

**McHenry County Water Resources Action Plan (WRAP) Update
Preliminary Outline (3-5-19)**

INTRODUCTION

History of Water Resource Planning in McHenry County

Goal: To Protect and Restore McHenry County's Water Resources

McHenry County

- Demographics
- Geology
- Land Cover
- Climate
- Environment
- Watersheds

Land Uses

- Residential
- Commercial
- Transportation
- Agricultural
- Natural Areas/Open Space

WATER RESOURCES

General Hydrology

- Hydrologic Cycle
- Surface Water
 - Stormwater
 - Flooding
- Groundwater
 - Recharge/Discharge
 - Aquifers
- Natural Hydrology
 - Infiltration, Ground/Surface Water Recharge, Minimal Runoff
- Urbanized Hydrology
 - Runoff, Flooding, Pollution, Thermal Changes

General Water

- Biology
- Health
- Ecology/Environment
- Economy
- Threats (Contamination, Over-Use, Drought)
- Regulation (Federal, State, Local)
- Total Maximum Daily Load (TMDL)
- One Water Concept

McHenry County Surface Water

- Lakes, rivers, streams, wetlands
- Watersheds
- Stormwater
- Floodplain
- Wetlands

Water Quality

Water Quantity

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McHenry County Ground Water

3 main types of drinking water aquifers

Shallow Aquifer – Sand and Gravel

Shallow Bedrock – Limestone

Deep Bedrock – Sandstone (2 main aquifers)

St. Peters Sandstone (upper)

Ironton Galesville Sandstone (lower)

(Potential 3rd deep bedrock aquifer, Mount Simon)

Water Quality

Water Quantity

Supply and Demand

Scientific Studies and Technical Resources

MAJOR ISSUES, LAND USES, AND BEST MANAGEMENT PRACTICES

CLIMATE CHANGE

Mitigation

Adaptation

Forecasted Changes in Midwest

Reduced Predictability/Increased Climatic Extremes

Increased Precipitation/Greater Storm Intensity

Increased Surface Runoff/Erosion/Sedimentation

Reduced Groundwater Recharge

Increased Temperature Extremes

Longer Growing Season/Increased Pests and Crop Stress

Water Infrastructure

Drinking Water

Municipal Wells and Water Lines

Wellhead Protection Zones

Private Wells

Well Monitoring and Testing (Municipal, Private)

Arsenic, Radon, Radium

Private Water Treatment

Reverse Osmosis, Iron Filters, etc.

Water Softeners

Waste Water

Municipal

Land Application

Septic Systems

Stormwater

Stormwater Ordinance

NEPA/MS4

Stormsewer

Cleanout/Vacuum Truck

Green Infrastructure

Water Re-Use/Graywater/Rainwater Harvesting

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Water Conservation

High Efficiency Fixtures

Municipal

Water Loss Reduction

Outdoor Watering Restrictions

Water Conservation Pricing

Retrofit/Replacement Programs

Net Blue Water neutral Growth (Alliance for Water Efficiency)

Commercial/Business

Residential

Behavior Changes/ Reducing Peak Demands

Lawn Watering Restrictions

Install Water Efficient Fixtures (Replace Inefficient)

Green Building

Flooding

County

Municipal

Commercial/Business

Residential

Drought Planning

County

Municipal

Commercial/Business

Residential

Residential/Small Business Development

Stormwater Best Management Practices (BMPs)

Green Infrastructure

Landscaping

Native/Naturalized Landscaping

Irrigation

Raingardens

Conservation Design

Transit Oriented Development

Pollution/Pollution Prevention

Pharmaceutical Disposal

Contaminants of Emerging Concern

Household Hazardous Waste

Pet Waste

Water Softeners

Industrial/Heavy Commercial Development

Site Location-Sensitive Aquifer Recharge Areas (SARA)

Hazardous Materials/Waste

Water Quality BMPs to Prevent Contamination

Green Infrastructure

High Capacity Wells/Well Monitoring

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Native/Naturalized Landscaping
Turf to Native
Lawn Chemicals

Transportation

Sensible Salting (public & private)
County
Municipal
Commercial/Business
Residential
Street Cleaning/Leaf Collection
Green Infrastructure
Native Plants/Pollinators in ROW
Public Transportation/Bicycling

Gravel Pits

Direct Impacts to Aquifer/Recharge/Ecology
Potential for Groundwater Contamination
Backfilling with Fill and Construction/Demolition Debris
Monitoring Wells
Restoration Planning

Agriculture

Nutrient Loss Reduction-Nitrates/Phosphorus
Soil Loss Reduction
Flood/Drought Planning
Storage of Fuel and Chemicals
Use of Pesticides (Herbicides and Insecticides)
Confined Feed Operations
Manure Management
Bio-Solids
Irrigation
Drain Tiles and Ditches
Reduced Infiltration/Increased Run-Off from Soil Compaction/Hardpan

Golf Courses

Nutrient Loss Reduction-Nitrates/Phosphorus
Naturalized Landscaping
Habitat Improvement/Management
Invasive Species Control
Irrigation

Natural Areas/Open Space

Acquisition/Preservation of "Last best Unprotected Areas"
Parks
Natural Areas Management
Invasive Species Control
Naturalized Landscaping
Education

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Recreation and Health

Miscellaneous

Coal Tar Sealants
Lawn-Chemicals
Auto Salvage Yards
Improperly Abandoned Wells
Aboveground and underground Storage Tanks
Abandoned Landfills
Fly Dumping

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RESOURCES

*** TO BE EXPANDED DURING WRAP DEVELOPMENT ***

McHenry County Online GIS

McHenry County Sensitive Aquifer Recharge Areas (SARA) Map

USGS Monitoring Well Network

ISGS Interactive McHenry County 3-Dimensional Geologic Mapping

ISGS Illinois and Water Related Wells

IEPA Sourcewater Assessment Program Map and Online Tools

Municipal Consumer Confidence Reports

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REFERENCES

*** TO BE EXPANDED DURING WRAP DEVELOPMENT ***

Introduction

USDA Soil Survey
McHenry County GIS
McHenry County 2030 Plan
CMAP On To 2050 Socioeconomic Forecast

Water Resources

Watershed Plans
McHenry County Stormwater Management Ordinance
ADID Maps
GIS

McHenry County Surface and Groundwater

ISWS CR 2013-06 McHenry Co G-water Simulation Modeling and Potentiometric Surface Mapping
ISGS 3-Dimensional Mapping
<http://maps.isgs.illinois.edu/vxs/McHenry/>
ISGS Water & Related Wells
<http://maps.isgs.illinois.edu/ILWATER/>
IEPA Source Water Assessment Program Factsheets
<http://dataservices.epa.illinois.gov/swap/factsheet.aspx>
USGS Monitoring Well Network
ISWS Modeling/Mapping
ISGS Cambrian-Ordovician Aquifer Systems of Illinois
List of High Capacity Wells of McHenry County

Major Issues (Climate Change)

U.S. Global Change Research Program: Climate Change Impacts - Chapter 18: Midwest
NOAA Technical Report NESDIS 142-3 Regional Climate Trends and Scenarios for the U.S. USDA:
Climate Risks in the Midwest
CMAP: Fox River Corridor Plan, Burtons Bridge to Fox Bluff- Appendix B Vulnerability Study

Major Issues (Land Uses)

Sensitive Aquifer Recharge Areas (SARA) Map
McHenry Co. 2030 Plan
Green Infrastructure Plan
EPA Homeowners Guide to Septic Systems https://www3.epa.gov/npdes/pubs/homeowner_guide_long.pdf