planning

- Loss of Jobs, Retail & Industry
- Degraded Natural Areas & Loss of Open Space
- Loss of Agriculture
- Decreased Quality of Life
- Decreased Property Values
- Stagnation

**Sprawl**

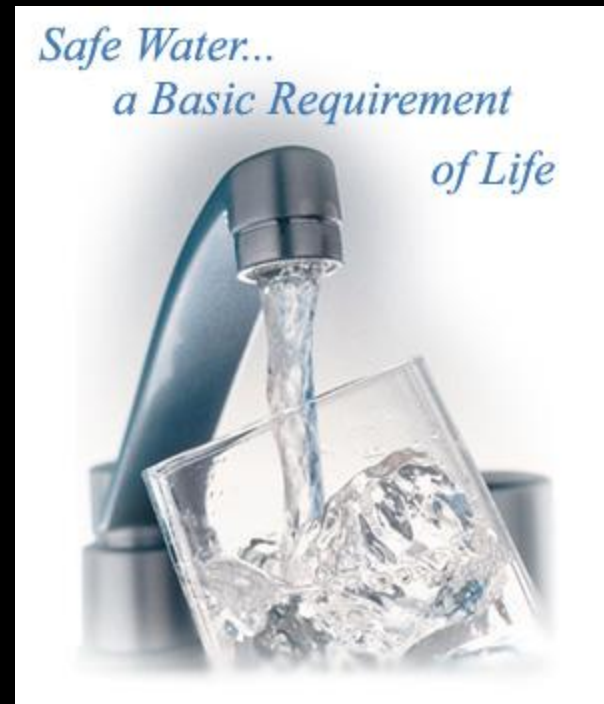
Why is it that water takes up  
70% of the earth's surface and 60% of our bodies, yet  
so little of our thinking?



Imagine turning water problems into  
**opportunities!**

# Opportunity:

- To rethink the way we treat and value water in McHenry County and across the Region!



## Create a Program to:

Protect and preserve the  
*quantity and quality*  
of groundwater for our generation and  
future generations,  
including the built and natural environment.

# Integrated Water Resources 7 Step Planning Process

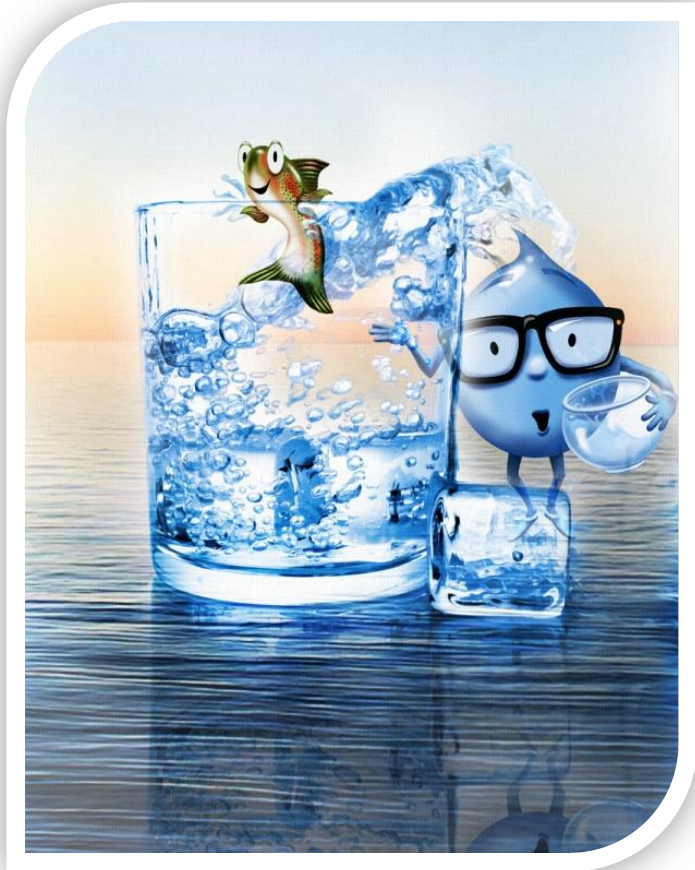


# Integrated Water Resources Planning

- **Integrated Water Resources Planning**
  - Encourages cooperative planning
  - Scientific Understanding
  - Reasonable / Attainable Goals
- **Planning “Team”:**
  - government leaders & regional partners,
  - business and industry,
  - agriculture, nurseries, sod farms
  - special interest groups,
  - residents
- Shared Vision = Common Goals



# Water Resources Action Plan



- Manage supply and demand
- Plan for growth and drought
- Utilize water conservation programs
- Value the land and treat water in all its forms as a resource!
  - Stormwater, Groundwater, Surface Water, Wetlands... they are all part of the water cycle and natural water balance.
- Consider all your “development” options
  - Open space, agriculture, pervious pavement, raingardens, parks, conservation design developments, buffer strips, and more...
- Increase access to recycling centers
- **Educate, Educate, Educate!!!**



# Water Resources Action Plan:

## Quality

- Pollution Prevention
- Sensible Salting

## Education

## Quantity

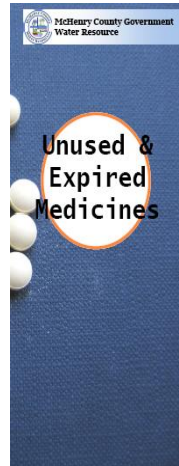
- Water Conservation
- Conservation Design

## Quantity & Quality

- Groundwater Recharge
- Protection of Water Dependent Ecosystems
- Wastewater
- Water Supply Planning
  - Drought Preparedness
  - Contingency Planning

# Water Resources Website!

- ✓ Water Resources Action Plan
  - ✓ Model policies and ordinances
- ✓ Children's Activities
- ✓ Teacher Lesson Plans
- ✓ Brochures
- ✓ Groundwater Research
- ✓ Newspaper Articles



[www.mchenryh2o.com](http://www.mchenryh2o.com)

# Implementation



# Steps to Implementation

1. Scientific Research
2. Municipal and County-Board Support
3. Symposiums, Workshops, & other Educational Offerings
  - ✓ Municipal
  - ✓ Public
    - ❖ Adult Education
    - ❖ Youth Education
  - ✓ Private Business Owners
    - ❖ Turf management, snow operators, agriculture and more...

# Research and Development



# Previously Completed:



## Sensitive Aquifer Recharge Areas

# Projects Underway:

- Observation Wells – USACE, ISGS, & USGS
- 3-D Geological Mapping - ISGS
- Hydrologic Flow Modeling - ISWS
- Stream Gauging - USGS
- Water Quality Analysis – USACE & USGS



# Municipal and County Board Support





# As of August 17, 2010

- County Board has resolved to review WRAP
- The following Municipalities have resolved to review WRAP:
  - Algonquin, Cary, Crystal Lake, Fox River Grove, Huntley, Harvard, Johnsburg, McCullom Lake, Ringwood, Richmond, Spring Grove
- Municipalities currently considering a resolution:
  - Marengo and Union
- If you're not on this list and are moving forward absent a resolution, please provide a status update.
- If you're not on this list and need more information or would like to schedule a presentation, please contact me.

# Status Updates:

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- City of Crystal Lake
- Village of Algonquin

Next 12 months:

**Task Force, Workshops, &  
Other Happenings**



# Winter Snow and Ice Operations – Training and Certification

- Public and Private Sector
  - Environmental Impacts
  - Storage
  - Handling
  - Application Rates
  - Material Options
  - Anti-icing
  - De-icing



**2010 Dates:**

Friday, October 22

Friday, November 5

# Medication Disposal Program

- **In partnership with:**
  - Local Law Enforcement
  - Illinois Environmental Protection Agency
- **Open to all county “residents” –**
  - Not open to physicians, nursing homes, or pharmacies
- **Anonymous disposal of:**
  - Most controlled and uncontrolled pharmaceuticals
  - Most over the counter remedies



**Fox River Grove P.D.**  
**Johnsburg P.D.**

# Program In Development

## Turf Management and Certification

- **Public and Private Sector**
  - Soil Testing
  - Phosphorous Fertilizer Education
  - Application Rates and Timing
  - Irrigation
  - Water Conservation
- *Spring Training in Development*



# A Few Other Programs Available to Public

- ❖ **Partners in Paint Recycling Programs** (Townships)
- ❖ **Household Hazardous Waste Disposal Program**  
(Lake County Solid Waste Action Agency and Rockford)
- ❖ **Electronic Waste Disposal Program** (when funding permits)
- ❖ **McHenry County Schools Environmental Education Program**
  - ✓ 2<sup>nd</sup> & 8<sup>th</sup> Grade “Water” Lessons
  - ✓ K-12 lessons available on [www.mchenryh2o.com](http://www.mchenryh2o.com)

# Task Force:

- Meet every other month
  - To discuss implementation
  - To make revisions when and where necessary
  - Location to rotate around County .... Hosts?

## **Next Meeting:**

Crystal Lake City Hall

Thursday, October 14, 2010

2:00 – 3:30 pm



# Closing Thought:

Consider the water supply implications of all decisions

- ✓ Encourage municipal leaders to make water supply planning part of your cities comprehensive plan
  - ✓ Value Water in all of its forms as a resource
  - ✓ Safe water is a basic requirement of life
  - ✓ Pass this information along to your friends and neighbors
- ✓ *Be a part of the solution, every drop counts!*



# QUESTIONS?

***"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."***

**Aldo Leopold, A Sand County Almanac**



# **Cassandra McKinney**

**Water Resources Manager - Division of Water Resources**

**McHenry County Government  
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Woodstock, IL 60098-2637**

**Phone: (815) 334-4213, Fax: (815) 338-3991**

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[www.mchenryh2o.com](http://www.mchenryh2o.com)**