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Title: Stormwater Basin Improvement Program Amendment

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Date	Ver.	Action By	Action	Result
9/21/2020	0	Board of Trustees		
9/16/2020	0	Village Manager	INTRODUCED TO BOARD	

Title/Name/Summary

Stormwater Basin Improvement Program Amendment

History

There are over 550 stormwater basins (detention ponds) in the Village that are part of the overall stormwater management system. Designed and constructed with the individual subdivisions, the basin's primary function is to serve as a critical component of the Village's stormwater management system because developments add more impervious runoff surfaces like parking lots, sidewalks, and roofs. Without these ponds, this extra water would be introduced into streams/creeks faster, increasing flow and would damage natural streams/creek drainage; increasing flooding on properties downstream. The ponds serve as a way to collect the water and slowly release to the same streams/creeks. They also serve a vital role to protect homes around the pond from flooding issues. While there is a secondary benefit for residents to have a water view, the main reason they are in place is for stormwater management.

Approximately 170 of the aforementioned stormwater basins are maintained by the Village. As the functionality of each basin is directly related to the stormwater sewer system, the responsibility for maintenance and management of the ponds has resided with the Village Public Works Department. Over \$500,000 is invested each year in maintaining and upgrading these facilities.

In February 2011, the Public Works and Engineering Committee and PW Staff presented a strategy for a structured program to review and improve stormwater basins. These efforts resulted in the establishment of the Village's Basin Best Practices Program. The broad goals of this program include:

1. Establish a comprehensive and consistent Village-wide approach to basin and basin shoreline management;

2. Provide consistency in expectations among all stakeholders;
3. Utilize the right resources at the right time provided by the best-qualified parties;
4. Follow industry best practices for ecological restoration and maintenance.

Prior to the establishment of the Basin Best Practices program, there had been varying levels of stormwater basin maintenance and management performed by different contractors, and a comprehensive strategy had not been developed. The Basin Best Practice programs unified the approach to basin management by utilizing Best Management Practices for the restoration and stabilization of stormwater basin shorelines. At the onset of the program, twenty-four (24) ponds were identified as primary ponds in need of shoreline restoration due to various factors, primarily erosion. The program has since grown to include thirty-seven (37) shoreline restoration projects, which the Village actively manages with the assistance of qualified ecological restoration contractors.

SHORELINE RESTORATION PROJECTS

The primary approach that the Village utilizes for shoreline restoration projects involves the use of native vegetation versus "hard edge" techniques such as sheet piling or stone riprap, which can be costly to install and maintain and lack the environmental benefits and aesthetics of more natural solutions. Native grasses/forbs have been proven to provide excellent means of erosion control and have been shown to filter out nutrient and sediment runoff from adjacent land, which contributes to improved water quality and lowered algae growth. The USEPA, US Army Corps of Engineers, the Morton Arboretum and the Chicago Botanic Garden utilize native plantings as a key component of current shoreline stabilization projects.

The main benefits to shoreline restoration projects are:

- Protect shorelines from erosion.
- Provide and improve habitat for fish and other wildlife.
- Improve water quality and filter nutrients/sediments.
- Attract natural wildlife.
- Increase shoreline stability.
- Have been shown to be more resilient than hard-edge shorelines over time, reducing future maintenance costs.

The Basin Best Practice Program also encourages the reduction of turf mowing areas around the stormwater basins throughout the Village. Turfgrass provides little to no erosion control, contributes to rills (shallow channel cut into soil by the erosive action of flowing water), bare spots, mower wheel tracks and toe of slope scour which are often observable at locations where turfgrass is present at the shoreline. These symptoms are signs of existing or future erosion and sediment control problems that cause water quality degradation and potentially impact the stormwater function and aesthetics of the basin if not addressed.

Shoreline restoration projects include an establishment period, in which existing turfgrass, invasive vegetation is removed, and the establishment of native plant species begins. Occasional regrading of pond slopes also occurs at sites where substantial erosion or scouring has previously occurred (as is the case with Eagle Ridge Pond #4). As restoration plantings typically take years to become established, a multi-year stewardship (maintenance) program follows the establishment period. Shoreline stewardships include the control of invasive woody and herbaceous flora through cultural methods, physical removal, or the application of appropriate herbicides.

It should be noted that the Village's Land Development Code currently requires a minimum of 15 of native shoreline plantings, also known as bufferyards, around all new stormwater basins (Section 6-305.D.8), with the intent of establishing resilient shorelines with water quality benefits and helping avoid the need for future restoration projects. A turf grass shoreline is no longer permitted nor installed in restoration projects. The same strategy is utilized, regardless of the pond location because the erosion and water quality issues are the same whether a pond is highly visible or not. While the initial aesthetic change can be a difficult adjustment, most times the surrounding properties come to enjoy the new naturalized aesthetic more than an artificial turf edge.

EAGLE RIDGE STORMWATER BASIN (POND #4)

Since 2017, Village Staff have been requested on numerous occasions to inspect the shoreline and water quality at Eagle Ridge Pond #4 by residents. On-site inspections revealed that the pond had experienced a scour around the pond edge and substantial erosion was present. Resident complaints have continued since that time regarding the condition of the shoreline and the water quality of the pond. Resident concerns, staff observations, and consultant inspections regarding the pond and its shoreline ultimately informed the decision to implement a shoreline restoration project at Eagle Ridge Stormwater Basin (Pond #4).

In Spring, 2020, Parks staff solicited proposals from four (4) ecological restoration contractors to restore and maintain the pond shoreline. V3 Companies provided the most economical and comprehensive approach to the pond erosion issues and were awarded the contract to restore the pond.

On July 27, 2020, a letter was sent to residents whose properties adjoined the pond informing them that a shoreline restoration project was scheduled to begin at Eagle Ridge Pond #4 in August 2020.

As part of this project, the Village is committed to maintaining the best possible aesthetics by:

- Selecting plantings that will remain as low as possible to maintain visibility of the water
- Planting species with aesthetics and functionality in mind
- Using plantings that are commonly used nationwide for shoreline restoration projects
- Using many of the same planting species used approximately 1/10th mile from the subdivision at the Orland Grasslands ER4 Pond
- Installing (2) outcropping areas for fishing to maintain access to the pond.

CURRENT PLAN

Build a Shoreline Buffer

Lawn grass along shorelines produces a trifecta of problems:

1. Lawn grass planted right to the edge of a pond acts like a big, green welcome mat for rain washed chemicals, road salts, and lawn fertilizers (which encourage pond algae to grow).
2. Lawn grass also provides the perfect habitat for Canada Geese. They feel safest when there's a clear path between the pond and the shore.
3. Thin, short grassroots are no defense against shoreline erosion.

Because of the challenges with lawn grass, the current plan is to continue with removing the grass around the pond and replacing it with a shoreline buffer of native plants. It is a sustainable solution that can address all of these problems:

- Native plant foliage and root systems filter out pollutants before they reach the pond.
- Canada Geese fear potential predators may be lurking among the tall shoreline foliage-so they will

abandon the pond.

- These plants' extensive fibrous root systems prevent shoreline erosion by holding the soil.
- Native plants do not require weekly mowing or watering.

Alternative Option: Stormwater Facility Transfer Program

1. The Village will reallocate the funds that were intended for native plantings to the HOA once the HOA takes ownership of the pond and administer required pond stabilization improvements. Anything above the cost of native plantings will be the responsibility of the HOA.
2. The HOA has to maintain the pond in perpetuity.
3. The HOA will need to meet Village and MWRD requirements.
4. An SSA will be established as a backup in case the HOA does not maintain the pond.

Additional Considerations Regarding Alternative Option;

The MWRD permit for the Eagle Ridge Pond includes plans that show the shoreline planted with vegetation, referring to pages 13-20 on the attached 404 Permit Application. The pond was originally planted as per the approved plans, but the plantings were not maintained, and turf grass eventually replaced the shoreline vegetation.

Additionally, the "Long Term Maintenance Plan" for the pond was included with the MWRD permit, which states, "This program is being established for the purpose of perpetuating the success of the plantings that have been installed and to insure that quality habitats form while denying a major foothold to invasive wetland plants."

As the Village was the "Permittee" on the 1993 MWRD application for the establishment of the pond (stormwater basin), if ownership is transferred from the Village to the HOA, in the eyes of the MWRD the Village would still ultimately be responsible for the maintenance of the pond. Since the native planting slope stabilization is the most economical and environmental option, the SSA would be required in order to ensure that MWRD requirements are being met.

The Village currently mows the grass around the Eagle Ridge 4 pond, and treats the pond for algae/aquatic weeds twice a month. If the HOA took over ownership of a pond, the Village would discontinue providing those services.

Financial Impact

Associated cost are budgeted annually for Stormwater Basin Improvement Program.

Recommended Action/Motion

I move to approve amending the 2011 plan to incorporate the Stormwater Transfer Program.