Stream Water Quality




Description

Stream water quality monitoring was conducted with the purpose of detecting water quality trends and diagnosing the cause of changes. Summary sheets for each stream are provided below. Additional data and trend analysis can be found on the Anoka Conservation District's Water Almanac:

https://www.anokaswcd.org/water-almanac.html

Locations

- Typo Creek
- Sunrise River West Branch
- Linwood Lake Tributaries
- Rum River & Tributaries
- Coon Creek & Tributaries
- Sand Creek & Tributaries
- Pleasure Creek
- Springbrook Creek

Monitoring Schedule

Dependent on site

Parameters

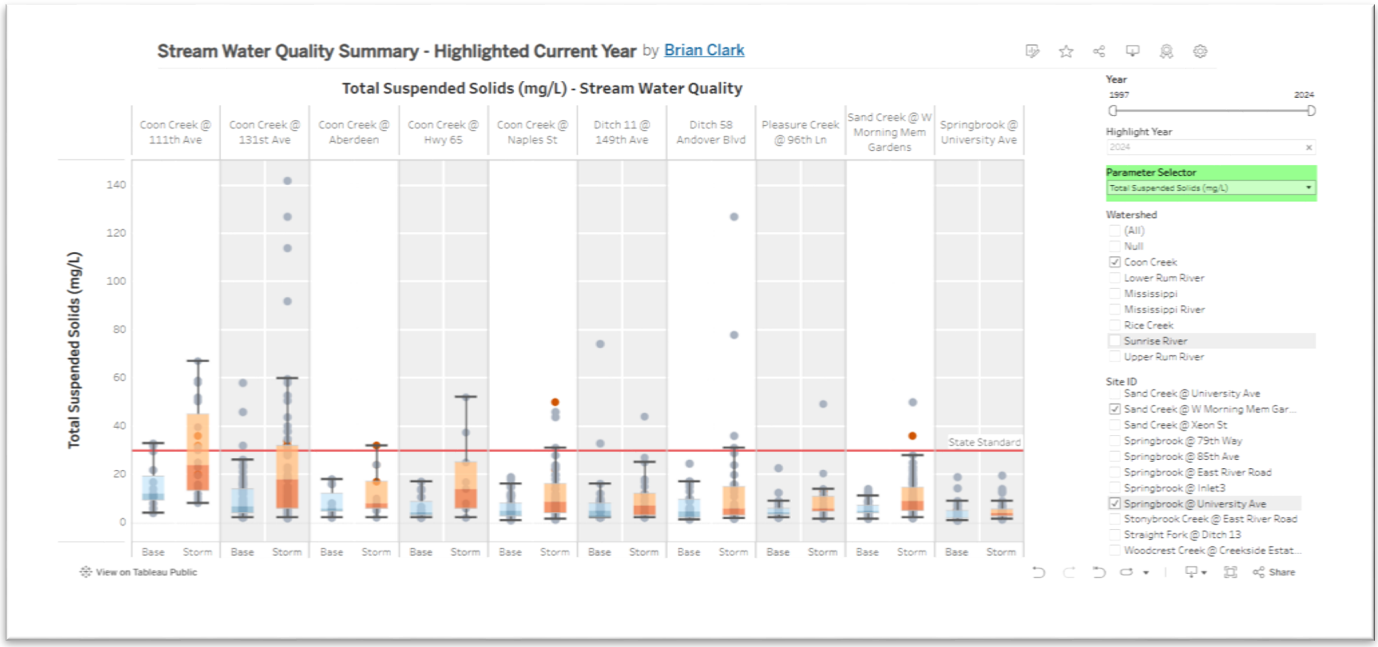
Dependent on site, but includes:

- Total Phosphorous
- Total Dis. Phosphorous
- Total Susp. Solids
- Dissolved Oxygen
- Turbidity
- Temperature
- Specific Conductance
- Transparency
- pH
- Salinity
- Chlorides
- E. coli
- Hardness
- Sulfate
- Flow
- Stage

ANOKA CONSERVATION DISTRICT

Tableau - How To View Data

The Anoka Conservation District uses Tableau to visualize our stream water quality data. Historical and current data can be viewed through [ACD's Tableau Graph for Stream Water Quality.]



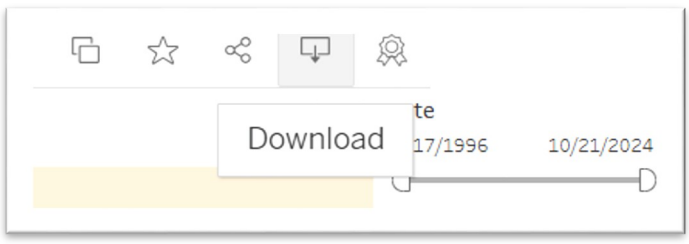
To view a specific dataset of a particular site, check its respective box on the right side of the graph under the "Site ID" table. Filtering by "Watershed" will limit the available sites in this table to the selected watersheds.

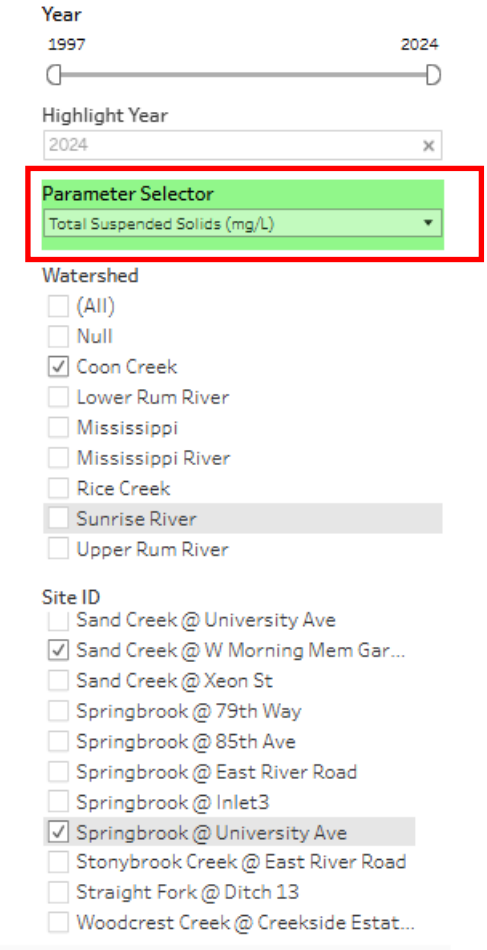
Additionally, the data can be filtered by a specific year or range of years using the slider on the top right of the graph.

Use the "Parameter Selector" tool to switch between graphs of different parameters.

Use the "Highlight Year" tool to highlight data from a specific year. Data collected this year is colored in red.

Additionally, the full dataset or filtered portions of the dataset can be downloaded through Tableau. To download data, click the image shown below on the top ribbon of the graph.





Typo Creek

2024 Stream Water Quality Summary

Sunrise River Watershed Management Organization

Background

The northern inlet to Martin Lake, also called Typo Creek, flows south from the outlet of Typo Lake about 1.9 miles where it enters into Martin Lake. This creek is the primary inlet to Martin Lake. The watershed is mostly undeveloped. Upstream water quality projects including carp barriers and carp harvests are aimed at improving water quality in this stream and the Sunrise River chain of lakes. Typo Creek connects Typo Lake and Martin Lake, both listed as impaired for excess nutrients, but can also be viewed as part of the West Branch of the Sunrise River which inlets into Typo Lake and outlets from Martin Lake eastward.

In 2024, water quality monitoring was completed by the Anoka Conservation District at one site to detect and identify water quality trends.

Sites monitored in 2024 include:

- Typo Creek @ Typo Creek Dr. (southern crossing)

Grab samples were collected on four sampling occasions - half during baseflow conditions and half following storm events (generally defined as 1”+ rainfall in 24-hour period).

Parameters tested with portable meters included pH, specific conductivity, turbidity, temperature, dissolved oxygen, and salinity. Parameters tested by lab samples include total phosphorous and total suspended solids.

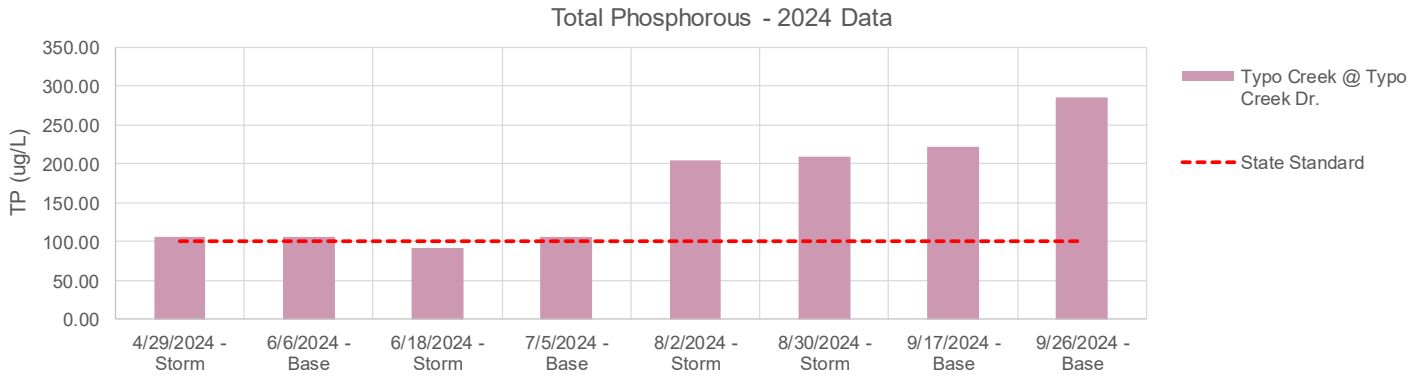
Typo Creek - Summary

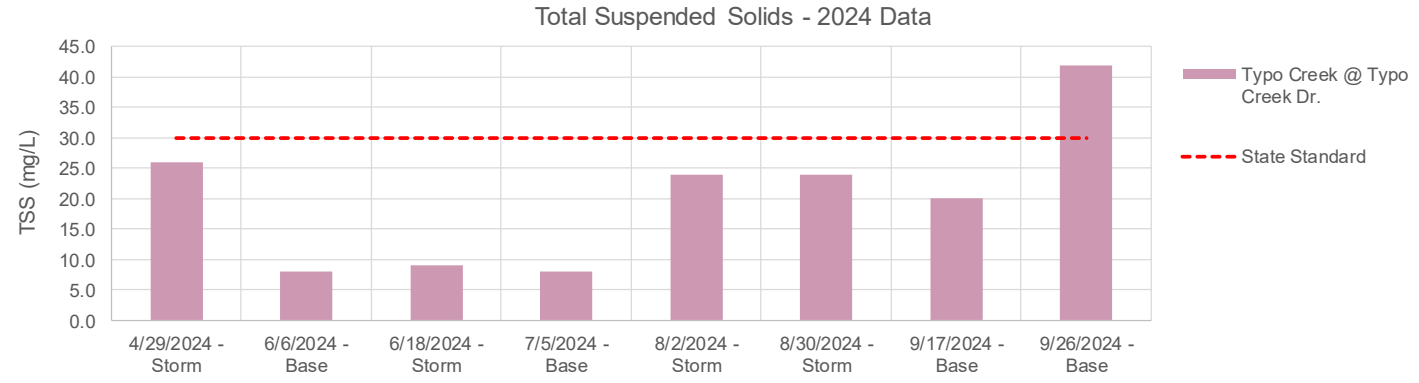
A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality.

In general, Typo Creek has high phosphorous levels and low dissolved oxygen levels, but total suspended solids have improved compared to historical averages.

- Dissolved pollutants, as measured by specific conductivity, are at low and healthy levels. However, specific conductivity in 2024 was higher than previous monitoring years, especially during baseflow conditions.
- Phosphorus loading and eutrophication remains the largest concern for Typo Creek. Total phosphorus (TP) levels in the creek routinely exceed state impairment standards. TP levels in 2024 were higher than the historical average during both baseflow and post-storm events. High phosphorus levels in Typo Creek are reflective of conditions in Typo Lake immediately upstream and then Typo Creek phosphorus is discharged into Martin Lake, immediately downstream.
- Suspended solids and turbidity remain a problem in Typo Creek and are directly related to the issues causing excessive nutrient loading. However, both of these parameters have shown significant improvement compared to the historical average.
- pH, on average, was within the range considered normal and healthy for streams in this area in 2024. Previous monitoring years' pH was outside the range that is considered healthy. A likely explanation for the pH improvement is the reduction in nutrient eutrophication that has occurred in Typo Lake.
- Dissolved oxygen (DO) remains lower in Typo Creek than would be ideal. In 2024, nearly all measurements were below the state standard. The excessive nutrients and algal growth, and subsequent decomposition, is likely driving low DO.

Typo Creek @ Typo Creek Dr.		
Parameter	2024 Average	Historical Average (1998-2022)
pH	7.26	7.78
Sp. Cond (mS/cm)	0.306	0.299
Turbidity (NTU)	14.0	41.0
DO (mg/L)	2.6	7.5
TP (ug/L)	166	161
Chloride (mg.L)	N/A	8.5
TSS (mg/L)	20.1	30.4





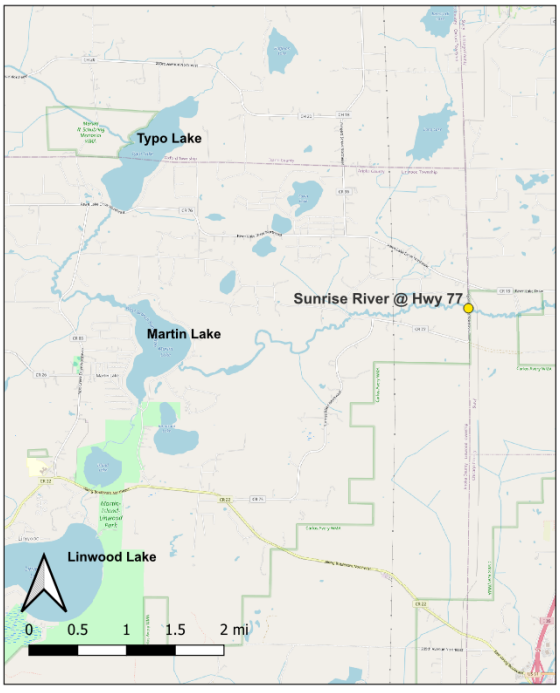
Sunrise River

2024 Stream Water Quality Summary

Sunrise River
Watershed Management Organization

Background

The West Branch of the Sunrise River flows eastward from the outlet of Martin Lake. Upstream, it drains through Rice, Boot, Linwood, Island, Martin, and Typo Lake. The Sunrise River Watershed Management Organization (SRWMO) historically monitors the most downstream extent of the Sunrise River Watershed in Anoka County at the Chisago County border. Additionally, monitoring is considered important because this portion of the river is impaired for aquatic life with turbidity identified as a stressor.



In 2024, water quality monitoring was completed by the Anoka Conservation District at one site to detect and identify water quality trends.

Sites monitored in 2024 include:
· Sunrise River West Branch @ Hwy 77

Grab samples were collected on four sampling occasions - half during baseflow conditions and half following storm events (generally defined as 1”+ rainfall in 24-hour period).

Parameters tested with portable meters included pH, specific conductivity, turbidity, temperature, dissolved oxygen, and salinity. Parameters tested by lab samples include chlorides.

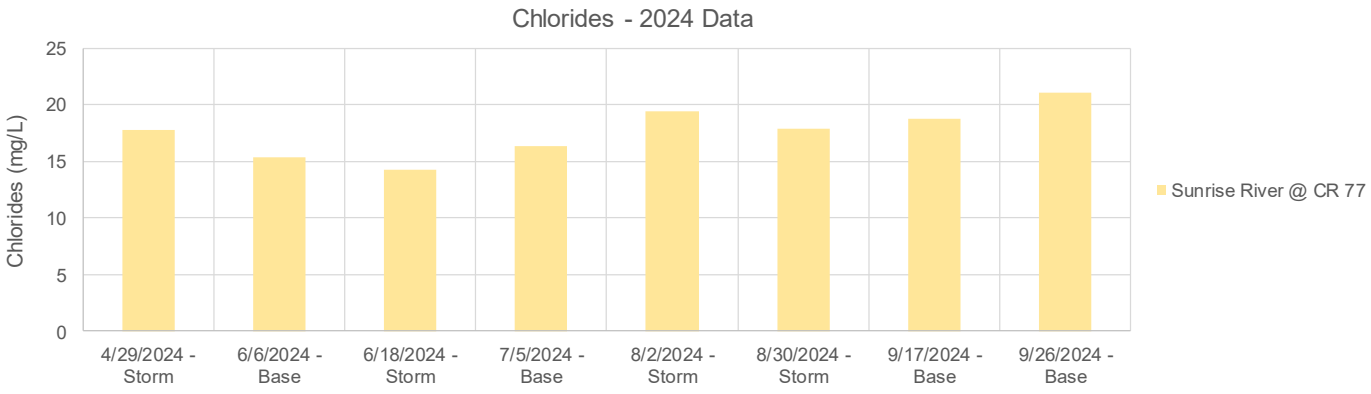
Sunrise River - Summary

A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality.

In general, the Sunrise River has low dissolved oxygen levels, but water quality has overall improved over recent years.

- Dissolved pollutants, as measured by specific conductivity and chlorides, are at low and healthy levels. Chlorides been measured at this site in all monitoring years except in 2015. In 2024, the average chloride concentration was slightly lower than the average concentration in 2020. This value is also slightly lower than the historical average across previous years.
- Total phosphorus levels were not sampled in 2024, but levels have historically fluctuated above and below the water quality standard. The median total phosphorous for all years at this site is slightly below this standard.
- Suspended solids were not sampled in 2024, but levels have historically been below the water quality standard. However, these levels are higher than most other Anoka County streams.
- Turbidity results in 2024 were much lower than the historical average.
- pH, on average, was within the range considered normal and healthy for streams in this area in 2024.
- Dissolved oxygen (DO) remains lower at this site than would be ideal. In 2024, nearly all measurements were below the state standard and the historical average for this site.

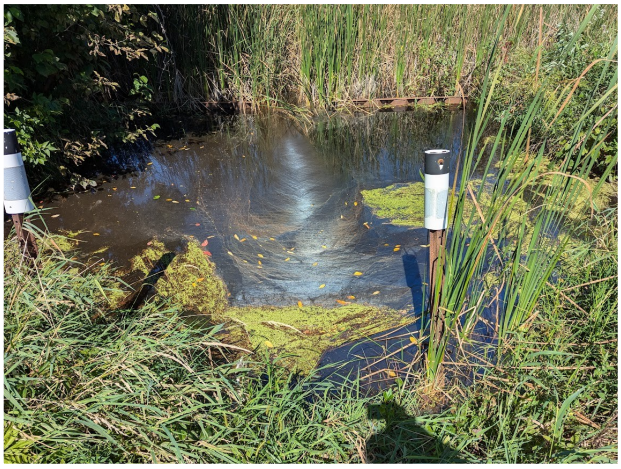
Sunrise River @ Hwy 77		
Parameter	2024 Average	Historical Average (2001-2020)
pH	7.24	7.69
Sp. Cond (mS/cm)	0.302	0.305
Turbidity (NTU)	3.5	18.8
DO (mg/L)	3.28	8.06
TP (ug/L)	N/A	99.8
Chloride (mg.L)	17.6	18.1
TSS (mg/L)	N/A	23.2



Linwood Lake Tributaries

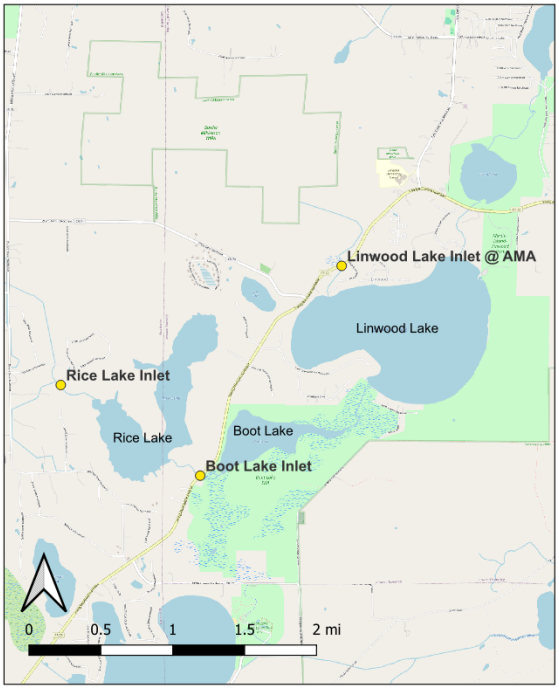
2024 Stream Water Quality Summary

Sunrise River Watershed Management Organization



Background

Linwood Lake is listed as impaired for aquatic recreation with excessive nutrients identified as a stressor. The Linwood Lake watershed is composed of three distinct subwatersheds, therefore one site was selected per subwatershed to represent the water quality conditions of that particular subwatershed. The purpose was to identify subwatersheds with the greatest phosphorous concentrations, thereby determining if a subwatershed analysis study should be conducted to identify and rank water quality improvement projects.



In 2024, water quality monitoring was completed by the Anoka Conservation District at three sites to detect and identify water quality trends.

Sites monitored in 2024 include:

- Rice Lake Inlet
- Linwood Lake Inlet @ AMA
- Boot Lake Inlet

Grab samples were collected on four sampling occasions - half during baseflow conditions and half following storm events (generally defined as 1”+ rainfall in 24-hour period).

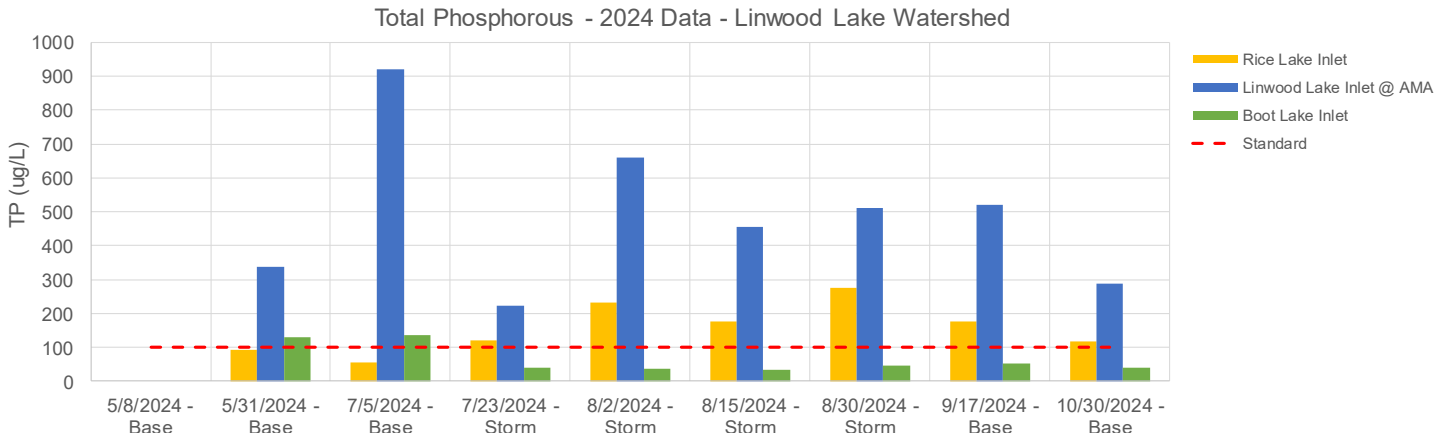
Parameters tested with portable meters included pH, specific conductivity, turbidity, temperature, dissolved oxygen, and salinity. Parameters tested by lab samples include total phosphorous and total dissolved phosphorous.

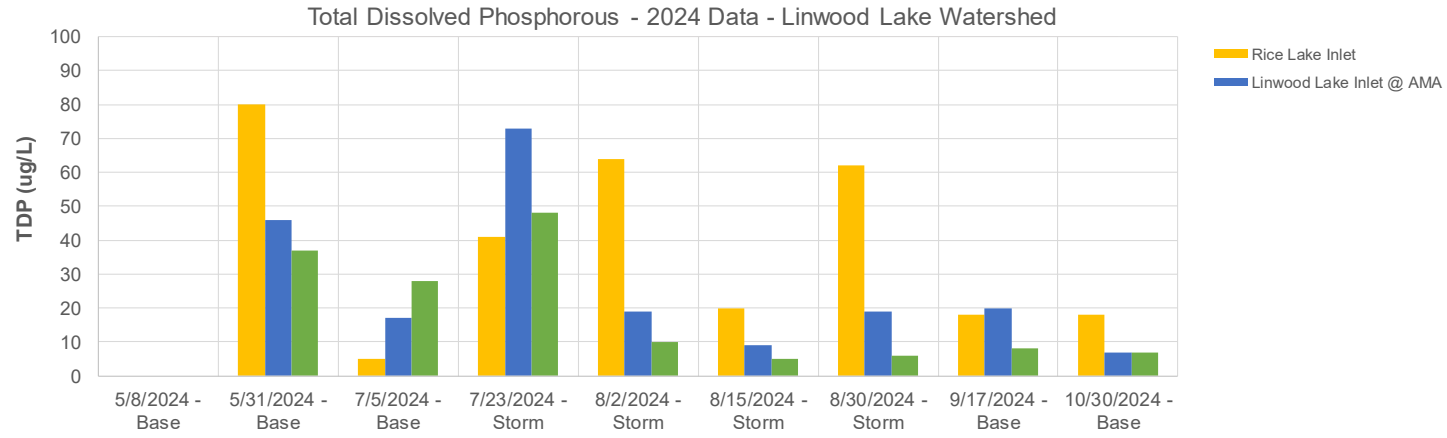
Linwood Lake Tributaries - Summary

A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality. Additional information on the Linwood Lake tributary monitoring results and recommendations for improvement can be found in the Linwood Lake Tributaries Water Quality Analysis Report.

- Dissolved pollutants, as measured by specific conductivity, are at healthy levels, but were occasionally elevated throughout the monitoring season.
- Total phosphorus levels were generally above state standards at Rice Lake Inlet and Linwood lake Inlet @ AMA, but not at Boot Lake Inlet. TP levels were much higher at the Linwood Lake Inlet @ AMA site than at any other site. This site is immediately downstream of the DNR's aquatic management area pond with a slow discharge. Total dissolved phosphorous only makes up a small portion of total phosphorous at these sites except for a couple occasions
- Suspended solids were not monitored in 2024.
- Turbidity levels were acceptable, but were occasionally elevated throughout the monitoring season.
- pH, on average, was within the range considered normal and healthy for streams in this area in 2024.
- Dissolved oxygen (DO) levels in 2024 were almost entirely below the state standard. The low DO levels are likely the result of decomposition in adjacent wetlands. The water has a lot of contact with decaying organic matter which can strip the water of oxygen.

	2024 Average		
Parameter	Rice Lake Inlet	Linwood Lake @ AMA	Boot Lake Inlet
pH	7.17	6.85	6.96
Sp. Cond (mS/cm)	0.384	0.233	0.279
Turbidity (NTU)	8.1	11.2	6.9
DO (mg/L)	2.95	1.17	2.58
TP (ug/L)	156.1	488.8	64.4
Chloride (mg.L)	N/A	N/A	N/A
TSS (mg/L)	N/A	N/A	N/A
TDP (ug/L)	38.5	26.3	18.6



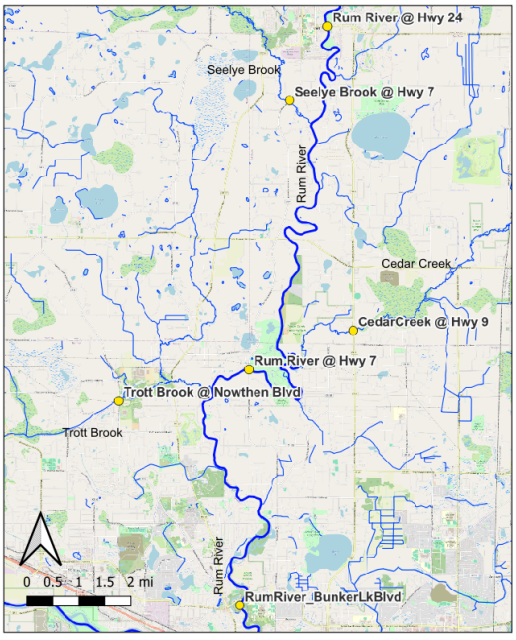


Rum River & Tributaries

2024 Stream Water Quality Summary

Background

The Rum River is one of Anoka County's most valuable water resources. The river is designated as a state "scenic and recreational" river until it reaches southern Anoka County and is used extensively for all types of recreation. A large portion of western Anoka County drains to the Rum River including the subwatershed of Seelye Brook, Trott Brook, Ford Brook, and Cedar Creek.



In 2024, water quality monitoring was completed by the Anoka Conservation District at six sites to detect and identify water quality trends.

Sites monitored in 2024 include:

- Rum River at Hwy 24
- Rum River at Bunker Lake Blvd.
- Seelye Brook at Hwy 7
- Cedar Creek at Hwy 9
- Rum River at Hwy 7
- Trott Brook at Nowthen Blvd.

Grab samples at Rum River @ Hwy 7 were collected on four sampling occasions - half during baseflow conditions and half following storm events (generally defined as 1"+ rainfall in 24-hour period). The remaining sites were collected during baseflow conditions.

Parameters tested with portable meters included pH, specific conductivity, turbidity, temperature, dissolved oxygen, and salinity. Parameters tested by lab samples include total phosphorous, total suspended solids, chlorides, chlorophyll-a, hardness, sulfate, and *E. coli*.

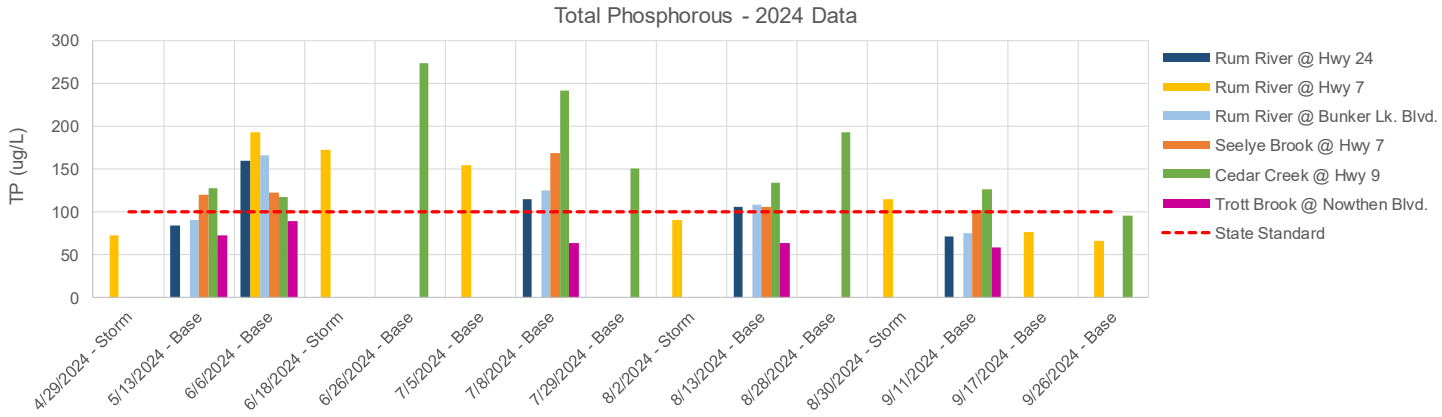
Rum River & Tributaries - Summary

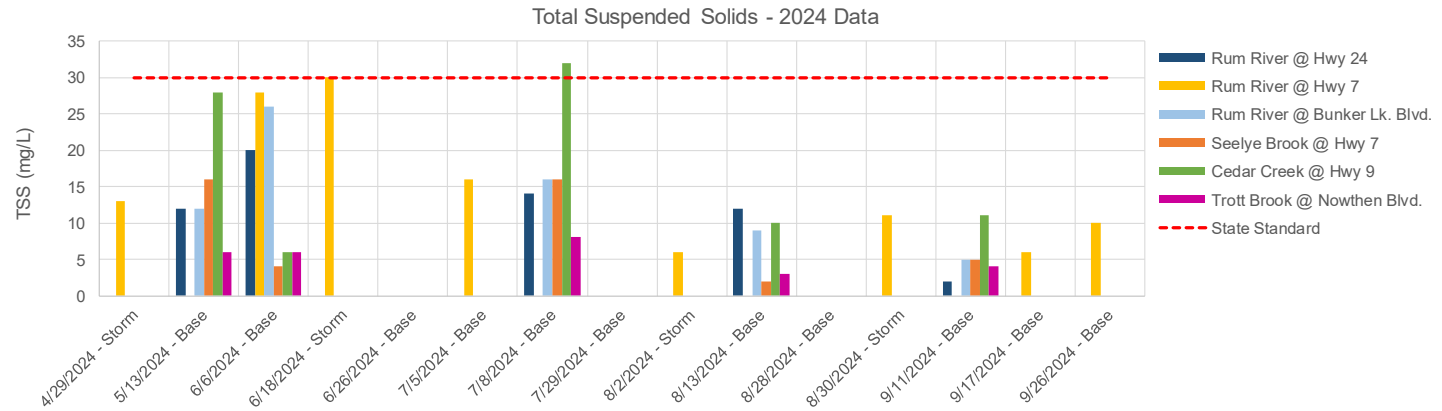
A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality.

In general, the Sunrise River has low dissolved oxygen levels, but water quality has overall improved over recent years.

- Dissolved pollutants, as measured by specific conductivity and chlorides, are at low and healthy levels. However, both specific conductivity and chloride levels were higher in 2024 than previous monitoring years. Management discussion: Chlorides are a regional concern and proactive measures to ensure it does not become elevated in the Rum River watershed is recommended. Periodic monitoring every 2-5 years is recommended.
- Phosphorus loading levels recent years have regularly exceeded the state standard of 100 µg/L at most sampled sites, but on average have been slightly lower than this threshold. 2024 averages were slightly higher than historical averages. Reducing phosphorus levels in the Rum River is a regional priority.
- Suspended solids and turbidity remained at acceptable levels in the Rum River and its monitored tributaries. Robust stormwater treatment within new developments and continued surveillance monitoring is recommended.
- pH, on average, was within the range considered normal and healthy for streams in this area.
- Dissolved oxygen (DO) remained above the state standard of 5 mg/L.

Rum River @ Hwy 7		
Parameter	2024 Average	Historical Average (2004-2023)
pH	7.76	7.84
Sp. Cond (mS/cm)	0.309	0.252
Turbidity (NTU)	6.4	9.4
DO (mg/L)	7.64	8.91
TP (ug/L)	117.3	96.1
Chloride (mg.L)	13.9	13.0
TSS (mg/L)	15.0	8.2





Rum River & Tributaries - Summary (cont.)

In 2024, the Anoka Conservation District secured funds through a Minnesota Pollution Control Agency (MPCA) surface water assessment grant (SWAG) to monitor the Anoka County portion of the Rum River watershed. The five selected sites have historically been monitored by ACD in the past.

The tables below summarize the water quality monitoring data collected over time. Further analysis and reporting will be accomplished by MPCA in coming years.

Cedar Creek @ Hwy 9		
Parameter	2024 Average	Historical Average
pH	7.56	7.88
Sp. Cond (mS/cm)	0.41	0.41
Turbidity (NTU)	7.19	11.90
DO (mg/L)	6.56	9.00
TP (ug/L)	161.89	150.67
Chloride (mg.L)	29.40	22.61
TSS (mg/L)	17.40	15.81
Chl-a (mg/L)	3.42	N/A
E. coli	299.40	216.24
Hardness (mg/L CaCO3)	177.00	171.99
Sulfate (mg/L)	N/A	19.59

Rum River @ Bunker Lk. Blvd.		
Parameter	2024 Average	Historical Average (1998-2023)
pH	7.82	8.06
Sp. Cond (mS/cm)	0.30	0.32
Turbidity (NTU)	5.27	8.59
DO (mg/L)	7.41	8.33
TP (ug/L)	113.00	134.50
Chloride (mg.L)	13.30	11.99
TSS (mg/L)	13.60	9.57
Chl-a (mg/L)	N/A	3.66
E. coli	132.98	47.82
Hardness (mg/L CaCO3)	116.00	119.18
Sulfate (mg/L)	N/A	12.39

Seelye Brook @ Hwy 7		
Parameter	2024 Average	Historical Average (1998-2023)
pH	7.67	7.84
Sp. Cond (mS/cm)	0.28	0.44
Turbidity (NTU)	5.03	6.74
DO (mg/L)	7.45	8.11
TP (ug/L)	107.20	138.05
Chloride (mg.L)	11.90	26.89
TSS (mg/L)	12.00	7.28
Chl-a (mg/L)	N/A	N/A
E. coli	102.27	357.69
Hardness (mg/L CaCO3)	106.00	175.28
Sulfate (mg/L)	N/A	15.43

Rum River @ Hwy 24		
Parameter	2024 Average	Historical Average (2001-2023)
pH	7.57	7.84
Sp. Cond (mS/cm)	0.41	0.31
Turbidity (NTU)	3.51	13.75
DO (mg/L)	6.02	8.92
TP (ug/L)	124.00	99.71
Chloride (mg.L)	26.60	11.06
TSS (mg/L)	8.60	8.53
Chl-a (mg/L)	N/A	N/A
E. coli	344.65	N/A
Hardness (mg/L CaCO3)	172.00	126.00
Sulfate (mg/L)	N/A	11.51

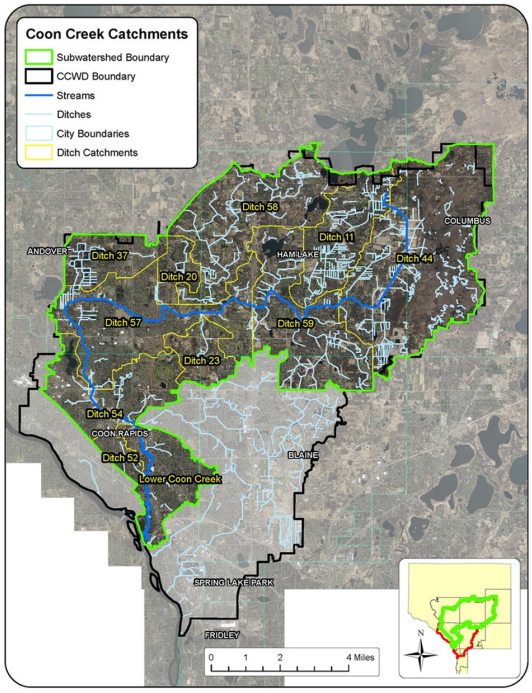
Trott Brook @ Nowthen Blvd.		
Parameter	2024 Average	Historical Average (1998-2023)
pH	7.52	7.70
Sp. Cond (mS/cm)	0.52	0.51
Turbidity (NTU)	1.24	4.35
DO (mg/L)	6.09	6.23
TP (ug/L)	69.20	113.86
Chloride (mg.L)	27.60	20.23
TSS (mg/L)	5.40	11.03
Chl-a (mg/L)	N/A	1.78
E. coli	51.83	76.70
Hardness (mg/L CaCO3)	240.00	209.81
Sulfate (mg/L)	13.27	16.34

Coon Creek & Tributaries

2024 Stream Water Quality Summary

COON CREEK WATERSHED DISTRICT

Background



Coon Creek and its tributaries drain approximately 49,000 acres through central Anoka County. The mainstem of Coon Creek starts as a ditched channel (Ditch 44) in northeastern Ham Lake. Ditch 44 flows southwest, draining Ham Lake, southern Andover, western Blaine, and much of Coon Rapids, before joining the Mississippi River near the Coon Rapids Dam. Land-use changes from primarily rural agriculture and residential in the northern portions of Ham Lake, to denser suburban residential and commercial development through the cities of Andover and Coon Rapids. Open channel ditch systems drain the upstream portions of the watershed, while the downstream parts of the watershed primarily drain through subsurface stormwater infrastructure before it outlets into Coon Creek. The rural ditch systems drain agricultural and residential lands into Coon Creek.

Coon Creek is listed as an impaired water for aquatic recreation due to elevated levels of E. coli bacteria and aquatic life due to poor invertebrate and fish communities. TSS and TP have been identified as primary stressors to the local invertebrate and fish communities and concentrations of both often exceed established water quality standards. Poor habitat and altered hydrology have also been identified as stressors of the biotic community as well as barriers to connectivity. Pending 2024 impairments include TSS and dissolved oxygen for Coon Creek, E. coli and dissolved oxygen for Ditch 11, and E. coli for Ditch 58.

Coon Creek & Tributaries - Summary

Coon Creek Subwatershed Monitoring Sites		
Site Name/ Site ID	**Years Monitored**	**2024 Data Collected**
Coon Cr at Lexington Blvd S007-539	2013-2016	
Coon Cr at Naples St S007-057	2012-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Ditch 11 at Naples St (tributary)	2022	
Ditch 11 at 149st Ave (tributary) S007-541	2013-2017, 2020-2022	
Ditch 59-4 at Bunker Blvd (tributary) S005-262	2022	
Coon Cr at Aberdeen St S016-441	2021-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Coon Cr at Hwy 65 S005-259	2018-2020	
Ditch 58 at Andover Blvd (tributary) S005-830	2001-2018, 2020-2023	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Coon Cr at Prairie Rd. S007-540	2013, 2017, 2018, 2020	
Ditch 20 at Andover Blvd (tributary) S016-392	2020-2021, 2023	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Ditch 37 at Raven St. (tributary) S017-199	2021, 2023	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Ditch 37 at 149th Ave. (tributary) S015-267	2021, 2023	Water Chemistry Grab Samples, Continuous Stage
Coon Cr at 131st Ave S005-257	2010-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Coon Cr at Lions Park (Hanson Blvd) S004-171	2007-2017	
Sand Cr at Xeon St. (tributary)	2007-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Coon Creek at 111th Ave S007-559	2018-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Ditch 52 at Robinson (tributary) S015-117	2018, 2021-2023	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Woodcrest Creek at Creekside Estates / Wintergreen St S016-393	2020, 2023	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Coon Cr at Vale St S003-993	2005-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements

Coon Creek & Tributaries - Summary

A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality.

- Dissolved pollutants, as measured by specific conductivity, are higher in the downstream reaches of the Coon Creek system, where there is denser development. Dissolved pollutant levels in the upstream portions of Coon Creek, during all conditions, are above average compared to other local streams.
- Management approaches will likely differ in the upper and lower portions of the watershed. Fertilizer associated with agricultural operations may be a substantial contributor to high conductivity in the upper reaches. Throughout the watershed, best management practices for road deicing should be a management focus.

- Total phosphorus levels in Coon Creek often exceed the state standard of 100 µg/L, especially after storm events. TP has been identified as a primary stressor to impaired biota. All of the headwater ditch systems monitored in 2023 (Ditch 20, Ditch 58, and Ditch 37) generally had higher TP concentrations than what was observed in the mainstem of Coon Creek, especially following storms. The relative impact of these systems on the water quality of Coon Creek depends on the relative proportion of flow and pollutant loading from each system. It is likely that other unmonitored ditches in the headwaters of Coon Creek are also contributing to high TP concentrations in Coon Creek. Supplemental ortho-phosphorus (OP) samples were collected in 2024 at Coon Creek at Vale St. The average OP concentration in 2024 during baseflow was 39.5% of average TP. For event based samples, the average OP concentration was 13.7% of average TP. This indicates that the majority of phosphorus in Coon Creek is particle-bound.
- A holistic management approach is likely required including the implementation of water storage and agricultural BMPs. The CCWD has made substantial financial investments into stormwater treatment and other water quality improvement projects in the lower portion of the watershed. These efforts seem to be indicating successes towards reducing phosphorus levels in Coon Creek. Best management practices (BMPs) to address phosphorus loading would be beneficial watershed-wide, but would be especially impactful in the upper portions of the watershed. Additional monitoring of the Ditch 37 system would be informative to observe trends and identify potential phosphorus reduction BMPs.

- Total Suspended Solids identified as a stressor for aquatic macroinvertebrates and fish in the creek. As of 2024, Coon Creek is also listed as impaired for excess TSS directly. TSS concentrations in Coon Creek follow a similar pattern to TP, but normally stay below the state standard of 30 mg/L and are generally higher in the lower catchments compared to headwater tributaries. Historically, exceedances during baseflow conditions are rare, while exceedances following storm events are common in the middle and lower reaches.
- Grab samples collected provide similar evidence that TSS concentrations only occasionally exceed the state standard following storm events. Trend analyses over time at Vale St do not indicate significant improvements or declines, but data visualizations reveal modest improvements in event based TSS concentrations over time.
- While TSS concentrations at Coon Creek at Vale St generally remain under 30 mg/L, it should be noted that significant increases in TSS concentrations, upstream to downstream, are occurring and should be a high priority for management. Stabilizing eroding streambanks offer a good starting point for reducing both TSS and TP loading into Coon Creek. Management efforts should be explored to minimize rapid fluctuations in flow and discharge in the tributary ditch systems during storm events. Additionally, as the upper portions of the watershed develop, it is important to continue enforcing stormwater regulations and ensuring compliance with construction BMPs is met.

- Turbidity levels were acceptable, but were occasionally elevated throughout the monitoring season.

- pH, on average, was within the range considered normal and healthy for streams in this area in 2024.

- Ecoli concentrations regularly exceeded the chronic standard of 126 MPN at all monitoring sites. Concentrations were significantly higher and more variable compared to what was observed during baseflow conditions. Mainstem Coon Creek is listed as impaired for aquatic recreation due to E. coli while Ditch 11 and Ditch 58 have pending E. coli impairments for 2024. The E. coli LDC in the Coon Creek TMDL shows that the creek often exceeds acceptable E. coli loads during all flow conditions. Sources of E. coli loading can be difficult to identify because E. coli levels fluctuate quickly without requiring any additional bacterial inputs, since E. coli is a living organism that continues to grow. Potential human sources of E. coli loading such as failing septic systems or failing sewer infrastructure are also likely present. While targeted management strategies exist to reduce E. coli, it is often the case that management strategies for TSS and TP are pursued with secondary benefits including the more elusive E. coli.

- Chloride sampling in Coon Creek reveals increasing chloride levels, upstream to downstream, through the Coon Creek system. Because chlorides are a major driver of specific conductivity, the same pollutant loading patterns discussed above are observed for chlorides.

Coon Creek & Tributaries - Summary

Trend Analysis-Coon Creek at Vale St

Parameter	Significant Change in Annual`X (2005-2024)	p=	Standard Error of Means
TP - Baseflow	None	0.92	20.49
TP - Storm	None	0.37	71.95
TSS - Baseflow	None	0.72	3.13
TSS - Storm	None	0.22	34.32

TP	2024 Baseflow Data					2024 Stormflow Data				
	AVG	MED	TOTAL	> 100 µg/L	% EXCEED	AVG	MED	TOTAL	> 100 µg/L	% EXCEED
Coon Creek @ Naples	119.2	127.5	6	3	50.0%	253.5	280.0	4	4	100.0%
Coon Creek @ 131st	129.0	132.0	6	3	50.0%	210.3	226.0	4	4	100.0%
Coon Creek @ Vale	122.7	113.5	5	3	60.0%	181.5	181.0	4	4	100.0%

TP	Historical Baseflow Data					Historical Stormflow Data				
	AVG	MED	TOTAL	> 100 µg/L	% EXCEED	AVG	MED	TOTAL	> 100 µg/L	% EXCEED
Coon Creek @ Naples	67.3	55.5	60	10	16.7%	144.1	112.0	50	27	54.0%
Coon Creek @ 131st	107.2	83.0	68	28	41.2%	182.7	150.5	58	46	79.3%
Coon Creek @ Vale	94.4	82.0	87	28	32.2%	196.3	155.0	78	71	91.0%

ANOVA Matrix TP Storms	Coon Creek at Naples St. n=50	Coon Creek at 131st Ave. n=58	Coon Creek at Vale St. n=78
Coon Creek at Naples St. n=50		No Sig. Change p = 0.068	Significant Increase p = <0.01
Coon Creek at 131st Ave. n=58			No Sig. Change p = 0.405

ANOVA Matrix TP Baseflow	Coon Creek at Naples St. n=60	Coon Creek at 131st Ave. n=68	Coon Creek at Vale St. n=87
Coon Creek at Naples St. n=60		Significant Increase p = < 0.00005	Significant Increase p = < 0.00005
Coon Creek at 131st Ave. n=68			No Sig. Change p = 0.133

TSS	2024 Baseflow Data					2024 Stormflow Data				
	AVG	MED	TOTAL	> 100 µg/L	% EXCEED	AVG	MED	TOTAL	> 100 µg/L	% EXCEED
Coon Creek @ Naples	14.0	14.5	6	0	0.0%	25.0	18.0	4	1	25.0%
Coon Creek @ 131st	16.7	15.0	6	0	0.0%	26.5	32.0	4	3	75.0%
Coon Creek @ Vale	14.3	15.3	5	0	0.0%	31.0	26.4	4	1	25.0%

TSS	Historical Baseflow Data					Historical Stormflow Data				
	AVG	MED	TOTAL	> 100 µg/L	% EXCEED	AVG	MED	TOTAL	> 100 µg/L	% EXCEED
Coon Creek @ Naples	7.6	6.0	60	0	0.0%	12.2	8.9	50	0	0.0%
Coon Creek @ 131st	11.1	7.0	70	3	4.3%	26.0	18.0	58	17	29.3%
Coon Creek @ Vale	11.3	8.2	85	2	2.4%	49.3	32.5	78	40	51.3%

ANOVA Matrix TSS Baseflow	Coon Creek at Naples St. n=60	Coon Creek at 131st Ave. n=70	Coon Creek at Vale St. n=88
Coon Creek at Naples St. n=60		Significant Increase p = <0.0005	Significant Increase p = < 0.001
Coon Creek at 131st Ave. n=70			No Sig. Change p= 0.781

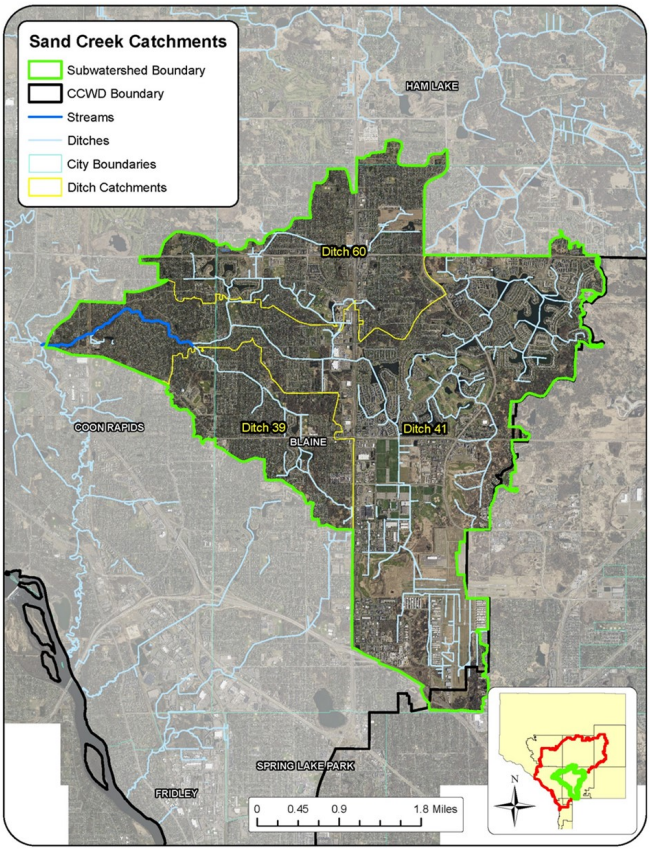
ANOVA Matrix TSS Storms	Coon Creek at Naples St. n=50	Coon Creek at 131st Ave. n=58	Coon Creek at Vale St. n=78
Coon Creek at Naples St. n=50		Significant Increase p = < 0.005	Significant Increase p = <0.001
Coon Creek at 131st Ave. n=58			Significant Increase p = <0.05

Sand Creek & Tributaries

2024 Stream Water Quality Summary

COON CREEK WATERSHED DISTRICT

Background



Sand Creek is the largest tributary to Coon Creek and is comprised of three major ditch systems that join near the border of Blaine and Coon Rapids. Each ditch, although in a similar suburban landscape, has its own unique features and were developed at different times.

Ditch 41 is the primary ditch system in the Sand Creek watershed, draining suburban residential and commercial areas throughout western Blaine. Most of the drainage area was developed under more stringent stormwater regulations. The upstream portion of this system is a complex network of ditch tributaries and man-made basins providing stormwater treatment and landscape aesthetics. After flowing through this residential development, the ditch flows through another series of stormwater ponds in a local golf course and finally through another network of stormwater ponds in the Club West housing development.

The southern portion of the Ditch 41 system drains primarily commercial areas including shopping centers, sport complexes, schools, and small businesses. The Ditch 41 system also drains a large portion of the Anoka County Airport.

Sand Creek & Tributaries

2024 Stream Water Quality Summary

COON CREEK WATERSHED DISTRICT

Background

The Ditch 60 system drains mostly residential neighborhoods of mixed age in northwest Blaine before consolidating into a large system of stormwater ponds. The downstream pond outlets to a short ditched channel that joins Ditch 41 before flowing under University Avenue. Ditch 39 drains residential land primarily developed, prior to stormwater regulations, before crossing University Avenue and emptying into a stormwater pond. This stormwater pond outlets through a culvert connecting with Ditch 41 in the southwest corner of the West Morningside Memorial Gardens Cemetery, just west of University Avenue.

In this report, the section of stream between the confluence of these three ditch systems will be called Sand Creek. Sand Creek flows west approximately two miles through residential neighborhoods. A wooded parkland trail corridor follows along the waterway for much of this reach. At its confluence with Coon Creek, Sand Creek is about 15 ft. wide and 2.5-3 ft. deep during baseflow conditions.

Sand Creek has undergone extension restoration work between Olive St and Xeon Blvd, including the re-meandering of 0.4 miles of previously straightened channel. Additional management included the stabilization of actively eroding streambank, implementing practices such as vegetated riprap, creating new cross vanes and rock riffles in the streambed, installing woody habitat, reconnecting floodplain, and restoring native riparian vegetation. This project reduces pollutant loading from eroding streambanks, allows for more sediment deposition, and enhances wildlife habitat along 1.1 miles of Sand Creek before its confluence with Coon Creek.

Sand Creek is listed as impaired for recreation and aquatic life (fish and invertebrate biota) downstream of West Morningside Memorial Gardens. A TMDL study has been completed with required reductions for E. coli, TSS, and TP pollutants. Additionally, Ditch 41-4 at Radisson Road has a pending 2024 impairment for E. coli.

Sand Creek - Summary

Sand Creek Subwatershed Monitoring Sites		
Site Name/ Site ID	**Years Monitored**	**2024 Data Collected**
Ditch 41 at Radisson Rd. S006-421	2010-2017, 2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Ditch 41 at Highway 65 S005-639	2009-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Ditch 41 at Happy Acres Park, Blaine S005-641	2009	
Ditch 60 at Happy Acres Park, Blaine S005-642	2009, 2019, 2023	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Ditch 41 at University Avenue S005-264	2008	
Ditch 39 at 113th Avenue	2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Ditch 39 at University Avenue S005-638	2009, 2019, 2023-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Sand Creek at Morningside Mem. Gardens S006-420	2010-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements
Sand Creek at Xeon Street S004-619	2007-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements

Sand Creek - Summary

A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality. Additional information on the

- Specific conductivity was higher than conductivity levels recorded in Coon Creek. From a management standpoint, it is important to remember that the source of dissolved pollutants observed during both stormflow and baseflow is the same, and thus preventing the pollutants' initial release into the environment should be the highest priority

- Total phosphorus levels . The Ditch 39 and Ditch 60 systems appear to degrade water quality in Sand Creek, with TP levels at the Ditch 41 at Hwy 65 site being substantially lower than the tributary sites during both baseflow and post-storm conditions. Supplemental OP samples were collected 2024 at Sand Creek at Xeon St. The average OP concentration during baseflow was 41% of average TP. After storms, the average OP concentration was 19% of average TP. Compared to the main stem of Coon Creek, OP loading during storms appears to be slightly elevated indicating extra sources of OP in the system.

- Total Suspended solids concentrations in Sand Creek remain low, with a slight increase after storms. TSS loading in Sand Creek appears to be occurring in the main channel after the confluence of the three ditches, and primarily during periods with high flows. Enhanced street sweeping in the middle and lower catchments of Sand Creek could be considered to reduce TSS loading at its source and to bolster the longevity of implemented rain gardens and other stormwater treatment practices.

- Turbidity levels were acceptable, but were occasionally elevated throughout the monitoring season.

- pH levels in Sand Creek remain within the acceptable range (6.5-8.5). The rare occasions when pH is below or exceeds the state standard should not be concerning.

- Chlorides are a common driver of conductivity levels in urban streams. Since Sand Creek is a densely developed watershed, de-icing salts are increasingly used. Like previous years, chloride concentrations in 2023 at Xeon St were higher during baseflow conditions than after storms events. No individual sample has approached the chronic state standard (230 mg/L). Urban stormwater runoff commonly contains high amounts of dissolved pollutants, including road deicing salts. Common stormwater treatment practices such as catch basins and settling ponds are relatively ineffective at removing dissolved pollutants from the environment. Therefore, minimizing the release of chlorides is the best management strategy.
- Dissolved oxygen (DO) levels in the Sand Creek system occasionally fall below the state standard of 5 mg/L, mainly in the tributary systems and during low flow conditions. Low DO can however exacerbate phosphorus loading as it can create redox conditions where phosphate is released from sediments. It is possible that low DO in the tributary systems could be contributing to phosphorus loading if certain stormwater ponds are not functioning correctly and are instead leaching phosphorus under low oxygen conditions.

- Ecoli levels observed in Sand Creek are consistent with its designated recreation impairment. The TMDL lists domestic pets as the primary source of E. coli to Sand Creek, accounting for 89% of all loading. It is also suspected that leaky sanitary infrastructure is a source of E. coli in Sand Creek. Considering the entire Sand Creek system drains mainly residential neighborhoods, identifying priority areas for addressing E. coli loading could be a challenge. During baseflow conditions, E. coli concentrations regularly exceeded the chronic standard of 126 MPN, at all sites. Post-storm, E. coli concentrations regularly exceeded the chronic standard of 126 MPN at all sites and the acute standard on a handful of occasions. E. coli concentrations were significantly higher and more variable compared to levels observed during baseflow conditions. During baseflow conditions, E. coli concentrations were higher at the downstream sites, while the opposite occurred after storm events.

Sand Creek - Summary

Trend Analysis - Sand Creek at Xeon St.

Parameter	Significant Change in Annual`X (2007-2024)	p=	Standard Error of Means
TP - Baseflow	No	0.203	10.06
TP - Storm	No	0.718	35.59
TSS - Baseflow	None	0.274	4.26
TSS - Storm	None	0.762	6.93

ANOVA Matrix for Storms Total Phosphorus

	Sand Cr at West Morningside Memorial Gardens – n=53	Sand Cr at Xeon St. – n=65
Sand Cr at Morningside Memorial Gardens – n=53		Significant Increase p= <0.05

ANOVA Matrix for Baseflow Total Phosphorus

Upstream to Downstream	Sand Cr at West Morningside Memorial Gardens – n=62	Sand Cr at Xeon St. – n=74
Sand Cr at Morningside Memorial Gardens – n=62		No Sig. Change p = 0.277

ANOVA Matrix for Baseflow Total Suspended Solids

	Sand Cr at West Morningside Memorial Gardens – n=62	Sand Cr at Xeon St. – n=74
Sand Cr at Morningside Memorial Gardens – n=62		No Sig. Change p = 0.708

ANOVA Matrix for Storms Total Suspended Solids

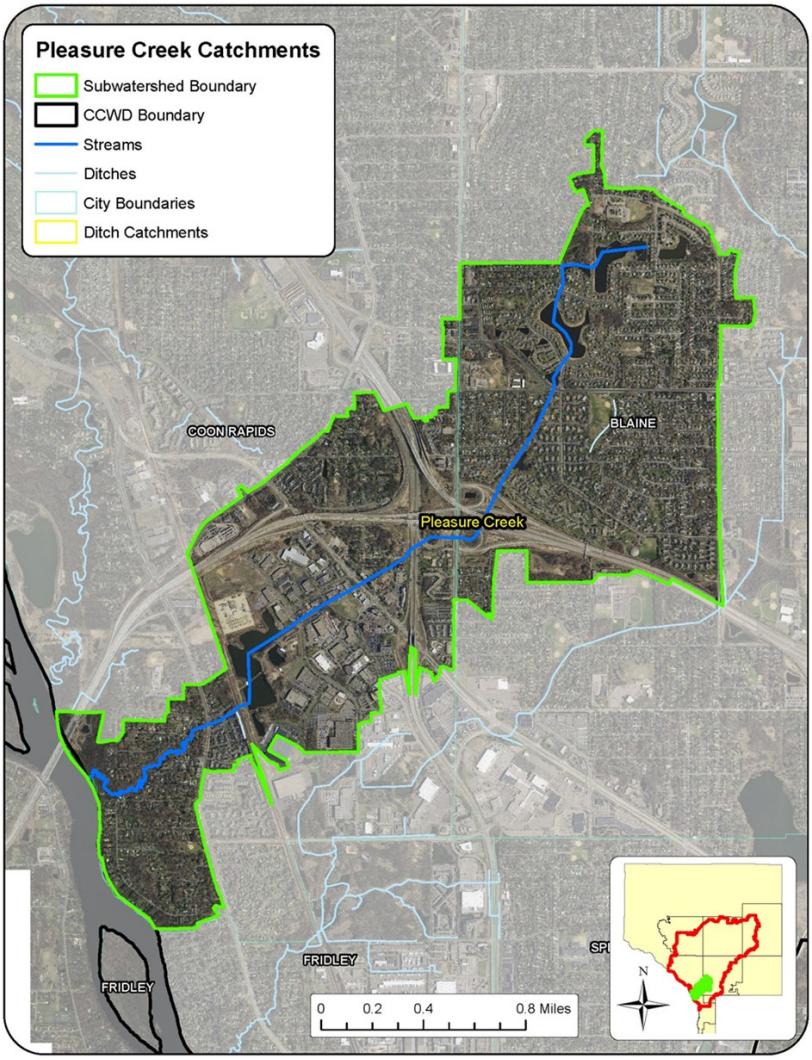
	Sand Cr at West Morningside Memorial Gardens – n=54	Sand Cr at Xeon St. – n=66
Sand Cr at Morningside Memorial Gardens - n=54		Significant Increase p = <0.05

Pleasure Creek

2024 Stream Water Quality Summary

COON CREEK WATERSHED DISTRICT

Background



Pleasure Creek drains southwestern Blaine and southern Coon Rapids. The watershed consists mainly of suburban residential and commercial land use. Pleasure Creek begins as the outlet for a series of stormwater ponds in a Blaine housing development. The creek flows as a straightened ditch for approximately 1.5 miles before entering a large stormwater pond located between East River Road and Coon Rapids Blvd. This stormwater pond outlets through a culvert running under East River Road before Pleasure Creek continues as a meandering channel for its final 1.5 miles to its confluence with the Mississippi River. The creek is about 8-10 ft. wide and 0.5-1.0 ft. deep near its outlet at baseflow. Pleasure Creek is listed as impaired for invertebrate biota and E. coli bacteria, and has a pending 2024 chloride impairment.

Pleasure Creek - Summary

Pleasure Creek Monitoring Sites		
Site Name/ Site ID	**Years Monitored**	**2024 Data Collected**
Pleasure Cr at Pleasure Cr Parkway S005-636	2009	
Pleasure Cr at 99th Ave S005-637	2009	
Pleasure Cr at 96th Lane S005-263	2008, 2018-2024	Water Chemistry Grab Samples, Continuous Stage, Flow measurements
Pleasure Creek at 86th Avenue S003-995	2006-2024	Water Chemistry Grab Samples, Continuous Stage, Flow measurements

Trend Analysis-Pleasure Creek at 86th Ave

Parameter	**Significant Change in Annual's (2006-2024)**	**p=**	**Standard Error of Means**
TP - Baseflow	None	0.24	8.50
TP - Storm	None	0.13	13.08
TSS - Baseflow	None	0.53	2.704
TSS - Storm	None	0.90	18.04

ANOVA Matrix for Storms Total Phosphorus

	Pleasure Creek at 96th Lane – n=25	Pleasure Creek at 86th Ave – n=67
Pleasure Creek at 96th Lane – n=25		No Sig. Change p= <0.80

ANOVA Matrix for Baseflow Total Phosphorus

	Pleasure Creek at 96th Lane – n=34 Samples	Pleasure Creek at 86th Ave – n=66
Pleasure Creek at 96th Lane – n=34		Significant Decrease p= <0.0000001

ANOVA Matrix for Baseflow Total Suspended Solids

	Pleasure Creek at 96th Lane – n=34	Pleasure Creek at 86th Ave – n=64
Pleasure Creek at 96th Lane – n=34		No Sig. Change p= <0.07

ANOVA Matrix for Storms Total Suspended Solids

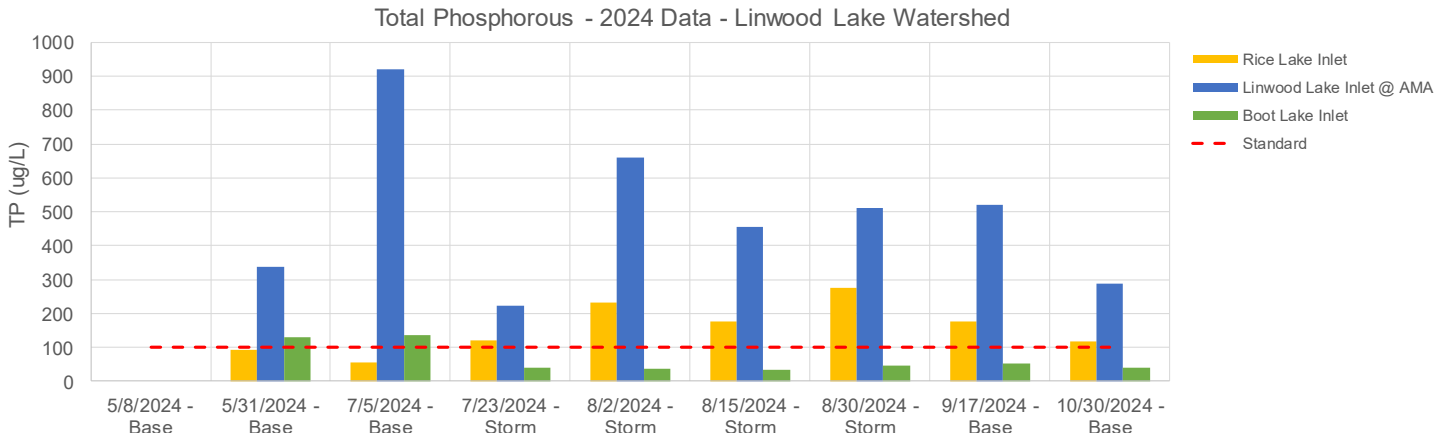
	Pleasure Creek at 96th Lane – n=26	Pleasure Creek at 86th Ave – n=67
Pleasure Creek at 96th Lane – n=26		No Sig. Change P= < 0.10

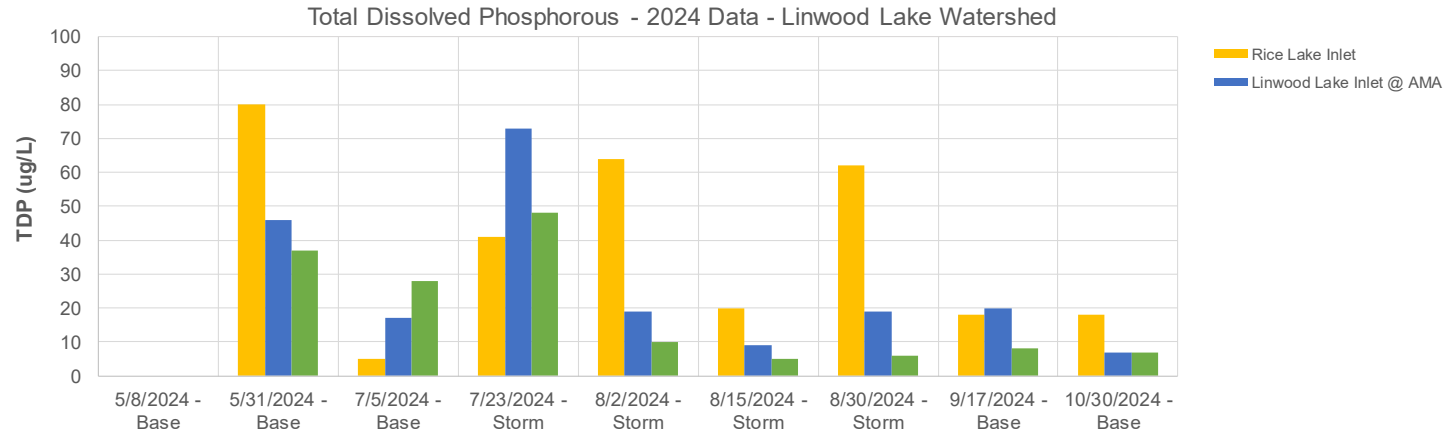
Pleasure Creek - Summary

A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality. Additional information on the Linwood Lake tributary monitoring results and recommendations for improvement can be found in the Linwood Lake Tributaries Water Quality Analysis Report.

- Dissolved pollutants, as measured by specific conductivity, are at healthy levels, but were occasionally elevated throughout the monitoring season.
- Total phosphorus levels were generally above state standards at Rice Lake Inlet and Linwood lake Inlet @ AMA, but not at Boot Lake Inlet. TP levels were much higher at the Linwood Lake Inlet @ AMA site than at any other site. This site is immediately downstream of the DNR's aquatic management area pond with a slow discharge. Total dissolved phosphorous only makes up a small portion of total phosphorous at these sites except for a couple occasions
- Suspended solids were not monitored in 2024.
- Turbidity levels were acceptable, but were occasionally elevated throughout the monitoring season.
- pH, on average, was within the range considered normal and healthy for streams in this area in 2024.
- Dissolved oxygen (DO) levels in 2024 were almost entirely below the state standard. The low DO levels are likely the result of decomposition in adjacent wetlands. The water has a lot of contact with decaying organic matter which can strip the water of oxygen.

	2024 Average		
Parameter	Rice Lake Inlet	Linwood Lake @ AMA	Boot Lake Inlet
pH	7.17	6.85	6.96
Sp. Cond (mS/cm)	0.384	0.233	0.279
Turbidity (NTU)	8.1	11.2	6.9
DO (mg/L)	2.95	1.17	2.58
TP (ug/L)	156.1	488.8	64.4
Chloride (mg.L)	N/A	N/A	N/A
TSS (mg/L)	N/A	N/A	N/A
TDP (ug/L)	38.5	26.3	18.6



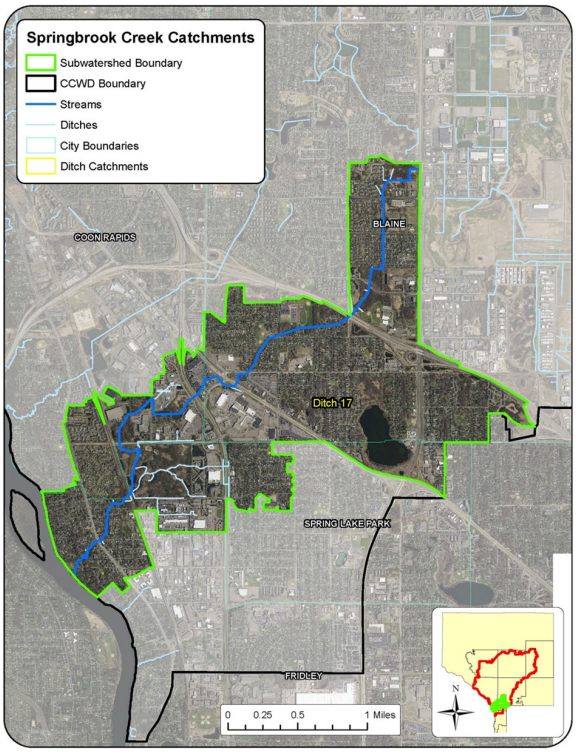


Springbrook Creek

2024 Stream Water Quality Summary

COON CREEK WATERSHED DISTRICT

Background



Springbrook Creek (Ditch 17) is a small system draining a highly urbanized watershed. This subwatershed does not drain to Coon Creek, but is included in the CCWD jurisdictional boundary as well as the Coon Creek TMDL. The watershed includes portions of Blaine, Coon Rapids, Spring Lake Park, and Fridley. The main channel of Springbrook Creek flows from a small ditched wetland in Blaine, through the southeastern corner of Coon Rapids, a wetland complex in northern Fridley, and finally to the Mississippi River.

Several small ditch tributaries and numerous subsurface stormwater conveyance systems contribute to Springbrook Creek, with many tributaries joining at the Springbrook Nature Center. From the outlet of the Springbrook Nature Center, Springbrook Creek flows in a meandering channel to its confluence with the Mississippi River. At its outlet, Springbrook Creek is about 10 ft. wide and 1 ft. deep during baseflow. The stream is flashy, with water levels that fluctuate dramatically following rainfall events.

In the early 2000s Springbrook Creek was part of a multi-partner effort focused on improving stormwater treatment and rehabilitating the Springbrook Nature Center. Routine monitoring of this creek has taken place since 2012 and CCWD has installed additional water quality improvement projects.

Springbrook Creek - Summary

A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality. Additional information on the

- Dissolved pollutants, as measured by specific conductivity, are at healthy levels, but were occasionally elevated throughout the monitoring season. are high compared to other streams in the Coon Creek watershed. Chlorides are a major component of dissolved pollutants that contribute to high conductivity. Dissolved pollutants in Springbrook Creek are lower during storm flows, suggesting that the local shallow groundwater is a contributing pollutant source during baseflow conditions and is diluted by runoff. Chlorides in the shallow groundwater that feeds Springbrook Creek appear to be causing higher concentrations compared to other streams in the watershed. Greater road densities and a long history of aggressive road salting practices have contributed to high chloride levels. Chlorides are persistent in the environment and not effectively removed by most stormwater treatment practices. They migrate into the shallow groundwater that feeds the stream during baseflow. The fact that high concentrations of dissolved pollutants are found during storm flows in Springbrook Creek as well, suggest that stormwater runoff from impervious surfaces into the stream is also problematic or mixing and releasing from stormwater ponds comprised partial. Dissolved pollutants are especially difficult to manage once released into the environment. They are not removed by stormwater settling ponds and infiltration practices can provide some treatment through biological processes in the soil, but this risks contaminating groundwater. The first priority for dissolved pollutant management must be to minimize their release into the environment.

- Total phosphorus levels In 2023, Springbrook Creek exceeded the state standard during both baseflow and post-storm conditions. There is a significant decrease in TP levels, upstream to downstream, during baseflow conditions. This suggests that implemented water quality improvement projects in the middle and lower reaches are effectively removing phosphorus from the Springbrook Creek system. One likely source of stormwater treatment is the expansive pond and wetland complex located in and around the Springbrook Nature Center. The source of high phosphorus during baseflow at University Ave is unknown, but could be due to leaky sanitary infrastructure or release of sediment-bound P from ponded areas of the channel during low oxygen conditions. After storm events, TP levels often exceed the standard and are consistently high at both the Springbrook monitoring sites. We can speculate that the Springbrook Nature Center wetland complex and other stormwater treatment practices in the area are possibly undersized or underperforming for the volume of water and pollutant loading occurring during larger storm events. Untreated stormwater also enters Springbrook Creek downstream of the Springbrook Nature Center from neighborhood developed prior to stormwater management rules. It is also possible that one or more stormwater basins or wetlands are leaching phosphorus through the process of internal loading and flushing. Adding additional capacity for stormwater treatment is advised, but the limited available space presents a challenge.
- High OP may be due to release from sediments during low oxygen conditions, leaching from excess organic matter (e.g. organic debris on roads, in sumps, or in the channel), or leaky sanitary infrastructure. The lower catchments of Springbrook Creek have some of the highest tree canopy cover in the CCWD.

- Suspended solids levels exceeded the state standard on a few occasions during stormflow, but never during baseflow. The area between these two sites contains a wetland complex that is potentially being filled in with sediment that is then re-suspended and flushed through the system during larger storm events. Undertreated stormwater runoff and/or bank and streambed erosion downstream of the Springbrook Nature Center could also be contributing to the elevated TSS levels at Springbrook at 79th Way. Based on long-term average concentrations, TSS levels do not increase upstream-to-downstream during baseflow but do increase significantly after storms. The largest likely contributor of TSS loading to Springbrook Creek are solids transported by stormwater conveyances from impervious surfaces or excess discharge rates causing erosion.
- Turbidity levels were acceptable, but were occasionally elevated throughout the monitoring season.

- pH in Springbrook Creek remained within the acceptable range (6.5-8.5). The rare occasions when pH beyond the acceptable range should not be concerning. Based on current and historical data, there is currently no management needed for pH in Springbrook Creek.

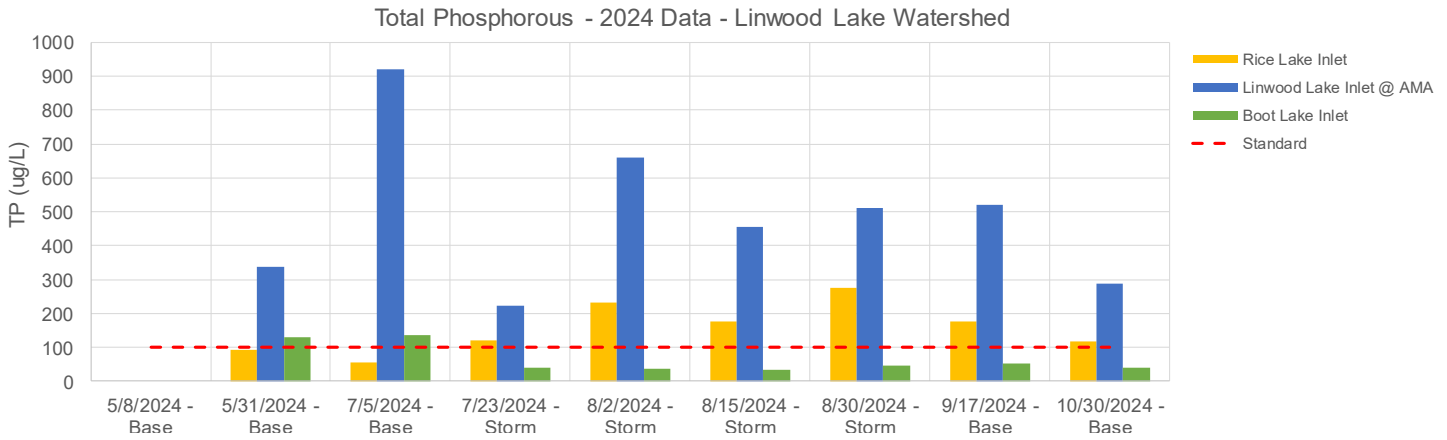
- Dissolved oxygen (DO) levels in Springbrook Creek remained above the state standard of 5 mg/L. Instances of low oxygen (at or below 5 mg/L) have occurred at the upstream site, University Ave, in the past and may help explain select elevated TP occurrences at this site. Based on the sampling data collected at these sites, there is currently no pressing management concern for low dissolved oxygen levels in Springbrook Creek. in 2024 were almost entirely below the state standard. The low DO levels are likely

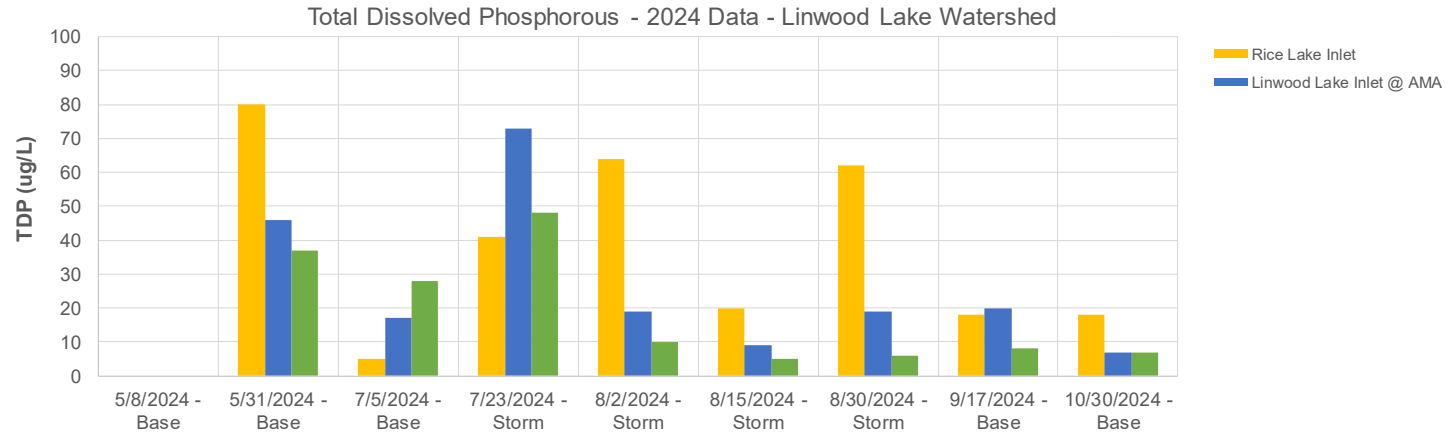
Springbrook Creek - Summary

A summary of water quality monitoring results is included below. Additional graphs for individual parameters can be found on ACD's Tableau Graph for Stream Water Quality. Additional information on the Linwood Lake tributary monitoring results and recommendations for improvement can be found in the Linwood Lake Tributaries Water Quality Analysis Report.

- Dissolved pollutants, as measured by specific conductivity, are at healthy levels, but were occasionally elevated throughout the monitoring season.
- Total phosphorus levels were generally above state standards at Rice Lake Inlet and Linwood lake Inlet @ AMA, but not at Boot Lake Inlet. TP levels were much higher at the Linwood Lake Inlet @ AMA site than at any other site. This site is immediately downstream of the DNR's aquatic management area pond with a slow discharge. Total dissolved phosphorous only makes up a small portion of total phosphorous at these sites except for a couple occasions
- Suspended solids were not monitored in 2024.
- Turbidity levels were acceptable, but were occasionally elevated throughout the monitoring season.
- pH, on average, was within the range considered normal and healthy for streams in this area in 2024.
- Dissolved oxygen (DO) levels in 2024 were almost entirely below the state standard. The low DO levels are likely the result of decomposition in adjacent wetlands. The water has a lot of contact with decaying organic matter which can strip the water of oxygen.

	2024 Average		
Parameter	Rice Lake Inlet	Linwood Lake @ AMA	Boot Lake Inlet
pH	7.17	6.85	6.96
Sp. Cond (mS/cm)	0.384	0.233	0.279
Turbidity (NTU)	8.1	11.2	6.9
DO (mg/L)	2.95	1.17	2.58
TP (ug/L)	156.1	488.8	64.4
Chloride (mg.L)	N/A	N/A	N/A
TSS (mg/L)	N/A	N/A	N/A
TDP (ug/L)	38.5	26.3	18.6





Springbrook Creek - Summary

Springbrook Creek (Ditch 17) Monitoring Sites		
Site Name/ Site ID	**Years Monitored**	**2024 Data Collected**
Springbrook at University S007-542	2013-2023	
Springbrook at 85th Avenue S007-543	2013-2020	
Springbrook at 79th Way S006-140	2012-2024	Water Chemistry Grab Samples, Continuous Stage, Flow Measurements

Trend Analysis-Springbrook at 79th Way

Parameter	**Significant Change in Annual`X (2012-2024)**	**p=**	**Standard Error of Means**
TP - Baseflow	None	0.659	13.72
TP - Storm	None	0.251	23.48
TSS - Baseflow	None	0.87	4.506
TSS - Storm	None	0.53	16.82

ANOVA Matrix for Storms Total Phosphorus

	Springbrook Creek at University Ave. – n=42	Springbrook Creek at 79th Way. – n=46
Springbrook Creek at University Ave. – n=42		No Significance p= <0.70

	Springbrook Creek at University Ave.– n=55	Springbrook Creek at 79th Way – n=60
Springbrook Creek at University Ave. – n=55		Significant Decrease p= <0.0000001

ANOVA Matrix for Baseflow Total Phosphorus

ANOVA Matrix for Baseflow Total Suspended Solids

	Springbrook Creek at University Ave. – n=55	Springbrook Creek at 79th Way. – n=60
Springbrook Creek at University Ave. – n=55		No Significance p= <0.50

ANOVA Matrix for Storms Total Suspended Solids

	Springbrook Creek at University Ave. – n=42	Springbrook Creek at 79th Way. – n=47
Springbrook Creek at University Ave. – n=42		Significant Increase p= <0.0000001

Discussion

With the exception of total phosphorous, the majority of sampling parameters remained within acceptable levels. Phosphorous levels in the Rum River and its tributaries have regularly exceeded the state standard at all sampled sites. Therefore, the priority for the Rum River is reducing phosphorus. A 5% reduction is a top goal identified in local and regional plans. Achieving it will require work throughout the watershed, including upstream of Anoka County. Rigorous stormwater treatment in new developments should be a priority in the coming years. There are also opportunities to better treat current runoff from developed and agricultural landscapes. Surveillance monitoring of these parameters in the Rum River watershed should continue.

Rum River Projects

In 2023, several projects led by the Anoka Conservation District were completed that help reduce sediment and phosphorous loading into the Rum River. ACD and partners currently have a well-funded riverbank stabilizations program because it offers multiple benefits to water quality, habitat, and protecting property.

Rum Central Regional Park - Cedar Tree Revetments

Cedar Creek Conservation Area - Cedar Tree Revetments

Anoka Nature Preserve - Cedar Tree Revetments

St. Francis High School - Swale Stabilization

Rum Central Regional Park - Boat Launch Shoreline Repair

Dellwood River Park - Shoreline Repair and Stabilization

Additional water quality monitoring information can be found on the Anoka Conservation District 2023 Water Almanac :

https://www.anokaswcd.org/water-almanac.html

ANOKA CONSERVATION DISTRICT