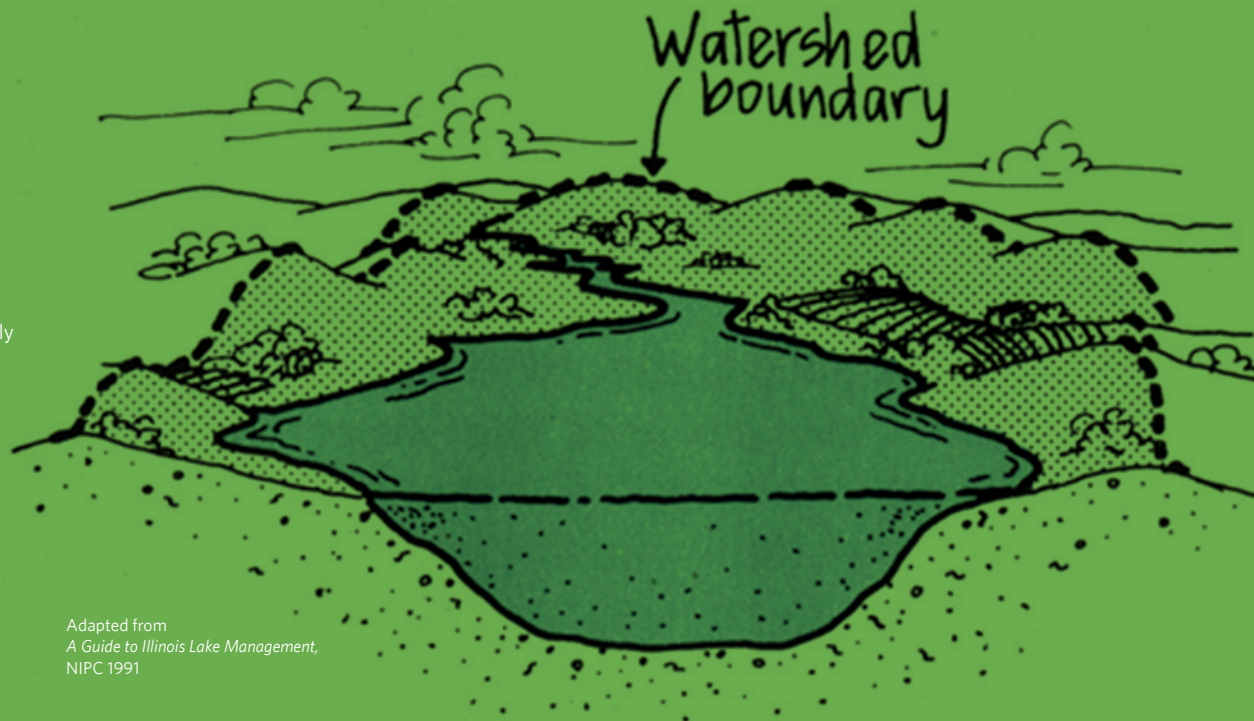


# Silver Creek and Sleepy Hollow Creek Watershed Action Plan Executive Summary

December 2011

# Watershed Planning

Watershed planning is a collaborative, community supported approach to protecting and improving water quality and watershed health. Watershed planning is a public process involving local residents, governmental agencies, and other concerned interests. Stakeholders are those individuals or parties participating in the planning process as well as the interests they represent since they all have a vested interest, or stake, in the overall health of the place they live or work. The planning process and resulting plan are therefore informed by both local knowledge and science-based information. Addressing sources of pollution (specifically those not created by single sources) to protect good water quality or improve poor water quality is the primary purpose for developing a watershed-based plan. However, other natural resource related objectives can also be pursued, including groundwater protection, recreational and economic opportunities, aquatic life, and conserving open space, as they are often related to the health of water resources.



**Figure 1. What is a watershed?**

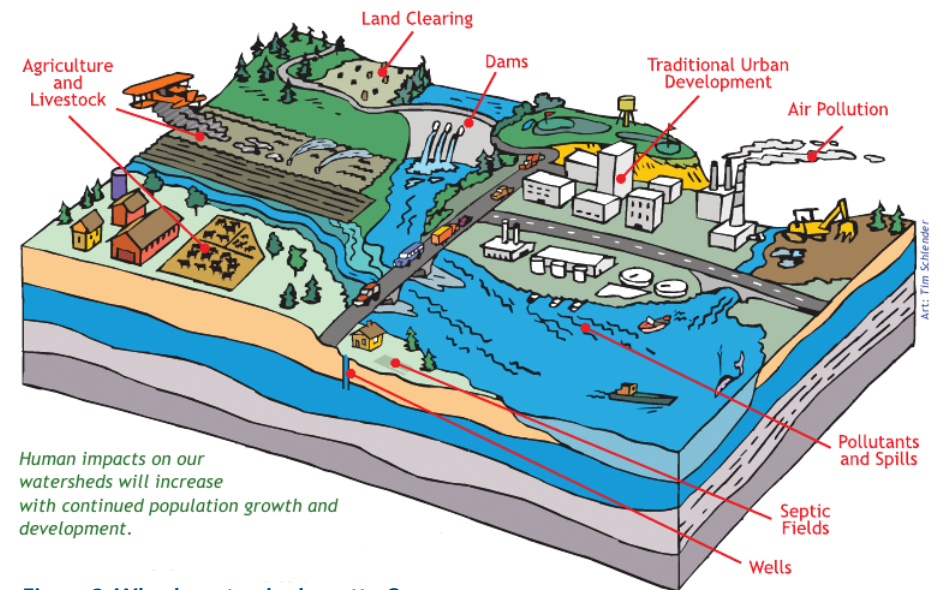
A watershed is the land area from which rainwater and snowmelt drains into a body of water such as a stream or lake. Watershed boundaries are defined by nature and are largely determined by the surrounding topography or "lay of the land."

A watershed is defined as the land area from which surface runoff from precipitation drains to a common point downhill; usually another stream, river, lake or estuary, and is the source of groundwater recharge to that waterbody. In this planning process, the watershed is used as an organizing principle for understanding the interrelationships between the many ways that people view, impact, and interact with both land and water resources. When combined with an adaptive management approach to plan implementation, the plan and those who produced it offer a potentially effective framework for producing and evaluating project and policy recommendations to correct water resource problems. It is from this viewpoint that the Silver Creek and Sleepy Hollow Creek Watershed plan was created.

The Silver Creek and Sleepy Hollow Creek Watershed planning process was designed to be stakeholder-driven with assistance from CMAP and other partner agencies. The Chicago Metropolitan Agency for Planning (CMAP) developed the plan with input from stakeholders. As the project lead, CMAP led monthly meetings from September 2010 to December 2011 to receive input on local water resource priorities and concerns. CMAP also facilitated two evening meetings to provide greater stakeholder access to the planning process. CMAP, Environmental Defenders of McHenry County (EDMC) and the Fox River Ecosystem Partnership (FREP) also hosted tours of a local wastewater treatment plant and a natural area restoration project, and a weekend public presentation on preliminary planning recommendations. EDMC also hosted a river clean-up date and two natural area tours. Together these activities helped to raise awareness of the watersheds and expand community participation in the watershed planning effort.

EDMC and FREP are both partners in the planning process. In coordination with CMAP and FREP, EDMC served as the watershed coordinator, convened local stakeholders, and executed an information and outreach campaign during the planning process. FREP supported the outreach and education effort by upgrading their website, serving as a source of watershed planning news and information, and highlighting watershed planning activities in their monthly Downstream e-Newsletter.

The Sleepy Hollow and Silver Creek Watershed Action Plan (the Plan) in its entirety can be found at [www.cmap.illinois.gov/watershed-planning](http://www.cmap.illinois.gov/watershed-planning) and at [www.foxriverecosystem.org](http://www.foxriverecosystem.org)<sup>1</sup>.



**Figure 2. Why do watersheds matter?**

Watersheds are important because what we do on the land directly affects the quality of our surface waters, drinking water supply, local economy, wildlife habitat, and recreational resources.

Adapted from  
*Healthy Watersheds, Healthy People*,  
Washington Department of Ecology, 2008

<sup>1</sup> Information highlighted in the Executive Summary is documented comprehensively in the full plan.

## Introduction

The Silver Creek and Sleepy Hollow Creek Watershed Planning Area is located within the Upper Fox River Basin (HUC 07120006) and consists of Silver Creek, Sleepy Hollow Creek, three other nearby Fox River tributary streams and the land that drains to them. There are over 20 miles of streams in the planning area. The planning area is located on the urban fringe of the Chicago metropolitan area in McHenry County, and is currently home to nearly 24,000 people. The watershed planning area covers portions of the City of Cary, the City of Crystal Lake, the City of McHenry, all of the Village of Prairie Grove and the Village of Oakwood Hills; borders the Village of Bull Valley; and includes portions of Nunda and Algonquin Townships and unincorporated McHenry County.

**Table 1: Summary of basic watershed data<sup>2</sup>**

Size of watershed	<b>31 square miles</b>
Local units of government in watersheds	<b>The Cities of Cary, Crystal Lake and McHenry; the Villages of Prairie Grove, Oakwood Hills and Bull Valley; portions of Nunda and Algonquin Townships, and unincorporated McHenry County</b>
Population in watershed	<b>23,729 people</b>
Unincorporated McHenry County land (2005)	<b>11,446 acres/57%</b>
Land in residential use (2005)	<b>7,106 acres/36%</b>
Land in agricultural use (2005)	<b>3,881 acres/20%</b>
Land in open space (2005)	<b>2,997 acres/15%</b>
Length of stream network in watershed	<b>20.5 miles</b>
Water supply source	<b>Groundwater</b>
Dominant soils	<b>Silt loam or silty clay loam, Hydrologic Soils Group B</b>

<sup>2</sup> All values for 2010 unless otherwise noted.

## Physical Characteristics

A physical assessment of the planning area reveals several elements including diverse channel conditions, the presence of hydraulic structures, and various types of aquatic habitat (Figure 1).

**Figure 1: Physical stream conditions within the planning area**

### Silver Creek in Oakwood Hills

The upper portions of Silver Creek have debris 2 or more feet high.



### Silver Creek in Oakwood Hills

The upstream segments of Silver Creek show significant streambank erosion.



### Sleepy Hollow Creek

A fresh water sponge was found in a portion of Sleepy Hollow Creek.



### Sleepy Hollow Creek in the Village of Prairie Grove

Portions of Sleepy Hollow Creek demonstrate excessive bank erosion.



### Fel Pro Creek

Hydraulic structures are found on FelPro Creek, (a Fox River tributary within the planning area) which can alter stream hydrology and exacerbate stream hydrology.



### Trash and debris accumulated, Sleepy Hollow Creek

Evidence of debris and trash being caught at the culvert entrance can be found along portions of Sleepy Hollow Creek which contributes to overbank flooding.

## Stakeholder Concerns and Goals

As a first task in developing plan recommendations, stakeholders described local water resource concerns. Stream physical and ecological conditions are a significant area of concern. The following are some of the specific concerns expressed: reducing erosion/sedimentation in lakes and streams; protecting lake water quality; protecting the health of area beaches; collecting monitoring data; protecting and restoring sensitive natural areas like fens; increasing biodiversity; funding restoration efforts; green infrastructure planning; encouraging native landscaping; public education and outreach; farmland preservation; and minimizing community flooding. Protecting the quality and quantity of groundwater resources is another area of concern for the watershed planning group. Specific groundwater-related issues include pollutants such as chlorides and industrial chemicals, well head protections, Class III groundwater protections and protection of recharge areas affecting groundwater dependent aquatic ecosystems and public water supply. Finally, addressing protections for water resources through appropriate local policies and planning initiatives was identified as an important means for effectively achieving goals established for the plan.

Goals were then drafted directly from the concerns expressed by the stakeholders. The final watershed protection goals are outlined below:

- Maintain/achieve healthy surface waters
- Protect groundwater quality
- Protect groundwater quantity
- Protect and restore natural areas and increase native species diversity
- Increase public awareness, knowledge, and implementation of watershed protection practices

These goals will be accomplished through implementation of the projects and policies recommended by the plan.

<sup>3</sup> Also identified by IEPA as potential causes of designated-use impairment

## Purpose of the Plan

The plan provides a roadmap for improving local water quality and watershed health and thus, the quality of life for those that live, work, and play within the Sleepy Hollow Creek and Silver Creek Watersheds. Water quality is generally evaluated by the absence or presence of certain elements (e.g., water chemistry) or attributes (e.g., aquatic biology, physical characteristics of stream network). Although many of these elements are naturally occurring and not innately harmful, it is their excessive concentrations, in some cases, that can negatively affect water quality. The table below provides a summary of common water quality indicators and associated sources of impairment.

**Table 2: Water quality indicators and potential primary sources of impairment**

WATER QUALITY INDICATOR <sup>3</sup>	POTENTIAL PRIMARY SOURCES OF IMPAIRMENT
Chloride	Road salt, water softeners
Fecal coliform	Potentially many, including failing septic systems, pet waste, waterfowl and other wildlife waste, manure, illicit sewer connections, etc.
Dissolved oxygen	Sediment oxygen demand, algal blooms/respiration, hydrologic modification
Phosphorus	Wastewater treatment plants, septic systems, urban & agricultural runoff including pet, waterfowl/wildlife, & livestock waste
Nitrogen	Wastewater treatment plants, septic systems, urban & agricultural runoff including pet, waterfowl/wildlife, & livestock waste
Suspended sediments	Erosion from streambanks, lakeshores, construction sites, agricultural fields

Regular testing of Illinois' streams and lakes for these and other water quality characteristics is managed by the Illinois Environmental Protection Agency (IEPA). Water bodies are assessed for certain designated uses (e.g., aquatic life, primary contact) and the results are produced every two years in the *Illinois Integrated Water Quality Report and Section 303(d) List* (Integrated Report). Sleepy Hollow Creek and Silver Creek have yet to be assessed. Thus, there are currently no known impairments of designated uses. Stakeholders specify, however, that the state/federal water quality standards/guidelines listed in Chapter 3 will be used to set target load reductions, if necessary, when monitoring data are collected in the future and analyzed to assess water quality.

## Plan recommendations

Watershed planning is a voluntary approach to protecting and improving water resource.<sup>4</sup> The Plan recommends several strategies to protect water quality and watershed health. Many of the recommended policy and planning initiatives may be found in Chapter 5 and recommended best management practices and site-specific projects can be found in Chapter 6 of the Plan. These recommendations were developed with input from local planning participants. The support and action of local governments and other community members will be needed to implement recommended projects and policies. All recommendations are in **BOLD** text.

### Best Management Practices

#### Urban BMPs

This plan recommends several best management practices (BMPs) for local government agencies to adopt or expand on in the near future. The recommendations are also aimed at protecting groundwater quality and improving habitat conditions. Examples of such include: implementing green practices including rain gardens, permeable pavement, and native landscaping; adopting water conservation design practices; establishing pharmaceutical disposal programs; and implementing programs to retrofit existing stormwater management infrastructure.

#### Agricultural BMPs

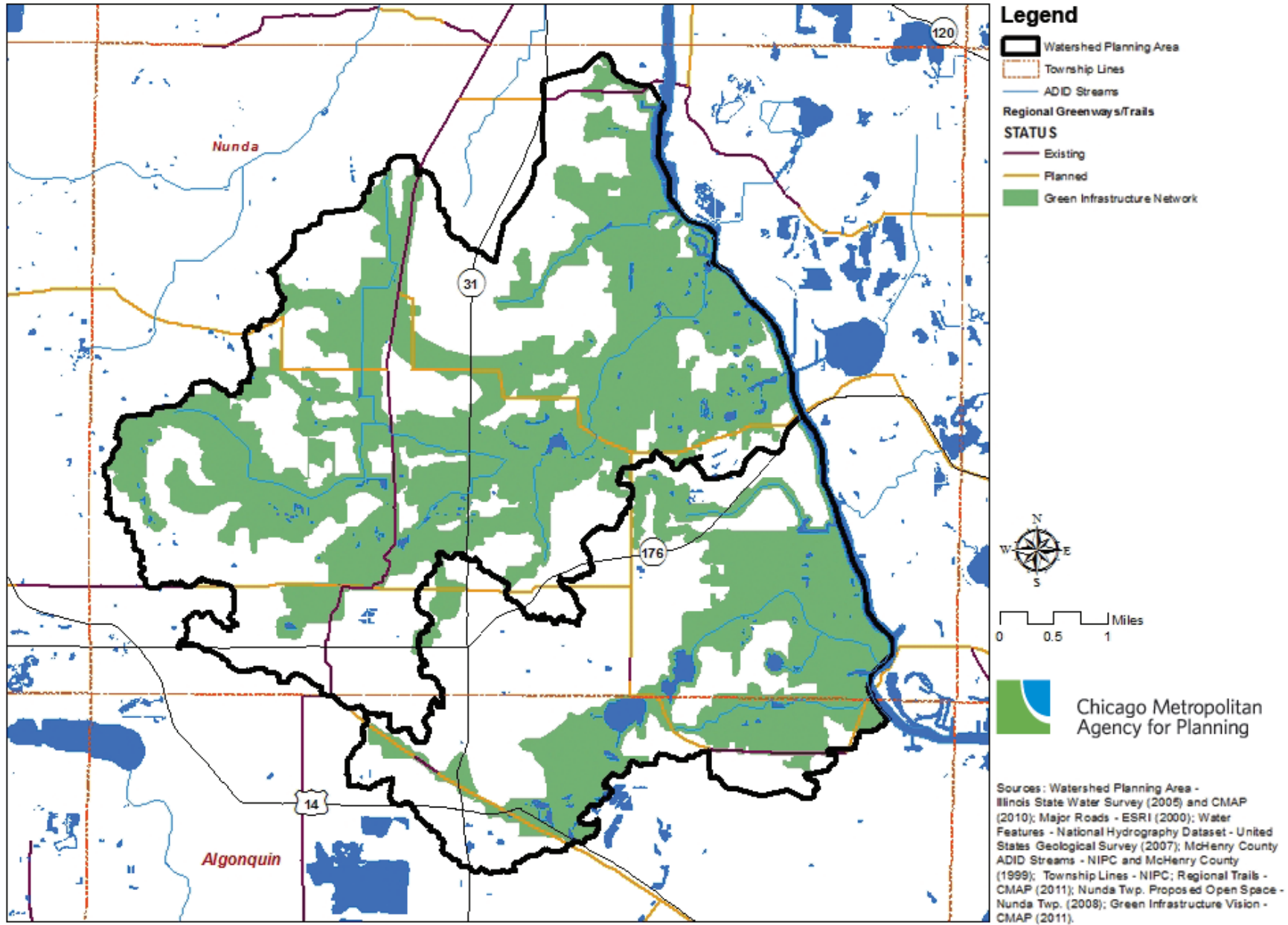
Approximately 3,880 acres of the watershed are in agricultural land use that is a potential source of nutrients and sediment to the Silver Creek and Sleepy Hollow Creek. It is important, therefore, for agricultural land managers to implement BMPs that minimize pollutant load contributions to nearby streams and lakes. The Natural Resource Conservation Service (NRCS) Field Office Technical Guides (FOTG) comprehensively documents BMPs that are applicable to the State of Illinois as well as standards and specifications for implementing such practices.

The following recommendations are primarily for agricultural land managers/owners.

- **Livestock managers should implement livestock exclusion fencing to separate livestock from direct contact with streams.**
- **Heavy use area protections should also be established to reduce erosion from livestock.**
- **Land managers/owners should adopt integrated nutrient and/or pest management plans that help to minimize nutrient and pesticide runoff to streams and lakes in the watershed planning area.**
- **Cropland management practices such as rotational grazing, cover cropping and/or conservation tillage should be implemented to control erosion and reduce the need for nutrient applications.**
- **Land managers/owners should implement general best management practices such as upland erosion controls, streambank or lake shore protection, and/or wetland protection/restoration to protect water quality, in addition to agriculture-specific BMPs discussed above.**

<sup>4</sup> This document does not automatically change existing laws or mandate projects.

Figure 2: Green Infrastructure Network





## Policy Recommendations

### Green Infrastructure

Green infrastructure is a network of natural areas and open spaces that yields water quality benefits, provides wildlife habitat, reduces flood risk, provides recreational resources, and protects groundwater resources. The Plan identifies a green infrastructure network of core areas and corridors for stakeholders and policy makers to protect through a variety of strategies. These strategies include acquisition or establishing conservation easements, restoring natural areas, incorporating advanced conservation strategies for undeveloped land, and implementing BMPs including retrofitting on sites where land is already developed.

The proposed green infrastructure network for this planning area integrates input from community members and considers resource priorities identified in the currently proposed McHenry County green infrastructure plan.<sup>5</sup> The network includes wetlands, lakes, floodplains, streams, existing and proposed regional bikeways, oak stands, areas identified in the McHenry County Natural Areas Inventory, protected open space and natural areas, protective buffers, and other considerations (Figure 2).

**Local governments and conservation organizations are encouraged to adopt the Silver Creek and Sleepy Hollow Creek Green Infrastructure Network as part of their comprehensive planning update process.**

### Future Conservation Opportunity Areas

The Plan also identifies Future Conservation Opportunity Areas, some of which are also identified for protection priority in the Nunda Township Open Space Plan. **It is recommended that permanent protection be expanded to include these areas through conservation easements or land acquisition where possible (Figure 3).**

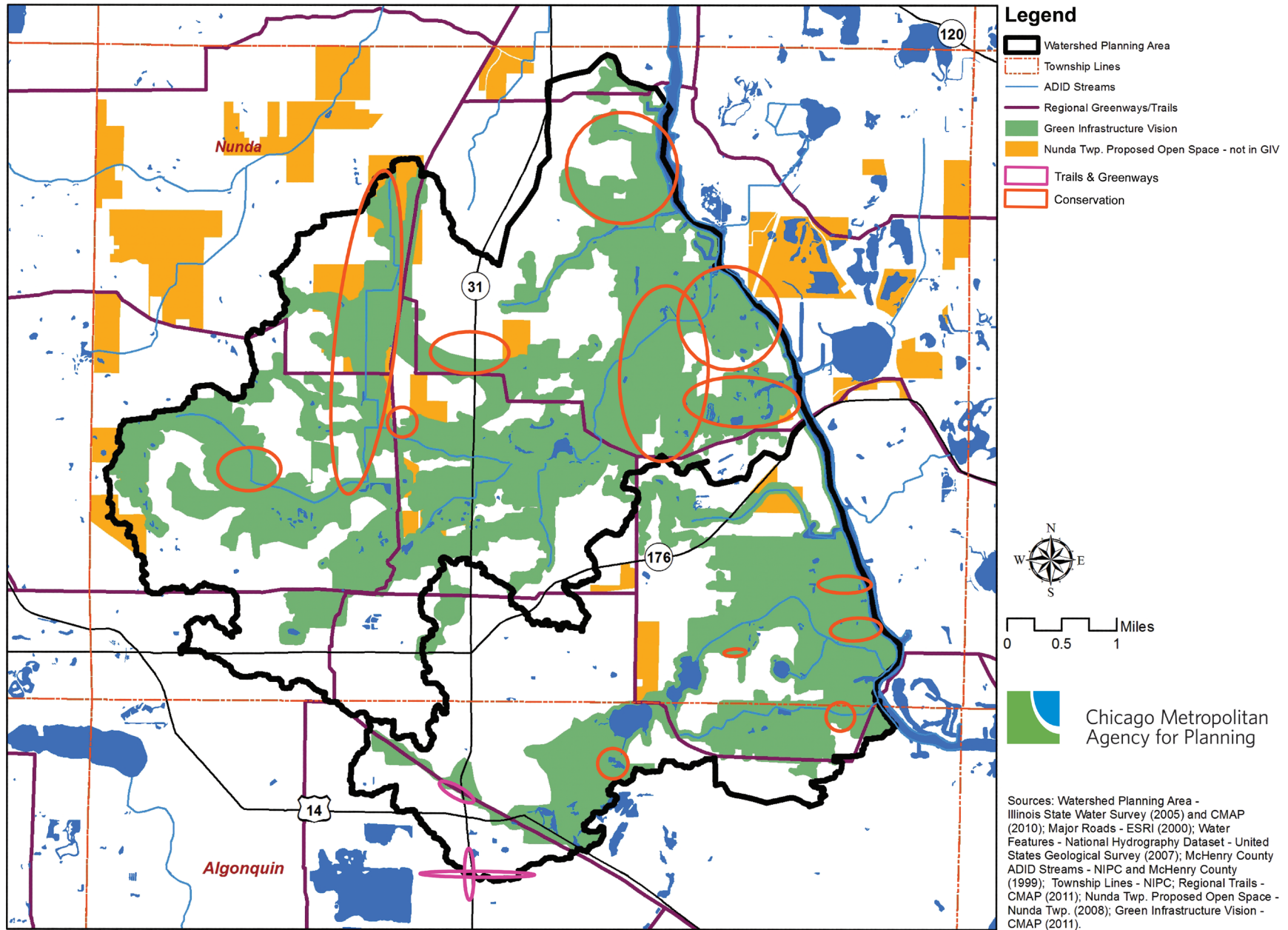
### Oak Stand Protection

Oak trees support biodiversity and are not easily replaced once they are removed or lost. Oak trees help stabilize soils, improve air quality, and provide habitat and food for wildlife. Despite these benefits, there has been a significant decline in the number of oak stands within the watershed planning area. As such, this plan recommends the following:

- **Local governments are encouraged to adopt programs for tree protection and maintenance on public properties and rights-of-way, to require tree replacement for losses during development, and to implement tree planting initiatives.**
- **Local governments should develop and enforce oak stand protection ordinances.**

<sup>5</sup> <http://www.co.mchenry.il.us/departments/planninganddevelopment/Pages/GreenInfrastructure.aspx>

Figure 3: Conservation opportunity areas not identified within the Green Infrastructure Network



### Groundwater Protection

All communities in the planning area are dependent on adequate and safe groundwater for their drinking water supply. However, scientific studies point to potential future groundwater shortages in southeastern McHenry County. Impacts to streams and other groundwater-dependent natural resources from groundwater withdrawals are a concern as well. Therefore, it is critical to protect both the quality and quantity of groundwater resources in the planning area. To help ensure adequate groundwater protection, the watershed plan offers the following recommendations for local governments to adopt or expand on:

- **Adopt groundwater protection ordinances.**
- **Establish Wellhead Protection Programs.**
- **Establish Class III groundwater protection for groundwater-dependent natural areas.**
- **Implement sensible salting practices.**
- **Install demand-initiated water softeners.**
- **Establish drop-off location(s) and collection events for proper disposal of unwanted pharmaceuticals.**
- **Adopt portions or all of CMAP's Model Water Use Conservation Ordinance.**
- **Become a WaterSense Partner.<sup>6</sup>**
- **Adopt policies consistent with recommendations of the McHenry County Water Resources Action Plan.**
- **Utilize conservation design principles.**

Policy recommendations to protect groundwater will also address broader water quality concerns including stormwater management, sedimentation and erosion, and nutrient runoff and improve aquatic habitat. In addition, while the watershed plan focuses primarily on water quality within Silver Creek and Sleepy Hollow Creek, it also considers the broader context of water quality in the Fox River, to which both creeks are tributaries.

### Ordinance Recommendations

Local ordinances and codes regulate and guide impacts from land use, for example, through subdivision standards for development. How a community addresses impervious surfaces such as sidewalks, streets, and parking has a substantial effect on the community's stormwater runoff both in terms of water quality and quantity. Research has shown that as impervious cover in a watershed increases, so do the concentrations of nutrients, sediment, and trace metals in surface waters.<sup>7</sup> Local governments are encouraged to adopt or expand on ordinances and codes to support the principles of conservation design and low impact development. Some examples of recommended policies and planning initiatives to support conservation design ordinances are outlined below.

- **Local governments should adopt ordinances that incentivize:**
  - **Shared parking,**
  - **Decreased dimensions in residential driveways/parking areas,**
  - **Use of bioretention for on-site stormwater treatment,**
  - **Development design that minimizes road width and length, and**
  - **Flexible arrangements to meet parking standards.**
- **Local governments should adopt ordinances that:**
  - **Encourage stormwater management BMPs and reductions in impervious cover, and**
  - **Reduce setbacks, smaller lots, and cluster developments.**
- **Local governments should adopt policies and incentives that:**
  - **Utilize existing infrastructure such as water and sewer, and**
  - **Encourage compact, mixed use, and transit-orientated developments.**
- **Local governments should consider a mandatory no-development buffer code for critical areas such as wetlands, floodplains, lakes, streams, and rivers, and areas with highly pervious soils.**

<sup>6</sup> U.S. EPA WaterSense Program, <http://www.epa.gov/watersense>.

<sup>7</sup> The Center for Watershed Protection. Impacts of Impervious Cover on Aquatic Systems. Mansfield, CT: University of Connecticut, 2003. [http://clear.uconn.edu/projects/TMDL/library/papers/Schueler\\_2003.pdf](http://clear.uconn.edu/projects/TMDL/library/papers/Schueler_2003.pdf) (accessed November 8, 2011).

## Education and Outreach

Watershed planning is a voluntary process. As such, education and outreach is an essential tool in putting the watershed plan into action since it raises public awareness and helps to motivate changes in behavior. The plan recommends that outreach and education efforts focus on key priorities that support the watershed-plan goals. These key outreach priorities include:

- **Native landscaping**
- **Water conservation**
- **Reduced winter-time road salt use**
- **Septic system inspection and maintenance**
- **Proper pet waste disposal**
- **Waste management**
- **Biological and water quality monitoring**
- **Reducing the use of lawn chemicals (pesticides and phosphorus fertilizers)**
- **Alternatives to coal tar sealants**
- **Encouraging rainwater harvesting (rain barrels)**
- **Proper disposal of pharmaceuticals and household hazardous waste**
- **Encouraging native landscaping including buffers along lake shores and streambanks**
- **Promoting rain gardens**
- **Green Infrastructure**
- **Lake and stream management**
- **Buffer strips**
- **Soil testing**
- **Nutrient management**

To accomplish the actions listed, stakeholders expressed an interest in partnering with local, regional, and state groups and outlined a list of activities and specific recommendations for targeted audiences.<sup>8</sup> Watershed community members working together is critical to implement the watershed action plan. A new local planning group called the **Silver & Sleepy Hollow Creeks Watershed Coalition** has formed. The purpose of the coalition is to support plan implementation and future watershed planning efforts. Community members are encouraged to participate in this new local planning group. Contact the Environmental Defenders of McHenry County to learn how you can participate at (815) 338-0393 or [mcdef@owc.net](mailto:mcdef@owc.net).

The Silver Creek and Sleepy Hollow Creek's Watershed Coalition will provide leadership and work with partnering organizations to raise awareness about key outreach priorities. This includes building local partnerships among key implementers of the watershed plan, sponsoring watershed protection education and outreach programs, encouraging local governments to adopt more stringent ordinances aimed at protecting watershed health, and identifying future projects and opportunities that support the watershed plan goals.

- **The Silver Creek and Sleepy Hollow Creeks Watershed Coalition will monitor water quality in the planning areas, in partnership with the Fox River Study Group.**
- **The Coalition should hire a watershed coordinator to promote and coordinate the implementation of the watershed plan's recommendations.**

<sup>8</sup> Full list found in Chapter 6 of the plan.

## On the Ground Project Recommendations

As part of the watershed planning process, several projects were identified for implementation within the next five years to improve watershed health and water quality. Such short-term projects are grouped into the following five types:

- Retrofits to existing stormwater management infrastructure to reduce the amount of pollutant loading and minimize runoff volume within the watershed (Urban);
- Natural Area/Wetland Restoration to improve aquatic habitat (Hydrologic);
- Educational signage to raise public awareness about watershed health (Other);
- Stream channel stabilization and restoration to reduce streambank erosion and improve water quality (Hydrologic), and;
- Lake shoreline protection to protect water quality of the lake and habitat (Hydrologic).

A detailed list of these proposed projects, including the project lead or “champion,” is found in Table 3 on the following page. Project implementation will depend on funding availability and the support of landowners and project partners. This list does not include all of the project recommendations within the plan, but rather it represents those projects with the highest potential to be implemented within the next five years (i.e., short term). These projects represent a range of activities that can be implemented throughout the watershed to protect water quality and improve overall watershed health.

A list of long-term plan recommendations is also provided in the watershed plan appendix.

9 Project specific pollutant load reductions are found in the full plan.

10 Project specific costs are found in the full plan.

## Expected Water Quality Benefits and Costs

### Benefits

CMAP retained the services of Hey and Associates to calculate pollutant load reduction and cost estimates for each of the short-term projects. Sediment, total suspended solids, phosphorus, fecal coliform, and nitrogen reductions were considered in the estimates. Table 4 summarizes expected pollutant load reductions organized by IEPA project categories.<sup>9</sup>

**Table 4: Expected pollutant load reductions organized by IEPA project categories**

IEPA PROJECT CATEGORY	SEDIMENT (tons/yr)	TSS (lbs/yr)	PHOSPHORUS (lbs/yr)	FECAL COLIFORM (counts/year)	NITROGEN (lbs/yr)
Hydrologic	387	14,180	650	4,160,000,000,000	1,511
Other	0	0	0	0	0
Urban	0	24,685	71	14,574,980,000,000	147
<b>Total</b>	<b>387</b>	<b>38,865</b>	<b>721</b>	<b>18,734,980,000,000</b>	<b>1,658</b>

### Costs

As noted above, implementation costs for each short-term recommendation have been estimated. Table 5 summarizes cost estimates for each of the three categories of aggregated short-term projects identified in the plan. Hydrologic projects have been further separated according to type.

**Table 5: Short-term project costs**

IEPA PROJECT CATEGORY <sup>10</sup>	ACCUMULATIVE COST OF SHORT-TERM PROJECTS
Hydrologic	\$3,140,351
Other	\$20,000
Urban	\$1,999,464
<b>Total</b>	<b>\$5,032,476</b>

Cost estimates developed in 2011 may change in time. As such, project leads will need to make the necessary adjustments at the expected time of implementation. It is anticipated that funding for these short-term projects will be provided through state and federal grants and local resources.

**Table 3: Silver Creek and Sleepy Hollow Creek Plan's short-term projects, by IEPA project category, watershed-wide summary of best management practices recommended for implementation within 5 years of plan adoption**

IEPA PROJECT CATEGORY	BEST MANAGEMENT PRACTICE	DESCRIPTION INCLUDING PROPERTY LOCATION	LEAD IMPLEMENTER
Hydrologic	Stream Channel Stabilization	Streambank stabilization east of Crystal Lake Road to Silver Lake	Algonquin Township
Hydrologic	Detention Basin Retrofit	Reshaping pond detention features a at Foxford Hills Golf Course	Cary Park District
Hydrologic	Detention Basin Retrofit	Bio-engineered treatments and restore remnant savanna NE of Crystal Lake Rd., Foxford Hills Golf Course	Cary Park District
Hydrologic	Wetland Restoration	Prairie Ridge Conservation Area and Educational Trails	Crystal Lake Park District
Hydrologic	Wetland Restoration	Wetland and shoreline restoration at Veteran Acres Pond	Crystal Lake Park District
Hydrologic	Wetland Restoration	Reduce invasive species at Sterne's Woods	Crystal Lake Park District
Hydrologic	Wetland Restoration	Restore a wetland community at the Silver Creek Conservation Area	McHenry County Conservation District
Hydrologic	Wetland Restoration	Restore a wetland at Fel-Pro Creek	McHenry County Conservation District
Hydrologic	Wetland Restoration	Restoration along Fel-Pro Creek	McHenry County Conservation District
Hydrologic	Wetland Restoration	Wetland Restoration on the south side of Thunderbird Lake	The Land Conservancy of McHenry County
Hydrologic	Shoreline Protection	Lakeshore stabilization and retrofit (Silver Lake)	Village of Oakwood Hills
Hydrologic	Stream Channel Stabilization	Stabilize the eroded gully in the Oakwood Hills Fen	Village of Oakwood Hills
Hydrologic	Stream Channel Stabilization	Restore/stabilize the streambank at Ames Road	Village of Prairie Grove
Other	Exhibit	Nature Center Exhibit	Crystal Lake Park District
Other	Interpretive Signs	Establish an interpretive sign at Wingate Prairie	Crystal Lake Park District
Urban	Stormwater Wetland	Natural Wetland System at Crystal Lake Stormwater Detention Pond	City of Crystal Lake
Urban	Detention Basin Retrofit	Naturalize existing detention basin at Pingree Road	Crystal Lake Park District
Urban	Porous Pavement	Install Permeable Pavers at Nature Center, 330 N. Main Street	Crystal Lake Park District
Urban	Porous Pavement	Install Permeable Pavement at View Street, Corner of View and Lorraine St.	Crystal Lake Park District
Urban	Porous Pavement	Install Permeable Pavement at Veterans Acres Park's Skate Shack	Crystal Lake Park District
Urban	Porous Pavement	Install Permeable Pavement at Veteran Acres Park , 431 N. Walkup Ave.	Crystal Lake Park District
Urban	Porous Pavement	Install Permeable Pavement at Rotary Shelter Lot, 431 N. Walkup Ave.	Crystal Lake Park District
Urban	Natural Area Restoration	Stabilize existing trails and develop a new trail at Sterne's Woods	Crystal Lake Park District

## Timeline and Implementers

A five-year schedule for plan implementation was developed for each recommendation category (Policy, Education and Outreach, and Project) with the assumption that the plan will be updated every five years. It should be noted that project implementation is based on a variety of factors including, but not limited to, securing appropriate funding and receiving participation from willing landowners and local governments.

In addition to short-term projects, the watershed plan also describes numerous policy recommendations. Identified parties are encouraged to consider and implement the plan's policy recommendations within five years from plan adoption. To help facilitate these efforts, CMAP or other consultants can provide assistance to communities for those recommendations that are related to comprehensive plans and ordinances, such as incorporating the Model Water Use Conservation Ordinance.

The outreach and education recommendations will be an on-going effort with partnering agencies, homeowners associations, and other relevant groups that are active within the watershed. The pace of implementation of the outreach and education recommendations will be greatly increased by hiring a watershed coordinator.

## Additional Information Needs

Water quality data that can be used to calculate pollutant loads do not exist for either Silver Creek or Sleepy Hollow Creek. To address this gap in data and lack of information, this watershed plan relies heavily on modeling results to estimate pollutant loads within the watersheds. A monitoring system should be implemented throughout the planning area that captures water quality conditions at adequate spatial and temporal resolutions. The Silver Creek and Sleepy Hollow Creeks Watershed Coalition should partner with Fox River Study Group (FRSG) and Illinois State Water Survey (ISWS) to develop a more robust water quality monitoring scheme with a goal of achieving an improved understanding of the sources of pollutants within the watershed. After such monitoring data are collected and analyzed, the source of contamination in terms of origin(s) and geographic location(s) can be determined. The Silver Creek and Sleepy Hollow Creeks Watershed Coalition can then reevaluate the plan's recommendations and make appropriate adjustments to priorities at that point.

## Acknowledgments

This project was made possible by Section 604(b) of the Clean Water Act, as amended, and the Illinois Environmental Protection Agency, Bureau of Water, who distributed funds to the Chicago Metropolitan Agency for Planning (CMAP). CMAP, the regional planning agency for the seven counties of northeastern Illinois and the delegated authority for the region's areawide water quality management plan, led the planning process. Support was also provided by the Environmental Defenders of McHenry County and the Fox River Ecosystem Partnership.

The many contributors to this planning process include the Villages of Prairie Grove, Cary, Oakwood Hills, Bull Valley, the Cities of Crystal Lake and McHenry, Nunda Township and Algonquin Township, Algonquin Township Road District, McHenry County, the McHenry County Department of Health, Openlands, property owners, Cary Park District, Crystal Lake Park District, McHenry County Conservation District, the McHenry-Lake County Soil and Water Conservation District, Natural Resources Conservation Service, the Fox River Study Group, Illinois Department of Natural Resources, Illinois Nature Preserves Commission, Nunda Neighbors, Prairie Grove Consolidated School District 46, Silver Lake residents, Sterne's Fen Nature Preserve Steward, Pizzo and Associates, Land Conservancy of McHenry County, TNC volunteers, USACE, Lake Killarney Homeowners Association, Landkeepers, McHenry County Farm Bureau, Toms Rain Barrels, and the Sierra Club.

### About CMAP

The Chicago Metropolitan Agency for Planning (CMAP) is the region's official comprehensive planning organization. Its GO TO 2040 planning campaign is helping the region's seven counties and 284 communities to implement strategies that address transportation, housing, economic development, open space, the environment, and other quality of life issues. See [www.cmap.illinois.gov](http://www.cmap.illinois.gov) for more information.



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