

Title:	Authorization to Execute a Contract to Analyze MCWD Stormwater Pond Survey Data and Develop Maintenance Recommendations					
Resolution number:	22-046					
Prepared by:	Name: Tiffany Schaufler Phone: 952.641.4513 tschaufler@minnehahacreek.org					
Reviewed by:	Name/Title: N/A					
Recommended action:	Authorization to enter into a contract with Stantec Consulting Services Inc. to review past MCWD stormwater data, inventory MCWD's stormwater ponds, identify survey and maintenance recommendations for the next 20 years, and identify retrofit/enhancement opportunities that could increase the water quality function of existing MCWD stormwater ponds.					
Schedule:	September 2022: Review Pond Data October 2022: Inventory Ponds and Develop Maintenance Recommendations November-December 2022: Identify Retrofit/Enhancement Opportunities					
Budget considerations:	Fund name and code: 2-2003-4550 – Project Maintenance and Land Management Fund budget: \$1,974,212 Expenditures to date: \$168,867.81 Requested amount of funding: \$48,620 (\$44,200 + 10% contingency)					
Past Board action:	Res # 17-018	Authorization to Award Contract for 2017 Stormwater Pond Sediment Surveys				
	Res # 18-023	Authorization to Award Contract for 2018 Stormwater Pond Sediment Surveys				
	Res # 19-078	Authorization to Award Contract for 2019 Stormwater Pond Annual Survey and Maintenance				
	Res # 20-023	Authorization to Execute a Contract with Wenck for 2020 Stormwater Pond Annual Survey and Maintenance				
	Res # 21-021	Authorization to Execute a Contract for 2021 Annual Stormwater Pond Maintenance				

# Summary:

The Minnehaha Creek Watershed District (MCWD) constructed its first stormwater pond in 1985. Since 1985, MCWD has constructed 25 stormwater ponds across the watershed. MCWD is responsible for the inspection and/or maintenance of these 25 stormwater ponds through ownership or cooperative agreement with its partner communities. Inspection and maintenance of these facilities is necessary to ensure that the ponds function as designed and continue to accrue their designed water resource benefit. The MCWD Board of Managers has an established policy that dictates cyclical investigation and maintenance of its stormwater management infrastructure to ensure long term water quality and water quantity function of the systems.

In 2010, the Project Maintenance and Land Management (PMLM) Program recommended pond sediment surveys of six to eleven ponds each year on a three-year rotation in order to adhere to the policy established by the Board. To conduct this work, the PMLM program budgets annually to perform sediment surveys on a certain number of ponds. Since 2010, Stantec (formerly Wenck) has performed over 90 sediment surveys on the 25 stormwater ponds that MCWD is responsible for inspecting and/or maintaining (see the stormwater pond database in Attachment A). Generally, this means that each stormwater pond has been surveyed by Stantec three or four times over the past 12 years and has resulted in a considerable dataset that can be used to inform pond performance, sediment accumulate rates, estimated survey needs, estimated cleanout years, and estimated cleanout costs for each stormwater pond.

MCWD staff have reviewed this stormwater pond dataset with Stantec and discussed staff's desire to develop a datadriven, predictive approach to stormwater pond maintenance for the PMLM program. Based on that discussion, Stantec developed a scope of work (Attachment B) which would include:

- 1. **Pond Data Review**: Review and synthesize the metrics for each pond, including why it was built, the watershed size that drains to it, water quality monitoring data, sediment survey data, and dredging data.
- 2. **Pond Inventory & Maintenance Planning**: Using the data from the task 1 above, categorize the ponds into performing, underperforming, or not performing.
  - a. For the ponds that are performing, develop asset management information including estimated survey dates (including adjustments to the survey rotation for each pond), cleanout dates, and budgetary estimates for surveys and cleanouts over the next 20 years.
  - b. For ponds that are underperforming or not performing, MCWD and Stantec staff may discuss a second phase of work which would investigate and diagnose why the pond is not performing as designed and recommend retrofit options.
- 3. Identify Pond Retrofit Opportunities: For the performing ponds, identify concept-level enhancement/retrofit opportunities that could improve water quality benefits, and considers climate adaptation needs that were recently identified in MCWD's Climate Action Framework.

At the July 28, 2022, MCWD Board Meeting, staff will seek approval of a contract for \$44,200 with Stantec to review MCWD's stormwater pond data and develop maintenance recommendations. Staff is recommending this contract be awarded to Stantec without competitive solicitation due to Stantec's (and formerly Wenck's) 12+ years of experience performing over 90 sediment surveys on MCWD's 25 stormwater ponds, and their past experience performing water quality monitoring on MCWD's stormwater ponds. For these reasons, Stantec is uniquely qualified to perform the data review, maintenance planning, and identification of retrofits for MCWD's stormwater ponds.

# Supporting documents:

- Attachment A: Stormwater Pond Database
- Attachment B: Stantec Consulting Services Inc. Scope of Work



# RESOLUTION

### Resolution number: 22-046

Title: Authorization to Execute a Contract to Analyze MCWD Stormwater Pond Survey Data and Develop Maintenance Recommendations WHEREAS the Minnehaha Creek Watershed District (MCWD) engages in regional capital improvement projects as described in its Water Resources Management Plan; and WHEREAS the MCWD has a policy that dictates cyclical investigation and maintenance of its stormwater management infrastructure and conducts pond sediment surveys on the 25 regional ponds that MCWD is responsible for inspecting and maintaining; and WHEREAS the Project Maintenance and Land Management (PMLM) Program annually plans and budgets for pond sediment surveys and since 2010 has gathered data on over 90 stormwater pond sediment surveys; and WHEREAS the PMLM Program desires to develop a data-driven and predictive approach to stormwater pond maintenance planning and budgeting; and WHEREAS since 2010, Stantec Consulting Services Inc. (formerly Wenck) has performed over 90 sediment surveys on MCWD's 25 stormwater ponds and has specific knowledge of the ponds, their sediment accumulation rates, and their past maintenance history; and WHEREAS internal Governance Policy #6 provides for a competitive process when purchasing any professional service in excess of \$25,000, but staff recommends, and the Board finds, that it is appropriate to deviate from that policy in light of Stantec's unique knowledge of the hydrologic and hydraulic behavior of the Minnehaha Creek watershed and the organizational goals of the District, as well as its work to date in monitoring stormwater ponds in MCWD, which together make Stantec uniquely qualified to develop a sound and cost effective product.

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers authorizes the District Administrator, on advice of counsel, to execute a contract with Stantec Consulting Services Inc. to review MCWD's stormwater pond data and develop maintenance recommendations in the amount of \$44,200 and authorizes the Administrator to execute change orders as necessary in the not-to-exceed amount of \$48,620.

Resolution Number 22-046	5 was mov	ed by Mar	nager	, seconded by Manager	Motion
to adopt the resolution	_ ayes,	_ nays,	_abstentions.	Date: 7/28/2022	

Date: July 28, 2022

Secretary

# Attachment A

	Bac	kground informa	Ac Built			Survey Infor	mation		Future	Planning			Past Dredging Info	rmation	
	Yese Built	Maintenance	Permanent Pool Volume	N	6	Accumulated	× 5.4	Sediment Accumulation	Estimated Cleanout	Estimated	Dredge	Dender Cert	Dredge Amount	Cost per	P-D I and (ma flux)
Subwatershed & Pond Name Minnehaha Creek 60th and 1st Pond	2000	Minneapolis	(CY)	Next Survey	2013	Sediment (CY)	North Bay: 0" of sediment; SW Bay:	kate (%/yr)	Year	Cleanout Cost	rears	Dreage Cost	Kemoved (CY)	Cubic Yard	Bar Level (mg/kg)
							37.2" of sediment; SE Bay: 9.6" of sediment								
Codes Mandaux Davis 3 (Mast)					2004		Dredged 2" of sed.				2004	\$41,574	2750	\$15.12	Below 2
Wet Detention Basin	1996	MCWD	13,000	2024	2010 2014 2017		9% Insignificant Insignificant	6%	2025						
					2020 - May	2,280	18%								
Cedar Meadows - Basin 2 (East) Wetland	1996	MCWD	5,710	2024	2020 - May	2 190	29%	3%	2023						
Excelsior Pond	2013	MCWD	2,385	2024	2016	1,100	14%	1.30%	2039						
					2019 - Sept	377	16%								
Nokomis-Amelia	2001	MCWD	22,247	2024	2011 2016		Dredged 21%	5%	2023	\$200-\$600k;	2010/11	\$48,175	2147	\$22.44	0.0679 mg/Kg
					2019 - Sept 2010	7,956	36%								
Nokomis-Gateway	2001	MCWD	5,516	2024	2016 2019 - Sept	321	4% 6%	0.70%	2039+						
					2005		NR								
Nokomis-Knoll	2001	MCWD	6,743	2024	2013 2016		Depth of sediment 16%	0.00%	2039						
					2019 - Sept 2004	1,075	16% Dredged				2004	\$57,417	3120	\$18	Below 2
					2007 2011		< 12" sediment 27%								
SW Bde Maka Ska - Cell 1	1999	MCWD	4,980	2024	2011 2017		Dredged 38%**		2025	\$53k	2011/12	\$116,039	2024	\$57	2.959 mg/Kg
					2018 - May		42%				2018/19	\$57,500	2000	\$28.75	Below SLV and SRV levels - unregulated fill
					2018-2019 2021 - June	970	Dredged 19%	6%							
SW Bde Maka Ska - Cell 2	1999	MCWD	12,690	2024	2004 2007		Dredged Insignificant		2030; dependent						Below 2
					2011 2020 - May		Insignificant 22%	3%	on Cell 1						
		Edina completed			2011 2015		Insignificant 36%								2.146 & 3 206 - Grant
Pamela Park - Cell 1	2001	first, now MCWD	3,550	2024					2025	\$49k	Dec. 2018 -	\$77,850			than SRV Tier 2 - Industrial Waste
		thereafter			2018 - May 2018-2019		59% Dredged				Feb. 2019	(Edina paid)	1800	\$43.25	(Contaminated)
					2021 - June	680	19%	6%							
Republic Reals Coll 2	3001	Edina-1st dredging,	3 500	2024					2044.						
Patiesa Park - Cell 2	2001	MCWD thereafter	3,360	2024	2011 2015 2018 - May		Insignificant 21%		2041+						1 697 8 2 566
					2021 - June	1090	30%	-2%							1.007 @ 3.500
Pamela Park - Cell 3	2001	Edina-1st dredging, MCWD	4,640	2024	2011 2015		Insignificant 4%		2041+						
		thereafter			2021 - June	680	15%	-1%							
					2004 2007 2010		NR 21%				2004	\$19,945	3403	\$6	Level 3
Twin Lakes Park Pond	1996	MCWD	6,840	2024	2011 2012		41% Dredged		2023	\$78k	2012	\$99,359	2080	\$48	14.698 mg/Kg
					2014 - May 2017 - April		11% 14%								
					2020 - May 2021 - June	2,880	42%	4%							
Long Lake Creek					2005		NR								
County Road 6 Pond	1002	MCWD	19,602	2024	2011		insignmeans		2039						
	1990		1 1		2016 2019 - Sept	1,883	10%	1.30%							
Deer Hill Pood-North	1996	MCWD		2023	2016 2019 - Sept 2007	1,883	10%	1.30%							
Deer Hill Pond-North	1996	MCWD		2023	2016 2019 - Sept 2007 2013 2018 - May	1,883	<ul> <li>10%</li> <li>&lt; 12" of sediment</li> <li>4.8" of sediment</li> <li>5%</li> </ul>	1.30%							
Deer Hill Pond-North Deer Hill Pond-South	1996	MCWD		2023 2023	2016 2019 - Sept 2007 2013 2018 - May 2007 2018 - May	1,883	<ul> <li>x 12" of sediment</li> <li>x 12" of sediment</li> <li>x 6"</li> <li>x 6"</li> <li>x 12" of sediment</li> <li>x 12" of sedi</li></ul>	1.30%							
Deer Hill Pond-North Deer Hill Pond-South	1996	MCWD		2023	2016 2019 - Sept 2007 2013 2018 - May 2007 2018 - May 1998 2004	1,883	<pre>c12" of sediment 4.8" of sediment 5% insignificant insignificant 6% Dredged</pre>	1.30%			2004	\$16,578	2410	\$6.88	Below 2
Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North	1996 1996 1996	MCWD MCWD MCWD	4,930	2023 2023 2024	2016 2019 - Sept 2007 2013 2018 - May 2007 2018 - May 2007 2018 - May 2004 2010 2014 2010 2014	1,883	01% 10% 12% of sediment 4.8% of sediment 5% insignificant insignificant 0% 0redged insignificant 20%	1.30%	2023	\$61k-\$184k	2004	\$16,578	2410	\$6.88	Below 2
Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North	1996 1996 1996	MCWD MCWD MCWD	4,930	2023 2023 2024	2016 2019 - Sept 2007 2013 - May 2007 2018 - May 2007 2018 - May 2004 2010 2014 2017 2014 2017 2020 - May	1,883	0% 10% <12° of sediment 4.8° of sediment 5% Insignificant insignificant 6% Dredged Insignificant 20% 20% 10%** 35%	1.30%	2023	\$61k-\$184k	2004	\$16,578	2410	\$6.88	Below 2
Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North Long Lake Park-South	1996 1996 1996	MCWD MCWD MCWD	4,930	2023 2023 2024 2024	2016 2019 - Sept 2007 2013 2018 - May 2007 2018 - May 2007 2018 - May 2004 2010 2010 2014 2010 2014 2017 2020 - May 2006 2010 2014	1,883	0% 0% <12° of sediment 4.8° of sediment 5% Insignificant Insignificant 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	8%	2023 2022 - Dredge with	\$61k-\$184k \$31K-\$94K	2004	\$16,578	2410 no dredg	\$6.88 jng records	Below 2
Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North Long Lake Park-South	1996 1996 1996	MCWD MCWD MCWD MCWD	4,930	2023 2023 2024 2024	2016 2019 Sept 2019 Sept 2013 2007 2013 - May 2007 2013 - May 2007 2018 - May 2007 2014 2010 2014 2017 2020 - May 2016 2010 2014 2017 2010	1,883	0% 10% 212° of sediment 4.8° of sediment 5% Insignificant Insignificant 0% Dredged Insignificant 20% Dredged Insignificant 29% Dredged Insignificant 29% 21%** 30%	1.30%	2023 2022 - Dredge with North pond for cost eff.	561k-\$184k \$31K-\$94K	2004	\$16,578	2410 no dredy	\$6.88 jng records	Below 2
Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North Long Lake Park-South Gleazen Lake Creek	1996 1996 1996	MCWD MCWD MCWD MCWD	4,930	2023 2023 2024 2024	2016 2019 - Sept 2019 - Sept 2013 - 2007 2013 - May 2007 2010 - May 2007 2018 - May 2019 - May 2010 2014 2010 2014 2010 2014 2010 2010	1,883	0% 10% 4.8° of sediment. 4.8° of sediment. 4.8° of sediment. bigorificant. bigorificant. 0% Dredged insignificant. 20% Dredged. bigorificant. 20% 21%** 30% NR	1.30%	2022 - Dredge with North pond for cost eff.	561k-5184k 531K-594K	2004	\$16,578	2410 no dredy	\$6.88	Below 2
Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North Long Lake Park-South Gleason Lake York Gleason Lake North - Ford 1	1996 1996 1996 1996	MCWD MCWD MCWD MCWD	4,930	2023 2023 2024 2024 2024	2016 - 6 - 2019 - Sept 2019 - Sept 2019 - Sept 2013 - May 2018 - May 2018 - May 2018 - May 2019 - 2004 2010 - 2014 2010 - 2014 2017 - 2020 - May 2016 - 2014 2017 - 2020 - May 2016 - 2011 2011 - 2011	1,883	10% 14% of sediment 4.12" of sediment 4.2" of sediment 5% insignificant insignificant insignificant 20% 10%** 30% Credged Negerificant 27% Negerificant 27% Negerificant Neger	1.30%	2022 - Dredge with North pond for cost eff. 2041+	561k-5184k 531K-594K	2004	\$16,578	2410 2410 no dredy 900	\$6.88 jng records \$70	Below 2
Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North Long Lake Park-South Gleason Lake Creek Gleason Lake North - Ford 1	1996 1996 1996 1996 1996	MCWD MCWD MCWD MCWD	4,930	2023 2023 2024 2024 2024	2016 - Sept 2019 - Sept 2019 - Sept 2019 - Sept 2018 - May 2018 - May 2018 - May 2014 2010 - 2014 2010 - 2014 2010 - 2014 2010 - 2010 - 2010 - 2010 - 2010 - 2010 - 2010 - 2011 2012 - 2015 2012 - Line Kay	1,883	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.30%	2022 - Dredge with North pond for cost eff. 2041+	561k-5184k 531K-594K	2004	\$16,578	. 2410 no drody 900	\$6.88 ing records \$70	Below 2 
Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North Long Lake Park-North Gleason Lake Orek Gleason Lake North - Fond 1	1996 1996 1996 1996	MCWD MCWD MCWD MCWD	4,930	2023 2023 2024 2024 2024	2016 - Sept 2019 - Sept 2017 - Sept 2018 - May 2018 - May 2018 - May 2018 - May 2019 - Sept 2014 2014 2014 2014 2014 2014 2014 2014	1,883	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.30%	2022 - Dredge with North pond for cost eff. 2041+	\$61k-\$184k \$31K-\$94K	2004	\$16,578	2410 2410 900	\$6.88 ing records \$70	Below 2 3.306 mg/fg
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Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North Long Lake Park-North Glesson Lake Yorth - Pond 1 Glesson Lake North - Pond 2 Glesson Lake North - Pond 2 Glesson Lake North - Pond 3	1996 1996 1996 1996 1996 1995 2008	MCWD MCWD MCWD MCWD MCWD MCWD	4,930 2,510 1,520 1,050 1,160	2023 2023 2024 2024 2024 2023 2023	2016 - Sept 2007 - Sept 2007 - 2013 - 2013 - 2013 - 2013 - 2014 2018 - May 2017 - 2018 - May 2018 - May 2018 - 2014 - 2014 - 2014 - 2014 - 2014 - 2014 - 2014 - 2014 - 2014 - 2014 - 2014 - 2015 - 2016 - 2015 - 200	1,883	2005. 2005. 2007.	1.30%	2023 2022 - Dredge with North pond for cost eff. 2041+ 2041+	561k-5184k	2004	\$16,578 \$62,995 \$45,064	2410 no droh 900 692 (Pond 243) 892 (Pond 243)	\$6.88 ing records \$70 \$51	Below J Below J J.206 mg/bg - 7935 mg/bg
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Deer Hill Pond-North Deer Hill Pond-South Long Lake Park-North Long Lake Park-South Gleazon Lake Korth - Pond 1 Gleazon Lake North - Pond 2 Gleazon Lake North - Pond 2	1996 1996 1996 1996 1996 1995 2008 2008	MCWD MCWD MCWD MCWD MCWD MCWD	4,330	2023 2023 2024 2024 2023 2023 2023	2016 Sept 2007 - Sept 2007 - 2013 - 2013 2018 - May 2018 - May 2018 - May 2007 - 2018 - May 2004 - 2017 2010 - 2014 2010 - 2014 2010 - 2014 2010 - 2014 2017 - 2006 2010 - 2014 2017 - 2006 2010 - 2014 2011 - 2006 2011 - 2018 - May 2021 - Lune 2015 - 2016 2015 - 2016 2015 - 2017 - 2017 2016 - 2018 - May 2021 - Lune	1,883	2005 2005 2017 of sectionari 2017 of sectionari 2017 of sectionari 2017 of sectionari 2017 of sectionari 2017 of sectionari 2017 of sectionari 2015 of sectionari 201	1.30% 8% 3% 1% 1%	2023 2022 - Decige with North pond for cost eff. 2041+ 2041+	561k-5184k 531K-594K	2004	\$16,578 \$62,995 \$45,064 \$45,064	2410 no drstr 900 922 (Pront 28.3) 892 (Pront 28.3)	56.88 ing records \$70 \$51	8000 2 8000 2 3200 mg/tg 2335 mg/tg 13765 mg/tg
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# Attachment B



Stantec Consulting Services Inc. 7500 Olson Memorial Highway Suite 300

Golden Valley MN 55427-4886

July 25, 2022

Tiffany Schaufler 15320 Minnetonka Blvd Minnetonka, MN 55345

Dear Tiffany Schaufler,

# Reference: MCWD Stormwater Pond Capital Improvement Planning

# Background

Stantec Consulting, Inc. (Stantec) is pleased to submit a scope of work and schedule to generate a comprehensive inventory of the 25 stormwater ponds maintained by MCWD. This work will build off previously completed survey work done by Stantec (and formerly Wenck) and will identify why each pond was built, the design intent of the pond, the performance history of the pond, and future recommendations for monitoring and maintenance (including costs and schedule).

At the conclusion of this work, Stantec will categorize the ponds, based on the design intent, as either performing, underperforming, or not performing. For the ponds that are found to be performing, Stantec will provide estimated cleanout dates/costs for each of the basins, recommended sedimentation survey frequency for each basin, and identify concept-level enhancement opportunities. For the ponds that are found to be underperforming or not performing, Stantec and MCWD staff can discuss a second phase to this scope of work which would diagnose why the pond is not performing as designed.

Stantec proposes the following tasks to complete the project:

- Task 1: Pond Data Review: Review and synthesize the metrics for each pond, including: why it was built, the watershed size that drains to it, any past monitoring data, past survey data, and past dredging data.
- Task 2: Pond Inventory & Maintenance Planning: Using the synthesis from Task 1, categorize the ponds into: performing, under performing, and not performing. For the ponds that are performing, compile estimated survey dates, cleanout dates, and budgetary cleanout cost estimates for each basin.
- Task 3: Identify Retrofit Opportunities: For the performing ponds, identify concept-level enhancement/retrofit opportunities.

# Task 1 Pond Data Review:

Stantec will complete a review of historic data, including design plans, past water quality monitoring reports, and past sedimentation accumulation surveys, to allow summarization of design intent and reasonable expectations for performance of each pond.

Review will include:

- Review contributing watersheds to understand size, drainage area and construction activity
- Review original design metrics of the pond
- Review past monitoring data
- Compile sedimentation rates from previous memos
- Cross check MCWD's provided summary table

### Outcomes:

• Understanding of design intent and reasonable expectations for functionality of each pond based on design, past performance, and contributing areas.

# Assumptions:

- MCWD will provide past monitoring data and design intent data for Stantec to review. Wenck performed and summarized past pond monitoring data for:
  - Twin Lakes Park Pond: 1996, 1997, 1998
  - o Cedar Meadows: 1997, 1998
  - Deer Hill Pond: 1996, 1997, 1998
  - Country Road 6 Pond: 1998
  - Bde Maka Ska Pond: 1999
- Historic sedimentation surveys that have been completed by Stantec (formerly Wenck).
- Review of historic construction activity will be based on the MCWD GIS database for permit applications within each pond's contributing drainage area. It is assumed that MCWD will provide this GIS database.

#### Deliverables and meetings:

• Technical Memorandum summarizing the pond data. Memo will include a summary table identifying the construction year, contributing watershed area, design intent, and analysis about past performance of each pond.

# Task 2 Pond Inventory and Maintenance Planning

Using the data from Task 1, Stantec will categorize each pond as performing, underperforming, and not performing. For the ponds that are performing. Stantec will create a sedimentation survey plan that considers the accumulation rate and expected dredging date. The plan will be developed with the intention of targeting sedimentation monitoring, based on historic sedimentation data. Sedimentation surveys will be recommended less frequently for basins that have historically shown low sediment accumulation rates, and more frequently for basins with historically high sedimentation rates. Furthermore, sedimentation surveys will be recommended in advance of the estimated cleanout dates, to allow field verification of estimated maintenance needs. This task will include:

- Estimate cleanout dates based on historic sediment accumulation rates
- Generate budgetary cost of cleanout for each basin based on basin size and estimated volume of sediment to be removed at cleanout
- Identify ponds that have higher or lower accumulation than would be expected, to flag the basins

for further investigation

# Outcomes:

- A timeline of expected cleanout dates and budgetary costs to plan for capital maintenance of MCWD stormwater ponds over the next 20 years.
- An assessment on whether each pond is performing, under-performing, or not performing, in terms of sediment accumulation.

# Assumptions:

- It is assumed that 10-12 ponds will be identified as performing.
- Sedimentation survey schedule will be based on previously collected data, and will not account for future development or planned land use changes.
- Estimates will be based on previously completed sedimentation surveys; no additional field work will be completed under this scope.
- Sedimentation survey schedule will be based on best interpretation of available data, and may prioritize use of recent data over historic data. Sedimentation projections may be based on the calculated average sedimentation rate.
- If future sedimentation surveys report notable changes to sedimentation rates, recommended survey dates and estimated dredge dates would need to be updated.
- Assessment of pond performance will be based on sedimentation accumulation over time, not on other water quality, ecological, water chemistry, aesthetic, or other parameters.
- Opinion of Probable Cost will be budgetary for planning purposes, and will consider recent bid data and future inflation.
- Pond cleanout thresholds will be based on current Minnesota Pollution Control Agency (MPCA) guidance (<u>link here</u>).

# Deliverables and meetings:

- A timeline and budgetary opinion of probable cost of dredging over the next 20 years, itemized by pond.
- A survey plan over the next 20 years, in tabular / spreadsheet format.
- Technical Memorandum summarizing:
  - Which ponds are performing, underperforming, and not performing
    - Methods and assumptions used to categorize the ponds

# Task 3 Identify Retrofit Opportunities

For the ponds that are performing, Stantec will complete a high-level opportunity screening to identify ponds that may be candidates for enhancements & retrofits to improve realization of water quality benefits. This analysis will be based on previously collected sedimentation data, previously collected instantaneous water quality parameters (sonde readings including dissolved oxygen, temperature, and conductivity profiles), and known watershed stressors.

For each pond identified as an opportunity location, 1 to 2 options for enhancements will be identified.

# **Outcomes:**

- A list of ponds that would be good candidates for enhancements.
- 1 to 2 options for enhancements on each pond identified.

# Assumptions:

- As identified in Task 2 assumptions, it is assumed that 10-12 ponds will be identified as performing. Retrofits will not be identified for ponds that are deemed to be non-performing in Task 2.
- It is assumed that 4-6 ponds will be identified as candidates for enhancements / retrofits. The level
  of effort, and associated cost of analysis, will increase if MCWD desires additional opportunities be
  identified.
- Sizing, water quality modeling, and cost estimating for potential enhancement options will not be under this scope of work. This information can be provided under a separate scope of work, based on MCWD direction and interest.

# Deliverables and meetings:

- Technical memorandum containing a list of ponds and enhancement / retrofit options.
- One meeting with District staff to review findings and recommendations.

# Fee Estimate

Scope of Work	Fee Estimate
Task 1 – Pond Data Review	\$16,980
Task 2 – Pond Inventory & Maintenance Planning	\$17,400
Task 3 - Identify Retrofit Opportunities	\$9,800
TOTAL	\$44,200

The total cost above includes all reimbursable expenses including mileage, printing, and equipment costs.

# Schedule

Task 1 – Pond Data Review: 5 weeks from receiving all data

Task 2 - Pond Inventory & Maintenance Planning: 3 weeks from completion of Task 1

Task 3 – Identify Retrofit Opportunities: 3 weeks from completion of Task 2

Sincerely,

STANTEC CONSULTING SERVICES INC.

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Rena Wes

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