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**MEMORANDUM**

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TO: Brown's Creek Watershed District Board  
FROM: Karen Kill  
RE: Marketplace Reuse Feasibility – Chloride Monitoring in Stormwater Ponds  
DATE: October 6, 2023

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See attached memo from Washington Conservation District for background and detailed scope.

**Recommendation:**

Authorize president to amend the 2023-2024 agreement with Washington Conservation District to include not to exceed \$19,183 from account 929-0012 in the 2024 budget. This total includes \$1,680 that will be subcontracted with the Metropolitan Council for lab sample analysis.

**Managers:**

Klayton Eckles, President • Celia Wirth, Vice-President • Chuck LeRoux, Secretary • Gerald Johnson, Treasurer



## MEMORANDUM

**TO:** BCWD Board of Managers

**FROM:** Rebecca Oldenburg, Senior Water Resource Specialist

**DATE:** October 5<sup>th</sup>, 2023

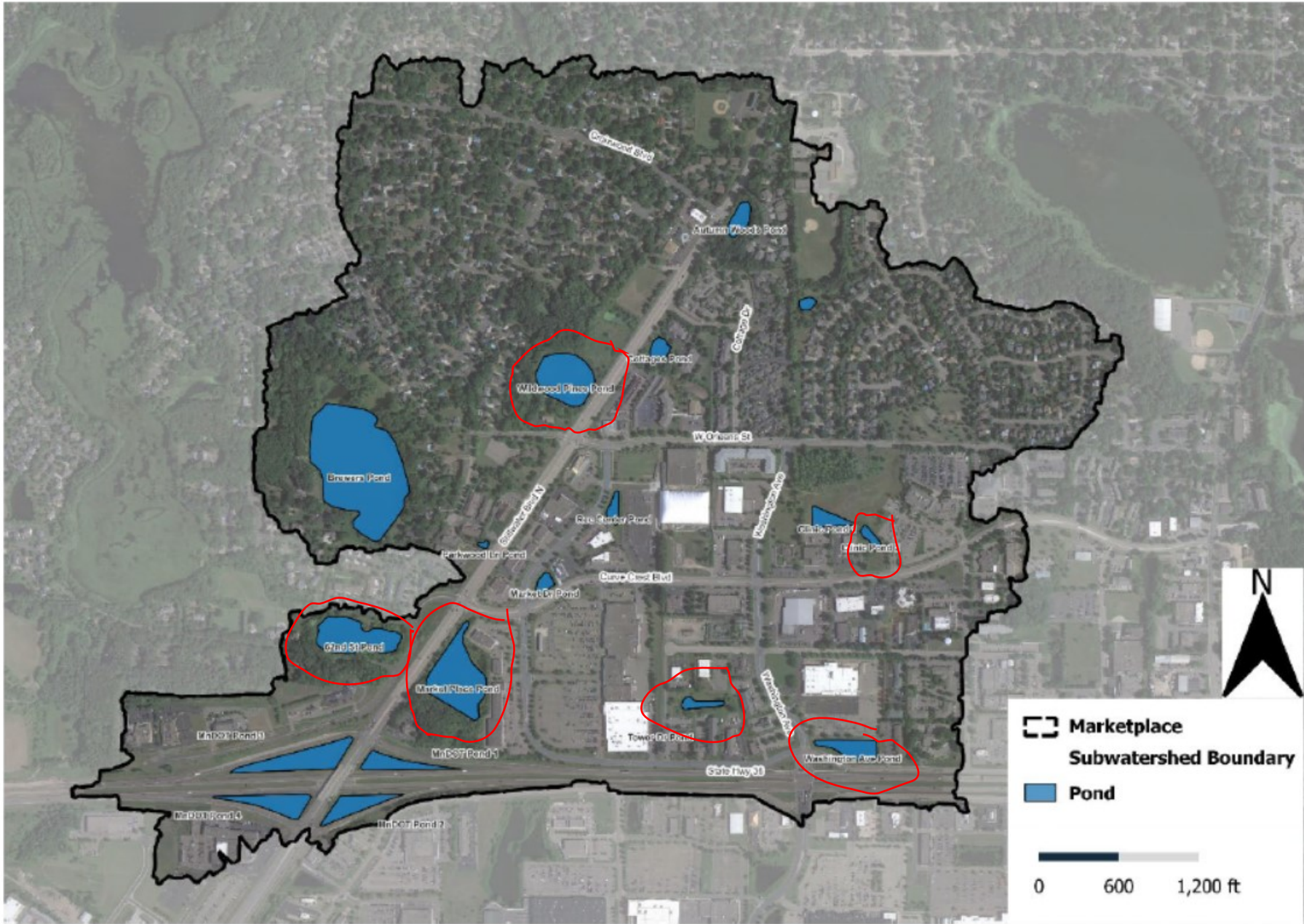
**RE:** Updated Marketplace District Reuse Monitoring Proposal 2024


In order to better understand the water quality of the ponds surrounding the Marketplace District for possible water reuse targeted investigatory monitoring is warranted. The water reuse would allow for a reduction in groundwater pumping for irrigation and help support creek baseflow, but this water must be viable for irrigation purposes. Chloride is a pollutant of concern when it comes to water reuse as terrestrial vegetation has a tolerance threshold before the water is too saline and can limit or inhibit growth and cause mortality. Turf grass has a variable tolerance threshold for chloride depending on the species; but can generally handle ranges between 70 and 355 mg/L, before it may begin to show signs of stress (EOR Technical Memo 7/5/2019). Additionally, grass cut with a low mowing height (shorter grass) like what is required for the Oak Glen Golf Course, is less saline tolerant (Liu, Todd, and Lo 2023).

The Washington Conservation District (WCD) currently performs water quality sampling on 18 basins in the Brown’s Creek Watershed District on behalf of BCWD. The WCD has been collecting chloride samples on these basins and two additional wetlands for two years now. Chloride is an accumulating pollutant that ends up in waterways and waterbodies often from road salting and home water softeners. The WCD would implement a similar monitoring regimen to the baseline water quality samples being collected on other BCWD waterbodies, sampling biweekly after ice-out from roughly April-October. A chloride sample would be collected from the surface and a secondary sample would be collected from the bottom water of six ponds. Sampling for the entire season allows for a fuller picture of how chloride concentration may vary during an irrigation season. If ponds have high salinity during the spring due to snowmelt and road runoff but tail off as the summer starts irrigation may still be possible, or a delayed schedule could be considered. This would still result in a reduction in groundwater use. Additionally, bathymetry surveys would be conducted to understand the depth and contours of all wet ponds. This is an important consideration as many ponds’ depth and volume vary with precipitation and can dry up in drought years, leaving the potential to effectively concentrate chloride in the water.

The total cost for the Marketplace District reuse monitoring for 2024 is **\$19,183**.

Marketplace District Reuse Monitoring	Type	Labor Cost	Lab Cost	Total Cost/Site	Notes
Marketplace Pond	LWQF1a	\$2,109	\$280	\$2,389	14x/yr surface chloride samples + hypo chloride samples
62nd St Pond	LWQF1a	\$2,109	\$280	\$2,389	14x/yr surface chloride samples + hypo chloride samples
Wildwood Pines Pond	LWQF1a	\$2,109	\$280	\$2,389	14x/yr surface chloride samples + hypo chloride samples
Washington Ave Pond	LWQF1a	\$2,109	\$280	\$2,389	14x/yr surface chloride samples + hypo chloride samples
Clinic Pond 2	LWQF1a	\$2,109	\$280	\$2,389	14x/yr surface chloride samples + hypo chloride samples
Tower Dr Pond	LWQF1a	\$2,109	\$280	\$2,389	14x/yr surface chloride samples + hypo chloride samples
Bathymetry - all wet ponds	BMA1	\$4,851	\$0	\$4,851	Rough bathymetry survey utilizing EOR’s collector application
Total Lake WQ Monitoring		\$17,503	\$1,680	\$19,183	
<b>Monitoring Summary</b>					
		<b>Labor Cost</b>	<b>Lab Cost</b>	<b>Total Cost</b>	<b>Notes</b>
<b>Total Lake WQ Monitoring 2024</b>		<b>\$17,503</b>	<b>\$1,680</b>	<b>\$19,183</b>	



 Marketplace  
Subwatershed Boundary

 Pond

0 600 1,200 ft