

Item #9A:

Village Trustee Wachs

Three Lakes Subdivision - Leveler Pipe & Pond Maintenance



July 24, 2013

Mr. Dave Lothspeich
Village of Long Grove
3110 RFD
Long Grove, IL. 60047

Subject: Water Conveyance Modification/Pond Sediment Removal

Mr. Lothspeich,

Pursuant to my evaluation of the site and our subsequent communications, I have gathered the following information relating to modifications to existing storm water BMP's in the Village that are intended to allow function as designed. It is important to note most ponds that were created as part of a planned development exist to regulate the flow of water to receiving bodies, and to act as a sedimentation basin so that the receiving waters do not become impaired. Routine maintenance of these storm water retention ponds is required for them to function properly.

There is a short-term need to remove sediment and modify conveyance piping so that water flows above NWL are transported without impediment. To achieve this, the 'leveler pipe' going under Three Lakes Drive can be extended into a newly installed 4' diameter concrete structure, with the elevation of the top of the structure being an acceptable NWL. This would keep all sediment that the pond is designed to retain from entering and settling in the pipe. The budget cost for this work (including design and permitting) is \$16,400.

To accomplish this, some amount of sediment in the area of the leveler pipe and the site of the proposed concrete structure must be removed and the work area must be accessible (i.e. not below a water surface). Lowering of the pond level is required by pumping water around the work site. The cost to remove, haul, and dispose of a limited amount of wet material (less than 50 cubic yards) is \$70/cubic yard. A savings of up to 50% of this cost can be realized if there is an approved suitable site within the Village for the removed sediment.

The cost for sediment removal from any of the entire Three Lakes system is a function of volume to be removed, accessibility, weather the work is done mechanically (requiring the pond to be pumped down) or hydraulically (where the pond levels and the pond function is unaffected by the sediment removal operation. In the Sediment Report dated May 2, 2013, we calculated the volume of sediment in all three ponds to be approximately 15,000 cubic yards, with approximately 12,000 cubic yards targeted for

removal. Specialized equipment can effectively remove sediment in high priority areas such as the leveler pipe area, which we feel would require the removal of approximately 50 cubic yards.

To remove and dispose of 50 cubic yards of sediment, pump down the pond level, obtain necessary permits (requiring some design work), and provide/install concrete structure and leveler pipe extension would be \$20,400.

The cost to remove and dispose of sediment from the area described as the ‘far east side of the lake...where it empties toward IL 82 & Aptikisic Rd.) is \$110/cubic yard with the price being different as a result of accessibility.

The sediment that has accumulated in the pond is either carried in by the water from off-site, or a result of eroded/failing adjacent shorelines. In many cases, efforts to remove sediment from lakes and ponds are simultaneous with programs to stabilize or repair shorelines that are likely to contribute to future sediment accumulation.

Shoreline repair costs vary from \$15/linear foot for simple seeding with native plants, matting, and two years of maintenance to upwards of \$200/linear foot for frontages that require grading, armoring, planting, or geo-engineering techniques. We can refer you to several publications on this topic. The importance of engaging waterfront property owners in enlightened and responsible shoreline management is illustrated by the grants that are available for this work that ultimately leads to improved water quality.

Integrated Lakes Management, Inc. handles all aspects of lake and pond management. We are happy to meet with you, elected officials, homeowners, or others to discuss our recommendations and various options. Please let me know if you have any immediate questions.

Sincerely,

Keith Gray

cc: Sandy Kubillus