

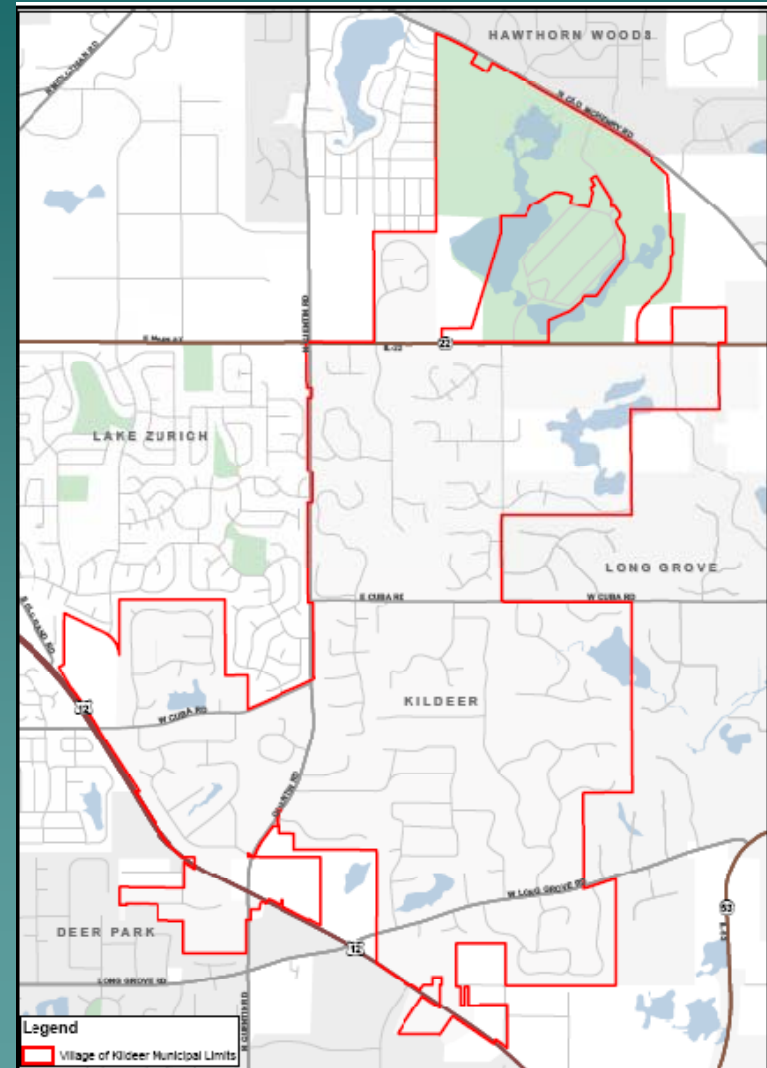
Village of Kildeer Storm Water Management Plan (SWMP)



Presented by:
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Presentation Overview

- ◆ What is storm water?
- ◆ How is it managed?
- ◆ Why is it a problem?
- ◆ What is the Village doing to manage storm water pollution?



What is Storm Water?

- ◆ Rain events
- ◆ Snow melt
- ◆ Other surface runoff and drainage



Where Does Storm Water Go In Our Community?

Travels over land



Carried through municipal separate storm sewer system (MS4)



Ultimately discharges to Des Plaines River

What is an MS4?

Municipal Separate Storm Sewer System:

A conveyance or system of conveyance (including “open” drainageways) owned by a State, city, town, or other public entity that discharges storm water to waters of the United States (Des Plaines River) and is Designed or used for collecting storm water.

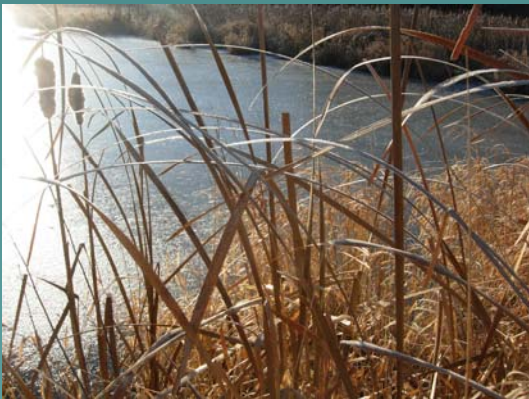


Why is Storm Water Pollution a Problem?

Untreated rainfall or snowmelt moving over the ground



Picks up natural and manmade pollutants (grease, fertilizers, litter...)



Deposits into lakes, rivers, wetlands and underground sources of drinking water

Why is Storm Water Pollution a Problem?

Non-Storm Water discharges enter system via illicit connections and illicit discharges

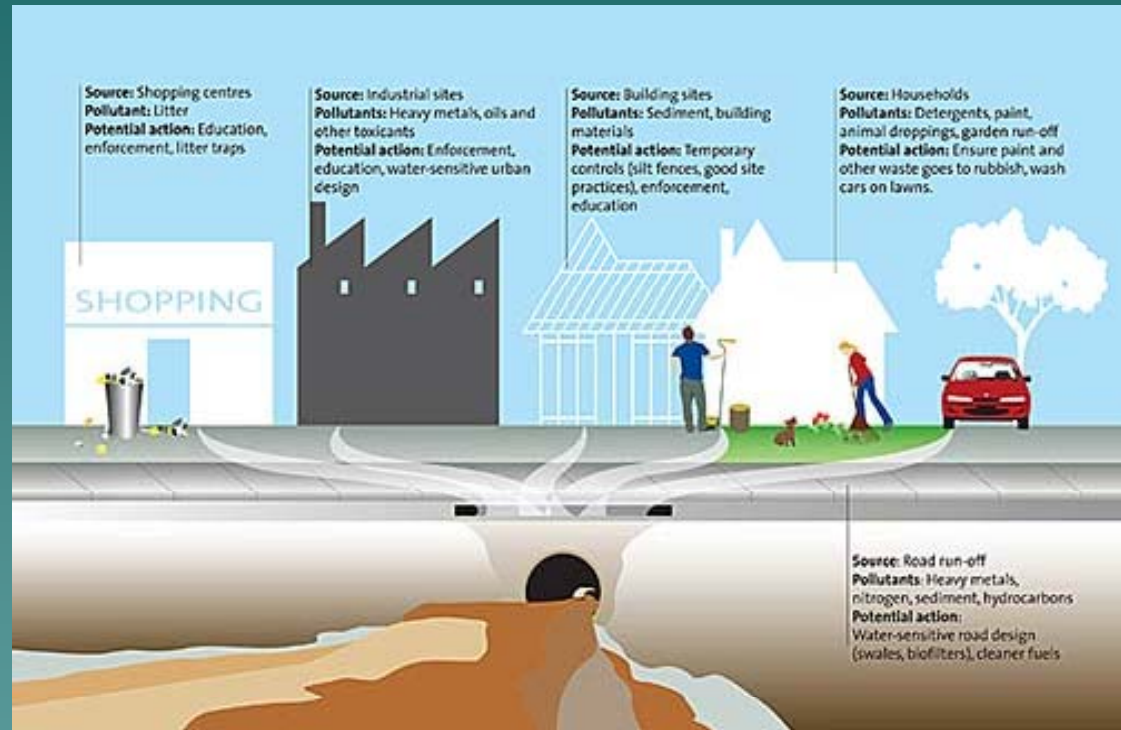


**Deposits into lakes, rivers, wetlands and
underground sources of drinking water**



Typical Storm Water Pollutants

- ◆ Sediment
- ◆ Nutrients
- ◆ Bacteria
- ◆ Oil and Grease
- ◆ Trace Metals
- ◆ Toxic Chemicals
- ◆ Chlorides



Now We Know About Storm Water and Its Impacts on Our Community. . .



But What Are We Doing About It?

Storm Water Permit Program

- ◆ Federal National Pollutant Discharge Elimination System (NPDES) regulations require a permit for the discharge of storm water from an MS4
- ◆ Federal EPA delegated permit authority to Illinois EPA. IEPA created state permitting program to meet federal requirements.



What Does Our NPDES Permit Require?

- ◆ Reduce pollutants in storm water to the Maximum Extent Practicable to protect water quality
- ◆ Develop, implement and enforce a storm water management program
- ◆ Track Progress towards measurable goals
- ◆ Report on our progress

6 Minimum Control Measures

1. Public education & outreach
2. Public involvement / participation
3. Illicit discharge detection and elimination
4. Construction site storm water runoff control
5. Post-construction storm water management
6. Pollution prevention / good housekeeping for municipal operations

1. Public Education and Outreach

- ◆ Educational Material
- ◆ Website
- ◆ Newsletter

EPA
United States
Environmental Protection
Agency
EPA 841-F-03-010

Protecting Water Quality from URBAN RUNOFF

Clean Water Is Everybody's Business

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain and snowmelt to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers, where they seriously harm water quality. To protect surface water quality and groundwater resources, development should be designed and built to minimize increases in runoff.

How Urbanized Areas Affect Water Quality

Increased Runoff

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to filter slowly into the ground. In contrast, impervious (non-porous) surfaces like roads, parking lots, and rooftops prevent rain and snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall

The most recent National Water Quality Inventory reports that runoff from urbanized areas is the leading source of water quality impairments to surveyed estuaries and the third-largest source of impairments to surveyed lakes.

Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?

The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot survive when these conditions prevail.

Increased Pollutant Loads

Urbanization increases the variety and amount of pollutants carried into streams, rivers, and lakes. The pollutants include:

- Sediment
- Oil, grease, and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria, and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles, and other sources
- Thermal pollution from dark impervious surfaces such as streets and rooftops

These pollutants can harm fish and wildlife populations, kill native vegetation, foul drinking water supplies, and make recreational areas unsafe and unpleasant.

The diagram illustrates the difference in water infiltration between natural ground cover and impervious cover. On the left, under 'Natural Ground Cover', 40% of water is lost to evapotranspiration, 10% is runoff, 25% infiltrates shallowly, and 25% infiltrates deeply. On the right, under '75%-100% Impervious Cover', 30% is lost to evapotranspiration, 65% is runoff, 10% infiltrates shallowly, and 5% infiltrates deeply.

Relationship between impervious cover and surface runoff. Impervious cover in a watershed results in increased surface runoff. As little as 50 percent impervious cover in a watershed can result in stream degradation.

2. Public Involvement/Participation

- ◆ Stakeholder Meetings
- ◆ Public Hearing
- ◆ Receipt of Public Input and Comments on SWMP
- ◆ Annual update of program



3. Illicit Discharge Detection and Elimination

- ◆ Storm Sewer Outfall Map
- ◆ Regulatory Control
- ◆ Detection/Elimination Plan
- ◆ Visual Dry Weather Screening
- ◆ Illicit Discharge Tracing
- ◆ Illicit Source Removal
- ◆ Program Evaluation

4. Construction Site Stormwater Runoff Control

- ◆ Largely regulated under WDO
- ◆ Erosion and Sediment Control BMPs
- ◆ Other Waste Control Program
- ◆ Site Plan Review Procedures
- ◆ Site Inspection Procedures



Watershed Development Ordinance



Lake County
Stormwater Management Commission

Effective November 18, 2008

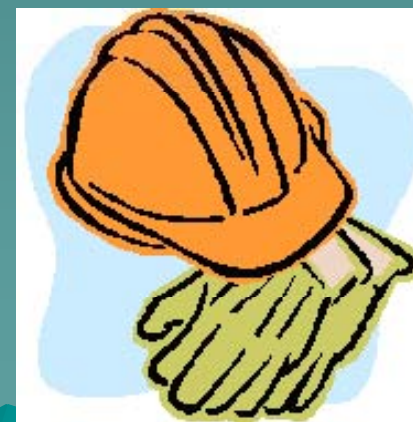
5. Post-Construction Storm Water Management in New Development and Redevelopment

- ◆ Largely regulated under WDO
- ◆ Long Term O&M Procedures
- ◆ Site Inspections During Construction
- ◆ Post-Construction Inspections



6. Pollution Prevention/Good Housekeeping for Municipal Operations

- ◆ Very few Municipal Operations
- ◆ Employee Training Program
- ◆ Inspection and Maintenance Program
- ◆ Municipal Operations Storm Water Control
- ◆ Municipal Operations Waste Disposal
- ◆ Flood Management



Expected Benefits of Our Storm Water Program

- ◆ Water quality
- ◆ Enhanced opportunities for recreation
- ◆ Reduced flood damage
- ◆ Enhanced aesthetic value



What Can Residents Do To Help?

- ◆ Never dump anything down storm drains
- ◆ Pick up after your pet
- ◆ Use fertilizers / pesticides sparingly
- ◆ Plant gardens in bare spots
- ◆ Direct rooftop runoff to grass or gardens
- ◆ Check vehicles for leaks
- ◆ Wash cars at the car wash
- ◆ Do not hose spills into the street, gutters or storm drains

How Can Residents Get Involved?

- ◆ Share information about the SWMP to other residents
- ◆ Report any storm water pollution issues to the Village



Questions?



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