Chapter 1.0 Introduction

1.1 The East Branch South Branch Kishwaukee River Watershed

1.1.1 Current Watershed Setting

A watershed is a land area that contains a common set of streams or rivers that drains to a common body of larger water such as larger rivers, lakes, estuaries, wetlands, or even the ocean (Figure 1-1). Topography is the key element affecting this area of land. The boundary of a watershed is defined by the highest elevations surrounding the stream with water flowing towards the lower elevations within the watershed. Theoretically, a drop of rainwater that falls on the highest elevation within the watershed will eventually make it to the lowest point. Rainfall that falls outside this boundary will enter another watershed and flow to a different stream. Whether you know it or not, you live in a watershed. Watersheds exhibit a complex interaction between land, climate, water, vegetation, humans, and animals. Watersheds are shown to be dynamic, constantly seeking states of equilibrium while being affected by man-made influences and natural daily changes in weather and climate.

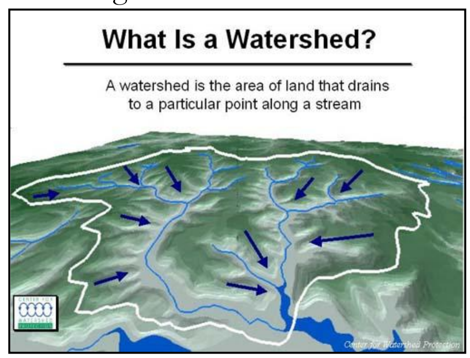

Figure 1-1 What is a watershed? (CWP)

Watersheds come in all shapes and sizes and can cross county, state, and even international borders. Other common names of watershed, depending on size, include basins, sub-basins, and catchments. For example, the United States Geological Survey (USGS) developed a national framework for categorizing watersheds based on geographical scale. This hierarchy of scales utilized a Hydrologic Unit Cataloging (HUC) system. The USGS HUC's divides all of the United State's watersheds into boundaries using four different classifications, and the cataloging unit is the smallest to define the watershed. The 8-digit HUC code (HUC 8) for the entire Kishwaukee River Watershed is 07090006. The 10-digit HUC code (HUC 10) for the South Branch Kishwaukee River Watershed is 0709000605. There are four (4) 12-digit HUC codes for the areas covered by this plan: 070900060504 (East Branch South Branch Kishwaukee River subwatershed), 070900060502 (eastern portion of Union Ditch subwatershed), 070900060503 (western portion of Union Ditch subwatershed) and 070900060501 (Virgil Ditch subwatershed).

The East Branch South Branch Kishwaukee River watershed is located in east-central DeKalb County and southwestern Kane County (Figure 3-1). The East Branch South Branch Kishwaukee River is a major tributary to the South Branch Kishwaukee River in DeKalb County, with the confluence about one mile west of Shabbona. The watershed drains approximately 123 square miles of land into the South Branch Kishwaukee River. The South Branch Kishwaukee River continues to flow west to its confluence with the Kishwaukee River. From this confluence, the Kishwaukee River flows westward through Rockford before joining the Rock River. The Rock River flows to the southwest before joining the Mississippi River in the Quad Cities area (Moline, Illinois; Rock Island, Illinois, Davenport, Iowa; and Bettendorf, Iowa).

The East Branch South Branch Kishwaukee River Watershed can be divided into 3 primary subwatersheds: Virgil Ditch, Union Ditch, and the East Branch South Branch Kishwaukee River (Figure 3-2). The Virgil Ditch subwatershed finds its headwaters in northwestern Kane County and flows south into Union Ditch. The Union Ditch system generally flows west from Kane County into DeKalb County and flows into the East Branch South Branch Kishwaukee River. As noted above, the East Branch South Branch Kishwaukee River is a major tributary to the South Branch Kishwaukee River.

Collectively, there are 72.7 stream miles in the East Branch South Branch Kishwaukee River Watershed: 21.3 miles attributed to East Branch South Branch Kishwaukee River, 13.7 miles of Virgil Ditch and 37.7 miles of Union Ditch. Available data indicates that 2,475 acres of wetlands are located within the East Branch South Branch Kishwaukee River watershed. There is one major surface impoundment in the watershed: Sycamore Lake. Sycamore Lake is 7.5 acres in size and is located within the East Branch South Branch Kishwaukee River subwatershed.

Two counties, eight municipalities and eleven townships comprise the East Branch South Branch Kishwaukee River watershed. Approximately 49.1% of the watershed is in DeKalb County and the remaining 50.9% in Kane County. Approximately 17.07% is incorporated in one of the eight municipalities: Village of Burlington, Village of Cortland, City of DeKalb Village of Elburn, Village of Lily Lake, Village of Maple Park, City of Sycamore, and Town of Virgil. The East Branch South Branch Kishwaukee River Watershed is approximately 84.34% agricultural and 11.35% developed. The remaining 4.31% is parks and open space.

The Illinois Environmental Protection Agency (Illinois EPA) has identified no impaired waters in The East Branch South Branch Kishwaukee River Watershed. However significant water quality concerns including channelization and hydromodification have been identified in the watershed. Erosion and sedimentation is prevalent along the waterways in the watershed. This plan aims at addressing identifying causes and sources of these impacts and developing programmatic and site specific recommendations for restoring the water quality and hydrology of the East Branch South Branch Kishwaukee River Watershed.

1.1.2 The Watershed Over Time

The streams and ditches within the East Branch South Branch Kishwaukee River Watershed have undergone significant changes since the time of European settlement in the late 1800s. Two hundred years ago, the much of the watershed would have been comprised on wetlands and very few defined stream channels. The United States Township plat book survey for Virgil Township dated June 1877 indicates that Virgil Ditch #2 and Virgil Ditch #3 did not extend as stream channel north of the Town of Virgil. Additionally, Virgil Ditch #1 is not shown. Presumably, the watershed upstream of Town of Virgil was a wetland slough, falling gradually as it flowed westerly and southwesterly. The presence of the wetlands made agriculture difficult due to the presence of standing water. According to information provided by Kane County, the first recorded right-of-way for the construction of a portion of the Virgil Ditch system was issues to the Drainage Commissions of the Virgil Ditch Drainage District #1 of the Town of Virgil on October 31, 1883. Subsequent right-of-way permits were issued and a large percentage of the watershed's wetlands were filled and the ditches were installed to drain water away from agricultural fields. By the time the 1937

United States Geological Survey (USGS) Topographic Map was prepared, Virgil Ditches #1, #2, and #3 and Union Ditch #4 are shown in their current configuration.

Similarly in the DeKalb County portion of the watershed, significant alterations were made to the watershed in the late 1800s to early 1900s. On the Map of Cortland Township dated 1871, Union Ditch #1, Union Ditch #3, and the East Branch South Branch Kishwaukee River are shown in an alignment similar to what is present today. A wetland complex is identified in the current location of Union Ditch #2. By 1892, excavation of Union Ditch #2 has begun near the current location of downtown Maple Park. A large wetland complex is still present north of Maple Park separating Union Ditch #2 and Union Ditch #3. By 1908, the wetland complex has been drained and Union Ditch #2 flows directly into Union Ditch #3 and Union Ditch #1, Union Ditch #2, Union Ditch #3, and the East Branch South Branch Kishwaukee River are shown in their current configuration.

1.1.3 Impacts of Watershed Development

As discussed above in Section 1.1.2, in the late 1800s as people moved into the watershed, they drained wetlands by excavating ditches as a means of removing water so that the land could be used for agriculture. It appears that the majority of the streams that make up Virgil Ditch #1, Virgil Ditch #2, Virgil Ditch #3, and Union Ditch #2 were manmade. These manmade ditches are unstable and channelized. Additionally, the natural occurring stream channels of Union Ditch #1, Union Ditch #3, and the East Branch South Branch Kishwaukee River were also channelized during the late 1800s and early 1900s as a means of increasing flow capacities to move water away from the agricultural field as quickly as possible.

There are problems resulting from the channelization of streams and manmade ditches. Channelization is detrimental for the health of streams and rivers through the elimination of suitable instream habitat for fish and wildlife by limiting the number of natural instream features such as pool-riffle sequences in the channel. Additionally, in many locations, a berm comprised of historic side-cast dredge spoils cuts off the stream channels from the floodplain.

Additionally, hydromodification, defined as human induced activities that change the dynamics of surface or subsurface flow, is prevalent in the watershed. Impacts from hydromodification can be seen as early as the late 1800s with the draining of wetlands, construction of the ditches, and the channelization of streams to increase agricultural production. Early settlers of the Midwest quickly realized that the soils found under wetlands and wet prairies were ideal for crop production once the water was removed. In order to "dry" the wetlands and the wet prairies, systems of sub-surface drainage tiles were installed in order to re-route the groundwater away from the wetlands and wet prairies and discharged into streams and ditches. Given that the drain tiles were drained by gravity flow, the receiving surface water needed to be a lower elevation than the tile. As such, ditches were installed and naturalized stream channels were often excavated to a deeper depth and straightened to facilitate quicker drainage of the fields. Once the water was removed, these areas could be put into successful agricultural production. This creation of agricultural land was at the cost of the loss of wetlands, wet prairies, and riparian habitat. Hydromodification attributed to the installation of drain tiles is prevalent throughout the East Branch South Branch Kishwaukee River.

Starting in the mid-1900s, the municipalities in the watershed including the City of Sycamore and the Villages of Cortland and Maple Park began to transition from rural communities into more suburban communities. This transition from rural to suburban is continuing to occur across the watershed as growth pressure increased from the communities located east and west of the watershed. Without proper planning, the transformation to a more suburban environment the East Branch South Branch Kishwaukee River watershed will begin to experience water quality and habitat degradation.

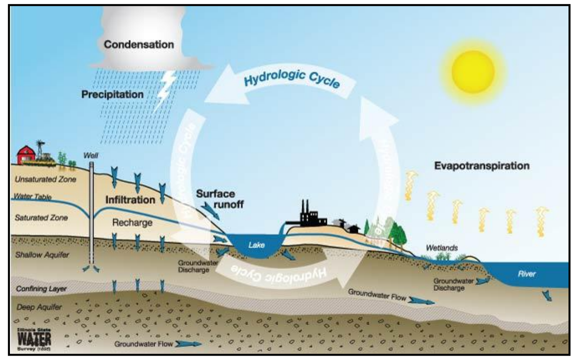

Figure 1-2: Hydrologic Cycle (ISWS)

Under natural and undisturbed conditions, precipitation that falls onto the land surface is allowed to soak into the soil and become groundwater in a process referred to as infiltration or evaporated into the air by plants or from soil or surface waters in a process known as evapotranspiration. Typically, 75-90% of the rainfall either soaks into the ground or evaporates. Precipitation that is not infiltrated or evapotranspired is called runoff. The runoff can be stored in wetlands or depressional areas where it can be infiltrated into the soil or flow across the vegetated land surface and into creeks, stream, rivers, and lakes. As the runoff passes through the vegetation, the flow of the water is slowed allowing for additional infiltration and reducing the potential for high flows to rush into the surface waters. Additionally, the flowing of the runoff through vegetation provides water quality benefits such as the settling out of soil and other solids and nutrient removal by plants. This process is known as the hydrologic cycle (Figure 1-2).

Suburban development in the watershed is reducing the amount of land available for the natural infiltration of rainfall into the ground. Instead of precipitation falling on vegetation where it can be infiltrated, it falls on parking lots, rooftops, and roads. The surfaces that prevent infiltration are known as impervious surfaces. From these impervious surfaces, the runoff is quickly conveyed into stream and creeks via a constructed drainage system comprised of drainage ditches, swales, and storm sewers. The discharge of runoff into the surface waters by the constructed drainage ditches is known as stormwater runoff.

Stormwater runoff tends to enter streams and creeks at a much more rapid rate than runoff from undeveloped areas. This rapid drainage results in what is called "flashy" hydrology. A "flashy" hydrology means that the water level in the stream rises very quickly during a storm and falls quickly afterward. Since less water is infiltrated into the ground to later seep out and create a steady base flow within the stream, low flows are considerably lower or less consistent. Likewise, because less water is absorbed by the ground and more water is flowing into the streams, high flows are considerably higher.

As a result of the higher flows, stream and creeks received large surges of water in short periods of time. These high flows cause erosion of the streambanks and/or streambeds. As the streambed erodes, the channel deepens and becomes more entrenched (or incised). If the streambed is composed of a stable substrate such as large gravel or stone or when structures provide grade control, the banks will erode and the channel will become wider instead of the channel deepening. As the physical modification of the stream occurs, adjacent property can be damaged.

The flows between these surges can include range from extremely low flows to no flows as there is limited groundwater to maintain baseflow to the creek. Decreased low flows degrade aquatic habitat because low flows have low levels of dissolved oxygen necessary for aquatic animals and because, in extreme cases, the stream can dry up completely for periods of time.

In addition, to problems created by the flashiness of the stream, the duration of high flows can also be a significant problem. High flows that cannot be contained within the stormwater conveyance system or within the stream channels can result in localized flooding of homes, business, and roads. This flooding is caused by over-bank topping, culvert backups, and storm sewer surges and backups. The resulting flooding caused property damage and can make travel difficult and unsafe due to standing water. The heavy flows damage stormwater infrastructure including culverts and discharge pipes by causing dislodgement or erosion around the infrastructure. The high flows also have the ability to carry debris including logs, branches, and trash which can be deposited in debris jams and block the conveyance system.

In addition to the change of the volume and rate of runoff, urbanization can also lead to increased pollutants loadings. This kind of pollution is called nonpoint source pollution. Unlike pollution from industrial and sewage treatment plants, nonpoint source pollution comes from many diffuse sources. Nonpoint pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, and ground waters.

Nonpoint source pollution can include:

- Excess fertilizers, herbicides and insecticides from agricultural lands and residential areas;
- Oil, grease and toxic chemicals from urban runoff and energy production;
- Sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks;
- Salt from roads and irrigation practices and acid drainage from abandoned mines;
- Bacteria and nutrients from livestock, pet wastes and faulty septic systems;
- Atmospheric deposition; and
- Hydromodification.

In addition to chemicals and other substances, nonpoint source pollution also includes other parameters that affect water quality such as temperature, pH, and the amount of oxygen in the water. Each of these parameters plays an important role in the health of aquatic organisms such as fish, macroinvertebrates, and other insects that live in and near streams and waterways. For example, aquatic organisms require oxygen that is dissolved in the water to live and propagate. Low flows and nonpoint sources of pollution can cause the dissolved oxygen levels to become so low that the organisms are killed or need to leave the area in order to find livable conditions.

Temperature is also critical for the health of aquatic organisms. Many fish require cool or cold flowing water in order to successfully breed and survive. Stormwater runoff is typically higher in temperature than the groundwater that feeds streams in an urbanized area. As stormwater runoff flows off of impermeable surfaces and through the stormwater infrastructure it is warmed, leading to elevated water temperatures in the receiving streams. Pollutants picked up along the way can also change the pH of the water making it more acidic or more alkaline. Significant changes towards acidic or alkaline can also have a negative impact on the health of a stream.

Many studies have shown a direct negative impact between the urbanization (or increase in impervious surface area) on water quality and stream health and increase risk of flooding. Thus, the health of the East Branch South Branch Kishwaukee River Watershed is directly related to land use activities throughout the watershed. These activities not only impact the residents of the watershed but all of those of the communities, both human and natural, living downstream on the South Branch Kishwaukee River.

1.1.4 Where Do We Go From Here

As discussed in Sections 1.1.2 and 1.1.3, land use changes from wetlands to agricultural to developed has played a significant role in the degradation of water resources in the East Branch South Branch Kishwaukee River Watershed and will continue to impact the watershed as development continues. Fortunately, there are actions that can be taken to mitigate existing issues and prevent additional future problems. This watershed-based plan outlines the recommended actions to restore water quality and stream health, and prevent and reduce flooding. The future health of the watershed is largely dependent on how stormwater is managed. The business-as-usual approach using conventional development practices, stormwater management techniques and landscape management practices will result in a continued decline of the watershed resources and water quality. A new approach that includes proven and environmentally-sensitive practices and approaches to stormwater management can reverse this trend and begin to improve water quality and stream health in the watershed.

There is no single fix for the water quality and flooding problems in the East Branch South Branch Kishwaukee River Watershed. These problems are the cumulative result of decisions made since the early 1900s. It will take the decisions and actions of every stakeholder living in the watershed to work together to improve the health of the watershed. Likewise, actions will need to be taken on every scale from the individual lot to the neighborhood to the municipalities to positively impact watershed resources.

This watershed-based plan is the first step in helping watershed residents and stakeholders understand what can be done to restore the valuable resources of the East Branch South Branch Kishwaukee River Watershed.

1.2 About this Watershed-Based Plan

1.2.1 Project Purpose

Watershed planning is a collaborative approach to addressing a variety of related water resource issues including water quality protection. This approach allows stakeholders to share information, better target limited financial resources, and address common water-related challenges. These challenges can include improving stream and lake water quality, preserving and protecting groundwater resources, managing stormwater, reducing soil erosion and flood damage, conserving open space, protecting wildlife habitat, providing safe recreational opportunities, supporting opportunities for economic development, and other issues of concern.

The scope of this project is to develop a watershed-based plan for the East Branch South Branch Kishwaukee River Watershed. The purpose of the plan is to address nonpoint-source pollution prevention and water resource protection needs in the East Branch South Branch Kishwaukee River Watershed as well as provide a unique forum for public education, involvement, outreach, and community-capacity building opportunities. If no action is taken, our watershed resources will continue to degrade. Water quality will continue to decline, streambank erosion will continue to erode and impact property and infrastructure and the potential for flooding will increase.

This plan provides information and a set of recommendations for municipalities, developers, residents, and others to effectively plan in a way that is appropriate for the protection of the watershed's resources. It provides guidance on water quality improvement, habitat restoration, development standards, and education and outreach programs.

1.2.2 DeKalb County Watershed Steering Committee

The DeKalb County Stormwater Management Committee, comprised of six County and six municipal members representing all 14 municipalities within the County's boundaries, has worked with the DeKalb County Community Foundation (DCCF) to undertake a watershed planning process in DeKalb County, Illnois. These organizations created the DeKalb County Watershed Steering Committee (DCWSC), which is a consortium of municipalities, resource agency professionals, environmental advocates, and local residents in the East Branch South Branch Kishwaukee River watershed. Members of the DCSWC include the Sycamore City Administrator, DeKalb County Soil & Water Conservation District; Village of Maple Park, Kane County Planning Department, members of the DeKalb County Stormwater Management Committee, the DeKalb County Engineer, the Cortland-Pierce Drainage District, and DeKalb County Community Foundation. After a discussion of water quality and stormwater problems and the need to coordinate the studies and planning required to implement solutions to the problems, it was agreed that DeKalb County would be the lead agency responsible for taking steps to formally organize the DCSWC and apply for the CWA Section 319 grant on behalf of the Committee. The DCCF Foundation also has a significant leadership role in the DCSWC and generously contributed $30,000 in cash as matching funds to the watershed-based planning process. The Section 319 grant was funded by the Illinois Environmental Protection Agency in Winter 2012 (See Section 1.2.3 for more information).

DCSWC met numerous times during the planning process to oversee the development of the watershed-based plan. In addition, a series of public meeting were held to inform the general public of the watershed planning process and solicit input on the plan. A list of meeting is included in Table 1-1. Copies of meeting minutes are included in Appendix A.

Table 1-1 Summary of DCSWC Activities

Meeting Number	Date	Meeting Type	Agenda / Topics Covered
1	January 9, 2013	DCWSC	• Watershed Planning Overview • Goals and Objectives • Watershed Steering Committee Membership
2	February 13, 2013	DCWSC	• Goals and Objectives • Public Meetings
3	March 7, 2013	Public Workshop	• Watershed Planning Overview • Goals and Objectives • Watershed Concerns
4	March 13, 2013	DCWSC	• Presentation by Sycamore Park District • Watershed Resource Inventory • Website and Logo
5	April 10, 2013	DCWSC	• Logo • Watershed Resource Inventory • Outreach Activities
6	April 10, 2013	Public Workshop	• Watershed Planning Overview • Goals and Objectives • Watershed Concerns
7	May 8, 2013	DCWSC	• Watershed Resource Inventory • Watershed Concerns
8	September 11, 2013	DCWSC	• Watershed Resource Inventory • Pollutant Load Modeling
9	September 19, 2013	Watershed Tour	• Watershed Overview • Best Management Practices (BMPs)
10	October 9, 2013	DCWSC	• Review of Watershed Tour • Pollutant Load Modeling • Identified Problem Areas
11	November 13, 2013	DCWSC	• Watershed Plan Format • BMP Fact Sheets • Pollutant Load Modeling • Action Plan
12	January 8, 2014	DCWSC	• Pollutant Load Modeling • Action Plan • Outreach Activities
13	February 5, 2014	DCWSC	• Pollutant Load Modeling • Action Plan • Outreach Activities

Meeting Number	Date	Meeting Type	Agenda / Topics Covered
14	March 12, 2014	DCWSC	• Action Plan • Outreach Activities
15	March 20, 2014	Public Workshop	• Watershed Planning Overview • Agricultural BMPs • Funding Sources for Agricultural BMPs
16	April 9, 2014	DCWSC	• Action Plan • Outreach Activities
17	April 24, 2014	Workshop for Decision Makers	• Watershed Planning Overview • Action Plan • Funding for Plan Implementation
18	May 16, 2014	DCWSC	• Action Plan • Outreach Activities • Website
19	June 12, 2014	Kane County Environmental Committee	• Presentation Watershed Plan Findings and Recommendations.
20	June 14, 2014	Watershed Tour	• Watershed Overview • Best Management Practices (BMPs)
21	June 19, 2014	Public Meeting	• Presentation of Final Plan

1.2.3 Project Funding

The project was initiated and funded by DeKalb County with a grant from the Illinois Environmental Protection Agency Section 319 grant program. The DeKalb County Community Foundation (DCCF) has also generously contributed $30,000 in cash as matching funds to the watershed-based planning process. Participating stakeholders contributed staff time to provide information and participate in the watershed planning progress.

1.2.4 Watershed-Based Plan Elements

The "Nonpoint Source Program and Grant Guidelines for States and Territories" written by United States Environmental Protection Agency (Illinois EPA) provides guidance for the production of Section 319 funded watershed-based plans. This guidance manual was created to ensure that all Section 319 funded projects including watershed-based plans are aimed at restoring waters impaired by nonpoint source pollution. The guidance manual outlines nine requirements that must be met by the plan in order for the plan to be considered a Watershed-Based Plan. These nine elements are:

1. Identification of causes and sources that will need to be controlled to achieve load reductions estimated within the plan;
2. Estimate of load reductions expected for management measures described in number 3 below;

3. Description of the non-point source pollution management measures that need to be implemented in order to achieve the load reductions estimated in number 2 above and an identification of critical areas
4. Estimate the amounts of technical and financial assistance needed; costs; and the sources and authorities that will be relied upon to implement the plan;
5. Information and public education component;
6. Implementation schedule;
7. Description of interim, measurable milestones for determining whether non-point source pollution measures or other actions are being implemented;
8. Criteria to measure success and re-evaluate the plan; and
9. Monitoring component to evaluate effectiveness of implementation efforts over time.

The East Branch South Branch Kishwaukee River Watershed -Based Plan meets all of the nine minimum criteria outlined by the USEPA. As such, the East Branch South Branch Kishwaukee River Watershed stakeholders will be able to apply for Section 319 funding for the implementation of non-point source pollution control projects outlined in the plan.

1.2.5 Prior Watershed Studies and Plans

Formed in 1996 the Kishwaukee River Ecosystem Partnership (KREP) is a coalition of groups and individuals working to protect the high quality natural resources of the Kishwaukee River Watershed. KREP has produced or assisted with the production of numerous reports related to water quality and habitat conditions in the Kishwaukee River:

- Kishwaukee River Subwatershed Reports, KREP, May 2005
- Sustainable Development Guide for Kishwaukee Watershed Municipalities, KREP and Environmental Defenders of McHenry County, 2000
- Kishwaukee River – Strategic Plan for Habitat Conservation and Restoration, January 2006
- Report on the Natural Resources and Habitat in the Kishwaukee River Watershed, KREP April 2004
- Critical Trends Assessment Program (CTAP) Kishwaukee River Area Assessment, Illinois Department of Natural Resources, 1998

While not specifically focused on the East Branch South Branch Kishwaukee River Creek Watershed, the information contained in these reports provides general information related to the health and condition of the Kishwaukee River watershed.

1.2.6 Process and Plan Organization

This watershed-based plan was produced via a comprehensive watershed planning approach that involved input from local residents, municipal officials, municipal employees, and representatives from natural resource agencies.

The DeKalb County Watershed Steering Committee (DCWSC) held meetings throughout 2013 to 2014 to direct the development of the watershed plan. In the Spring of 2012, DCWSC established goals and objectives to focus the watershed planning activities.

Information obtained from watershed stakeholders and numerous natural resource agencies was then used to assess the overall condition of the watershed including water quality, natural resources, and flood risks. Using this information, a series of recommended management practices aimed at improving the water quality and natural resources conditions of the watershed was developed. Potential funding sources and strategies for the implementation and monitoring of the identified recommended projects were also included in the watershed-based plan. Using the guidance provided by the "Guidance for Developing Actions Plans in Illinois" prepared by Chicago Metropolitan Planning Agency (CMAP), the format for the East Branch South Branch Kishwaukee River Creek Watershed-Based Plan includes five main sections.

- Goals and Objectives
- Water Resources Inventory and Assessment
- Stormwater Retrofit Toolbox
- Action Plan
- Monitoring Plan

Goal and Objectives

Watershed stakeholders developed a list of watershed issues, goals, and objectives. The major topics of concern included: hydromodification, water quality, flooding, watershed coordination, watershed hydrology, and instream habitat.

Water Resources Inventory and Assessment

The project planning team assessed watershed conditions and prepared a series of watershed maps based on data, studies, inventories, and stakeholder input. The assessment includes information on stream corridor conditions, stormwater infrastructure, flooding, water quality, land use, wetlands, and other relevant information. This information not only provides a snapshot of current conditions but also serves as baseline data for comparing future watershed assessments.

Stormwater Solutions Toolbox

After the watershed condition was determined, a stormwater solutions toolbox was assembled to identify the range of actions needed to improve watershed resources. This toolbox includes practices in the areas of policy and planning, development standards, stormwater management, erosion control, streambank stabilization, yard and landscape management, habitat restoration, natural area preservation, and flood reduction.

Prioritized Action Plan

The effectiveness of the East Branch South Branch Kishwaukee River Creek Watershed plan will be largely dependent on the quality of the action plan. The action plan provides the "who, what, where and when" for watershed improvement and includes programmatic (general) and site-specific recommendations. The site specific action items are tied to a particular location in the watershed or along the stream corridor, and they include details such as area, cost, responsibility, schedule, and priority.

Monitoring Plan

A monitoring and evaluation plan was developed to provide stakeholders and other implementers with a way to monitor watershed conditions and track whether meaningful progress is being made towards plan goals. The monitoring plan includes milestones, parties responsible for monitoring, and the frequency and method for collecting data.

1.3 Using This Plan

For those unfamiliar with watershed-based planning, this plan likely seems overwhelming. There are pages of information to absorb, tables to navigate, and numerous costly recommendations that a single resident could not possibly begin to implement. But there are simple, straightforward actions that each person can take immediately to help improve the watershed.

Remember that every action, no matter how small, can have an impact and improve watershed resources. The Executive Summary of the plan provides a concise overview of what this plan is all about. For additional details, browse the Table of Contents and flip to the relevant section, or refer to Table 1-2 and the suggestions that follow to help find more information.

Table 1-2 Priority Actions by Stakeholder Group

If you are a….	Your top priority action items include:
Resident	1. Join the Kishwaukee Ecosystem Partnership to stay engaged in watershed activities. 2. Restore native riparian buffers, and remove excess debris from stream channels. 3. Capture stormwater runoff using rain gardens, rain barrels or other retrofits and to avoid discharging roof and sump pump runoff directly to the stream. 4. Dispose of yard and municipal waste appropriately, not into stream channels, stormsewers or drainageways. 5. Do not construct structures such as sheds or gazebos in drainage ways or detention facilities.
Business owner	1. Manage your property appropriately by regularly cleaning parking lots and using environmentally-friendly lawn care practices. 2. Incorporate stormwater retrofits to reduce and slow stormwater runoff from your property.
Developer or Homebuilder	1. Incorporate stormwater best management practices into all new development and redevelopment sites aimed at slowing, infiltrating, storing, and cleaning stormwater runoff. 2. Use conservation development or low impact development for a new and redevelopment sites.
Government Official or Staff	1. Incorporate watershed-based plan recommendations into local plans, policies, and regulations. 2. Prepare a detailed stormwater management plan for the watershed. 3. Manage, retrofit, and stabilize the stormwater management system including detention basins, culverts, drainageways, and discharge pipes. 4. Modify and use planning and development standards, policies, and capital improvement plans and budgets to protect and enhance water quality. 5. Require the use of stormwater BMPs and/or stormwater retrofits in all new or redevelopment projects.

To find out….

…what this plan is intended to achieve, read about the watershed goals and objectives in Chapter 2.0.

…detailed information about the watershed, its resources, and problems, read the water resources inventory and assessment included in Chapter 3.0.

…to locate watershed problems close to your home or business, refer to the watershed maps included in Chapter 3.0 to find out what subbasin is closest to the area you are interested in. The maps and text in Chapter 3 will help you locate the watershed resources and problem areas near you.

…what can be done to prevent and mitigate water quality and flooding problems in the watershed, read Chapter 4.0, Stormwater Retrofit Tool Box and Chapter 5, Section 2, the Programmatic Action Plan.

…what types of solutions are available to fix a problem in a specific area, read Chapter 4.0, Stormwater Retrofit Tool Box and Chapter 5, Section 3, the Site Specific Action Plan. The Site Specific Action plan is presented by municipality.

…what king of funding is available for watershed projects, refer to Chapter 6, Section 3, Funding Sources.