

Upper Rum River Watershed Management Organization (URRWMO) Watershed Management Plan

Water Quality Monitoring Plan 2013-2017

Effective date: January 9, 2013 (date of URRWMO Board adoption)

Introduction

The URRWMO monitors water quality to ensure the URRWMO water quality standards are met, detect any trends, and to inform management. Efforts focus on major recreational water bodies including East Twin Lake, Lake George, and the Rum River and its major tributaries. All of these selected waterbodies have good water quality which the URRWMO wants to protect.

The URRWMO adopted a water monitoring plan as part of its 2nd Generation Watershed Management Plan. That monitoring plan covered 2008-2012 and in was to be re-visited and updated for 2013-2017. This updated monitoring plan is consistent with approaches used in 2008-2012 - the sites, frequency, and parameters monitored are largely the same. Any changes are to synchronize efforts with the Lower Rum River WMO or MN Pollution Control Agency, or to put more emphasis on topics of concern.

In 2013-2017 the following types of monitoring will occur:

- Lake water quality
- Lake levels
- Stream water quality
- Stream hydrology
- Biomonitoring of the Rum River
- Reference wetland hydrology

MONITORING SCHEDULE

Type	Site	2013	2014	2015	2016	2017	Notes
Lake WQ	East Twin Lake	1		1		1	
	Lake George	1		1		1	
Lk Ivls	East Twin Lake	1	1	1	1	1	
	Lake George	1	1	1	1	1	
	Coopers Lake	1	1	1	1	1	
	Minard Lake	1	1	1	1	1	
Strm WQ	Rum River at CR 24		1	1	1	1	4 samples/yr.
	Rum River at CR 7		1	1	1	1	Coordinate monitoring with Lower Rum River WMO, split costs. 4 samples/yr.
	Seelye Brook at CR 7	MPCA	1	1	1	1	MPCA WRAPP project in 2013. 4 samples/yr.
	Cedar Creek at CR 9	MPCA	1	1	1	1	MPCA WRAPP project in 2013. 4 samples/yr.
	Ford Brook at CR 63	MPCA	1	1	1	1	MPCA WRAPP project in 2013. 4 samples/yr.
	Crooked Brook at CR 22		MPCA				Dissolved oxygen impairment exists. MPCA plans to study and caclulate a TMDL during their WRAPP project.
Strm Hydro	Rum River at CR 24						
	Rum River at CR 7						
	Rum River at CR 22	USGS	USGS	USGS	USGS	USGS	
	Seelye Brook at CR 7						Spot measurements of stage taken as part of water quality sampling.
	Cedar Creek at CR 9						Spot measurements of stage taken as part of water quality sampling.
	Ford Brook at CR 63						Spot measurements of stage taken as part of water quality sampling.
Biomon	Rum River at CR 24	1	1	1	1	1	Done with St. Francis High School classes.
Ref Wtlds	East Twin Ref Wtld	1	1	1	1	1	
	Lake George Ref Wtld	1	1	1	1	1	
	Alliant Tech Ref Wtld						
	Cedar Ref Wtld	1	1	1	1	1	
	Viking Ref Wtld						

ESTIMATED COSTS

Type	Site	2013	2014	2015	2016	2017
Lake WQ	East Twin Lake	\$1,250		\$1,326		\$1,407
	Lake George	\$1,250		\$1,326		\$1,407
Lk lvls	East Twin Lake	\$200	\$250	\$258	\$265	\$273
	Lake George	\$200	\$250	\$258	\$265	\$273
	Coopers Lake	\$200	\$250	\$258	\$265	\$273
	Minard Lake	\$200	\$250	\$258	\$265	\$273
Strm WQ	Rum River at CR 24		\$1,313	\$1,352	\$1,392	\$1,434
	Rum River at CR 7		\$1,313	\$1,352	\$1,392	\$1,434
	Seelye Brook at CR 7	MPCA	\$1,313	\$1,352	\$1,392	\$1,434
	Cedar Creek at CR 9	MPCA	\$1,313	\$1,352	\$1,392	\$1,434
	Ford Brook at CR 63	MPCA	\$1,313	\$1,352	\$1,392	\$1,434
	Crooked Br at CR 22		MPCA			
Strm Hydro	Rum River at CR 24					
	Rum River at CR 7					
	Rum River at CR 22	USGS	USGS	USGS	USGS	USGS
	Seelye Brook at CR 7					
	Cedar Creek at CR 9					
	Ford Brook at CR 63					
Biomon	Rum River at CR 24	\$825	\$850	\$875	\$901	\$929
Ref Wtlds	East Twin Ref Wtld	\$560	\$577	\$594	\$612	\$630
	Lake George Ref Wtld	\$560	\$577	\$594	\$612	\$630
	Alliant Tech Ref Wtld					
	Cedar Ref Wtld	\$560	\$577	\$594	\$612	\$630
	Viking Ref Wtld					
	TOTAL	\$5,805	\$10,143	\$13,099	\$10,760	\$13,897

MONITORING HISTORY AND METHODS

Lake Water Quality Monitoring

2008-2012 monitoring - The URRWMO monitored Lakes George and East Twin every other year.

Methods - Monitor every other week from May to September. Minimum parameters are total phosphorus, chlorophyll-a, and secchi transparency. Monitoring shall take place at the deepest spot in each lake, consistent with past monitoring efforts.

Lake Levels

2008-2012 monitoring - The URRWMO supported volunteer monitoring of lake levels annually. Coopers and Minard Lakes were added in 2011 due to water level concerns.

Methods - Staff gauge surveyed by MN DNR and Anoka Conservation District staff and read by volunteers during ice-free conditions. Weekly readings are requested.

Stream Water Quality

2008-2012 monitoring -

The URRWMO monitored the Rum River in 2009-2011 to build a baseline of data. The tributaries of Seelye, Cedar, and Ford Brooks were monitored in 2011.

Methods -

Monitor on four occasions per year typically including three scheduled samplings and one event-based (high or low flow). Minimum parameters are total phosphorus, total suspended solids, chlorides, pH, conductivity, turbidity, dissolved oxygen, and temperature. Sulfates and hardness may be added if these are incorporated (or are about to be incorporated) into the calculations for state chloride standards (additional fees will likely apply). Stream level will be recorded on each sampling occasion.

Notes -

Schedule may be altered to reflect the findings and recommendations of the MPCA's Watershed Restoration and Protection Plan.

Stream Hydrology

2008-2012 monitoring -

Continuous stream hydrology monitoring last occurred in 2007 for most streams. The USGS operates a flow monitoring station for the Rum River at Viking Blvd every year, year round.

Methods -

Electronic, datalogging stream gauges are used to measure stream water level every two hours. Rating curves to calculate flow may be developed.

Notes -

Schedule may be altered to reflect the findings and recommendations of the MPCA's Watershed Restoration and Protection Plan.

River Biomonitoring

2008-2012 monitoring -

Annual monitoring in cooperation with St. Francis High School classes. The URRWMO first began funding this work in 2012 to make up for lost funding elsewhere that was threatening the program.

Methods -

Invertebrate monitoring occurs in spring or fall using the EPA's multihabitat method. Invertebrates are identified to the family level and indices of river health are calculated. This is primarily an educational program with St. Francis High School classes.

Reference Wetland Hydrology

2008-2012 monitoring -

All sites have been monitored for 10+ years. They are part of a network of 18 such sites county-wide that assist with hydrological understanding and accurate wetland regulatory determinations. The URRWMO first funded two of the five sites in 2012.

Methods -

Electronic, datalogging gauges are used to measure subsurface water levels at the wetland edge every four hours.

DEVIATIONS

The URRWMO may deviate from this plan in order to best accomplish management goals and allocate financial resources to the highest priorities.

EXPIRATION

This monitoring plan will expire in 2017 with the 2nd Generation URRWMO Watershed Management Plan.

Upper Rum River WMO Water Monitoring 2013-2017 Monitoring Sites

