

● IMPLEMENT BEST MANAGEMENT PRACTICES TO PROTECT THE KISHWAUKEE WATERSHED



A stormwater Best Management Practice (BMP) is demonstrated by this small recreated wetland which captures stormwater before entering the creek, thereby slowing its velocity and reducing the impact upon the stream.

“We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.”

Aldo Leopold, A Sand County Almanac

Additional resources for this section:

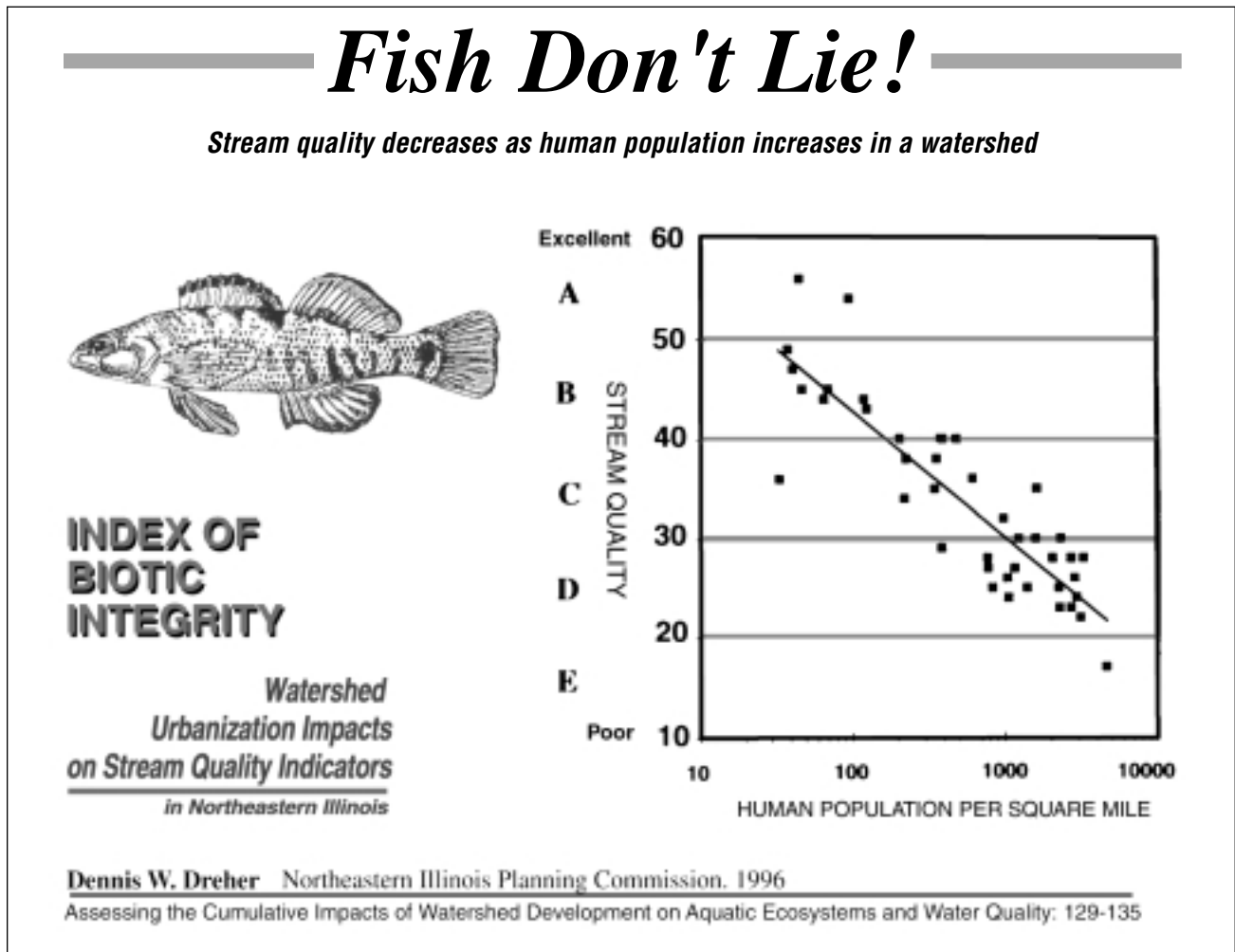
- Stormwater Detention Basin Retrofitting (see binder pockets)
- Construction Site Soil Erosion & Sediment Control
- NRCS & SWCD at Work for Your Community
- Code and Ordinance Worksheet
- NIPC Executive Summary of Conservation Design Resource Manual

Implement Best Management Practices (BMP's) to Protect the Kishwaukee Watershed

- Best Management Practices guide economic growth while sustaining your rich natural resources

The Kishwaukee water system has renewed itself for centuries. Rains fall, flow over the land, sink into the ground to replenish groundwater supplies and are absorbed by surrounding wetlands.

Today, people are moving to the Kishwaukee watershed at a surprising rate. Enthusiastic newcomers delight in the vastness and diversity of nearby natural resources. But, according to Northeastern Illinois Planning Commission, more people means greater impact on these natural resources.



In Illinois, stream quality is measured by the fish species that can live there. State biologists annually count fish species at designated stream sites throughout the state. "A" streams, like the Kishwaukee, are home to many different fish. "D" streams support very little life. Scientists have found that increasing population is directly related to decreasing stream quality.



Best Management

Practices: aka BMP's

BMP's describe all those actions which promote sustainable development — economic growth that also protects the local environment.

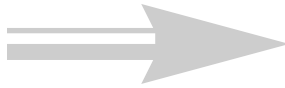
Consider your riverfront town. The Kishwaukee is the pride of local citizens.

They enjoy the views of clear Kishwaukee streams. They canoe, fish, hike, and bicycle in and by the Kish. Downtown economic revitalization projects, playgrounds, parks, housing developments and factories find that Kishwaukee riverfronts are desirable locations. Likewise, the Kishwaukee provides drainage for upland farms, area streets and parking lots. Sewage treatment plants even discharge into the Kishwaukee. We expect a lot from the mighty Kish.

Sustainable development within the Kishwaukee watershed can guide economic growth without sacrificing our rich natural resource asset — the Kishwaukee River.

Use the following BMP's as a guide to sustainable development. Remember these are not national design standards. Instead, they are to be used and adapted at the local level.

Sustainable development will enhance the value of your neighborhoods and enrich the quality of life in your communities. Make sustainable development work for your town while enhancing the rich natural resource assets of the Kishwaukee watershed.



Benefits of applying BMP's

These BMP's have been documented to benefit both the community and the natural environment. Some communities have realized the following benefits:

- *reduces development costs*
- *increases local property values*
- *increases local property tax revenues*
- *makes compliance with wetland and other regulations easier*
- *promotes neighborhood designs that provide a sense of community*
- *creates more pedestrian friendly neighborhoods*
- *provides open space for recreation*
- *reduces car speeds on residential streets*
- *results in a more attractive landscape*
- *provides urban wildlife habitat through natural area preservation*
- *protects sensitive forests, wetlands, and habitats from clearing*
- *helps reduce soil erosion during construction*
- *allows more sensible locations for stormwater facilities*
- *protects the quality of local streams, lakes, and wetlands*
- *generates smaller loads of stormwater pollution*

Who decides what qualifies as a BMP?

A diverse cross-section of local government, development and environmental professionals.

A BMP is site-specific. What may be a great BMP on one site can cause problems on another site.

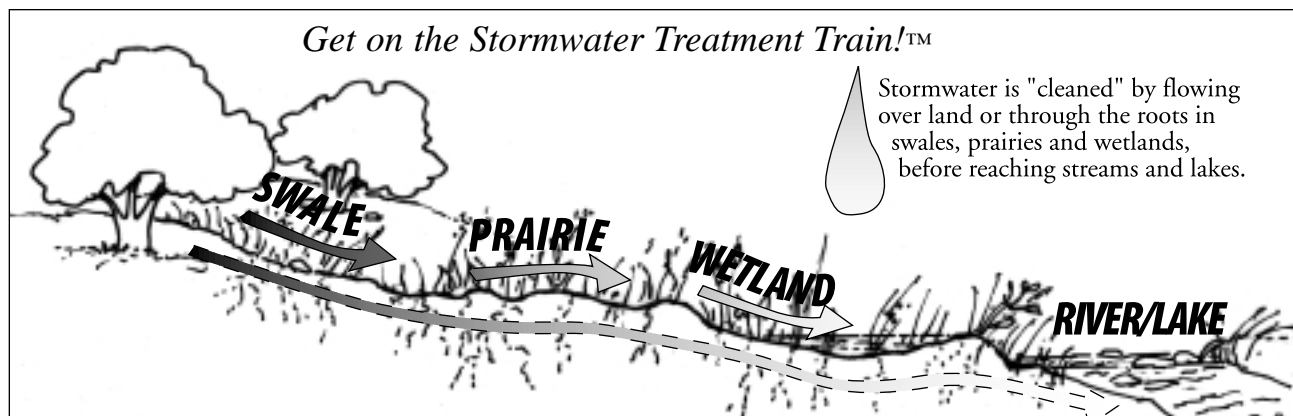
The Best Management Practices described in the following pages are adapted from two publications: *The Consensus Agreement on Model Development Principles to Protect Our Streams, Lakes, and Wetlands* by Center for Watershed Protection (www.cwp.org) and *Restoring and Managing Stream Greenways, a Landowner's Guide* by Northeastern Illinois Planning Commission (www.nipc.cog.il.us).



Look in Section 5 for more information to help develop ordinances to promote: stream and wetland protection, floodplain protection, stormwater drainage and detention, soil erosion and sediment control.

Best Management Practices for Lot Development . . . *providing a sustainable habitat FOR PEOPLE*

- Encourage open space design development — a great alternative to single large lot development. Consult your ordinances and find ways to incorporate open space design into your town's municipal ordinances. Consider the following advantages: compact development area reduces total construction costs; less highway maintenance; provides community recreational areas and common open space; reduced amount of impervious surfaces; and natural area conservation protects Kishwaukee streams.
- Designate a responsible entity to manage both the natural and recreational open space in the community open space plan.
- Promote alternative driveway design and surfaces. Shared driveways and pervious surface driveways reduce the amount of impervious surface.



- Prairie Crossing, Grayslake, IL uses vegetated swales, created prairies, existing and created wetlands, and a created lake system as key elements of their “Stormwater Treatment Train.”™ Water from residential areas flows overland from residential yards to vegetated swales then to expansive prairies where the majority of sediments, nutrients, and contaminants are removed from the stormwater. Very clean water and significantly less water than what entered the swales will reach the wetlands and lake. Surface water loss will result because of infiltration and evaporation during the long period of time the water is in the prairies, lessening flooding potential of severe storms.
- Require and enforce erosion control during construction. Fewer tax dollars needed to stop siltation and pollution before it enters the Kishwaukee than costly instream clean-ups.

Best Management Practices for Residential Streets and Parking Lots . . . *providing a sustainable habitat FOR CARS*

- Consider the volume of traffic to a specific area on residential streets. Encourage development of residential streets with the minimum required pavement width needed to support travel lanes, on-street parking, and emergency, maintenance, and service vehicle access.
- Minimize pavement in subdivisions: reduce the total length of residential streets; examine alternative street layouts; minimize cul de sacs. Determine the best way to increase the number of homes per unit length of street.

- Minimize excess parking space construction. Encourage parking lot designs that includes compact car spaces, minimum stall dimensions, efficient parking lanes, and the use of pervious materials for spillover parking areas where possible. Require enforcement of a parking ratio of both the maximum and minimum number of spaces for a particular land use or activity. Seek lower parking requirements where public transportation or shared parking is available. Provide incentives that encourage structured and shared parking by making it more economically viable.
- Use vegetated open channels to convey and treat stormwater runoff from streets instead of curb and gutter construction.
- Filter strips, retention areas, and other practices that are part of the landscaping areas and traffic islands should provide stormwater treatment for parking lot runoff.

Stream or Wetland Buffer : a continuous strip of forest or prairie next to a river, lake or wetland.

Best Management Practices for Conservation of Natural Areas . . . *providing a sustainable habitat FOR NATURE*

- Maintain naturally vegetated buffer strips along all streams. This is especially necessary in streams with steep slopes and next to wetlands. Turf grass lawn down to the water's edge is NOT a buffer strip.
- Streamside buffers work best with preserved and restored native vegetation. The deep-rooted native species are perennial, need no mowing, provide habitat for insects, birds, amphibians, and small mammals. Nuisance Canada Geese prefer short mowed green grasses.
- Ensure stormwater does not discharge directly into wetlands, streams, or other sensitive areas.
- Plan to let the Kishwaukee meander. Give the Kish elbow room — keep homes and businesses out of the way. Meandering streams provide flood storage, increased recreational opportunities, channel and streambank stability and increased wildlife habitat.
- Protect natural stream corridors. Provides numerous recreational opportunities while ensuring flood and runoff conveyance.
- Protect and maintain streamside wetlands. Protects adjacent lands from flood damage while keeping the waters of the Kishwaukee clear and clean.



Best Management Practices in Community and Subdivision Design . . . *providing a sustainable habitat OVERALL*



Look in Sect. 5 listing for Better Site Design: A Handbook for Changing Development Rules in Your Community -- a good book to help Kishwaukee communities plan development.

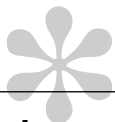
Design, on both the community and subdivision levels, is key to reducing the negative impacts of development on the Kishwaukee River. Efforts to minimize the amount of impervious area, to reduce the “footprint” of development, to provide areas for recharge of our groundwater resources, and to protect sensitive natural areas are best done as part of the overall design of our communities.

Using the principles of compact development, cluster development and conservation design, Kishwaukee watershed communities can increase their populations without having the same adverse effect on their local stream as conventional development has had in areas in Cook, DuPage, and Lake counties.

Compact Development - houses are built on smaller lots contiguous to and interconnected with existing development. Town boundaries expand slowly, leaving more of the surrounding land as farmland and open space. Residents benefit from their home’s close proximity to amenities such as shopping, library, and police and fire services. Municipalities feel the benefit of compact development because infrastructure and services can keep up with growth and therefore is less expensive to the community.

Cluster Development - the same overall number of houses are built on a site as in a conventional development, but the homes are clustered together on smaller lots leaving a portion of the site as community open space. Because of the significant open space provided by cluster developments, there are many more opportunities to route impervious runoff onto common open space where it can be absorbed.

Conservation Design - the principles of cluster development are used to tailor a development to the natural characteristics of the site, avoiding and preserving such features as a stream corridor, an oak woodland, and even prime farmland soils. Typically a conservation development preserves over 50% of the site as natural open space or farmland.



Impervious cover:

all the roofs, roads, parking lots, and buildings that leave a footprint on the land, covering the soil and making it impossible for stormwater to seep into the soil.

Impervious cover levels greater than 10% have been shown to negatively impact the quality of fish habitat and wetlands.

How Do You Measure Impervious Cover?

Imperviousness can be viewed from two perspectives - Per acre and per capita. Typically impervious surface per acre is lowest for low-density development. The house and driveway and street in front of the house are relatively small compared to the size of the lot. However, impervious area per capita (or per housing unit) is lowest for high-density development. Smaller lots have shorter driveways and shorter streets in front of the house.

Low-density development (homes on 1-5 acre lots) may be the way your community wishes to grow *if your ultimate plans are for a relatively small population*. By also incorporating cluster and conservation design, your community can remain rural and also accumulate your open space into common, larger, contiguous pieces that provide better wildlife habitat and natural stormwater management.

Compact development (homes on 1/16 to 1/2 acre lots) is the way to grow *if you plan a large increase in your community’s population*. Combined with sufficient open land to treat impervious runoff and wastewater and with proper buffers for streams and wetlands, compact development can best accommodate a growing population with stream protection.