



PELICAN RIVER

watershed district

# 2022 Monitoring Work Plan

Gina Kemper  
*Water Resource Coordinator  
Pelican River Watershed District*



## 2022 Monitoring Workplan

EQuIS ID	Lake Name	LWQMA	Monitoring	Water Quality	Ecological Integrity		
				Water Chemistry/Clarity	Vegetation Survey	Shoreline Survey	
03-0387-02-206	Big Floyd Lake	Floyd/Campbell	Major	X			
03-0387-01-207	North Floyd Lake	Floyd/Campbell	Major	X			
03-0386-00-201	Little Floyd Lake	Floyd/Campbell	Major	X			
03-0381-00-204	Big Detroit Lake	Detroit/Rice	Major	X			
03-0381-00-207	Little Detroit Lake	Detroit/Rice	Major	X			
03-0383-00-201	Long Lake	Long	Major	X			
03-0382-00-202	Saint Clair Lake	Sallie/Melissa	Major	X			
03-0359-00-201	Lake Sallie	Sallie/Melissa	Major	X		X	
03-0475-00-202	Lake Melissa	Sallie/Melissa	Major	X		X	
03-0366-00-201	Brandy Lake	Brandy/Wine	Minor	X			
--	Fish Lake		Minor	X			
--	Kennedy Lake		Minor	X			
--	Saint Patrick Lake		Minor	X			
03-0420-00-201	Sands Lake	Floyd/Campbell	Minor	X			
03-0358-00-201	Fox Lake	Fox/Munson	Minor		X		
03-0371-00-201	Meadow Lake	Small Lakes	Minor		X		
03-0377-00-201	Mill Pond	Sallie/Melissa	Minor		X		
03-0360-00-201	Muskrat Lake	Sallie/Melissa	Minor		X		
03-0376-00-201	Lind Lake	Small Lakes	Minor			X	






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

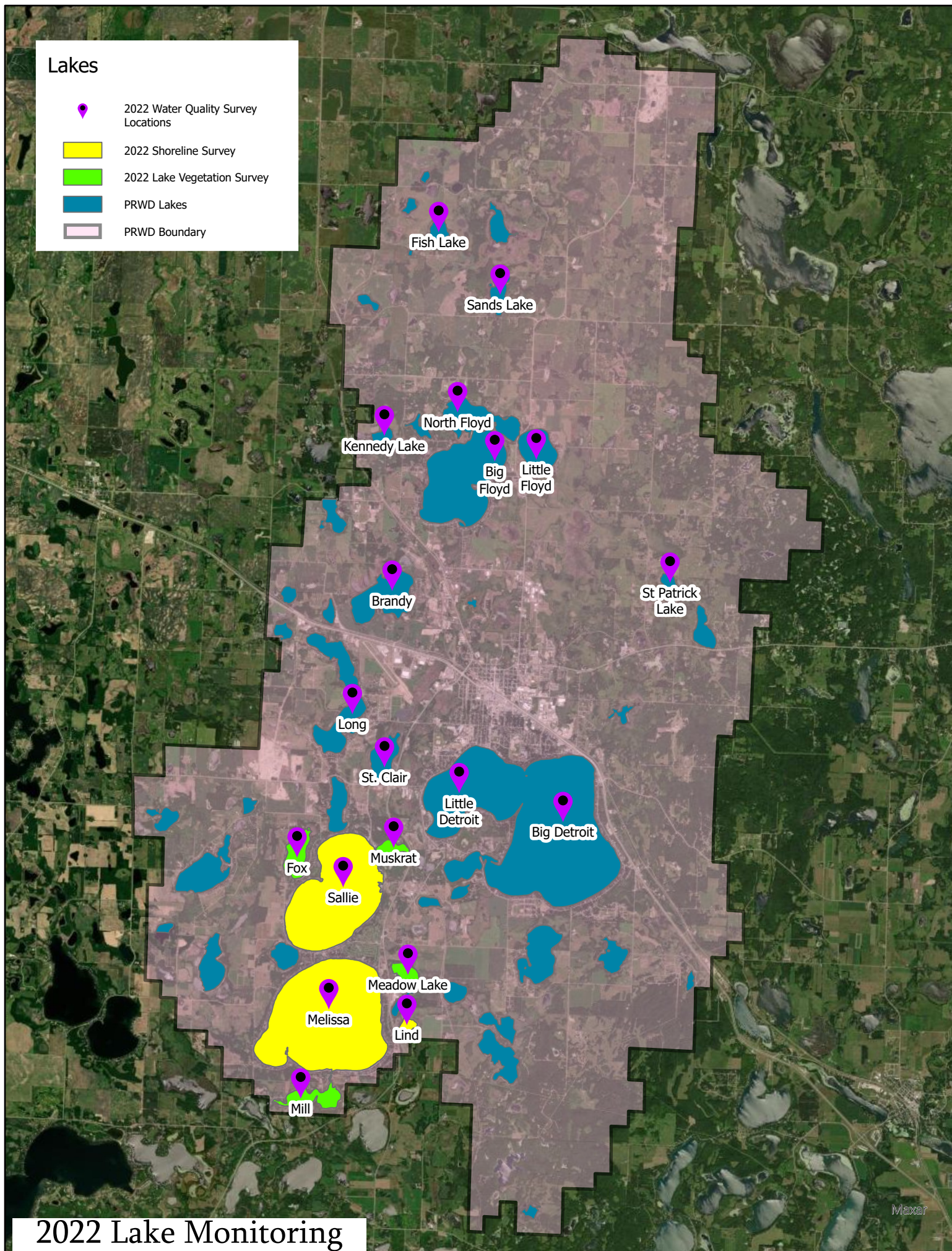
### Notes:

- **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.
- **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 but will look at starting it up again next year with alternating lakes each year(half the lakes one year and the other half the next and then back and forth).
- **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** – Possibly purchase 2 sit-in kayaks to replace the Zodiac due to a air leak in the vessel and the accessibility in and out of lakes with it. Will also purchase a 100 ft. depth gauge tape for the secchi disk so we are able to be able to take lake depth readings along with clarity. All staff will be adequately trained with the field equipment.
- **Special Project** – *Groundwater Study* – we have 3-4 Piezometers that we can put out to monitor the interactions of the groundwater and surface water if this because a problem. But we will have it on hold unless we hear complaints on this issue.



## Lakes

-  2022 Water Quality Survey Locations
-  2022 Shoreline Survey
-  2022 Lake Vegetation Survey
-  PRWD Lakes
-  PRWD Boundary



2022 Lake Monitoring



## 2022 Monitoring Workplan

Site	New or Current Site	Description	Weekly Visit		Bi Weekly			Monthly		Event/Storm	
			Staff Gauge	HOB0	Chemical	E. Coli	Flow	E. Coli	Flow	Chemical	E. Coli
CC2	Current	Campbell Creek at 230th St	X	X	X				X	X	
CC2a**	Current	Campbell Creek 1/4mi Downstream of 230th St	X		X						
CC1	Current	Campbell Creek at CR-149	X	X	X			X	X	X	
CC1a	Current	Campbell Creek Outlet to North Floyd Lake	X		X						
PR1	Current	Little Floyd Outlet on Little Floyd Rd	X		X						
PR2	Current	Pelican River at Anchor Rd	X		X					X	
PR2a***	Current	Pelican River at Rice Lake Outlet	X	X	X	X			X	X	X
PR3	Current	Pelican River at State Highway 34	X	X	X	X	X			X	X
PR4a	Current	Pelican River at Corbett Rd	X	X	X	X	X			X	X
PR4b	NEW	Pelican River at Lori Ave. (Weekly Flow Rating)	X				X				
PR6	Current	Pelican River at Detroit Lake Outlet	X	X	X				X	X	
PR6a	Current	Pelican River at US Highway 59	X		X						
PR8	Current	Pelican River at Lake Sallie Outlet	X		X						
PR9	Current	Pelican River at Lake Melissa Outlet	X		X						
SC3	Current	Ditch 14 at Lake St. Clair Outlet	X	X	X		X		X	X	
SC3b	Current	Ditch 14 Between Lake St. Clair and Pelican River	X								
SC4	Current	Ditch 14 at Outlet to Pelican River	X		X		X			X	
IP	Current	Outlet to Industrial Park Storm Sewer				X				X	X
PUB	NEW	Detroit Lakes Public Beach						X			
ESW	NEW	Storm Sewer Discharge to Ditch 14 Wetlands			X					X	X
SU1	NEW	Sucker Creek at Outlet to Detroit Lake	X	X	X		X			X	

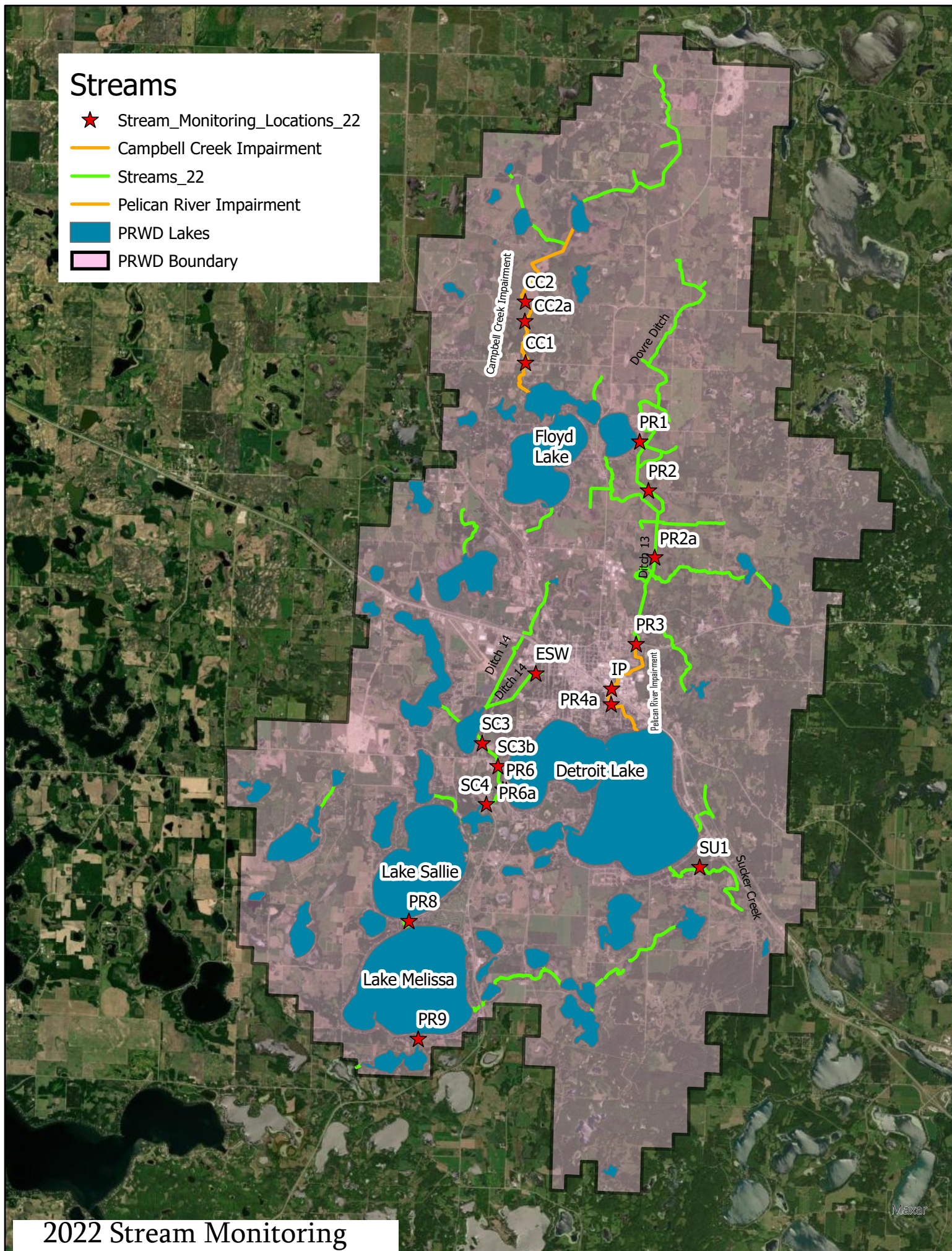
### Notes:

- **HOB0's** – HOB0 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 HOB0 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. Location PR4b will be sampled bi-weekly to build a new rating curve for the location. PR4a will be sampled at the same time as PR4b to compare the changes in flow between the two locations. 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\_22
- Campbell Creek Impairment
- Streams\_22
- Pelican River Impairment
- PRWD Lakes
- PRWD Boundary





Routine Sampling				
Metric	# of Sites	# of Samples	RMBEL Cost	Total Budget
Total Phosphorous	31	288	\$ 12.00	\$ 3,456.00
Orthophosphate	31	288	\$ 10.00	\$ 2,880.00
Chlorophyll-a	14	112	\$ 19.00	\$ 2,128.00
Total Suspended Solids	9	133	\$ 10.00	\$ 1,330.00
E-Coli	4	70	\$ 16.00	\$ 1,120.00
			Total	\$ 10,914.00
Storm Event Sampling				
Metric	# of Sites	# of Samples	RMBEL Cost	Total Budget
Total Phosphorous	12	60	\$ 12.00	\$ 720.00
Orthophosphate	12	60	\$ 10.00	\$ 600.00
Total Suspended Solids	12	60	\$ 10.00	\$ 600.00
E-Coli	6	30	\$ 16.00	\$ 480.00
			Total	\$ 2,400.00
			Total Sampling Expected Cost:	\$ 13,314.00
			Total Budgeted for 2022:	\$ 14,000.00
Administrative				
Line Item				
Seasonal Staff				\$ 17,000.00
Water Resource Coordinator (1/2x)				\$ 40,200.00
Vehicle and Maintenance				\$ 2,000.00
Equipment Purchase/Repair				\$ 5,000.00
Monitoring Supplies				\$ 2,000.00
Capital Outlay*				\$ 5,000.00
Zooplankton Study				\$ 1,000.00
*2 kayaks(\$1,000)			Total Budgeted:	\$ 71,200.00