Legislation Details (With Text)

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On agenda:	12/12/2017			**Final action:**	12/12/2017
Title:	Review of the 2017 Pond Assessment Study				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	1. 1 - Executive Summary_Cost Estimates, 2. 2 - Link to Full Pond Assessment Report				

Date	Ver.	Action By	Action	Result
12/12/2017	1	City Council	approve	Pass

City Council Meeting Date: December 12, 2017

To: Mayor and City Council
City Administrator

From: David E. Bennett, Public Works Director/City Engineer
Sean M. Simonson, Engineering Manager

Review of the 2017 Pond Assessment Study

Action Requested:
The Northfield City Council discusses the 2017 Pond Assessment Study.

Summary Report:
In December 2016, the City released its Request for Proposals (RFP) for the Stormwater Pond Assessment. The RFP laid out a detailed scope of work that included a multi-phase approach for understanding the ponds current capacities for water quality improvements and set in motion a plan for cleaning the highest priority basins. The scope included the following phases:

- Phase 1: Perform bathymetric survey and compare results to as-built surveys and grading plans. Evaluate the ponds to determine the estimate life expectancy based on historical and anticipated loadings. Provide GIS mapping of bathymetry and original construction. Provide table of sediment accumulation.
- Phase 2: Identify stormwater ponds with the highest percent sediment accumulation. Sample and test the sediment in the highest priority ponds. Determine the respective disposal category. Provide project cost estimates.
- Phase 3: Determine the Total Suspended Solids (TSS) and Total Phosphorus (TP) treatment effectiveness.

Bolton and Menk, Inc., along with the City of Northfield, performed assessments on 50 ponds within the City

of Northfield. The following information was collected during the 2017 Pond Assessment Project:

- Stormwater pond bathymetric assessment
- Field-collected data summary
- Pond cleaning prioritization
- TSS and TP treatment effectiveness
- Estimated pond cleaning costs

After data collection, the ponds surveyed were prioritized based on the "percent full" of accumulated sediment in each pond. The Minnesota Stormwater Manual highly recommends sediment removal activities after 50% of the total forebay capacity has been lost. This data collected translated into eight ponds that are at or anticipated to be at 50% capacity within the anticipated 10-year timeline. The Grant Park Pond, which was identified in the 2010 Stormwater Pond Evaluation and Prioritization, brings the total program to nine ponds.

Additionally, sediment samples were collected on the eight ponds identified above. The Minnesota Pollution Control Agency (MPCA) requires testing for polycyclic aromatic hydrocarbons (PAHs), specific metals to determine the level of contamination. These levels are defined as follows:

- **Management Level 1**: Suitable for use or reuse on residential or recreational properties. Material is at or below the concentration limits for the Tier 1 Soil Reference Values (SRVs)
- **Management Level 2:** Suitable for use or reuse on properties with industrial use. Material is at or below the concentration limits for the Tier 2 SRVs.
- **Management Level 3:** Not suitable for use or reuse and must be landfilled. Material has significant contamination and has one or more concentrations exceeding the limits for the Level 2 SRVs.

Sediment disposal costs are related to the management level. Other cost considerations include time of year for construction, site access, dewatering, sediment excavation methods (i.e. mechanical or hydraulic methods) and site restoration. Preliminary Engineer's Estimates were developed for each of the priority ponds. Attachment 1 includes the Executive Summary and Appendix A which includes the Preliminary Engineer's Estimate and Pond Access Exhibits. The full report can be viewed at the following link: (Attachment 2)

<https://www.ci.northfield.mn.us/1166/2017-Pond-Assessment-Study>

Alternative Options:
None at this time.

Financial Impacts:
Attachment 1 contains the Engineering estimates for each pond maintenance project.

Tentative Timelines
Staff anticipates bringing the final report for acceptance to the January 2, 2018 City Council meeting for approval.