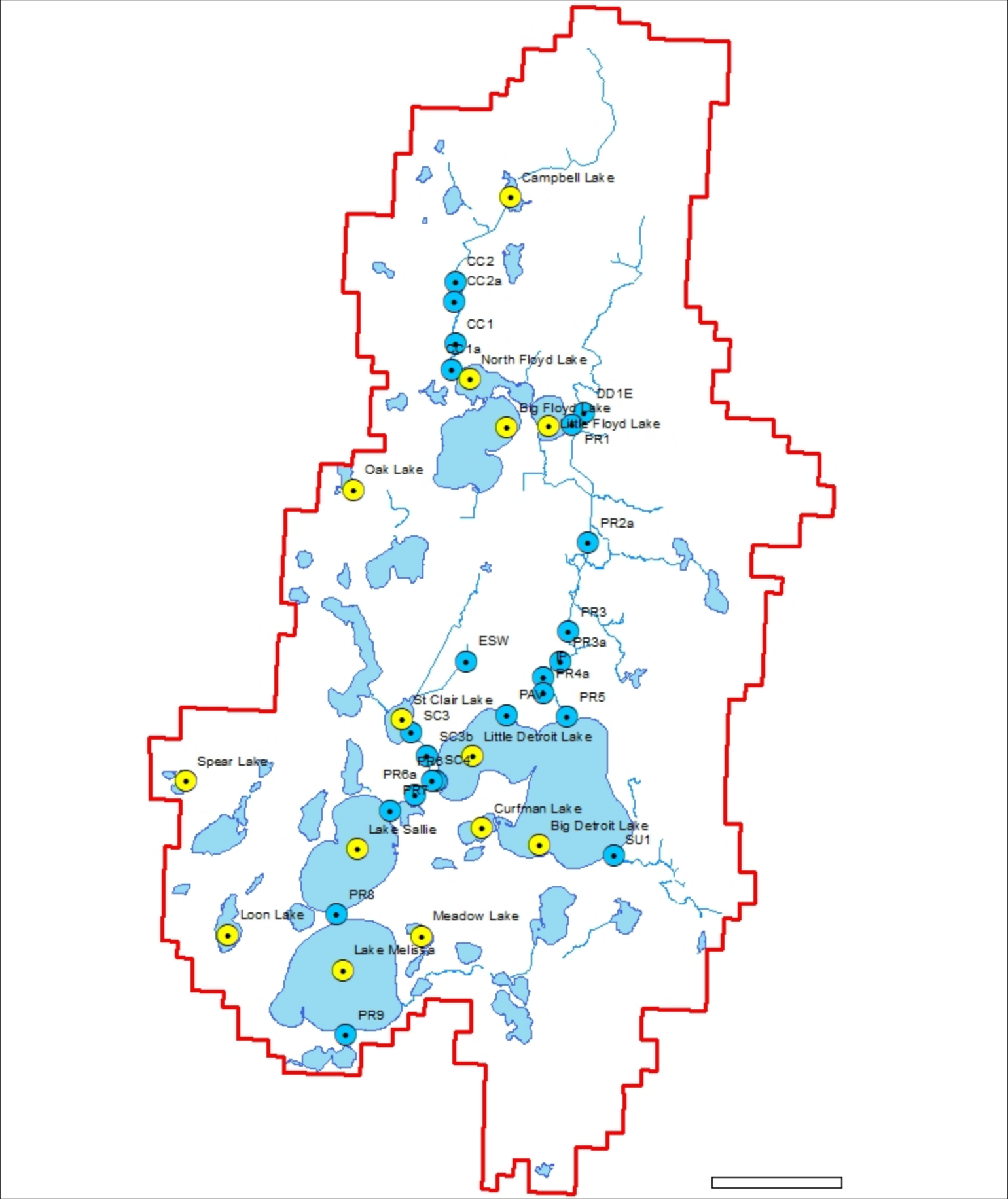




2020 Monitoring Work Plan

PELICAN RIVER WATERSHED DISTRICT

Adam Mortenson | Water Resource Coordinator | 3/19/2020



2020 Lake Sampling Schedule by Metric.

EQulS ID	Lake Name	LWQMA	Monitoring	Water Quality Survey	Vegetation Survey	Shoreline Survey	Zooplankton
03-0382-00-202	Saint Clair Lake	Sallie/Melissa	Major	X			
03-0387-02-206	Big Floyd Lake	Floyd/Campbell	Major	X	X		X
03-0386-00-201	Little Floyd Lake	Floyd/Campbell	Major	X	X		X
03-0387-01-207	North Floyd Lake	Floyd/Campbell	Major	X	X		X
03-0475-00-202	Lake Melissa	Sallie/Melissa	Major	X			X
03-0359-00-201	Lake Sallie	Sallie/Melissa	Major	X			X
03-0381-00-205/ 03-0381-00-204	Big Detroit Lake	Detroit/Rice	Major	X			X
03-0381-00-207	Little Detroit Lake	Detroit/Rice	Major	X			X
03-0419-00-100	Campbell Lake	Floyd/Campbell	Minor	X			
03-0489-00-201	Loon Lake	Pearl	Minor	X			
-	Oak Lake	Brandy	Minor	X			
-	Spear Lake	Pearl	Minor	X			
03-0371-00-201	Meadow Lake	Small lakes	Minor	X		X	
03-0363-00-202	Curfman Lake	Detroit/Rice	Minor	X			X
03-0360-00-201	Muskrat Lake	Sallie_Melissa	Minor			X	
03-0358-00-20	Fox Lake	Fox_Munson	Minor			X	

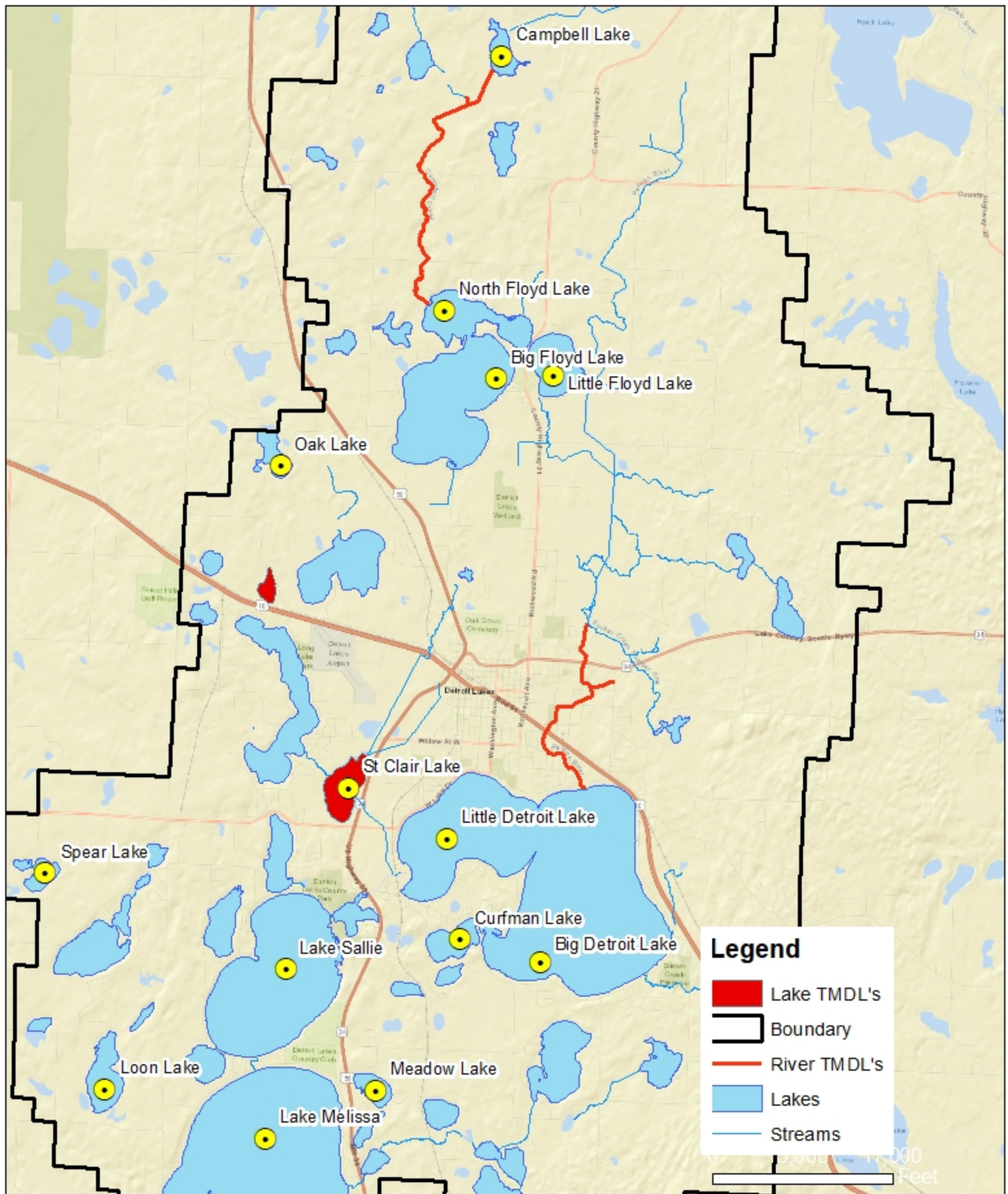
Notes:

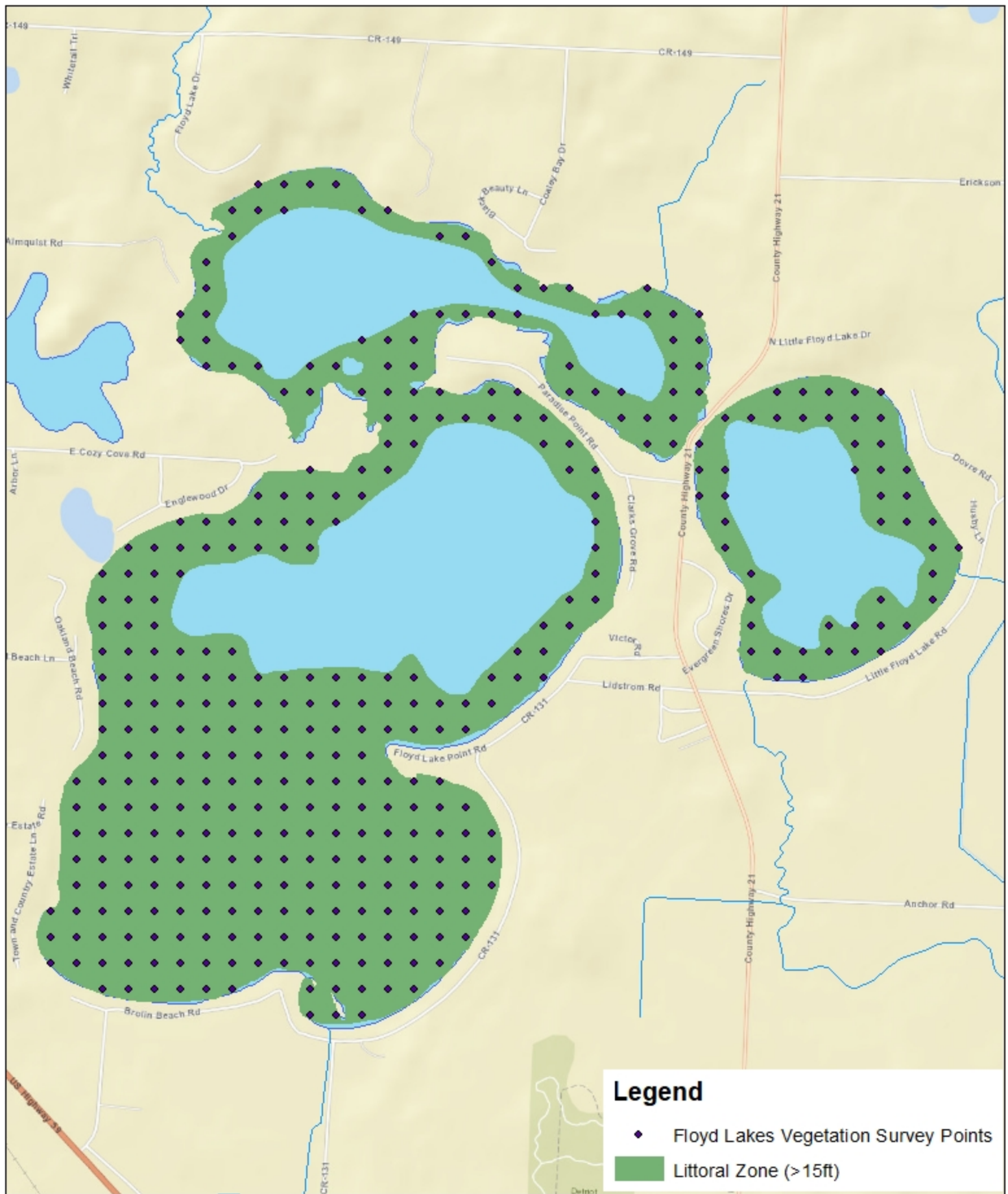
New Programs- The District will begin monitoring public accesses monthly per the 10-Year Plan. All public accesses in the District will be monitored by staff.

Staffing- 2 Seasonal interns will be hired from May to August. These interns will be tasked with collecting most of the Data collected over the summer. A third intern (Eli Disse) will be hired to assist with spring set up from March to the middle of May. The Water Resource Coordinator will handle any remaining data collection.

Equipment Needs - Equipment will be inspected prior to the sampling season. As of February, no major equipment needs replacement/servicing.

Citizen Monitoring- For 2020, the goal is to connect with 5 new Citizen Scientist. The District will work with the MPCA to ensure citizen scientists are trained and provided with proper equipment. District Staff will also work with local volunteer organizations to construct and distribute zebra mussel samplers. The District's goal is to distribute samplers to 2 volunteers per lake on 3 different lakes.





2020 Stream Sampling Locations, Metrics, and Schedule.

Site	New or Current Site	Description	Weekly Visit		Bi Weekly		Monthly		Event/Storm	
			Staff Gage	HOB0	Chemical	E-Coli	Chlorides	Chemical	Chemical	E-Colli
CC1a	Current	Campbell Creek Outlet to North Floyd Lake	X		A				X	
CC1	Current	Campbell Creek at CR-149	X	X	B					
CC2a	Current	Campbell Creek 1/4mi Downstream of 230th St	X		A				X	
CC2	Current	Campbell Creek at 230th St	X	X	B					
PR1	Current	Little Floyd Outlet on Little Floyd Rd	X		A					
PR2a	Current	Pelican River at Rice Lake Outlet	X	X	B					
PR3	Current	Pelican River at State Highway 34	X		A	X			X	
PR3a	NEW	Pelican River at 8th St	X		B	X			X	X
PR4a	Current	Pelican River at Corbett Rd	X	X		X			X	
PR5	Current	Pelican River at North Shore Drive	X		A	X	X		X	X
PR6	Current	Pelican River at Detroit Lake Outlet	X	X			X			
PR6a	Current	Pelican River at US Highway 59	X							
PR7	Current	Pelican River at Muskrat Lake Outlet	x		B*					
PR8	Current	Pelican River at Lake Sallie Outlet	X		A*					
PR9	Current	Pelican River at Lake Melissa Outlet	X		B*					
SC3	Current	Ditch 14 at Lake St. Clair Outlet	X	X	A*					
SC3b	Current	Ditch 14 Between Lake St. Clair and Pelican River	X							
SC4	Current	Ditch 14 at Outlet to Pelican River	X		B*		X			
IP	Current	Outlet to Industrial Park Storm Sewer							X	X
PV	Current	Pavillion Storm Sewer Discharge to Detroit Lake							X	X
PUB	NEW	Detroit Lakes Public Beach							X	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	
DD1	NEW	Dovre Ditch at Little Floyd Rd	X		B				X	

*Only TP and OP are Sampled

Notes:

Changes for 2020- Three new routine sites will be added in 2020 to more closely track pollution in the District. Staff Gages will be installed to track water levels at these sites. A HOB0 sensor will be placed in Sucker Creek to track fluctuations in flow. E. Coli and chlorides will be tracked more frequently and in more locations than in past years. A continuous DO logger will be purchased to track DO fluctuations throughout the Pelican River Impairment. Transparency will be measured at all stream sites on all visits using a secchi tube.

Staffing- Two seasonal interns will be hired from May to August. These interns will be tasked with collecting most of the Data collected over the summer. A third intern (Eli Disse, a previous year's intern) will be hired to assist with spring set up from March to the middle of May. The Water Resource Coordinator will handle any remaining data collection.

Equipment Needs - Equipment will be inspected prior to the sampling season. Any necessary replacements or repairs will be made. As of February, no major equipment needs replacement/servicing.

Staff Gages- Staff Gages will be inspected and cleaned prior to the start of the field season. The District will place two new staff gages: one at Sucker Creek and one at Dovre Ditch.

2020 Proposed Monitoring Budget

Routine Sampling					
Metric	# of Sites	# of Samples	RMBEL Cost	Total Budget	
Total Phosphorous	29	232	\$ 12.00	\$	2,784.00
Orthophosphate	29	232	\$ 10.00	\$	2,320.00
Chlorophyll-a	14	112	\$ 19.00	\$	2,128.00
Chlorides	4	20	\$ 10.00	\$	200.00
Total Suspended Solids	10	80	\$ 10.00	\$	800.00
E-Coli	4	32	\$ 17.00	\$	544.00
Total				\$	8,776.00
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
Chlorophyll-a	12	60	\$ 19.00	\$	1,140.00
Chlorides	12	60	\$ 10.00	\$	600.00
Total Suspended Solids	12	60	\$ 10.00	\$	600.00
E-Coli	6	30	\$ 17.00	\$	510.00
Total				\$	4,170.00
Total Sampling Expected Cost:				\$	12,946.00
Total Budgeted in 2020 Budget:				\$	14,000.00
Special Projects					
Project	# of Sites	# of Samples	RMBEL Cost	Total Budget	
Phytoplankton Study	4	20	\$ 195.00	\$	3,900.00
Administrative					
Line Item					
Seasonal Staff				\$	15,700.00
Administrative Staff (Estimated)				\$	30,000.00
Vehicle and Maintenance				\$	1,200.00
Equipment Purchase/Repair				\$	3,200.00
Misc. Supplies				\$	1,500.00
Total Budgeted:				\$	51,600.00