

VILLAGE OF DOWNERS GROVE
Report for the Village Council Meeting

2/13/2018

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| SUBJECT: | SUBMITTED BY: |
| Discussion of Potential Amendments to Stormwater Management Regulations | Naneil Newlon Director of Public Works |

SYNOPSIS

Staff is requesting Village Council discussion of potential amendments to stormwater management regulations.

STRATEGIC PLAN ALIGNMENT

Consider Amendments to Stormwater Regulations was identified as a Priority Action Item for 2017-2019. As part of this item, the Village Council directed staff to consider more stringent stormwater management regulations to lessen the negative impacts of increased runoff generated by construction activity.

FISCAL IMPACT

N/A

RECOMMENDATION

Provide direction to staff on the proposed changes to the stormwater regulations.

BACKGROUND

Stormwater runoff generated by new residential construction, additions to homes and construction of accessory structures that comply with current Village regulations sometimes negatively impact adjacent properties.

Priority Action Item Issue & Objectives

Issue: Code-compliant development activity generates stormwater runoff which sometimes negatively impacts adjacent properties.

Objectives:

- Reduce the negative impacts of runoff caused by development activities
- Permitting process should accommodate residential renovation & redevelopment

The Village Council previously discussed this issue at their [October 10, 2017](#) and [December 5, 2017](#) meetings.

At the [October 10, 2017](#) meeting, the Council directed staff to provide additional information for identified potential stormwater management regulation amendments that would address all development that results in increased runoff.

At the [December 5, 2017](#) meeting, the Council directed staff to:

- Provide additional information about requiring site runoff storage and the connection of the storage to the public drainage system (including the requirement to extend the public system if it is not adjacent to the subject site) for new single family houses and major additions to existing houses.
- Draft a definition of “major addition.” The definition should reduce the likelihood of an applicant constructing an addition which has many attributes of a new house, but would not be subject to stormwater regulations for new houses.

This staff report provides the information Council requested and provides information about the benefits of the potential amendments to the stormwater regulations.

Storage & Connection/Extension Requirements for New Single Family Houses

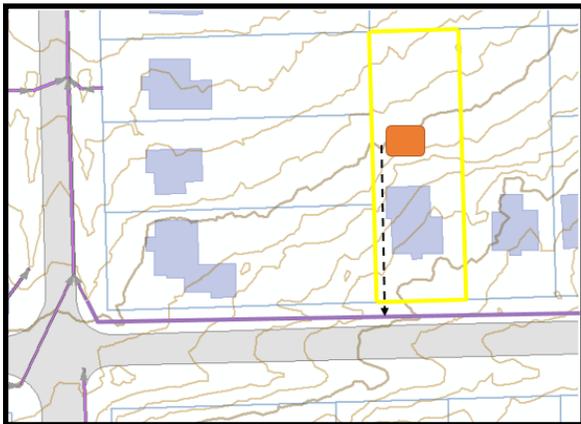
A review of building permit records indicates that over half of the new houses constructed in 2016 and 2017 were constructed in locations with the public drainage system adjacent to the property while over 40% of the new houses were constructed in locations lacking immediate accessibility to the public drainage system (See Table 1 below).

*Table 1
Impacts of Requiring Connection to & Extension of System*

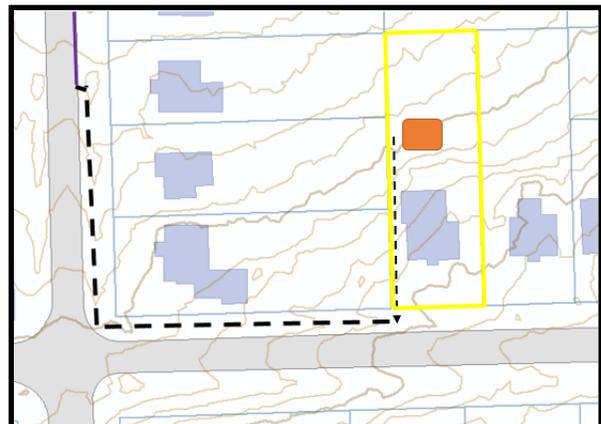
| Scenario | New Houses ('16 & '17) | % | Est. Cost |
|-----------------------------------|-----------------------------------|----------|---------------------|
| System adjacent to property | 80 | 58% | \$500 - \$20,000 |
| System within 200' of property | 30 | 22% | \$20,000 - \$50,000 |
| System more than 200' of property | 28 | 20% | \$50,000 and up |

The estimated cost of connecting storage basins to the public drainage system varies greatly, from \$500 to over \$50,000. There are four major factors which significantly affect the cost:

1. Length of Private and Public Sewer to be Constructed - The length of the storm sewer required to be installed will affect the total cost. Costs will be low if the public drainage system is located in front of the subject site and the extension of the public system is not necessary. Costs could be high if the public system must be extended to the site.

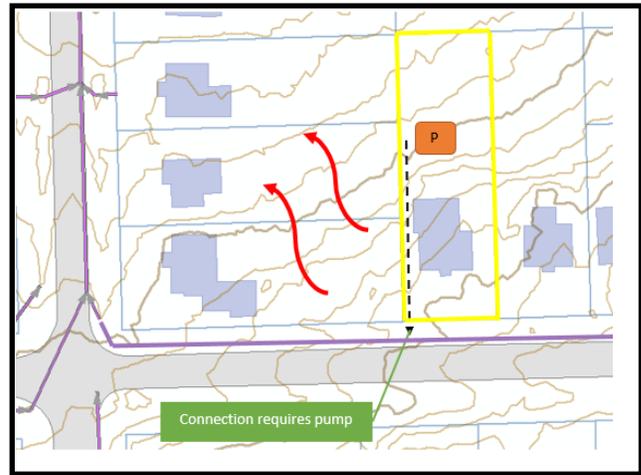
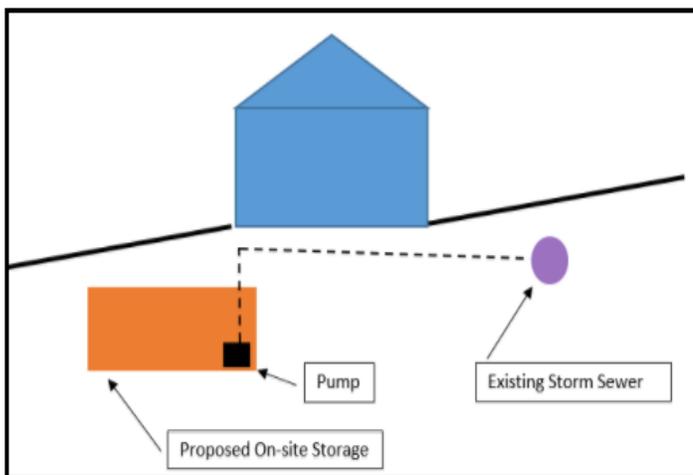


Existing Public Drainage System in Front of House

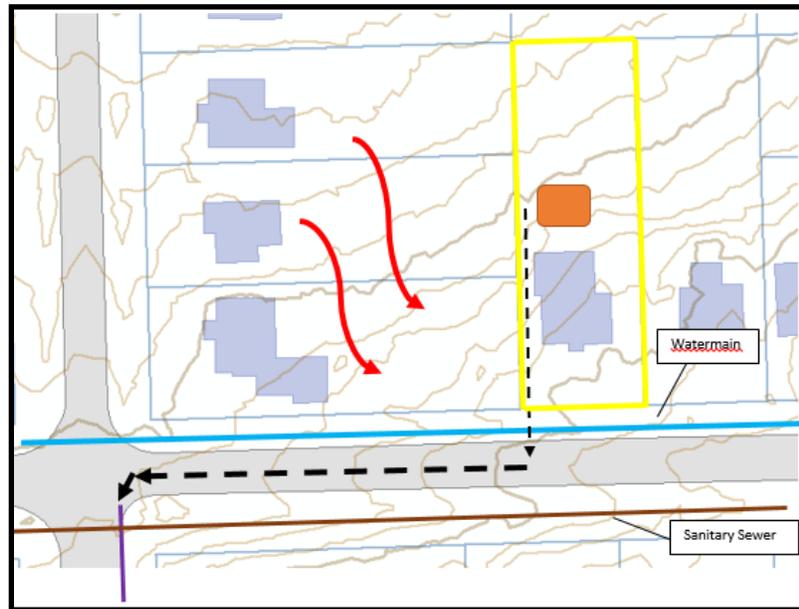


Existing Public Drainage System Not in Front of House

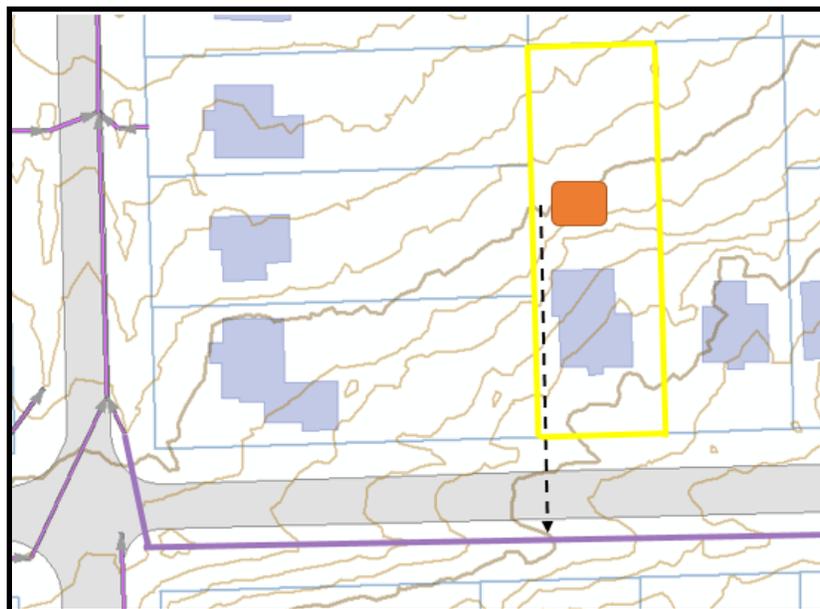
2. Elevation Difference between the Site Runoff Storage and the Public Drainage System - In cases where the public drainage system is at a lower elevation than the storage basin, the cost of connection will most likely be low because the water can drain by gravity. In cases where the public drainage system is at a higher elevation than the site runoff storage, costs could be significantly greater. In these cases, pumps and supporting improvements are likely to be required to empty the detention basin. The types of pumping systems that would be used would be similar in most respects to a sump pump, however, they would operate outside and be exposed to freezing temperature. It is unlikely outside pumping systems would be operational in the winter, and back-up power in the form of a generator or secondary, battery operated pump may be warranted.



3. Extent of Utility & Tree Conflicts - The number of conflicts with other utilities (watermains, sanitary sewers, gas mains, electric lines, etc.) and parkway trees will affect total costs. In cases where existing utilities conflict with the required connection to the public drainage system, costs of avoiding these conflicts or relocating existing utilities can be substantial.



4. Location of Public Drainage System (in parkway or in the street) - Costs are also affected by the location of the public drainage system. Generally speaking, costs are lower if the public improvements can be located in the parkway and costs are higher if the improvements have to be located under pavement, either in the street or crossing a street, which involve significantly higher construction and restoration costs.



Definition of “Major Addition”

At the December 5, 2017 meeting, the Council expressed some interest in requiring new single family houses and major additions to existing houses to provide site runoff storage and a connection to the public drainage system. The definition of “major addition” should reduce the likelihood of constructing an addition which has many attributes of a new house, but would not be subject to stormwater regulations for new home construction.

The proposed definition of a “major addition” is an addition which:

- Expands the footprint of the house (excluding porches, stoops, patios, etc.)
- AND**
- Alters a total of 600 square feet or more (inclusive of the size of the addition and any remodeling of the existing house)

In 2016 and 2017, there were approximately 330 house additions. Twenty seven of these additions, about 8%, would have qualified as major addition under the proposed definition.

Benefits of the Regulations

The potential amendments to the stormwater regulations (requiring site runoff storage and connection to the public drainage system) are intended to reduce the negative impacts of additional runoff caused by development activities.

No stormwater improvement or regulation will “solve” stormwater issues. Even in cases where site runoff storage is functioning properly, runoff may negatively impact an adjacent property.

Post-Construction Best Management Practices (PCBMPs) including drywells or rain gardens are currently required for construction activities resulting in 700 square feet or more of net new impervious area. The PCBMPs are essentially small storage basins not connected to the public drainage system. The proposed site runoff storage basins would provide about four times the amount of storage as the PCBMPs required under current Village Code.

Downers Grove experiences an average of 103 rain events per year. On average, the PCBMPs effectively store runoff in 88 of these events and overflow about 15 times per year. If the Village requires site runoff storage basins without connecting them to the public drainage system, they will effectively store runoff in about 98 events per year (10 more than the PCBMPs) and overflow about 5 times per year (10 fewer than the PCBMPs).

In cases where the storage basin overflows, the impact on an adjacent property could be more severe than not requiring the basin.

Table 2
Benefits of PCBMPs and Site Runoff Storage Basins

| | PCBMPs | Site Runoff Storage |
|---|---------------|----------------------------|
| Estimated Rain Events Effectively Managed | 88 | 98 |
| Estimated Rain Events in Which Basin May Overflow | 15 | 5 |
| Average Rain Events per Year | 103 | 103 |