Currents

Illicit Discharge Detection and Elimination Ordinance Enacted

DuPage County is authorized to discharge stormwater into Waters of the United States through coverage under a General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4).

This permit, ILR40, authorizes the discharge of only stormwater from storm sewer outfalls, as federal regulations define an illicit discharge as "any discharge to an MS4 that is not composed entirely of stormwater."

In order to comply with the permit requirements, the County is responsible for developing a stormwater management program that addresses six minimum control measures. One of these control measures is Illicit Discharge Detection and Elimination, which requires DuPage County to develop, implement and enforce a program to detect and eliminate illicit discharges into its MS4.

On May 26, 2009, the DuPage County Board approved and enacted the Illicit Discharge Detection and Elimination (IDDE) Ordinance as Chapter 16 of the County Code.

The Ordinance was drafted in accordance with DuPage County's Stormwater Management Plan and incorporated into Appendix F of that same document. DuPage County's IDDE Ordinance regulates illicit discharges into the County's MS4 for unincorporated areas; however, each municipality and township must adopt their own IDDE ordinance for their own jurisdiction.

In accordance with ILR40, the Ordinance establishes regulations on the introduction of discharges other than those occurring as a direct result of precipitation and snow melt into the storm sewer system.

Likely illicit discharge with bacterial growth from raw sewage outfall. (Photo courtesy of the Center for Watershed Protection)

The Ordinance outlines prohibited discharges to the MS4 and also identifies the types of discharges that are exempted from the regulation. Exemptions, as stated in the permit, include, but are not limited to the following permitted discharges: certain car washing activities, water line and fire hydrant flushing, sump pump discharges and landscape irrigation watering.

For a complete copy of the IDDE Ordinance, please email Water.Quality@dupageco.org or call 630.407.6700.

DuPage County Stormwater Management Division

Quarterly Publication Updating DuPage County on Stormwater Management Issues

Volume 2, Issue 1

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Inside this issue:

Water Quality Improvement Grant Program

In order to address the water quality of local streams, rivers and lakes, DuPage County has developed financial assistance programs to aide property owners with projects that provide a benefit to water quality.

The Streambank Stabilization Program was initiated in 1993 as an offshoot of DuPage County's Stream Maintenance Program. The Program financially supplemented County approved streambank stabilization projects. This successful program used bioengineering techniques to restore severely eroded streambanks back to healthy, vegetated sideslopes.

In response to several requests to participate in projects where the goal was to improve water quality, but streambank stabilization was not necessarily the desired solution, the County expanded the Streambank Stabilization program into the Water Quality Improvement Program.

Through this Program, DuPage County recognizes the financial burden that a property owner may face undertaking a project which improves regional water quality. The County offers to potentially fund Conceptual Design Reports for eligible entities, as well as up to 20% of construction costs for the portions of projects that provide water quality benefits not otherwise required.

Additionally, up to 20% of the permitting and maintenance and monitoring costs are eligible for reimbursement, provided that the project is constructed. The maintenance and monitoring costs are associated with all restoration projects and generally extend for three to five years following construction to ensure project success.

The types of projects that are eligible for funding are:

- Streambank stabilization involving bioengineering practices (e.g. soil lifts, bank reshaping and planting, coconut fiber rolls, live fascines, and a-jacks);
- In-stream habitat improvements (e.g. pool-riffle complexes, lunker structures, weirs or sills, log, brush, and rock shelters);

Stabilized Streambank

- Channel rehabilitation (e.g. removal of concrete lining, remeandering a previously channelized section of a stream, and stabilizing streambank);
- Riparian buffer rehabilitation (e.g. daylighting a storm sewer and wetland plantings);
- Wetland creation;
- "Green Building Technologies" that reduce/ filter stormwater runoff (e.g. green roofs, rain gardens, bioswales, cisterns, permeable pavers, and porous concrete).

Permeable Pavers in Elmhurst

Program applicants can vary from single homeowners, a grouping of homeowners or larger ventures. DuPage County staff reviews the applications and prioritizes them based on a Funding Evaluation Form, categorized by a water quality, restoration and educational benefit point system.

All projects are ranked on individual project merit. Projects for fiscal year 2010 are due by December 1, 2009. For more information regarding this program, please call 630.407.6700.

Green Landscapes Day (cont. on pg 3)

Over 200 DuPage County residents participated in the first ever Green Landscapes Day held on May 30, 2009 at the DuPage County Fair Grounds.

Residents had the opportunity to learn about environmentally friendly improvements they could make to their property, including installing rain barrels and native plants.

Rain barrels and native plants are both considered stormwater best management practices homeowners can implement on their property. A best management practice is a technique, measure or structural control that manages the quantity and improves the quality of stormwater runoff in the most cost effective measure.

SCARCE Volunteers providing environmental education.

Rain Barrels Distributed at County

On May 1, 2009, DuPage County Board member and Stormwater Committee Chairman Jim Zay helped distribute rain barrels to County employees at a discounted price. Employees purchased the discounted rain barrels from The Conservation Foundation, with DuPage County subsidizing part of the cost for employees residing in the County.

Rain Barrels are an easy way to limit the amount of runoff coming from a homeowner's property by storing rainwater for use in gardens and lawns.

Stormwater Committee Chairman Jim Zay loads a rain barrel into an employee's car.

Not only do rain barrels cut down on the amount of stormwater runoff from your property, but they also can reduce water bills by conserving rainwater for later use on vegetation.

Over 200 rain barrels were purchased by County employees. The barrels are made from recycled food storage containers.

The benefits of rain barrels include:

- Water Conservation

  During the hot summer months, the average homeowner uses 40% of household water in the yard. Barrels help store mineral rich and chlorine free rainwater for use on gardens and lawns.

- Water Quality

  Rain barrels store stormwater that would normally run over the ground and pick up pollutants on its way to a storm sewer, where it would be directly conveyed without treatment to a local body of water.

- Water Quantity

  Rain barrels hold water which would normally run off your rooftop and then into the storm sewer system. Using the barrels can provide some relief to the storm sewers and reduce the stress on local streams and rivers during heavier rain events.

Green (cont. from pg 2)

The Conservation Foundation sold over 125 rain barrels the day of the event. The barrels, which normally are sold for $85, were sold for a discounted price of $70. They are fashioned from recycled food and beverage storage barrels and were available in blue, black, slate and terra cotta.

DuPage County residents purchase rain barrels and native plants.

Applied Ecological Services, Inc., Jack Pizzo and Associates, Ltd., and Possibility Place Nursery were also available for consultations for property owners, and sold native plants.

Native plants are species that have adapted over the years to the climate and soils found in DuPage County. They have deep roots that hold water, prevent erosion and do not require excessive watering, fertilizers or pesticides.

Certain species of natives are particularly beneficial for stormwater retention and can be designed into rain gardens. Rain gardens are built in low areas that accumulate water after a storm. They collect and filter runoff and allow it to seep naturally into the ground instead of running off untreated to our streams and rivers.

The local non-profit group School and Community Assistance for Recycling and Composting Education (SCARCE) provided environmental education to residents including how to make and use compost bins. Composting creates a product from organic waste that acts as a natural fertilizer that helps store runoff.

Focus on a Facility: Elmhurst Quarry

The Elmhurst Quarry is located in the Salt Creek Watershed in Elmhurst, at Route 83 and just south of North Avenue. The quarry was proposed for use as flood control in response to historic severe flooding of Salt Creek. The quarry was purchased from Chicago Stone, and construction of the site was completed in 1996. The stone in the Quarry is limestone and dolomite. The volume of the Quarry is 8300 acre-feet, or 2.7 billion gallons.

In order to facilitate operation of the Quarry and create a more dependable hydraulic condition downstream, the original channel of Salt Creek was straightened.

Two lobes of the Quarry, located just east of Route 83.

In general, the facility operates by diverting flood waters from Salt Creek, which are conveyed through a tunnel under Route 83 to the Quarry. The Quarry has an east and a west lobe that is divided by West Avenue, but connected by a keyway. The depth of the two lobes varies; at its deepest the east lobe is 200 feet and the west lobe reaches a depth of 100 feet.

East lobe of Quarry partially filled.

Staff monitors USGS gages at Harger Road and Irving Park Road to determine if the facility needs to be operated. When gages reach the trigger elevation, staff opens a 7'x7' sluice gate to divert water from Salt Creek.

The water flows to a vortex drop shaft that allows water to flow to a tunnel under Route 83. Water spirals down the sides of the drop shaft to allow air to release through the center; this aids with flow through the tunnel.

The tunnel discharges into the west lobe where water is conveyed through a rip rap channel towards the keyway and into the east lobe. The rip rap channel protects soil from erosion.

The east lobe is deepest and fills up first. The east lobe backs up into the west lobe, if necessary. There have only been three events where water was stored in the west lobe in addition to the east lobe.

In order for dewatering of the Quarry to begin, the gage at Harger Road must be at or below 651.2 feet. Pump back is limited to 100 cfs (cubic feet per second) to Salt Creek. Stormwater is pumped out of the west lobe first. Once the west lobe is dewatered, the east lobe pumps into the west lobe, and the west lobe pumps out to the Creek. There is a 36 inch force main in the tunnel under route 83 that conveys water from the west lobe pumping station to the Creek.

Stormwater pumps.

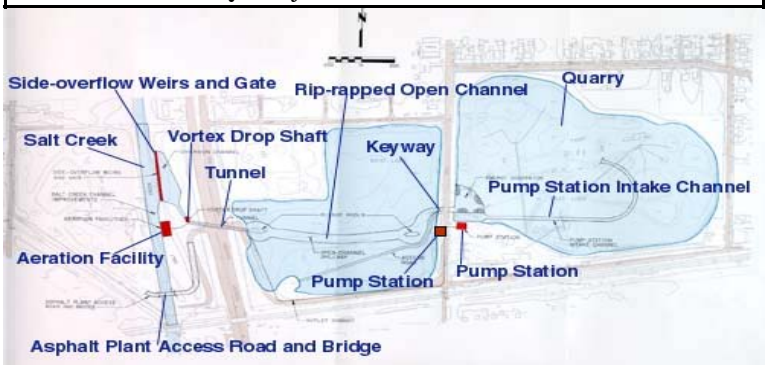
Before the water is discharged to Salt Creek it flows over an aeration structure. As water cascades down the structure air is added to the water, oxidizing it before returning it to the Creek. This helps improve the quality of the water returned to the Creek. There are dissolved oxygen (DO) sensors at the bottom of the steps of the facility, at the bridge and at Harger Road to ensure proper aeration.

When the Quarry is full it would take 72 days in an ideal situation to pump the water back to the Creek. As the Quarry is being dewatered, surveyors monitor areas adjacent to the facility ,and geologists read inclinometers and perform inspections to ensure structural integrity of the facility.

How the Elmhurst Quarry Works

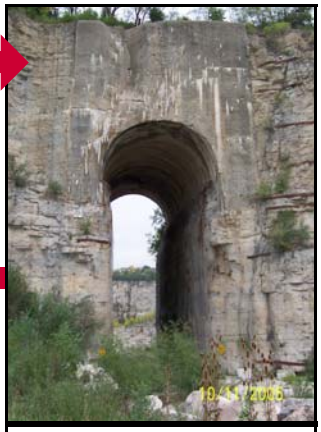
The 7'x7' sluice gate, which diverts flood waters, and the overflow weir.

Overview of the Quarry with notable features.



Water overflowing weir.

Water flowing over Rip Rap channel through west lobe.



Keyway connecting west and east lobe.

Water flowing through keyway to east lobe.

The east lobe of the Quarry filled.

West lobe pump station. West lobe is pumped out first.

East lobe sump pump. East lobe pumps to west lobe, and then to Creek.

Water flows over aeration facility before returning to Creek.

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Stormwater Displays Booth at Fair

The Stormwater Management Division displayed a booth at the DuPage County Fair, held from July 22-26, 2009. The booth was located in the Ag/Adventureland area of the Fair and was manned by Stormwater staff and volunteers from SCARCE. Kids and adults learned about watersheds and groundwater through hands on demonstrations. Exhibits included models of the Elmhurst Quarry and the Wood Dale/Itasca Reservoir, a green roof sample, an oil and sediment separator model, a rain gage and information on water quality testing and storm drain stenciling. An extensive variety of educational brochures on stormwater concepts and County programs were on display. Finally, a rain barrel donated by The Conservation Foundation was raffled off and won by Kurt Erickson (at right).

In addition to our booth, The Forest Preserve District of DuPage County displayed an exhibit on behalf of the Stormwater Management Division that showed an installed rain barrel next to a section of a house with a gutter and downspout.

Zay Presents Rain Barrels to Convalescent Center Residents

On May 26, 2009, Stormwater Committee Chairman Jim Zay presented the Convalescent Center's Rain Garden Club with two rain barrels and stands. The residents in turn presented Zay with a certificate of appreciation. The Garden Club meets every Tuesday and each member has an individual designated area to grow plants and vegetables. The rain barrels will be installed underneath downspouts near the residents' gardens.