



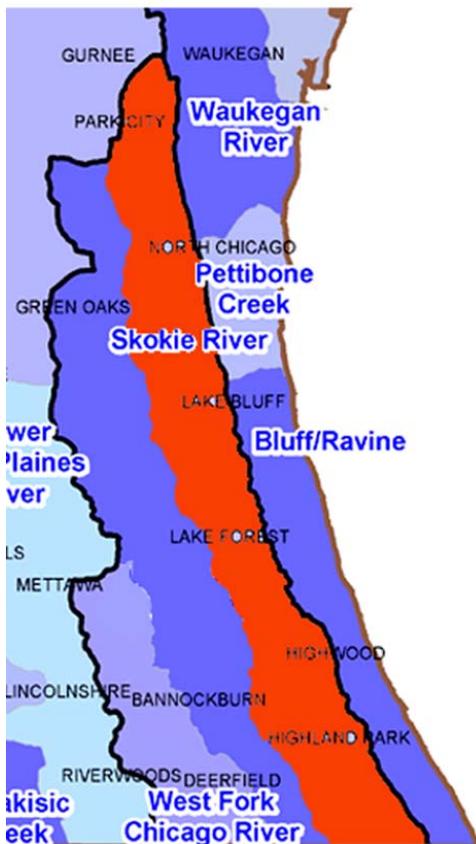
CITY OF HIGHLAND PARK, ILLINOIS

Stormwater Management Fact Sheet

WHAT IS STORMWATER MANAGEMENT?

Stormwater management is the method for channeling rainfall through pipes and sewers away from property to an appropriate body of water, or outfall. Excess stormwater requires careful management as the ramifications, like flooding, can negatively affect the City and residents. Typically, stormwater is managed through an underground storm sewer system. However, extreme rain events may overwhelm this type of municipal infrastructure. Excess water that travels on impervious surfaces (e.g. surfaces that do not absorb water), such as roads, may also become contaminated before reaching the outfall location.

STORMWATER MANAGEMENT IS A REGIONAL ISSUE



The City of Highland Park has a unique drainage system in that stormwater can either make its way through to two of three “forks” of the North Branch of the Chicago River: the Middle Fork and the East Fork – better known as the Skokie River – are both located in Highland Park. The third drainage area for Highland Park is Lake Michigan. Your residential location will determine your drainage location.

The adjacent map depicts the City’s drainage areas. Each body of water is a regional asset since each flows through neighboring municipalities in addition to Highland Park. The Lake County Stormwater Management Commission (SMC) serves as the County’s central agency to facilitate regional stormwater management coordination. The City of Highland Park operates and maintains storm sewer mains throughout the City. There are separate drainage districts that are responsible for maintenance of the Skokie River (East Skokie Drainage District) and the Middle Fork (Union Drainage District).

TYPES OF FLOODING

Protecting residential and commercial buildings and structures from flooding is one of the most important Highland Park stormwater management goals. It is important to distinguish between the different types of flooding events that can occur during rainfall events. These include:

- ❖ Flash flooding: Occurs after a short rainfall event that has a high level of intensity.

- ❖ River flooding: Occurs when river basins overflow, possibly due to the combination of melting snow and spring rains.
- ❖ Urban flooding: Occurs when natural surfaces are paved and lose their ability to absorb rainfall; the excess stormwater fills parking lots, yards and may flood basements.

Stormwater can enter basements through several means, such as a leak or crack in basement or foundation walls. Poor lot drainage and plugged downspouts may also contribute to seepage. Basement flooding may also be attributed to sump pump failure, a backup of wastewater in the sanitary sewer system, or a blocked connection between the home and the main sewer line in the street.

HOW STORMWATER MAY IMPACT THE SANITARY SEWER SYSTEM

Excess stormwater may also impact the sanitary sewer system that conveys wastewater from residential and commercial structures to the regional wastewater treatment plant, operated by the North Shore Sanitary District (NSSD), on Clavey Road. This facility serves all of Highland Park, Highwood, Lake Forest, Lake Bluff, North Chicago, and portions of other communities north of Highland Park. The NSSD receives wastewater via large “interceptor” sewer lines that accept wastewater from the collector sewer mains in the communities along its route. Because Highland Park is located at the “downstream end” where water flows, the City may experience flooding resulting from excess stormwater in the respective sanitary sewer systems.

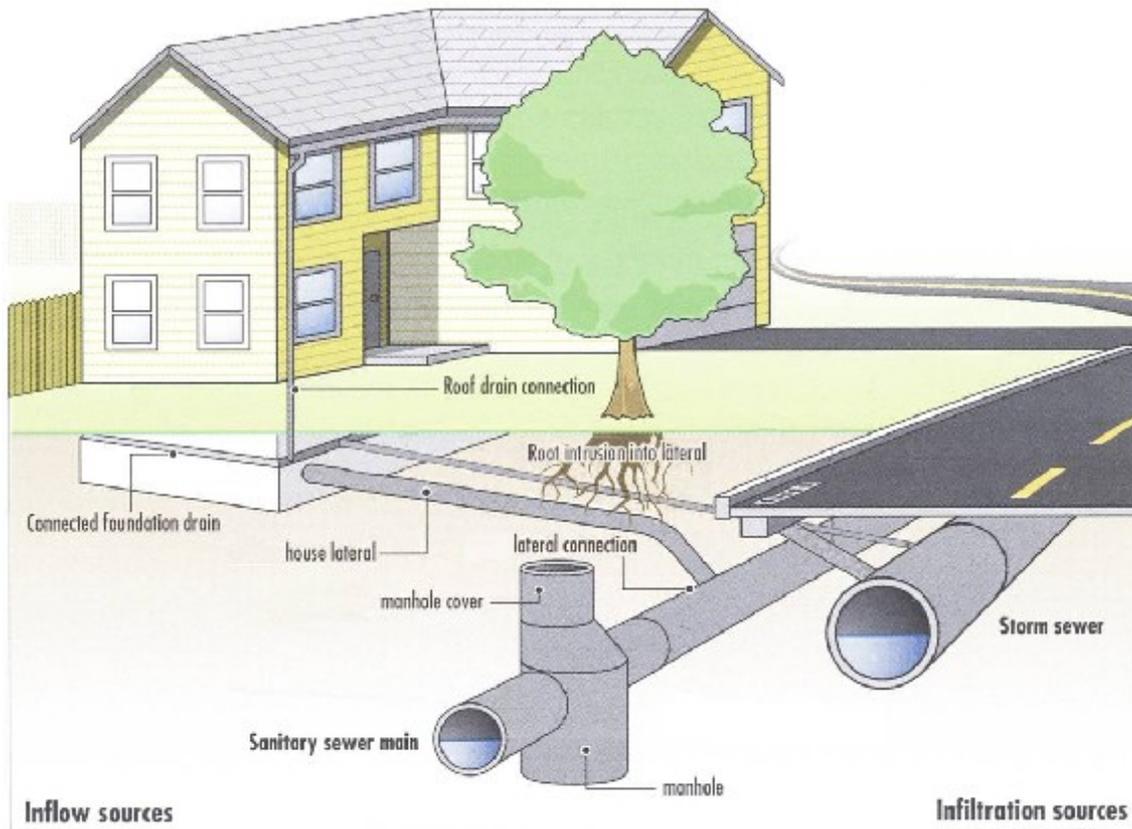
Stormwater can enter into the sanitary sewer system in two ways: inflow and infiltration. Inflow is stormwater that enters the sanitary sewer system through points of direct connection to the system, such as downspouts or basement stairwells. Infiltration is when stormwater enters the sanitary sewer system through cracks or defects in sanitary sewer pipes. Wet weather can magnify inflow and infiltration sources. Once the sanitary sewer system reaches capacity, water may back up and potentially flood basements. As a result, inflow and infiltration can reduce a sanitary sewer’s ability to transport wastewater to the treatment facility.

GOVERNMENTAL PARTNERSHIPS

Because Highland Park is located at the south end of the Skokie River, the Middle Fork, and the NSSD interceptor, the City may be impacted by too much water in any of these conveyances. As a result, City officials must coordinate with various governmental entities to develop long-term stormwater management solutions. These agencies include the Lake County SMC, local drainage districts, and state agencies responsible for natural resources and environmental protection, such as the Illinois Department of Natural Resources (IDNR) and the Illinois Environmental Protection Agency (IEPA). Also included is the agency responsible for wastewater treatment along the Lake Michigan area in Lake County, the NSSD. In addition, Highland Park collaborates with other municipalities located upstream so that all of the communities can work together to reduce the potential negative impacts from stormwater runoff or sanitary sewer infiltration.

PARTNERSHIPS WITH RESIDENTS

Effective local storm and sanitary sewer systems also require a partnership between the City and its residents. The City owns and maintains storm and sanitary sewer collector lines, while homeowners are responsible for maintaining lateral sewer lines that connect a residence to the City’s sanitary sewer main. The graphic on the following page depicts the relationship between storm and sanitary sewer systems and a residence.



Since the mid-1990s, the City has completed improvements to over 27 miles of its storm and sanitary sewer lines. The City’s long-term neighborhood infrastructure improvement program has identified seven priority areas requiring significant reduction of inflow and infiltration into the City’s sanitary sewer system. These include the following neighborhoods:

- ❖ Highlands
- ❖ Ravinia
- ❖ Ridgewood
- ❖ Sherwood Forest
- ❖ Southwest (Clavey/Ridge)
- ❖ Sunset Woods
- ❖ Trail Way

These projects include lining City-owned and maintained sanitary sewer mains in order ensure that they are impervious to stormwater infiltration, initiating spot repairs to small sections of storm or sanitary sewers that are damaged, and installing larger storm sewers designed to handle a 10-year rain event. A 10-year rain event is classified as a storm possessing an intensity that has a 10% chance of occurring in any given year.

CAPITAL IMPROVEMENT AND MASTER PLANS

The City of Highland Park, in conjunction with various third-party engineering consultants, has developed master plans for both the City’s storm and sanitary sewer systems that identify future

capital projects that are scheduled for completion. The purpose of these master plans is to develop a comprehensive approach to operating, maintaining and improving the City's storm and sanitary sewer systems. Additionally, the City has established the following targets to guide future efforts in the realm of stormwater management, in order of priority:

1. Protect buildings from flooding
2. Protect yards from flooding
3. Protect streets and public rights-of-way from flooding

The City's Storm and Sanitary Sewer Master Plan is available on the City's website at www.cityhpil.com.

INNOVATIVE SOLUTIONS

Highland Park is also investigating and implementing alternative methods to assist with stormwater management. For example, in 2008 the City completed installation of a rain garden demonstration project adjacent to City Hall. The rain garden is designed to temporarily detain stormwater during heavy or prolonged rain events in order to reduce the rate of surface runoff. Further, rain gardens help mitigate flooding and streambank erosion. These alternatives are gaining acceptance as measures that can aid in on-site stormwater management. To learn more about residential stormwater management techniques that may have aesthetic and functional benefits, please see the following brochure, *Discovering the Benefits of On-Site Stormwater Management*, which is also available on the City's Web site at: www.cityhpil.com.

Another option residents may consider to mitigate potential flooding is retrofitting. Retrofitting involves initiating changes to an existing property in order to protect it from future hazards. Homeowners can make various types of structural changes to existing property by implementing improved construction technology. To determine if retrofitting is a viable solution, visit FEMA's Web site and download a free copy of a *Homeowner's Guide to Retrofitting* at <http://www.fema.gov/library/viewRecord.do?id=1420>.

A partnership between the City and its residents is necessary to advance the success of the community's environmental goals. Homeowners are reminded that all projects must comply with City codes and ordinances, and to obtain necessary permits before construction begins.

HAVE YOU BEEN AFFECTED BY FLOODING?

Residents are encouraged to check their basements for signs of water to determine the source. If water is surcharging from a floor drain, the problem may reside with the City or the residential sanitary sewer line, and the responsibility of repairing such a problem may rest with the homeowner or the City. Please contact the Department of Public Works (847) 432-0807 before calling a plumber so that a determination can be made as to whether the flooding is a public or private concern.

Residents experiencing a sanitary sewer backup are encouraged to contact a restoration company to clean affected or damaged areas. Damaged property can be disposed of through Veolia Environmental Services. Special pick-ups may be arranged by calling (847) 272-4145.

ADDITIONAL RESOURCES

Please consult these supplemental resources for more information about regional stormwater management efforts.

- ❖ Lake County Stormwater Management Commission; 847-918-5260; www.lakecountyil.gov/stormwater
- ❖ Illinois Stormwater Information; 1-800-729-0604; www.stormwaterauthority.org
- ❖ FEMA; 1-800-611-6122; www.fema.gov/hazard/flood/index.shtm
- ❖ 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

If you have additional questions regarding stormwater management in Highland Park, please contact the Department of Public Works at (847) 432-0807 or publicworks@cityhpil.com.

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