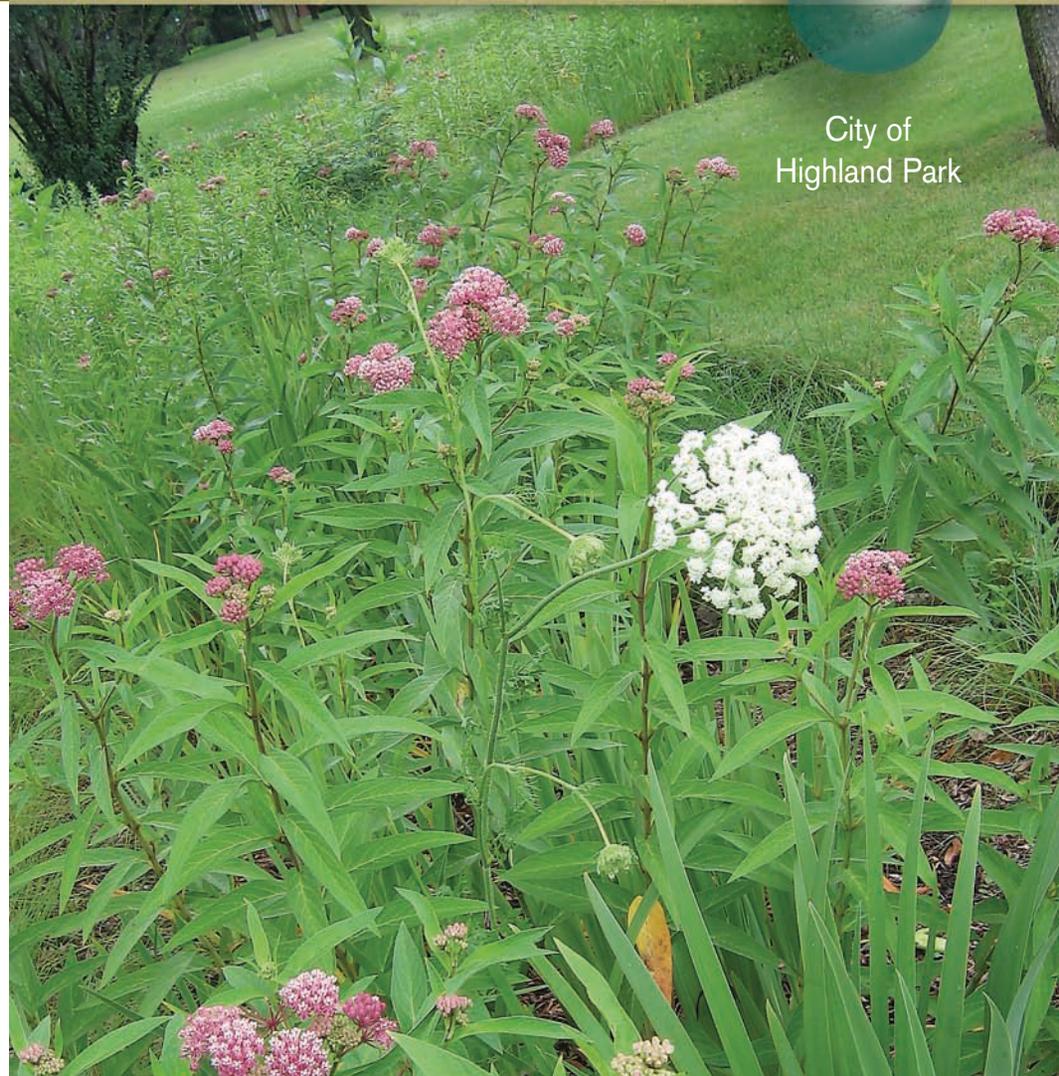




Discovering the Benefits of On-Site Stormwater Management



City of
Highland Park

CITY OF HIGHLAND PARK

1707 St. Johns Avenue
Highland Park, IL 60035



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DISCOVERING THE BENEFITS OF MANAGING YOUR STORMWATER

“Stormwater runoff” is water that flows over land as a result of a rain or snowfall event. Traditionally, stormwater management involved channeling stormwater runoff through pipes, or storm sewers, away from developed land into a nearby body of water. Although this extensive underground system is necessary to prevent flooding, municipal infrastructure can be overwhelmed in extreme situations by increases in stormwater runoff that result from impervious surfaces such as roads, parking lots and buildings. As stormwater runoff travels over these surfaces, it picks up contaminants and pollutants such as fertilizers, pet waste and automotive fluids before it is deposited unfiltered and untreated into water bodies that are used for recreation and drinking water.

TWO MAIN ISSUES CAN ARISE FROM CONVENTIONAL STORMWATER MANAGEMENT:

- *The quality of water that is diverted into streams, rivers and lakes can pollute public water supplies and degrade natural habitat*
- *Large, intermittent quantities of water can erode natural drainage ways such as ravines and lead to costly infrastructure repairs*

right—Native plantings flourish in place of turf grass at the Hidden Creek Aqua Park Detention Basin
left—Black-eyed Susans serve as a beautiful backdrop to a summer picnic



In Highland Park, stormwater management is extremely important because of the City's unique drainage system: stormwater that falls west of Green Bay Road makes its way through the Skokie River or the Middle Fork into the Chicago River, while stormwater that falls east of Green Bay Road flows into Lake Michigan. Lake Michigan and the Chicago River are valuable regional assets—both host a variety of plant and animal species and are used for a number of recreational activities. Lake Michigan also serves as a primary source of drinking water for millions of people in the Chicago metropolitan area, including Highland Park.

The City understands the need to maintain its traditional infrastructure in order to protect its residents, but realizes the importance of supplementing the existing system with new sustainable approaches to stormwater management. There are many missed opportunities to retain and use stormwater instead of potable water for outdoor activities including watering lawns and gardens, washing cars and cleaning decks and patios.

The purpose of this brochure is to help residents take advantage of the numerous benefits that are inherent in simple techniques such as rain gardens and permeable paving, so that together the community can properly manage its precious natural resources.

HOW CAN I MANAGE MY STORMWATER?

The term "Best Management Practice"—or BMP—is used to describe a variety of cost-effective techniques that can be used to store and filter stormwater that would otherwise be channeled directly to the City's storm sewers. Some BMPs improve the quality of stormwater that runs into the City's drainage system. Other BMPs limit the amount of stormwater leaving a site, usually by allowing it to soak into the ground or become absorbed by vegetation. Both varieties ultimately work to protect the watershed, a large area of land where all water drains into the same place. Not only do BMPs minimize pollution, flooding and drainage concerns, but they can also enhance the beauty of a residence and create an aesthetically-pleasing neighborhood habitat. By showcasing a BMP on one's property, residents can educate adjoining neighbors and demonstrate a commitment to conserving water.



Below are just a few examples of methods by which residents can manage stormwater on site. Before pursuing these techniques or others, residents should understand maintenance demands, familiarize themselves with the City’s regulations and contact the Department of Public Works to discuss how these projects may help manage stormwater runoff on their respective property.

Rain Gardens

Rain gardens are depressed areas landscaped with native plants, species that have evolved naturally and adapted to local conditions, that soak up stormwater runoff collected from impervious surfaces such as roofs, decks and patios. Rain gardens naturally filter water and reduce the amount of stormwater runoff that is channeled into the City’s storm sewers. When installed properly, rain gardens drain within hours of a rain event (mosquitoes need not be a concern as they require 7 to 12 days to lay and hatch eggs).

Permeable Paving

Permeable paving is a porous alternative to traditional impervious materials, such as concrete and asphalt, which do not allow water to soak into the ground. Rather than channeling stormwater runoff

directly into the storm sewers, permeable pavement filters water and allows it to soak into the ground, effectively decreasing runoff and replenishing groundwater.

Rain Barrels and Cisterns

Rain barrels and cisterns are containers that can be placed at the bottom of gutters not directly connected to the City’s storm sewer system in order to harvest stormwater runoff from a rooftop. Rain barrels and cisterns can prevent stormwater runoff from being deposited directly into the storm sewer by storing the water so it can be “recycled” and used to water lawns, trees and gardens.

Green Roofs

A green roof is a layer of specialized plants and planting materials installed on top of a building. There are a variety of green roof systems, however all work in essentially the same manner—by absorbing, retaining and filtering stormwater. Green roofs can minimize runoff, conserve energy, improve air quality and significantly reduce roof temperatures during summer months.





Native plantings improve the functionality and attractiveness of a drainage path

WHAT IS HIGHLAND PARK DOING TO MANAGE STORMWATER?

Like many municipalities, the City is participating in a national movement towards establishing a more sustainable future. Thoughtful stormwater management is one element of the City's larger initiative to promote green building practices. The Department of Public Works continually upgrades the existing storm sewer system and undertakes yearly capital projects in neighborhoods to prevent or mitigate flooding. In addition, the City is dedicated to practicing and raising awareness of more sustainable approaches to stormwater management. As part of this effort to remain abreast of new techniques and methods that may supplement the traditional storm sewer system, the City regularly calls upon the expertise of its Commissions to identify opportunities for creative stormwater management and to evaluate regulations in the City Code. In recent years, the City has demonstrated this commitment in several successful projects throughout town.

CITY HALL RAIN GARDEN

DEMONSTRATION PROJECT • 1707 St. John's Avenue

In 2008, the City completed installation of a rain garden at the northwest corner of City Hall, adjacent to Gardener Memorial Park. The rain garden has been designed to temporarily store stormwater runoff during heavy rain events so that the rate of drainage into the nearby ravine is reduced and erosion is minimized. The City will continue to monitor the rain garden's performance and use the lessons learned to guide residents in construction of their own rain gardens.

HYACINTH PLACE • Hyacinth Place at Western Avenue

Hyacinth Place is a 14-unit affordable housing development that features several green amenities including native plantings and permeable pavers and an award-winning stormwater management system. The paver system at Hyacinth Place consists of solid concrete paving stones fit together with gaps that allow water to flow into layers of gravel beneath the surface. The pavers dramatically reduce pollution by filtering out up to 80% of pollutants, and the amount of overland water flow that is directed into the storm sewer is significantly reduced. The water that is held in the gravel has the opportunity to evaporate back into the atmosphere and the water that does enter the storm sewer is naturally purified.

Concrete pavers are assembled on a layer of gravel to filter pollutants

HELPFUL TIPS TO USE AT HOME

The City's initiatives and efforts to manage stormwater can be enhanced and expanded by the individual actions of residents—collectively, these small steps can have a noticeable impact on the watershed. A partnership between the City and its residents is necessary to advance the success of the community's environmental goals. City staff is available to work with



homeowners on unique and sustainable approaches that can effectively meet the individual needs of each property.

City staff is also able to provide limited technical assistance, and can help identify outside resources to assist homeowners.

While the City encourages residents to utilize BMPs, please note several important regulations that are in place to protect properties:

- *Stormwater can be diverted from gutters to rain gardens and rain barrels only in instances where downspouts are not already connected or required to be connected to the City's storm sewer system*
- *Homeowners should call J.U.L.I.E. prior to digging a rain garden*
- *Special consideration must be given to drainage on properties containing ravines and bluffs to minimize slope erosion*
- *All proposed projects must comply with all applicable City Codes and Ordinances*
- *Property owners must obtain all necessary permits before commencing construction of any proposed project*

This brief summary of regulations is not intended to replace the City Code. For a full explanation of the most recently updated regulations, please visit the City's website or contact the Department of Community Development or Department of Public Works to discuss how these regulations may apply to each project.



SOURCES OF MORE INFORMATION

The City's commitment to sustainability and best management practices is shared with partners who are available to help you get started on your own on-site stormwater management project. For further information, please use:

CITY OF HIGHLAND PARK DEPARTMENT OF COMMUNITY DEVELOPMENT
1150 Half Day Road, Highland Park, Illinois 60035 • 847-432-0867
www.cityhpil.com

CITY OF HIGHLAND PARK DEPARTMENT OF PUBLIC WORKS
1150 Half Day Road, Highland Park, Illinois 60035 • 847-432-0807

PARK DISTRICT OF HIGHLAND PARK
636 Ridge Road, Highland Park, Illinois 60035 • 847-831-3810
www.pdhp.org

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION
www.lakecountyil.gov/stormwatermanagement/

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
www.epa.state.il.us/water/

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
www.dnr.wi.gov/runoff/index.htm

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
www.epa.gov/