

Black Dog Watershed Management Commission

AGENDA

Wednesday, October 18, 2023

5:00 P.M.

COMMISSIONERS:

Curt Enestvedt, Chair

Mike Hughes, Vice Chair

Scott Thureen, Secretary/Treasurer

Rollie Greeno

Lynette Dunsworth

Greg Helms, Alternate

- I. Approval of Agenda
- II. Approval of Minutes – September 20, 2023
- III. Approval of Accounts Payable
- IV. Review Budget Performance Reports
- V. Review Updated 2022 Watershed Management Plan Goal Tracking Summary Sheets
- VI. Review Draft of New Report Format For Use In Reporting Management Level Monitoring Results
- VII. Miscellaneous
- VIII. Adjournment

The City of Burnsville and Black Dog Watershed Management Organization do not discriminate on the basis of race, color, national origin, sex, religion, age, or disability in the admission or access to, or treatment or employment in, its programs, activities, or services.

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Black Dog Watershed Management Commission

Agenda Background October 18, 2023

I. Approval of Agenda

Agenda enclosed.

Action Requested: A motion be considered to approve the Agenda.

II. Approval of Minutes from the September 20, 2023, Meeting

Minutes enclosed.

Action Requested: A motion be considered to approve the Minutes from the September 20, 2023, meeting.

III. Approval of Accounts Payable

Accounts payable list enclosed.

Action Requested: A motion be considered to approve the accounts payable list as submitted by staff.

IV. Review of Budget Performance Reports

Current Budget Performance Reports enclosed.

Action Requested: No formal action required.

V. Review 2022 Watershed Management Plan Goal Tracking Summary Sheets

The packet includes drafts of goal progress tracking forms for the 2022 BDWMO Plan. The first half of the tracking forms were reviewed in September and the second half are included in this packet for review at this meeting. The Engineer seeks input on content and layout of the draft goal tracking sheets.

Action requested: Review and provide feedback on goal tracking sheets.

VI. Review Draft Report Format for Reporting Management Level Monitoring Results

The packet includes a draft of the new proposed format for this reporting. This new format was developed because of changes in the 2022 Watershed Management Plan. Staff will present and discuss the new report at the meeting.

Action requested: Review and provide feedback on the new draft management level monitoring report.

VII. Miscellaneous

VIII. Adjournment

DRAFT

**Meeting Minutes
September 20, 2023**

MEMBERS PRESENT

Curt Enestvedt, Chair
Mike Hughes, Vice Chair
Rollie Greeno

MEMBERS ABSENT

Greg Helms, Alternate
Scott Thureen, Secretary/Treasurer
Lynette Dunsworth

OTHERS PRESENT

Greg Williams – Barr Engineering
Karen Chandler – Barr Engineering
Jared Shepherd – Campbell Knutson
Curt Coudron – Dakota County Soil & Water Conservation District
Jessica Schaum – City of Apple Valley
Ann Messerschmidt – City of Lakeville
Daryl Jacobson – BDWMO Administrator
Tammi Carte – BDWMO Secretary

Curt Enestvedt, Chair, called the September 20, 2023, meeting to order at 5:00pm.

I. Approval of Agenda

Motion by Hughes, second by Greeno, to approve the September 20, 2023, Agenda as presented.

Ayes – Enestvedt, Hughes, Greeno
Nays – None

Motion Carried Unanimously

II. Approval of Minutes from the August 16, 2023, Meeting

Motion by Hughes, second by Greeno, to approve the August 16, 2023, Minutes as presented.

Ayes – Enestvedt, Hughes, Greeno
Nays – None

Motion Carried Unanimously

III. Approval of Accounts Payable

Motion by Greeno, second by Hughes, to approve accounts payable to Barr Engineering in the amount of \$7,033.14 for services from July 29, 2023, through September 1, 2023; and, to Campbell Knutson in the amount of \$297.50 for August 2023 general services.

Ayes – Enestvedt, Hughes, Greeno

Nays – None

Motion Carried Unanimously

IV. Review Budget Performance Reports

Daryl Jacobson, BDWMO Administrator, shared that contribution payments are coming in from member cities.

No Formal Action Required

V. Review 2022 Watershed Management Plan Goal Tracking Summary Sheets

Draft copies of the goal progress tracking forms were provided to the Commission for review prior to tonight's meeting. The three examples from the previous meeting have been updated and about half of the total goal tracking sheets were included in the meeting packet. The remaining sheets will be reviewed at the next Black Dog meeting.

Greg Williams, Barr Engineering, reviewed the resource related goal sheets and requested input from the Commission on content and layout of the draft goal tracking sheets. The changes requested by the Commission to the sheets reviewed at last month's meeting were applied. Barr sent drafts of the forms to Ann Sawyer, Minnesota Board of Water & Soil Resources (BWSR), for review. BWSR suggested including status metrics under broadcasts. Staff does not recommend doing this due to the variables affecting progress for different goals. For example, tracking salt and chemicals used during winter snow events would not be reflective due to the different number of snow events each year. The Commission requests the data tables color legend designate green as the progress indicator instead of yellow.

No Formal Action Required

VI. Miscellaneous

1. Jessica Schaum, City of Apple Valley – Whitney Pond – comments have been collected and submitted to Barr Engineering.
2. The next BDWMO meeting is scheduled for October 18, 2023.

VII. Adjournment

Motion by Hughes, second by Greeno, to adjourn at 5:35pm.

Ayes – Enestvedt, Hughes, Greeno

Nays – None

Motion Carried Unanimously



Accounts Payable October 18, 2023 Meeting

Barr Engineering - Services from September 2, 2023 through September 29, 2023

Engineering	\$	3,437.00
Special Projects: General Fund - 2023 Management Level Monitoring - Keller Lake	\$	2,177.68
	\$	5,614.68

Campbell Knutson

General Services - September 2023	\$	245.00
	\$	245.00

Dakota County Soil & Water Conservation District - Services for July 2023 - September 2023

Website Updates & Maintenance	\$	270.00
Technical Assistance - Landscaping for Clean Water Assistance	\$	5,500.00
Landscaping for Clean Water Grant: Grannes & Knutson	\$	2,750.00
	\$	8,520.00

Accounts Payable Total \$ **14,379.68**

resourceful. naturally.
engineering and environmental consultants



Remittance address:
Lockbox 446104
PO Box 64825
St Paul, MN 55164-0825

October 9, 2023

Black Dog Watershed Management Commission
City of Burnsville
13713 Frontier Court
Burnsville, MN 55337-4720

Attn: Mr. Daryl Jacobson

RE: Engineering & Environmental Consulting Services

**Invoice of Account with
BARR ENGINEERING COMPANY**

For professional services during the period of September 2, 2023 through September 29, 2023

TOTAL PAYABLE THIS INVOICE:	\$ 5,614.68
Allocation:	
Engineering	\$ 3,437.00
Special Projects: General Fund	
• Keller Lake 2023 Management Level Monitoring	\$ 2,177.68

Barr declares under the penalties of law that
this account, claim, or demand is just and that
no part of it has been paid.

A handwritten signature in black ink that reads "Karen L. Chandler".

Karen L. Chandler
Vice President

A handwritten signature in black ink, possibly reading "OK" or "10-11-23", with a date "10-11-23" written below it.

BUDGET SUMMARY - 2023 FY
Black Dog Watershed Management Commission
through September 29, 2023

Work Description	Pre-2023 Costs	2023 Barr Budget	Current Invoice	Spent This Year	Balance
Engineering	-----	43,000.00 ¹	3,437.00	23,072.07	19,927.93
Special Projects: General Fund					
<i>Reporting on Lac Lavon 2022 Water Quality Monitoring</i>	-----	4,700.00	0.00	4,323.50	376.50
<i>Keller Lake 2023 Management Level Monitoring</i>		19,100.00	2,177.68	12,981.15	6,118.85
Subtotal -- Special Projects: General Fund	-----	23,800.00	2,177.68	17,304.65	6,495.35
Water Quality Monitoring					
<i>Reporting on 2022 Orchard Lake Habitat Monitoring</i>	-----	9,200.00	0.00	8,957.00	243.00
<i>Update Trend Analyses</i>	-----	2,000.00	0.00	810.00	1,190.00
Subtotal -- W.Q. Monitoring	-----	11,200.00	0.00	9,767.00	1,433.00
Public Education					
<i>Watershed Annual Report</i>	-----	4,500.00	0.00	4,196.50	303.50
<i>Annual Activity Report (BWSR)</i>	-----	2,100.00	0.00	2,272.50	(172.50)
Subtotal -- Public Education	-----	6,600.00	0.00	6,469.00	131.00
Total Services	-----	84,600.00	5,614.68	56,612.72	27,987.28

Notes:

¹ 2023 budget increase from \$31,000 to \$43,000 authorized at 2/15/2023 meeting for BDWMO Plan goal tracking



INVOICE

Barr Engineering Co.
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
Phone: 952-832-2600; Fax: 952-832-2601
FEIN #: 41-0905995 Inc: 1966

Remittance address:
Lockbox 446104
PO Box 64825
St Paul, MN 55164-0825

Mr. Daryl Jacobson
Black Dog WMO
City of Burnsville
13713 Frontier Court
Burnsville, MN 55337-4720

October 9, 2023
Invoice No: 23190374.23 - 7

Total this Invoice	\$3,437.00
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Regarding: BDWMO 2023 Engineering Services

Professional Services from September 2, 2023 to September 29, 2023

Job: 2023 Engineering Services

Task: 001 Attend BDWMO Meetings

Labor Charges

	Hours	Rate	Amount
Engineer / Scientist / Specialist III			
Williams, Sterling	2.00	165.00	330.00
	2.00		330.00
Subtotal Labor			330.00
Task Subtotal			\$330.00

Task: 002 Miscellaneous Consulting

Labor Charges

	Hours	Rate	Amount
Vice President			
Chandler, Karen	2.70	200.00	540.00
Engineer / Scientist / Specialist III			
Williams, Sterling	2.60	165.00	429.00
Support Personnel II			
Nypan, Nyssa	1.30	110.00	143.00
	6.60		1,112.00
Subtotal Labor			1,112.00
Task Subtotal			\$1,112.00

Task: 005 BDWMO Plan Goal Tracking

Labor Charges

	Hours	Rate	Amount
Vice President			
Chandler, Karen	.90	200.00	180.00

Terms: Due upon receipt. 1 1/2% per month after 30 days. Please refer to the contract if other terms apply.

Project	23190374.23	BDWMO 2023 Engineering Services	Invoice	7
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Engineer / Scientist / Specialist III
Williams, Sterling

11.00	165.00	1,815.00
11.90		1,995.00

Subtotal Labor		1,995.00
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Task Subtotal	\$1,995.00
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Job Subtotal	\$3,437.00
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Total this Invoice	\$3,437.00
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	Current	Prior	Total	Received	A/R Balance
Invoiced to Date	3,437.00	26,104.07	29,541.07	26,104.07	3,437.00

Thank you in advance for the prompt processing of this invoice. If you have any questions, please contact Karen Chandler, your Barr project manager, at (952) 832-2813 or email at kchandler@barr.com.



INVOICE

Barr Engineering Co.
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
Phone: 952-832-2600; Fax: 952-832-2601
FEIN #: 41-0905995 Inc: 1966

Remittance address:
Lockbox 446104
PO Box 64825
St Paul, MN 55164-0825

Mr. Daryl Jacobson
Black Dog WMO
City of Burnsville
13713 Frontier Court
Burnsville, MN 55337-4720

October 9, 2023
Invoice No: 23190375.23 - 7

Total this Invoice	\$2,177.68
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Regarding: Management Level Water Quality Monitoring

Professional Services from September 2, 2023 to September 29, 2023

Job:	KEL	Keller Lake 2023 Water Quality Monitorin
Task:	100	Monitoring Data Mgmt & Proj Mgmt

Labor Charges

	Hours	Rate	Amount
Engineer / Scientist / Specialist III			
Olson, Terri	.90	160.00	144.00
Technician II			
Melmer, David	5.80	105.00	609.00
Novack, John	3.80	105.00	399.00
Technician I			
Wilde, Brianna	.80	80.00	64.00
Wolf, Matthias	1.00	90.00	90.00
Support Personnel II			
Treanor, Margaret	2.30	120.00	276.00
	14.60		1,582.00
Subtotal Labor			1,582.00

Subconsultant Charges

Subconsultants		
9/5/2023	RMB Environmental Laboratories Inc	43.20
9/16/2023	RMB Environmental Laboratories Inc	43.20
9/25/2023	RMB Environmental Laboratories Inc	43.20
Subtotal Subconsultant		129.60

Unit Charges

Canoe	1.0 day @ 45.00	45.00
Vehicle (Mileage)	65.0 miles @ 0.655	42.58

Terms: Due upon receipt. 1 1/2% per month after 30 days. Please refer to the contract if other terms apply.

Project	23190375.23	Management Level Water Qual Monitoring	Invoice	7
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Water Quality Meter (YSI 556 MPS)	1.0 day @ 85.00	85.00	
Barr Owned Vehicle Use	1.0 day @ 105.00	105.00	
Ice (per bag)	2.0 ea @ 2.50	5.00	
Kemmerer Vertical Bottle Sampler	1.0 day @ 33.50	33.50	
Subtotal Units			316.08

Task Subtotal \$2,027.68

Task: 200 Phytoplankton Counts

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist III				
Rattei, Margaret	1.00	150.00	150.00	
	1.00		150.00	
Subtotal Labor				150.00

Task Subtotal \$150.00

Job Subtotal \$2,177.68

Total this Invoice \$2,177.68

	Current	Prior	Total	Received	A/R Balance
Invoiced to Date	2,177.68	15,126.97	17,304.65	15,126.97	2,177.68

Thank you in advance for the prompt processing of this invoice. If you have any questions, please contact Kevin Menken, your Barr project manager, at (952) 832-2794 or email at kmenken@barr.com.

CAMPBELL KNUTSON
Professional Association
Attorneys at Law
Federal Tax I.D. #41-1562130
Grand Oak Office Center I
860 Blue Gentian Rd Ste 290
Eagan, Minnesota 55121
(651) 452-5000

Black Dog Watershed Management Organization
Attention: Daryl Jacobson
City of Burnsville
100 Civic Center Parkway
Burnsville MN 55337-3817

Page: 1
September 30, 2023
Account # 602-0000G
388

RE: GENERAL SERVICES
RENDERED TO DATE:

			HOURS	
09/14/2023	JDS	Email to C. Birkeland; review 9/20 agenda; email to T. Carte re: meeting.	0.20	35.00
09/20/2023	CAB	Attend meeting.	1.20	210.00
		AMOUNT DUE	1.40	245.00
		TOTAL CURRENT WORK		245.00
		PREVIOUS BALANCE		\$297.50
09/28/2023		Payment - thank you		-297.50
		TOTAL AMOUNT DUE		<u>\$245.00</u>

OK
Daryl Jacobson
10/10/23

Amounts due over 30 days will be subject to a finance charge of .5% per month (or an annual rate of 6%). Minimum charge - 50 cents.

DAKOTA COUNTY



SOIL & WATER
CONSERVATION DISTRICT

Dakota County Soil & Water Conservation District

4100 220th Street West, Ste 102

Farmington, MN 55024

(651) 480-7777

DakotaSWCD.Accounting@CO.Dakota.MN.US

Invoice

DATE	INVOICE #
10/4/2023	3324

BILL TO

Black Dog WMO
Daryl Jacobson, Administrator
13713 Frontier Court
Burnsville, MN 55337

AGREEMENT

2023 Agreement

BILLING PERIOD

Jul - Sep 2023

TERMS

Net 30 Days

DESCRIPTION

HRS/COUNT

RATE

AMOUNT

EDUCATION AND ASSISTANCE OUTREACH

Website Updates and Maintenance

Fee: Website Hosting

3

90.00

270.00

0

900.00

0.00

Landscaping for Clean Water Intro Class

0

3,600.00

0.00

Landscaping for Clean Water Design Course

0

7,200.00

0.00

Landscaping for Clean Water Maintenance Workshop

0

1,800.00

0.00

TECHNICAL ASSISTANCE

Landscaping for Clean Water Technical Assistance

11

500.00

5,500.00

COST SHARE

Landscaping for Clean Water Grant: Brown, Congdon, Rachuk,
Shenk, Lee, Jensen, Waller, Bronson, Heckathorn, Montgomery &
Romig

11

250.00

2,750.00

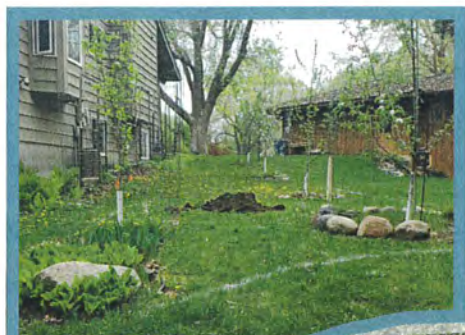
OK
Daryl Jacobson
10/10/23

It's been a pleasure working with you!

Total

\$8,520.00

HECKATHORN RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground.



AFTER

PROJECT: Installation of a 305 square foot residential raingarden.

COST: Project materials cost estimated at \$1,311

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:
Lasson Court
Burnsville



PRACTICE:

- Raingarden

BENEFITS:

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

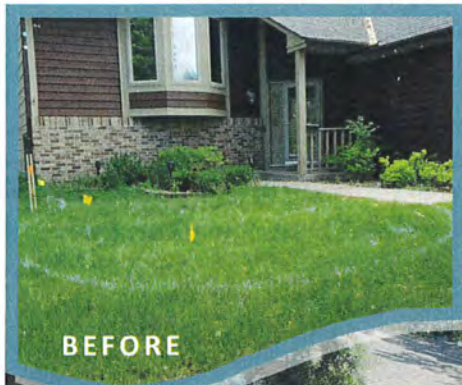
INSTALLATION:

- Summer 2023



WALLER

RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground.



AFTER

PRACTICE:

- Raingarden

BENEFITS:

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023

PROJECT: Installation of a 300 sf residential raingarden.

COST: Project materials cost estimated at \$1,055

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:

Sunset Lake Drive
Burnsville



BRONSON

RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground.



AFTER

PROJECT: Installation of a 150 square foot residential raingarden.

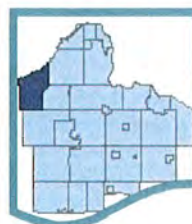
COST: Project materials cost estimated at \$635

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:

River Hills Drive
Burnsville



PRACTICE:

- Raingarden

BENEFITS:

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023



MONTGOMERY RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground.



AFTER

PROJECT: Installation of a 300 square foot residential raingarden.

COST: Project materials cost estimated at \$1,495

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:

Birchwood Lane
Burnsville



PRACTICE:

- Raingarden

BENEFITS:

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023



ROMIG

RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground.



AFTER

PRACTICE:

- Raingarden

BENEFITS:

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023

PROJECT: Installation of a 200 square foot residential raingarden.

COST: Project materials cost estimated at \$520

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



BLACK DOG
Watershed Management Organization

LOCATION:

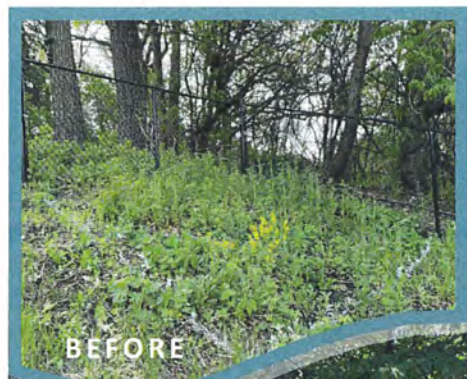
Earle Way
Burnsville





BROWN

RESIDENTIAL NATIVE GARDEN



BEFORE

A native garden, also called natural landscaping, uses plants, trees and grasses that are suitable for growth in a particular geographical area



AFTER

PROJECT: Installation of a 110 sq. ft. residential native garden.

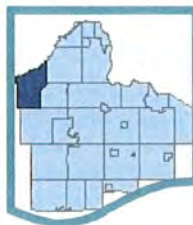
COST: Project materials cost estimated at \$266

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:

Portland Avenue
Burnsville



PRACTICE:

- Native Garden

BENEFITS:

- Runoff volume reduction
- Slope stabilization
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023



CONGDON NATIVE SHORELINE PLANTING



BEFORE

A native shoreline planting is the use of native vegetation to protect a shoreline from existing or potential erosion.



AFTER

PROJECT: Installation of a 360 square foot Native Shoreline Planting

COST: Project materials cost estimated at \$457

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



BLACK DOG
Watershed Management Organization

LOCATION:

Highview Drive
Apple Valley



PRACTICE:

- Native Shoreline Planting

BENEFITS:

- Shoreline stabilization and erosion reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023



JENSEN

RESIDENTIAL NATIVE GARDEN



BEFORE

A native garden, also called natural landscaping, uses plants, trees and grasses that are suitable for growth in a particular geographical area



AFTER

PRACTICE:

- Native Garden

BENEFITS:

- Runoff volume reduction
- Slope stabilization
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023

PROJECT: Installation of a 400 sq. ft. residential native garden.

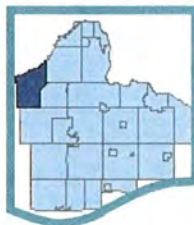
COST: Project materials cost estimated at \$1,209

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:

River Hills Drive
Burnsville





LEE

RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground.



AFTER

PROJECT: Installation of a 140 square foot residential raingarden.

COST: Project materials cost estimated at \$525

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:

Portland Avenue
Burnsville



PRACTICE:

- Raingarden

BENEFITS:

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023

RACHUK RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground.



AFTER

PRACTICE:

- Raingarden

BENEFITS:

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023

PROJECT: Installation of a 270 square foot residential raingarden.

COST: Project materials cost estimated at \$1,055

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:

Hemlock Drive
Burnsville



SHENK

RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground.



AFTER

PROJECT: Installation of a 160 square foot residential raingarden.

COST: Project materials cost estimated at \$1,299

FUNDING: Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



LOCATION:

Geneva Boulevard
Burnsville



PRACTICE:

- Raingarden

BENEFITS:

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

PARTNERS:

- Black Dog Watershed Management Organization

WATERSHED:

- Black Dog

INSTALLATION:

- Summer 2023

BLACK DOG WMO
CASH ACTIVITY REPORT 2023

Date	Description	Deposits	Check #	Check Amount	Monthly Cash Balance	Expenditures: General Engineering Support	Special Projects (General)	Special Projects (Capital)	Special Projects (Gen. Reserve)	Insurance	Legal & Audit	Admin Support	Public Education	Water Quality Monitoring	Conf Public	Contingency
Balance as of 12/31/22					533,464.61											
18-Jan	Barr Engineering Co (2022)		1797	7,639.50		2,155.00	1,832.00		3,130.50		175.00			522.00		
18-Jan	Campbell Knutson (2022)		1798	175.00												
18-Jan	Metropolitan Council - Enviro Srvc (2022)		1799	3,420.00										3,420.00		
31-Jan	Interest Income	1,880.84														
01/31/23 Balance		1,880.84		11,234.50	524,110.95	2,155.00	1,832.00	-	3,130.50	-	175.00	-	-	3,942.00	-	-
15-Feb	Barr Engineering Co		1800	3,099.22		1,436.72	544.50						668.00	450.00		
15-Feb	Campbell Knutson		1801	630.00							630.00					
15-Feb	City of Burnsville (2022)		1802	24,032.91								24,032.91				
15-Feb	Dakota County Soil & Water (2022)		1803	1,005.00			750.00						255.00			
28-Feb	Interest Income	1,759.91														
02/28/23 Balance		1,759.91		28,767.13	497,103.73	1,436.72	1,294.50	-	-	-	630.00	24,032.91	923.00	450.00	-	-
31-Mar	Interest Income	1,977.10														
03/31/23 Balance		1,977.10		-	499,080.83	-	-	-	-	-	-	-	-	-	-	-
19-Apr	Barr Engineering		1804	11,558.72		2,361.72	862.00						1,990.00	6,345.00		
19-Apr	Campbell Knutson		1805	210.00							210.00					
19-Apr	Dakota County Soil & Water (2022)		1806	11,412.50			5,250.00						6,162.50			
19-Apr	Dakota County Soil & Water		1807	1,170.00									1,170.00			
30-Apr	Interest Income	1,969.34														
04/30/23 Balance		1,969.34		24,351.22	476,698.95	2,361.72	6,112.00	-	-	-	210.00	-	9,322.50	6,345.00	-	-
18-May	Barr Engineering		1808	11,122.90		2,828.72	4,039.18						1,283.00	2,972.00		
18-May	Campbell Knutson		1809	385.00							385.00					
31-May	Interest Income	2,018.05														
05/31/23 Balance		2,018.05		11,507.90	467,209.10	2,828.72	4,039.18	-	-	-	385.00	-	1,283.00	2,972.00	-	-
21-Jun	Barr Engineering		1810	7,263.99		3,452.72	2,020.77						1,790.50	-		
21-Jun	Campbell Knutson		1811	35.00							35.00					
21-Jun	League of MN Cities Insurance Trust		1812	2,842.00						2,842.00						
30-Jun	Interest Income	1,930.28														
06/30/23 Balance		1,930.28		10,140.99	458,998.39	3,452.72	2,020.77	-	-	2,842.00	35.00	-	1,790.50	-	-	-
31-Jul	Interest Income	1,965.67														
07/31/23 Balance		1,965.67		-	460,964.06	-	-	-	-	-	-	-	-	-	-	-
16-Aug	Barr Engineering		1813	10,920.07		5,575.19	4,607.38						737.50	-		
16-Aug	Campbell Knutson		1814	280.00							280.00					
16-Aug	Dakota County Soil & Water Conserv Dist		1815	14,460.00			14,100.00						360.00			
31-Aug	Interest Income	2,018.73														
08/31/22 Balance		2,018.73		25,660.07	437,322.72	5,575.19	18,707.38	-	-	-	280.00	-	1,097.50	-	-	-
20-Sep	Barr Engineering		1816	7,033.14		3,980.00	3,053.14									
20-Sep	Campbell Knutson		1817	297.50							297.50					
14-Sep	City of Lakeville	28,310.00														
22-Sep	City of Apple Valley	11,404.00														
22-Sep	City of Eagan	586.00														
30-Sep	Interest Income	1,995.01														
09/30/22 Balance		42,295.01		7,330.64	472,287.09	3,980.00	3,053.14	-	-	-	297.50	-	-	-	-	-
Total Revenue		57,814.93	Total Expense		118,992.45	21,790.07	37,058.97	-	3,130.50	2,842.00	2,012.50	24,032.91	14,416.50	13,709.00	-	-
Less: 2022 A/R		-	Less: 2022 A/P		(47,684.91)	(2,155.00)	(7,832.00)	-	(3,130.50)	-	(175.00)	(24,032.91)	(6,417.50)	(3,942.00)	-	-
December LMC insurance reclass		-			-											
Total YTD 2023 Revenue		57,814.93	Total YTD 2023 Exp		71,307.54	19,635.07	29,226.97	-	-	2,842.00	1,837.50	-	7,999.00	9,767.00	-	-
			2023 Budget		158,200.00	43,000.00	37,300.00	-	-	2,500.00	5,000.00	24,000.00	25,700.00	15,200.00	500.00	5,000.00
			Budget Remaining		86,892.00	23,365.00	8,073.03	-	-	(342.00)	3,162.50	24,000.00	17,701.00	5,433.00	500.00	5,000.00
YTD Interest Income		17,514.93														

BLACK DOG WATER MANAGEMENT COMMISSION

Budget Performance Report September 30, 2023

	CURRENT MONTH	YEAR TO DATE			
	ACTUAL	GENERAL FUND BUDGET	CAPITAL IMPROVEMENT FUND BUDGET	ACTUAL	VARIANCE FAVORABLE (UNFAVORABLE)
Opening Fund Balance		\$ 382,290	\$ 103,489	\$ 485,780	
REVENUES :					
Member Contributions:					
City of Apple Valley	\$ 11,404	\$ 10,412	\$ 992	\$ 11,404	\$ -
City of Burnsville	-	94,014	9,186	-	(103,200)
City of Eagan	586	586	-	586	-
City of Lakeville	28,310	25,988	2,322	28,310	-
Total Member Contributions	40,300	131,000	12,500	40,300	(103,200)
Other Revenues:					
Interest	\$ 1,995	\$ 40	\$ -	\$ 17,515	\$ 17,475
Grant (State of MN BWSR)	-	-	-	-	-
Total Other Revenue	1,995	40	-	17,515	17,475
Total Revenues	\$ 42,295	\$ 131,040	\$ 12,500	\$ 57,815	\$ (85,725)
EXPENDITURES :					
General Engineering Support	\$ 3,980	\$ 43,000	\$ -	\$ 19,635	\$ 23,365
Special Projects - General Fund	3,053	37,300	-	29,227	8,073
Special Projects - Capital Improvement Fund	-	-	-	-	-
Special Projects - General Fund Reserve	-	-	-	-	-
Insurance	-	2,500	-	2,842	(342)
Legal and Audit	298	5,000	-	1,838	3,163
Administrative Support	-	24,000	-	-	24,000
Public Education	-	25,700	-	7,999	17,701
Water Quality Monitoring	-	15,200	-	9,767	5,433
Conference/Publications	-	500	-	-	500
Contingency	-	5,000	-	-	5,000
Total Expenditures	7,331	158,200	-	71,308	86,892
EXCESS OF REVENUES OVER (UNDER) EXPENDITURES	34,964	(27,160)	12,500	(13,493)	
EXCESS OF REVENUES OVER (UNDER) EXPENDITURES PLUS OPENING FUND BALANCE				472,287	
TOTAL CASH AVAILABLE 9/30/2023	472,287				
Fund Balance 9/30/2023	\$ 472,287				

Goal K – Shoreland, Habitat and Open Space Management

Support member city and partner actions to prevent the increase or reduce the occurrence of aquatic invasive species within BDWMO strategic waterbodies.

Metric/Measures

The BDWMO will assess goal achievement based on the following measurable outcomes or actions:

- Number of newsletter articles, social media posts, or other public broadcasts addressing aquatic invasive species (AIS) issues.
- Member city and partner AIS management activities, noting BDWMO support roles including, but not limited to:
 - Technical support
 - Financial support
 - Regulatory support/coordination



Goal Status/Tracking

Member City/Partner	AIS Information Broadcasts ¹		AIS Management Actions
	2024	To date	
Apple Valley			
Burnsville			
Eagan			
Lakeville			
Dakota SWCD			
Dakota County			

(1) Including newsletters, articles, social media posts and other public broadcasts as noted.

Additional Project Details (if applicable)

Placeholder to include narrative of project details, if applicable.

Implementation Actions

The following activities from the BDWMO's 2022 Watershed Management Plan are related to Goal K.

Administration and Engineering

AE-8 General Engineering (task includes providing technical support for projects as requested by cities, including projects addressing AIS).

Education and Public Engagement

ED-4 Coordinate with member cities to develop and distribute educational information (AIS are identified as a key education topic).

Draft Goal Progress Tracking Form – Goal A to R, v.2

ED-5 Sponsor workshops to support resident/landowner stewardship practices.

ED-6 Coordinate with partners to identify and support volunteer efforts (may include AIS management activities).

Projects and Programs

Placeholder to include specific projects if added to implementation table.

Goal L – Groundwater

Promote the protection of groundwater quality and quantity through annual collaboration with Dakota County, Minnesota Department of Natural Resources, and/or other agencies managing groundwater.

Metric/Measures

The BDWMO will assess goal achievement based on the following measurable outcomes or actions:

- Meeting annually with Dakota County and other groundwater management agencies.
- Groundwater management roles performed in cooperation with partners, including but not limited to:
 - Planning and/or advisory roles
 - Technical support
 - Financial support



Goal Status/Tracking

- Did the BDWMO meet with Dakota County/groundwater authorities in 2024: **Yes; date(s)**
- Outcomes of groundwater planning meeting(s):
 - *Placeholder for notes*

Additional Activity Details (if applicable)

Placeholder to include narrative of project/role details, if applicable.

Implementation Actions

The following activities from the BDWMO's 2022 Watershed Management Plan are related to Goal L.

Administration and Engineering

AE-8 General Engineering (task includes providing technical support for projects as requested by cities, including projects addressing groundwater management).

Projects and Programs

PP-2 Groundwater protection planning and technical assistance.

Goal M – Groundwater

Promote groundwater conservation and water reuse through education and outreach activities.

Metric/Measures

- Number of newsletter articles, social media posts, or other public broadcasts addressing groundwater conservation or stormwater reuse
- BDWMO support provided for member city and partner groundwater conservation and reuse activities, including:
 - Technical support
 - Financial support
 - Regulatory support/coordination



Goal Status/Tracking

Member City/Partner	2024			2023 – Present			Notes
	Broadcasts ¹	Workshops	Projects	Broadcasts ¹	Workshops	Projects	
Apple Valley							
Burnsville							
Eagan							
Lakeville							
Dakota SWCD							
Dakota County							

(1) Including newsletters, articles, social media posts and other public broadcasts as noted.

Additional Project Details (if applicable)

Placeholder to include narrative of project details, if applicable.

Implementation Actions

The following activities from the BDWMO's 2022 Watershed Management Plan are related to Goal M.

Administration and Engineering

AE-8 General Engineering (task includes providing technical support for projects as requested by cities, including projects addressing wetlands).

Education and Public Engagement

ED-4 Coordinate with member cities to develop and distribute educational information.

ED-5 Sponsor workshops to support resident/landowner stewardship practices.

Projects and Programs

PP-2 Groundwater protection planning and technical assistance.

Goal N – Administration

Promote local connection to water resources by delegating day-to-day management and regulation of the BDWMO's water resources to the member cities.

Metric/Measures

- Maintenance of City local controls (e.g., ordinances) addressing stormwater management, erosion and sediment control, wetlands, floodplains and shorelands.
- Updates on City and partner activities impacting strategic waterbodies or other public waters.



Goal Status/Tracking

Member City	Local Controls					Notes
	Stormwater	Erosion Control	Wetlands	Shorelands	Floodplains	
Apple Valley	X	X	X	X	X	
Burnsville	X	X	X	X	X	
Eagan	X	X	X	X	X	
Lakeville	X	X	X	X	X	

City/Partner Activities

Placeholder to include activities impacting strategic waterbodies and public waters

Implementation Actions

The following activities from the BDWMO's 2022 Watershed Management Plan are related to Goal N.

Administration and Engineering

- AE-8 General Engineering (task includes review of proposed updates to City local controls).
AE-9 Review of Local Water Management Plans (LWMPs)

Goal O – Administration

Promote efficient and consistent management of water and natural resources by coordinating staff and financial resources to address common goals while maintaining regulation at the local level.

Metric/Measures

The BDWMO will assess goal achievement based on the following outcomes, actions, or assessments:

- Did the BDWMO's 20XX expenditures fall between 80% and 110% of its planned 20XX budget?
- How many of the BDWMO 2022 Watershed Management Plan's 15 non-administrative goals (Goals A through M, Q, and R) were achieved or advanced in 20XX?
- Was regulation maintained at the local level?
- What were the BDWMO commissioners', administrator's, and member city staff's qualitative assessments of annual coordination:
 - Good/Neutral/Needs improvement



Goal Status/Tracking

Assessment	Score ¹	Notes
Did expenses fall within 80% to 110% of budget?	Budgeted: \$XX,XXX Spent: \$XX,XXX Percent: XX%	
Number of non-administrative goals achieved or advanced	Achieved: X Advanced: Y Total: (X+Y)/15	
Was regulation maintained at the local level?	Yes	
Commissioners' qualitative assessment of coordination	Good: X Neutral: X Needs improvement: X	
Administrator and member city staff qualitative assessment of coordination	Good: X Neutral: X Needs improvement: X	

(1) Score type varies according to question/assessment

This section will include a narrative discussion of the goal, for example:

In 20XX, the BDWMO promoted the efficient and consistent management of water and natural resources through successful coordination of its commissioners, staff, member cities, and partners. The BDWMO was within X percent of its planned operating budget [note any extenuating circumstances]. BDWMO member cities maintain direct land use permitting authority and request BDWMO assistance as needed [note any special requests]. Overall, coordination was considered [good, neutral, needs improvement] by the BDWMO commissioners, administrator and member city staff.

Placeholder for simplified
budget pie chart

Implementation Actions

The following activities from the BDWMO's 2022 Watershed Management Plan are related to Goal O.

Administration and Engineering

AE-1 General Administration

AE-7 Review Funding Mechanisms and Dues

AE-8 General Engineering (includes coordination of engineer with administrator and member city staff)

AE-4 Biennial Progress Review

Note that several other implementation activities are indirectly related to this goal.

Goal P – Administration

Minimize duplication and redundancy of regulatory efforts by delegating regulatory authority to member cities and establishing standards complementary to and consistent with State and Federal requirements.

Metric/Measures

- Maintenance of City local controls (e.g., ordinances) addressing stormwater management, erosion and sediment control, wetlands, floodplains and shorelands.
- Consistency of City controls and practices with BDWMO performance standards (see Watershed Management Plan Section 4.8.1).



Goal Status/Tracking

Performance Standards (paraphrased from WMP Section 4.8.1)	Apple Valley	Burnsville	Eagan	Lakeville
4.8.1-1: Local controls are strengthened or maintained	X	X	X	X
4.8.1-2: Require 1-acre trigger for stormwater standards	X	X	X	X
4.8.1-3: Erosion controls are consistent with NPDES Stormwater Permit	X	X	X	X
4.8.1-4: New/redeveloped stormwater facilities conform to BDWMO WMP	X	X	X	X
4.8.1-5: Stormwater pretreatment upstream of lakes, ponds, and wetlands	X	X	X	X
4.8.1-6: Orchard Lake outlet is limited to 65 cfs or less	--	--	--	X
4.8.1-7: Trunk stormwater systems are designed to 100-year event	X	X	X	X
4.8.1-8: Non-trunk stormwater systems are designed to 10-year event	X	X	X	X
4.8.1-9: Conveyances are designed to minimize erosion	X	X	X	X
4.8.1-10: Consider additional factors in stabilization projects (see WMP)	X	X	X	X
4.8.1-11: Seek input from BDWMO when standards cannot be met	--	--	--	--
4.8.1-12: Ensure projects do not increase downstream flood risk	X	X	X	X
4.8.1-13: Include emergency overflows to ponds where feasible	X	X	X	X
4.8.1-14: Secure easements to stormwater system with new/redevelopment	X	X	X	X
4.8.1-15: Require maintenance agreements for private stormwater facilities	X	X	X	X
4.8.1-16: Minimum building elevations are 1ft above 100-year water level	X	X	X	X
4.8.1-17: Peak stormwater rates maintained for 2-, 10-, and 100-year events	X	X	X	X
4.8.1-18: Maintain all City-owned stormwater infrastructure	X	X	X	X
4.8.1-19: BMP designs conform to standard engineering practice	X	X	X	X
4.8.1-20: Maintain wetland standards for buffers and bounce	X	X	X	X

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Additional Details (if applicable)

Placeholder to include notes specific to any of the items above

Implementation Actions

The following activities from the BDWMO's 2022 Watershed Management Plan are related to Goal P.

Administration and Engineering

AE-8 General Engineering (task includes review of proposed updates to City local controls).

AE-9 Review of Local Water Management Plans (LWMPs)

Goal Q – Education and Public Involvement

Increase awareness and knowledge of community members regarding water resources and stormwater management through actions coordinated with member cities, Dakota SWCD, and other partners, including:

- *presentations at K-12 schools,*
- *electronic newsletters/social media posts presenting information on priority issues, and*
- *resource clean-up events or similar volunteer activities.*

Metric/Measures

- Presentations at K-12 schools
- Number of newsletter articles, social media posts, or other public broadcasts addressing education topics
- Volunteer activities (e.g., resource clean-up events)



Goal Status/Tracking

Member City/Partner	2024			Cumulative 2023 – Present			Notes
	Broadcasts ¹	School Presentations	Volunteer Events	Broadcasts ¹	School Presentations	Volunteer Events	
Apple Valley							
Burnsville							
Eagan							
Lakeville							
Dakota SWCD							
Dakota County							

(1) Including newsletters, articles, social media posts and other public broadcasts as noted.

Additional Details (if applicable)

Placeholder to include narrative of project details, if applicable.

Implementation Actions

The following activities from the BDWMO's 2022 Watershed Management Plan are related to Goal Q.

Education and Public Engagement

- ED-3 Coordination with Dakota SCWD and member cities for K-12 programming.
- ED-4 Coordinate with member cities to develop and distribute educational information.
- ED-6 Coordinate with partners to identify and support volunteer efforts.

Goal R – Education and Public Involvement

Increase community capacity to implement water and natural resource stewardship action through:

- *increased participation in volunteer activities*
- *increased participation in small-scale BMP cost share projects*
- *consistently providing data through accessible media*

Metric/Measures

- Volunteer activities (e.g., resource clean-up events)
- Small-scale BMP cost-share project implementation
- Updates to BDWMO website
- Distribution of annual report



Goal Status/Tracking

Member City/Partner	2024				Cumulative 2023 – Present		Notes
	Volunteer Events	Small-scale BMPs supported ¹	Website updated	Annual Newsletter Distributed	Volunteer Events	Small-scale BMPs supported ¹	
Apple Valley							
Burnsville							
Eagan							
Lakeville							
Dakota SWCD		-- ¹				-- ¹	
Dakota County		--				--	

(1) Including Landscaping for Clean Water projects; projects are listed according to physical location.

Additional Details (if applicable)

Placeholder to include narrative of project details, if applicable.

Implementation Actions

The following activities from the BDWMO's 2022 Watershed Management Plan are related to Goal R.

Education and Public Engagement

- ED-1 Website administration.
- ED-2 Prepare and publish annual report (newsletter) to BDWMO website.
- ED-5 Sponsor workshops to support resident/landowner stewardship practices.
- ED-6 Coordinate with partners to identify and support volunteer efforts.



Placeholder for aerial map showing lake and surrounding land (to give idea of land use), maybe conceptual flow arrows (major inlets and outlet)?

The Black Dog Watershed Management Organization (BDWMO) performs monitoring of its strategic waterbodies on a 5-year rotating basis. BDWMO monitored Lac Lavon in 2022. Monitoring results presented in this report include:

- Water chemistry (including chloride)
- Macrophytes (aquatic plants)
- Phytoplankton
- Water levels

Summary and Recommendations

- Continued excellent water quality; Phosphorus, chlorophyll a, and Secchi disc transparency better than MPCA standards
- No statistically significant trends in water quality over the past 10 years
- *Placeholder for chloride results*
- Several native plant species are present that indicate good water quality
- Dense growth of invasive curly-leaf pondweed and Eurasian watermilfoil occur in some areas
- Invasive brittle naiad is present but not in nuisance levels
- *Placeholder for phytoplankton results*
- *Placeholder for lake level results, if significant*
- *Placeholder for recommendations*

About Lac Lavon

BDWMO Classification	Strategic waterbody
MDNR ID number	19-0446
Watershed Area	184 acres
Lake Area	60 acres
Average Depth	--
Maximum Depth	32 feet
Ordinary High Water Level	--
Downstream Resource	Normally landlocked, Keller Lake at high water
Location (city)	Apple Valley, Burnsville
Public Access	Two parks
MPCA Classification	Deep lake
MPCA Impairments	Mercury in fish tissue
Aquatic Invasive Species	Curly-leaf pondweed Eurasian watermilfoil Brittle naiad

Introduction

Lac Lavon is an abandoned gravel pit that lies on the border of Burnsville and Apple Valley. Lac Lavon receives runoff from both cities, although the lake's primary water source is groundwater. Lac Lavon has no natural outlet and lake levels can fluctuate significantly based on long-term precipitation trends.

The Lac Lavon watershed land use is low density residential and park. Lac Lavon is used for wildlife habitat and a variety of recreational purposes, including fishing, swimming, and aesthetic viewing. The City of Burnsville park has access for launching canoes and the City of Apple Valley park has a canoe rack and path to a fishing pier on the shoreline. There is no public boat ramp for launching trailered boats on Lac Lavon.

*Include brief summary of recent projects, if applicable.
Add callout box for BDWMO and City management activities?*

2023 Water Quality Monitoring

Water quality monitoring performed by BDWMO in 2022 included eleven sampling events between April and September. Measured parameters included:

- Secchi disc transparency
- Chlorophyll *a*
- Total phosphorus
- Field parameters including:
 - Dissolved oxygen
 - Specific conductivity
 - pH

A CAMP volunteer also collected four samples in 2022. Monitoring methods are described in detail in the Lac Lavon monitoring plan (*to be completed*).

Results of 2022 Barr and CAMP water quality monitoring events are presented in Figure 1a through 1c. *Placeholder for summarized results of 2022 monitoring specifically.*

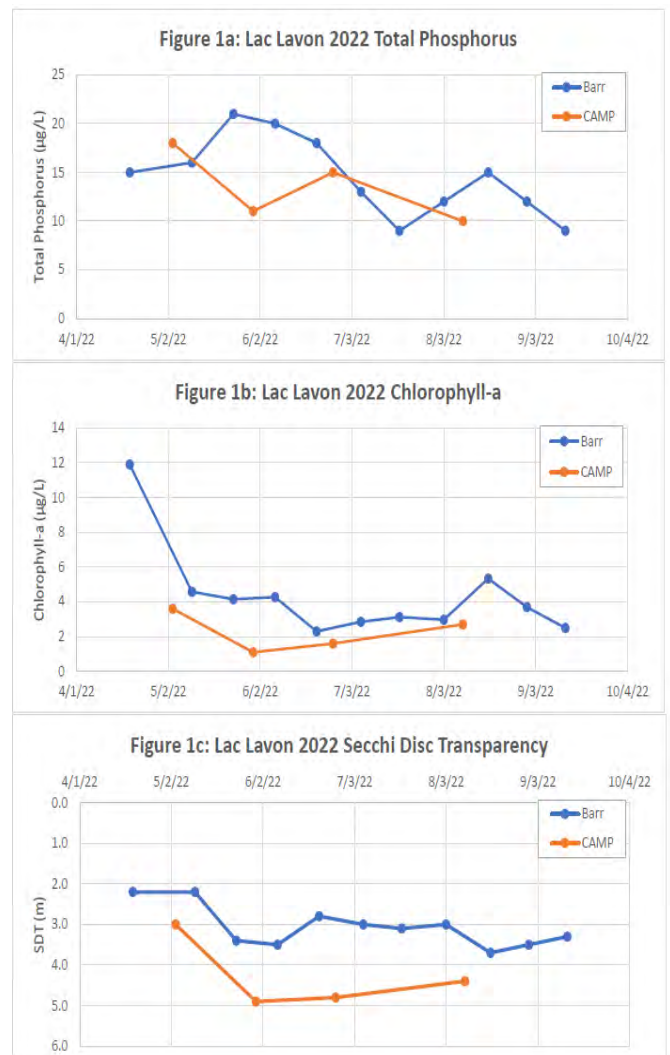
Add the boat graphic?

Consider adding BDWMO standard to the plots.

Fisheries

The City of Apple Valley has conducted fish surveys (years 2020 and 2022) and fish stocking (2020) on Lac Lavon. The Lac Lavon fish community includes bluegill, northern pike, black crappies, hybrid sunfish, pumpkin-seed sunfish, largemouth bass, and bullhead. Bluegill sunfish were the most abundant species in 2020. In 2020, a total of 500 walleye and 500 largemouth bass were stocked in Lac Lavon.

Include a photo of fish. Check species against most recent survey.



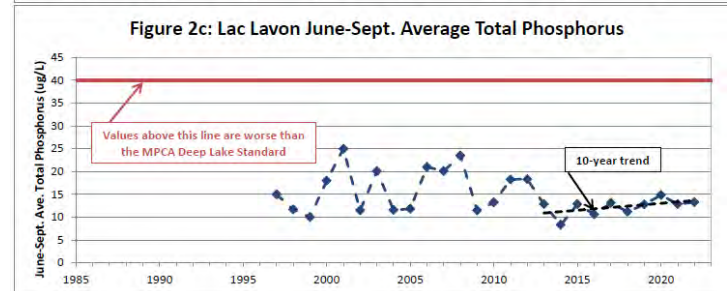
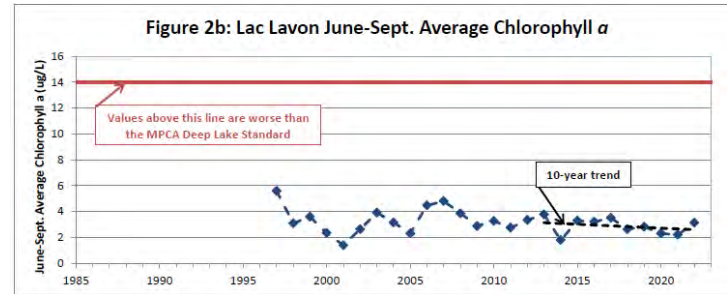
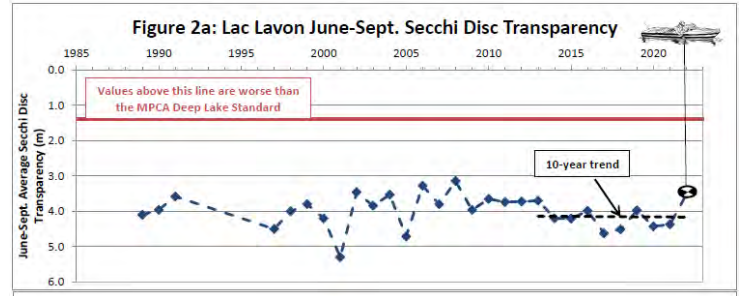
Water Quality Trends (2014-2023)

The 2022 summer (June-September) averages of water quality parameters were calculated for Lac Lavon and plotted with previous years' summer averages (see Figure 2).

Placeholder for summer average water quality. Results will address:

- Condition relative to MPCA standards
- Condition relative to BDWMO standards
- Statistically significant trends
- Relationships between parameters

Parameter	MPCA Standard	BDWMO Goal	2014-2023 Average
Secchi Disc Transparency (m)	1.4	XX	XX
Chlorophyll a (ug/L)	14	XX	XX
Total Phosphorus (ug/L)	40	XX	XX

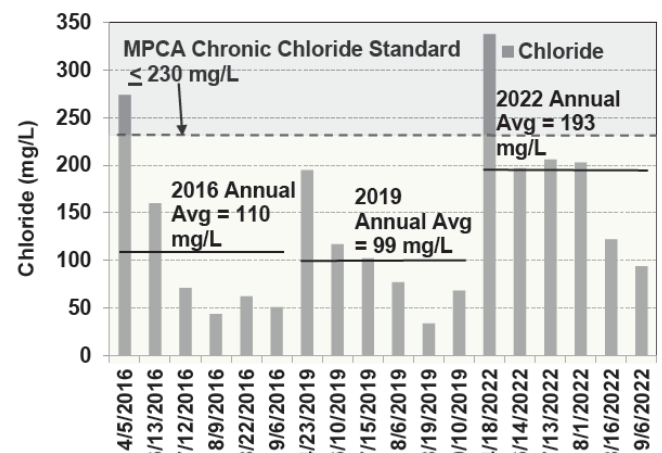


Chlorides

Consider having a separate callout for chloride data and results due to dissimilarity with nutrient data (e.g., shorter period of record, seasonal trends)

Chloride concentrations in area lakes have increased since the early 1990s due to increased use of road salt in winter. Because high chloride concentrations can harm fish and plant life, the MPCA has established maximum and chronic chloride standards. A lake is considered impaired if two or more measurements exceed the chronic standard (230 mg/L) within a 3-year period or if one measurement exceeds the maximum standard (860 mg/L).

Placeholder for summary of 2023 data.



Example chloride graphic.

Macrophytes (Aquatic Plants)

A diverse aquatic plant community is a sign of a healthy lake.

The BDWMO assess health of a lake’s submerged aquatic plant community based on the number of species present and the “quality” of the species as measured by the Floristic Quality Index (FQI). The FQI considers the number of different species and the sensitivity of each species to disturbance (referred to as a “C-value”). Higher C-values and FQI indicate better lake health. The BDWMO established goals for the number of native species and FQI of strategic waterbodies.

Parameter	BDWMO Standard	2022 Results
Floristic Quality Index (submergent zone)	≥17.8	17.7
Native Species (submergent zone)	≥11	8

A total of 11 aquatic plant species were identified in 2022, including 8 native species and three non-native aquatic invasive plants.

Native Species (2023)

- *List native species as bullets*
- *Note species with high C values*
- *Include photos?*

Aquatic Invasive Species

- **Brittle naiad (*Najas minor*)** has been reported in Lac Lavon as far back as 2003 and was observed in the lake in years 2013, 2014, and 2016. Unlike curly-leaf pondweed and Eurasian watermilfoil, which have infested numerous Minnesota lakes, brittle naiad has only been reported in a total of six Minnesota lakes, according to [MDNR web page on the invasive plant](#). Brittle naiad grows much shorter than curly-leaf pondweed and Eurasian watermilfoil (both of which can create dense surface mats); and does not appear to be growing at nuisance levels in Lac Lavon. Because brittle naiad does not grow very tall, and more easily breaks into small fragments (it truly is “brittle”), it may not show up on the plant rake during surveys even when present, and it’s possible its abundance is underreported. It can be transferred to other waterbodies by plant fragments stuck to boats or equipment, or by tiny seeds in mud stuck to boots, anchors, etc.
- **Curly-leaf pondweed** was found at 29% of sampling points with plant growth. No curly-leaf pondweed was observed in August 2022. Curly-leaf pondweed can create dense, nuisance growths, and can also have negative impacts on water quality due to its earlier seasonal life cycle than native aquatic plants. The water quality of Lac Lavon remained excellent throughout the summer months; therefore, curly-leaf pondweed does not appear to be degrading Lac Lavon water quality.
- **Eurasian watermilfoil** can create dense, nuisance growths at the lake surface, and have a negative impact on recreational activities and may also crowd out native plant species. Eurasian watermilfoil was found at 65% of sampling points with plant growth in June 2022, and 82% in August 2022.

Phytoplankton (Algae)

Phytoplankton, or algae, are small aquatic plants naturally present in lakes. Phytoplankton derive energy from the sun through photosynthesis and provide food for several types of aquatic organisms, including zooplankton (microscopic animals), which are, in turn, eaten by fish. Excess phytoplankton can reduce water clarity while low numbers of phytoplankton can negatively impact zooplankton and fish populations.

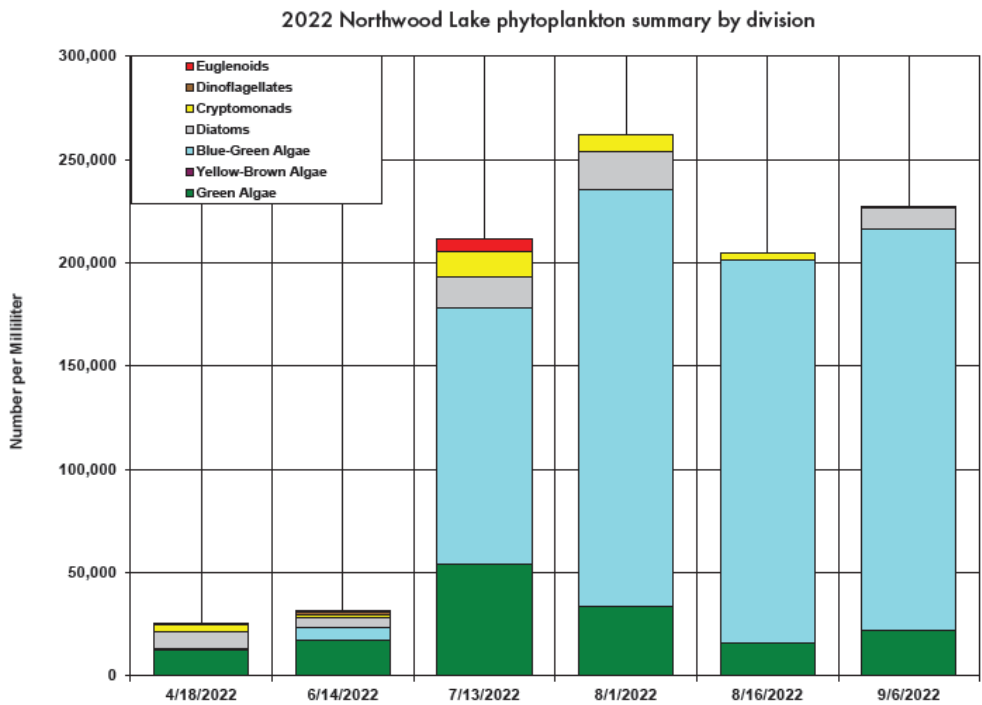
Phytoplankton samples were collected from XXXXXX to evaluate water quality and the quality of food available to zooplankton. Phytoplankton monitoring included blue-green algae (cyanobacteria); this type of bacteria thrives in warm, nutrient-rich water and can grow rapidly under certain conditions, causing “blooms.” Blue-green algae can produce algal toxins, and are also a poor-quality food for zooplankton.

Harmful Algal Blooms

Some blue-green algae (cyanobacteria) can produce toxins that can be harmful to humans and animals if ingested. Specific testing is necessary to determine the presence of algal toxins. However, the World Health Organization (WHO) has established a threshold blue-green algae concentration of 100,000 units per liter above which there is a “moderate probability of adverse health effects” (versus a low probability below the threshold).

Figure X summarizes the number and major groups of phytoplankton in XXXXX in 2022.

Placeholder for text summarizing the results and significance of phytoplankton monitoring.



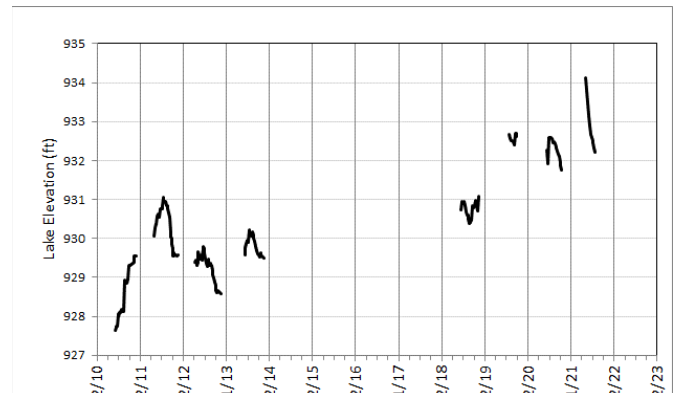
This is an example of what the phytoplankton plot may look like

Water Levels

Lac Lavon is landlocked and has no regularly flowing outlet. The lake level changes in response to precipitation, evaporation, and groundwater inflow/outflow. City of Apple Valley staff collected lake elevation data for years 2010-2014, 2018-2021, and 2023.

Water levels were not measured in 2022 but were observed to be low during water quality monitoring visits. During the period of monitoring, the lake elevation has fluctuated from a low of 927.6 feet in 2010 to a high of 934.13 feet in 2021, a difference of 6.53 feet (Figure X). High lake levels flooded the path leading to the fishing dock in years 2019-2021 (Figure X). Many landlocked lakes in the Twin Cities experienced high water levels in 2019-2021 due to record-breaking precipitation in years 2019-2020 combined with above-average precipitation in prior recent years.

The last two years have seen below average precipitation, and lake levels have come down, including in Lac Lavon. By August 2022, the receding water levels were visible along the lakeshore (Figure X).



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