

# Chapter 1: Introduction

This first chapter of the Clear Creek Watershed Action Plan (Plan) provides an introduction to the planning process, including the funding sources, purpose, success statement, scope and limitations, process overview and timeline, participants, and guidelines followed.

## About the Planning Process

### Funding

Initial watershed planning efforts were funded by the Lost Nation/New Landing River Conservancy District of Illinois (RCD). Funding for this 2011 Clear Creek Watershed Action Plan (Plan) was provided by the Illinois Environmental Protection Agency through Section 319 of the Clean Water Act and the RCD. Many organizations donated their time and staff resources, including the USDA Natural Resources Conservation District, Illinois Department of Natural Resources, The Nature Conservancy, Illinois Department of Agriculture, and Ogle County Zoning and Planning Department.

### Project Purpose and Success Statement

The committee's success statement is:

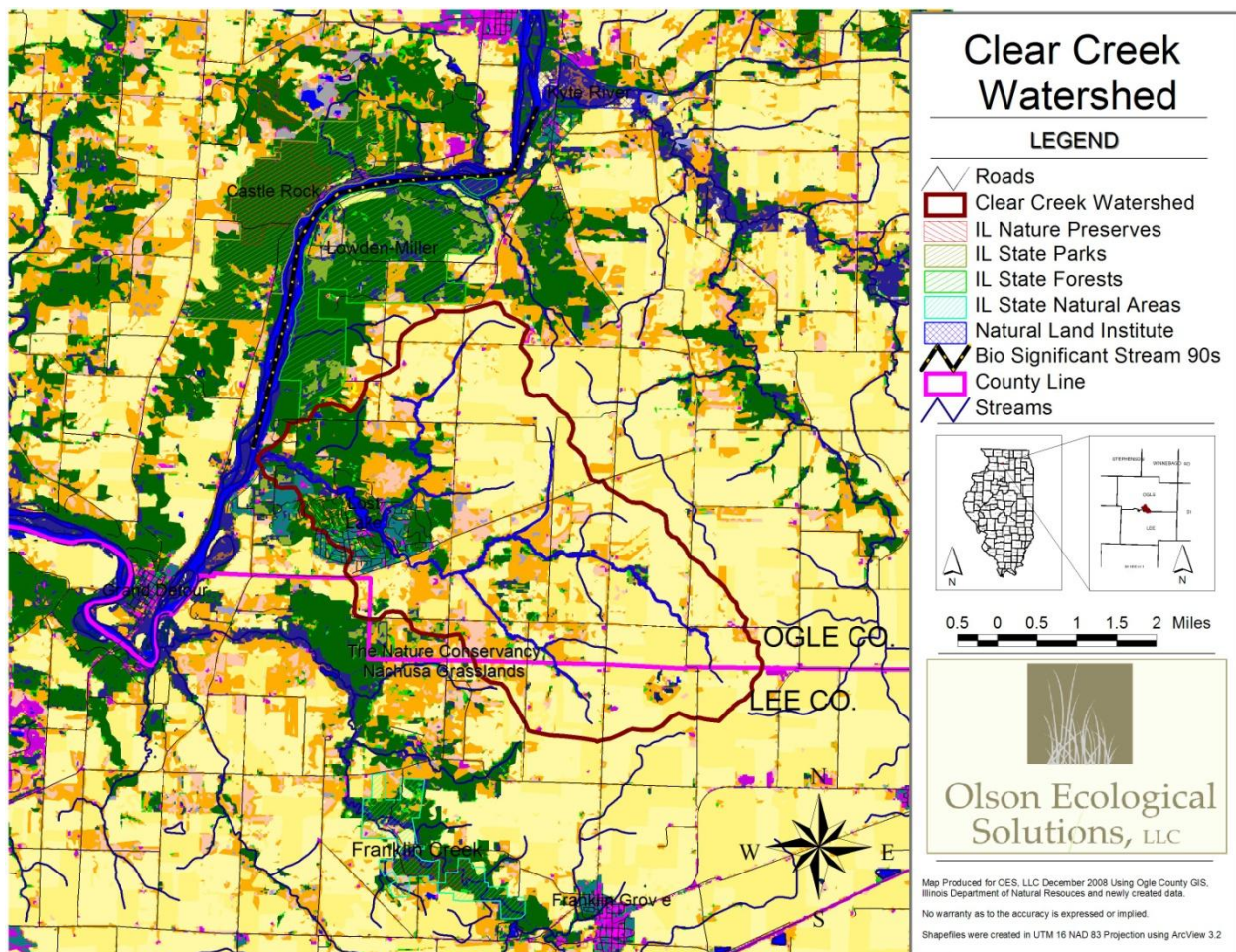
“To minimize the amount of pollutants entering the watershed by recommending, instituting and maintaining environmentally sound practices that support the ecosystem and the productive use of the land that is inclusive of the Clear Creek watershed.”

To meet this success statement, goals, objectives, and action items form the crux of this Plan. They address mainly the remedial needs to alleviate negative impacts of current land uses on water quality and other environmental concerns through the use of best management practices (BMP). They also provide some preventative measures in the form of agricultural and natural land preservation. The agricultural economy and rural lifestyle of the area are respected throughout the Plan. The Plan will serve as a guide for implementation, and shall be updated from time to time.

## Watershed Action Plan Scope and Limitations

The scope of this project is defined to meet the needs of the people of the Clear Creek watershed in addition to the needs of the land. The geographic area considered for this Plan is the Clear Creek Watershed, as delineated in Figure 1-1. This watershed is situated mostly in Ogle County, Illinois, with its southernmost tip extending into Lee County. It empties into the Rock River near Grand Detour, Illinois. It consists of over 11,000 acres, over half of which is farmland. The rest contains Nachusa Grasslands, which is owned and operated by The Nature Conservancy, privately owned forest lands, and a residential subdivision situated around Lost Lake. The watershed features are described in detail in Chapter 2.

Figure 1-1: Watershed boundaries of Clear Creek.



The people of the watershed have various interests that need to continue to be met under this Plan, some of which might interfere with what is the most ecologically sound approach to land management. This plan is designed to suggest reasonable options that result in a compromise that will achieve improvement to water quality and other environmental factors while allowing other interests to persist, mainly sustaining the agricultural economy of the watershed. Therefore, the Plan suggests very little land use change.

The majority of pollutant load reductions into surface waters and groundwater are often achieved by stabilizing streambanks and Highly Erodible Lands (HEL), restoring hydric soils to wetlands, and improving agricultural and residential land management practices. The changes suggested in this Plan are concentrated on stabilizing streambanks and restoring hydric soils to wetlands closest to the streams, with a few exceptions. The Plan recognizes that stabilizing HELs by changing the land use from agricultural production to permanent vegetative cover would likely interfere with the livelihood of the landowners. Therefore, it is instead suggested to use conservation farming practices on HELs. The Plan also recognizes that known areas of channelization are likely not to be reverted to meandering streams, again because this would likely unacceptably interfere with the income potential of the surrounding farmland. Other best management practices are recommended for the remainder of agricultural and residential lands.

## **Watershed Planning Process Overview and Timeline**

The process of creating a watershed-based action plan began largely in 2006, when the RCD formed the Lake Management Committee to preserve and protect the Clear Creek watershed by promoting understanding and comprehensive management plans for the land and watershed ecosystems. The RCD initially was concerned about the declining water quality of Lost Lake and their contribution to water quality degradation downstream from the lake to the Rock River. They recognized that this was not just a lake community issue, but a whole watershed issue. The RCD hired the firm JadEco of Shannon, Illinois to help them improve the water quality of the lake. They adopted standard operating procedures for shoreline re-vegetation prepared by Kaskaskia Engineering Group (2008), implemented a rebate program for homeowners to stabilize their shorelines, and introduced a zero phosphorus lawn fertilizer program in May 2009, which is an educational tool for homeowners (Breckenfelder, Pers. Comm.). In April of 2008, they hired Olson Ecological Solutions, LLC of Rockford, Illinois as a grant writer and facilitator of a watershed planning committee and a technical advisory committee. They soon gained support from local organizations, including the Ogle County Soil and Water Conservation District, who authorized the USDA Natural Resources Conservation Service to become a partner in the watershed planning effort.

On April 1, 2009, the first Clear Creek Watershed Planning Committee meeting was held, and individual stakeholders of the watershed volunteered to serve as committee members. On June 8, 2009, the first Clear Creek Technical Advisory Committee meeting was held, and representatives from federal, state,

and local environmental and planning organizations joined the effort. In September of 2009, the committees decided to merge into one Clear Creek Watershed Planning and Technical Advisory Committee. Separate meetings were to be held if any one meeting was going to lean specifically toward planning or technical advice, but this did not occur.

In December of 2008, a funding request was submitted by the RCD to the Illinois Environmental Protection Agency (EPA) for assistance through Section 319 of the Clean Water Act, who provided partial funding for watershed planning to the RCD through grant number 3190816 in May 2009.

During initial meetings, committee members found common ground in their concerns for improving water quality for all surface waters in the watershed. As the planning process moved forward, the committee members identified goals and objectives related to improving the environment within the watershed while maintaining the rural lifestyle of the community. The current conditions of the watershed were inventoried using readily available data. In May 2010, the EPA approved the Clear Creek Watershed Resource Inventory, which reflected the outcome of this study. The committee used this information to refine their goals and objectives and create a list of action items, which were more specific tasks to address the goals and objectives. Field work was conducted to satisfy gaps in the data, which were recognized as the action items unfolded. Nathan Hill, GIS Analyst for Olson Ecological Solutions, created a land cover data file to reflect information that was more current than what was readily available, and ran a computer model using this land cover data file to estimate current pollutant loading into the streams and lake. He then changed the land cover map to reflect the hypothetical situation of a complete build-out scenario using the measurable best management practices (BMP) recommended in the action items. He re-ran the model to estimate the pollutant loading once the BMPs were implemented. The differences in these values were the pollutant load reduction estimates. With this information, the committee quantified the work to be accomplished and created a schedule and budget to the extent possible. They chose to limit this Plan to 5 years and included the perceived long-term needs that would extend beyond the life of the Plan. They intended to update the Plan annually. In June 2011, the committees agreed to continue their structure and commitment, changing their focus from planning to education and facilitation.

## **Watershed Planning Participants**

Many people participated in the watershed planning effort, including landowners and stakeholders of the watershed; representatives from federal, state, and local environmental and planning organizations; and staff and consultants of the RCD. Participants represented a wide range of interests and expertise. Below participants are listed by their role in the process.

### *Creek Watershed Planning Committee Members:*

1. Joe Baker, Landowner
2. Marian Baker, Taylor Township

3. Ed Bettner (Chairperson), Taylor Township
4. Dan Boehle (Secretary), Landowner
5. Loran Brinkmeier, NRCS, Ogle Co.
6. Jim Brown, Homeowner
7. Bill Kleiman, The Nature Conservancy
8. Steve Larry, RCD
9. Steve Meiners, Landowner
10. Dave Meisenheimer, Soil Conservation Technician, NRCS, Ogle Co.
11. Dave Point, Landowner
12. Sherrie Taylor, Landowner

*Clear Creek Technical Advisory Committee Members:*

1. Bill Lindenmeier, University of Illinois Extension
2. Marty McManus (Chairperson), Illinois Dept. of Agriculture
3. Abby Merriman, NRCS, Ogle Co.
4. Frank Ostling, Wildlife Biologist, Illinois Dept. of Natural Resources
5. Dan Pierce, Soil Conservation Technician, NRCS, Ogle Co.
6. Mike Reibel, Ogle County Zoning and Planning Department
7. Karen Rivera, Fisheries Biologist, Illinois Dept. of Natural Resources
8. Joe Rush, JadEco Natural Resource Consulting
9. Aaron Seim, District Conservationist, NRCS, Lee Co.
10. Bob Vogl, Prairie Preserv. Soc. of Ogle Co. & Rock R. Resource Rich Area Ecosystem Partnership
11. Sonia Vogl, Prairie Preserv. Soc. of Ogle Co. & Rock R. Resource Rich Area Ecosystem Partnership
12. Roger Windhorn, Soil Scientist and Geologist, NRCS

*Guests in Attendance at Meetings:*

1. Nola Colwell
2. Curtis Fruit
3. Richard Gates
4. Jeff McKinley
5. Charlie Moore
6. Jerry Sellers
7. Audrey Taylor
8. Les Taylor
9. Bill Wurtz

*Technical Assistants:*

1. Gary Chase, Illinois Rural Water
2. Sharon Hartzold, Resource Conservationist, NRCS
3. Amy Kuhel, Illinois Dept. of Agriculture

4. Dave Larson, Illinois State Geological Survey
5. John Lesnak, Illinois Environmental Protection Agency
6. Jerry Paulson, Natural Land Institute
7. Marlyn Schafer, US Army Corps of Engineers
8. Sharron Santure, Natural Resources Conservation Service
9. Susan Steffens, Lost Lake Utility District.

*Consultants and Staff:*

1. Rebecca Breckenfelder, Administrative Manager, RCD
2. Angela Buesse, Olson Ecological Solutions
3. Nathan Hill, Olson Ecological Solutions
4. Rebecca Olson, Olson Ecological Solutions
5. Shannon Thrumman, Olson Ecological Solutions

**Figure 1-2: Part of the Clear Creek Watershed Planning & Technical Advisory Committee.**



From left to right: (Back row) Abby Merriman, Steve Larry, Rebecca Olson, Becky Breckenfelder, Jim Brown, and Joe Rush.  
(Front row) Joe Baker, Marian Baker, and Ed Bettner.

## **Watershed Action Plan Guidelines Met**

The Plan was based on the Inventory and the input of the committee. The Plan was consistent with USEPA watershed based plan guidance dated August 26, 2003 (as revised), Chicago Metropolitan Agency for Planning's "Guidance for Developing Watershed Action Plans in Illinois" dated June 2007, and current watershed planning principles. The Handbook for Developing Watershed Plans to Restore and Protect Our Waters (USEPA, 2008) was especially helpful. Total maximum daily load (TMDL) implementation plan requirements were not applicable to this watershed and therefore not considered. The draft of this plan was submitted in June of 2011.

## **About the Watershed**

The Clear Creek Watershed was a 7.22-mile basin that drained 11,130 acres (17.4 mi<sup>3</sup>) in Ogle and Lee counties in north-central Illinois (Hill, Pers. Comm. and USGS, 2009). Clear Creek and Lost Lake were the major waterbodies referenced by the EPA as HUC 0709000506 (IEPA, 2010). The nature of this watershed was generally explained by its physical and natural features, land use and population characteristics, watershed and waterbody conditions, pollutant sources, and waterbody monitoring data. Streams in the watershed flowed through mostly flat to rolling agricultural land, The Nature Conservancy's Nachusa Grasslands, and a subdivision situated around Lost Lake before it entered a former Biologically Significant Stream section of the Rock River. The watershed was an important agricultural area, as over 90% of the soils were designated as either prime or of statewide importance. About 56% of the watershed was in row crops and 5% was grazed. Only about 2.3% was developed. The watershed consisted of only 0.22% floodplain, 2.4% wetlands on the National Wetlands Inventory, and 5.9% hydric soils, all predominantly located along the creek corridor. Bedrock in the watershed varied, with a depth of 75 feet at the Lost Lake dam (Finch, 1973). There were five reported archaeological sites in the western portion of the watershed (Santure, Pers. Comm.). Local ordinances regarding land management practices in the watershed originated from Ogle and Lee Counties and the RCD. No future land use changes were planned for the watershed by either county (Ogle County Planning & Zoning Dept., 2008 and Vandewalle and Associates, 2010). The designated uses for Lost Lake were Aquatic Life, Fish Consumption, Primary Contact, Secondary Contact, and Aesthetic Quality. In 2010, the Environmental Protection Agency assessed that the lake fully supported Aquatic Life, but did not support Aesthetic Quality. Reasons stated were excess of total suspended solids (TSS), total phosphorous, and aquatic algae stemming from nonpoint sources, namely residential districts, the dam, yard maintenance, agriculture, and runoff from forest, grassland, and parkland (IEPA, 2010). No TMDL reports applied to the watershed.

The Clear Creek Watershed was of great importance to many wildlife species classified as Species in Greatest Need of Conservation and housed several threatened and endangered species (IDNR, 2005). The watershed contained high priority grasslands at Nachusa Grasslands and two Conservation

Opportunity areas of high value to wildlife, the Rock River Conservation Opportunity Area and the Nachusa-Franklin Creek-Castle Rock-Lowden Miller Conservation Opportunity Area (Renn, Pers. Comm.). It was within one of three Forest Legacy Areas in Illinois (Gillespie, Pers. Comm.). Habitat types present in the watershed included forest, rural grassland, prairie, and wetlands. The Nature Conservancy was the only agency permanently protecting land within the watershed. They owned 1,490 acres and have conservation easements on 400 acres. Other critical habitat was provided by over 5,500 acres of state-protected lands within the vicinity. The Illinois Department of Natural Resources sampled fish at Nachusa Grasslands in 2006 and ranked the site as a Moderate Aquatic Resource with an Index of Biotic Integrity (IBI) of 35 (Rivera, 2006 unpublished). Further studies of macroinvertebrates in Clear Creek and Lost Lake suggested moderate to good water quality (DeWalt, Pers. Comm.).

Limited data provided by the Environmental Protection Agency's sampling of Lost Lake in 2007 supported that excessive amounts of suspended solids, nitrogen, and phosphorus contributed to the decline of water quality in the surface waters of the watershed (Carruso, 2008 unpublished). Likely sources of sedimentation and pollution were identified, and some measures were installed to mitigate and prevent these threats. Known major contributors to sedimentation in the watershed included Highly Erodible Lands covering 31% of the watershed, channelization of about 10% of the open waterways, runoff and soil compaction of cropland affecting about 59% of the watershed, lack of vegetation along riparian zones, livestock on 550 acres with free access to 17,330 linear feet of stream, and worsening unstable stream banks. The likely nonpoint sources of pollution and erosion to surface and ground waters included livestock and runoff from agricultural fields and residential lawns. Impervious surfaces account for considerably less than 10% of the watershed and were therefore not assessed as sources of pollution. The only known point source of pollution in the watershed was a wastewater treatment plant for the subdivision, which incurred multiple violations by the Environmental Protection Agency prior to its reconstruction in the summer of 2010. After the reconstruction, no violations were reported at the time of this Plan. The entire Clear Creek watershed fell into the "excessive" category of Keefer's mapping of aquifer sensitivity to contamination by pesticide leaching (Keefer, 1995). Technical and financial assistance were being utilized by stakeholders for implementation projects to combat sedimentation and pollution. The Lost Lake Utility District reduced some pollutants by reconstructing the wastewater treatment plant to meet stricter requirements recently implemented by the Environmental Protection Agency. Support for reducing nonpoint source pollution came from the Natural Resources Conservation Service, Soil and Water Conservation District, and RCD. At the time of this Plan, one Section 319 nonpoint source project was in progress for the watershed, to stabilize 1,575 feet of streambank along Babbling Brook and 1,981 feet of shoreline at Lost Lake (Grant No. 3191003). Construction was scheduled to be completed in June 2012.

Some information about the watershed was not readily available, including fish consumption advisories, Source Water Assessment; annual drinking water report; septic system number, locations, or failures; drain tile locations; or livestock population, management, or land application of manure. Wells were located, but information about well contamination was not available. Septic systems outside the subdivision were not considered a significant source of nonpoint pollution due to low density.

## Literature Cited for Chapter 1

Chicago Metropolitan Agency for Planning. 2007. Guidelines for Developing Watershed Action Plans in Illinois. Springfield, IL: Illinois Environmental Protection Agency.

U.S. Environmental Protection Agency (U.S. EPA). 2008. Handbook for Developing Watershed Plans to Restore and Protect Our Waters. Washington, D.C.: USEPA Office of Water, Nonpoint Source Control Branch.

\*See the Literature Cited section of Chapter 2 for all other references.