

The background of the cover is a photograph of a river winding through a landscape with vibrant autumn foliage in shades of yellow, orange, and red. The sky is overcast with grey clouds. The river reflects the surrounding colors and the sky.

# PELICAN RIVER

watershed district

## 2023 Monitoring Work Plan

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## 2023 Monitoring Workplan

				Water Quality	Ecological Integrity	
EQuIS ID	Lake Name	LWQMA	Monitoring	Water Chemistry/Clarity	Vegetation Survey	Shoreline Survey
03-0387-02-206	Big Floyd	Floyd/Campbell	Major	X		
03-0387-01-207	North Floyd	Floyd/Campbell	Major	X		
03-0386-00-201	Little Floyd	Floyd/Campbell	Major	X		
03-0381-00-204	Big Detroit	Detroit/Rice	Major	X		X
03-0381-00-207	Little Detroit	Detroit/Rice	Major	X		X
03-0383-00-201	Long	Long	Major	X	X	
03-0382-00-202	Saint Clair	Sallie/Melissa	Major	X		
03-0359-00-201	Lake Sallie	Sallie/Melissa	Major	X		
03-0475-00-202	Lake Melissa	Sallie/Melissa	Major	X		
03-0376-00-201	Lind Lake	Small Lakes	Minor	X		
03-0398-00-201	Wine	Brandy/Wine	Minor	X		
03-0377-00-201	Mill Pond	Sallie/Melissa	Minor	X		
	Tamarack	Floyd/Campbell	Minor	X		
03-0363-00-202	Curfman	Detroit/Rice	Minor			X
03-0486-00-201	Pearl	Pearl/Loon	Minor		X	
03-0358-00-201	Munson	Fox/Munson	Minor		X	

*\*Dependent on access. Arial imagery suggest lake may be inaccessible. If staff can not reasonably access, an alternate will be use.*

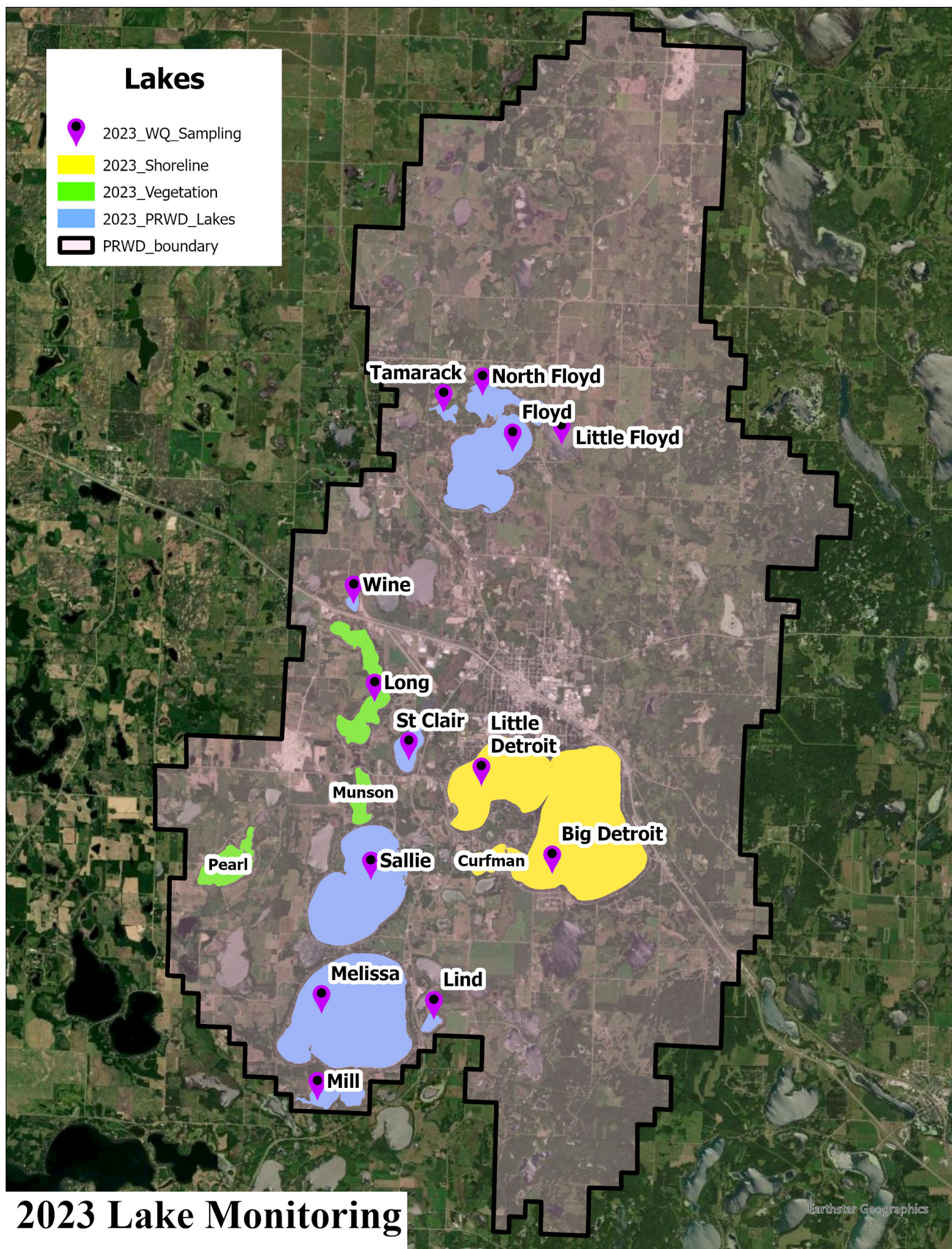
### Notes:

- **Standard Operating Procedures** – All lakes will be sampled per the 10-year Monitoring Plan adopted in 2020.
- **Water Quality** – Water Quality samples will be collected a minimum of 8 times, from June to September on sampled lakes. Once a month for 4 months we will take Bottom readings of TP on St. Clair Lake using a Van Dorn sampler.
- **Water Quantity** – Lake gages will be maintained on Little Floyd, Detroit, Sallie, Melissa Lakes and St. Clair Lakes.
- **Ecological Integrity** – Vegetation Surveys will occur in late July to early August. Shoreline Surveys will occur as opportunity presents. Zooplankton sampling - after discussion with the MN DNR Area Fisheries Supervisor, due to the backlog of work they need to catch up on we will not be doing sampling this year.
- **Staffing** – 2 Seasonal Interns will be hired from May to August. These interns will be tasked with collecting most of the data that is in this work plan.
- **Equipment** – Updated monitoring equipment (boat, spot lock and aqua-view). All staff will be adequately trained with the field equipment.



## Lakes

- 2023\_WQ\_Sampling
- 2023\_Shoreline
- 2023\_Vegetation
- 2023\_PRWD\_Lakes
- PRWD\_boundary



2023 Lake Monitoring

Earthstar Geographics



## 2023 Monitoring Workplan

Site	EquiS Location ID	Description	Weekly Visit			Bi-Weekly	Event/Storm		NOTES
			Staff Gauge	Chemical	E. Coli	Flow	Chemical	E. Coli	
CC2**	S002-164	Campbell Creek at 230th St	X	X		X	X		
CC1**	S002-163	Campbell Creek at CR-149	X	X		X	X		
PR1	S002-167	Little Floyd Outlet on Little Floyd Rd	X	X					
PR2a**	S016-453	Pelican River at Rice Lake Outlet (Rice Lake Structur	X	X		X	X		
PR3	S002-169	Pelican River at State Highway 34	X	X	X	X	X	X	
PR4b	S002-170	Pelican River at Corbett Rd						X	
PR4a**	S002-176	Pelican River at Railroad Trestle	X	X	X	X	X	X	
PR6**	S002-172	Pelican River at Detroit Lake Outlet	X	X		X	X		
PR6a	S009-364	Pelican River at US Highway 59	X	X					
PR8	S002-174	Pelican River at Lake Sallie Outlet	X	X					
PR9	S002-175	Pelican River at Lake Melissa Outlet	X	X					
SC3**	S002-158	Ditch 14 at Lake St. Clair Outlet	X	X		X	X		
SC3b	S005-247	Ditch 14 Between Lake St. Clair and Pelican River	X	X					
SC4	S002-160	Ditch 14 at Outlet to Pelican River	X	X		X	X		
SU1**	S002-162	Sucker Creek at Outlet to Detroit Lake	X	X		X	X		
IP	S015-007	Industrial Park By dog park bridge	X		X		X	X	
PUB	PD00033	Public Water Access Storm Water Outflow (Roosevelt Ave)						X	ONLY IF FLOW
ESW	PS00177	Stormwater pond East of Cheryl Ave.					X	X	ONLY IF FLOW
PR3a	S016-006	8th Street North East of IP North Side of road					X	X	
PR5	S002-171	Pelican River at North Shore Drive (South side)						X	
PAV-E	S002-186	Pavilion East-picnic area- Storm water outflow					X	X	ONLY IF FLOW
PAV-W		Pavilion West-Washington Ave. outflow					X	X	ONLY IF FLOW

\*\* HOBO

TP, OP 2 Bottles IF THERE IS NO FLOW DO NOT SAMPLE AT THAT SITE

TP, OP, TSS 3 Bottles E. coli testing even along PR (6 Sites) PR3, PR3a, IP, PR4a Railroad trestle, PR4b (Corbett Rd S002-170) and PR5 (Detroit Inlet)

Ecoli 1 Bottle

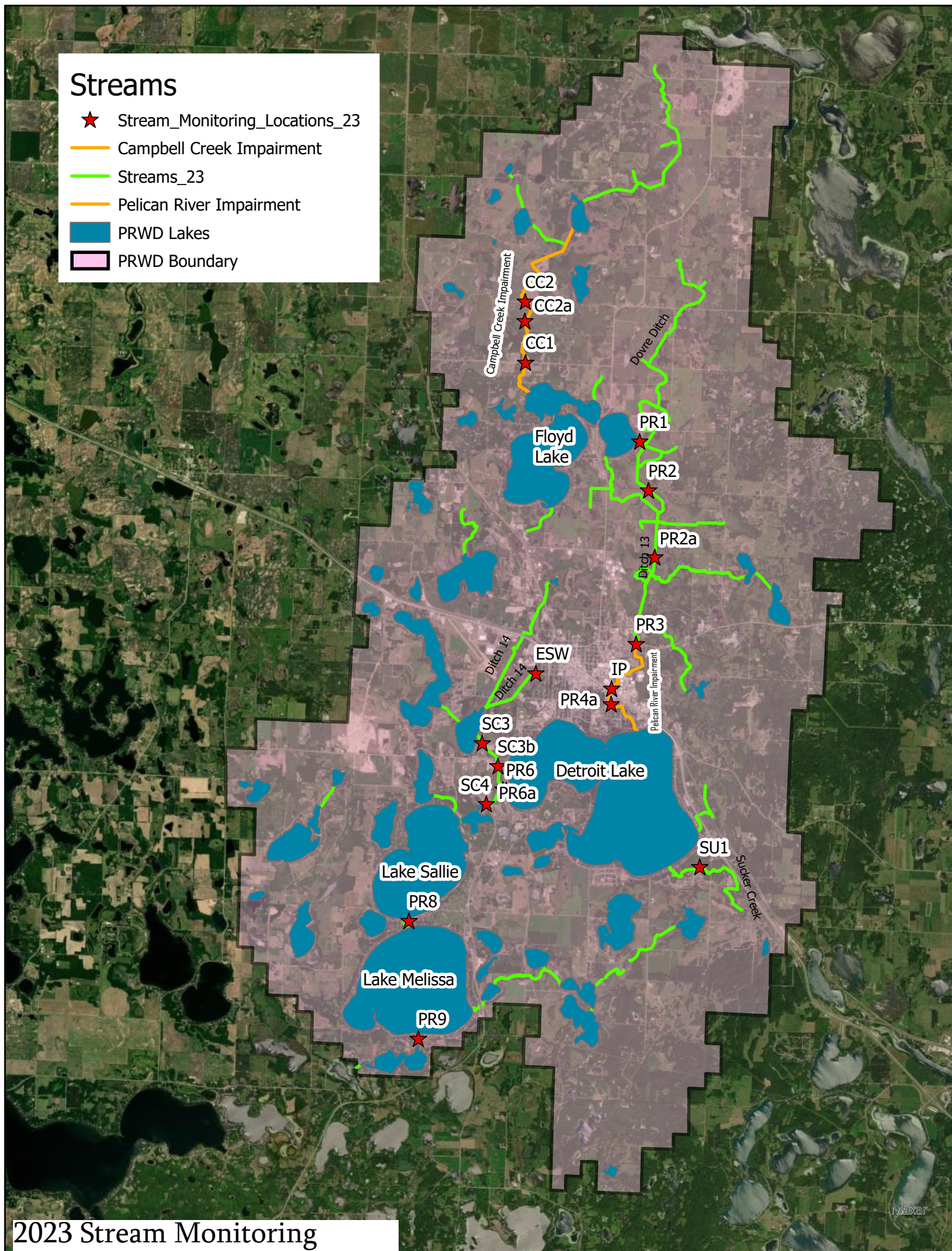
### Notes:

- **HOBO's** – HOBO units will be placed by the water Resource Coordinator as soon as streams open up in the spring. If possible, they will remain in place just prior to freeze up in the fall. While HOBO units are deployed, we will take bi-weekly samples at those sites.
- **Water Quality** – All Samples will be taken per the 10-year Monitoring Plan adopted in 2020 at the locations noted in the chart above.
- **Ecological Integrity** – *Campbell Creek* – District staff will continue to cooperate with the MN DNR staff to perform surveys of the channel erosion on Campbell Creek.
- **Water Quantity** – Staff will be taking extensive flow readings to improve rating curves at key locations (Minimum of 12 readings). Staff gages will be maintained at all noted sites. Staff gauges will be inspected and cleaned prior to the start of the field season. Gage zero will be surveyed at the beginning and end of the season.
- **Staffing** – 2 Seasonal Interns will be hired from May to August. These interns will be tasked with collecting most of the data that is in this work plan. Water Resource Coordinator will be responsible for any other data collection.
- **Equipment** – A new staff gauge will be installed at the PR3 (the bottom section has rusted away). All staff will be adequately trained with the field equipment.
- **Special Study** – Systematic testing of E. coli in the Pelican River will be performed to locate the source of the E. coli. Staff will use their best judgment to take more samples at key locations when E.coli loads are high.



## Streams

- ★ Stream\_Monitoring\_Locations\_23
- Campbell Creek Impairment
- Streams\_23
- Pelican River Impairment
- PRWD Lakes
- PRWD Boundary





Routine Sampling Lakes (8 samples/lake) & Stream( 24 weeks)				
Metric	# of Sites	# of Samples	RMBEL Cost	Total Budget
Total Phosphorous	28	448	\$ 16.00	\$ 7,168.00
Orthophosphate	28	448	\$ 15.00	\$ 6,720.00
Chlorophyll-a	14	112	\$ 24.00	\$ 2,688.00
Total Suspended Solids	5	120	\$ 14.00	\$ 1,680.00
E-Coli	3	72	\$ 15.00	\$ 1,080.00
			<b>Total</b>	<b>\$ 19,336.00</b>
Storm Event Sampling Streams -Budget for 5 events				
Metric	# of Sites	# of Samples	RMBEL Cost	Total Budget
Total Phosphorous	14	70	\$ 16.00	\$ 1,120.00
Orthophosphate	14	70	\$ 15.00	\$ 1,050.00
Total Suspended Solids	4	20	\$ 14.00	\$ 280.00
E-Coli -Special Project Testing	10	50	\$ 15.00	\$ 750.00
			<b>Total</b>	<b>\$ 3,200.00</b>
			<b>Total Sampling Expected Cost:</b>	<b>\$ 22,536.00</b>
Seasonal Staff				\$ 17,000.00
Water Resource Coordinator (1/2x)				\$ 50,300.00
Vehicle and Maintenance				\$ 3,000.00
Equipment Purchase/Repair				\$ 5,000.00
Monitoring Supplies				\$ 2,000.00
Capital Outlay*-boat, Aqua- view, spot lock				\$ 35,000.00