


## Shingle Creek Watershed Management Commission Treasurer's Report

		2020 Budget	October	November	%age YTD	2020 YTD
<b>REVENUE</b>	%age					
Application Fees		23,000			55.22	12,700.00
Member Assessments		363,590			100.00	363,590.00
Blue Line Extension		1,000			-	-
Interest and Dividends		15,000	14.12		22.10	3,315.35
Education Reimbursement		33,000			54.55	18,000.00
Rain Garden Workshops		8,000			-	-
<i>Transfer to (from) Grants (see following pages)</i>			-	-		128,943.24
<i>Transfer to (from) CIPs</i>						167,095.10
<i>Transfer to (from) Closed Projects Account</i>						-
<b>TOTAL REVENUE</b>		<b>443,590</b>	<b>14.12</b>	<b>-</b>		<b>693,643.69</b>
<b>EXPENSES</b>						
<b>ADMINISTRATION</b>						
Administrative Services		71,000	5,035.99	6,327.31	79.50	56,447.27
Engineering Support		17,000	522.74	823.46	49.25	8,372.67
Project Reviews		1,500	151.56	27.41	76.19	1,142.84
Blue Line Extension		500				-
<b>ENGINEERING</b>						
Administration		62,000	5,460.00	2,140.00	100.73	62,452.06
Grant Application Writing		11,500	300.00	760.00	99.18	11,405.50
Project Reviews/WCA		45,000	2,441.90	1,906.80	55.77	25,094.50
Blue Line Extension		500				-
TMDL 5 Year Reviews		12,000			72.61	8,713.70
<b>LEGAL - Legal Services</b>		6,000	944.70	442.20	68.87	4,132.00
<b>MISCELLANEOUS</b>						
Bookkeeping		7,000	260.00	157.30	94.31	6,602.00
Audit		6,500			92.31	6,000.00
Insurance & Bonding		3,100			104.26	3,232.00
Meeting Expense		5,000			23.14	1,157.01
<b>PROGRAMS</b>						
Stream Monitoring		35,000	1,721.58	3,258.36	82.22	28,775.89
Stream Monitoring (USGS)		4,500		3,800.00	84.44	3,800.00
Lake Monitoring		24,000	1,713.63	368.90	105.88	25,410.71
Citizen Assisted Lake Monitoring (CAMP)		3,800		157.60	50.40	1,915.31
Volunteer Wetland Monitoring (WHEP)		2,000			-	-
Volunteer Stream Monitoring (River Watch)		1,000			-	-
Annual Monitoring Report		16,000		700.70	104.74	16,759.19
Water Quality Education						
Education Program		15,000	1,107.07	768.83	92.83	13,925.24
Education Grants		500			-	-
WMWA General Programs		20,000		613.84	31.42	6,283.20
WMWA Special Projects		6,500			-	-
WMWA Ed/Watershed Prep		18,000		306.90	26.28	4,729.75
Rain Garden Workshops		8,000			-	-
Management Plan/Amendments		1,000			29.21	292.09
Subwatershed BMP Assessment		20,000				-
Flood Modeling and Mapping		0		12,564.00		39,001.80
<i>Transfer to (from) Grants (see following pages)</i>			10,247.50	7,235.91		105,278.79
<i>Transfer to (from) CIPs</i>			50,050.40	38.80		58,474.28
<i>Transfer to (from) Partnership BMP Retrofits Fund</i>						43,510.00
<i>Transfer to (from) Closed Projects Account</i>						10,474.68
<i>To/From Reserves</i>		19,690				
<b>TOTAL OPERATING EXPENSE</b>		<b>443,590</b>	<b>79,957.07</b>	<b>42,398.32</b>		<b>553,382.48</b>
<b>CASH SUMMARY</b>						
<b>4M Fund Balance at 12/31/19</b>						<b>463,980.58</b>
<b>Plus Revenue Received 2020 to date</b>						<b>878,481.50</b>
<b>Minus Claims Approved to Date</b>						<b>(541,974.36)</b>
<b>Minus Claims Presented Current Month</b>						<b>(42,398.32)</b>
<b>Fund Balance</b>			<b>800,487.72</b>			<b>758,089.40</b>

## Shingle Creek Watershed Management Commission Treasurer's Report

Claims Presented	General Ledger Acct No	October	November		Total
Kennedy & Graven					<b>482.40</b>
Legal - General	52001		442.20		
Legal - Bass/Pomerleau Grant	70727		40.20		
US Geological Survey - Stream Monitoring	56004		3,800.00		<b>3,800.00</b>
Sharon Meister - WMWA Ed Services	57011		259.60		<b>290.65</b>
Sharon Meister - WMWA Ed Reimbursement	57012		31.05		
Wenck Associates					<b>29,920.87</b>
General Engineering	51001		2,140.00		
Grant Writing	51005		760.00		
Project Reviews	51002		1,906.80		
Flood Modeling and Mapping	51015		12,564.00		
CAMP	56002		157.60		
Stream Monitoring	56004		3,258.36		
Lake Monitoring	56010		368.90		
TMDL 5-Year Reviews	56011				
Education	57008		670.00		
Education - WMWA	57009		160.00		
Annual Water Quality Report	58002		700.70		
Bass/Pomerleau Alum Trmt Grant	70727		1,453.40		
SRP Reduction Grant	70729		5,187.81		
Meadow Lake Mgt Plan Grant	70731				
Crystal Lake Management Plan Grant	70732		554.50		
Twin Lake Carp Management Follow-up	70809		38.80		
BioChar Filters Ongoing Management	70812				
Bass Creek Stream Restoration Feasibility Study	20910				
Judie Anderson's Secretarial Service					<b>470.09</b>
WMWA General Expense	57009		453.84		
WMWA Educators/WS Prep	57011		16.25		
Judie Anderson's Secretarial Service					<b>7,434.31</b>
Administration	53001		6,327.31		
Project and WCA Review Support	53002		27.41		
Bookkeeping / Audit Prep	54002		157.30		
Education Programs	57008		98.83		
Engineering Support	53004		823.46		
<b>Total Claims</b>					<b>42,398.32</b>
					
<b>Judie A Anderson, Deputy Treasurer</b>					

## Shingle Creek Watershed Management Commission Treasurer's Report

	Total Grant	October	November	%age YTD	YTD
<b>GRANTS</b>					
Bass/Pomerleau Lakes Internal Load Reduction (BWSR C18)	267,040				
Revenue					106,816.00
Expense		2,111.93	1,493.60		50,367.12
Balance		(2,111.93)	(1,493.60)		56,448.88
BWSR Watershed Based Funding	103,571				
Revenue					-
Expense					-
Balance		-	-		-
SRP Reduction Project	72,170				
Revenue					8,869.73
Expense		2,529.84	5,187.81		23,634.27
Balance		(2,529.84)	(5,187.81)		(14,764.54)
Crystal Lake Management Plan (MPCA)					
Revenue					7,334.61
Expense		5,605.73	554.50		31,277.40
Balance		(5,605.73)	(554.50)		(23,942.79)
MN DNR Floodplain Modeling & Mapping	50,000				
Revenue					5,922.90
Expense					-
Balance		-	-		5,922.90
<b>TOTAL GRANTS</b>					
<b>Revenue</b>		-	-		<b>128,943.24</b>
<b>Expense</b>		<b>10,247.50</b>	<b>7,235.91</b>		<b>105,278.79</b>
<b>Balance</b>		<b>(10,247.50)</b>	<b>(7,235.91)</b>		<b>23,664.45</b>

# Kennedy & Graven, Chartered

150 South Fifth Street, Suite 700  
Minneapolis, MN 55402

(612) 337-9300

41-1225694

October 13, 2020

Statement No. 157430

Shingle Creek Watershed Management Commission

Judie Anderson

JASS - Watershed Administrators  
3235 Fernbrook Lane  
Plymouth, MN 55447

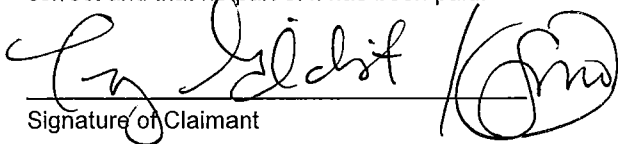
Through September 30, 2020

SH220-00001      General

482.40

**Total Current Billing:** 482.40

I declare, under penalty of law, that this  
account, claim or demand is just and  
correct and that no part of it has been paid.

  
Signature of Claimant

**Kennedy & Graven, Chartered**

150 South Fifth Street, Suite 700  
Minneapolis, MN 55402

Shingle Creek Watershed  
Judie Anderson

September 30, 2020

SH220-00001    General

Through September 30, 2020  
For All Legal Services As Follows:

*Bas from Grant*

			Hours	Amount
9/1/2020	TJG	Email exchange regarding finalizing the amendment to the alum treatment agreement; revise and email amendment	0.20	40.20
9/4/2020	TJG	Review assessment resolution; review statute; email to Diane S regarding same	0.30	60.30
9/10/2020	TJG	Prepare for and participate in meeting; review and respond to email regarding public comment on draw down project	1.10	221.10
9/11/2020	TJG	Call with Diane S regarding draw down project	0.20	40.20
9/30/2020	TJG	Work on Plymouth cooperative agreement for street sweeper; email to Diane regarding same	0.60	120.60
<b>Total Services:</b>			<b>\$</b>	<b>482.40</b>
<b>Total Services and Disbursements:</b>			<b>\$</b>	<b>482.40</b>

UNITED STATES DEPARTMENT OF THE INTERIOR  
DOWN PAYMENT (BILL) REQUEST

Make Remittance Payable To: U.S. Geological Survey  
Billing Contact: Angie Hughes, amhughes@usgs.gov

Phone: 651-280-5735

Bill #: 90851443  
Customer: 6000001443  
Date: 10/15/2020  
Due Date: 12/14/2020

Remit Payment To: United States Geological Survey  
P.O. Box 6200-27  
Portland, OR 97228-6200

Payer: SHINGLE CREEK WATERSHED COMMIS  
Judie Anderson  
3235 FERNBROOK LANE  
PLYMOUTH MN 55447

Additional forms of payment may be accepted. Please email GS-A-HQ\_RMS@USGS.GOV or call 703-648-7683 for additional information.

To pay through Pay.gov go to <https://www.pay.gov>.

Checks must be made payable to U.S. Geological Survey. Please detach the top portion or include bill number on all remittances.

Amount of Payment: \$ \_\_\_\_\_

Date	Description	Qty	Unit Price		Amount
			Cost	Per	
10/15/2020	Billing for the operation, and maintenance of specific conductance and water temperature monitoring instrumentation at Shingle Creek at Queen Avenue in Minneapolis. 20NKJFA213	1	3,800.00	1	3,800.00
Amount Due this Bill:					3,800.00

Accounting Classification:  
Sales Order: 94001  
Sales Office: GENK  
Customer: 6000001443  
Accounting #: 11122204

TIN: \*\*\*\*\*0004



**Invoice**

November 5, 2020  
Invoice No: 12007580



Responsive partner.  
Exceptional outcomes.

Ms. Judie Anderson  
Shingle Creek Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Project Manager Edward Matthiesen

Project B001240-20-220 2020 General Engineering - Shingle Creek

**Professional Services Through October 31, 2020**

Phase 01 2020 General Engineering  
2020 General Engineering

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Matthiesen, Edward	8.10	200.00	1,620.00	
Spector, Diane	2.60	200.00	520.00	
Totals	10.70		2,140.00	
<b>Total Labor</b>				<b>2,140.00</b>
				<b>Phase Total</b>
				<b>\$2,140.00</b>
				<b>Total Invoice Amount</b>
				<b>\$2,140.00</b>

	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>2,140.00</b>	<b>60,312.06</b>	<b>62,452.06</b>



**Invoice**

November 5, 2020  
Invoice No: 12007582



Responsive partner.  
Exceptional outcomes.

Ms. Judie Anderson  
Shingle Creek Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Project Manager Diane Spector

Project B001240-20-221 2020 Grant Writing - Shingle Creek

**Professional Services Through October 31, 2020**

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Spector, Diane	3.80	200.00	760.00	
Totals	3.80		760.00	
<b>Total Labor</b>				<b>760.00</b>
		<b>Total Invoice Amount</b>		<b>\$760.00</b>

	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>760.00</b>	<b>10,645.50</b>	<b>11,405.50</b>

**Invoice**November 5, 2020  
Invoice No: 12007584Ms. Judie Anderson  
Shingle Creek Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447Responsive partner.  
Exceptional outcomes.

Project Manager Edward Matthiesen

Project B001240-20-224 2020 Project Reviews - Shingle Creek

**Professional Services Through October 31, 2020**Phase 01 General Project Reviews  
General Project Reviews**Professional Personnel**

	Hours	Rate	Amount	
Kemmitt, Katie	2.00	99.00	198.00	
Matthiesen, Edward	2.60	200.00	520.00	
Spector, Diane	1.00	200.00	200.00	
Totals	5.60		918.00	
<b>Total Labor</b>				<b>918.00</b>
				<b>Phase Total \$918.00</b>

Phase 02 WCA  
WCA**Professional Personnel**

	Hours	Rate	Amount	
Dietrich, Meaghan	5.60	123.00	688.80	
Totals	5.60		688.80	
<b>Total Labor</b>				<b>688.80</b>
				<b>Phase Total \$688.80</b>

Phase 10 Middle of the Blvd  
Middle of the Blvd**Professional Personnel**

	Hours	Rate	Amount	
Matthiesen, Edward	1.20	200.00	240.00	
Totals	1.20		240.00	
<b>Total Labor</b>				<b>240.00</b>
				<b>Phase Total \$240.00</b>

Phase 11 Crystal MAC Boardwalk  
Crystal MAC Boardwalk**Professional Personnel**

	Hours	Rate	Amount	
Matthiesen, Edward	.30	200.00	60.00	
Totals	.30		60.00	
<b>Total Labor</b>				<b>60.00</b>

INVOICES ARE DUE UPON PRESENTATION. Subject to 1-1/2% 18% Annum interest/finance charge. Please reference the invoice number when sending payment. Federal Tax ID #41-1520095 -Wenck Associates, Inc.-1800 Pioneer Creek Center PO Box 249- Maple Plain, MN 55359-0249 Toll Free:800-472-2232 Main:763-479-4200 E-mail:accounting@wenck.com Web www.wenck.com

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Project	B001240-20-224	2020 Project Reviews - Shingle Creek	Invoice	12007584
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<b>Phase Total</b>	<b>\$60.00</b>
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<b>Total Invoice Amount</b>	<b>\$1,906.80</b>
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	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>1,906.80</b>	<b>23,187.70</b>	<b>25,094.50</b>

**Invoice**

November 5, 2020

Invoice No: 12007573



Ms. Judie Anderson  
 Shingle Creek Watershed Management Commission  
 3235 Fernbrook Lane  
 Plymouth, MN 55447

Responsive partner.  
 Exceptional outcomes.

Project Manager Eileen Weigel

Project B001240-18-201 Shingle Creek HUC 8 Model Update

**Professional Services Through October 31, 2020**

Phase 01 Meetings  
 Meetings

**Professional Personnel**

	Hours	Rate	Amount	
Weigel, Eileen	.50	158.00	79.00	
Totals	.50		79.00	
<b>Total Labor</b>				<b>79.00</b>
		<b>Phase Total</b>		<b>\$79.00</b>

Phase 04 Hydraulic Analysis - Detailed Areas  
 Hydraulic Analysis - Detailed Areas

**Professional Personnel**

	Hours	Rate	Amount	
Barth, Brendan	26.00	108.00	2,808.00	
Mullen, Ross	25.80	158.00	4,076.40	
Totals	51.80		6,884.40	
<b>Total Labor</b>				<b>6,884.40</b>
		<b>Phase Total</b>		<b>\$6,884.40</b>

Phase 05 Hydraulic Analysis - Non-Detailed Areas  
 Hydraulic Analysis - Non-Detailed Areas

**Professional Personnel**

	Hours	Rate	Amount	
Mullen, Ross	10.10	158.00	1,595.80	
Totals	10.10		1,595.80	
<b>Total Labor</b>				<b>1,595.80</b>
		<b>Phase Total</b>		<b>\$1,595.80</b>

Phase 06 GIS Work and Mapping  
 GIS Work and Mapping

**Professional Personnel**

	Hours	Rate	Amount	
Kaczmarek, Hagen	.30	130.00	39.00	
Megow, Erik	1.00	145.00	145.00	
Mullen, Ross	.20	158.00	31.60	

INVOICES ARE DUE UPON PRESENTATION. Subject to 1-1/2% 18% Annum interest/finance charge. Please reference the invoice number when sending payment. Federal Tax ID #41-1520095 -Wenck Associates, Inc.-1800 Pioneer Creek Center PO Box 249- Maple Plain, MN 55359-0249 Toll Free:800-472-2232 Main:763-479-4200 E-mail:accounting@wenck.com Web www.wenck.com

Weigel, Eileen	1.70	158.00	268.60	
Totals	3.20		484.20	
<b>Total Labor</b>				<b>484.20</b>
			<b>Phase Total</b>	<b>\$484.20</b>

Phase 07 Reporting

**Professional Personnel**

	Hours	Rate	Amount	
Spector, Diane	.30	198.00	59.40	
Totals	.30		59.40	
<b>Total Labor</b>				<b>59.40</b>
			<b>Phase Total</b>	<b>\$59.40</b>

Phase 08 Ryan - Twin Lakes

Ryan - Twin Lakes

**Professional Personnel**

	Hours	Rate	Amount	
Megow, Erik	6.00	145.00	870.00	
Weigel, Eileen	16.40	158.00	2,591.20	
Totals	22.40		3,461.20	
<b>Total Labor</b>				<b>3,461.20</b>
			<b>Phase Total</b>	<b>\$3,461.20</b>
			<b>Total Invoice Amount</b>	<b>\$12,564.00</b>

<b>Billing Summary</b>	<b>Current</b>	<b>Prior</b>	<b>Total</b>
	12,564.00	62,376.90	74,940.90

**Invoice**

November 5, 2020

Invoice No: 12007578



Ms. Judie Anderson  
 Shingle Creek Watershed Management Commission  
 3235 Fernbrook Lane  
 Plymouth, MN 55447

Responsive partner.  
 Exceptional outcomes.

Project Manager Diane Spector

Project B001240-20-218 2020 CAMP

**Professional Services Through October 31, 2020****Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Stone, Alicia	1.60	87.00	139.20	
Totals	1.60		139.20	
<b>Total Labor</b>				<b>139.20</b>

**Reimbursable Expenses**

Mileage - Reimbursable			18.40	
<b>Total Reimbursables</b>			<b>18.40</b>	<b>18.40</b>

**Total Invoice Amount \$157.60**

	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>157.60</b>	<b>1,757.71</b>	<b>1,915.31</b>

**Invoice**

November 5, 2020

Invoice No: 12007586



Ms. Judie Anderson  
 Shingle Creek Watershed Management Commission  
 3235 Fernbrook Lane  
 Plymouth, MN 55447

Responsive partner.  
 Exceptional outcomes.

Project Manager Diane Spector

Project B001240-20-225 2020 Stream Monitoring

**Professional Services Through October 31, 2020****Professional Personnel**

	Hours	Rate	Amount	
Kemmitt, Katie	13.30	99.00	1,316.70	
Omodt, Nicholas	5.10	99.00	504.90	
Stone, Alicia	6.90	87.00	600.30	
Totals	25.30		2,421.90	
<b>Total Labor</b>				<b>2,421.90</b>

**Outside Services**

RMB Environmental Laboratories, Inc.			687.00	
<b>Outside Services Total</b>			<b>687.00</b>	<b>687.00</b>

**Unit Billing**

00-WAI Vehicle Golden Valley				
01-Data Sonde - YSI EXO				149.46
			<b>Total Invoice Amount</b>	<b>\$3,258.36</b>

	Current	Prior	Total
<b>Billing Summary</b>	<b>3,258.36</b>	<b>25,517.53</b>	<b>28,775.89</b>

**Invoice**

November 5, 2020  
Invoice No: 12007583



Responsive partner.  
Exceptional outcomes.

Ms. Judie Anderson  
Shingle Creek Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Project Manager Diane Spector

Project B001240-20-222 2020 Lake Monitoring

**Professional Services Through October 31, 2020**

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Kemmitt, Katie	.10	99.00	9.90	
Wilkinson, Anne	1.00	135.00	135.00	
Totals	1.10		144.90	
<b>Total Labor</b>				<b>144.90</b>

**Outside Services**

RMB Environmental Laboratories, Inc.			224.00	
<b>Outside Services Total</b>			<b>224.00</b>	<b>224.00</b>

**Total Invoice Amount \$368.90**

	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>368.90</b>	<b>25,041.81</b>	<b>25,410.71</b>



**Invoice**

November 5, 2020  
Invoice No: 12007579



Responsive partner.  
Exceptional outcomes.

Ms. Judie Anderson  
Shingle Creek Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Project Manager Diane Spector

Project B001240-20-219 2020 Education and Outreach

**Professional Services Through October 31, 2020**

Phase 01 General Education  
General Education

**Professional Personnel**

	Hours	Rate	Amount	
Spector, Diane	6.70	200.00	1,340.00	
Totals	6.70		1,340.00	
<b>Total Labor</b>				<b>1,340.00</b>
				<b>Phase Total</b>
				<b>\$1,340.00</b>

Phase 02 WMWA  
WMWA

**Professional Personnel**

	Hours	Rate	Amount	
Spector, Diane	.80	200.00	160.00	
Totals	.80		160.00	
<b>Total Labor</b>				<b>160.00</b>
				<b>Phase Total</b>
				<b>\$160.00</b>

**Total Invoice Amount \$1,500.00**

Billing Summary	Current	Prior	Total
	1,500.00	24,009.40	25,509.40

SC Education - 670.00  
 WMWA - 160.00  
 -----  
 830.00

Wm Education 670.00

**Invoice**

November 5, 2020  
Invoice No: 12007577



Responsive partner.  
Exceptional outcomes.

Ms. Judie Anderson  
Shingle Creek Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Project Manager Diane Spector

Project B001240-20-217 2020 Annual WQ Report

**Professional Services Through October 31, 2020**

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Hyams, Aaron	11.00	64.00	704.00	
Kemmitt, Katie	3.00	99.00	297.00	
Totals	14.00		1,001.00	
<b>Total Labor</b>				<b>1,001.00</b>
		<b>Total Invoice Amount</b>		<b>\$1,001.00</b>

<b>Billing Summary</b>	<b>Current</b>	<b>Prior</b>	<b>Total</b>
	<b>1,001.00</b>	<b>22,940.70</b>	<b>23,941.70</b>

SC - 700.70

Wm - 300.30

**Invoice**

November 5, 2020  
Invoice No: 12007575



Ms. Judie Anderson  
Shingle Creek Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Responsive partner.  
Exceptional outcomes.

Project Manager Diane Spector

Project B001240-19-214 2019 Twin Lake Carp Management

**Professional Services Through October 31, 2020**

Phase 01 Carp & SAV Management  
Carp & SAV Management

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Omodt, Nicholas	.40	97.00	38.80	
Totals	.40		38.80	
<b>Total Labor</b>				<b>38.80</b>
		<b>Phase Total</b>		<b>\$38.80</b>
		<b>Total Invoice Amount</b>		<b>\$38.80</b>

	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>38.80</b>	<b>11,822.47</b>	<b>11,861.27</b>

**Invoice**

November 5, 2020

Invoice No: 12007572



Ms. Judie Anderson  
 Shingle Creek Watershed Management Commission  
 3235 Fernbrook Lane  
 Plymouth, MN 55447

Responsive partner.  
 Exceptional outcomes.

Project Manager Diane Spector

Project B001240-18-200 Bass and Pomerleau Lakes Alum Treatment

**Professional Services Through October 31, 2020**

Phase 01 Technical Services

Technical Services

**Professional Personnel**

	Hours	Rate	Amount	
Matthiesen, Edward	.30	198.00	59.40	
Spector, Diane	.50	198.00	99.00	
Totals	.80		158.40	
<b>Total Labor</b>				<b>158.40</b>
		<b>Phase Total</b>		<b>\$158.40</b>

Phase 02 Lake WQ Monitoring

Lake WQ Monitoring

**Professional Personnel**

	Hours	Rate	Amount	
Kemmitt, Katie	3.00	97.00	291.00	
Wilkinson, Anne	4.80	130.00	624.00	
Totals	7.80		915.00	
<b>Total Labor</b>				<b>915.00</b>

**Outside Services**

RMB Environmental Laboratories, Inc.			380.00	
<b>Outside Services Total</b>			<b>380.00</b>	<b>380.00</b>

**Phase Total \$1,295.00**

**Total Invoice Amount \$1,453.40**

	Current	Prior	Total
<b>Billing Summary</b>	<b>1,453.40</b>	<b>88,842.15</b>	<b>90,295.55</b>

**Invoice**

November 5, 2020

Invoice No: 12007574



Ms. Judie Anderson  
 Shingle Creek Watershed Management Commission  
 3235 Fernbrook Lane  
 Plymouth, MN 55447

Responsive partner.  
 Exceptional outcomes.

Project Manager Diane Spector

Project B001240-19-212 Shingle Creek SRP Reduction Project

**Professional Services Through October 31, 2020**

Phase 02 Filter Installation

Filter Installation

**Professional Personnel**

	Hours	Rate	Amount	
Scientist I				
Kemmitt, Katie	3.70	78.09	288.93	
Omodt, Nicholas	2.00	78.09	156.18	
Totals	5.70		445.11	
<b>Total Labor</b>				<b>445.11</b>
				<b>Phase Total \$445.11</b>

Phase 03 Monitoring

Monitoring

**Outside Services**

Pace Analytical Services, Inc.			154.00	
<b>Outside Services Total</b>			<b>154.00</b>	<b>154.00</b>
				<b>Phase Total \$154.00</b>

Phase 04 Evaluation

Evaluation

**Professional Personnel**

	Hours	Rate	Amount	
Scientist I				
Kemmitt, Katie	11.50	78.09	898.04	
Scientist II				
Kallio, Brian	10.40	97.48	1,013.79	
Totals	21.90		1,911.83	
<b>Total Labor</b>				<b>1,911.83</b>
				<b>Phase Total \$1,911.83</b>

Phase 05 Information Sharing

Information Sharing

**Professional Personnel**

	Hours	Rate	Amount	
Project Manager				
Spector, Diane	14.00	137.52	1,925.28	

INVOICES ARE DUE UPON PRESENTATION. Subject to 1-1/2% 18% Annum interest/finance charge. Please reference the invoice number when sending payment. Federal Tax ID #41-1520095 -Wenck Associates, Inc.-1800 Pioneer Creek Center PO Box 249- Maple Plain, MN 55359-0249 Toll Free:800-472-2232 Main:763-479-4200 E-mail:accounting@wenck.com Web www.wenck.com

Scientist I				
Kemmitt, Katie	1.70	78.09	132.75	
Totals	15.70		2,058.03	
<b>Total Labor</b>				<b>2,058.03</b>
		<b>Phase Total</b>		<b>\$2,058.03</b>

-----

Phase 06 Semiannual/Annual Reports

Semiannual/Annual Reports				
<b>Professional Personnel</b>				
	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Project Manager				
Spector, Diane	4.50	137.52	618.84	
Totals	4.50		618.84	
<b>Total Labor</b>				<b>618.84</b>
		<b>Phase Total</b>		<b>\$618.84</b>
		<b>Total Invoice Amount</b>		<b>\$5,187.81</b>

<b>Billing Summary</b>	<b>Current</b>	<b>Prior</b>	<b>Total</b>
	<b>5,187.81</b>	<b>108,948.78</b>	<b>114,136.59</b>

**Invoice**

November 5, 2020

Invoice No: 12007576



Ms. Judie Anderson  
 Shingle Creek Watershed Management Commission  
 3235 Fernbrook Lane  
 Plymouth, MN 55447

Responsive partner.  
 Exceptional outcomes.

Project Manager Diane Spector

Project B001240-20-216 Crystal Lake Management Plan

**Professional Services Through October 31, 2020**

Phase 01C Water Quality Monitoring  
 Water Quality Monitoring

**Professional Personnel**

	Hours	Rate	Amount	
Wilkinson, Anne	.50	135.00	67.50	
Totals	.50		67.50	
<b>Total Labor</b>				<b>67.50</b>

**Outside Services**

RMB Environmental Laboratories, Inc.			190.00	
<b>Outside Services Total</b>			<b>190.00</b>	<b>190.00</b>

**Phase Total \$257.50**

Phase 02A Carp Assessment & Tracking  
 Carp Assessment & Tracking

**Professional Personnel**

	Hours	Rate	Amount	
Omodt, Nicholas	.80	99.00	79.20	
Totals	.80		79.20	
<b>Total Labor</b>				<b>79.20</b>

**Phase Total \$79.20**

Phase 04 Semi-annual & Final Report  
 Semi-annual & Final Report

**Professional Personnel**

	Hours	Rate	Amount	
Kemmitt, Katie	2.20	99.00	217.80	
Totals	2.20		217.80	
<b>Total Labor</b>				<b>217.80</b>

**Phase Total \$217.80**

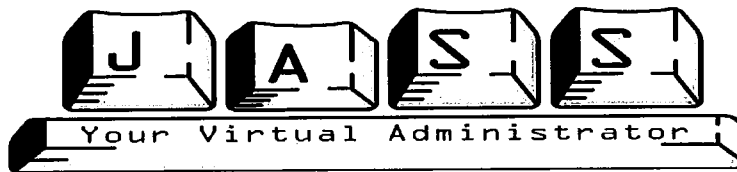
**Total Invoice Amount \$554.50**

	Current	Prior	Total
<b>Billing Summary</b>	<b>554.50</b>	<b>30,722.90</b>	<b>31,277.40</b>

INVOICES ARE DUE UPON PRESENTATION. Subject to 1-1/2% 18% Annum interest/finance charge. Please reference the invoice number when sending payment. Federal Tax ID #41-1520095 -Wenck Associates, Inc.-1800 Pioneer Creek Center PO Box 249- Maple Plain, MN 55359-0249 Toll Free:800-472-2232 Main:763-479-4200 E-mail:accounting@wenck.com Web www.wenck.com







3235 Fernbrook Lane  
Plymouth MN 55447

Shingle Creek / West Mississippi Watershed Management Commissions  
3235 Fernbrook Lane  
Plymouth, MN 55447


November 9, 2020

	Share	G/L	Shingle Creek			West Mississippi			Total Project Area	
			SC	WM		SC	WM	SC	WM	
Administrative		53001	1.15	60.00	69.00	0.40	60.00	24.00		
Administrative	70-30	53001		60.00	-		60.00	-		
Administrative		53001	15.38	65.00	999.70	1.16	65.00	75.40		
Administrative	70-30	53001	28.22	65.00	1,284.01		65.00	550.29		
Annual Reporting		53001	25.67	65.00	1,668.55	50.48	65.00	3,281.20		
Admin - Offsite		53001		70.00	-		70.00	-		
Admin - virtual meeting	70-30	53001	1.88	70.00	92.12		70.00	39.48		
Office Support	70-30	53001	12.00	200.00	1,680.00		200.00	720.00		
Data Processing/File Mgmt		53001		55.00	-		55.00	-		
Data Processing/File Mgmt		53001		60.00	-		60.00	-		
Data Processing/File Mgmt	70-30	53001	0.41	60.00	17.22		60.00	7.38		
Admin Reimbursables		53001	516.71	1.00	516.71		1.00	331.54	6,327.310	5,029.290
Bookkeeping		54022	2.42	65.00	157.30	1.42	65.00	92.30		
Audit Prep		54022		60.00	-		60.00	-		
Audit Prep		54022		65.00	-		65.00	-	157.300	92.300
Project / WCA Reviews - Admin		53002	0.32	65.00	20.80		65.00	-		
Project Reviews - File Mgmt		53002		55.00	-		55.00	-		
Reimbursable Expenses		53002	6.61	1.00	6.61		1.00	-	27.410	-
Education - Admin	50-50	57008	1.30	65.00	42.25		60.00	42.25		
Education - Admin - virtual	50-50	57008		70.00	-		70.00	-		
Education Grant	50-50	57007		65.00	-		65.00	-		
Website	50-50	57008	1.16	60.00	34.80		55.00	34.80		
Website	50-50	57008	0.67	65.00	21.78		60.00	21.78		
Education Reimbursables	50-50	57008		1.00	-		1.00	-	98.825	98.825
Engineering Support - Admin		53004	4.82	65.00	313.30		65.00	-		
Engineering Support - Admin	70-30	53004	10.25	65.00	466.38		60.00	199.88		
Engineering Support - virtual	70-30	53004		70.00	-		70.00	-		
Engineering Support Reimbursable:	70-30	53004	43.79	1.00	43.79	13.30	1.00	13.30	823.465	213.175
					7,434.31			5,433.59	7,434.310	5,433.590

**West Mississippi Watershed Management Commission  
Treasurer's Report**

	2020 Budget	October	November	%age YTD	2020 YTD
<b>REVENUE</b>					
Application Fees	18,000			73.89	13,300.00
Member Assessments	153,600			100.00	153,600.00
Blue Line Extension	1,000				-
Interest & Dividend Income	5,000	10.38		49.04	2,451.79
Miscellaneous Income					-
<i>Transfer to (from) CIPs (see CIP Tracker page)</i>					27,632.85
<i>To (From) Reserve</i>					-
<b>TOTAL REVENUE</b>	<b>177,600</b>	<b>10.38</b>	<b>-</b>		<b>196,984.64</b>
<b>EXPENSES</b>					
<b>ADMINISTRATION</b>					
Administrative Services	31,000	2,411.49	5,029.29	91.61	28,398.46
Engineering Support	4,500	263.72	213.17	64.02	2,880.77
Project Reviews	1,500	135.57		57.77	866.59
Blue Line Extension	500				
<b>ENGINEERING</b>					
Administration	31,000	2,819.20	520.00	100.66	31,204.40
Grant Application Writing	1,000	260.00	60.00	56.35	563.50
Project Review	27,600	2,936.95	780.00	70.36	19,418.40
Blue Line Extension	500			0.00	-
<b>LEGAL</b>					
Legal Services	5,000	241.20	180.90	50.88	2,544.10
<b>MISCELLANEOUS</b>					
Bookkeeping	3,000	152.10	92.30	83.56	2,506.75
Audit	5,500			81.82	4,500.00
Insurance & Bonding	2,800			115.43	3,232.00
Meeting Expense	2,700			18.37	495.86
<b>PROJECTS</b>					
Volunteer Wetland Monitoring (WHEP)	2,000			100.00	2,000.00
Macroinvertebrate Monitoring (River Watch)	1,000			0.00	-
Outfall and Stream Monitoring	20,000	410.05	1,035.15	47.29	9,458.00
Annual Water Quality Report	8,000		300.30	89.78	7,182.51
<b>Water Quality Education</b>					
Education	15,000	1,107.07	768.83	92.83	13,925.24
Education Grants	500			0.00	-
WMWA General Programs	5,000			60.00	3,000.00
WMWA Special Projects	2,000			50.00	1,000.00
WMWA Educators/Watershed Prep	4,500			44.44	2,000.00
Rain Garden Workshops	2,000	-		31.25	625.00
Management Plan/Amendments	1,000			12.52	125.18
Flood modeling and mapping	0				-
<i>Transfer to (from)CIPs</i>					289.42
<i>To (from) Reserves</i>					-
<b>TOTAL OPERATING EXPENSE</b>	<b>177,600</b>	<b>10,737.35</b>	<b>8,979.94</b>		<b>136,216.18</b>
<b>CASH SUMMARY</b>					
<b>4M Fund Balance at 12/31/19</b>					<b>543,439.02</b>
<b>Plus Revenue Received to Date</b>					<b>197,102.16</b>
<b>Minus Claims Approved to Date</b>					<b>(137,590.81)</b>
<b>Minus Claims Presented Current Month</b>					<b>(8,979.94)</b>
<b>Fund Balance</b>		<b>602,950.37</b>			<b>593,970.43</b>

**West Mississippi Watershed Management Commission  
Treasurer's Report**

Claims Presented	General Ledger Acct No	October	November		
					<b>Total</b>
Kennedy & Graven					<b>180.90</b>
Legal - General	52001		180.90		
Wenck Associates					<b>3,365.45</b>
General Engineering	51001		520.00		
Project Reviews	51002		780.00		
Grant Applica/Research	51005		60.00		
Education Program	57008		670.00		
Water Monitoring Program	58011		1,035.15		
Annual Water Quality Report	58002		300.30		
Judie Anderson's Secretarial Service					<b>5,433.59</b>
Administration	53001		5,029.29		
Bookkeeping / Audit Prep	54002		92.30		
Project and WCA Review Support	53002				
Education Programs	57008		98.83		
Engineering Support	53004		213.17		
<b>Total Claims</b>					<b>8,979.94</b>
_____					
					
Judie A Anderson, Deputy Treasurer					
_____					
_____					
_____					

**Kennedy & Graven, Chartered**

150 South Fifth Street, Suite 700  
Minneapolis, MN 55402

(612) 337-9300

41-1225694

October 13, 2020

Statement No. 157439

West Mississippi Watershed Management Commission

JASS - Watershed Administrators  
3235 Fernbrook Lane  
Plymouth, MN 55447

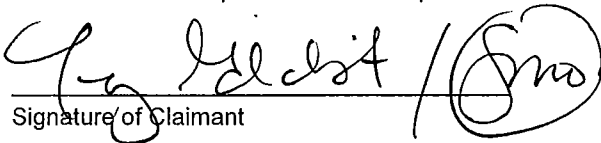
Through September 30, 2020

WE405-00001    General

180.90

**Total Current Billing:** 180.90

I declare, under penalty of law, that this account, claim or demand is just and correct and that no part of it has been paid.

  
\_\_\_\_\_  
Signature of Claimant

**Kennedy & Graven, Chartered**

150 South Fifth Street, Suite 700  
Minneapolis, MN 55402

West Mississippi Watershed

September 30, 2020

WE405-00001    General

Through September 30, 2020

For All Legal Services As Follows:

			Hours	Amount
9/10/2020	TJG	Prepare for and participate in meeting	0.90	180.90

**Total Services:            \$            180.90**

**Total Services and Disbursements:    \$            180.90**

**Invoice**

November 5, 2020  
Invoice No: 12007581



Responsive partner.  
Exceptional outcomes.

Ms. Judie Anderson  
West Mississippi Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Project Manager Edward Matthiesen

Project B001241-20-078 2020 General Engineering - West Mississippi

**Professional Services Through October 31, 2020**

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Matthiesen, Edward	1.10	200.00	220.00	
Spector, Diane	1.50	200.00	300.00	
Totals	2.60		520.00	
<b>Total Labor</b>				<b>520.00</b>
				<b>Total Invoice Amount</b>
				<b>\$520.00</b>

	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>520.00</b>	<b>30,684.40</b>	<b>31,204.40</b>

**Invoice**

November 5, 2020  
Invoice No: 12007585



Responsive partner.  
Exceptional outcomes.

Ms. Judie Anderson  
West Mississippi Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Project Manager Diane Spector

Project B001241-20-079 2020 Grant Writing

**Professional Services Through October 31, 2020**

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Spector, Diane	.30	200.00	60.00	
Totals	.30		60.00	
<b>Total Labor</b>				<b>60.00</b>
		<b>Total Invoice Amount</b>		<b>\$60.00</b>

	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>60.00</b>	<b>503.50</b>	<b>563.50</b>

**Invoice**

November 5, 2020

Invoice No: 12007588



Ms. Judie Anderson  
 West Mississippi Watershed Management Commission  
 3235 Fernbrook Lane  
 Plymouth, MN 55447

Responsive partner.  
 Exceptional outcomes.

Project Manager Edward Matthiesen

Project B001241-20-082 2020 Project Reviews

**Professional Services Through October 31, 2020**

Phase 01 General Project Reviews

General Project Reviews

**Professional Personnel**

	Hours	Rate	Amount	
Matthiesen, Edward	1.90	200.00	380.00	
Spector, Diane	.30	200.00	60.00	
Totals	2.20		440.00	
<b>Total Labor</b>				<b>440.00</b>
				<b>Phase Total \$440.00</b>

Phase 05 Kurita

Kurita

**Professional Personnel**

	Hours	Rate	Amount	
Matthiesen, Edward	.90	200.00	180.00	
Totals	.90		180.00	
<b>Total Labor</b>				<b>180.00</b>
				<b>Phase Total \$180.00</b>

Phase 07 94th Ave N

94th Ave N

**Professional Personnel**

	Hours	Rate	Amount	
Matthiesen, Edward	.80	200.00	160.00	
Totals	.80		160.00	
<b>Total Labor</b>				<b>160.00</b>
				<b>Phase Total \$160.00</b>

**Total Invoice Amount \$780.00**

Billing Summary	Current	Prior	Total
	780.00	18,398.40	19,178.40



**Invoice**

November 5, 2020  
Invoice No: 12007587



Responsive partner.  
Exceptional outcomes.

Ms. Judie Anderson  
West Mississippi Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Project Manager Diane Spector

Project B001241-20-080 2020 Outfall and Stream Monitoring

**Professional Services Through October 31, 2020**

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Kemmitt, Katie	7.60	99.00	752.40	
Totals	7.60		752.40	
<b>Total Labor</b>				<b>752.40</b>

**Outside Services**

RMB Environmental Laboratories, Inc.			204.00	
<b>Outside Services Total</b>			<b>204.00</b>	<b>204.00</b>

**Unit Billing**

00-WAI Vehicle Golden Valley				
01-Data Sonde - YSI EXO				
				<b>78.75</b>

**Total Invoice Amount \$1,035.15**

	<b>Current</b>	<b>Prior</b>	<b>Total</b>
<b>Billing Summary</b>	<b>1,035.15</b>	<b>8,422.85</b>	<b>9,458.00</b>

INVOICES ARE DUE UPON PRESENTATION. Subject to 1-1/2% 18% Annum interest/finance charge. Please reference the invoice number when sending payment. Federal Tax ID #41-1520095 -Wenck Associates, Inc.-1800 Pioneer Creek Center PO Box 249- Maple Plain, MN 55359-0249 Toll Free:800-472-2232 Main:763-479-4200 E-mail:accounting@wenck.com Web www.wenck.com

**Invoice**

November 5, 2020  
Invoice No: 12007577



Ms. Judie Anderson  
Shingle Creek Watershed Management Commission  
3235 Fernbrook Lane  
Plymouth, MN 55447

Responsive partner.  
Exceptional outcomes.

Project Manager Diane Spector

Project B001240-20-217 2020 Annual WQ Report

**Professional Services Through October 31, 2020**

**Professional Personnel**

	<b>Hours</b>	<b>Rate</b>	<b>Amount</b>	
Hyams, Aaron	11.00	64.00	704.00	
Kemmitt, Katie	3.00	99.00	297.00	
Totals	14.00		1,001.00	
<b>Total Labor</b>				<b>1,001.00</b>
		<b>Total Invoice Amount</b>		<b>\$1,001.00</b>

<b>Billing Summary</b>	<b>Current</b>	<b>Prior</b>	<b>Total</b>
	<b>1,001.00</b>	<b>22,940.70</b>	<b>23,941.70</b>

SC - 700.70

WM - 300.30

**Invoice**

November 5, 2020  
 Invoice No: 12007579



Ms. Judie Anderson  
 Shingle Creek Watershed Management Commission  
 3235 Fernbrook Lane  
 Plymouth, MN 55447

Responsive partner.  
 Exceptional outcomes.

Project Manager Diane Spector

Project B001240-20-219 2020 Education and Outreach

**Professional Services Through October 31, 2020**

Phase 01 General Education  
 General Education

**Professional Personnel**

	Hours	Rate	Amount	
Spector, Diane	6.70	200.00	1,340.00	
Totals	6.70		1,340.00	
<b>Total Labor</b>				<b>1,340.00</b>
				<b>Phase Total</b>
				<b>\$1,340.00</b>

Phase 02 WMWA  
 WMWA

**Professional Personnel**

	Hours	Rate	Amount	
Spector, Diane	.80	200.00	160.00	
Totals	.80		160.00	
<b>Total Labor</b>				<b>160.00</b>
				<b>Phase Total</b>
				<b>\$160.00</b>

**Total Invoice Amount \$1,500.00**

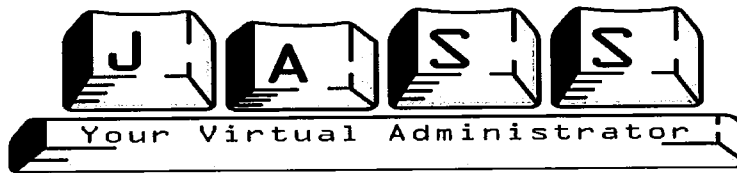
Billing Summary	Current	Prior	Total
	1,500.00	24,009.40	25,509.40

SC Education - 670.00  
 WMWA - 160.00  


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 830.00

WM Education 670.00



3235 Fernbrook Lane  
Plymouth MN 55447

Shingle Creek / West Mississippi Watershed Management Commissions  
3235 Fernbrook Lane  
Plymouth, MN 55447

November 9, 2020

	Share	G/L	Shingle Creek			West Mississippi			Total Project Area	
								SC	WM	
Administrative		53001	1.15	60.00	69.00	0.40	60.00	24.00		
Administrative	70-30	53001		60.00	-		60.00	-		
Administrative		53001	15.38	65.00	999.70	1.16	65.00	75.40		
Administrative	70-30	53001	28.22	65.00	1,284.01		65.00	550.29		
Annual Reporting		53001	25.67	65.00	1,668.55	50.48	65.00	3,281.20		
Admin - Offsite		53001		70.00	-		70.00	-		
Admin - virtual meeting	70-30	53001	1.88	70.00	92.12		70.00	39.48		
Office Support	70-30	53001	12.00	200.00	1,680.00		200.00	720.00		
Data Processing/File Mgmt		53001		55.00	-		55.00	-		
Data Processing/File Mgmt		53001		60.00	-		60.00	-		
Data Processing/File Mgmt	70-30	53001	0.41	60.00	17.22		60.00	7.38		
Admin Reimbursables		53001	516.71	1.00	516.71		1.00	331.54	6,327.310	5,029.290
Bookkeeping		54022	2.42	65.00	157.30	1.42	65.00	92.30		
Audit Prep		54022		60.00	-		60.00	-		
Audit Prep		54022		65.00	-		65.00	-	157.300	92.300
Project / WCA Reviews - Admin		53002	0.32	65.00	20.80		65.00	-		
Project Reviews - File Mgmt		53002		55.00	-		55.00	-		
Reimbursable Expenses		53002	6.61	1.00	6.61		1.00	-	27.410	-
Education - Admin	50-50	57008	1.30	65.00	42.25		60.00	42.25		
Education - Admin - virtual	50-50	57008		70.00	-		70.00	-		
Education Grant	50-50	57007		65.00	-		65.00	-		
Website	50-50	57008	1.16	60.00	34.80		55.00	34.80		
Website	50-50	57008	0.67	65.00	21.78		60.00	21.78		
Education Reimbursables	50-50	57008		1.00	-		1.00	-	98.825	98.825
Engineering Support - Admin		53004	4.82	65.00	313.30		65.00	-		
Engineering Support - Admin	70-30	53004	10.25	65.00	466.38		60.00	199.88		
Engineering Support - virtual	70-30	53004		70.00	-		70.00	-		
Engineering Support Rembursable:	70-30	53004	43.79	1.00	43.79	13.30	1.00	13.30	823.465	213.175
					7,434.31			5,433.59	7,434.310	5,433.590

# Brooks Landing Landscape Retrofit

November 12, 2020  
Shingle Creek Watershed Management Commission



1



2



# Resident Engagement



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## BROOKS LANDING APARTMENTS

5825 74TH AVE N, BROOKLYN PARK  
CONCEPT PLAN: Revised 2-11-20

74TH AVENUE NORTH

Foundation Plantings & Raingarden #2 in this area to bid separately

Brooks Landing Apartments

Raingarden #2 Catchment Area

**POLLUTION REDUCTION CALCS**

**RAINGARDEN #1**  
Impervious area treated: 25,640 sq ft (parking lot + fire lane)  
Previous area treated: 15,942 sq ft (lean area)  
Raingarden Area approx. 1,400 sq ft @ 12" deep  
Runoff Captured Annually: 85,129 cu ft (821,848 gallons/88%)  
3,500 pounds Total Phosphorus reduction (88%)  
860.3 pounds Total suspended solids reduction (88%)  
Modeled with WinSLAMM using 2.5" infiltration rate

**RAINGARDEN #2**  
Impervious treated: 447 sq ft (concrete walk/patio)  
Raingarden Area approx. 350 sq ft @ 6" deep  
Runoff Captured Annually: 1527 cu ft (11,423 gallons/100%)  
4,028 pounds Total Phosphorus reduction (100%)  
12.15 pounds Total suspended solids reduction (100%)  
Modeled with WinSLAMM using 2.5" infiltration rate

**LEGEND: Conceptual Design**

- New Paved Areas
- New Raingardens
- Impervious area treated in raingardens
- Existing Walkways/Patios
- Proposed Walkways/Patios
- Direction of Runoff
- Raingarden 1 Drainage Area
- Property Line
- Countours
- Existing Fence
- Soil Infiltration Test
- Existing Tree
- Proposed Tree/Shrub
- RAINGARDEN/GARDENS

**WALKING PATH/BENCHES**

**PERGOLA**

**TRASH ENCLOSURE**

**WAIST-HIGH RAISED PLANTER**

6



7



New England Aster



Monarda



Vervain



Milkweed



8





# Courtyard Before



9

# Helping Hand Companies



10

# Courtyard After



11

# Parking Lot Before



12



Frerichs Construction, Warner  
Outdoor Solutions and  
Urban Escapes

13

## Parking Lot After



14

# By the numbers...

## RAINGARDEN #1

Impervious area treated: 25,640 sf  
 Pervious area treated: 15,942 sf  
 Raingarden Area: 1,383 sf @ 12" deep

Runoff Captured Annually :  
 -83,129 cf (621,848 gallons)(88%)  
 -3.976 lbs Total Phosphorus reduction (88%)  
 -860.3 lbs Total Suspended Solids reduction (88%)

## RAINGARDEN #2

Impervious treated: 447 sf  
 Raingarden Area: 319 sf @ 6" deep

Runoff Captured Annually:  
 -1527 cf (11,423 gallons)(100%)  
 -0.024 lbs Total Phosphorus reduction (100%)  
 -12.15 lbs Total Suspended Solids reduction (100%)

Modeled with WinSLAMM using 2.5"/hr infiltration rate

Area of New Native Plantings: 1,980 sf  
 (in addition to raingarden areas)

# of new native perennials: 914

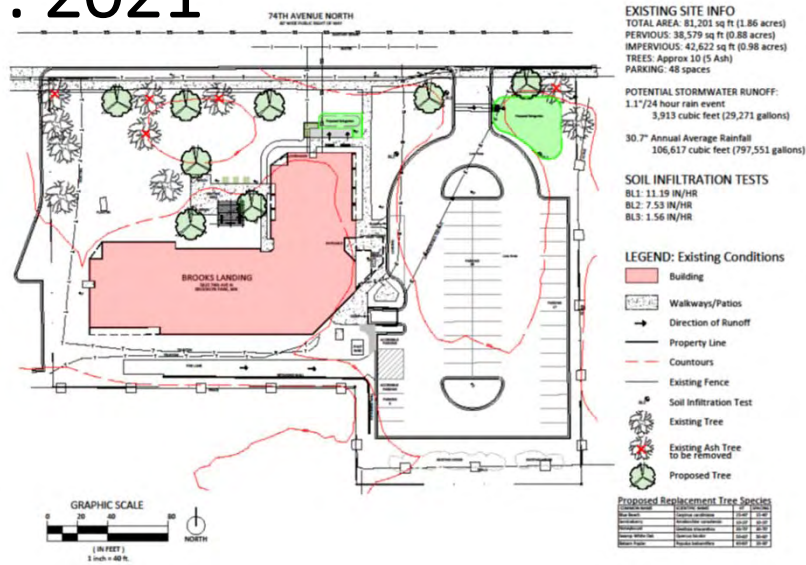
# of new native shrubs: 76

# of new native trees: 6



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# Sustainable Tree Canopy: 2021



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Jennifer Ehlert  
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Laura Scholl  
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**Thank You**

Artwork: Sue Vue



## Soluble Reactive Phosphorous Reduction Project at Wetland 639



Brian Kallio  
SCWMC  
November 12, 2020

1

## Project Background

- Wetland 639 in Crystal, Minnesota, has been identified as a source of about **375 pounds** of phosphorous annually to Upper Twin Lake
  - The phosphorous reduction goal from wetland 639 is **300 pounds per year**. Previous projects have reduced the phosphorous load by about **120 pounds**
- Study objectives:
  - Evaluate media for phosphorous reduction
  - Design and evaluate system that can reduce phosphorous loading from Wetland 639 that be duplicated on a larger scale

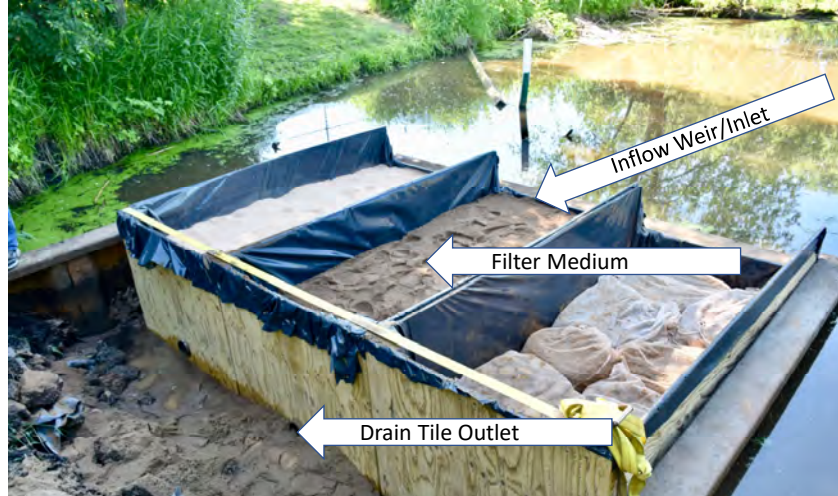


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2

# Outlet Filter Box Construction

June 26-28, 2019



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SCWMC  
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Delta Absorbents' AAFS50  
"iron-enhanced activated  
alumina"  
**(Alcan)**

Plaisted Co.'s Iron-  
enhanced Sand  
5% iron filings  
95% sand  
**(IES)**

MetaMateria's Phosphorus  
Sponge  
Lab-grown "nano-iron  
oxyhydroxide acicular crystals"  
**(Phosphorus Sponge)**



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# Finished Construction



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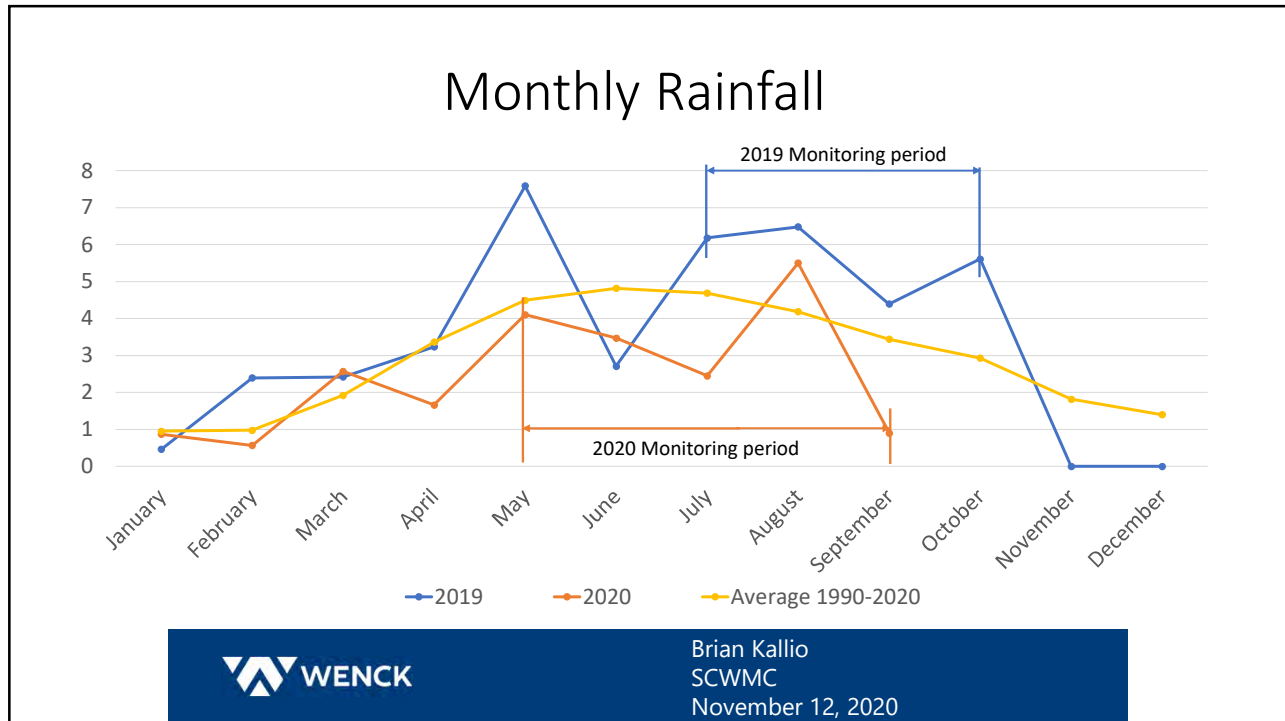
# 2019-2020 Measurements and Monitoring



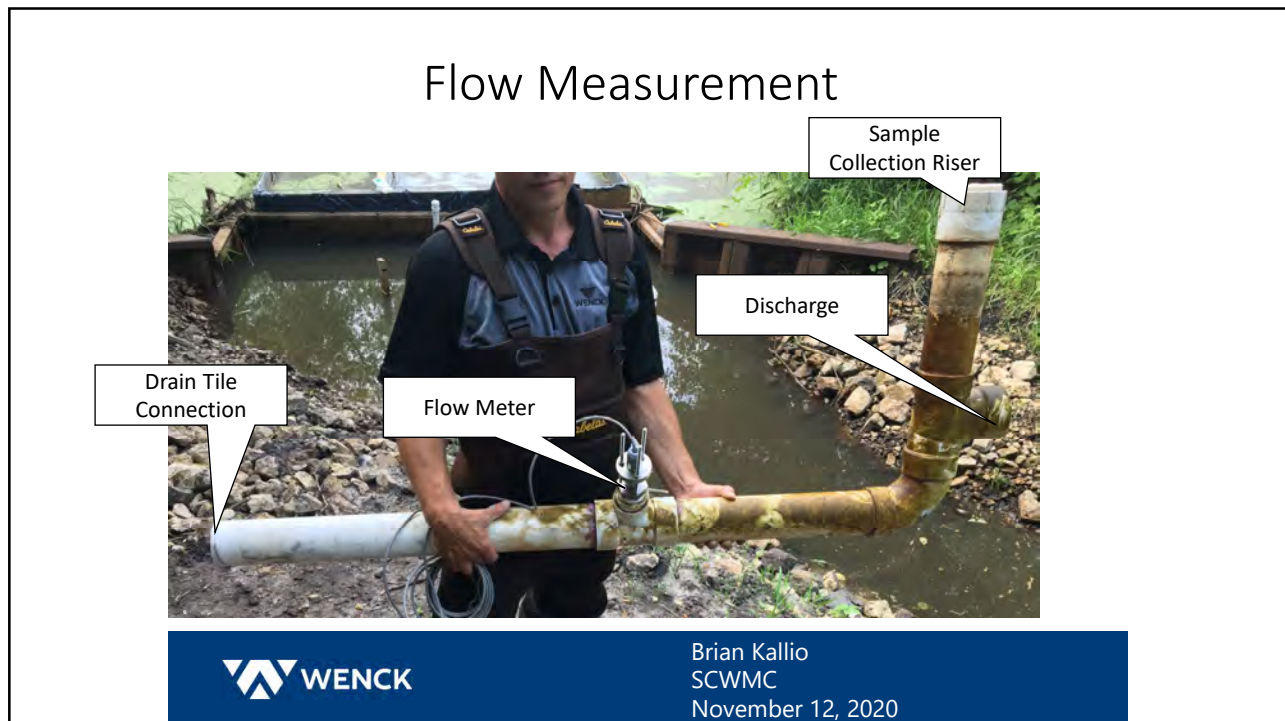
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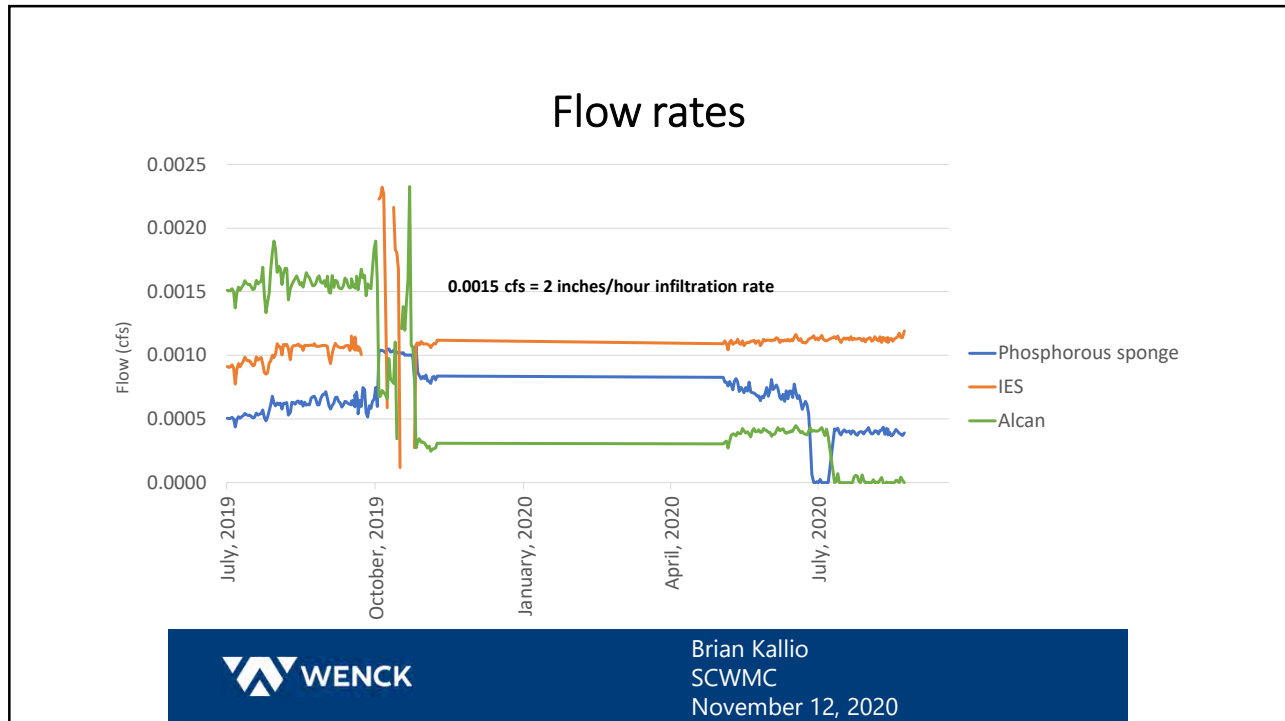




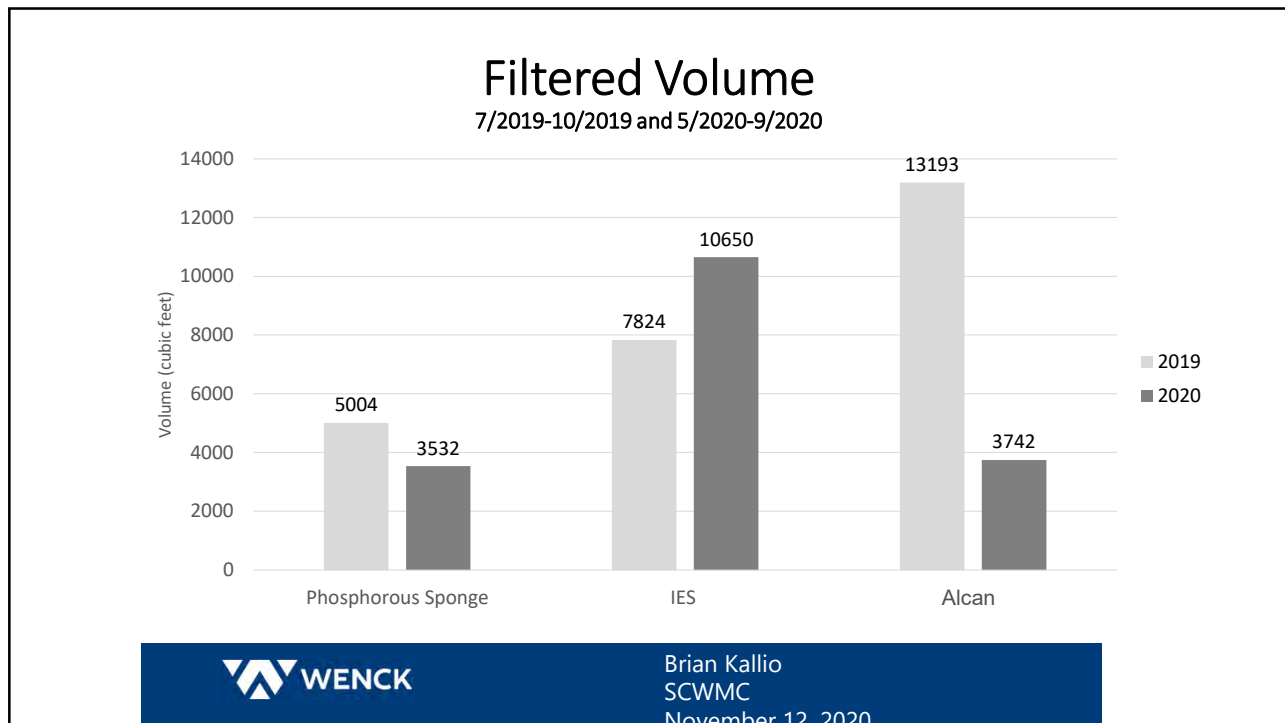
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# Sampling

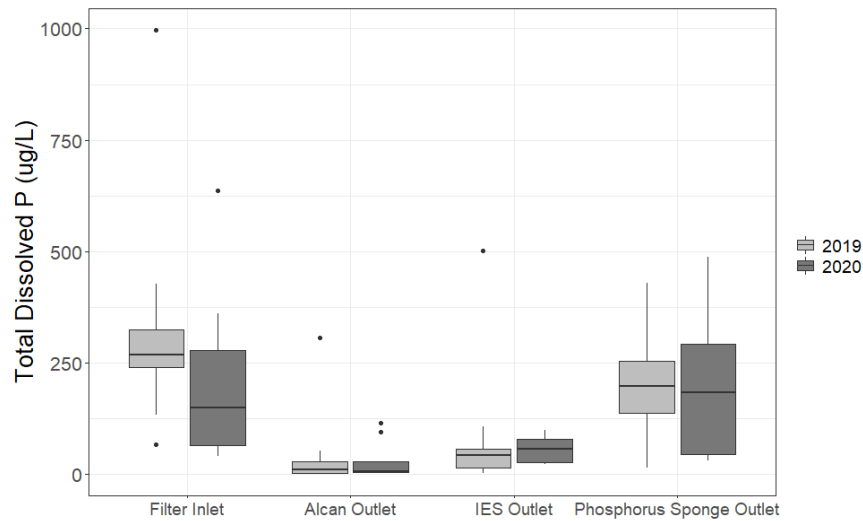
- Collected 24 sets of water samples in 2019 and 2020.
- Samples were field screened for dissolved oxygen, pH, temperature, specific conductivity and ORP
- Laboratory samples were analyzed for Total Phosphorous, Total Dissolved Phosphorous, and Soluble Reactive Phosphorous (dissolved inorganic phosphorous).



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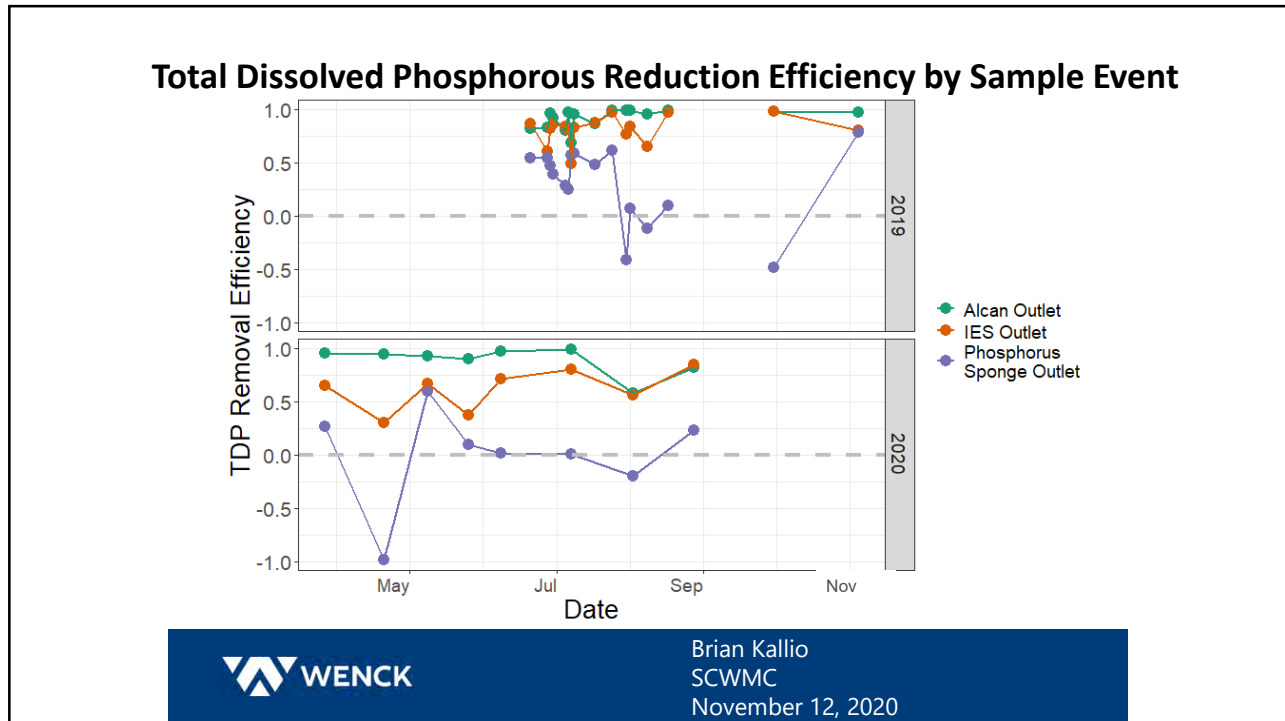
11

## Total Dissolved Phosphorous

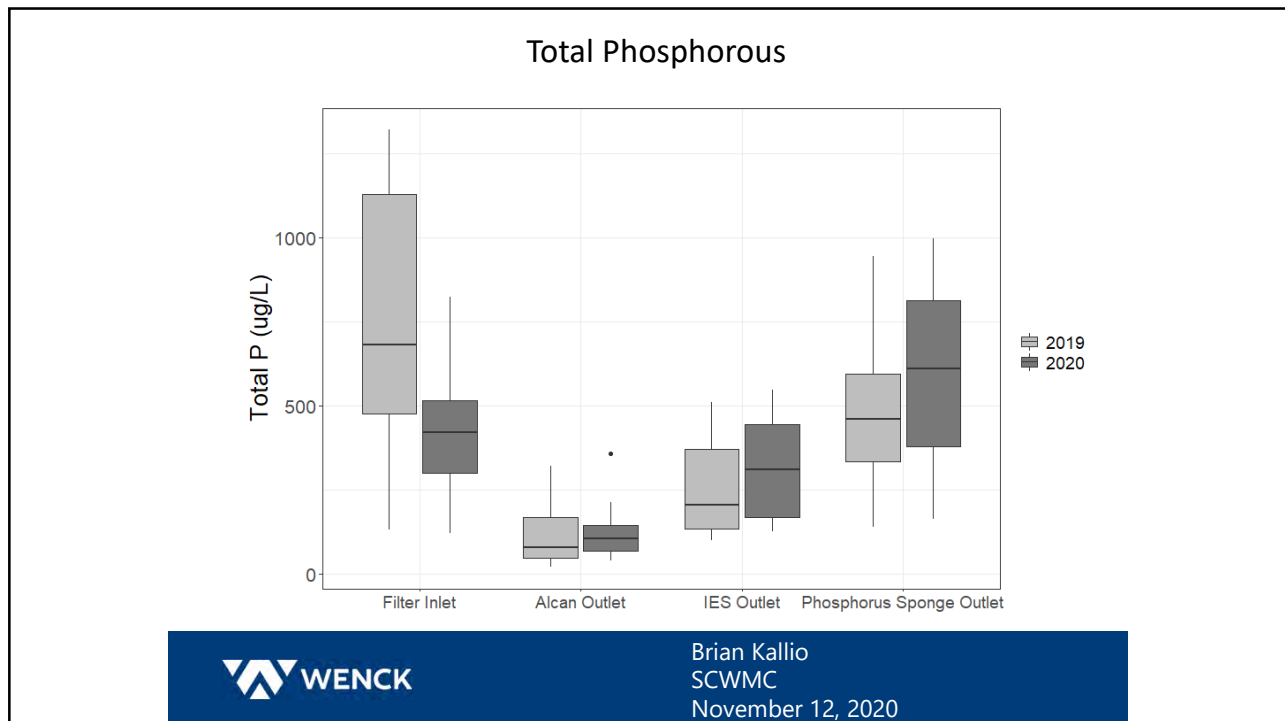


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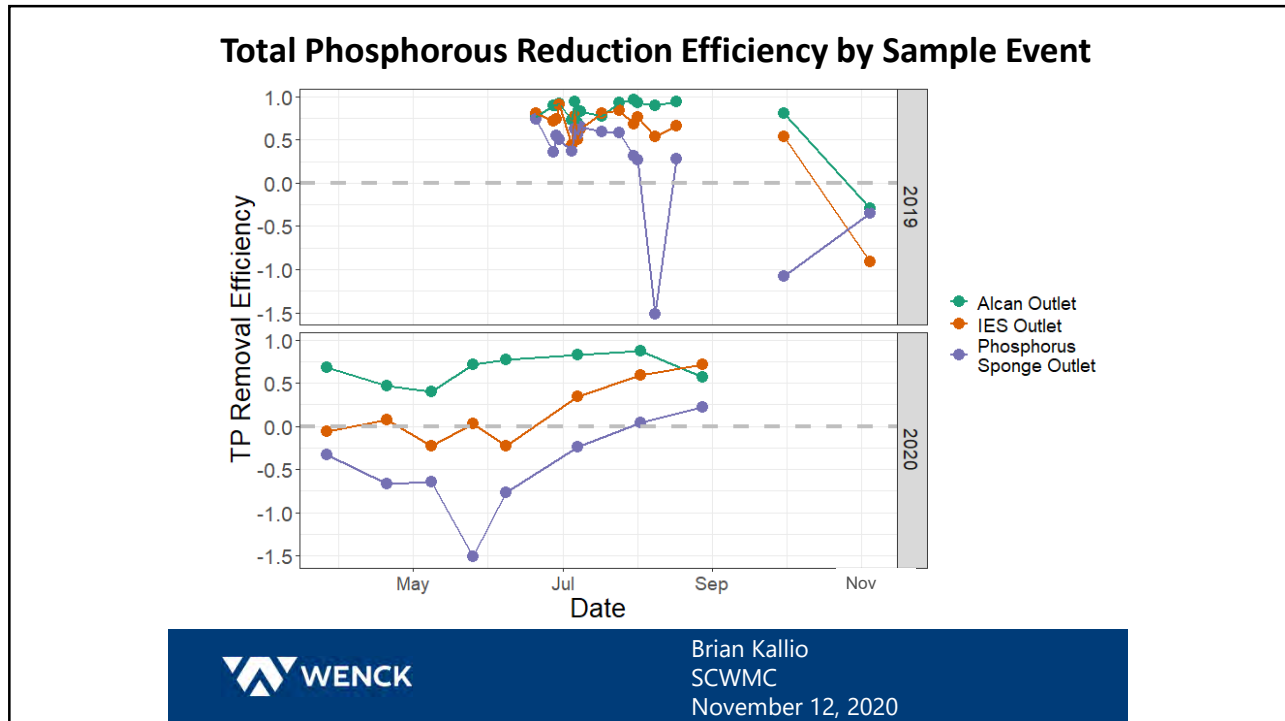
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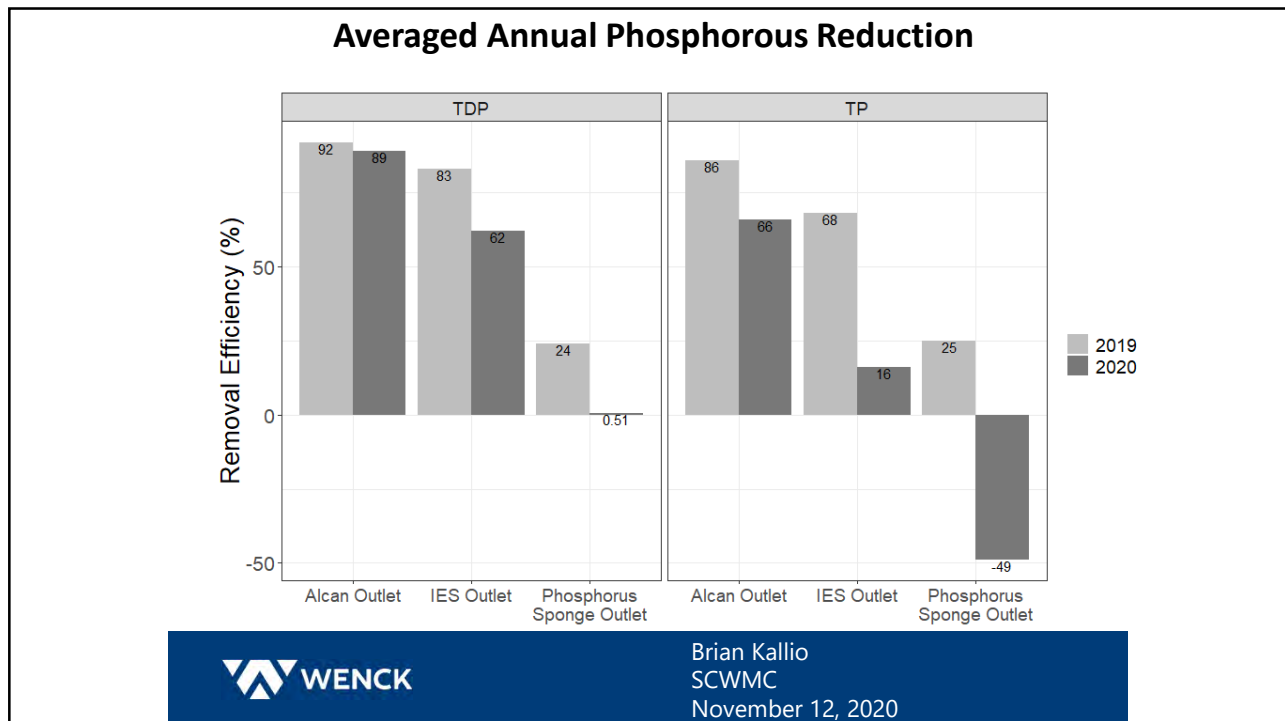
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14

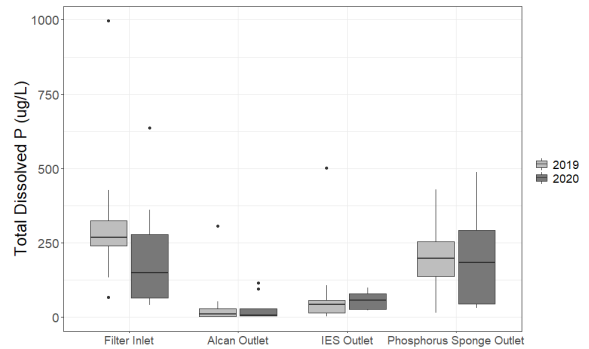
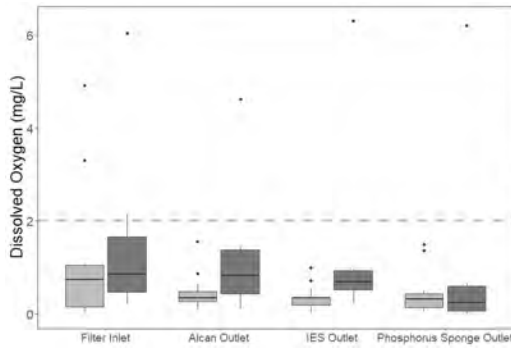


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### Dissolved phosphorus is reduced even in low-oxygen conditions



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### 2019 and 2020 Combined Measurements

	Total Measured Flow (cf)	TDP load to filter (lbs.)	TDP Reduction (lbs)	TDP Reduction Rate (%)	TP load to filter (lbs.)	TP Reduction (lbs)	TP Reduction Rate (%)
Alcan	16,935	0.30	0.27	90	0.77	<b>0.65</b>	<b>84</b>
IES	18,565	0.29	0.21	72	0.69	<b>0.32</b>	<b>46</b>
Phosphorous sponge	8,537	0.15	0.07	47	0.35	<b>0.01</b>	<b>3</b>



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## Estimated Filter Size for 100 pounds per year TP Reduction

	TP Reduction (lbs)	TP Reduction Rate (%)	TP load to filter (lbs.) <sup>1</sup>	Total Annual Flow (cf) <sup>2</sup>	Area needed (sf) <sup>3</sup>
Alcan	100	84	119	2.6 M	5,000
IES	100	46	216	5.8 M	10,000
Phosphorous sponge	100	3	3500	85 M	320,000

- 1 – Estimated load based on annual flow and measured concentrations in the wetland  
 2 – Flow based on measured concentrations and flow rates, and calculated reduction rate.  
 3 – Area based on 32 square foot filter for study.



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## Estimated Filter System Cost for 100 pounds per year TP Reduction

Material	CF of Medium Needed at 1 foot Depth	Price per CF of Medium	Medium Price	Estimated Site Work Cost	Estimated O&M (15 years)	Total Cost per Pound TP P Reduction <sup>1</sup>
Alcan	5,000	\$100	\$500,000	\$75,000	\$50,000	\$417
IES	10,000	\$15	\$150,000	\$100,000	\$60,000	\$207

- 1 – Estimated Total Cost per pound based on 15-years of operation.



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## Summary

- The filters reduced phosphorous by 84% and 46% by the Alcan and IES media in the 2-year period.
- The filters continued to remove phosphorous in 2020, even though the media was saturated nearly the entire period and under hypoxic conditions
- Based on the study, a full-scale filter to reduce the phosphorous loading by 100 pounds is feasible using the IES and Alcan media



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## What Next?



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## Acknowledgements

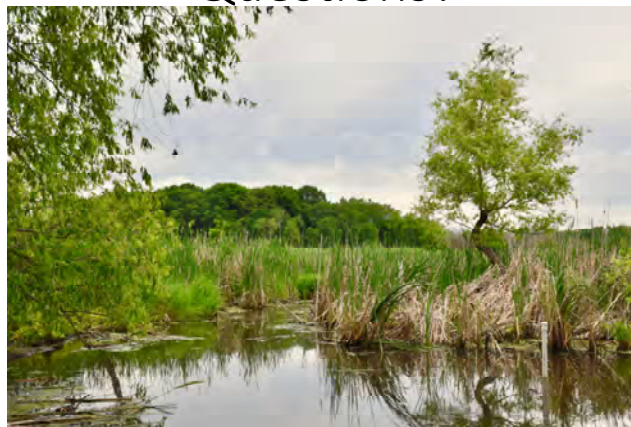
- Wenck staff:
  - Brian Kallio
  - Ed Matthiesen
  - Diane Spector
  - Katie Kemmitt
  - Sarah Nalven
  - Jeff Strom
  - Mehdi Harley
  - Ali Stone
- Chad Penn, USDA & Purdue University
- Northland Excavating
- City of Crystal staff
- EPA 319 funding
- Shingle Creek WMC



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## Questions?



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