

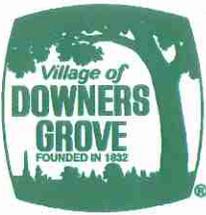
Village of Downers Grove
Stormwater and Flood Plain Oversight Committee Meeting

Wednesday, July 20, 2016
7:00 PM

Downers Grove Public Works Facility
Conference Room
5101 Walnut Avenue
Downers Grove, Illinois

AGENDA

- I. CALL TO ORDER
- II. ROLL CALL
- III. MEETING MINUTES
- IV. PUBLIC COMMENTS
- V. NEW BUSINESS
 - A. Public Hearing – Appeal of a Notice of Violation for Placing Fill in a Special Flood Hazard Area
- VI. STAFF REPORT
- VII. OLD BUSINESS
 - A. Continued Discussion Related to Proposed Amendments to Stormwater & Zoning Regulations
- VIII. ADJOURN



Memorandum

TO: SW&FPOC

DATE: July 15, 2016

FROM: Julie A Lomax, PE, CFM
Development Engineer

SUBJECT: 5117 Brookbank

PETITION SUMMARY

On or about September 24, 2015, the homeowner of 5117 Brookbank, Philip Shaw, regraded his lot. The regrading was done to remove silt he claims was deposited on his property by St. Joseph's Creek, which runs along the south end of the property. The silt was spread throughout his yard, some of which was placed in the floodplain. Part of the fill placed has created a condition where water ponds in the right-of-way along Brookbank south of Mr. Shaw's driveway and sometimes to the north of Mr. Shaw's driveway. A letter was sent to Mr. Shaw on October 9, 2015, notifying him a permit was required for the work he completed. On December 14, 2015, Mr. Shaw submitted for a permit. Review Comments were sent on December 30, 2015, which were responded to on May 16, 2016. Mr. Shaw met on site with the Development Engineers, Kerry Behr and Julie Lomax on Monday, May 9, at which time he was instructed to remove the fill blocking the natural drainage path to the creek. At that meeting Mr. Shaw stated he would not remove the fill. On June 1, 2016, a Notice of Violation was issued to Mr. Shaw to remove the fill in the floodplain/floodway.

The petitioner is asking for an appeal to the Notice of Violation for placing fill in a Special Flood Hazard Area.

STAFF ANALYSIS

Numerous Village employees have met with Mr. Shaw prior to September 24, 2015, to discuss drainage in the right-of-way in front of his house. Each time he was told the same thing: a permit was required for the work he was proposing, he could not fill in the floodplain without providing compensatory storage, and he could not block the natural drainage path toward the creek.

STAFF RECOMMENDATION

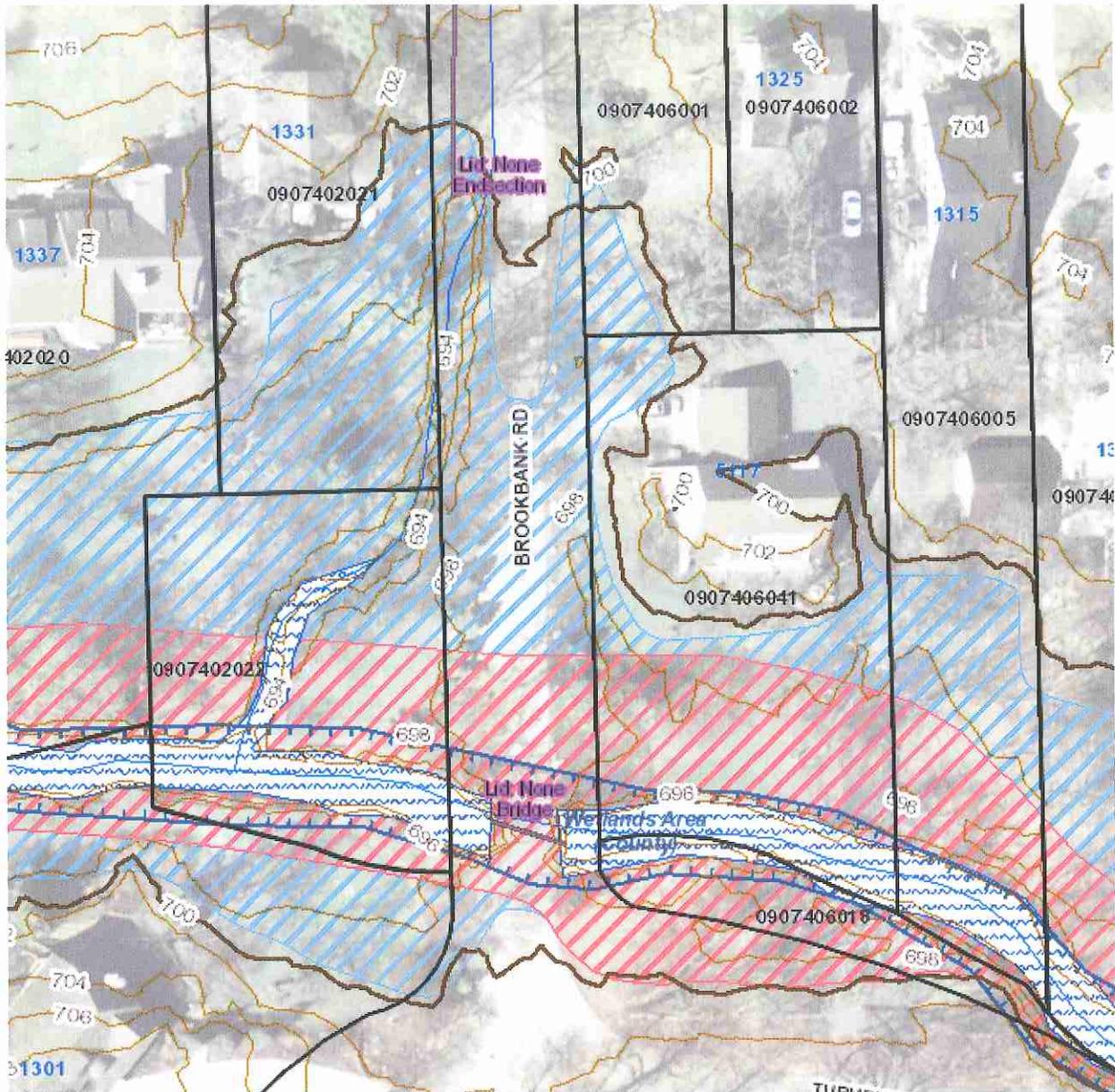
Staff does not recommend approving the appeal. Regardless of whether or not the fill placed has been correctly compensated for,

COMMITTEE ACTION OPTIONS:

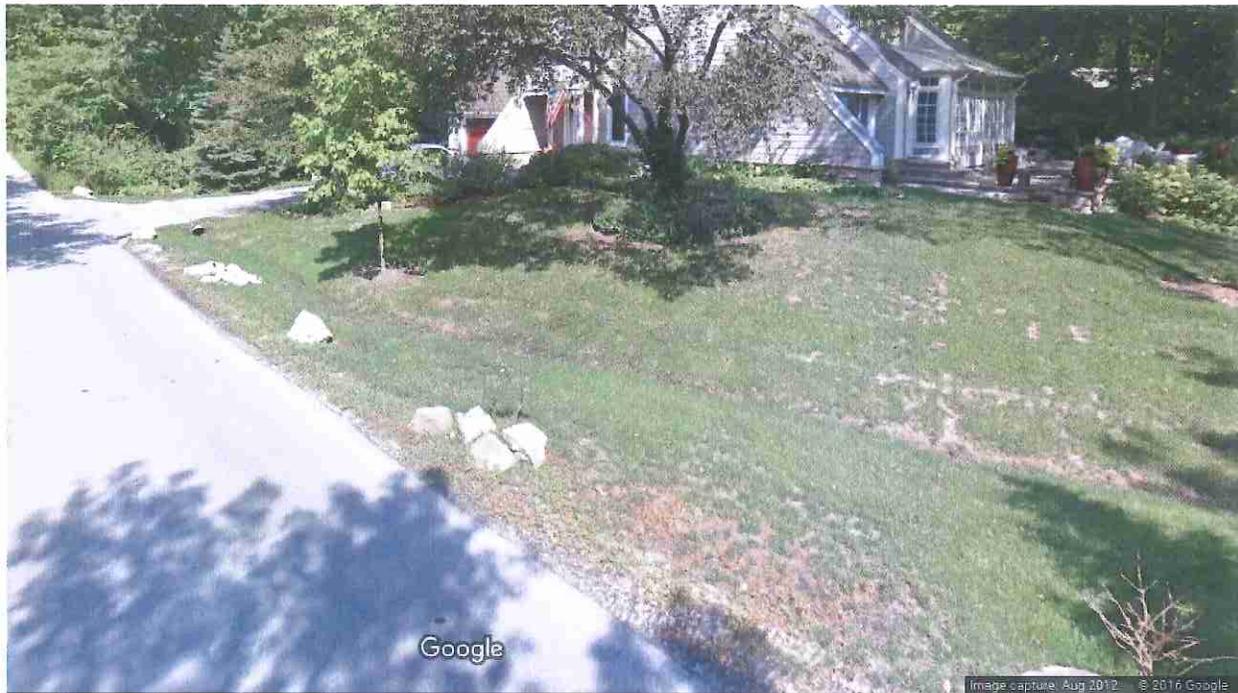
1. Recommend to the Village Council that the appeal be granted.
2. Recommend to the Village Council that the appeal be granted with modifications.
3. Recommend to the Village Council that the appeal be denied.

ATTACHMENTS:

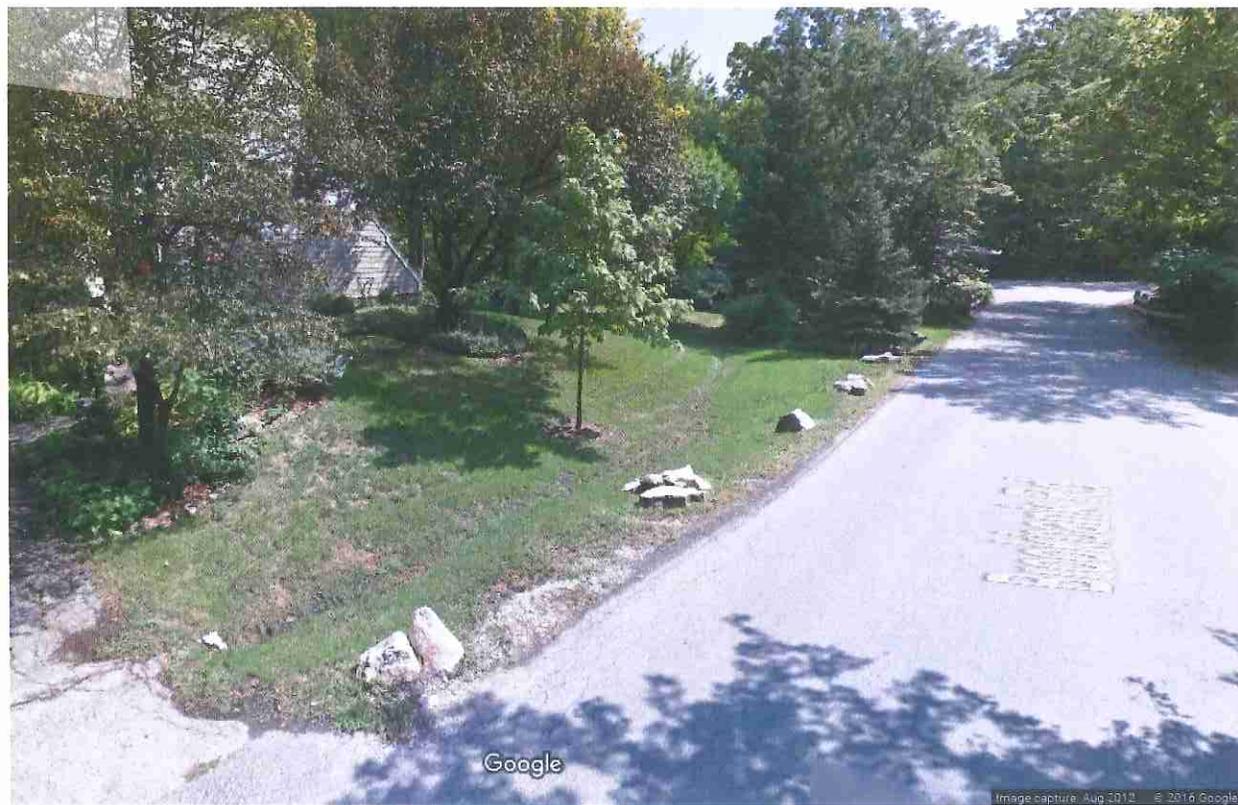
- Variance petition 2014-001
- Aerial photo
- Street View Photos



5117 Brookbank



5117 Brookbank – August 2012



5117 Brookbank – August 2012

5117 Brookbank Road
Downers Grove, Illinois 60515
17 June 2016

Village of Downers Grove
Attn: Stormwater and Flood Plain Oversight Committee
801 Burlington Avenue
Downers Grove, Illinois 60515

Re: Notice of Violation
Dated: 1 June 2016

Gentlemen:

I am writing to appeal the captioned Notice of Violation I received on 3 June 2016, via ordinary mail. (Copy attached).

We have owned our property, at 5117 Brookbank, since 1978. The lot presented numerous challenges: it was covered by a number of large piles of construction and landscaping debris, the invasive Knotweed covered 2/3 of the lot, it is within areas designated as "flood plain", and was not served by the sanitary district. As the lot was below an elevation that would permit a conventional gravity based sewer, we installed a municipal rated force main system, one of the few residential such at that time.

Because of the location and nature of the lot, prior to the completion of our purchase of the lot, we went through a preliminary design permit submittal to assure that the Village would issue a Building Permit. With Village approval of the preliminary design the sale was completed and we obtained a Building Permit. Construction began in the Spring of 1978 and completed in the Fall of 1979. Final site grading was approved and the yard was sodded at the end of October 1979.

Nothing in the Universe is static and over the next few years the cycles of the flooding of St. Joseph Creek left ever larger layers of silt along the Creekside and while the elevation of the yard increased, the creek under-cut the banks causing the areas of the lawn to suddenly collapse. This became a very dangerous situation for anyone cutting the grass.

By the late 1980's the problem had become so severe we approached the Village to allow construction of a retaining wall along the creek. As the creek was then considered a "navigable water-way", as designated by the U.S. Army Corps of Engineers (CoE), the Village claimed it had no authority/jurisdiction over the creek and referred us to the Omaha office of the CoE to obtain a building permit. With our submittal of a permit

application and drawings we were issued a Permit and we, my son and I, constructed the retaining wall as it exists today.

As part of the CoE permit, it was stipulated that the ownership of the property would be responsible for all maintenance, repairs, costs and up-keep of the wall as long as it should exist. The wall was well constructed following the concrete unit manufacturer's recommendations and is about at the height limit recommended for an un-reinforced wall. The wall has now stood for almost thirty years with no real maintenance to the wall itself other than the occasional spraying to kill weeds and tree sprouts to prevent them from gaining a foothold in the drainage cracks between the precast units.

The design of the wall was not intended to control the flooding of the creek but, only to control the undercutting of the bank and provide secure support and footing for the lawn behind the wall. As the creek overflows it's banks, and the top of the retaining wall, on a yearly cycle of about three to six times a year, leaving layers of silt and all manner of debris, the elevation of the lawn increases in height. The amount of silt deposits vary, in thickness, from just fractions of an inch to several inches. As a result of the flooding in April 2016, deposits of 7 to 9 inches thick were received within a single 24 hour period. The silt, for the most part, builds up in an area spread back about 15 to 25 feet from the retaining wall. Far lessor amounts are spread over the whole area of flooding.

In the years following construction of the wall we have regraded the wide path of the yard, defined by the largest silt deposits, removing both sod and silt and restoring the grade elevation to closely match that existed at the time of the completion of the wall. We have done this 4 or 5 times, on a more or less regular basis, as we determine a need. There are 3 reasons to do this:

1. The wall was not designed for the increased back pressure, along the top, caused by the weight of the silt.
2. Because the silt forms a low height sort of dam across the yard, rain run-off is trapped behind it and forms puddles of standing water that can persist for days.
3. Most importantly, as the silt builds up, the lawn grows through the layers and forms a sloped edge concealing the top of the wall, creating an unsafe condition for those walking along the wall or for the lawnmowing service personnel.

This maintenance has been done, at our expense, as a stipulated requirement of the CoE's granting of a permit. The continuing maintenance of the wall is our responsibility and obligation. It is our contention that this duty still exists to that agreement regardless that the CoE may no longer exercise any control in the management of the creek. The Village deferred any responsibility for the retaining wall and it's continuing maintenance and therefore the work does not require a Village permit.

When we acquired the property there was a small ditch, in the right-of-way, that meandered alongside Brookbank Road, flowing, almost without pitch, south to a point

approximately 30 feet north of the small bridge over the creek. At that point, more a swale than a ditch, it turned toward the east and downward to the low end of the bridge headwall, close to or at the juncture of the our property line and the right-of-way, draining into the creek. Over the years a number of changes have occurred affecting both the location, existence, and flow of the ditch:

1. Brookbank Road has been widened, pavement patched, re-patched, repaved, repaved again, patched and re-patched. The slope of the full width of the road appears to be greater now than in the past resulting in much of run-off water to be emptied in to the eastern right-of-way. Areas of the roadway's elevation have gained as much a 10 or more inches in height as was exposed when the flooding of 2013 peeled back areas of the pavement, revealing many of the past applications of additional pavement.
2. As years have passed, silt build-up, along the east side of the road, has generally risen with the elevation gains of the roadway, filling the roadside ditch as it approached to within 50 to 70 feet of the bridge; forcing it's path of flow ever eastward and finally, across our property line.
3. Starting in the 1980's the Village has grown; the size and number of homes has increased, driveways have been enlarged to accommodate 3, 4 and even 5 car garages, circular drives with two street entries have been added, larger and larger patios and decks have become the norm, more and more stormwater has been allowed to flow into the creek. Much of the aforementioned has occurred in our immediate neighborhood and adjacent to our property. The resulting increase in water flow has caused the ditch, in front our house, form large puddles which persist for weeks on end owing to the impermeable nature of the soil.
4. Over the years, where the ditch has been filled-in, as it approached the bridge, the right-of-way was overgrown with tall grasses, a couple of dead trees were replaced, by the Village, we planted several trees and bushes alongside to property line, and a couple of evergreens sprouted amidst the grasses in the right-of-way. As the trees, within the right-of-way and alongside our property line, have grown they shaded out the grasses. The last of the tall grasses were swept away during the flood of 2013.
5. As the drainage swale moved across onto our property it ceased to flow. At first, the ditch carried so little water there was no problem as, all but the largest rainfalls were absorbed shortly after the rain. By the end of the nineties silt build-up and the vastly increased run-off into the ditch started to backup into larger and larger puddles in front of our house. The water would persist even into very dry periods.
6. Around 2004, during a silt removal cycle along the retaining wall, we attempted to alleviate the ponding problem by digging a small swale, along our western property line, draining down to the juncture of the retaining wall and low end of the bridge headwall. It worked! But it was very short lived. Within a couple of instances of the creek flooding, the swale ceased to flow and the ponding returned. Around 2010 or 2011, again removing silt along the retaining wall, a bigger swale/ditch was dug with somewhat better results. By the end of 2012 the flow stopped, the ponding returned. The flooding of 2013 erased all evidence that the ditch ever existed.
7. In 2014 and again in 2015 we contacted the Village asking for assistance to correct the ponding problem. Meetings with the Village staff have not been productive.

Instead of good engineering recommendations we received references to the Village code backed by warnings for non-compliance. The latest meetings have resulted in the Notice of Violation and demands to re-dig the ditch on our property; a demonstrably short term solution doomed for failure.

I have proposed the installation of a small drain pipe, 8 inches in diameter, from the ditch, in the eastside right-of-way to the ditch in the westside right-of-way. This solution has been met claims that the Village "does not have the money". When I offered to share the cost of the work, I was told that it was not possible because "budgeting will take two years". When I then offered to pay the entire cost of the installation, I was informed that "you can't put water on other peoples' property". What?! The bulk of the water ponding in front of my house is from other peoples' property. I would suggest that this solution may be the best long term and least costly solution.

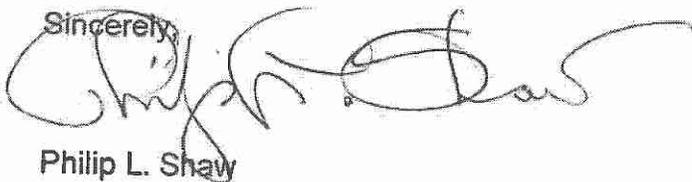
Because the original path of the ditch, in the right-of-way, was blocked by silt accumulation resulting from the increasing height of the pavement on Brookbank which, while, increasing very slowly, over many, many years created a very low height dam across the floodway in direct violation of the Village Code.

Two other solutions, which, to me, are far less desirable and more costly might be:

1. The Village could re-dig the ditch within the right-of-way to the low end of the bridge headwall and perform such continuing maintenance as may be necessary to insure the flow and drainage of the ditch.
2. In order to preserve the existing trees, in the right-of-way, the Village might auger through, under the trees, to the bridge headwall.

I would close by stating that in no way do I wish to have the ditch run across my property as the ever increasing flow and flooding of the creek is more than an imposition and duty.

Sincerely,



Philip L. Shaw

P.S. I have numerous photos explaining various aspects of my letter and would welcome the opportunity to meet with the Committee to more fully illustrate the situations described above.

Follow up to Stormwater & Floodplain Oversight Committee

**Recommendations to Reduce the Negative Impacts of Stormwater
Runoff from Residential Construction Activities**

July 15, 2016

Staff identified several potential code changes that could be considered by the Stormwater and Floodplain Oversight Committee for recommendation to the Village Council.

The following is a summary of the discussion from the meeting on June 23, 2016:

Summary

Items for Recommendation

- Increase the minimum required side yard setback in the R-4 zoning district to the greater of six feet (6') or 10% of the lot width.

Items for Further Review

- ~~Maximum lot coverage for all impervious surfaces~~ impervious area regulation
- Require sump pumps to connect to a minor drainage system or Post Construction Best Management Practices (PCBMP)
- Increase the site runoff storage variance fee and fee in-lieu for constructing PCBMPs
- Reduce minimum foundation drain tile size requirement from six-inch (6") diameter to four-inch (4") diameter
- Require foundation and finished grade elevations to be aligned with properties located on either side of site
- Require additional PCBMPs for basements deeper than nine feet (9')

Items Not Recommended

- Require on-site stormwater detention with an outlet that overflows to an established minor drainage system in the right-of-way or other similar approved location for new residential development that results in a net increase of 700 square feet or more of impervious area
- Remove local PCBMP requirements for construction resulting in 700 square feet or more of net new impervious area. This would raise the threshold to meet DuPage County at 2,500 square foot.
- Include detached garages and front porches in the calculation of building coverage by eliminating the exception for these items in the current code

Items for Recommendation

Increase the Minimum Required Side Yard Setback in the R-4 District

Currently, the minimum required side yard setback in the R-4 District is five feet (5') or 10% of the lot width, whichever is greater. Many new single family houses and additions to existing houses are constructed on 50-foot wide lots, resulting in a five foot (5') side yard setback. In some cases, the five foot (5') side yard does not provide ample room for stormwater drainage improvements and negatively impacts adjacent properties.

Recommendation

Increase in the side yard setback to a minimum of six feet (6') in the R-4 District.

The likely impacts of this change include:

- Increase the space available to construct stormwater improvements including swales
- Flattening the side slope of swales, making them easier to maintain
- Increase the space between houses
- Increase the side yard setback of window wells from 3.5 feet to 4 feet
- Decrease the maximum width of a house on a 50 foot wide lot from 40 feet to 38 feet
- Increase the depth of the house to accommodate for loss in width

Items for Further Review

Maximum Lot Coverage for All Impervious Surfaces

The maximum building coverage in the Zoning Ordinance is 32% of the lot area. Building coverage is measured as the area of the lot occupied by principal and accessory buildings and by structures with a surface area of more than four (4) square feet and a height of 18 inches or more. Driveways, patios, and some decks are not included in this calculation, which can add significantly to the amount of stormwater runoff from a property.

Recommendation

Investigate option of creating a maximum impervious area coverage calculation to include all impervious surfaces and not only that of structures. Further review is required to determine the maximum coverage percentage to be recommended and how to handle existing, non-conforming properties.

Require Sump Pumps to Connect to a Minor Stormwater System or PCBMP

Under the current code, sump pumps are required to discharge onto yards with a minimum setback of 20 feet from downstream lot lines. In many cases, sump pumps meeting code requirements still discharge significant amounts of water which negatively affects adjacent properties. In these cases, the Village practice is to require the sump pump to discharge into a PCBMP. When feasible, these systems overflow to a minor stormwater system.

Recommendation

Investigate whether the Village should require sump pumps for all new single family homes and additions with new sump pumps to connect directly to a PCBMP and/or minor stormwater system.

Increase the Site Runoff Storage Fee and/or the Fee in-Lieu-of Constructing PCBMPs

Under the current code the Village collects a fee for all residential construction projects that are not required by code to provide on-site detention. Revenues from these fees are placed in the Stormwater Fund. The current fee ranges between \$0.565 per square foot to \$0.71 per square foot of additional impervious area due to construction, depending on the watershed in the which the project is located.

Recommendations

Investigate the possibility of increasing the Stormwater Runoff Fee to provide a dedicated fund to mitigate nuisance flooding in neighborhoods. Research how the additional funds can best be applied. Review the possibility of expanding the cost-share program with this added funding.

Investigate possible revisions to the current fee-in-lieu of constructing PCBMPs. Research the appropriate cost of the fee-in-lieu to be more in line with actual construction costs for PCBMPs. Review how fees can best be used to assist with regional stormwater management and water quality projects.

Reduce Minimum Foundation Drain Tile Size Requirement

Under the current code, the minimum size of the foundation drain tile is six inches. This is a local code amendment. The International Building Code requires a minimum size of four inches. The six-inch drain tile carries substantially more water than a four-inch drain tile and increases the amount of water flowing through the sump pump discharge.

Recommendation

Consider repealing the amendment. Research what codes other municipalities have adopted.

Require Foundation and Finished Grade Elevations to be Aligned with the Properties Located on Either Side of the Site

The current Village code does not include regulations regarding the elevation of the tops of foundations for new houses and additions. In some cases, the foundations are constructed at elevations significantly higher than those of adjacent houses. This can result in more stormwater runoff flowing onto adjacent properties at higher rates, and contributes to negative perceptions of new construction by surrounding property owners.

Recommendation

Consider requiring the tops of foundations to be at an elevation equal to or less than the average of the tops of foundations of adjacent houses. Research what other communities have in place for

top of foundation elevation requirements and add wording to allow for Village discretion, as required for stormwater management.

Require Additional PCBMPs for Basements Deeper than Nine Feet (9')

The current code does not regulate the depth of basements. New houses are often constructed with deeper basements than older houses and can require multiple or extensive sump pump systems to manage groundwater. In some cases, where the basement floor is below the elevation of the water table, sump pumps may run continuously during drier periods and volume will increase during periods of rain. This often creates a condition where low lying areas stay continually wet from constant discharge.

Recommendation

Consider requiring additional PCBMPs for basements deeper than nine feet (9'). Research if other communities have a maximum basement depth and/or how they deal with deeper basements and increased sump pump discharge.

Items Not Recommended

Require On-site Stormwater Detention for New Residential Development

Under the current Village code, stormwater detention must be provided for new construction with 25,000 square feet or more of net new impervious area. Installation of PCBMPs such as rain gardens and dry wells are required for construction activities that result in 700 square feet or more of net new impervious area but fall below the 25,000 square feet threshold.

The volume of storage required for detention and PCBMPs is significantly different, with detention providing approximately six times more storage.

$$\text{Required Detention Volume} = 7.58'' \text{ of runoff} \times \text{total new impervious area}$$

$$\text{Required PCBMP Volume} = 1.25'' \text{ of runoff} \times \text{total new impervious area}$$

For each 1,000 square feet of impervious, 570 cubic feet of detention would be required. The average new single family home in the R4 district would require 1,850 cubic feet of detention, which equates to a pit 43' x 43' x 1' deep or 20' x 20' x 4.5' deep. For comparison, the PCBMPs would require 340 cubic feet of storage. In addition, the detention outlet would be required to connect directly into a minor stormwater system in the right-of-way such as a storm sewer or ditch, which is not always feasible on a parcel due to topography or lack of a minor stormwater system in the area.

Recommendation

Do not require on-site detention for all new residential development that results in 700 square feet or more of net new impervious area.

Reasons:

- Costs too high
- Not guaranteed to correct nuisance flooding issues

Remove Local PCBMP Requirements

In 2015, the Village adopted a revision to its stormwater ordinance which requires all developments that result in new impervious area of greater than 700 square feet to install PCBMPs. Examples of these include dry wells, rain gardens or permeable pavers with added base. These regulations are intended to improve water quality, to mitigate the stormwater impacts of new development on neighboring properties, and to reduce the amount of water entering the public portion of the stormwater management system.

The required PCBMPs have not been effective or well-received by homeowners on many properties. Stormwater fails to properly infiltrate the ground due to high clay content in the soils. When PCBMPs overflow, the runoff flows onto adjacent properties at one concentrated point which can cause issues with erosion and standing water. Some property owners do not like having PCBMPs in their yards because these areas can not be used for certain recreational activities due to constant wetness.

Rain gardens are not fully effective for two to three years, with proper maintenance, and infiltration rates can increase over time. Some of the above issues may be resolved with time.

Recommendation

Do not repeal existing PCBMP requirements

Eliminate the Building Coverage Exception for Detached Garages and Front Porches

The current code does not include detached garages in the rear yard and rear-loading attached garages with a building footprint of 500 square feet or less towards overall building coverage. Front porches with a total footprint of 250 square feet or less are also not counted towards overall building coverage.

Although the corresponding impervious surfaces do affect the quantity of stormwater runoff, the current code encourages construction of front porches and detached garages and is intended to enhance the aesthetic appearance of neighborhoods.

Recommendation

Keep the code the way it is: exclude detached garages of 500 sq feet or less and front porches of 250 sq feet or less from building coverage calculation