

**MINUTES OF THE  
REGULAR MEETING OF THE HIGHLAND PARK CITY COUNCIL**

**JULY 5, 2016**

Council convened at 7:07 p.m. with Council President Patrick presiding.

Present: Council Pro Tem McDonald, Councilmember Woodard, Councilmember Lewis  
Councilmember McClary and Council President Patrick (5).

Absent: (0).

A quorum being present, Council was declared in session.

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**APPROVAL OF AGENDA  
07-05-IV**

Moved by Councilmember McClary  
Supported by Councilmember Lewis

To approve the agenda with the following corrections: item VII changed to Tabled Item and remove item XIVb. Yeas (5), Nays (0), Absent (0).

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**PUBLIC HEARING  
07-05-V**

Moved by Councilmember Lewis  
Supported by Councilmember McClary

To open the Public Hearing to hear citizens input regarding City of Highland Park water and sewage rates. Yeas (5), Nays (0), Absent (0).

Comments were heard by citizens and City council. Jarion Bradley, Project Coordinator answered questions regarding rate changes, billing charges, and bill format.

Moved by Council Pro Tem McDonald  
Supported by Councilmember Lewis

To close Public Hearing. Yeas (5), Nays (0), Absent (0). Public hearing closed at 8:04

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**BID PROPOSALS  
07-05-VI**

The Clerk stated this was the place and time to open bid proposals for Bid Pack #17

demolition of 115 Ferris, 176 Ferris, 218 Candler, 234 Candler, 250 Candler, 212 Church, 124 Connecticut, 150 Connecticut

Seven (7) bids were received.

Able Demolition Inc.  
5675 Auburn Rd.  
Shelby Twp, MI 48317  
586.997.3366  
Bid amount: \$178,442

Blue Star  
21950 Hoover  
Warren, MI 48089  
586.427.9933  
Bid amount: \$184,900

SJ Design & Construction  
25855 Lahser Rd.  
Southfield, MI 48033  
248.990.2239  
Bid amount: \$134,350

Adamo Demolition Co.  
320 E. Seven Mile Rd.  
Detroit, MI 48203  
313.892.7330  
Bid amount: \$186,661

International Construction  
53618 Cherrywood  
Shelby Twp, MI 48315  
586.749.9895  
Bid amount: \$149,000

Rickman Enterprises  
15533 Woodrow Wilson  
Detroit, MI 48238  
313.454.4000  
Bid amount: \$186,610

FDI  
601 Beaufait St.  
Detroit, MI 48207  
313.259.7910  
Bid amount: \$314,366

Moved by Councilmember Woodard  
Supported by Councilmember Lewis

To refer the bid proposals to the Director of Community Development. Yeas (5), Nays (0), Absent (0).

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**TABLED ITEM  
07-05-VII**

The following item was tabled from the June 20, 2016 meeting

Final read and adoption of the Stormwater Manual and Ordinance.

Moved by Councilmember McClary  
Supported by Councilmember Lewis

To remove this item from the table. Yeas (5), Nays (0), Absent (0).

# City of Highland Park Stormwater Management Manual and Ordinance

## TABLE OF CONTENTS

|   |    |
|---|----|
| Foreword.....   | 2  |
| General Policies and Procedures.....                    | 3  |
| City Ordinance.....                                     | 12 |
| Appendix A Drainage/Stormwater Charge Fee Schedule..... | 18 |
| Appendix B Sample Calculation .....                     | 19 |
| Appendix C Sample Industrial Exhibits .....             | 22 |
| Appendix D Sample Commercial Exhibits .....             | 27 |
| Appendix E Sample Residential Exhibits .....            | 29 |
| Appendix F Best Management Practice Guide Sheets .....  | 33 |



# CITY OF HIGHLAND PARK

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## Stormwater Management Manual and Ordinance

### Foreword

The City of Highland Park (City) is committed to protecting, conserving and managing our water and sewer system for all to enjoy.

Being a primary urban area and more hard surfaces, such as rooftops and roadways, there are fewer and fewer places where rain water can infiltrate the soil, nourish plants and remain part of the natural system. Without green space to absorb it, the sewer system is required to handle more and more water. Since the City of Highland Park's wastewater is treated by the Great Lakes Water Authority (GLWA)/Detroit Water and Sewerage Department (DWSD), this results in increased sewerage rates for the City of Highland Park, and in turn, for the residents and business owners.

The City of Highland Park has an estimated water and sewer department budget of approximately \$10 million per year to maintain, repair, clean, or upgrade approximately fifty-seven (57) miles of water and sewer lines and related structures. However, historically, sewage rates were not adequately measured or charges distributed to all users of the combined sewer system equitably. While the community continues to build the city back to prominence, managing the combined sewage system with the stormwater runoff and assessing equitable charges to generate revenue to cover rates as charged by DWSD is essential to rebuilding the sewer infrastructure and the community.

As part of the process of reducing stormwater runoff in the community, demolition has been occurring over the past few years, along with vegetating empty lots to reduce runoff. In addition, a program shall be put in place to disconnect downspouts connected to the combined sewer system.

The purpose of this ordinance is to assist the City of Highland Park property and business owners within the city, to understand new stormwater drainage and stormwater charges and how to reduce the city's overall contribution of stormwater runoff to the combined sewer system.



# CITY OF HIGHLAND PARK

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## Stormwater Management Manual and Ordinance

### 1.1 General Policies and Procedures

#### 1.2 Introduction

The City of Highland Park Stormwater Manual and Ordinance was created for current property owners, including industrial, commercial, and residential parcels contributing to stormwater runoff to the combined sewer system, along with developers, engineers and architects who may prepare future plans for properties contributing stormwater runoff into the City of Highland Park's combined sewer system.

The goals of the manual and ordinance are:

- Allow for the City of Highland Park's Water Department be a technical resource and provide tools and guidelines necessary to comply with the Stormwater Manual and Ordinance
- Provide to residents, business owners, property owners, and governmental agencies who contribute to the combined sewer system, a rate structure consistent with the methodology in which the City of Highland Park is assessed charges by the GLWA/DWSD, which treats all wastewater generated from the City of Highland Park
- Provide several options for property owners to reduce impervious areas on property, reducing overall stormwater runoff to combined sewer system, and reducing overall monthly drainage or stormwater charges

The manual and ordinance shall also address several best management practices (BMPs) to control the stormwater-related impacts of public right-of-ways and industrial, commercial, and residential parcels in the City of Highland Park. Although this list is not all inclusive, property owners will have a better understanding of various methods in which to reduce the stormwater runoff into the combined sewer system. The City of Highland Park's goal to gradually incorporate stormwater BMPs into new development designs to efficiently achieve the overall goal of reducing stormwater runoff, thereby effectively reducing each property owners drainage and stormwater charge, thus reducing the City of Highland Park's overall monthly sewage bill paid to GLWA/DWSD .

#### 1.3 The Need for Stormwater Management

The City of Highland Park performed an examination of available information, including past stormwater drainage and stormwater studies, engineering reports from GLWA/DWSD, and various news articles published from several sources. This information was used to develop a new manual and ordinance for stormwater runoff and billing for the City of Highland Park in 2016. The assessment included evaluating how the City of Highland Park was billed for combined sewer flow volume, and an overview of the method in which, for comparison purposes, the City of Detroit property owners are assessed various monthly stormwater and/or drainage related charges for both residential and non-residential property owners on their water and sewer bills by DWSD.

Sewage bills to Highland Park from DWSD for the years of 2010 through 2015 were evaluated for the purposes of reviewing stormwater, drainage related charges, and overall volumes of wastewater generated. The City of Highland Park is billed by DWSD based on an estimated monthly combined sewage discharge volume. The estimated combined monthly sewage discharge volume is broken down



## CITY OF HIGHLAND PARK

### Stormwater Management Manual and Ordinance

into three (3) components as identified in DWSD Rates Understanding DWSD Wholesale Sewer Rates, September 2005:

- The first component consists of the estimated sanitary flow based on the amount of wastewater projected to be delivered based on past meter readings.
- The second component consists of the estimated dry weather inflow and infiltration, which is the amount of water in the ground absorbed into the sewer pipes through joints or other connections.
- The third and final component includes the estimated wet weather flow from rainfall events and snow melt. As indicated by DWSD Rates Understanding DWSD Wholesale Sewer Rates, September 2005, the baseline rainfall data for this component is compiled from the Greater Detroit Regional Sewer System (GDRSS) model. Based on DWSD information, approximately 95% of First Tier Customers are metered.

The sewer rate structure for The City of Highland Park is broken down into four (4) components per the DWSD Rates Understanding DWSD Wholesale Sewer Rates, September 2005:

- **Common Charge:** charge to recover transportation and treatment cost of sanitary flows and dry weather infiltration
- **Lookback:** charge correcting the difference between the previous year's revenue collected and actual cost of service
- **Wholesale:** charge by DWSD based on usage distance from treatment plant. Additional detail is required from DWSD to determine exact rate determination
- **CSO Charges:** charge to recover the costs of wet weather flows and each customer's share of the DWSD CSO control program

As documented in DWSD's document, Stormwater Retail Drainage Charges June 6, 2013, starting as early as the year 1974, DWSD began assessing a separate stormwater charge as a component of the overall wastewater sewer bill for non-residential property owners in the City of Detroit. Stormwater runoff for a selected property is currently calculated by DWSD for residential and non-residential DWSD customers.

All properties will be subject to the City of Highland Park's Downspout Disconnection Program. In addition, as shown on the City of Highland Park rate sheet included in *Appendix A*, all properties are to be assessed monthly charges. This charge, which is a result of several factors and calculations for all contributors to the combined sewer system, shall allow for shared responsibility for all who contribute stormwater runoff to the City of Highland Park's monthly and annual sewer bill. This charge shall be shown on a customer's monthly bill from the City of Highland Park Water and Sewer Department. Drainage and Stormwater charges shall be assessed as follows:

- For governmental agencies with right-of-way within the City of Highland Park, the sewage rate charge is assessed based on stormwater volume per 1,000 cubic feet (mcf) per month
- A monthly drainage charge for residential (single or two family homes, or property zoned or designated to be used residential) shall be assessed.



## CITY OF HIGHLAND PARK

---

### Stormwater Management Manual and Ordinance

- Industrial and commercial property owners shall be assessed monthly stormwater charge based on the size of the parcel and the size or amount of pavement, building, and vegetative cover which includes grass, shrubs, trees, and other general landscaping, referred to as the properties percentage of imperviousness. All individual properties and right-of-ways in the City of Highland Park were evaluated using Geographic Information System (GIS) to determine the relative impervious percentage.

#### Downspout Disconnection

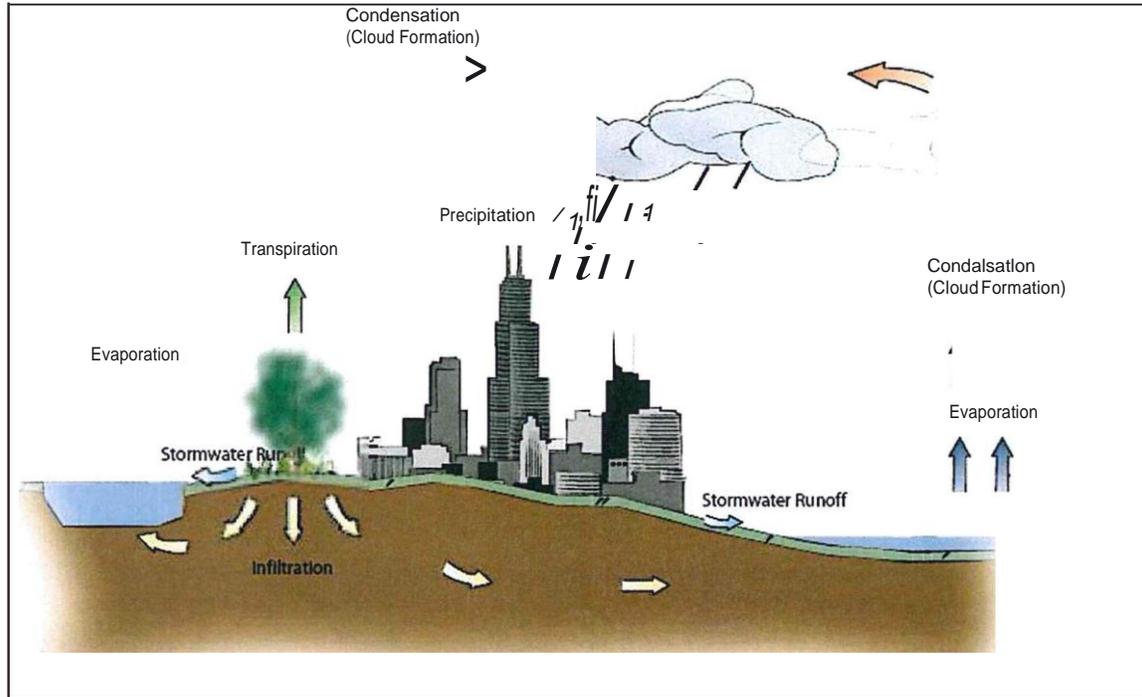
Disconnecting rooftop gutter downspouts can greatly reduce the amount of stormwater entering the combined sewer system. It may also aid in minimizing basement flooding. A downspout is a pipe that carries rainwater or snowmelt from the roof of a building and is routed directly into a sewer system via a drain pipe connection.

A mandatory downspout disconnection program will be implemented in the City of Highland Park beginning in the FY 2017.

The impacts from developments occur both during construction and after the development is complete. The conversion of pervious land to impervious surfaces results in increased rate and volume of stormwater runoff, reductions in groundwater recharge, and reduction of evapotranspiration. These new impervious surfaces change the hydrologic characteristics of the landscape by reducing infiltration into the soil and the evapotranspiration from vegetation (See Figure 1).



Figure 1. The Hydrologic Cycle



The result of development is a dramatic increase in the rate and volume of precipitation running off the landscape as stormwater. New impervious surfaces, compaction of soils, and loss of native vegetation reduces the amount of precipitation that infiltrates into the ground. Without adequate stormwater management controls, an additional burden is created for the sewer system. Since the City of Highland Park is primarily a combined system, the already aged system may experience flooding or surcharged sewers, and can lead to basement backups and combined sewer overflows. Uncontrolled, the impacts of development on stormwater runoff can lead to increased flooding, combined sewer overflows, and increased sewer charges from DWSD. Properly designed and implemented stormwater management facilities can prevent these unacceptable impacts and minimize runoff into combined sewer system. With the assistance of the Highland Park's Engineer of Record, Water & Sewer Department Director, and Department of Public Works, property and parcel owners may reduce stormwater and drainage charges by implementing various volume control best management practices.

**Volume Control:** The *volume* of stormwater runoff ensures existing, new, or redeveloped properties capture and retain a portion of the runoff generated. This reduces the effects of new development or redeveloped properties, recharges groundwater and provides water quality benefits. Volume control can help prevent sewer flooding and combined sewer overflows, as well as reduce the volume of runoff is sent to the DWSD wastewater treatment plant, thereby reducing communities overall sewer bill.



## CITY OF HIGHLAND PARK

### Stormwater Management Manual and Ordinance

The list of volume control BMPs below is not all-inclusive. The City has identified common volume control BMPs that can be implemented to meet the goals and objectives of the City of Highland Park Ordinance. The City of Highland Park has prepared BMP guide sheets (Appendix F) which include additional information on the implementation of various stormwater BMPs. The following BMPs are generally applicable to volume control and are discussed below.

- General Removal of Deteriorated or Excessive Pavement
- Green Roofs
- Rooftop Runoff BMPs (Planter Boxes, Rain Barr'7IS and Cisterns)
- Permeable Paving
- Natural Landscaping
- Vegetated Filter Strips
- Bioinfiltration Systems
- Infiltration Vault

#### **General Removal of Deteriorated or Excessive Pavement**

Pavement removal increases the amount of ground cover with the ability to absorb more stormwater before leaving the property than a more impervious pavement surface could. These areas could be converted to gardens, permeable pavement areas if parking is still desired, or general landscaping. A few areas where pavement could be removed include:

- Unused sport play areas including tennis courts, basketball courts, or school playgrounds
- Sections of a driveway not used for parking
- Patios and walkways no longer in use by property owner
- 

#### **Green Roofs**

In green roof systems, runoff is absorbed and retained by living vegetation installed on a rooftop. There are two types of green roof systems: extensive and intensive systems. Extensive systems usually contain shallower soil, put less weight on rooftops, and are easy to maintain. They generally contain shorter plants with shallower root systems. Intensive systems have deeper soil; add more weight to a rooftop; and generally contain a more diverse mixture of deep-rooted plants, trees, and shrubs. Intensive systems require more maintenance but provide added benefits in the form of water filtration and wildlife habitat. Green roof systems provide insulation and prolong the life of a roof by protecting it from the elements. Green roof systems also improve air quality by reducing the urban heat island effect. Maintenance of green roof systems is minimal and mostly involves watering and weed removal during the first few years of establishment.



## CITY OF HIGHLAND PARK

### Stormwater Management Manual and Ordinance

In most cases, a green roof shall not cover all surfaces of a roof. The green roof shall be counted as a pervious surface to aid in achieving the required impervious area reduction.

#### **Roof Runoff BMPs (Planter Boxes and Rain Barrels)**

Roof runoff BMPs include planter boxes and rain barrels. Planter boxes are used in heavily paved areas to reduce the amount of impervious areas. Planter boxes can be above ground or at grade and are designed to retain water in the substrate or in an underlying aggregate. Planter boxes come in a wide variety of shapes and sizes and may be planted with native or ornamental plants. Planter boxes at grade can be designed to drain part of the surrounding paved area. Planter boxes can also be designed to infiltrate water into the ground or to capture water through an underdrain system that discharges excess water into a sewer system.

Rain barrels collect and store stormwater runoff from rooftops. The volume of rain barrels or cisterns may be counted as volume control storage. Water collected in rain barrels can be used to water lawns and landscaped areas between storms. Rain barrels and cisterns are therefore most useful during the growing season. They require periodic cleaning to remove debris. Filters to keep out most debris can be installed, but periodic cleaning is still advised. In addition, rain barrels should be sealed to prevent mosquito breeding and must be drained before winter to prevent any damage from freezing and thawing.

#### **Permeable Paving**

Permeable paving provides many benefits in urban environments by reducing the quantity of stormwater runoff and pollutants discharged from a site. Permeable pavement systems come in many different forms. The most common forms are paving blocks with a cutout to facilitate infiltration or grids that have openings filled with a porous material such as rock, sand or soil. Paving blocks work best on areas that have sandy, permeable soils, however, they may also be implemented on low permeability soils by using aggregate and an underdrain system. Permeable pavement systems are most useful in areas not receiving high traffic volumes or heavy weight loads.

Areas of permeable pavement may be counted as permeable surfaces, unless the aggregate layer includes an underdrain or the aggregate storage is being used for detention. In these cases, the permeable pavement should be treated as an impervious surface for volume control and detention requirements. The storage provided in permeable paving systems is based on the void space of the aggregate.

#### **Natural Landscaping**

Natural landscaping involves the planning and implementation of naturalized or native vegetation on permeable soils or prepared soils. Care must be taken to ensure that the proposed vegetation and existing soils are compatible. If existing soils are unsuitable for implementation of native vegetation, alternative landscaping plans should be devised, or a prepared soil should be brought to the site. Natural landscaping on prepared soils has a greater capacity to infiltrate stormwater than lawns on heavy soil.



## CITY OF HIGHLAND PARK

### Stormwater Management Manual and Ordinance

Natural landscaping can be an integral part of the design of other BMPs such as vegetated swales, filter strips and bioinfiltration basins.

Trees slow down rain from small storms, holding the water on leaves and branches and allowing the water to evaporate. Tree species must be chosen from the approved list provided by the City of Highland Park.

#### Vegetated Filter Strips

Filter strips are designed to receive stormwater runoff from impervious surfaces and disperse it over wide, vegetated areas. Filter strips can be implemented in areas with little or no slope to provide the maximum impact by slowing and infiltrating runoff and allowing pollutants and sediment to deposit or be filtered out. When implemented on permeable or prepared soils, filter strips can effectively reduce runoff volume for small storm events, especially when they receive runoff from areas no more than four or five times their size. Maintenance requirements for filter strips are simple. Normal maintenance requires occasional mowing or weed removal and periodic cleaning. Filter strips can decrease maintenance requirements of downstream stormwater devices by capturing and controlling sediment.

Level spreaders should be used to disperse runoff to the filter strip and avoid channelization. A level spreader intercepts concentrated flows and disperses runoff in a uniform manner to the filter strip. It may consist of a gravel-filled trench running perpendicular to the direction of concentrated flow. Water fills the trench, spreading evenly along the trench's axis before overflowing on the downstream side. Level spreaders improve the effectiveness of the filter strip or other BMPs that depend on sheet flow to operate. Level spreaders can be used at the edges of parking lots, loading areas, driveways, roof downspouts, and other discharge points when a point source discharge should be spread over a larger level area. Level spreaders are inexpensive and require very little maintenance.

#### Bioinfiltration Systems

Bioinfiltration systems are features such as basins or trenches collecting stormwater from surrounding impervious areas. A rain garden is a good example of a bioinfiltration system, which is relatively easy to construct. Bioinfiltration is very effective at reducing runoff volume and removing pollutants, especially when used as parking lot islands. As with drainage swales and vegetated filter strips, bioinfiltration systems work best when used to collect runoff from small storm events. In some cases, bioinfiltration systems can be used in conjunction with sewer systems by incorporating underground perforated pipes or overflow inlets.

Bioinfiltration systems should be located away from structures so water does not drain into the foundations of structures. As with the other infiltration BMPs, the subsoils must have a permeability of at least 0.5 inches per hour. Bioinfiltration systems work best when pretreatment is provided in the form of drainage swales or vegetated filter strips to reduce the amount of sediment reaching the infiltration facility.

#### Infiltration Vault



Detention vaults are box-shaped underground stormwater storage facilities typically constructed with reinforced concrete. Infiltration vaults are detention vaults with an open bottom to encourage infiltration in areas where permeable subsoil conditions are found. This option may be used to satisfy volume control requirements but above-ground naturalized infiltration facilities are preferred. Infiltration vaults must include a design for pretreatment. In many cases this can be provided within the vault itself, but a definitive long-term maintenance plan shall be required for the removal of sediment. When the infiltration rate has been verified by geotechnical investigations and pretreatment is provided, the infiltration rate may be counted in addition to the allowable release rate when computing required storage volumes.

### 1.4 Stormwater Management Policy

It is the policy of the City of Highland Park to encourage and promote programs that shall:

- Minimize the negative stormwater impacts of existing, new, or redeveloped property
- Protect and conserve land and water resources in conjunction with orderly and responsible property development
- Prevent pollution of local waters, groundwater, and land
- Minimize stormwater flows into the combined sewer system by minimizing impervious surfaces, promoting infiltration through on-site regional retention or detention of stormwater
- Moderate flood and stormwater impacts, improve water quality, reduce soil erosion, provide recreational opportunities, provide aesthetic benefits, and enhance community and economic development
- Facilitate existing and future intergovernmental contractual agreements for stormwater management of their properties and right-of-ways
- Manage or reduce stormwater runoff from right-of-ways, industrial, commercial, residential properties to the fullest feasible extent. To achieve these goals, the primary stormwater management objectives for development sites are to:
  - reduce impervious areas
  - capture stormwater on site
  - use or retain the stormwater on site for evaporation and absorption into the ground. Stormwater not used or retained, may be discharged into a City of Highland Park owned combined sewer or storm sewer

If a property owner has reason to believe improvements have been made to property reducing impervious area or impervious area has been incorrectly identified, or any other use or zoning related matters that would result in a stormwater or drainage charge reduction, please take the following steps:



## CITY OF HIGHLAND PARK

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### Stormwater Management Manual and Ordinance

1. Print the industrial, commercial, or residential parcel stormwater assessment exhibit document from the City of Highland Park website at [www.highlandparkcity.org](http://www.highlandparkcity.org).
2. Mark or identify the area(s) of parcel in question on the exhibit(s) in question or that have been improved since map was created. Include on this exhibit the use and/or zoning class of the parcel as identified by the City of Highland Park Zoning Map located at <http://www.highlandparkcity.org/Community/Docs/ZoningMap.pdf>. If a parcel owner believes a reduction is in order, take photos of identified rate or volume reduction BMPs or areas where property owner believes impervious area(s) has been reduced.
3. Schedule a meeting with the City of Highland Park Water Department to discuss stormwater assessment exhibit for selected parcel(s)

Or

4. Mail the document to:

City of Highland Park  
Robert B. Blackwell Municipal Building  
Water and Sewer Department  
12050 Woodward Avenue  
Highland Park, Michigan 48203

The City of Highland shall meet with or review each parcel owner's request. Upon completing the review and/or meeting, the City of Highland Park shall return finding and return the results of the analysis in writing.



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

CITY OF HIGHLAND PARK  
CITY ORDINANCE  
PART TEN - STREETS, UTILITIES, AND PUBLIC SERVICES  
CODE TITLE FOUR - UTILITIES  
DRAINAGE AND STORMWATER BILLING ORDINANCE

### Title and purpose

This section shall be known and may be cited as the "City of Highland Park Drainage and Stormwater Billing Ordinance". It is hereby declared to be the policy of the City of Highland Park to institute charges for public right-of-way holders and industrial, commercial, and residential parcel owners a monthly charge for drainage and/or stormwater runoff volume entering the combined sewer system.

### Definitions

For the purposes of this ordinance, unless the context requires otherwise, the following terms, regardless of whether or not they are capitalized, shall have the definitions set forth below:

**Owner:** The owner, manager, agent or other person in charge, possession or control of a property responsible for stormwater runoff from a public right-of-way, industrial, commercial, or residential parcel located within the jurisdiction of the City of Highland Park.

**Best Management Practice (BMP):** A measure approved by the City of Highland Park Water and Sewer Director used to control the stormwater-related effects of development .

**Commercial Parcel:** A parcel, or portion thereof, consisting of buildings, business, or other facilities for the primary purposes of profit, or as designated use by the City of Highland Park Community and Economic Development Department.

**Drainage Area:** Any location from which or through which stormwater moves to a drainage system.

**Existing Conditions:** The condition of a site in the ten years prior to the date of a Plan submission, as shown on historical aerial photographs or other verifiable documentation. If a site has been demolished and/or cleared within such ten-year period, its conditions prior to such demolition and/or clearing may be used as a basis for existing conditions .

**Impervious Surface:** A surface which substantially precludes the infiltration of water, such as



## CITY OF HIGHLAND PARK

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### Stormwater Management Manual and Ordinance

concrete, asphalt, tile or compacted gravel.

**Industrial Parcel:** A parcel, or portion thereof, consisting of buildings, business, or other facilities for the primary purposes of profit, or as designated use by the City of Highland Park Community and Economic Development Department.

**Infiltration:** The passage, movement or percolation of water into and through soil surfaces, including soil surfaces on roofs and in landscaped areas.

**Residential Parcel:** A parcel, or portion thereof, consisting of detached single-family or two-family dwellings, or as designated use by the City of Highland Park Community and Economic Development Department.

**Runoff:** The water derived from precipitation falling onto a public right-of-way or industrial, commercial, or residential parcel which is in excess of the infiltration capacity of the soils, which flows over the surface of the ground or is collected in any watercourse or conveyance system.

**Stormwater:** Water derived from any form of precipitation from a natural weather event including, rain, snow, sleet, and hail.

**Combined Sewer System:** Wastewater collection systems designed to carry sanitary sewage and stormwater from a public (right-of-way or industrial, commercial, or residential property in a single piping system to a treatment facility.

**Watercourse:** Any channel, natural or artificial, lined or unlined, through which water flows or may flow.

**Waters:** All watercourses and all lakes, ponds, wetlands and other bodies of water, whether natural or artificial, that are located wholly or partly within or adjoining the territorial boundaries of the City of Highland Park.

**Water Director:** The director of water and sewer or his designee.

**Stormwater Exhibit and Impervious Percentage - Required**

As zoned by the City of Highland Park Highland Park Water Department, Assessors Office, and Community and Economic Development Department, every industrial, commercial, and residential



## CITY OF HIGHLAND PARK

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### Stormwater Management Manual and Ordinance

zoned exempt properties shall have stormwater assessment exhibits created utilizing GIS or a method approved by the City of Highland Park Water Director indicating the relative imperviousness of the selected parcel for the purpose of drainage and stormwater charges.

#### **Stormwater Exhibit and Impervious Percentage - Exceptions**

As determined by the City of Highland Park Assessor's and Community and Economic Development Departments, residential parcels or properties specifically designated as single family or two family dwellings shall not have a stormwater assessment exhibits created. These properties shall be assessed a special monthly drainage and stormwater fee assessment as determined by the Highland Park Water Department Director.

#### **Stormwater Management Plan - Appeal**

A property shall be assessed, operated and maintained in compliance with the manual and ordinance until such time as the City of Highland Park approves an amendment or other modification of the assessment for the property. The submission of a request for appeal shall be made in such form(s) and format(s) as the water director may require. The water director shall review any request for appeal and shall notify the Applicant of the result of such review. An amendment may only be granted if the water director determines the appeal shall not have a detrimental effect on the overall runoff volume reduction for the community original exhibit has been updated or revised.

#### **Change of Ownership**

Upon a change of ownership of a public right-of-way holder or industrial, commercial, and residential parcel owner, each new owner of the public right-of-way or industrial, commercial, and residential parcel, or any part thereof, shall comply with the drainage or stormwater assessment in place, until such time, the water and sewer director approves a revised or modification of the assessment. In addition, for the sell to take place, the seller must meet the requirements set forth in the downspout disconnection program, or as approved by the water director. A change of ownership of an industrial, commercial, or residential parcel shall not relieve the new owner of said responsibilities for the drainage or stormwater assessment charge. The owner of industrial, commercial, or residential parcels for which a drainage or stormwater assessment is



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

required or has been created, shall notify each new owner of the applicability of the drainage or stormwater assessment to the industrial, commercial, or residential parcel, and provide each new owner with a copy of the stormwater assessment, before consummation of the sale of the parcel.

### Stormwater and Drainage Charges

City of Highland Park parcel owners and governmental agencies with right-of-way jurisdiction within the city shall be assessed monthly charges on the monthly water and sewer bills from the City of Highland Park Water and Sewer Department. The public right-of-way rate shall be determined by the City of Highland Park Water and Sewer Director and be based on stormwater runoff volume per cubic feet (cf). A drainage charge for residential properties shall be based on meter size for the property.

Industrial and commercial property owners shall be assessed a stormwater charge based on the size of the parcel and the amount of pavement, building, and vegetative cover which includes grass, shrubs, trees, and other general landscaping, referred to as the properties percentage of imperviousness. A breakdown of the current fee schedule for the 2016-2017 Fiscal Year is shown in the table below:

| <b>Drainage Rate Charge</b>                                    |                       |
|--|-----------------------|
| <b>Residential Parcels or Designated Residential Usage</b>     | <b>Monthly Charge</b> |
| 5/8"   | \$9.35                |
| 3/4"   | \$9.35                |
| 1"   | \$9.35                |
| 1-1/2"   | \$9.35                |
| 2"   | \$9.35                |
| 3"   | \$87.88               |
| 4"-48"   | \$87.88               |
| <b>Stormwater Rate Charge (based on impervious percentage)</b> |                       |
| <b>Industrial/Commercial Parcels/Residential Exempt</b>        | <b>Monthly Charge</b> |
| 0-24%  | \$102.42 per ac.      |
| 25-49%   | \$212.63 per ac.      |
| 50-74%   | \$319.12 per ac.      |
| 75-100%  | \$428.73 per ac.      |



## CITY OF HIGHLAND PARK

### Stormwater Management Manual and Ordinance

#### 11-18-90 Variance

(a) Upon written petition of a property owner demonstrating exceptional circumstances exist that would prevent them from being liable for stormwater runoff from the site, the director may grant a variance, in whole or in part, from the requirements of the ordinance.

(b) Exceptional circumstances justifying the application of this section shall exist only where the property owner can clearly demonstrate, to the satisfaction of the director, that one of the following four circumstances exists:

(1) The owner cannot comply due to the site's exceptional physical conditions or circumstances. To demonstrate such conditions or circumstances exist, the owner must provide supporting documentation. At a minimum, the Applicant must show the site is designed to minimize the peak rate of discharge and volume of stormwater from the property. Such showing must include a BMP feasibility evaluation for each building, parking area, landscaped area and each other significant footprint at the site. The evaluation must include all necessary technical computations and analyses.

(2) The owner cannot comply with ordinance without causing a public nuisance.

(3) The owner cannot comply with ordinance without violating the local code, or a state or federal law.

(c) In applying for a variance, an owner may propose, and the director may consider, alternative measures to accomplish the stormwater management goals of this ordinance.

#### Site Inspections

To enable the director, or his designee, to monitor compliance with this ordinance, the Owner shall permit access during reasonable hours to those areas of public right-of-way or industrial, commercial, or residential properties.

#### Regulations

The director is authorized to promulgate regulations to effectuate the purposes of this ordinance. Any regulations so promulgated shall be considered as an integral part of the City of Highland Park



## CITY OF HIGHLAND PARK

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### Stormwater Management Manual and Ordinance

Drainage and Stormwater Billing Ordinance and shall be enforceable, and their violation subject to the same penalties, as set forth by *Part Ten -Streets, Utilities, and Public Service Codes 1040.09 and 1040.14.*

#### **Requirements Not Exclusive**

The requirements of this ordinance shall be in addition to, and shall not relieve any person from compliance with, all other applicable provisions of the City of Highland Park City Ordinance, Part Ten.

#### **Enforcement and Penalties**

- (a) Except as otherwise specifically provided in this ordinance, the director, and his respective designee, are authorized to enforce this ordinance and any regulations promulgated hereunder, including the issuance of citations for violations.
- (b) Owners, developers and any other persons who violate any provision of this ordinance shall be jointly and severally liable for each such violation.
- (c) In addition to any other remedies, penalties or means of enforcement provided in this ordinance, if the director, on due investigation, makes a determination of noncompliance, he may request the city attorney to make application on behalf of the City to the Circuit Court of Wayne County for such other order as the Court may deem necessary or appropriate to secure compliance. The city attorney may then institute proceedings on behalf of the City, as provided by law.



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

### APPENDIX A

#### DRAINAGE AND STORMWATER CHARGE FEE SCHEDULE

| Drainage Rate Charge                                    |                  |
|---|------------------|
| Residential Parcels or Residential Usage                | Monthly Charge   |
| 5/8"  | \$9.35           |
| 3/4"  | \$9.35           |
| 1"  | \$9.35           |
| 1-1/2"  | \$9.35           |
| 2"  | \$9.35           |
| 3"  | \$87.88          |
| 4"-48"  | \$87.88          |
| Stormwater Rate Charge (based on impervious percentage) |                  |
| Industrial/Commercial Parcels/Residential Exempt        | Monthly Charge   |
| 0-24%   | \$102.42 per ac. |
| 25-49%  | \$212.63 per ac. |
| 50-74%  | \$319.12 per ac. |
| 75-100%   | \$428.73 per ac. |



# CITY OF HIGHLAND PARK

Stormwater Management Manual and Ordinance

## APPENDIX B

### SAMPLE CALCULATION OF IMPERVIOUS PERCENTAGE

|                 |   |   |  |     |
|-----------------|---|---|--|-----|
|                 | Total Site Area   | = | _____  | (A) |
| Site Conditions |   |   |  |     |
|                 | Impervious Site Area <sup>1</sup>                                 | = | _____  | (B) |
|                 | Impervious Site Area Runoff Coefficient <sup>2</sup> <sub>4</sub> | = | _____  | (C) |
|                 | Pervious Site Area <sup>3</sup>                                   | = | _____  | (D) |
|                 | Pervious Site Area Runoff Coefficient <sup>4</sup>                | = | _____  | (E) |
|                 | Existing Site Area Runoff Coefficient                             | = | $\frac{(B \times C) + (D \times E)}{(A)}$<br>_____ | (F) |

1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
2. Use 0.95 unless lower or higher runoff coefficient can be verified.
3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
4. See the table on the following page for typical C values.



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

### Runoff Coefficients for Undeveloped Areas Watershed Types

|                   | Extreme   | High  | Normal  | Low  |
|-------------------|---|---|---|--|
| Relief            | .28 -.35<br>Steep rugged terrain with average slopes above 30%  | .20 -.28<br>Hilly with average slopes of 10 to 30%  | .14 -.20<br>Rolling, with average slopes of 5 to 10%  | .08 -.14<br>Relatively flat land with average slopes of 0 to 5%  |
| Soil Infiltration | .12 -.16<br>No collective soil cover, either rock or thin soil mantle of negligible infiltration capacity | .08 -.12<br>Slow to take up water, clay or shallow loam soils of low infiltration capacity, imperfectly or poorly drained | .06 -.08<br>Normal: well drained light or medium textured soils sandy loams, silt and silt loams                        | .04 -.06<br>High: deep sand or other soil that takes up water readily very light well drained soils  |
| Vegetal Cover     | .12 -.16<br>No effective plant cover, bare or very sparse cover   | .08 -.12<br>Poor to fair: clean cultivation crops, or poor natural cover, less than 20% of drainage area over good cover  | .06 -.08<br>Fair to good: about 50% of area in good grassland or woodland not more than 50% of area in cultivated crops | .04 -.06<br>Good to excellent: about 90% of drainage area in good grassland, woodland or equivalent cover.                                   |
| Surface Storage   | .10 -.12<br>Negligible surface depression few and shallow: drainageways steep and small, no marshes       | .08 -.10<br>Low: well defined system of small drainageways: no ponds or marshes   | .06 -.08<br>Normal : considerable surface depression storage: lakes and pond marshes                                    | .04 -.06<br>High: surface storage, high: drainage system not sharply defined: large flood plain storage or large number of ponds or marshes. |
| Given             | An undeveloped watershed consisting of:   |   | Solution:   |  |
|                   | 1) rolling terrain with average slopes of 5%.   |   | Relief  | 0.14   |
|                   | 2) clay type soils.   |   | Soil infiltration   | 0.08   |
|                   | 3) good grassland area. and   |   | Vegetal Cover   | 0.04   |
|                   | 4) normal surface depressions.  |   | Surface Storage   | <u>0.06</u>  |
|                   |   |   |   | C= 0.32  |
| Find              | The runoff coefficient, C, for the above watershed.   |   |   |  |



### Runoff Coefficients for Developed Areas

| Type of Drainage Area     | Runoff Coefficient |
|---------------------------|--------------------|
| <b>Business:</b>          |                    |
| Downtown areas            | 0.70 - 0.95        |
| Neighborhood areas        | 0.50 - 0.70        |
| <b>Residential :</b>      |                    |
| Single-family areas       | 0.30 - 0.50        |
| Multi-units , detached    | 0.40 - 0.60        |
| Multi-units , attached    | 0.60 - 0.75        |
| Suburban                  | 0.25 - 0.40        |
| Apartment dwelling areas  | 0.50 - 0.70        |
| <b>Industrial:</b>        |                    |
| Light areas               | 0.50 - 0.80        |
| Heavy areas               | 0.60 - 0.90        |
| Parks, cemeteries:        | 0.10 - 0.25        |
| Playgrounds:              | 0.20 - 0.40        |
| Railroad yard areas:      | 0.20 - 0.40        |
| Unimproved areas:         | 0.10 - 0.30        |
| <b>Lawns:</b>             |                    |
| Sandy soil, flat, 2%      | 0.05 - 0.10        |
| Sandy soil, average, 2-7% | 0.10 - 0.15        |
| Sandy soil, steep, 7%     | 0.15 - 0.20        |
| Heavy soil, flat, 2%      | 0.13 - 0.17        |
| Heavy soil, average, 2-7% | 0.18 - 0.25        |
| Heavy soil, steep, 7%     | 0.25 - 0.35        |
| <b>Streets:</b>           |                    |
| Asphaltic                 | 0.70 - 0.95        |
| Concrete                  | 0.80 - 0.95        |
| Brick                     | 0.70 - 0.85        |
| Drives and walks          | 0.75 - 0.85        |
| <b>Roofs:</b>             | 0.75 - 0.95        |



# CITY OF HIGHLAND PARK

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Stormwater Management Manual and Ordinance

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## APPENDIX C

### SAMPLE INDUSTRIAL EXHIBITS

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|                 |                |
|-----------------|----------------|
| *Parcel Number  | 43002040001321 |
| "Parcel Address | 91 MANCHESTER  |
| "Parcel (Ac)    | 10.960         |
| Impervious %    | 89%            |

\*Source: Writne County GIS (Pwulsh, pe few Oisply, urpos.s Only)  
 fl.Source WCA Parcel Data

# City of Highland Park

Parcel Exhibit  
 Industrial  
 03/2016  
 Page 1 of 2



- Impervious Area
- Industrial Parcels
- Commercial Parcels
- Residential Parcels
- Subject Parcel



N  
W



|                |                |
|----------------|----------------|
| *Parcel Number | 43002040001322 |
| Parcel Address | 91 MANCHESTER  |
| Parcel (Ac)    | 18.950         |
| Impervious %   | 95%            |

\*Source Wayne County GIS (PMEL Ship For Dblplif Purposes Only)  
 \*\*Source WCA Parcel...

# City of Highland Park

Parcel Exhibit  
 Industrial  
 03/2016  
 Page 1-23



## Impervious Analysis

- D** Industrial Parcels
- C:J** Commercial Parcels
- 1** Residential Parcels
- C:J** Subject Parcel

Feet  
 0 60 120

N  
 .I>



|                |                |
|----------------|----------------|
| Parcel Number  | 43002040001323 |
| Parcel Address | 91 MANCHESTER  |
| Parcel (Ac)    | 7.500          |
| Impervious %   | 64"            |

\*Source Wayne County GIS (Partially Shape For Display, Purposes Only)  
 \*\*Source WCA Parcel Data

# City of Highland Park

Parcel Exhibit  
 Industrial

03/2016  
 Page 1-24

## Impervious Analysis

- Impervious Area
- Industrial Parcels
- Commercial Parcels
- Residential Parcels
- Subject Parcel





|                 |                |
|-----------------|----------------|
| "Parcel Number  | 43002040001324 |
| "Parcel Address | 91 MANCHESTER  |
| "Parcel (Ac)    | 44.800         |
| Impervious %    | 95"            |

# City of Highland Park



- D** Impervious Area
- I** Industrial Parcels
- D** Commercial Parcels
- R** Residential Parcels
- CJ** Subject Parcel



N  
CT



# CITY OF HIGHLAND PARK

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Stormwater Management Manual and Ordinance

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## APPENDIX D

### SAMPLE COMMERCIAL EXHIBITS

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Revision Date: 6.28.2016



|                |                |
|----------------|----------------|
| Parcel Number  | 43016010004001 |
| Parcel Address | 11800 WOODWARD |
| Parcel (Ac)    | 0.311          |
| Impervious %   | 95%            |

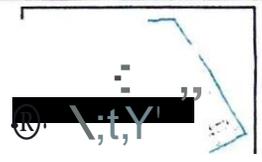
\*Source Wayne County GIS (Point Shape) For Dnpl., Purposes Only  
 \*\*Source WCA Parcel Data

# City of Highland Park

Parcel Exhibit  
 Commercial  
 03/2016  
 Pago C.II

Impervious Analysis

- D Industrial Parcels
- D Commercial Parcels
- D Residential Parcels
- D Subject Parcel



200



# CITY OF HIGHLAND PARK

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Stormwater Management Manual and Ordinance

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## APPENDIX E

### SAMPLE RESIDENTIAL EXEMPT EXHIBIT

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|                 |                |
|-----------------|----------------|
| *Parcel Number  | 43004040307000 |
| ^Parcel Address | 120 BRIGHTON   |
| **Parcel (Ac)   | 0.494          |
| Ime_ervious %   | 88%            |

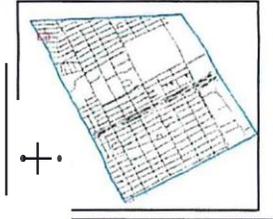
\*Source Wayne County GIS (Partel Shapt For DIspl,v Purposes Only)  
 \*\*Source WCA Parcel Oau

# City of Highland Park



Parcel Exhibit  
 Residential  
 03/2016  
 Page R-3

**Impervious Analysis**  
 Impervious Area  
**LJ** Industrial Parcels  
**C:J** Commercial Parcels  
**D** Residential Parcels  
**D** Subject Parcel





|                  |                |
|------------------|----------------|
| * Parcel Number  | 43002020015000 |
| " Parcel Address | 45 CAMBER      |
| Parcel (A)       |                |
|                  |                |

# City of Highland

## Park

### Parcel Exhibit



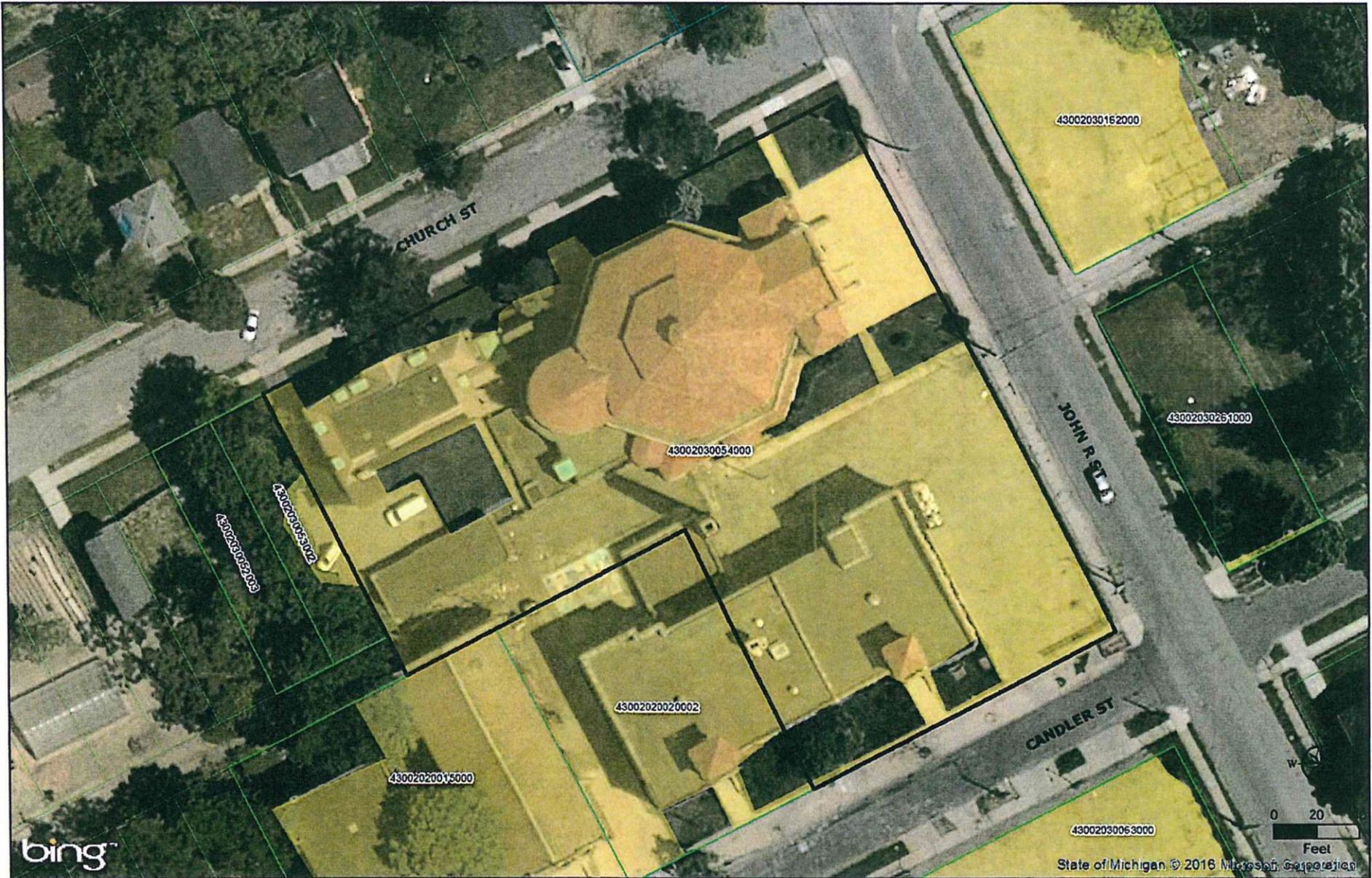
Residential  
03/2016  
Page R-4

**Impervious Analysis**  
LJ Impervious Area

- D Industrial Parcels
- D Commercial Parcels
- D Residential Parcels
- C:::J Subject Parcel



Im\_l:>\_ervious % n %  
 \*Source Wayne County GIS (Parcel Shape For Display Purposes Only)  
 "Source WCA Parcel 01t1



|                 |                |
|-----------------|----------------|
| *Parcel Number  | 43002030054000 |
| "Parcel Address | 60 CHURCH      |
| "Parcel (Ac)    | 1.522          |
| e_ervious %     | 83%            |

\*Source Wayne County GIS (Parcel Shape For Display Purposes Only)  
 "Source WCA Parcel Dau

# City of Highland Park



Parcel Exhibit  
 Residential  
 03/2016  
 Page R-15

**Impervious Analysis**  
 Impervious Area  
 Industrial Parcels  
 Commercial Parcels  
 Residential Parcels  
 Subject Parcel



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### APPENDIX F

#### BEST MANAGEMENT PRACTICE GUIDE SHEETS

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#### GREEN ROOF

##### Overview

In green roof systems, runoff is absorbed and retained by living vegetation installed on a rooftop. There are two types of green roof systems: extensive and intensive systems. Extensive systems usually contain shallower soil, put less weight on rooftops, and are easy to maintain. They generally contain shorter plants with shallower root systems. Intensive systems have deeper soil; add more weight to a rooftop; and generally contain a more diverse mixture of deep-rooted plants, small trees, or shrubs. Intensive systems require more maintenance but provide added benefits in the form of water filtration and wildlife habitat. Green roof systems provide insulation and prolong the life of a roof by protecting it from the elements. Green roof systems also improve air quality by reducing the urban heat island effect. Maintenance of green roof system is minimal and mostly involves watering and weed removal during the first few years of establishment.

##### Design Guidelines

There are rate control and volume control benefits of a green roof. A green roof shall reduce the runoff coefficient for the project which shall cause the required rate control volume to decrease. Also, a green roof can be counted as a pervious surface in order to reduce site imperviousness and help meet the volume control requirement.

A green roof system, extensive or intensive, is often comprised of the same components:

- Plant material
- Growing medium
- Filter fabric
- Drainage layer
- Membrane protection and root barrier
- Structural support

**Plant Material** The plant material chosen for green roofs is designed to take up much of the water that falls on the roof during a storm event. Plant selection is very important to the sustainability of the roof. About 50% of the vegetation on an extensive green roof should be sedums. Plant material also collects dust, creates oxygen, releases moisture, and provides evaporative cooling.



## CITY OF HIGHLAND PARK

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### Stormwater Management Manual and Ordinance

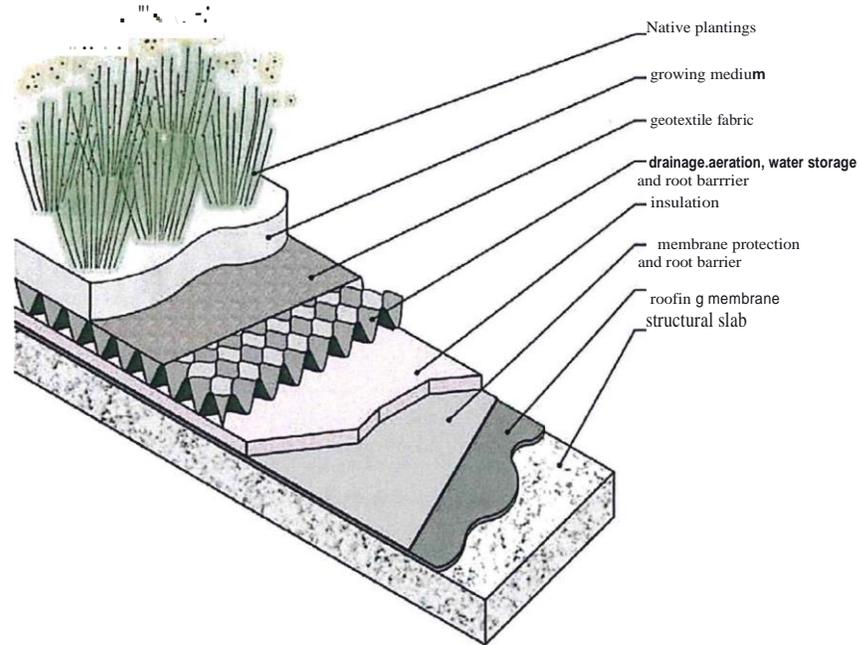
**Growing Medium** The growing medium is a critical element of stormwater storage and detention on a green roof, and provides a buffer between the roof structure and vegetation for root development. Storage is provided by a green roof primarily through water held in tension in the growing medium pores. The growing medium in an extensive green roof should be a lightweight mineral material with a minimum of organic material and should stand up to freeze/thaw cycles.

**Filter Fabric** An engineered filter fabric prevents fine soil particles from passing into the drainage layer of the green roof system.

**Drainage Layer** The drainage layer may be a lightweight granular medium that underlays the planting medium. The drainage layer needs to provide a balance between water retention and root aeration and is a critical component of the stormwater retention function.

**Membrane Protection and Root Barrier** To maintain structural integrity of the roof, a waterproof material is laid above the roof structure. Some waterproofing materials are inherently root resistant, whereas others require an additional root barrier.

**Structural Support** The load capacity of a roof structure must be taken into account when considering the installation of a green roof. Extensive green roofs typically weigh between 15 and 30 lbs per square foot and are compatible with wood or steel decks. Intensive green roofs weigh more than 36 lbs per square foot and typically require concrete supporting decks.



Structure of an extensive green roof

### **Maintenance Guidelines**

All facility components, including plant material, growing medium, filter fabric, drainage layer, waterproof membranes, and roof structure should be inspected for proper operations, integrity of the waterproofing, and structural stability throughout the life of the green roof. The manufacturer's maintenance schedule must also be followed and should be included with the stormwater management plan.



### Activity Schedule

- |               |  |
|---------------|--|
| As needed     | <ul style="list-style-type: none"><li>• Drain inlet pipe should be cleared when soil substrate, vegetation, debris or other materials clog the drain inlet.</li><li>• Sources of sediment and debris may be identified and corrected.</li><li>• Plant material should be maintained to provide 90% plant cover. Weeding should be manual with no herbicides or pesticides used. Weeds should be removed regularly and not allowed to accumulate.</li><li>• Irrigation, although not recommended, can be accomplished either through hand watering or automatic sprinkler systems if necessary during the establishment period.</li></ul> |
| Quarterly     | <ul style="list-style-type: none"><li>• Growing medium should be inspected for evidence of erosion from wind or water. If erosion channels are evident, they can be stabilized with additional growth medium similar to the original material.</li></ul>   |
| Once per year | <ul style="list-style-type: none"><li>• Inspect drain inlet pipe and containment system.</li></ul>   |

### ROOFTOP RUNOFF BMPs

#### Overview

Roof runoff BMPs include planter boxes, rain barrels, and cisterns. Planter boxes are used in heavily paved areas to reduce the area of impervious areas. Planter boxes can be aboveground or at grade and are designed to retain water in the substrate or in an underlying aggregate. Planter boxes come in a wide variety of shapes and sizes and may be planted with native or ornamental plants. Planter boxes at grade can be designed to drain part of the surrounding paved area. Planter boxes can also be designed to infiltrate water into the ground or to capture water through an underdrain system that discharges excess water into a sewer system. The storage provided in the voids of underlying aggregate, prepared soil voids, and the contained air space (reservoir) above the soil may be counted as volume control storage.

Rain barrels and cisterns collect and store stormwater runoff from rooftops. Water collected in rain barrels and cisterns can be used to water lawns and landscaped areas between storms. Rain barrels and cisterns are therefore most useful during the growing season. They require periodic cleaning to remove debris. Filters to keep out most debris can be installed, but periodic cleaning is still advised. In addition, rain barrels should be sealed to prevent mosquito breeding and must be drained before winter to prevent any damage from freezing and thawing.



#### *Rain Barrels and Cisterns*

Rain barrels and cisterns all require the following basic components:

- Roof leader or other means of conveying roof runoff to the storage element
- Screen to prevent debris and mosquitoes from entering
- Storage element
- Slow release mechanism or pump
- Reuse opportunity or infiltration area
- Overflow mechanism to bypass large storms

**Roof Leader** The gutter and roof leader system collects rooftop runoff and conveys it to the rain barrel, cistern, or other storage element. In most cases conventional roof leaders and downspouts can be used for this purpose.

**Screen** A screen keeps leaves and other debris from entering and clogging the storage element. A screen also prevents mosquitoes from breeding in the rain barrel. A screen is typically placed at the end of the roof leader, before flow enters the rain barrel. A leaf strainer may also be placed where the gutter connects to the roof leader.

**Storage Element** The storage element is the barrel, cistern, or tank itself. Rain barrels are typically made of plastic. Underground cisterns may be poured concrete or prefabricated plastic tanks similar to septic tanks. Proprietary products that store water in a variety of structures are also available. Some of these are designed to bear the weight of vehicles.

**Slow Release Mechanism or Pump** For the storage element to serve its stormwater control function, it must be completely drained within 14 days after a storm event. Larger surface tanks may drain by gravity or may be pumped. Operational experience has suggested that the best method for using water in large storage features like a cistern is to bring it to pressure and distribute it through an irrigation system. Other alternatives exist, but the plan should have a clear idea of how and where the water shall be used if relying solely on gravity distribution.

**Reuse Opportunity or Infiltration Area** For rain barrels, cisterns, and other tanks to provide effective stormwater management, an opportunity for reuse or infiltration of the stormwater must exist. This opportunity might be provided by a garden or landscaped area that needs to be watered, or an opportunity to reuse stormwater for non-potable uses.

**Overflow Mechanism** The storage capacity of rain barrels, cisterns, and other tanks shall be exceeded in large storms. The overflow can occur through a hose, weir, pipe, or other mechanism. The discharge from the overflow is directed to the same place flow from the roof leader would be directed if there were no rain barrel or cistern.



#### Planter Boxes

Planters are placed on impervious surfaces such as sidewalks and plazas. Contained planters should be treated as pervious surfaces and not as volume control BMPs because they are not designed to accept runoff from other surfaces. Drainage occurs through the bottom of a planter box onto the impervious surface.

The infiltration planter box is designed to intercept precipitation and accept runoff from downspouts. The box is designed to store water in planter soil and then allow the water to infiltrate into native soils; for this reason, the box must be positioned at least 10feet from any buildings. An infiltration planter box reduces an amount of stormwater runoff equal to the available pore space in the soil, the size of the reservoir above the planter soil. If soil testing is conducted, infiltration can be used in addition to the detention release rate when sizing detention storage.

The flow-through planter box includes aspects of all three types of planter boxes has an impervious bottom and is designed to accept both precipitation and downspout runoff. The box is designed to store water in planter soil and overflow excess water to a storm sewer system. This type of planter box is preferred for use adjacent to buildings. Flow-through planter boxes reduce an amount of stormwater runoff equal to the available pore space in the planter soil and the size of the reservoir above the soil.

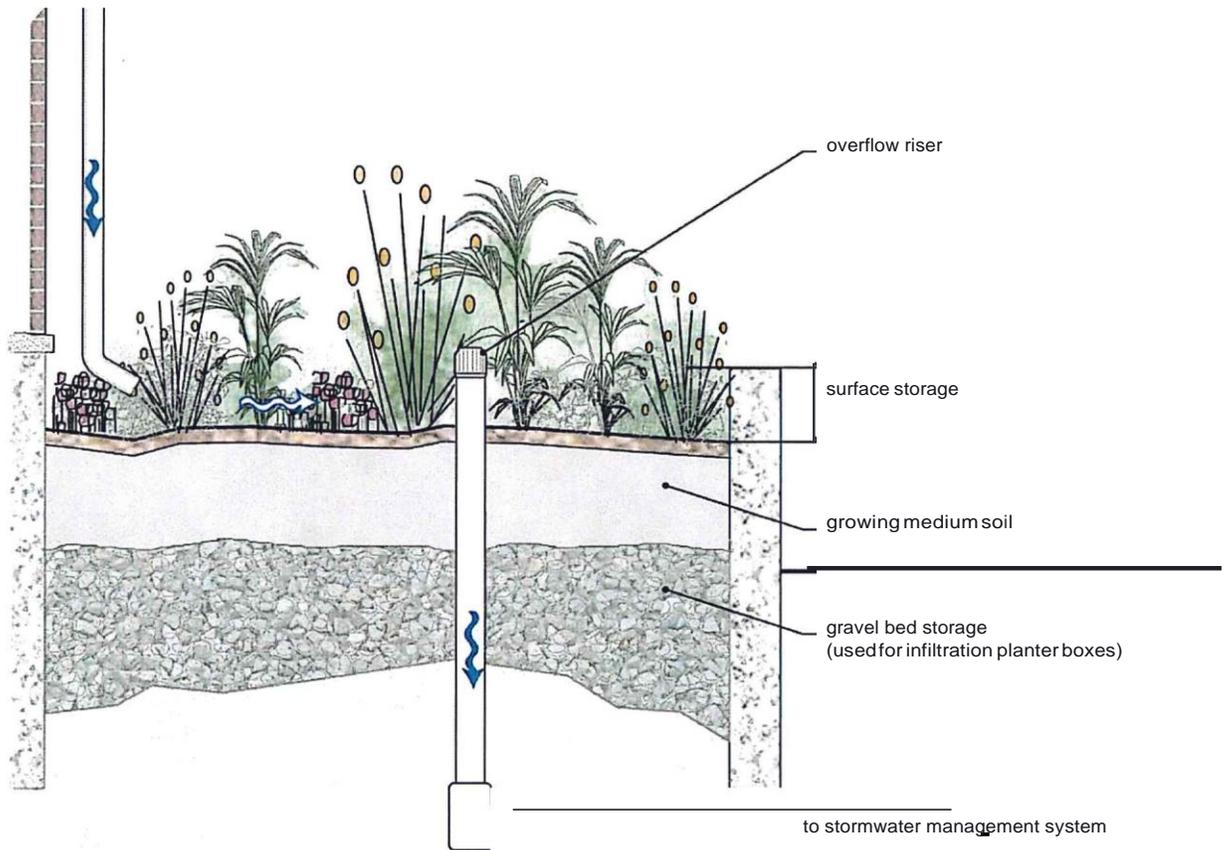


Figure 7: Flow-through Planter Box (Adapted from City of Portland, 2002)

### Maintenance Guidelines

As with other best management practices, these stormwater storage systems require regular maintenance to ensure a prolonged life. The following table suggests maintenance activities to perform on rain barrels, cisterns, and planter boxes.

#### Activity Schedule

- |                                    |   |
|------------------------------------|---|
| As needed                          | <ul style="list-style-type: none"><li>Occasional cleaning may be necessary to remove debris, such as leaves, coming off the drainage area</li></ul> |
| 2 weeks after every rainfall event | <ul style="list-style-type: none"><li>Rain barrels and cisterns being used to provide rate control volume must be drained/pumped out.</li></ul>     |



## CITY OF HIGHLAND PARK

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### Stormwater Management Manual and Ordinance

- |                |   |
|----------------|---|
| Monthly        | <ul style="list-style-type: none"><li>• Remove litter and debris</li><li>• Clear leaves and debris from overflow pipe</li></ul>   |
| Twice per year | <ul style="list-style-type: none"><li>• Inspect plants in planter boxes to evaluate health</li></ul>  |
| Once per year  | <ul style="list-style-type: none"><li>• Flush cisterns to remove sediment.</li><li>• Brush the inside surfaces and thoroughly disinfect.</li><li>• To avoid structural damage, the rain barrel should be drained prior to freezing weather.</li></ul> |

### PERMEABLE PAVEMENT

#### Overview

Permeable paving provides many benefits in urban environments by reducing the quantity of stormwater runoff and pollutants discharged from a site. Permeable pavement systems come in many different forms. The most common form is paver blocks with a cutout to facilitate infiltration.

Permeable pavements work best on areas that have sandy, permeable soils, however, they may also be implemented on low permeability soils by using an underdrain system.

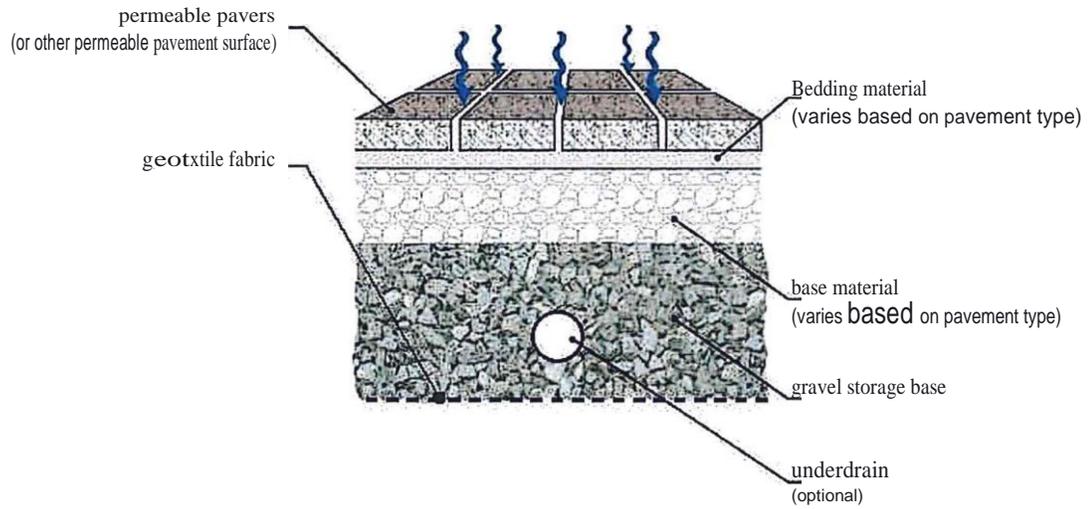
Permeable pavements work by infiltrating runoff through a permeable surface into the gravel base below. Water is stored in the gravel subbase until it is exfiltrated into the underlying soil or carried away by an underdrain. The gravel base and subbase material must be sized for the expected traffic loading and for the desired amount of storage. Based on design infiltration rate, the depth of the storage layer should be sized to drain by exfiltration within 48 hours. For instance, a site with a measured infiltration rate of 0.5 in/hr would have an allowable storage layer depth of 24 inches (0.5 in/hr \* 48 hours). If additional storage was desired (such as in a combined volume control and rate control storage facility), an underdrain or outlet structure could be placed above the elevation at which the volume control storage is provided. If the measured soil infiltration rate does not meet the minimum requirement of 0.5 in/hr, then the underdrain could be placed at the bottom of the storage aggregate.

Finally, when computing the storage provided in a permeable pavement system, the slope of the pavement surface must be taken into consideration.

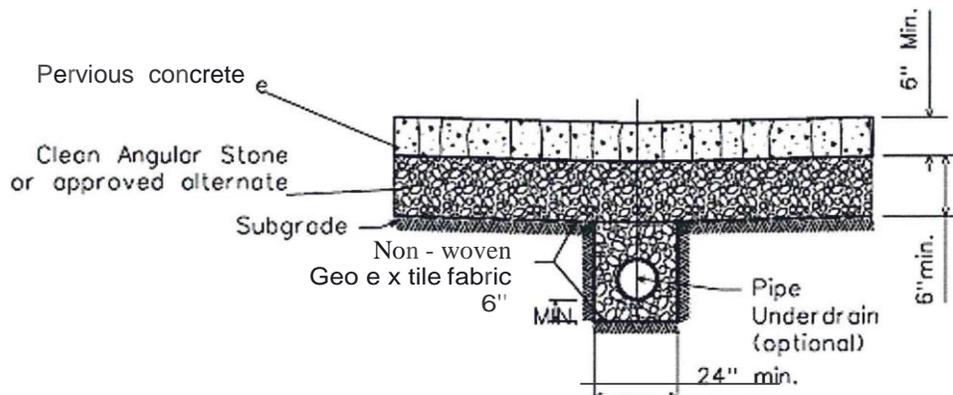


# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance



Permeable Pavement



Permeable Concrete



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

### *Maintenance Guidelines*

As with most stormwater management practices, permeable pavement systems require regular maintenance to ensure a prolonged lifespan. The following table displays maintenance recommendations for permeable pavement systems.

| <b>Activity Schedule for Permeable Pavers</b> |   |
|---|---|
| As needed                                     | <ul style="list-style-type: none"> <li>Do not use sand during the winter months</li> <li>Keep landscaped areas well-maintained and prevent soil from being transported onto the pavement.</li> <li>Monitor regularly to ensure that the paving surface drains properly after storms.</li> <li>Ensure that surface is free of sediment.</li> <li>Remove vegetation established in gravel spaces in pavement</li> </ul> |
| Twice per year                                | <ul style="list-style-type: none"> <li>Broom, blow, rotary brush or sweep entire surface (alternate - vacuum entire surface)"</li> <li>Replenish joint aggregate material after cleaning.</li> <li>Clean out inlet structures within or draining to the subsurface bedding beneath surface</li> </ul>   |
| Once per year                                 | <ul style="list-style-type: none"> <li>Inspect surface for signs of deterioration or settling.</li> </ul>   |
| Every 5 years                                 | Vacuum or power wash the entire surface and refill joint aggregate material   |

| <b>Activity Schedule for Pervious Concrete</b> |   |
|--|---|
| As needed                                      | <ul style="list-style-type: none"> <li>Do not use sand during the winter months</li> <li>Keep landscaped areas well-maintained and prevent soil from being transported onto the pavement.</li> <li>Monitor regularly to ensure that the paving surface drains properly after storms.</li> <li>Ensure that surface is free of sediment.</li> </ul> |
| Twice per year                                 | <ul style="list-style-type: none"> <li>Vacuum, pressure wash, or power blow entire surface</li> <li>Clean out inlet structures within or draining to the subsurface bedding beneath surface</li> </ul>  |



### NATURAL LANDSCAPING AND STORMWATER TREES

#### Overview

Natural landscaping involves planting naturalized or native vegetation on permeable soils or prepared soils. Care must be taken to ensure that the proposed vegetation and existing soils are compatible. If existing soils are unsuitable for implementation of native vegetation, alternative landscaping plans should be devised, or a prepared soil should be brought onto the site. Natural landscaping on prepared soils has a greater capacity to infiltrate stormwater than lawns on heavy soil. Areas with natural landscaping on permeable or prepared soils have a lower C-value and can reduce the amount of required detention storage. There is no volume control storage benefit specifically allowed for natural landscaping, however, natural landscaping can be an integral part of the design of other BMPs such as vegetated swales, filter strips and bioinfiltration basins.

Trees can also be used for minor volume control benefits and to reduce urban heat island effects. Trees slow down rain from small storms, holding the water on leaves and branches and allowing the water to evaporate. Urban heat island effects are reduced because trees provide shade to impervious surfaces, thereby decreasing the temperature of the surfaces and subsequently the temperature of the surrounding air and of any stormwater that passes over the impervious area. Lowering the temperature of stormwater runoff can be beneficial in providing the water quality of receiving streams. Existing trees located on a property that are preserved a part of the site plan and proposed trees located on the property that are planted within 20 feet of on-site impervious areas may count as a deduction of the on-site impervious area for volume control. The tree species must be chosen from the approved list provided by the City of Highland Park.

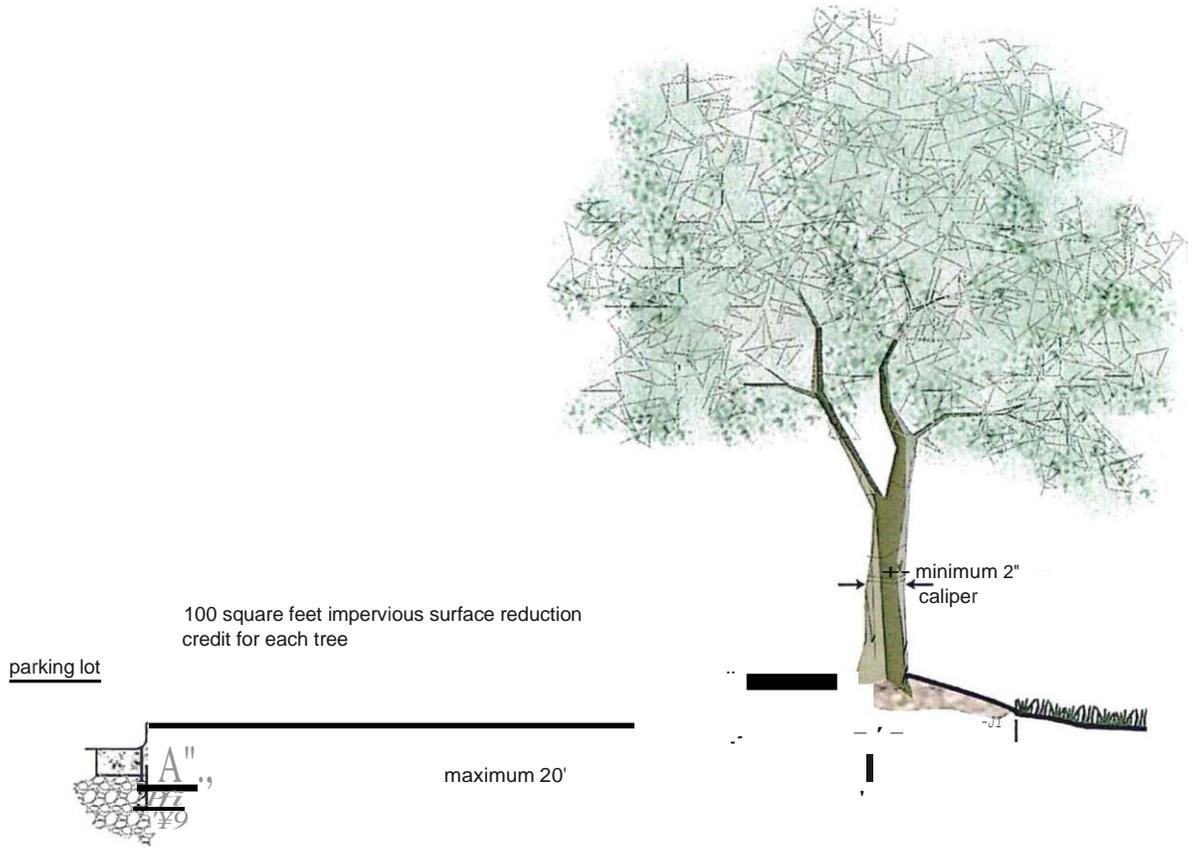
#### Maintenance Guidelines

No special maintenance is required for natural landscaping or stormwater trees other than pruning and trimming in late fall or winter to remove dead wood and excess growth to maintain an open and healthy canopy. Native landscaping planting may be managed similar to the recommendations for bioinfiltration facilities. Trees counted as a stormwater management BMP that do not survive should be replaced.



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance



**Figure 4:** Stormwater Tree



### VEGETATED FILTER STRIPS

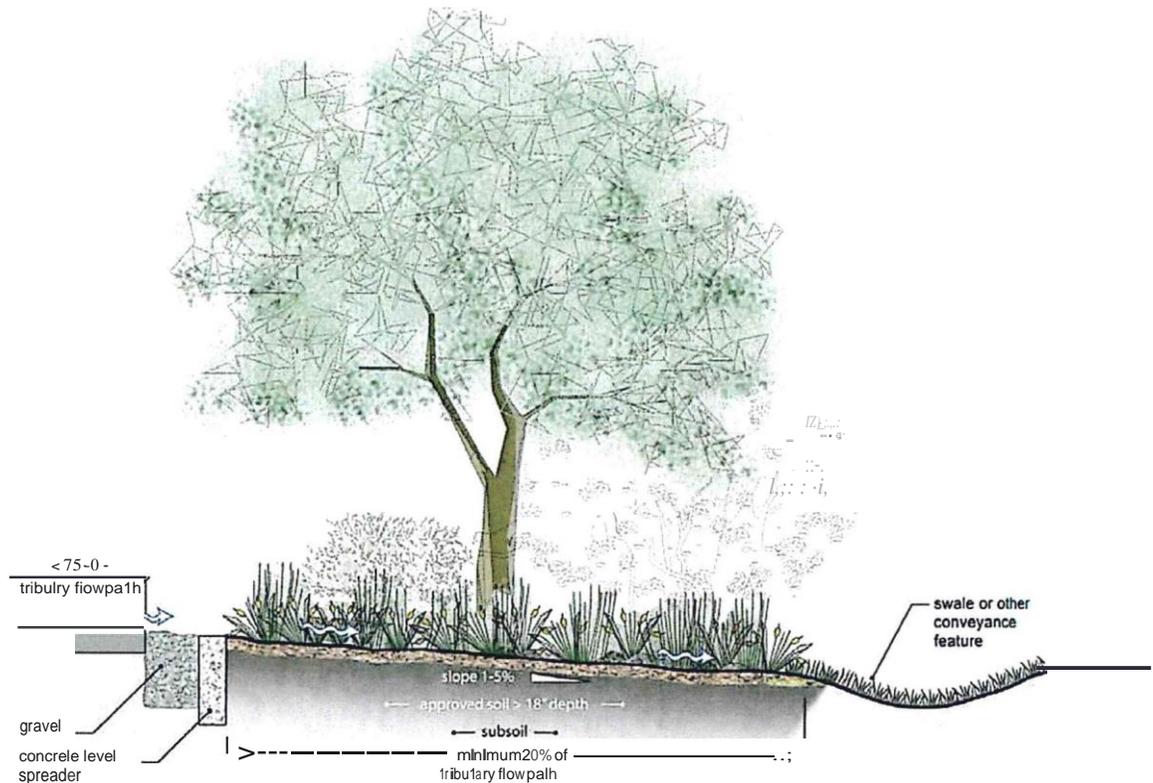
#### Overview

Filter strips are uniformly graded and densely vegetated sections of land, engineered to filter and infiltrate water. Filter strips should be implemented in areas with little or no slope to provide the maximum impact by slowing and infiltrating runoff and allowing pollutants and sediment to deposit or be filtered out. When implemented on permeable or prepared soils, filter strips can effectively reduce runoff volume for small storm events, especially when they receive runoff from areas no more than four or five times their size.

Filter strips are designed to receive stormwater runoff from impervious surfaces and disperse it over wide, vegetated areas. If designed according to the minimum design guidelines, volume control storage credit may be given for a 1 to 1 ratio of impervious area to the area the filter strip. For example, if one acre of parking lot was discharged to a acre filter strip designed in accordance with the minimum design requirements, volume control would be satisfied for acre of impervious surface. Additional measures would be needed for the remaining  $\frac{3}{4}$  acre of parking lot.

Level spreaders should be used to disperse runoff to the filter strip and avoid channelization. Concentrated flow rates can have an erosive effect that can arrange the filter strip, rendering the strip ineffective. A level spreader intercepts concentrated flows and disperses runoff in a uniform manner to the filter strip. It may consist of a gravel-filled trench running perpendicular to the direction of concentrated flow. Curb cuts combined with a gravel level spreader are a common type of flow control. Water fills the gravel trench, spreading evenly along the trench's axis before overflowing on the downstream side. A concrete curb or other fixed edge must be provided on the downstream side of the gravel to ensure that flow remains level. Level spreaders improve the effectiveness of the filter strip or other BMPs that depend on sheet flow to operate. Level spreaders can be used at the edges of parking lots, loading areas, driveways, roof downspouts, and other discharge points when a point source discharge should be spread over a larger level area. When receiving downspout flows, a level spreader must be sufficiently wide and deep in order to distribute runoff across the width of the level spreader. Level spreaders are inexpensive and require very little maintenance, however, it is critical that a level spreader is constructed level or else it is rendered useless.

The vegetation for filter strips may be comprised of turf grasses, meadow grasses, shrubs, and native vegetation.



Filter Strip

### Maintenance Guidelines

Maintenance requirements for filter strips are relatively simple. Normal maintenance requires occasional mowing or weed removal and periodic cleaning. Filter strips can decrease maintenance requirements of downstream stormwater devices by capturing and controlling sediment.

#### Activity Schedule

- |           |  |
|-----------|--|
| As needed | • Mowing and/or trimming of vegetation.  |
| Monthly   | • Inspect all vegetated strip components expected to receive and/or trap debris and sediment for clogging and excessive debris and sediment accumulation; remove sediment during dry |



## CITY OF HIGHLAND PARK

### Stormwater Management Manual and Ordinance

- |                |  |
|----------------|--|
| Twice per year | <ul style="list-style-type: none"><li>• Vegetated areas should be inspected for erosion, scour, and unwanted growth. Erosion repair and removal of unwanted growth should have minimum disruption to the planting soil bed and remaining vegetation.</li></ul> |
| Once per year  | <ul style="list-style-type: none"><li>• Inspect all level spreading devices for trapped sediment and flow spreading abilities.</li><li>• Remove sediment and correct grading and flow channels during dry periods.</li></ul>                                   |

### BIOINFILTRATION SYSTEM

#### Overview

Bioinfiltration systems are features such as basins or trenches that collect stormwater from surrounding impervious areas. These flow regulating structures pass inflow through a shallow depressed area containing plants, mulch, and a prepared soil. A rain garden is a good example of a bioinfiltration system. Bioinfiltration is very effective at reducing runoff volume and removing pollutants, especially when used as parking lot islands. As with drainage swales and vegetated filter strips, bioinfiltration systems work best when used to collect runoff from small storm events. In some cases, bioinfiltration systems can be used in conjunction with sewer systems by incorporating underground perforated pipes or overflow inlets.

#### Design Guidelines

Bioinfiltration systems should be located at least 10 feet downgradient (10 feet laterally, with flow directed away from structure) from structures so water does not drain into the foundations of the structures. As with the other infiltration BMPs, the subsoils must have a design infiltration rate of at least 0.5 inches per hour. When subsoils do not meet the minimum design infiltration rate, the BMP may still be implemented by using an underdrain.

The primary components of a bioinfiltration system are:

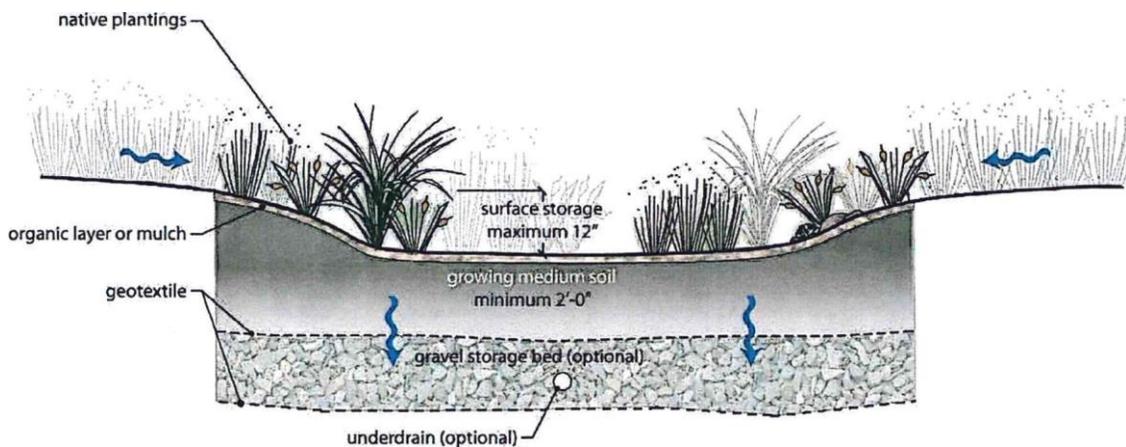
- Pretreatment
- Inlet
- Surface storage (ponging area)
- Organic layer or hardwood mulch
- Growing medium soil
- Native plantings
- Gravel storage bed
- Underdrain, if necessary
- Positive overflow



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

**Pretreatment** Pretreatment is recommended for bioinfiltration facilities. Pretreatment prolongs the life of the system by reducing sediment and other pollutant inputs. Bioinfiltration systems work best when pretreatment is provided in the form of drainage swales or vegetated filter strips to reduce the amount of sediment that reaches the infiltration facility. If pretreatment is not provided by an upstream BMP, then it must be designed into the bioinfiltration system by using a plunge pool or sediment forebay sized for 10 percent of the total design storage. If pretreatment is provided within the BMP, the maintenance and the plan should identify the need for removal of sediment from the pretreatment area.



Typical Bioinfiltration Facility

**Inlet** It is preferred to route runoff to a bioinfiltration area via sheet flow over a filter strip. This is not always possible due to site constraints or space limitations. On sites where curb removal is not an option or where flow is concentrated by the time it reaches the bioinfiltration area, curb cuts coupled with energy dissipaters provide an alternative runoff inlet. Disconnected roof leaders that flow into bioinfiltration areas also require energy dissipaters to prevent erosion in the bed. Energy dissipation can be provided by cobbles underlain by geotextile fabric.

**Surface Storage** Surface storage provides temporary storage of stormwater runoff before infiltration and evaporation can occur within the bioinfiltration system. Ponding time provides water quality benefits by allowing larger debris and sediment to settle out of the water. Ponding design depths must be less than 12 inches in order to reduce hydraulic loading of underlying soils, minimize facility drainage time, and prevent standing water.



## CITY OF HIGHLAND PARK

### Stormwater Management Manual and Ordinance

**Organic Layer or Hardwood Mulch** An organic layer or mulch can provide a medium for biological growth, decomposition of organic material, absorption, and bonding of heavy metals. The mulch layer can also serve as a sponge that absorbs water during storms and retains water for plant growth during dry periods.

**Growing Medium Soil** The planting soil provides a medium suitable for plant growth. The planting soil also acts as a filter and as a hydrologic buffer between the surface storage and the native soil. The prepared planting soil must be at least 2 feet deep and provides additional storage while the water infiltrates into the underlying aggregate or native soil. Storage volume is a function of both soil porosity, soil depth and the size of the bioinfiltration area.

**Native Plantings** The plant material in a bioinfiltration system binds and removes nutrients and stormwater pollutants through vegetative uptake, removes water through evapotranspiration, and creates pathways for infiltration through root development and plant growth. A varied plant community is recommended to avoid susceptibility to insect and disease infestation and ensure viability. A mixture of groundcover, grasses, shrubs, and trees is recommended to create a microclimate that can ameliorate urban stresses as well as discourage weed growth and reduce maintenance.

**Gravel Storage Bed** A gravel storage layer can be included to provide storage below the growing medium soil. It must be separated from the growing medium with a layer geotextile fabric. The storage layer should be designed to drawdown in less than 5 days based simply on the design infiltration rate. For example, when considering the depth of surface storage (one foot) and growing medium soil (two feet) and the minimum required design infiltration rate of 0.5 in/hr., the storage bed could be up to 2 feet deep ( $0.5 \text{ in/hr.} / 12 \text{ in/ft.} * 5 \text{ days} * 24 \text{ hours} = 3 \text{ feet}$ ).

**Underdrain** An underdrain is a perforated pipe that collects water at the bottom of the system and conveys it to the system outlet. Underdrains intercept, collect, and convey stormwater that has percolated through growing medium soil, a geotextile fabric and a suitable aggregate. When minimum native soil infiltration requirements cannot be met, an underdrain may be employed. Underdrains eliminate most infiltration because they provide a preferential pathway for flow. A sand layer or gravel filter should surround the underdrain to filter sediment and facilitate flow to the underdrain. Underdrains should be located at least six inches from the bottom of the facility.

**Positive Overflows** A positive overflow is provided at the maximum ponding depth. When runoff exceeds system storage capacity, the excess flow leaves the system through the positive overflow. The overflow can connect to a system that shall provide peak rate control.



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

### Maintenance Guidelines

Properly designed and installed bioinfiltration systems require little maintenance. During periods of extended drought, bioinfiltration systems may require watering approximately every 10 days.

#### Activity Schedule

- |                |  |
|----------------|--|
| As needed      | <ul style="list-style-type: none"><li>• Water plants during first growing season</li><li>• Water plants during dry periods after first growing season</li><li>• Remulch void areas</li><li>• Treat diseased trees and shrubs</li></ul> |
| Monthly        | <ul style="list-style-type: none"><li>• Keep overflow free and clear of leaves</li><li>• Inspect soil and repair eroded areas</li><li>• Remove litter and debris</li><li>• Clear leaves and debris from overflow</li></ul>             |
| Twice per year | <ul style="list-style-type: none"><li>• Inspect trees and shrubs to evaluate health</li></ul>  |
| Once per year  | <ul style="list-style-type: none"><li>• Add additional mulch</li><li>• Inspect facility and pretreatment areas for sediment buildup, erosion, vegetative conditions, etc.</li></ul>  |

## BIOINFILTRATION SYSTEM

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### Design Guidelines

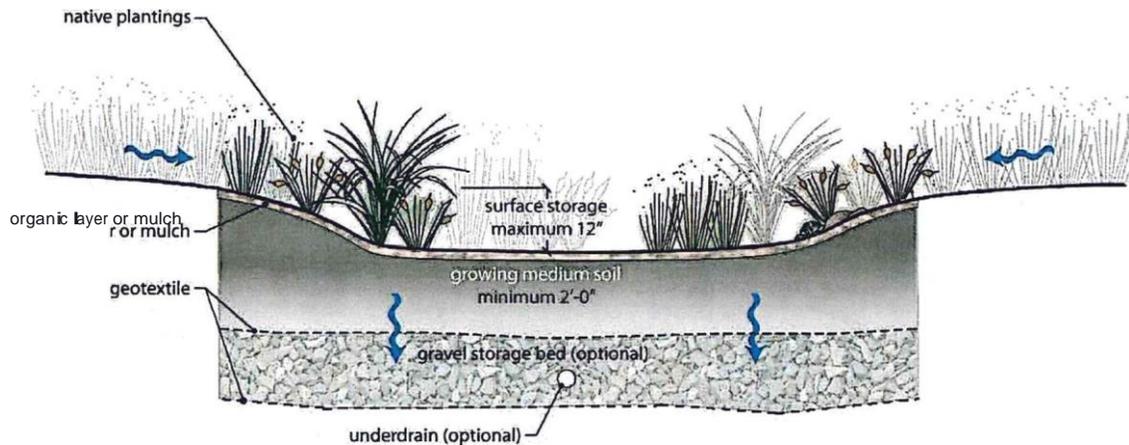
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The primary components of a bioinfiltration system are:

- Pretreatment
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**Figure 1:** Typical Bioinfiltration Facility

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# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

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#### Activity Schedule

|                |  |
|----------------|--|
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## DETENTION SYSTEMS

### Overview

There are various ways to store water on-site. Detention systems include: detention basins, detention vaults, infiltration vaults, oversized pipes, parking lot detention, and rooftop detention.

### Detention Basins

Detention basins are depressions that temporarily store stormwater and release it gradually to a downstream drainage system. Wet detention basins are designed to permanently retain water and can be made to appear manicured or naturalized. Dry detention basins are designed to drain completely between storms. When discharging to waterways or storm sewers, wet detention basins are preferable to dry detention basins because of their effectiveness in removing runoff pollutant loads, especially suspended solids. In order to achieve optimum pollutant removal efficiency, the basin inlet and outlets should be located hydraulically as far apart as possible to prevent "short circuiting" and to increase the retention time. In addition to providing pollutant removal, detention basins can be designed to be aesthetically pleasing and to provide recreational benefits.



## CITY OF HIGHLAND PARK

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### Stormwater Management Manual and Ordinance

Naturalized detention basins incorporate features such as plunge pools, stilling basins, and variable topography to lengthen low flow pathways, and native upland buffer and wetland plantings. Detention basins that incorporate these features can replicate some of the flood storage, water quality and habitat benefits provided by natural systems such as wetlands, lakes or ponds. Naturalized detention basins may be created on almost any site, but the provision of wetlands may be constrained by site hydrology and soil conditions. Wetland detention basins are feasible in areas with a high water table or relatively impermeable soils. In some cases, it may be possible to provide detention within an existing degraded wetland area by developing a plan to rehabilitate the area. In addition to reducing peak flows, wetland detention basins are very effective in removing pollutant loads. The principal advantages of stormwater wetlands are their ability to prevent settled pollutants from re-suspending and washing out during subsequent storms and their ability to remove dissolved pollutants and organic matter through biological processes. High-quality wetlands should not be used to treat stormwater.

#### Detention Vaults

Detention vaults are usually precast reinforced concrete tanks constructed below grade. They are provided with restrictors to limit release rates. Most vaults permanently retain water in order to dissipate energy, settle out large solids particles, and act as an oil separator. Subsurface vault systems are suitable for any project where space is limited and other stormwater management systems are not feasible. Subsurface vaults may be used for commercial, industrial, or roadway projects. The presence of a subsurface vault in most cases does not alter the intended land use at the surface. The subsurface vault must meet structural requirements for overburden support and traffic loading to be applicable in urban settings.

#### Infiltration Vaults

Infiltration vaults are detention vaults with an open bottom to encourage infiltration in areas where permeable subsoil conditions are found (Figure 9). This option may be used to satisfy volume control requirements but above-ground naturalized infiltration facilities are preferred. Infiltration vaults must include a design for pretreatment. In many cases this can be provided within the vault itself, but a definitive long-term maintenance plan shall be required for the removal of sediment. When the infiltration rate has been verified by geotechnical investigations and pretreatment is provided, the infiltration rate may be counted in addition to the allowable release rate when computing required storage volumes.

#### Oversized Pipes

Oversized pipes are designed like storm sewers. Oversized pipes serve as both detention and conveyance structures. They are very commonly used at small developments to fulfill detention



## CITY OF HIGHLAND PARK

### Stormwater Management Manual and Ordinance

requirements. To serve as a storage structure, the oversized pipe requires a flow restrictor at the downstream end of the pipe to limit the capacity of the sewer outlet to the required release rate. In this way, when inflow into the sewer is greater than the release rate, stormwater is "stored" in the pipe behind the restrictor. Oversized pipes offer a feasible alternative to detention basins when a site has limited space; however, oversized pipes do not provide volume control or water quality benefits.

#### Parking Lot Detention

Parking lots can be significant sources of runoff pollutants and these areas are often directly connected to the storm drain system. Reducing the paved surface area in parking lots and incorporating BMPs into the parking lot design can reduce runoff volume and pollutants discharges from the site. Parking lot detention can be designed to receive overflow from other BMPs during intense storms or to pond to a certain depth and then overflow into other: BMPs.

#### Rooftop Detention

Rooftop detention consists of either an enclosed chamber or a constructed ponding area designed to fill with stormwater during large storm events, slowly releasing it over a number of hours. There are numerous components to these systems. Drain inlet pipes convey stormwater into a detention chamber, which accumulates stormwater during a storm event. An orifice structure or outlet drainpipe restricts the flow out of detention chamber, allowing it to fill up and slowly drain out. Rooftop detention does not provide water quality or volume control benefits.

#### **Maintenance Guidelines**

Maintenance is required for the proper operation of detention systems. Plans for detention systems should identify owners, parties responsible for maintenance, and an inspection and maintenance schedule for detention systems.

#### **Activity Schedule (Detention Basins)**

- |           |  |
|-----------|--|
| As needed | <ul style="list-style-type: none"><li>• Sediment should be removed from the basin as needed (at least once every 5 to 10years)</li></ul>   |
| Quarterly | <ul style="list-style-type: none"><li>• Inspect inlet pipe(s) and outlet control structure for clogging</li><li>• After every storm greater than one inch</li><li>• Remove trash and debris</li><li>• Remove invasive plants</li><li>• Grassed areas also require periodic prudent fertilizing, dethatching and soil conditioning</li><li>• Trees, shrubs, and other vegetative cover shall require periodic maintenance such as fertilizing, pruning, and pest control</li><li>• Mow/ trim detention basin vegetation</li></ul> |



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance

- Once per year
  - Inspect detention basin, potential problems include: subsidence, erosion, cracking or tree growth on the embankment; damage to the emergency spillway; sediment accumulation around the outlet; inadequacy of the inlet/outlet channel erosion control measures; changes in the condition of the pilot channel; and erosion within the

### Activity Schedule (Underground detention systems)

Underground vaults must be designed so the vault can have easy access for inspection and maintenance. Vault maintenance procedures must meet OSHA confined space entry requirements, which include clearly marking entrances to confined space areas. This may be accomplished by hanging a removable sign in the access riser(s), just under the access lid.

- As needed
  - Removal of sediment and debris from subsurface vault sedimentation chamber when the sediment zone is full as well as from inlet and outlet pipes. Sediments should be tested for toxicants in compliance with applicable disposal requirements if land uses in the catchment include commercial or industrial zones, or if indications of pollution are noticed.
- Quarterly
  - Floating debris should be removed.
- Once per year
  - Inspection of subsurface vault and control structures

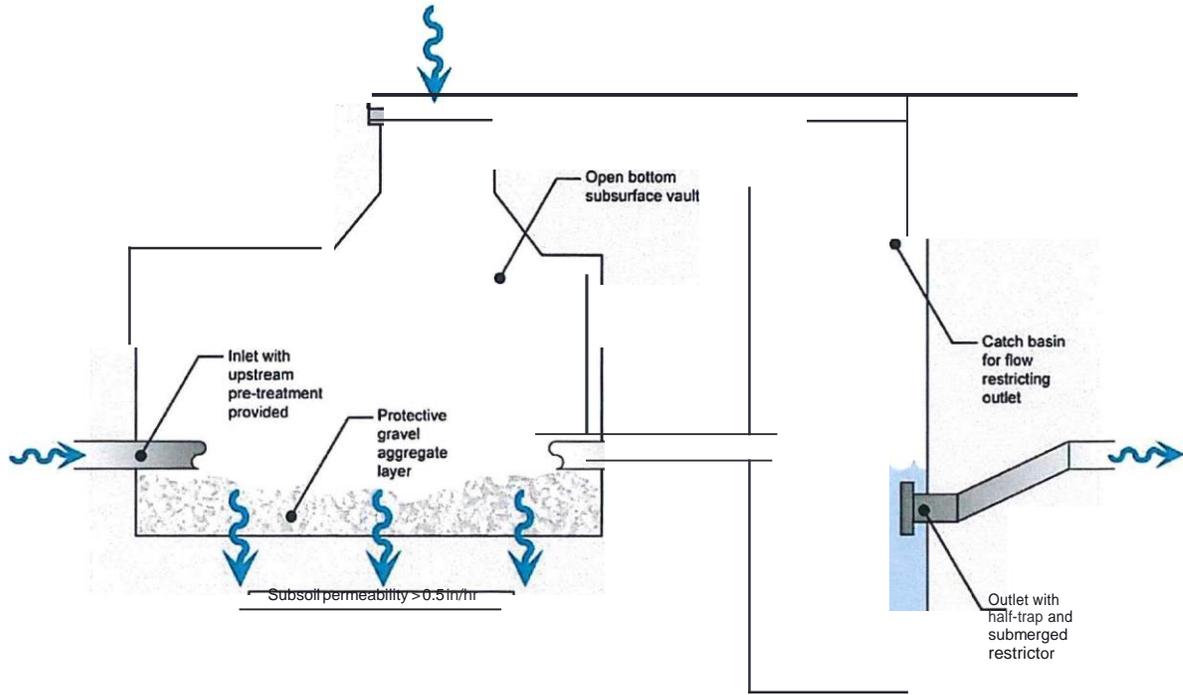
### Activity Schedule (Parking lot detention and Rooftop detention)

- As needed
  - Remove trash and debris
- Quarterly
  - Inspect outlet control structure for clogging and after every rainfall



# CITY OF HIGHLAND PARK

## Stormwater Management Manual and Ordinance



Infiltration Vault

Moved by Councilmember McClary  
Supported by Councilmember Lewis

To approve the adoption of the Stormwater Manual and Ordinance. Yeas (5), Nays (0), Absent (0).

\*\*\*

**CITY CLERK**  
**07-05-VIIIa**

The Clerk submitted the following letter.

Dear Honorable City Council:

I am requesting that you cancel your regular scheduled meeting for August 1, 2016 due to the State Primary election being held the following Tuesday, August 2, 2016. The Clerk's office will be working the evening of August 1, to prepare for the election.

Your consideration is appreciated.

Moved by Councilmember Woodard  
Supported by Councilmember Lewis

To cancel the regular August 1, 2016 City Council meeting. Yeas (5), Nays (0), Absent (0).

\*

**07-05-VIIIb**

The Clerk submitted a Parade Permit Application by the Marcus Garvey Memorial Committee to hold a parade Saturday, August 13, 2016 in honor of Marcus Garvey's birthday.

Moved by Council Pro Tem McDonald  
Supported by Councilmember Woodard

To refer to Administration. Yeas (5), Nays (0), Absent (0).

\*\*\*

**CITY TREASURER**  
**07-05-IX**

The following resolution was submitted for approval.

This resolution sets forth the millage rate on the taxable value of property within the City of Highland Park, which is located in the County of Wayne Michigan.

Moved by Councilmember Lewis  
Supported by Councilmember Woodard

Now therefore be it

RESOLVED, by the Highland Park City Council this 5<sup>th</sup> day of July, 2016 that approval be, and is hereby, granted that the City of Highland Park hereby declares and certified that the 2016 Summer Property Tax Levy on the Real Tangible Personal Property within the City shall include the levy of 19.3703 Mills for City Operating, a levy of 2.9055 for City Special Rubbish, a levy of 16.8500 for Judgment-pension, a levy of 3.8250 for Bond Judgment, a levy of 1.4250 for 2014 Emergency Loan and a levy of 4.9110 for City Judgments (Total \$49.2868 per \$1,000) on each dollar of the taxable value of the property within the City, such rate being adjusted to conform to Const. 1963, article 9, ~31, and to any legislation implementing said section of the Michigan Constitution; and be it

RESOLVED, that the Summer Taxes of the City to be levied against property within the City, any portion of which area lies within the City boundaries, shall be subject to penalties, interest and collection charges and shall be returned as delinquent to the County Treasurer with interest, penalties and fees; and be it further

RESOLVED, that in conformance of Act 206 of 1893 and this Resolution of the Highland Park City Council is hereby authorized to certify the City Summer tax rate to be levied and the amount of taxes to be raised and do whatever is necessary and proper to effectuate compliance with the Act and this Resolution. Yeas (5), Nays (0), Absent (0).

\*\*\*

## **COMMUNITY DEVELOPMENT 07-05-X**

The following resolution was submitted for approval.

Resolution to approve demolition contractor Blue Star, Inc. to demolish dilapidated structure located at  
68/70 Pilgrim, Highland Park, MI 48203

Moved by Councilmember McClary  
Supported by Councilmember Woodard

WHEREAS, properties located at various address are owned by the City of Highland Park; and

WHEREAS, some of these properties owned by the City of Highland Park are dilapidated and must be demolished; and

WHEREAS, State Law requires that demolition be done by a licensed demolition contractor company to demolish dilapidated residential structures within the City of Highland Park; and

WHEREAS, the City Council has accepted and reviewed request for proposals and selected the most qualified contractor to perform the demolition work of the dilapidated structure.

NOW HEREBY BE IT RESOLVED that the Highland Park City Council approves the selection of Blue Star Inc, 21950 Hoover Warren, MI 48089, Bid price \$35,900 to demolish the dilapidated structure located at 68/70 Pilgrim St. Highland Park, MI 48203. Yeas (5), Nays (0), Absent (0).

\*\*\*

**FINANCE DEPARTMENT**  
**07-05-XIa**

The following resolution was submitted for approval.

**RESOLUTION AUTHORIZING THE ENGAGEMENT OF FINDLEY DAVIES TO PROVIDE GASB  
67/68 VALUATION REPORT FOR THE CITY OF HIGHLAND PARK**

Moved by Council Pro Tem McDonald  
Supported by Councilmember Woodard

BE IT RESOLVED that the Highland Park City Council hereby approves the Engagement Letter between the City of Highland Park and Findley Davies located at One SeaGate, suite 2050, Toledo, Ohio 43604-1338, to provide GASB 67 and 68 actuarial valuation report for the City of Highland Park for an amount not to exceed Thirty Six Thousand (\$36,000) dollars. Yeas (5), Nays (0), Absent (0).

\*

**07-05-XIb**

The following resolution was submitted for approval.

**RESOLUTION AUTHORIZING THE SERVICES AGREEMENT OF AEROTEK, INC. TO PROVIDE  
TEMPORARY CONTRACT EMPLOYEES FOR THE CITY OF HIGHLAND PARK**

Moved by Councilmember Woodard  
Supported by Councilmember Lewis

BE IT RESOLVED that the Highland Park City Council hereby approves the Services Agreement between the City of Highland Park and Aerotek, Inc. located at 7301 Parkway Drive, Hanover, MD 21076, to provide temporary contract employees to work at the City of Highland Park. Yeas (5), Nays (0), Absent (0).

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**FIRE DEPARTMENT**  
**07-05-XIIa**

Fire Chief Coney submitted the following request.

I am respectfully requesting the Mayor and City Council to accept the donation of a 2002 Pierce Pumper (Fire Engine) from the City Bloomfield Township, Michigan. The engine will replace our current engine 2 as a primary response apparatus.

The current engine has numerous mechanical issues and is constantly in need of repair.

Moved by Councilmember McClary  
Supported by Councilmember Lewis

To accept the donation of a 2002 Pierce Pumper Fire Engine from the City Bloomfield Township, Michigan. Yeas (5), Nays (0), Absent (0).

\*

### **07-05-XIIb**

Fire Chief Coney submitted the following letter.

RE: Proposal to Accept a FEMA Grant for Equipment Valued at \$98,000

The City of Highland Park Fire Department has recently been awarded a grant totaling \$98,000. The monies are to be used for personnel equipment gear such as turnout gear, helmets, gloves and Personal Alert Safety System (PASS devices). Please review the grant for further information.

Moved by Councilmember Woodward  
Supported by Councilmember Lewis

To accept the FEMA Grant for firefighter equipment valued at \$98,000. Yeas (5), Nays (0), Absent (0).

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## **LEGAL DEPARTMENT**

### **07-05-XIII**

The following resolution was submitted for approval.

#### **RESOLUTION TO RETAIN THE SERVICES OF THE FORD LAW FIRM AS CITY ATTORNEY**

Moved by Councilmember McClary  
Supported by Councilmember Lewis

WHEREAS, Highland Park is charged with the privilege and responsibility of carrying out the functions of a municipality within the geographic limits of the City, Wayne County, Michigan; and

WHEREAS, the Ford Law Firm has been acting as the City Attorney for the City of Highland

Park; and

WHEREAS, City Council has determined that it is in the best interest of the City to retain the legal services of the Ford Law Firm as the City Attorney; and

WHEREAS, the Ford Law Firm is able and experienced in matters of municipal law and capable of providing the complete legal services which the City will require;

NOW, THEREFORE, BE IT RESOLVED that the City Council approves the retention of the Ford Law Firm as City Attorney for the City of Highland Park. Yeas (5), Nays (0), Absent (0).

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\*\*Councilmember McClary left the meeting at 9:35 p.m.

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**CITY COUNCIL AFFAIRS**  
**07-05-XIV**

The following resolution was submitted for approval

RESOLUTION MANDATING THE IMMEDIATE REPEAL OF THE EMERGENCY FINANCIAL MANAGER DIRECTIVE #61 OF 2003 AND REINSTATEMENT OF THE HIGHLAND PARK BUILDING CODE (CHAPTER 1420.) FROM THE HIGHLAND PARK CODE OF ORDINANCES

Moved by Councilmember Woodard  
Supported by Councilmember Lewis

WHEREAS, the Emergency Financial Manager, through Directive #61 on February 27<sup>th</sup> 2003, directed the City of Highland Park to transfer responsibility for the administration and enforcement of its Building, Electrical, Mechanical and Plumbing code provisions to the Bureau of Construction Code (the State of Michigan) and,

WHEREAS, this directive taken by the aforementioned Emergency Financial Manager has relieved the City of Highland Park of its own ability to inspect building, electrical, mechanical and plumbing within the boundaries of the City of Highland Park and,

WHEREAS, this directive taken by the aforementioned Emergency Financial Manager has assisted in causing financial hardship to the City of Highland Park, now

THEREFORE BE IT RESOLVED, that the Highland Park City Council through its legal legislative powers hereby mandates the immediate REPEAL of the Emergency Financial Manager Directive #61 and REINSTATES the City of Highland Park Building Code (Chapter 1420.) from the Highland Park Code of Ordinances effective immediately. Yeas (4), Nays (0), Absent (1) Councilmember McClary.

## **OUTSIDE COMMUNICATION**

### **07-05-XVa**

The following communication was received from the East Grand & Brush Block Club

East Grand & Brush Block Club request to be put on the City Council meeting agenda for July 5, 2016.

Request approval to erect a tent on City Property, the dead end of Brush Street, and a waiver to leave the tent in place until September 10, 2016.

Moved by Councilmember Woodard

Supported by Council Pro Tem McDonald

To allow East Grand & Brush Block Club to erect a tent at the dead end of Brush & E. Grand until September 10, 2016. Yeas (4), Nays (0), Absent (1) Councilmember McClary.

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### **07-05-XVb**

The following communication was received from the Highland Park Business Association.

The Highland Park Business Association (HPBA) is requesting to be added to the agenda for the next City Council Meeting on Monday June 20, 2016, to discuss plans for the 7<sup>th</sup> Annual Highland Park Music Festival to request permission to use the vacant lot across from City Hall on California and the park on Massachusetts July 15 – 17.

The Council previously granted permission to use the grounds of the McGregor Library for the festival. This request is to expand on that request to use the additional space.

Moved by Councilmember Woodard

Supported by Councilmember Lewis

To allow the Highland Park Business Association use of the park at Massachusetts and the lot on California for the Highland Park Music Festival July 15-17, 2016. Yeas (4), Nays (0), Absent (1) Councilmember McClary

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## **ADJOURNMENT:**

Moved by Councilmember Lewis

Supported by Council Pro Tem Mc Donald

To adjourn the meeting, motion carried, meeting adjourned at 10:28 p.m.

**CERTIFICATE**

I, hereby certify that the attached is a copy of the proposed minutes of the Regular Meeting held the 5<sup>th</sup> day of July, 2016 and that said proposed minutes are available for public inspection at the address designated on the posted public notice.



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Cidia Wicker-Brown, Deputy City Clerk