

● KISHWAUKEE MUNICIPALITIES PLAN FOR SUSTAINABLE DEVELOPMENT



"Natural areas, parks and open space create a high quality of life that attracts tax-paying businesses and residents to communities."

Trust for Public Land, 1999

Additional resources for this section:

- Land Treatment of Municipal Wastewater (see binder pockets)
- USEPA Stormwater Phase II Factsheet
- Blackberry Creek Report
- DeKalb County Regional Planning Commission Charter

AT WORK PROTECTING KISHWAUKEE WATERS

1

Establish streamside greenways

Ribbons of open space within urban and rural areas provide recreational opportunities as well as wildlife habitat. **The City of Belvidere, Belvidere Park District and Boone County Conservation District** have safeguarded miles of shoreline along the Kishwaukee River. Bike, cross country ski, and hiking trails follow the river. Picnic areas, canoe launches and birdwatching sites offer citizens easy access to the beauty and serenity of the Class “A” Kishwaukee River.

(See more information about Greenways in section 4b)

2

Protect and buffer natural wetland areas

Save upland areas as open space to buffer wetlands. Wetlands need upland buffers.

The extensive wetlands bordering the Kishwaukee River have helped maintain the river’s high quality. Wetlands absorb excess rainfall and help reduce flooding. Wetlands provide a safe nursery for fish, insects and birds. Wetlands are an interesting tourist destination.

Do you have an example of how your community has protected wetland assets?

(See Section 2 for more information about Wetlands)

3

Preserve Open Space in New Developments

The preservation and connection of open space in developments provides areas for alternative stormwater treatment, floodwater storage, recreation and habitat for wildlife. **The Heron Creek Development** in Sycamore, IL is set on 455 acres, with more than 155 acres (39% of the development) protected as open space, including mature forests and wildlife-rich lakes.

4

Plan for Future Growth at all levels

City of DeKalb Growth Summit: A group of 28, including leaders of local government, Northern Illinois University and selected civic leaders, participated in an ad-hoc committee to determine the best growth strategies without overcrowding schools in DeKalb. The result of the Growth Summit was a consensus on 10 growth issues, such as infill development and ‘linked development’. Another point of consensus was that new residential development should be kept at less than 2% per year.

DeKalb County Regional Planning Commission: The Commission, which includes representatives from 13 municipalities and DeKalb County, is working to create a Unified Comprehensive Plan for the County. This plan will combine the Land Use Plans of all the municipalities and the County. This cooperation will help diminish the negative impacts of traffic congestions, increased flooding, loss of prime agricultural land and the degradation and destruction of environmentally sensitive areas. See the end of this section for the Charter of the DeKalb County Regional Planning Commission.

Kane County 2020 Land Resources Management Plan: The county plan seeks to manage growth in the county by focusing development along existing Transportation corridors and in designated critical growth areas, while trying to preserve much of the county’s prime farm land, to promote and protect the economic viability of the farm economy, and to achieve various conservation goals.

(See Section 5 for information about community design and planning)

5

Limit soil erosion during construction

Soil erosion and sediment control should be considered as important as any other component of the development process. Consistently enforced ordinances will protect Kishwaukee streams from the damage done by construction site erosion. Construction erosion damage can be 10 - 20 times greater than typical soil loss from agricultural lands.

Any activity which disturbs one or more acres of land must apply for coverage under the Illinois EPA's general permit for construction activities. This permit requires that a **Stormwater Pollution Prevention Plan** be prepared for the site which describes the Best Management Practices that will be employed to prevent erosion from the site. As of March 2003, most communities in the Kishwaukee watershed are also required to develop, implement and enforce a sediment erosion control program for such activities in their jurisdiction as part of the USEPA's Storm Water Phase II Rule- Municipal Separate Storm Sewer Systems (MS4).

Soil and Water Conservation District staff in each county in the Kishwaukee River watershed will provide assistance to municipalities and developers to help implement successful soil erosion control programs on a case-by-case basis.

A factsheet about the USEPA Stormwater Phase II Rule MS4 is included at the end of this section. More information about the General Permit for Construction Activities and the MS4 program can be found at <http://www.epa.state.il.us/water/permits/storm-water/index.html>



See Section 3
On Best Management Practices in Community and Subdivision Design

6

Manage stormwater naturally

The McHenry County Soil and Water Conservation District (SWCD) will be building a new office building at the headwaters of the Kishwaukee River mainstem, just south of the City of Woodstock. Planning the stormwater treatment of the site was done with water quality in mind. The system was designed to handle the "first flush" rainfall event. Typically these rainfall events are considered the most contaminated since there tends to be, over time, an accumulation of pollutants (oil, dirt), which are then "flushed" into the storm sewers and therefore into the Kishwaukee. The SWCD site directs parking lot runoff through depressed curbs into central islands where the rainfall can soak into the ground. To help the soaking process, deep-rooted native prairie grasses are planted in the islands. Once the islands are at capacity the excess water is directed to the storm water detention basin. On the way to the basin, the runoff passes overland through more native prairie grasses allowing for more absorption into the ground. Storm water that does actually reach the basin percolates through a sand lens, thus allowing the slow infiltration of clean water into the wetland area below. The storm water that reaches the wetland area has gone through three Best Management Practice (BMP) treatments before reaching the headwaters of the Kishwaukee River.

(See Section 3 for more detailed information about stormwater management)

7

Keep sewage pollution out of Kishwaukee streams

As the human population of the Kishwaukee watershed continues to increase, increased demands are placed on Kishwaukee streams to accept pollutants present in effluent from sewage treatment plants. Nutrients, toxins, and bacteria are all present in municipal wastewater. State-of-the-art treatment systems that remove more pollutants, or alternative treatment systems such as land application and wetland treatment which eliminate the direct discharge of wastewater to streams, must be adopted by watershed municipalities if Kishwaukee streams are to be maintained in their high quality. The **City of Woodstock** agreed to accept stringent limits on the amount of ammonia, a fish toxin, that their southside sewage treatment plant will discharge into the headwaters of the Kishwaukee River.

The Village of Huntley diverts wastewater from the S. Branch of the Kishwaukee River during summer months, in an agreement made with the Defenders and the Sierra Club, Illinois Chapter. The diversion plan is incorporated into the Illinois EPA permit which allows the Village to discharge wastewater into the river. The permit also contains conditions requiring the Village to study the impacts their sewage effluent has on this Class B tributary to the Kishwaukee River. The agreement is the result of negotiations between the Village and the environmental groups who had raised concerns with the Village's proposal to increase their discharge of wastewater to the South Branch by 0.95 millions gallons per day (MGD). The agreement allows the discharge increase, but only during the winter months. Pollutant loadings to the river are limited during the summer when aquatic organisms are reproducing and young life forms are present. During the months April to October, a minimum of 34% of the wastewater from the Village's West Treatment Plant is diverted to irrigate the golf course and common grounds at the Del Webb development.

8

Watershed planning...
to ensure the future of our Class "A" Kishwaukee River

Natural resources cross township, city, and county borders. Consider municipal growth within the context of the Kishwaukee watershed. Natural resources cross township, city, and county borders. Consider municipal growth within the context of the Kishwaukee watershed. **The Kishwaukee River Ecosystem Partnership (KREP)** is a partnership of individuals, representatives of organizations, local governments, citizen groups, and agencies. Its mission is to raise awareness of the ecological, recreational, cultural, and economic importance of the Kishwaukee River watershed, and to coordinate and encourage efforts to foster stewardship, protect, and enhance its natural resources. Municipalities are encouraged to participate in the Kishwaukee River Ecosystem Partnership.

The Kishwaukee Ecosystem Partnership offers municipalities a forum to:

- network with groups and individuals with vested interests in sound watershed planning
- learn most up-to-date planning strategies for a class "A" waterway
- share planning challenges and successes with other Kishwaukee watershed municipalities
- participate in Illinois' statewide Ecosystem Partnership initiative

(Contact Nathan Hill, KREP, at 815-544-1576 for membership advantages and information)

9

Plan developments using conservation design strategies

The Blackberry Creek Alternative Futures Analysis was funded by USEPA through IDNR and Kane County. The project illustrates conservation planning and design strategies to protect natural resources and minimize stormwater impacts on flooding, streambank erosion, and water quality. Both watershed scale and site scale strategies were identified. A watershed scale open space plan ("Green Infrastructure Plan") was developed to provide protection of aquatic resources from direct impacts, such as filling and draining. Site scale strategies were identified to provide protection from indirect hydrologic impacts. Site scale conservation design practices illustrated and analyzed included clustering, naturalized drainage using native landscaping, bioretention swales and rain gardens, green roofs, and porous paving.

The Blackberry Creek Report is included at the end of this section. For more information, contact The Conservation Foundation at 1-630-428-4500.

10

Create Ordinances to Manage Stormwater

A **Comprehensive Stormwater Ordinance** in a county or municipality is a key tool to protecting the water quality of the Kishwaukee River. Such an ordinance will protect water quality by setting standards for stormwater drainage and detention, floodplain management, soil erosion and sediment control, and stream and wetland protection. In accordance with statewide authorization to create a countywide stormwater plan, **McHenry County** and **Kane County** have adopted countywide Stormwater Ordinances to protect the quality of their waterways.

A Stormwater Ordinance impacts the way land is developed, with regulations on how to manage water flow in new developments. Under a Stormwater Ordinance, stormwater runoff caused by the increase of parking lots and rooftops is directed to flow into the ground more effectively. This prevents the pollutants from reaching the Kishwaukee as well as encourages the recharge of the drinking water aquifers.

These ordinances also require increased protection of wetlands and floodplains, which in turn protects wildlife habitat, all the while decreasing the potential of costly and detrimental flooding in the county. Another benefit is the requirements that control soil erosion and sedimentation during construction. This decreases the amount of soil erosion pollution going into the Kishwaukee and its wetlands.

HOW?

(Numbered listings correspond with descriptions of projects on preceding pages)

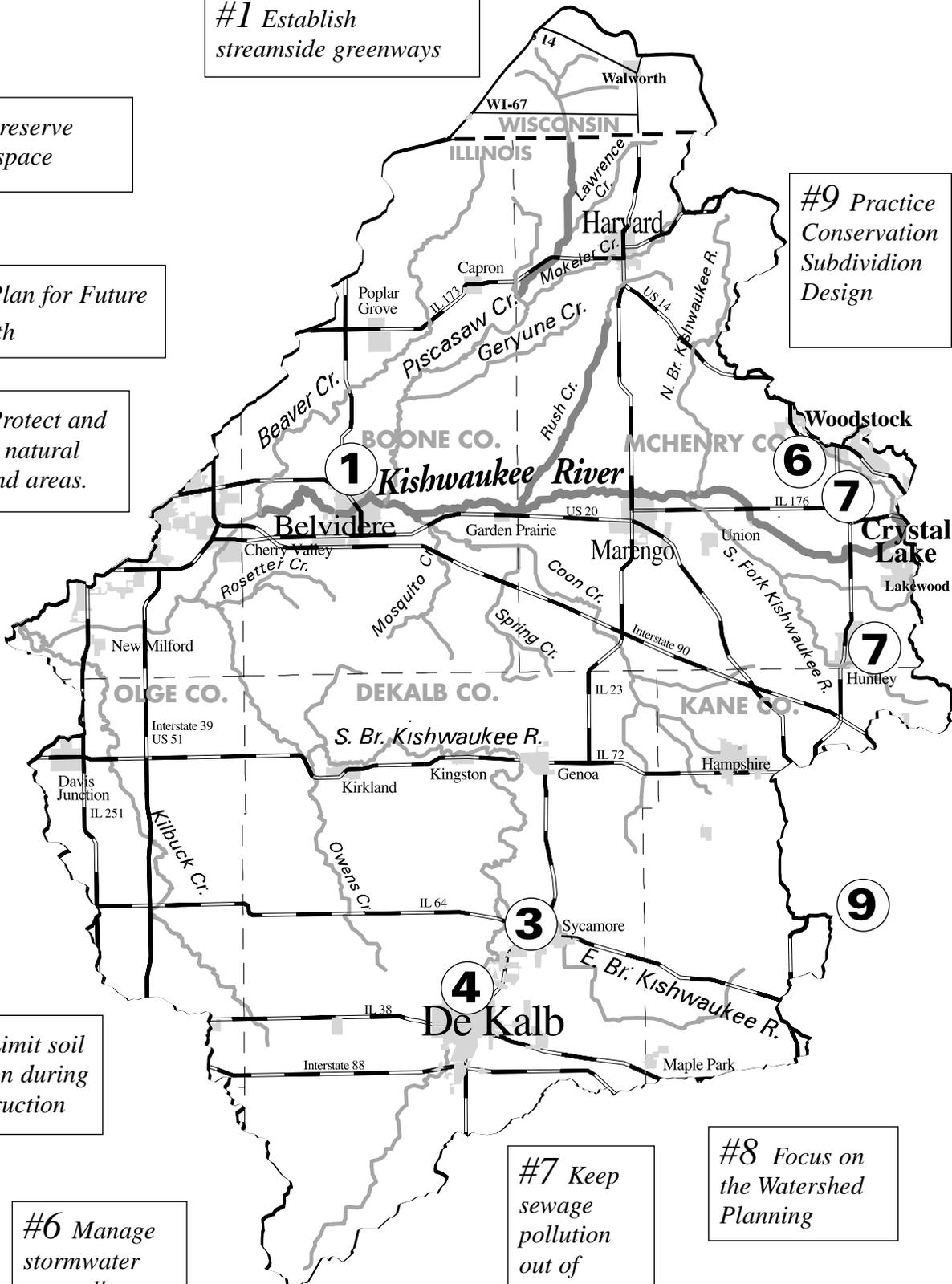
#1 Establish streamside greenways

#3 Preserve open space

#4 Plan for Future Growth

#2 Protect and buffer natural wetland areas.

#9 Practice Conservation Subdivision Design



#5 Limit soil erosion during construction

#6 Manage stormwater naturally

#7 Keep sewage pollution out of Kishwaukee Streams

#8 Focus on the Watershed Planning



Greenways – connecting spaces for plants and animals while allowing humans passage into the natural world.

“Many of Illinois’ greenways border waterways, deserted railroads, swampy wetlands or urban boulevards, providing long ribbons of open space.”

Boone-Winnebago Greenway Plan

Additional resources included in this section:

- The American Greenways Program
- Economic Benefits of Greenways
- Economic Impact of Wildlife Habitat



GREENWAYS

Corridors of protected open space managed for recreation and conservation purposes.

Several Kishwaukee watershed communities have turned long narrow stretches of land into natural resource assets. Belvidere constructed bike paths and a downtown City Park complete with bandshell along the banks of the Kishwaukee River. Boone County Conservation District offers fishing hideaways and cross-country ski trails along the lowland areas next to the Kishwaukee River in Spencer Park. Sliver sections of land link larger parks and create whole networks of paths and trails for residents and visitors.

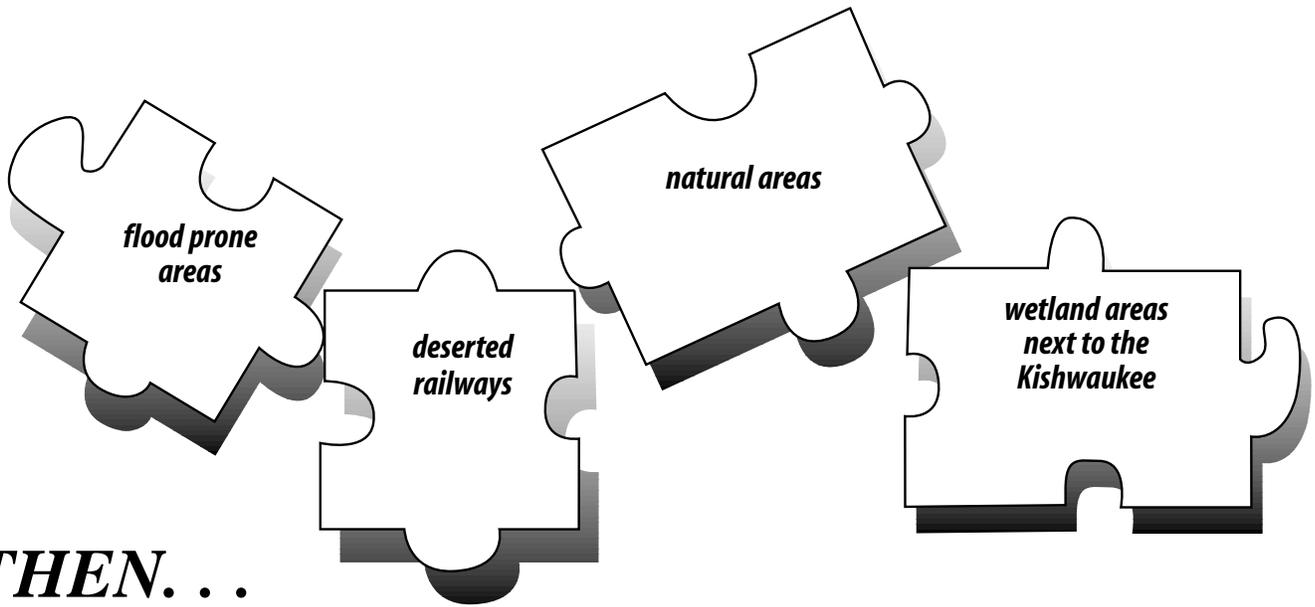
Look at your village maps. Identify slivers of land which you can save and protect. Be sure to include land under power towers, floodprone lowland areas, urban boulevards, deserted railways, and other natural and manmade assets in your area (gravel pits, lakes, streams, schools, shopping centers, downtown areas). Consult Greenway Plans for your area. Work to acquire and/or manage these greenways. Especially secure more lands to connect the greenways along banks of the Kishwaukee River and its tributaries.



See Section 4a, #1
is an example of local Greenway initiatives

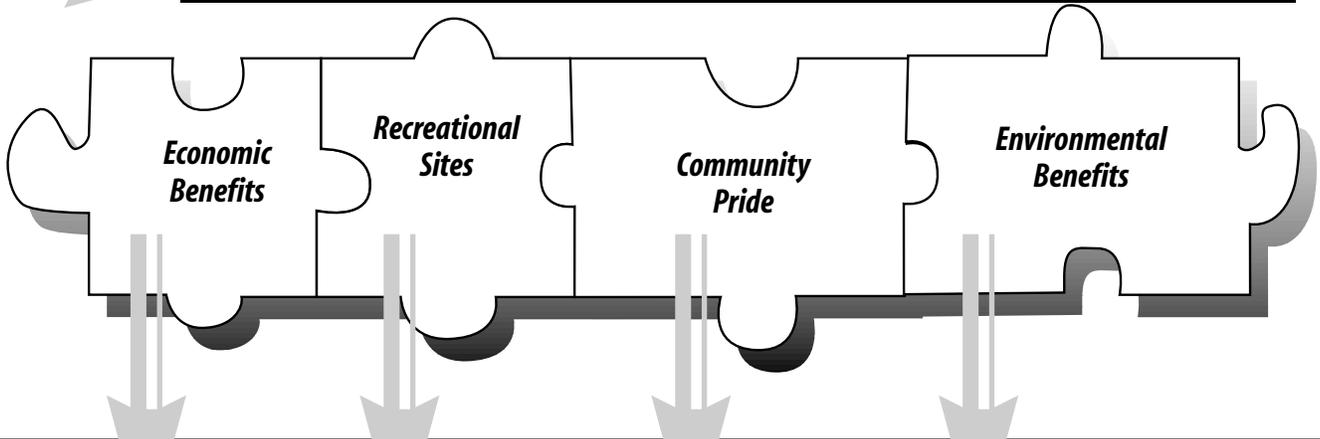


Protect small seemingly unusable slivers of land.



THEN...

fit these pieces together to provide opportunity for your community and open space!



- increased property value
- reduces costs resulting from flooding
- business opportunities for recreation-oriented services
- links to larger countywide & statewide trail systems

- bike trails
- picnic areas
- cross-country ski trails
- bird watching
- canoeing
- fishing
- hiking

- parks
- wildlife viewing
- band shells
- meeting place for concerts, marathons, festivals
- outdoor classrooms

- protects water quality of Kishwaukee
- preserves wildlife habitat
- provides alternative transportation routes
- provides improved overall appeal of community
- directs growth and development away from community's natural resource assets