

**Minnehaha Creek Watershed District**

**REQUEST FOR BOARD ACTION**

**MEETING DATE:** March 8, 2018

**TITLE:** Approval of Continuing MCWD and USGS Agreement for Joint Funding of O&M of Gage Stations near Minnehaha Falls and Grays Bay Dam for 2018 and 2019

**RESOLUTION NUMBER:** 18-017

**PREPARED BY:** Yvette Christianson, Water Quality Manager

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**REVIEWED BY:**  Administrator  Counsel  Program Mgr.:  
 Board Committee  Engineer  Other: Kelly Dooley, Water Quality Manager

**WORKSHOP ACTION:**

<input type="checkbox"/> Advance to Board meeting Consent Agenda	<input type="checkbox"/> Advance to Board meeting for discussion prior to action
<input type="checkbox"/> Refer to a future workshop (date): _____	<input type="checkbox"/> Refer to taskforce or committee (date): _____
<input type="checkbox"/> Return to staff for additional work	<input type="checkbox"/> No further action requested.
<input checked="" type="checkbox"/> Other (specify): Recommend Approval	

**PURPOSE or ACTION REQUESTED:**

Authorization to continue the Joint Funding Agreement with the United States Geological Survey (USGS) to continue to operate, maintain, and publish data from the Lake Minnetonka gage and Hiawatha Gage and collect water quality samples from storm events on Minnehaha Creek near Minnehaha Falls.

**PROJECT/PROGRAM LOCATION:**

Minnehaha Creek near Hiawatha Avenue and upstream of Minnehaha Falls, and Lake Minnetonka water level monitoring at Grays Bay dam.

**PROJECT TIMELINE:**

USGS Fiscal Year:  
October 1, 2017 through September 30, 2018  
October 1, 2018 through September 30, 2019

**PROJECT/PROGRAM COST:**

Fund name and number: Water Quality (5001)  
Current budget: \$967,962  
Requested amount of funding: FY2018 Costs = \$15,565; FY2019 Costs = \$22,200  
Is a budget amendment requested? No  
Is additional staff requested? No

**PAST BOARD ACTIONS:**

- 05/26/16 Resolution Number 16-048:

- Approval of Continuing Minnehaha Creek Watershed District and United States Geological Survey Agreement for Joint Funding of O&M of Gage Station Near Minnehaha Falls and Grays Bay Dam for 2016 and 2017
- 01/29/16 Resolution Number 15-007:
  - Authorization to Enter into a Joint Funding Agreement with the United States Geological Survey (USGS) for the Operations and Maintenance of a Stage Gage on Lake Minnetonka
- 05/08/14 Resolution Number 14-042:
  - Approval of Continuing Minnehaha Creek Watershed District (MCWD) and United States Geological Survey (USGS) Agreement for Joint Funding of Operations and Maintenance of a Year-Round Gaging Station near Minnehaha Falls for 2014 and 2015
- 05/09/13 Resolution Number 13-061:
  - Approval of Continuing Minnehaha Creek Watershed District (MCWD) and United States Geological Survey (USGS) Agreement for Joint Funding of Operations and Maintenance of a Year-Round Gaging Station near Minnehaha Falls 2013
- 05/24/12 Resolution Number 12-049:
  - Approval of Continuing Minnehaha Creek Watershed District (MCWD) and United States Geological Survey (USGS) Agreement for Joint Funding of Operations and Maintenance of a Year-Round Gaging Station near Minnehaha Falls 2012.
- 07/28/11 Resolution Number 11-057:
  - Approval of Continuing Minnehaha Creek Watershed District (MCWD) and United States Geological Survey (USGS) Agreement for Joint Funding of Operations and Maintenance of a Year-Round Gaging Station near Minnehaha Falls.
- 08/05/10 Resolution Number 10-063:
  - Approval of Continuing Minnehaha Creek Watershed District (MCWD) and United States Geological Survey (USGS) Agreement for joint funding of operations and maintenance of a year-round gaging station near Minnehaha Falls.
- 03/20/08 Resolution Number 08-016:
  - Approval of Joint Watershed Research Program proposal
- 09/08/05 Resolution Number 05-052:
  - Approval of joint funding agreement with the USGS to install and operate a year-round gaging station on Minnehaha Creek near Minnehaha Falls.

## **SUMMARY:**

The United States Geological Survey (USGS) is the leader in the field with regards to discharge measurement and water level gaging techniques. MCWD initiated a partnership with USGS at the Hiawatha gaging station in 2005. It remains a joint project where each agency pays approximately half of the cost of operation, maintenance, and publishing of the data.

The benefits of this partnership agreement, between the MCWD and the USGS, extend beyond the data collection. Accurate discharge data is crucial for the calculation of stream pollutant loads and for calibration of water quantity/quality models for the purposes of future projects and Total Maximum Daily Load Studies (TMDLs). The data is also published on the USGS's website and linked to the MCWD's website. The public

has access to the real-time water level data, which has reduced the number of inquiries District staff receives. Both gage stations are one of the USGS most frequently visited webpages.

Minnehaha Creek was listed impaired for chloride in 2008. MCWD worked with USGS to install a chloride and temperature probe to collect year-round, fifteen-minute data for the Creek at Hiawatha gaging station. In 2012, a refrigerated automatic storm water sampler was installed to collect data that will be used for defining pollutant loads, tracking trends, and modeling for the TMDLs for Minnehaha Creek and Mississippi River.

In 2013, the Metropolitan Council Environmental Services' Water Outlet Monitoring Program's station at 34<sup>th</sup> Ave. in Minneapolis was discontinued due to lack of funding. MCWD and the USGS partnered with Metropolitan Council to provide additional monitoring parameters at the Hiawatha gaging station in exchange for advanced calculated modeling of annual and monthly pollutant loads that may be used for future projects.

In 2014, the high water levels throughout the watershed revealed the public's interests in Lake Minnetonka water level and Grays Bay dam operations. District staff realized the need to improve our service delivery of water level information to local communities and citizens. Given the success of the partnership at the Hiawatha gaging station along Minnehaha Creek, District staff reached out to the USGS. In 2015, the partnership between MCWD and USGS was extended to include an additional gage on Lake Minnetonka at the outlet of Grays Bay dam.

The Joint Funding Agreement between MCWD and the USGS needs to be renewed every two years. The costs for the agreement is for the stream gage operations and maintenance, daily discharge computation, continuous specific conductance and water temperature, and water quality runoff sampling and laboratory analysis. The agreement renewal, which will continued to be funded by USGS and MCWD is for the following timeframe: October 1, 2017 through September 30, 2018 and October 1, 2018 through September 30, 2019 (see attachment).

**RESOLUTION**

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**RESOLUTION NUMBER:**    18-017

**TITLE:**            **Approval of Continuing MCWD and USGS Agreement for Joint Funding of O&M of Gage Station near Minnehaha Falls and Grays Bay Dam for 2018 and 2019**

WHEREAS,    Minnehaha Creek has been identified by the District as a high priority resource; and

WHEREAS,    the USGS is the leader in the field with regards to discharge measurement; and

WHEREAS,    MCWD has partnered with USGS in the management, operations, and publishing of the Hiawatha Gage Station since 2005; and

WHEREAS,    in 2013, an additional partnership was formed with the Metropolitan Council where MCWD and the USGS agreed to collect additional data at the Hiawatha station and share the data with the Metropolitan Council in exchange for advanced calculated modeling of pollutant loads that may be used for future projects on Minnehaha Creek; and

WHEREAS,    in 2015, a second gage station was set up at Grays Bay dam to manage, operate, and publish water level on Lake Minnetonka; and

WHEREAS,    the accurate discharge data collected is crucial for the calculation of stream pollutant loads (e.g., phosphorus, chloride) and for calibration of water quantity/quality models, which can be used for the purposes of future projects and TMDL plans; and

WHEREAS,    the discharge data is also published on the USGS website and linked to the MCWD website and both Grays Bay and Hiawatha stations are at the top of their most frequently visited webpages; and

WHEREAS,    to continue funding the partnership, the Joint Funding Agreement between MCWD and the USGS needs to be renewed every two years; and

NOW, THEREFORE, BE IT RESOLVED, that the MCWD Board of Managers authorize MCWD district administrator to extend an agreement with USGS to continue the Joint Funding Agreement for services from October 1, 2017 through September 30, 2019 in which the total cost not to exceed \$37,765.

Resolution Number 18-017 was moved by Manager \_\_\_\_\_, seconded by Manager \_\_\_\_\_.  
Motion to adopt the resolution \_ ayes, \_ nays, \_ abstention. Date:

\_\_\_\_\_  
Secretary

Date: \_\_\_\_\_

**U.S. Geological Survey  
Summary of Data Program  
In Cooperation with  
Minnehaha Creek Watershed District  
Federal Fiscal Years 2018 and 2019**

## **2018 Federal Fiscal Year (October 1, 2017 through September 30, 2018)**

### **1) Minnehaha Creek at Hiawatha Avenue**

The U.S. Geological Survey will maintain a streamgage for computation of continuous streamflow, specific conductance, and water temperature; and collect and analyze water-quality samples from runoff.

(A) Streamgage operation and maintenance and streamflow computation

A streamgage will be maintained and operated. Discharge measurements will be made to define changes to the stage-discharge rating over the range of flows that occur to compute an accurate record of streamflow.

(B) Continuous specific conductance and water temperature

In-stream sensors will be maintained and operated to provide a record of continuous specific conductance and water temperatures. Sensors will be cleaned and calibrated monthly or as needed to ensure an accurate record of data.

(C) Runoff-triggered auto-samples (6)

A refrigerated autosampler will be used to collect samples from 6 runoff events. For each event, a discharge-weighted sample that is composited from discrete samples obtained during the rising limb and peak of the runoff hydrograph, will be analyzed for the constituents in table 1. To minimize nutrient degradation, chilled samples will be processed, preserved, and shipped to the laboratory within 48-72 hours of initial sample collection. The MCWD may authorize additional samples through an amended agreement at a cost of \$1,200 per sample.

Because none of the budgeted autosamples from FY17 were collected due to monitoring station reconfiguration issues, these costs have been credited to FY18 in this agreement, as shown in Table 2.

**Table 1. Laboratory analyses and physical measurements to be obtained from composited samples**

<b>Laboratory Analyses</b>	
Nutrients	Dissolved chloride
Total phosphorus	Total suspended solids
Dissolved phosphorus	Volatile suspended solids
Dissolved ortho-phosphosphate	Suspended sediment concentration
Total ammonia plus organic nitrogen	<b>Physical measurements from composite samples</b>
Dissolved ammonia nitrogen	Specific conductance
Dissolved nitrite plus nitrate nitrogen	pH
Dissolved nitrite nitrogen	--

### **2) Lake Minnetonka above Gray's Bay Outlet in Minnetonka**

The U.S. Geological Survey will maintain a lake gage for computation of continuous water level during periods when the stilling well intakes are not frozen.

**Data Publication** - Provisional and approved data will be published on USGS NWISWeb at

[http://waterdata.usgs.gov/mn/nwis/nwisman/?site\\_no=05289800](http://waterdata.usgs.gov/mn/nwis/nwisman/?site_no=05289800) and

[http://waterdata.usgs.gov/mn/nwis/uv/?site\\_no=05289000](http://waterdata.usgs.gov/mn/nwis/uv/?site_no=05289000)

## **2019 Federal Fiscal Year (October 1, 2018 through September 30, 2019)**

The workplan is the same as 2018; with costs increased 2% for inflation.

**Summaries of program costs are shown in Table 2 (FY18), Table 3 (FY19), and Table 4 (FY18-19 combined)**

U.S. Geological Survey  
 Summary of Data Program  
 In Cooperation with  
 Minnehaha Creek Watershed District  
 Federal Fiscal Years 2018 and 2019

**Table 2. Program and cost summary for FY18, including credit for samples not collected in FY17**

Task Number	Task	Total	USGS Matching Funds	MCWD Share
(1)-A	Streamgage O&M, Minnehaha Cr	\$16,800	\$7,900	\$8,900
(1)-B	Continuous Sp Cond & Temp, Minnehaha Cr	\$7,290	\$3,450	\$3,840
(1)-C	Autosamples (6), Minnehaha Cr	\$7,749	\$1,550	\$6,199
(2)	Gage O&M, Lake Minnetonka	\$3,875	\$1,050	\$2,825
	<b>SUBTOTAL</b>	<b>\$35,714</b>	<b>\$13,950</b>	<b>\$21,764</b>
(1)-C	Credit for uncollected FY17 autosamples (6)	(\$7,749)	(\$1,550)	(\$6,199)
	<b>TOTAL</b>	<b>\$27,965</b>	<b>\$12,400</b>	<b>\$15,565</b>

**Table 3. Program and cost summary for FY19**

Task Number	Task	Total	USGS Matching Funds	MCWD Share
(1)-A	Streamgage O&M, Minnehaha Cr	\$16,980	\$7,900	\$9,080
(1)-B	Continuous Sp Cond & Temp, Minnehaha Cr	\$7,420	\$3,500	\$3,920
(1)-C	Autosamples (6), Minnehaha Cr	\$7,900	\$1,580	\$6,320
(2)	Gage O&M, Lake Minnetonka	\$3,950	\$1,070	\$2,880
<b>TOTAL</b>	<b>TOTAL</b>	<b>\$36,250</b>	<b>\$14,050</b>	<b>\$22,200</b>

**Table 4. Program and cost summary for FY 18-19 combined**

Task Number	Task	Total	USGS Matching Funds	MCWD Share
(1)-A	Streamgage O&M, Minnehaha Cr	\$33,780	\$15,800	\$17,980
(1)-B	Continuous Sp Cond & Temp, Minnehaha Cr	\$14,710	\$6,950	\$7,760
(1)-C	Autosamples (12) Minnehaha Cr	\$7,900	\$1,580	\$6,320
(2)	Gage O&M, Lake Minnetonka	\$7,825	\$2,120	\$5,705
<b>TOTAL</b>	<b>TOTAL</b>	<b>\$64,215</b>	<b>\$26,450</b>	<b>\$37,765</b>