

# City of St. Ignace

## Phase I – Water System Improvements

Michigan Drinking Water State Revolving Fund Project Plan  
Volume 2 – Appendix

21-0084

April 5, 2022



1211 Ludington Street  
Escanaba, MI 49829

# APPENDIX A

## BASIS OF COST

## **Appendix A**

### **Part 1: Estimated Project Construction Costs**

**C2AE**

1211 Ludington St., Escanaba, Michigan 49829

PROJECT St. Ignace DWSRF NOI  
  
Water Treatment Plant  
Costs Projected to 2022 Construction Dollars

BY: JAH  
DATE: 3/25/21

DIVISION	DESCRIPTION	QUANT.	UNIT	UNIT AMOUNT	TOTAL AMOUNT	PRIORITY LEVEL
<b><u>Low Service Pumps-Variable Speed Drives</u></b>						1
	VFD, 40 Hp	3	Ea	\$11,500	\$34,500	
	Labor	1	Ls	\$10,350	\$10,350	
	Control/SCADA	1	Ls	\$2,900.00	\$2,900	
	Miscellaneous	1	Ls	\$4,600.00	<u>\$4,600</u>	
					<b>\$52,350</b>	
<b><u>Streaming Current Monitor</u></b>						1
	Monitor Material	1	Ls	\$13,800	\$13,800	
	Installation	1	Ls	\$3,500	\$3,500	
	Control/SCADA	1	Ls	\$1,700	\$1,700	
	Miscellaneous	1	Ls	\$1,200	<u>\$1,200</u>	
					<b>\$20,200</b>	
<b><u>Filters No. 2</u></b>						1
	Wall Coatings	1	Ea	\$34,500	\$34,500	
	Media, Anthracite	6,100	Lbs	\$1.75	\$10,675	
	Media, Sand	14,400	Lbs	\$1.15	\$16,560	
	Miscellaneous	1	Ls	\$7,000	<u>\$7,000</u>	
					<b>\$68,735</b>	
<b><u>Flocculation Cell Rehabilitation</u></b>						1
	Wall Coatings, 4 Tanks	2,500	Sf	\$40	\$100,000	
	Flocculator Drives, Complete	4	Ea	\$23,500	\$94,000	
	Miscellaneous	1	Ls	\$5,000	\$5,000	
					<b>\$199,000</b>	
<b><u>Equipment Rehabilitation</u></b>						1
	High Service Pumps	2	Ea	\$26,000	\$52,000	
	Washwater/Backwash Pump	1	Ea	\$12,000	\$12,000	
	Surface Supply Pump	1	Ea	\$18,000	\$18,000	
	Filter Valves	20	Ea	\$3,760	\$75,200	
	Miscellaneous	1	Ls	\$5,000	<u>\$5,000</u>	
					<b>\$162,200</b>	



**C2AE**

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Water Treatment Plant  
Costs Projected to 2022 Construction Dollars

BY: JAH  
DATE: 3/25/21

DIVISION	DESCRIPTION	QUANT.	UNIT	UNIT AMOUNT	TOTAL AMOUNT	PRIORITY LEVEL
<b><i>High Service Pump Variable Speed Drives</i></b>						1
	Variable Frequency VFD, 50 Hp	4	Ea	\$17,250	\$69,000	
	Drive Installation and Wiring	1	Ls	\$10,350	\$10,350	
	Control Programming and Startup	1	Ls	\$5,200	\$5,200	
	Related Accessories	1	Ls	\$5,800	\$5,800	
	Total Project Cost				<b>\$90,350</b>	
<b><i>Protective Coating-Existing Treated Water Storage Tank</i></b>						
	Inspection of Reservoir	1	Ls	\$3,500	\$3,500	1
	Prepare and Coat, Wall & Ceiling	13,000	Sf	\$12.75	\$165,750	1
					<b>\$169,250</b>	
<b><i>Sample Pumps</i></b>						1
	End Suction Centrifugal Sample Pump	3	Ea	\$6,000	\$18,000	
	Sample Pump Piping	1	Ls	\$2,000	\$2,000	
					<b>\$20,000</b>	
<b><i>Soda Ash, Pumping</i></b>						1
	3/4" Suction, 0-104 gph Meter Pumps	2	Ea	\$4,300	\$8,600	
	Soda Ash Piping, Approx. 55'	1	Ls	\$2,000	\$2,000	
	Miscellaneous	1	Ls	\$10,000	\$10,000	
					<b>\$20,600</b>	
<b><i>Filter, Service Building, Low Service Booster, General Rehabilitation</i></b>						1
<b><i>Doors - Both Buildings</i></b>						
	Mandoor Replacement, HM, Single MD	6	Ea	\$2,500	\$15,000	
	Mandoor Replacement, HM, Double MD	1	Ea	\$3,500	\$3,500	
	Demolish Existing Doors and Frame	8	Ea	\$580	\$4,640	
					<b>\$23,140</b>	
<b><i>Low Service Shorewell Pump Station</i></b>						
	CMU, Brick Fascia Repair, Lower 3'	332	Sf	\$75	\$24,900	
	Floor Drain, Upgrades	1	LS	\$10,000	\$10,000	
					<b>\$34,900</b>	

**C2AE**

1211 Ludington St., Escanaba, Michigan 49829

PROJECT St. Ignace DWSRF NOI  
  
Water Treatment Plant  
Costs Projected to 2022 Construction Dollars

BY: JAH  
DATE: 3/25/21

DIVISION	DESCRIPTION	QUANT.	UNIT	UNIT AMOUNT	TOTAL AMOUNT	PRIORITY LEVEL
	<b><u>HVAC Rehabilitation</u></b>					
	1100 cfm, Hot Water Unit Heater	6	Ea	\$1,250	\$7,500	
	1760 cfm, Hot Water Unit Heater	3	Ea	\$1,300	\$3,900	
	3300 cfm, Hot Water Unit Heater	2	Ea	\$1,450	\$2,900	
	Service Building, Chlorine Room UH	1	Ea	\$1,250	\$1,250	
	Exhaust Fan, Chlorination Room	1	LS	\$1,500	\$1,500	
	Replace Thermostats	1	LS	\$1,000	\$1,000	
	Boiler Replacement	1	LS	\$15,000	\$15,000	
					<b>\$33,050</b>	
	<b><u>Interior Plumbing</u></b>					
	Chemical Feed Piping, Misc. Process Pipe	1,000	Sf	\$25	\$25,000	
					<b>\$25,000</b>	
	<b><u>General Coatings Allowance</u></b>					
	Miscellaneous Coatings	1	Ls	\$5,000	\$5,000	
	<b><u>Misc. Equipment</u></b>					1
	Eyewash/Emergency Shower	1	Ls	\$2,200	\$2,200	
	Benchtop Turbidimeter	1	Ea	\$1,500	\$1,500	
					<b>\$3,700</b>	
	<b><u>Water Tower Upgrades</u></b>					1
	Tank Inspection, 3 Tanks	1	Ls	\$15,000	\$15,000	
	Marley Street Standpipe (2025, Overcoat)	1	Ls	\$149,500	\$149,500	1
	Second Street Elevated Tank (2020, Overcoat)	1	Ls	\$209,300	\$209,300	
	Evergreen Shores Elevated Tank (2025, In/Ou	1	Ls	\$218,500	\$218,500	
	Pressure Transducer	3	Ea	\$2,000	\$6,000	
	Miscellaneous	1	Ls	\$10,000	\$10,000	
					<b>\$608,300</b>	
	<b><u>Sludge Lagoon</u></b>					1
	Sludge Removal, Lagoon Rehab	1	Ls	\$15,000	\$15,000	
	<b><u>Shore Well Improvements</u></b>					1
	Demolition of Existing Valve	1	Ls	\$9,000	\$9,000	
	24" Valve, Gate Valve	1	Ls	\$31,250	\$31,250	
	Miscellaneous	1	Ls	\$5,000	\$5,000	
					<b>\$45,250</b>	
	<b>CONSTRUCTION PLANNING COSTS</b>				<b>\$1,596,025</b>	

**City of St. Ignace Opinion of Cost: Phase 1 - Water and Wastewater USDA RD Improvements (21-0084 & 85)**

Versions: ANH 2/7/2022

				C1		C2		A3		A4		A6		D2		B8		A15		C4		B5		C3		A14		A1		B2		A8	
				Antoine St. (I75 & East to Lake)		Lemotte St & Lake Ave to Lemotte St & Reagon St to Reagon St and I75		E Goudreau St from I75 to I75 BL and Mary St from Goudreau St North		N Marley St from E Goudreau St to Old Portage Rd		N 2nd St from Collins St to Spring St		Graham Ave from S State St to Strats Park Access		S State St from Ferry Ln to Graham Ave		Dock 3 St from Graham Ave to Ferry Ln; From Ferry and Dock 3 St to Huron St		Bertrand St Hombach to Ferry Ln		Truckey St & Spring St from Marley to N175 including sewer between streets		Keightley St from Church St to 500 ft east		S Marley Street from Spring St to Tank		Boundary Rd from S Airport Rd to 300 ft S		N 1st St from Collins St to North of Old Portage Rd		Fountain St. from Old Portage Rd to E Truckey St.	
Item	Description	Price	Unit	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost	No. of Units	Cost		
<b>General</b>																																	
101	Mobilization, General Conditions, Bonds & Insurance (5% of Total Construction Cost)	5%			\$ 6,642		\$ 13,884		\$ 43,337		\$ 15,097		\$ 39,655		\$ 39,716		\$ 19,557		\$ 31,547		\$ 13,884		\$ 27,554		\$ 5,201		\$ 5,811		\$ 1,623		\$ 14,412		\$ 12,399
102	Environmental Mitigation, Traffic Control, Etc. (2.5% of Total Construction Cost)	2.5%			\$ 3,321		\$ 6,942		\$ 21,668		\$ 7,549		\$ 19,827		\$ 19,858		\$ 9,779		\$ 15,774		\$ 6,942		\$ 13,777		\$ 2,600		\$ 2,905		\$ 811		\$ 7,206		\$ 6,199
	<b>Total</b>				<b>\$ 9,963</b>		<b>\$ 20,826</b>		<b>\$ 65,005</b>		<b>\$ 22,646</b>		<b>\$ 59,482</b>		<b>\$ 59,573</b>		<b>\$ 29,336</b>		<b>\$ 47,321</b>		<b>\$ 20,826</b>		<b>\$ 41,331</b>		<b>\$ 7,801</b>		<b>\$ 8,716</b>		<b>\$ 2,434</b>		<b>\$ 21,618</b>		<b>\$ 18,598</b>
<b>Restoration</b>																																	
201	3" Type 'E' HMA Pavement Replacement (Full Width of 24'w)	\$14	SY	0	\$ -	0	\$ -	4,533	\$ 61,880	1,600	\$ 21,840	5,867	\$ 80,080	0	\$ -	0	\$ -	0	\$ -	0	\$ -	2,667	\$ 36,400	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
202	12" Gravel Base in Type 'E' Pavement Areas (Full Width of 24'w)	\$11	SY	0	\$ -	0	\$ -	4,533	\$ 47,600	1,600	\$ 16,800	5,867	\$ 61,600	0	\$ -	0	\$ -	0	\$ -	0	\$ -	2,667	\$ 28,000	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
203	3" Type 'A' HMA Pavement Replacement (Half Width-Trench Only)	\$30	LF	600	\$ 18,000	1,200	\$ 36,000	0	\$ -	0	\$ -	0	\$ -	3,300	\$ 99,000	1,330	\$ 39,900	1,800	\$ 54,000	1,200	\$ 36,000	0	\$ -	500	\$ 15,000	0	\$ -	0	\$ -	1,000	\$ 30,000	600	\$ 18,000
204	12" Gravel Base in Type 'A' Pavement Areas (Half Width-Trench Only)	\$22	LF	600	\$ 13,200	1,200	\$ 26,400	0	\$ -	0	\$ -	0	\$ -	3,300	\$ 72,600	1,330	\$ 29,260	1,800	\$ 39,600	1,200	\$ 26,400	0	\$ -	500	\$ 11,000	0	\$ -	0	\$ -	1,000	\$ 22,000	600	\$ 13,200
205	3" Type 'B' HMA Pavement Replacement (3" Trench Plus 1.5" Full Width Cap)	\$36	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	900	\$ 32,400	400	\$ 14,400	0	\$ -	0	\$ -
206	12" Gravel Base in Type 'B' Pavement Areas (Trench Only)	\$22	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	900	\$ 19,800	400	\$ 8,800	0	\$ -	0	\$ -
207	6" Gravel Surface Replacement (15'w)	\$13	SY	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
208	Pavement Marking	\$1	LF	600	\$ 630	1,200	\$ 1,260	1,700	\$ 1,785	600	\$ 630	2,200	\$ 2,310	3,300	\$ 3,465	1,330	\$ 1,397	1,800	\$ 1,890	1,200	\$ 1,260	1,000	\$ 1,050	500	\$ 525	900	\$ 945	400	\$ 420	1,000	\$ 1,050	600	\$ 630
209	Curb and Gutter Replacement (both sides)	\$28	LF	0	\$ -	0	\$ -	400	\$ 11,340	0	\$ -	0	\$ -	0	\$ -	1,000	\$ 28,350	2,600	\$ 73,710	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
210	Curb and Gutter Removal (both sides)	\$4	LF	0	\$ -	0	\$ -	400	\$ 1,680	0	\$ -	0	\$ -	0	\$ -	1,000	\$ 4,200	2,600	\$ 10,920	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
211	Storm Repair (1-48" Manhole with 15' of Storm Pipe & 2-36" Catch Basins with 30' Lead every 400')	\$13,681	EA	0	\$ -	0	\$ -	4	\$ 58,144	2	\$ 20,522	6	\$ 75,246	0	\$ -	3	\$ 45,489	5	\$ 61,565	0	\$ -	3	\$ 34,203	0	\$ -	0	\$ -	0	\$ -	0	\$ -	2	\$ 20,522
212	6" Concrete Driveway Replacement (every 800', 10sy)	\$53	SY	8	\$ 394	15	\$ 788	21	\$ 1,116	8	\$ 394	28	\$ 1,444	41	\$ 2,166	17	\$ 873	23	\$ 1,181	15	\$ 788	13	\$ 656	6	\$ 328	11	\$ 591	5	\$ 263	13	\$ 656	8	\$ 394
213	3" Bituminous Driveway Replacement (every 300', 10sy)	\$37	SY	20	\$ 735	40	\$ 1,470	57	\$ 2,083	20	\$ 735	73	\$ 2,695	110	\$ 4,043	44	\$ 1,629	60	\$ 2,205	40	\$ 1,470	33	\$ 1,225	17	\$ 613	30	\$ 1,103	13	\$ 490	33	\$ 1,225	20	\$ 735
214	4" Concrete Sidewalk (5'w, Single Side)	\$7	SF	0	\$ -	0	\$ -	8,500	\$ 62,475	3,000	\$ 22,050	0	\$ -	0	\$ -	0	\$ -	6,500	\$ 47,775	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
215	6" Concrete Sidewalk at Drive Crossings (every 200' @ 5'x15')	\$9	SF	0	\$ -	0	\$ -	638	\$ 6,024	225	\$ 2,126	0	\$ -	0	\$ -	0	\$ -	488	\$ 4,607	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
216	6" Concrete ADA Ramps w/ Iron Warning Plate (every 400' @ 100sf)	\$17	SF	0	\$ -	0	\$ -	425	\$ 7,140	150	\$ 2,520	0	\$ -	0	\$ -	0	\$ -	325	\$ 5,460	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
217	Adjust Existing Casting before Final Paving (2 ea @ 400')	\$383	EA	3	\$ 1,150	6	\$ 2,300	9	\$ 3,258	3	\$ 1,150	11	\$ 4,216	17	\$ 6,324	7	\$ 2,549	9	\$ 3,449	6	\$ 2,300	5	\$ 1,916	3	\$ 958	5	\$ 1,725	2	\$ 767	5	\$ 1,916	3	\$ 1,150
218	Miscellaneous Topsoil, Seed & Mulch / Sod Restoration	\$2	LF	600	\$ 1,260	1,200	\$ 2,520	1,700	\$ 3,570	600	\$ 1,260	2,200	\$ 4,620	3,300	\$ 6,930	1,330	\$ 2,793	1,800	\$ 3,780	1,200	\$ 2,520	1,000	\$ 2,100	500	\$ 1,050	900	\$ 1,890	400	\$ 840	1,000	\$ 2,100	600	\$ 1,260
219	Gravel Shoulder Replacement (6" d, 2' w)	\$3	LF	600	\$ 1,800	1,200	\$ 3,600	1,700	\$ 5,100	600	\$ 1,800	2,200	\$ 6,600	3,300	\$ 9,900	1,330	\$ 3,990	1,800	\$ 5,400	1,200	\$ 3,600	1,000	\$ 3,000	500	\$ 1,500	900	\$ 2,700	400	\$ 1,200	1,000	\$ 3,000	600	\$ 1,800
220	Excess Cut, (15% of Pipe LF)	\$3	LF	90	\$ 284	180	\$ 567	255	\$ 803	90	\$ 284	330	\$ 1,040	495	\$ 1,559	200	\$ 628	270	\$ 851	180	\$ 567	150	\$ 473	75	\$ 236	135	\$ 425	60	\$ 189	150	\$ 473	90	\$ 284
	<b>Total</b>				<b>\$ 37,452</b>		<b>\$ 74,904</b>		<b>\$ 273,998</b>		<b>\$ 92,110</b>		<b>\$ 239,850</b>		<b>\$ 205,986</b>		<b>\$ 161,058</b>		<b>\$ 316,392</b>		<b>\$ 74,904</b>		<b>\$ 109,023</b>		<b>\$ 31,210</b>		<b>\$ 61,578</b>		<b>\$ 27,368</b>		<b>\$ 62,420</b>		<b>\$ 57,974</b>
<b>Water Related Items</b>																																	
301	Granular Fill Over Water Main (5% of Trench Length)	\$21	LF	26	\$ 546	56	\$ 1,166	61	\$ 1,271	24	\$ 504	108	\$ 2,258	161	\$ 3,381	63	\$ 1,323	86	\$ 1,806	56	\$ 1,166	44	\$ 914	20	\$ 420	13	\$ 263	0	\$ -	0	\$ -	25	\$ 515
302	12" Trench Undercut and Stone Refill for Water Main (25% of TL)	\$12	LF	130	\$ 1,556	278	\$ 3,321	303	\$ 3,620	120	\$ 1,436	538	\$ 6,432	805	\$ 9,632	315	\$ 3,769	430	\$ 5,145	278	\$ 3,321	218	\$ 2,603	100	\$ 1,197	63	\$ 748	0	\$ -	0	\$ -	123	\$ 1,466
303	12" CL 350 DI Water Main	\$90	LF	0	\$ -	0	\$ -	920	\$ 82,800	480	\$ 43,200	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	250	\$ 22,500	0	\$ -	0	\$ -	0	\$ -
304	10" CL 350 DI Water Main	\$80	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
305	8" CL 350 DI Water Main	\$74	LF	520	\$ 38,480	1,110	\$ 82,140	290	\$ 21,460	0	\$ -	2,150	\$ 159,100	3,220	\$ 238,280	1,260	\$ 93,240	1,720	\$ 127,280	1,110	\$ 82,140	870	\$ 64,380	400	\$ 29,600	0	\$ -	0	\$ -	0	\$ -	490	\$ 36,260
306	6" CL 350 DI Water Main (30' Hydrant Leads & Connection to Existing Main)	\$68	LF	117	\$ 7,985	250	\$ 17,045	272	\$ 18,581	108	\$ 7,371	484	\$ 33,016	725	\$ 49,447	284	\$ 19,349	387	\$ 26,413	250	\$ 17,045	196	\$ 13,360	90	\$ 6,143	56	\$ 3,839	0	\$ -	0	\$ -	110	\$ 7,525
307	8" to 10" Gate Valve and Box (4 Ea. @ 400')	\$2,500	EA	5	\$ 13,000	11	\$ 27,750	12	\$ 30,250	5	\$ 12,000	22	\$ 53,750	32	\$ 80,500	13	\$ 31,500	17	\$ 43,000	11	\$ 27,750	9	\$ 21,750	4	\$ 10,000	3	\$ 6,250	0	\$ -	0	\$ -	5	\$ 12,250
308	1" Type 'K' Copper Water Service (35 LF Ea. Every 100' Ea. Side)	\$41	LF	364	\$ 14,742	777	\$ 31,469	847	\$ 34,304	336	\$ 13,608	1,505	\$ 60,953	2,254	\$ 91,287	882	\$ 35,721	1,204	\$ 48,762	777	\$ 31,469	609	\$ 24,665	280	\$ 11,340	280	\$ 11,340	105	\$ 4,253	0	\$ -	343	\$ 13,892
309	1" Corp & Curb Stops & Connection (Every 100' Ea. Side)	\$263	EA	10	\$ 2,730	22	\$ 5,828	24	\$ 6,353	10	\$ 2,520	43	\$ 11,288	64	\$ 16,905	25	\$ 6,615	34	\$ 9,030	22	\$ 5,828	17	\$ 4,568	8	\$ 2,100	8	\$ 2,100	3	\$ 788	0	\$ -	10	\$ 2,573
310	Hydrant Assembly (Every 400')	\$5,740	EA	1	\$ 7,410	3	\$ 15,818	3	\$ 17,243	1	\$ 6,840	5	\$ 30,638	8	\$ 45,885	3	\$ 17,955	4	\$ 24,510	3	\$ 15,818	2	\$ 12,398	1	\$ 5,700	1	\$ 3,563	0	\$ -	0	\$ -	1	\$ 6,983
311	Dewatering (15% of Water Main)	\$3	LF	78	\$ 246	167	\$ 524	182	\$ 572	72	\$ 227	323	\$ 1,016																				



## **Appendix A**

### Part 2: Salvage Value

ST. IGNACE DWSRF  
 WATER SYSTEM - 2021 CAPITAL IMPROVEMENT SALVAGE VALUE  
 3/18/2021 by RMB

<b>Improvement</b>	<b>Cost</b>	<b>Estimated Service Life</b>	<b>Salvage (in 20 years)</b>
Low Service Pumps-Variable Speed Drives	\$ 52,350	25	\$ 10,470
Streaming Current Monitor	\$ 20,200	20	\$ -
Filters No. 2	\$ 68,735	40	\$ 34,368
Flocculation Cell Rehabilitation	\$ 199,000	20	\$ -
Equipment Rehabilitation	\$ 162,200	15	
High Service Pump Variable Speed Drives	\$ 90,350	25	\$ 18,070
Protective Coating-Existing Treated Water Storage Tank	\$ 169,250	20	\$ -
Sample Pumps	\$ 20,000	25	\$ 4,000
Soda Ash, Pumping	\$ 20,600	20	\$ -
Filter, Service Building, Low Service Booster, General Rehabilitation	\$ 121,090	30	\$ 40,363
Misc. Equipment	\$ 3,700	20	\$ -
Water Tower Upgrades	\$ 571,500	20	\$ -
Sludge Lagoon	\$ 15,000	10	
Shorewell Improvements	\$ 45,250	40	\$ 22,625
<b>Total Construction Costs</b>	<b>\$ 1,559,200</b>	<b>Total Salvage</b>	<b>\$ 129,895.83</b>

## **Appendix A**

### Part 3: Operating Expenses

City of St. Ignace O&M Estimate for Present Worth Analysis  
(reference Tab 1 AMP Summary October 2019)

3/18/2021 by RMB

OPERATING EXPENSES					Impact on O&M			
Table 1.					No Action		Optimization	
	TOTAL	Administration	Line Maintenance	Plant Operations				
Labor	\$289,500.00	\$28,500.00	\$86,000.00	\$175,000.00	10.0%	\$17,500.00	-10.0%	(\$17,500.00)
Overhead	\$178,950.00	\$30,630.00	\$58,440.00	\$89,880.00		\$0.00		\$0.00
Operator Supplies	\$53,000.00	\$ -	\$6,000.00	\$47,000.00	10.0%	\$4,700.00	-10.0%	(\$4,700.00)
Cont. Services	\$28,000.00	\$ -	\$8,000.00	\$20,000.00	10.0%	\$2,000.00	-10.0%	(\$2,000.00)
Prof. Services	\$3,500.00	\$3,500.00	\$ -	0		\$0.00		\$0.00
Uniforms	\$1,065.00	\$ -	\$700.00	\$365.00		\$0.00		\$0.00
General Fund	\$42,500.00	\$42,500.00	\$ -	0		\$0.00		\$0.00
Equip. Rental	\$25,000.00	\$ -	\$25,000.00	0		\$0.00		\$0.00
Communications	\$1,000.00	\$ -	\$ -	\$1,000.00	10.0%	\$100.00	-10.0%	(\$100.00)
Insurance, Fleet & Prop.	\$35,500.00	\$ -	\$ -	\$35,500.00		\$0.00		\$0.00
Repair & Maintenance	\$8,300.00	\$ -	\$7,000.00	\$1,300.00	25.0%	\$325.00	-25.0%	(\$325.00)
Utilities & Cable	\$74,000.00	\$ -	\$ -	\$74,000.00	30.0%	\$22,200.00	-20.0%	(\$14,800.00)
Office Supplies	\$0.00	\$ -	\$ -	0		\$0.00		\$0.00
Transfer to 729	\$19,600.00	\$19,600.00	\$ -	0		\$0.00		\$0.00
Education & Train.	\$4,150.00	\$1,000.00	\$ -	\$3,150.00		\$0.00		\$0.00
Moran Township	\$12,000.00	\$ -	\$ -	\$12,000.00	15.0%	\$1,800.00	-5.0%	(\$600.00)
Cap. Outlay	\$3,000.00	\$ -	\$ -	\$3,000.00	40.0%	\$1,200.00	-40.0%	(\$1,200.00)
Sundry	\$1,300.00	\$500.00	\$100.00	\$700.00	25.0%	\$175.00	-25.0%	(\$175.00)
Travel	\$0.00	\$ -	\$ -	0		\$0.00		\$0.00
Miss Dig	\$0.00	\$ -	\$ -	0		\$0.00		\$0.00
Print & Publishing	\$1,200.00	\$1,200.00	\$ -	0		\$0.00		\$0.00
Gas & Oil	\$10,500.00	\$ -	\$10,500.00	0		\$0.00		\$0.00
Refuse Collection	\$0.00	\$ -	\$ -	0		\$0.00		\$0.00
Transfer to 641	\$0.00	\$ -	\$ -	0		\$0.00		\$0.00
Member Dues/Subs	\$1,500.00	\$1,500.00	\$ -	0		\$0.00		\$0.00
Equipment Fund	\$5,700.00	\$5,700.00	\$ -	0		\$0.00		\$0.00
Subtotals	\$799,265.00	\$134,630.00	\$201,740.00	\$462,895.00		\$50,000.00		(\$41,400.00)



## **Appendix A**

### **Part 4: Bond Schedule**

**Bond Schedule****Date:** 02/03/22

**Borrower Name:** City of St. Ignace **Type of Bond:** 40  
**Interest Rate:** 1.875%  
**Yrs Deferred Principle:** 0  
**Principal:** \$11,250,000 (round to nearest \$1000)  
**Ammort. Factor:** 0.0358  
**Ammortized Payment:** \$402,290  
**Monthly Debt Service:** \$33,524  
**Estimated System EDUs:** 2617  
**User Rate Impact:** \$12.81

Year	1st Interest	2nd Interest	Principal Paid	Total Year Payment	Loan Balance
1	105,469	105,469	191,000	401,938	11,059,000
2	103,678	103,678	195,000	402,356	10,864,000
3	101,850	101,850	199,000	402,700	10,665,000
4	99,984	99,984	202,000	401,969	10,463,000
5	98,091	98,091	206,000	402,181	10,257,000
6	96,159	96,159	210,000	402,319	10,047,000
7	94,191	94,191	214,000	402,381	9,833,000
8	92,184	92,184	218,000	402,369	9,615,000
9	90,141	90,141	222,000	402,281	9,393,000
10	88,059	88,059	226,000	402,119	9,167,000
11	85,941	85,941	230,000	401,881	8,937,000
12	83,784	83,784	235,000	402,569	8,702,000
13	81,581	81,581	239,000	402,163	8,463,000
14	79,341	79,341	244,000	402,681	8,219,000
15	77,053	77,053	248,000	402,106	7,971,000
16	74,728	74,728	253,000	402,456	7,718,000
17	72,356	72,356	258,000	402,713	7,460,000
18	69,938	69,938	262,000	401,875	7,198,000
19	67,481	67,481	267,000	401,963	6,931,000
20	64,978	64,978	272,000	401,956	6,659,000
21	62,428	62,428	277,000	401,856	6,382,000
22	59,831	59,831	283,000	402,663	6,099,000
23	57,178	57,178	288,000	402,356	5,811,000
24	54,478	54,478	293,000	401,956	5,518,000
25	51,731	51,731	299,000	402,463	5,219,000
26	48,928	48,928	304,000	401,856	4,915,000
27	46,078	46,078	310,000	402,156	4,605,000
28	43,172	43,172	316,000	402,344	4,289,000
29	40,209	40,209	322,000	402,419	3,967,000
30	37,191	37,191	328,000	402,381	3,639,000
31	34,116	34,116	334,000	402,231	3,305,000
32	30,984	30,984	340,000	401,969	2,965,000
33	27,797	27,797	347,000	402,594	2,618,000
34	24,544	24,544	353,000	402,088	2,265,000
35	21,234	21,234	360,000	402,469	1,905,000
36	17,859	17,859	367,000	402,719	1,538,000
37	14,419	14,419	373,000	401,838	1,165,000
38	10,922	10,922	380,000	401,844	785,000
39	7,359	7,359	388,000	402,719	397,000
40	3,722	3,722	395,000	402,444	2,000

**Appendix A**

Part 5: Operating Budget (2020)

Excerpt from City of St. Ignace Asset Management Plan  
 (prepared by Michigan Rural Water Association in October 2020)

**Section A - The Budget**

The City of St. Ignace Budget

OPERATING EXPENSES				
Table 1.				
	TOTAL	Administration	Line Maintenance	Plant Operations
Labor	\$289,500.00	\$ 28,500.00	\$ 86,000.00	\$ 175,000.00
Overhead	\$178,950.00	\$ 30,630.00	\$ 58,440.00	\$ 89,880.00
Operator Supplies	\$53,000.00	\$ -	\$ 6,000.00	\$ 47,000.00
Cont. Services	\$28,000.00	\$ -	\$ 8,000.00	\$ 20,000.00
Prof. Services	\$3,500.00	\$ 3,500.00	\$ -	\$ -
Uniforms	\$1,065.00	\$ -	\$ 700.00	\$ 365.00
General Fund	\$42,500.00	\$ 42,500.00	\$ -	\$ -
Equip. Rental	\$25,000.00	\$ -	\$ 25,000.00	\$ -
Communications	\$1,000.00	\$ -	\$ -	\$ 1,000.00
Insurance, Fleet & Prop.	\$35,500.00	\$ -	\$ -	\$ 35,500.00
Repair & Maintenance	\$8,300.00	\$ -	\$ 7,000.00	\$ 1,300.00
Utilities & Cable	\$74,000.00	\$ -	\$ -	\$ 74,000.00
Office Supplies	\$0.00	\$ -	\$ -	\$ -
Transfer to 729	\$19,600.00	\$ 19,600.00	\$ -	\$ -
Education & Train.	\$4,150.00	\$ 1,000.00	\$ -	\$ 3,150.00
Moran Township	\$12,000.00	\$ -	\$ -	\$ 12,000.00
Cap. Outlay	\$3,000.00	\$ -	\$ -	\$ 3,000.00
Sundry	\$1,300.00	\$ 500.00	\$ 100.00	\$ 700.00
Travel	\$0.00	\$ -	\$ -	\$ -
Miss Dig	\$0.00	\$ -	\$ -	\$ -
Print & Publishing	\$1,200.00	\$ 1,200.00	\$ -	\$ -
Gas & Oil	\$10,500.00	\$ -	\$ 10,500.00	\$ -
Refuse Collection	\$0.00	\$ -	\$ -	\$ -
Transfer to 641	\$0.00	\$ -	\$ -	\$ -
Member Dues/Subs	\$1,500.00	\$ 1,500.00	\$ -	\$ -
Equipment Fund	\$5,700.00	\$ 5,700.00	\$ -	\$ -
Subtotals	\$799,265.00	\$ 134,630.00	\$ 201,740.00	\$ 462,895.00

**Debt Expenses**

The City of St. Ignace has existing water system loans on the water system with debt (principal and interest) payments of \$430,135 per year.

**Section B - Available Cash Balance**

The City of St. Ignace had the following Cash available on December 31, 2019.

Reserve Funds as of December 31, 2020	
TABLE 3.	
Bond Reserves	
2000 Water Supply Reserve	\$ 146,000
2012 Water Supply Reserve	\$ 26,500
Repair, Replace and Improvement Reserve	
2000 Water Supply Reserve	\$ 85,560
Unrestricted	\$ 576,025
Total Reserves	\$ 834,085

How much money a community water system has in reserve is typically dependent on the following

- Age and condition of system
- Upcoming capital projects
- Upcoming major equipment replacement and rehabilitation expenses
- Debt requirements
- Time cycle between cash received from customers VS bills paid, especially debt payments

Because the water fund is an enterprise fund it is common to have at a minimum, two billing cycles worth of expenses. Although many communities have six to twelve months of expenses in cash.

The City of St. Ignace has an annual "Rate Budget of \$799,265 dollars.

The City invoices customers on a monthly basis

Two months of expenses equate to \$799,265 divided by 12 months of the year, then doubled for two months would equal \$66,605. The available cash in the bank does exceed this.

## APPENDIX B

### DISADVANTAGED COMMUNITY



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY  
**DISADVANTAGED COMMUNITY STATUS DETERMINATION WORKSHEET**

The following data is required from each municipality to assess the disadvantaged community status. Please provide the necessary information and return to:

Mark Conradi  
Water Infrastructure Financing Section  
Finance Division  
[conradim@michigan.gov](mailto:conradim@michigan.gov)

Please contact Mark Conradi ([conradim@michigan.gov](mailto:conradim@michigan.gov)) with any questions on the completion of the form.

Please check the box this determination is for:

DWSRF

CWSRF

Total amount of anticipated debt for the proposed project, if applicable.

Annual payments on the existing debt for the system.

Total operation, maintenance, and replacement expenses for the system on an annual basis.

Number of residential equivalent users (REUs) in the system.

**For determinations made using anticipated debt, a final determination will be made based upon the awarded loan amount.**

If you need this information in an alternate format, contact [EGLE-Accessibility@Michigan.gov](mailto:EGLE-Accessibility@Michigan.gov) or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at [EGLE-NondiscriminationCC@Michigan.gov](mailto:EGLE-NondiscriminationCC@Michigan.gov) or 517-249-0906.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.



## APPENDIX C

### ENVIRONMENTAL INFORMATION

# **ENVIRONMENTAL INFORMATION AND GUIDANCE TABLE OF CONTENTS**

0. Typical Submittal Package
1. Air Quality
2. Archaeological and Historic Resources
3. Tribal Historic Preservation Officers
4. Facility Discharge Permits
5. Farmland and Open Space Preservation
6. Local Health Department
7. Lagoon Berm Permits
8. National Natural Landmarks
9. Project Site Contamination
10. Projected Plants and Animals
11. Regional Planning
12. Stormwater Discharge Permits
13. Water Withdrawal and Dewatering
14. Wild and Scenic Rivers
15. Airspace and Airports
16. Land-Water Interfaces
  - a. Inland Lakes and Streams
  - b. Floodplains
  - c. Wetlands
  - d. Great Lakes Shorelands Protection
  - e. ACE Regulated Activities
  - f. Joint Permit Applications
17. Soils and Geology

**Appendix C**

Typical Review Package as Distributed

## **PROJECT SUMMARY FOR ENVIRONMENTAL REVIEWS**

### **CITY OF ST. IGNACE, MICHIGAN WATER AND WASTEWATER SYSTEM IMPROVEMENTS (SRF PROJECT PLANS)**

February 2022

#### **ADMINISTRATIVE**

The City of St. Ignace, Michigan has contracted with C2AE Engineers of Escanaba to prepare an EGLE DWSRF and CWSRF Program Project Plan. The purpose of the Project Plan is to evaluate needs and recommend alternatives for upgrades to the existing water distribution system and facilities (tanks, pump stations, and water treatment plant), and wastewater system.

#### **PROJECT PLANNING AREA**

Project planning concentrates on the existing St. Ignace water and wastewater distribution system (Township 40N, Range 3W, Sections 6, 7, 17, and 18). The City is located in Mackinac County near the east end of Michigan's Upper Peninsula.

#### **EXISTING FACILITIES**

The City of St. Ignace is the responsible entity for the municipal water and wastewater treatment plant serving the City and the adjacent areas of Moran and St. Ignace Townships. The entire service district lies within Mackinac County in Michigan's Upper Peninsula.

The City's water facilities include a 500,000 gal in-ground concrete treated water storage tank at the WTP, one 300,000 gal steel standpipe with booster pumping at Marley Street, a 100,000 gal elevated storage tank on Second Street, and a 100,000 gal elevated storage tank in Evergreen Shores; these facilities and the distribution system are currently owned, operated, and maintained by the City. The distribution system includes about 200,000 ft of water main and includes hydrants, valves, and services. The City's water source is Lake Huron near the Straits of Mackinaw.

The existing sewer system consists of approximately 20 miles of 6 to 27-inch sewers. The City's WWTP is located directly north of the airport. The system is gravity with eight lift stations.

#### **NEED FOR THE PROJECT**

Reliable operation of the water and wastewater system within the City of St. Ignace's utility systems are imperative to protect the health and safety of the City's citizens and visitors. The City has been operating and maintaining the systems and facilities effectively, but there are areas of escalating deterioration and obsolescence that require a larger, preventative replacement and rehabilitation effort. Operators, consultants, and regulators have collaborated on the proposed solutions for these areas of work.

## **ALTERNATIVES CONSIDERED**

Cost effectiveness of treatment and distribution alternatives has been an ongoing evaluation. Based on the cost effectiveness analysis and long term desires of the City, this application will be focused on improvements to the existing facilities and replacement of water and sewer main. The principal alternatives are being considered as noted below:

- Alternative 1: No Action; the systems may continue to maintain operations, but escalating deterioration of existing equipment and structures risks inefficiency, additional hazards, and control failures.
- Alternative 2: Upgrade existing water facilities and replacement of water and sewer main; the rehabilitation of existing water treatment systems can be done with relatively minor additions, modifications, and replacements.

## **RECOMMENDED ALTERNATIVE**

Upgrade of existing water facilities and replacement of water and sewer main (7,950 ft) is considered the preferred alternative. Attached maps outline the proposed project areas.

The fundamental effectiveness of the existing treatment plant and storage systems is not in need of major changes, but minor improvements can prevent decline and improve efficiency of current operations. This includes the following improvements:

- Pump rehabilitation at the low service pump station
- Valve replacement at the raw water intake
- Pump replacement, general rehabilitation, and equipment upgrades at the water treatment plant
- Recoating and resurfacing of the Evergreen Shores Elevated Tank, Second Street Elevated Tank, and Marley Standpipe

## **ANTICIPATED SCHEDULE**

The initial project is scheduled for submission of a EGLE Project Plan in 2022 with construction in 2023 through 2024.

Figure 1: Location Map











## **Appendix C**

### Part 1: Air Quality

## 1. Air Quality

EGLE was contacted to review and comment on the potential direct or indirect air pollutant emissions impact that would result from the construction or operation of the proposed project. Fugitive dust emissions on the worksite are a potential during construction. If this would become an issue, dust suppressants will be used to control the fugitive dust to prevent violations of Rule 901.

**Appendix C**

Part 2: Archeological and Historic Resources

## 2. Archeological and Historic Resources

Based on the ITA Meeting for this project, the project has been classified as an equivalency project, therefore SHPO was not contacted for review. It is anticipated that there will be no impact to any historic properties. Construction activities will be within previously disturbed, existing facilities. Currently, it is not expected that there will be any earthwork.

## **Appendix C**

### **Part 3: Archeological and Historic Resources** (Tribal Historic Preservation Officers and Federally Recognized Tribes)



1211 Ludington St.  
Escanaba, MI 49829  
O: 906.233.9360  
www.c2ae.com

### **3. Archeological and Historic Resources (Tribal Historic Preservation Officers and Federally Recognized Tribes)**

Based on the ITA Meeting for this project, the project has been classified as an equivalency project, therefore THPO was not contacted for review. It is anticipated that there will be no impact to any tribal lands.

## **Appendix C**

### **Part 4: Facility Discharge Permits**



1211 Ludington St.  
Escanaba, MI 49829  
O: 906.233.9360  
[www.c2ae.com](http://www.c2ae.com)

#### **4. Facility Discharge Permit**

The proposed project does not require a NPDES Permit.

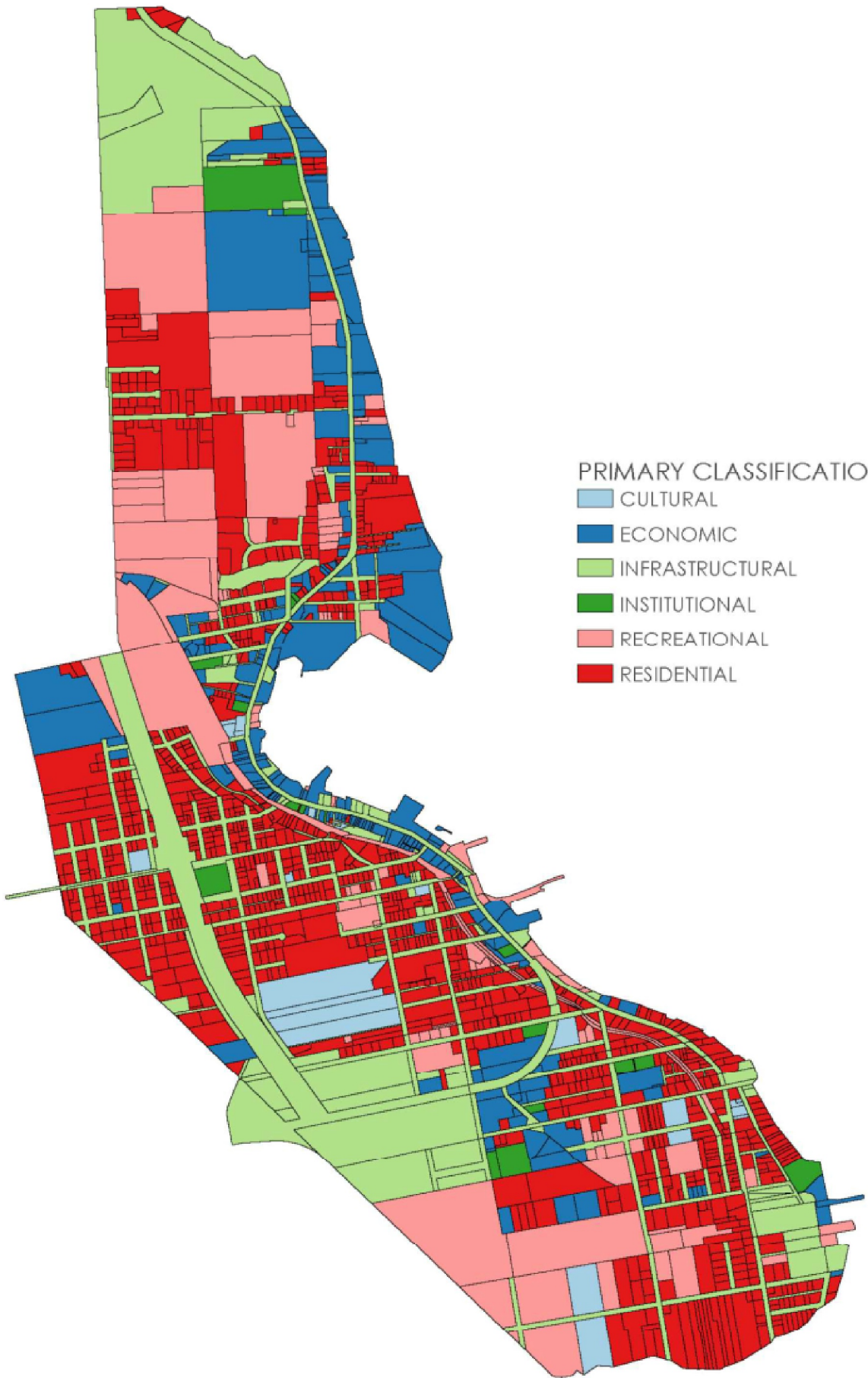


**Appendix C**

**Part 5: Farmland and Open Space Preservation**

## **5. Farmland and Open Space Preservation**

A map of the Land Use in the project location is provided on the following page. It is not anticipated that the proposed project would involve converting farmlands to nonagricultural uses. Construction will be limited to previously disturbed areas.



0 0.25 0.5 1 Miles



SCALE: 1:20,000



**Appendix C**

Part 6: Health Department Permits



1211 Ludington St.  
Escanaba, MI 49829  
O: 906.233.9360  
[www.c2ae.com](http://www.c2ae.com)

## **6. Health Department Permits**

The proposed project does not involve the construction, alteration, extension, or replacement of onsite septic systems. Thus the local health department was not contacted.

**Appendix C**

Part 7: Lagoon Berm Permits



1211 Ludington St.  
Escanaba, MI 49829  
O: 906.233.9360  
[www.c2ae.com](http://www.c2ae.com)

## **7. Lagoon Berm Permits**

The proposed project will not impact a lagoon as defined where the berm encloses more than five acres. Thus the EGLE WRD Damstaff was not contacted.

**Appendix C**

Part 8: National Natural Landmarks



## 8. National Natural Landmarks

A list of national natural landmarks was reviewed, the following three designated National Natural Landmarks in the Upper Peninsula of Michigan were found:

1. Dukes Research Natural Area (Marquette County): 231 acres in the U.S. Forest Service Upper Peninsula Experimental Station, 22 miles southeast of Marquette near Maple Grove.
2. Porcupine Mountains (Gogebic and Ontonagon Counties): 47,761 acres on the southern shore of Lake Superior, 14 miles north of Wakefield.
3. Strangmoor Bog (Schoolcraft County): 9,700 acres within the Seney National Wildlife Refuge, 14 miles southwest of Seney.

None of which are near the vicinity of the project location.

**Appendix C**

Part 9: Project Site Contamination

## 9. Project Site Contamination

The EGLE Environmental Mapper was used to examine for potential areas with contamination. The possible and/or confirmed contamination sites and sites with underground storage tanks are shown in the map below and listed in the following tables attached. When individual projects are designed contaminated areas will be avoided via utility routing where possible. When construction may infringe on impacted areas, a FOIA request for these sites will be made, EGLE permitting will be pursued if appropriate, and mitigation and safety measures will be required by contractor via construction documents:

*Compliance with all applicable health and safety regulations, use of properly trained personnel in accordance with OSHA requirements, preparation of a Site Health and Safety Plan in accordance with OSHA requirements, monitoring of hydrocarbon levels in the work area, proper material segregation, storage and backfill of affected soils, and use of hydrocarbon resistant gaskets (Nitrile or Viton) on the utility being installed.*

However, it is not anticipated that there will be any earthwork associated with construction. All work will be in existing facilities.



**Appendix C**

Part 10: Protected Plants and Animals

## **10. Protected Plants and Animals**

Based on the ITA Meeting for this project, the project has been classified as an equivalency project, therefore MNFI was not contacted for review. Disturbance to these species will be minimized. All construction will be within existing facilities.

## 10 B. Protected Plants and Animals: U.S. Fish and Wildlife Services

The U.S. Fish and Wildlife Services technical assistance website on Section 7 Endangered Species Act Consultation was used to determine if the project will impact any federally listed species. This provided the following results:

- There may be the following endangered and/or threatened species present in the County: Canada Lynx, Gray Wolf, Northern Long-eared Bat, Piping Plover, Red Knot, Hine's Emerald Dragonfly, Dwarf Lake Iris, Houghton's Goldenrod, Lakeside Daisy, Michigan Monkey Flower, Pitcher's Thistle, and American Hart's-tongue Fern.
- There were no critical habitats found at the Action Area location.
- Also possibly present in the County includes the migratory birds: American Bittern, Bald Eagle, Black Tern, Black-billed Cuckoo, Bobolink, Canada Warbler, Cape May Warbler, Connecticut Warbler, Dunlin, Eastern Whip-poor-will, Evening Grosbeak, Golden Eagle, Golden-winged Warbler, Lesser Yellowlegs, Long-eared Owl, Olive-sided Flycatcher, Ruddy Turnstone, Rusty Blackbird, Semipalmated Sandpipe, Whimbrel, and Wood Thrush.
- There are no refuge lands or fish hatcheries.
- Although there are wetlands within the IPAC area (the entire IPAC area is the City's water service area), no construction is anticipated to be near the wetlands.

The action area will be limited to already developed area and will be within existing facilities. Therefore, this project will not affect suitable habitat for federally listed species. For these reasons, it can be concluded that the project will have "no effect" on listed species, their habitats, or proposed or designated critical habitat.

# IPaC resource list

This resource  
(collected from  
jurisdiction)

IPaC is experiencing performance issues. We are working on the issue and hope to have it resolved soon. We apologize for any inconvenience this may cause.

habitat

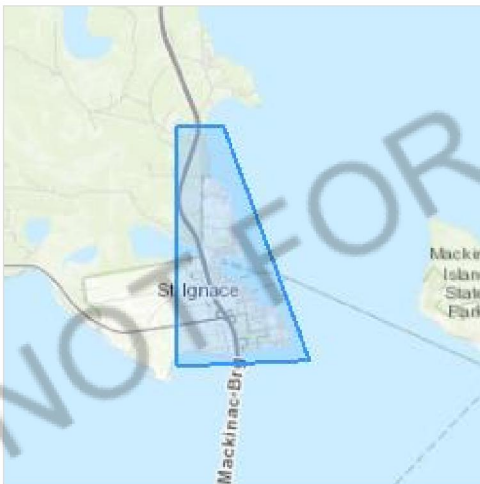
The list

may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Mackinac County, Michigan



## Local office

Michigan Ecological Services Field Office

☎ (517) 351-2555

📠 (517) 351-1443

2651 Coolidge Road Suite 101  
East Lansing, MI 48823-6360

<http://www.fws.gov/midwest/EastLansing/>



# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

Canada Lynx *Lynx canadensis* Threatened  
There is **final** critical habitat for this species. The location of the critical habitat is not available.  
<https://ecos.fws.gov/ecp/species/3652>

Northern Long-eared Bat *Myotis septentrionalis* Threatened  
Wherever found  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/9045>

## Birds

NAME STATUS

Piping Plover *Charadrius melodus* Endangered  
There is **final** critical habitat for this species. The location of the critical habitat is not available.  
<https://ecos.fws.gov/ecp/species/6039>

Red Knot *Calidris canutus rufa* Threatened  
Wherever found  
This species only needs to be considered if the following condition applies:  

- Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30.

  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/1864>

## Insects

NAME STATUS

Hine's Emerald Dragonfly *Somatochlora hineana* Endangered  
Wherever found  
There is **final** critical habitat for this species. Your location overlaps the critical habitat.  
<https://ecos.fws.gov/ecp/species/7877>

## Flowering Plants

NAME STATUS

Dwarf Lake Iris *Iris lacustris* Threatened  
Wherever found  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/598>

Houghton's Goldenrod *Solidago houghtonii* Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/5219>

Lakeside Daisy *Hymenoxys herbacea* Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/3615>

Michigan Monkey-flower *Mimulus michiganensis* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/5295>

Pitcher's Thistle *Cirsium pitcheri* Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8153>

## Ferns and Allies

NAME

STATUS

American Hart's-tongue Fern *Asplenium scolopendrium* var. Threatened

*americanum*

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4232>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME

TYPE

Hine's Emerald Dragonfly *Somatochlora hineana* Final

<https://ecos.fws.gov/ecp/species/7877#crithab>

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)



<p><b>American Bittern</b> <i>Botaurus lentiginosus</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA  <a href="https://ecos.fws.gov/ecp/species/6582">https://ecos.fws.gov/ecp/species/6582</a></p>	<p>Breeds Apr 1 to Aug 31</p>
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>  This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.  <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	<p>Breeds Dec 1 to Aug 31</p>
<p><b>Black Tern</b> <i>Chlidonias niger</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA  <a href="https://ecos.fws.gov/ecp/species/3093">https://ecos.fws.gov/ecp/species/3093</a></p>	<p>Breeds May 15 to Aug 20</p>
<p><b>Black-billed Cuckoo</b> <i>Coccyzus erythrophthalmus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a></p>	<p>Breeds May 15 to Oct 10</p>
<p><b>Bobolink</b> <i>Dolichonyx oryzivorus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds May 20 to Jul 31</p>
<p><b>Canada Warbler</b> <i>Cardellina canadensis</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds May 20 to Aug 10</p>
<p><b>Cape May Warbler</b> <i>Setophaga tigrina</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds Jun 1 to Jul 31</p>
<p><b>Connecticut Warbler</b> <i>Oporornis agilis</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds Jun 15 to Aug 10</p>
<p><b>Dunlin</b> <i>Calidris alpina arctica</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	<p>Breeds elsewhere</p>
<p><b>Eastern Whip-poor-will</b> <i>Antrostomus vociferus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds May 1 to Aug 20</p>

<p>Evening Grosbeak <i>Coccothraustes vespertinus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds May 15 to Aug 10</p>
<p>Golden Eagle <i>Aquila chrysaetos</i>  This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.  <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a></p>	<p>Breeds Jan 1 to Aug 31</p>
<p>Golden-winged Warbler <i>Vermivora chrysoptera</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/8745">https://ecos.fws.gov/ecp/species/8745</a></p>	<p>Breeds May 1 to Jul 20</p>
<p>Lesser Yellowlegs <i>Tringa flavipes</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a></p>	<p>Breeds elsewhere</p>
<p>Long-eared Owl <i>asio otus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/3631">https://ecos.fws.gov/ecp/species/3631</a></p>	<p>Breeds Mar 1 to Jul 15</p>
<p>Olive-sided Flycatcher <i>Contopus cooperi</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/3914">https://ecos.fws.gov/ecp/species/3914</a></p>	<p>Breeds May 20 to Aug 31</p>
<p>Ruddy Turnstone <i>Arenaria interpres morinella</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	<p>Breeds elsewhere</p>
<p>Rusty Blackbird <i>Euphagus carolinus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds May 10 to Jul 20</p>
<p>Semipalmated Sandpiper <i>Calidris pusilla</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	<p>Breeds elsewhere</p>
<p>Whimbrel <i>Numenius phaeopus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9483">https://ecos.fws.gov/ecp/species/9483</a></p>	<p>Breeds elsewhere</p>

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

A week is marked as having no data if there were no survey events for that week.









Lesser Yellowlegs  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



Long-eared Owl  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



Olive-sided  
Flycatcher  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



Ruddy Turnstone  
BCC - BCR (This is a  
Bird of  
Conservation  
Concern (BCC) only  
in particular Bird  
Conservation  
Regions (BCRs) in  
the continental  
USA)



Rusty Blackbird  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)





## What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

## How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

## Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

## What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

## Proper Interpretation and Use of Your Migratory Bird Report



The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

### Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

## **Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

**Appendix C**

Part 11: Regional Planning





1211 Ludington St.  
Escanaba, MI 49829  
O: 906.233.9360  
www.c2ae.com

March 26, 2021

Jeff Hagan  
EUP Planning CEO  
Eastern Upper Peninsula Regional Planning & Development Commission  
2345 Meridian Street  
Sault Ste. Marie, MI 49783

**Re: City of St. Ignace, Michigan  
Mackinac County  
Water Distribution System Facility Improvements  
To Evaluate Needs and Recommend Alternatives for Improvements  
Environmental Review and Evaluation**

Dear Mr. Hagan,

On behalf of the City of St. Ignace, Mackinac County, we are requesting review and comment of plans for improvements to their existing water distribution system facilities.

The City of St. Ignace is preparing an EGLE DWSRF Program Project Plan to evaluate needs and recommended alternatives for improvements to the water distribution system facilities. The project location spans across Township 40N, Range 3W, Sections 6, 7, 17, and 18.

We have enclosed a Project Summary and Location Maps. We are requesting your review and comment. Comments received within 30 days will allow them to be incorporated into the project plan prior to the preparation of the final DWSRF Project Plan.

Comments can be mailed to our Escanaba office or emailed to [ashley.hendricks@c2ae.com](mailto:ashley.hendricks@c2ae.com).

Sincerely,  
C2AE

Ashley N. Hendricks, PE

A handwritten signature in blue ink, appearing to read 'Ashley N. Hendricks'.

Enclosure  
cc: 21-0076 Project Narrative

**Appendix C**

Part 12: Stormwater Discharge Permits

## 12. Stormwater Discharge Permit

The proposed project does not involve additional stormwater discharges nor does it include separation of combine sewer system. Construction activities are part of the system upgrades only. Construction activity will be limited to the area encompassing these upgrades. Disturbance during construction will most likely be greater than one acre. Therefore, a Part 91 SESC permit and Notice of Coverage shall be required for this project. An SESC plan will be prepared to minimize soil erosion and sedimentation leaving the site during construction. Best Management Practices will be incorporated for review and approval by ELGE.

**Appendix C**

Part 13: Water Withdrawal and Dewatering

### **13. Water Withdrawal and Dewatering**

The proposed project will not require consumptive uses or diversions that would result in significant impacts to the water and water dependent natural resources. There is some dewatering that may be needed temporarily during construction. Construction is not anticipated to exceed depths more than twenty feet.

**Appendix C**

Part 14: Wild and Scenic Rivers

#### **14. Wild and Scenic Rivers**

The proposed project will not impact a wild, scenic, or natural river or tributary. Maps illustrating the proximity of the project location to these rivers are shown on the following pages.

# MICHIGAN'S DESIGNATED NATURAL RIVERS

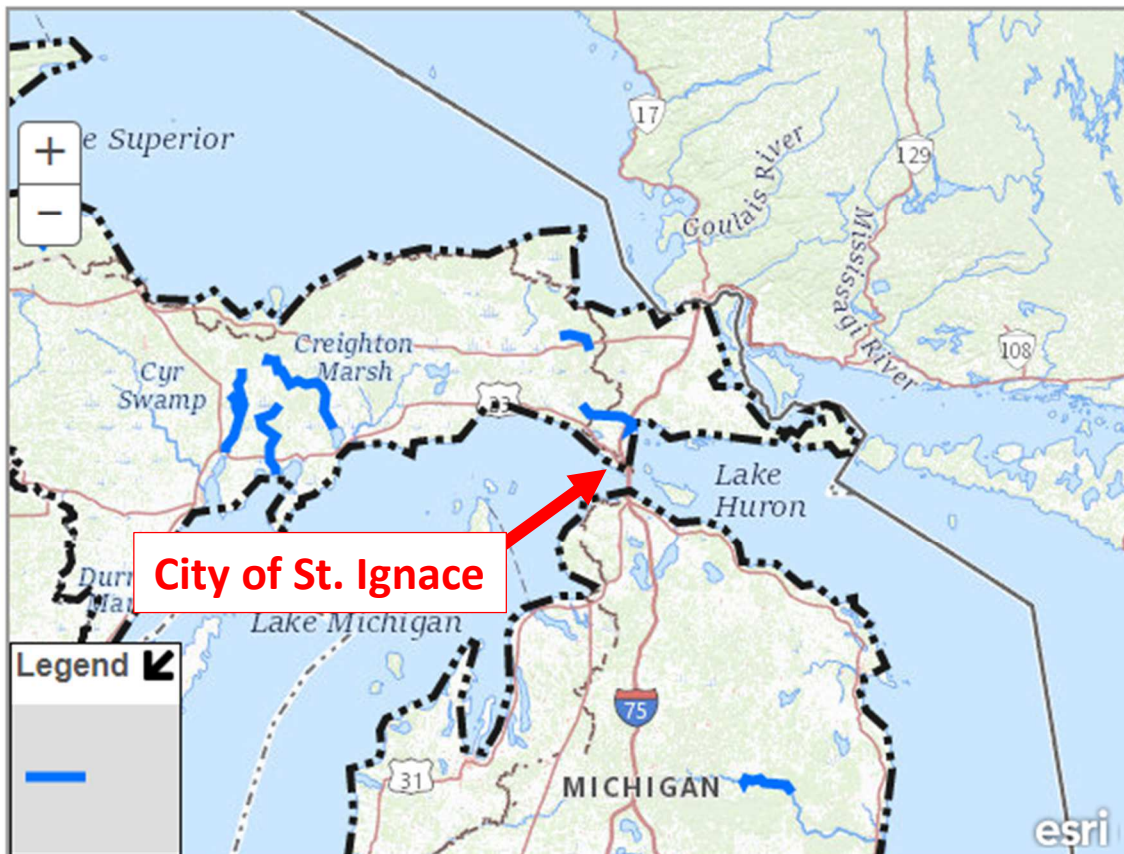




# National Wild and Scenic River System

## MICHIGAN

Michigan has approximately 51,438 miles of river, of which 656.4 miles are designated as wild & scenic—just a bit more than 1% of the state's river miles.



# Nationwide Rivers Inventory

This is a listing of more than 3,200 free-flowing river segments in the U.S. that are believed to possess one or more "outstandingly remarkable" values.

National Park Service  
U.S. Department of the Interior

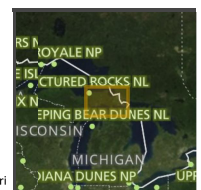


Park Tiles Imagery

10 mi

National Park Service (<https://www.nps.gov>) | © Mapbox (<https://www.mapbox.com/about/maps/>) | © OpenStreetMap (<https://www.openstreetmap.org/copyright>) contributors | Geocoding by Esri

[Home \(https://www.nps.gov\)](https://www.nps.gov) | [Frequently Asked Questions \(https://www.nps.gov/faqs.htm\)](https://www.nps.gov/faqs.htm) | [Website Policies \(https://www.nps.gov/aboutus/website-policies.htm\)](https://www.nps.gov/aboutus/website-policies.htm) | [Contact Us \(https://www.nps.gov/contacts.htm\)](https://www.nps.gov/contacts.htm)



## **Appendix C**

### Part 15: Airspace and Airports

## 15. Airspace and Airports

The Mackinac County airport is located within the City of St. Ignace limits. No new structures or facilities are being built as part of the proposed project nor will there be a new or expanded wildlife attractant in the vicinity of the airport. However, all construction will be within five miles of the airport and the MDOT Aeronautics Environmental Specialist was contacted.







### Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V\_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

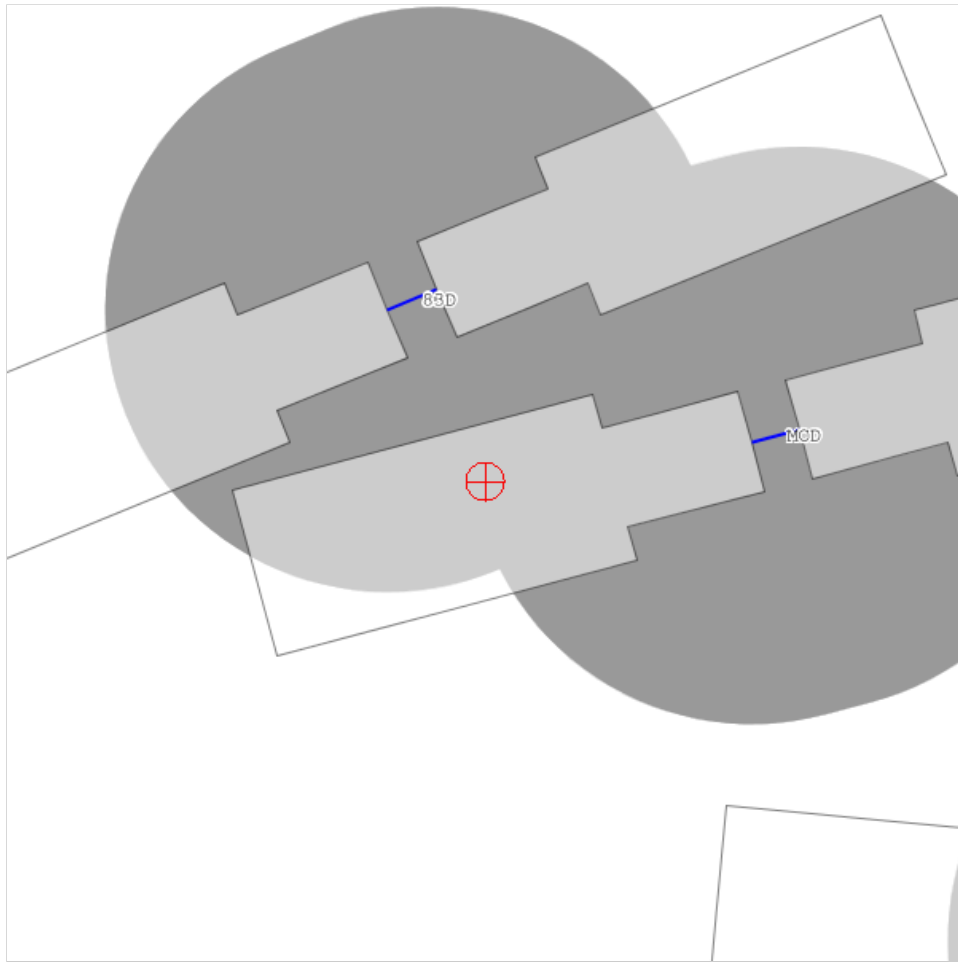
<b>Latitude:</b>	<input type="text" value="45"/> Deg	<input type="text" value="51"/> M	<input type="text" value="20.95"/> S	<input type="button" value="N"/> <input type="button" value="v"/>
<b>Longitude:</b>	<input type="text" value="84"/> Deg	<input type="text" value="43"/> M	<input type="text" value="4.498"/> S	<input type="button" value="W"/> <input type="button" value="v"/>
<b>Horizontal Datum:</b>	<input type="button" value="NAD83"/> <input type="button" value="v"/>			
<b>Site Elevation (SE):</b>	<input type="text" value="672"/> (nearest foot)			
<b>Structure Height :</b>	<input type="text" value="1"/> (nearest foot)			
<b>Traverseway:</b>	<input type="button" value="No Traverseway"/> <input type="button" value="v"/>			
	<small>(Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway</small>			
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You exceed the following Notice Criteria:

Your proposed structure is in proximity to a navigation facility and may impact the assurance of navigation signal reception. The FAA, in accordance with 77.9, requests that you file.

The FAA requests that you file





1211 Ludington St.  
Escanaba, MI 49829  
O: 906.233.9360  
www.c2ae.com

March 26, 2021

Molly Lamrouex  
Aeronautics Environmental Specialist, MDOT  
2700 Port Lansing Road  
Lansing, MI 48906-2160

**Re: City of St. Ignace, Michigan  
Mackinac County  
Water Distribution System Facility Improvements  
To Evaluate Needs and Recommend Alternatives for Improvements  
Environmental Review and Evaluation**

Dear Ms. Lamrouex,

On behalf of the City of St. Ignace, Mackinac County, we are requesting review and comment of plans for improvements to their existing water distribution system facilities.

The City of St. Ignace is preparing an EGLE DWSRF Program Project Plan to evaluate needs and recommended alternatives for improvements to the water distribution system facilities. The project location spans across Township 40N, Range 3W, Sections 6, 7, 17, and 18.

We have enclosed a Project Summary and Location Maps. We are requesting your review and comment. Comments received within 30 days will allow them to be incorporated into the project plan prior to the preparation of the final DWSRF Project Plan.

Comments can be mailed to our Escanaba office or emailed to [ashley.hendricks@c2ae.com](mailto:ashley.hendricks@c2ae.com).

Sincerely,  
C2AE

A handwritten signature in blue ink, appearing to read 'Ashley N. Hendricks', with a long horizontal flourish extending to the right.

Ashley N. Hendricks, PE

Enclosure  
cc: 21-0076 Project Narrative

## **Appendix C**

Part 16: Land-Water Interfaces

A. Inland Lakes and Streams



## **16. Land – Water Interfaces**

### **A. Inland Lakes and Streams**

It is not anticipated that the project plan will result in the control or structural modification of any natural stream or inland body of water.

**Appendix C**

Part 16: Land-Water Interfaces

B. Floodplains

## **16. Land – Water Interfaces**

### **B. Flood Plains**

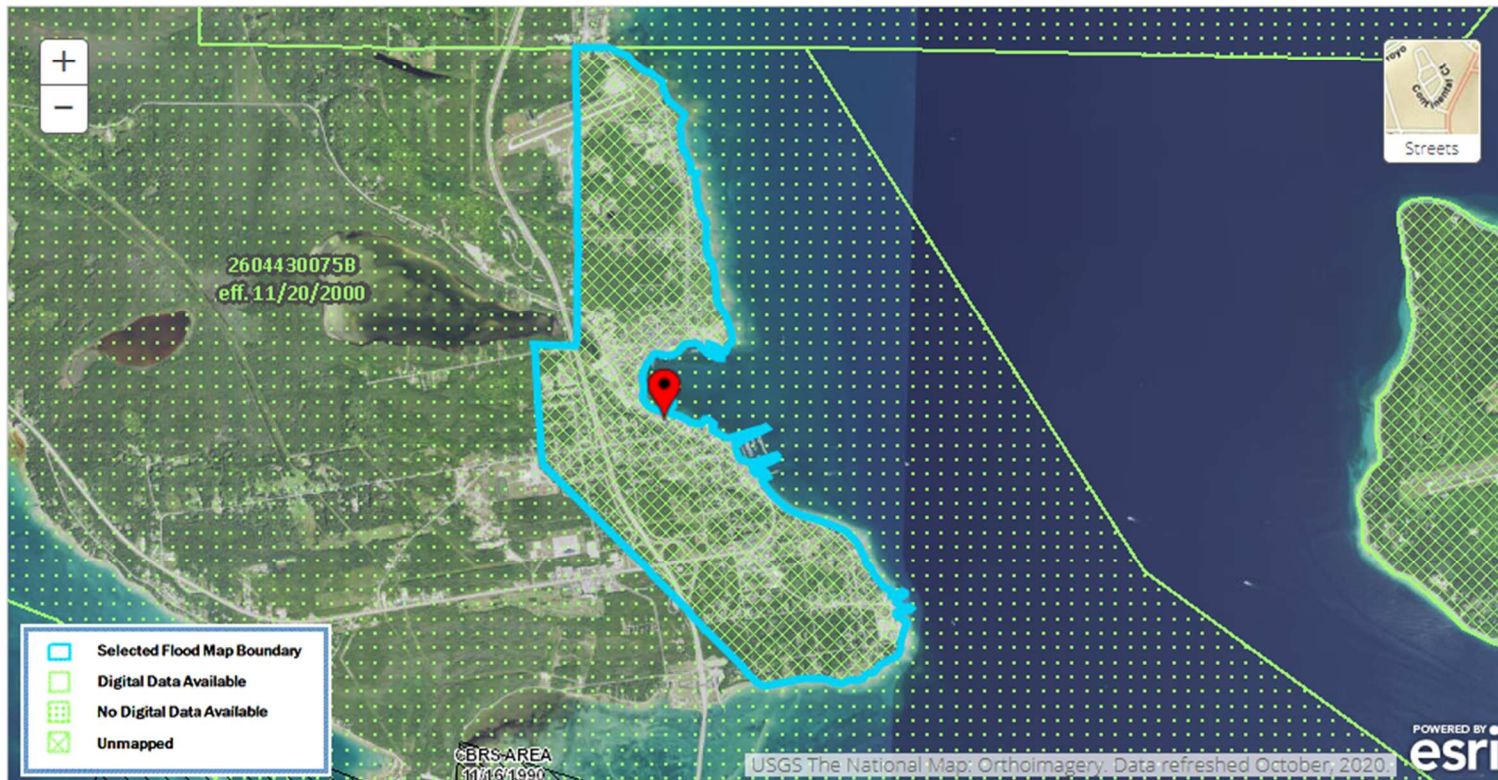
It is not anticipated that the project plan will result in impacts to any Flood Plains. Construction will be within existing facilities and there will be no permanent elevation changes to the ground surface or new buildings/structures as a result of the project. Because of this, all work is exempt from the EGLE Floodplain Authority found in Part 31 of Michigan's NREPA, when ground surface elevations are restored to pre-existing conditions. FEMA Flood Plain maps showing project location are shown on the following pages.

## Search Results—Products for **ST. IGNACE, CITY OF**

[Show ALL Products »](#)

FEMA has not completed a study to determine flood hazard for the selected location; therefore, a flood map has not been published at this time. You can contact your community or the FEMA FMIX for more information about flood risk and flood insurance in your community.

*You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist.*



**Appendix C**

Part 16: Land-Water Interfaces  
C. Wetlands

## **16. Land – Water Interfaces**

### **C. Wetlands**

It is not anticipated that the project plan construction or operation will have wetland impacts. All proposed construction is within previously disturbed areas. The project location is outlined on a map from the National Wetlands Inventory from the US Fish and Wildlife Services on the following page












Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

March 25, 2021

**Wetlands**

- |   |                                |   |                                   |   |          |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland       |  | Lake     |
|  | Estuarine and Marine Wetland   |  | Freshwater Forested/Shrub Wetland |  | Other    |
|   |                                |  | Freshwater Pond                   |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

## **Appendix C**

Part 16: Land-Water Interfaces  
D. Great Lakes Shorelands Protection



## **16. Land – Water Interfaces**

### **D. Great Lakes Shorelands Protection**

The City of St. Ignace located along the shorelands of Lake Michigan and Lake Huron at the Straits of the Mackinac. It is not anticipated that the project plan construction or operation will affect any shoreland included in the Coastal Barrier Resource System. A map showing the project location in the vicinity of any shoreland included Coastal Barrier Resource System is shown below. However, the City of St. Ignace's service area is located along the Coastal Zone Management Area shown on the following page. All construction is to be within existing facilities and it is not expected to have any impact on the Shorelands.



**U.S. Fish and Wildlife Service**  
**Coastal Barrier Resources System**

City of St. Ignace - Nearby Coastal



March 25, 2021

**CBRS Units**

- Otherwise Protected Area
- System Unit

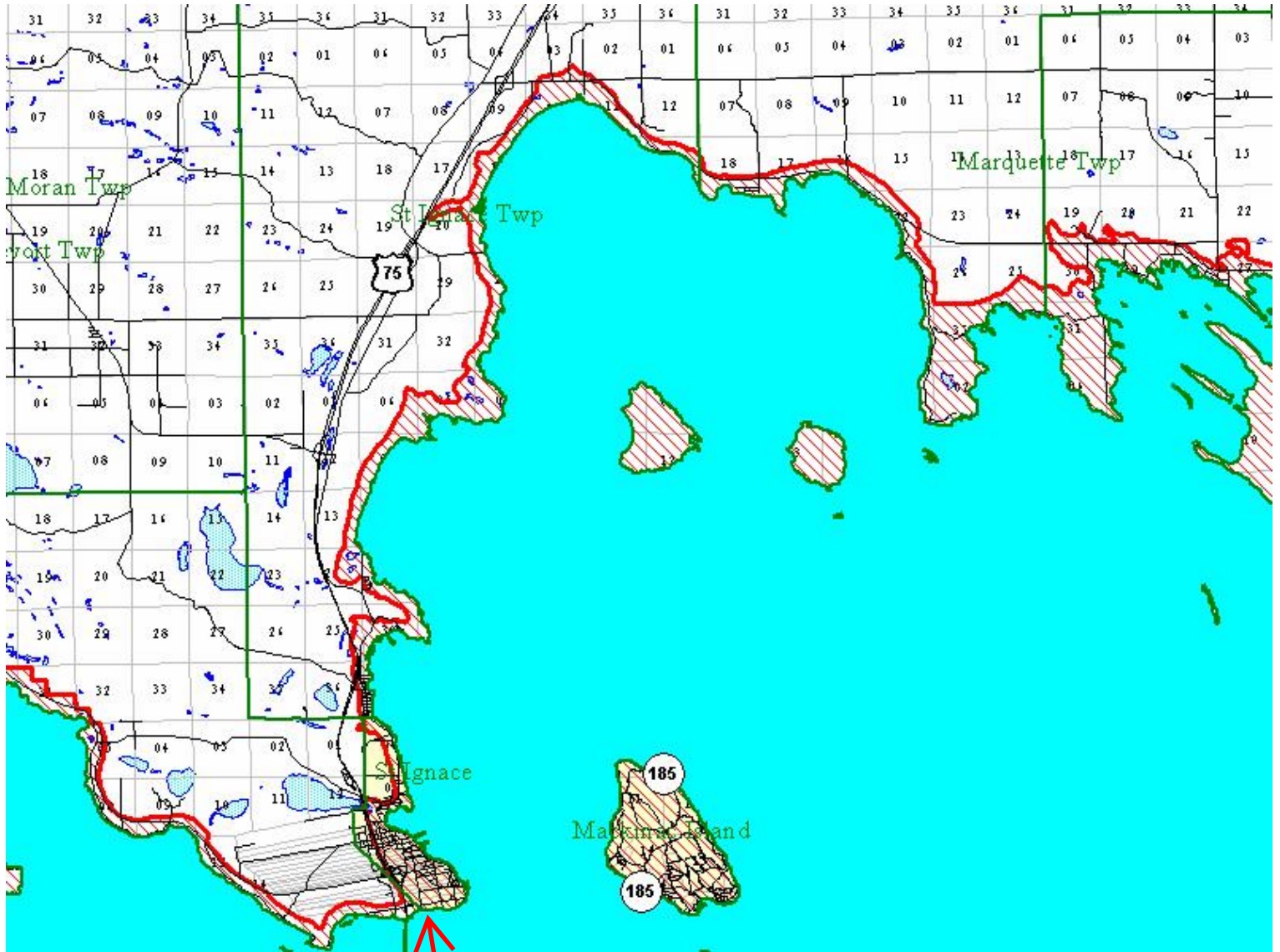
This map is for general reference only. The Coastal Barrier Resources System (CBRS) boundaries depicted on this map are representations of the controlling CBRS boundaries, which are shown on the official maps, accessible at <https://www.fws.gov/cbra/maps/index.html>. All CBRS related data should be used in accordance with the layer metadata found on the CBRS Mapper website.

The CBRS Buffer Zone represents the area immediately adjacent to the CBRS boundary where users are advised to contact the Service for an official determination (<http://www.fws.gov/cbra/Determinations.html>) as to whether the property or project site is located "in" or "out" of the CBRS.

CBRS Units normally extend seaward out to the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS mapper.

**Mackinac County**  
**Marquette Township, T41N R2W and T42N R2W**  
**St. Ignace Township, T40N R3W, T41N R3W, T41N R4E and T42N R3W**

The heavy red line is the **Coastal Zone Management Boundary**  
The red hatched area is the **Coastal Zone Management Area**



**City of St. Ignace**

**Appendix C**

Part 16: Land-Water Interfaces  
E. Army Corps of Engineers Regulated Activities

## **16. Land – Water Interfaces**

### **E. USACE Regulated Activities**

It is not anticipated that the proposed construction will impact a water resource under federal jurisdiction, and therefore, USACE was not contacted on behalf of this project.

**Appendix C**

Part 16: Land-Water Interfaces  
F. Joint Permit Applications

## **16. Land – Water Interfaces**

### **F. Joint Permit Applications**

It is anticipated that a Joint Permit will be needed for this project. Appropriate permitting processes will be followed.

## **Appendix C**

### Part 17: Soils and Geology





United States  
Department of  
Agriculture

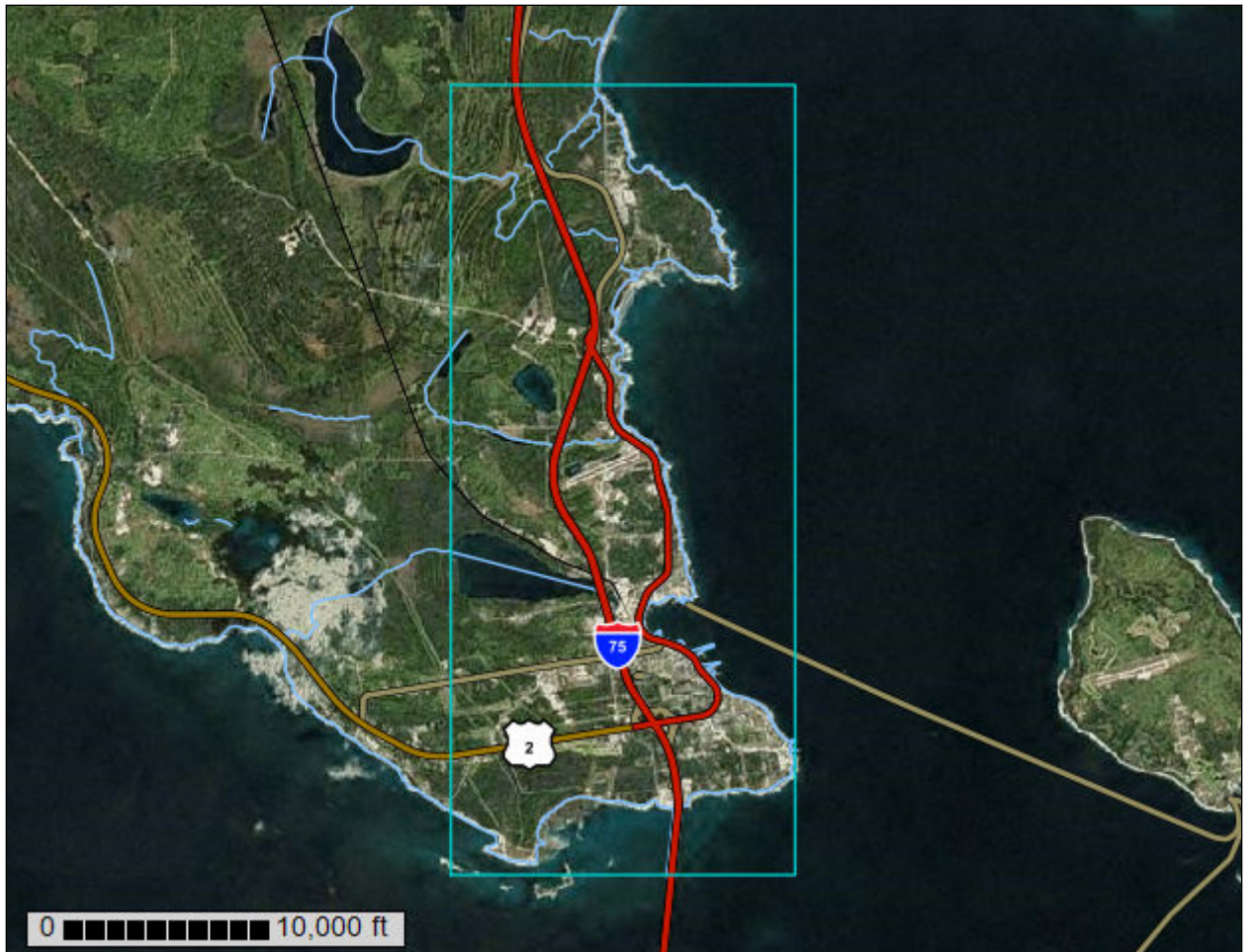
**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Mackinac County, Michigan**

## City of St. Ignace



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

---

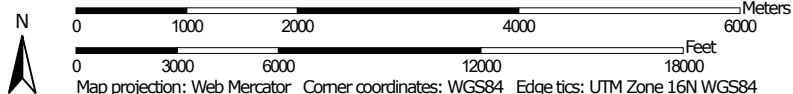
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



# Custom Soil Resource Report Soil Map



Map Scale: 1:68,300 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84


### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mackinac County, Michigan  
 Survey Area Data: Version 13, Jun 2, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Mar 31, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
11A	Rudyard silty clay loam, 0 to 3 percent slopes	17.6	0.1%
17D	Eastport sand, 0 to 15 percent slopes	13.8	0.1%
18B	Rubicon sand, 0 to 6 percent slopes	55.7	0.4%
20B	Croswell sand, 0 to 3 percent slopes	13.6	0.1%
23	Deford and Leafriver soils, 0 to 2 percent slopes	91.2	0.6%
24B	Springlake loamy coarse sand, 0 to 6 percent slopes	10.4	0.1%
27D	Greylock fine sandy loam, 6 to 15 percent slopes	40.3	0.3%
29A	Solona loam, 0 to 3 percent slopes	227.0	1.5%
33	Pits, sand and gravel	218.7	1.5%
35	Histosols and Aquents, ponded	102.4	0.7%
36	Markey and Carbondale mucks	1,583.5	10.7%
38E	Eastport-Leafriver complex, 0 to 35 percent slopes	655.5	4.4%
43	Angelica muck	193.8	1.3%
44B	Battydoe fine sandy loam, 1 to 6 percent slopes, stony	13.9	0.1%
52A	Ingalls fine sand, 0 to 3 percent slopes	22.1	0.1%
62A	Iosco sand, 0 to 3 percent slopes	33.0	0.2%
64A	Search very fine sandy loam, 0 to 3 percent slopes	112.0	0.8%
68	Wakeley muck	4.7	0.0%
69B	Satago silt loam, 1 to 6 percent slopes	277.4	1.9%
70B	St. Ignace silt loam, 0 to 6 percent slopes	1,813.6	12.3%
70D	St. Ignace silt loam, 6 to 15 percent slopes, rocky	89.3	0.6%
70F	St. Ignace-Rock outcrop complex, 35 to 70 percent slopes	401.4	2.7%
88B	Croswell-Wainola complex, 0 to 6 percent slopes	20.1	0.1%
94A	Markey-Spot-Finch complex, 0 to 3 percent slopes	65.1	0.4%

## Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
112	Soo silty clay loam	98.6	0.7%
116	Udipsammments and Udorthents, nearly level	440.6	3.0%
124D	Alpena gravelly loam, 0 to 15 percent slopes	1,324.4	9.0%
125B	Croswell-Markey complex, 0 to 6 percent slopes	31.3	0.2%
147B	Shelter very cobbly loam, 0 to 6 percent slopes, stony	155.2	1.1%
151	Beavertail muck	144.3	1.0%
160B	Esau extremely gravelly sandy loam, 0 to 3 percent slopes	52.4	0.4%
163B	Esau-Zela complex, 0 to 3 percent slopes	193.9	1.3%
W	Water	416.9	2.8%
<b>Totals for Area of Interest</b>		<b>14,759.9</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

## Custom Soil Resource Report

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Mackinac County, Michigan

### 11A—Rudyard silty clay loam, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2xtmz  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 37 inches  
*Mean annual air temperature:* 39 to 45 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Farmland of local importance

#### Map Unit Composition

*Rudyard and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Rudyard

##### Setting

*Landform:* Flats  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Clayey glaciolacustrine deposits

##### Typical profile

*Ap - 0 to 6 inches:* silty clay loam  
*B/E - 6 to 9 inches:* silty clay loam  
*Bt - 9 to 17 inches:* clay  
*C - 17 to 79 inches:* clay

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)  
*Depth to water table:* About 0 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 30 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water capacity:* Low (about 5.7 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 6w  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* D  
*Other vegetative classification:* Tsuga-Thuja-Petasties (TTP)  
*Hydric soil rating:* No

**Minor Components**

**Pickford**

*Percent of map unit:* 10 percent  
*Landform:* Flats  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Maianthemum-Coptis, Dryopteris phase (TMC-D)  
*Hydric soil rating:* Yes

**17D—Eastport sand, 0 to 15 percent slopes**

**Map Unit Setting**

*National map unit symbol:* fz80  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Eastport and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Eastport**

**Setting**

*Landform:* Beach ridges, dunes  
*Landform position (two-dimensional):* Backslope, shoulder, summit  
*Landform position (three-dimensional):* Crest, base slope, side slope  
*Down-slope shape:* Concave, convex  
*Across-slope shape:* Linear  
*Parent material:* Beach sand

**Typical profile**

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 4 inches:* sand  
*E - 4 to 15 inches:* sand  
*B<sub>s1</sub> - 15 to 25 inches:* sand  
*B<sub>s2</sub> - 25 to 39 inches:* sand  
*C - 39 to 80 inches:* sand

**Properties and qualities**

*Slope:* 0 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Runoff class:* Very low

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (6.00 to 20.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Low (about 4.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* A

*Other vegetative classification:* Acer-Quercus-Vaccinium/Tsuga-Maianthemum-Vaccinium (AQV/TMV)

*Hydric soil rating:* No

### Minor Components

#### Leafriver

*Percent of map unit:* 5 percent

*Landform:* Outwash plains, lake plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Fraxinus-Mentha-Carex (FMC)

*Hydric soil rating:* Yes

#### Finch

*Percent of map unit:* 5 percent

*Landform:* Lake plains, outwash plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Maianthemum-Coptis/Tsuga-Maianthemum-Coptis, Vaccinium phase (TMC/TMC-V)

*Hydric soil rating:* No

## 18B—Rubicon sand, 0 to 6 percent slopes

### Map Unit Setting

*National map unit symbol:* 2v8dd

*Elevation:* 420 to 1,710 feet

*Mean annual precipitation:* 28 to 37 inches

*Mean annual air temperature:* 39 to 45 degrees F

*Frost-free period:* 80 to 160 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Rubicon and similar soils:* 85 percent



## Custom Soil Resource Report

*Minor components: 15 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Rubicon

#### Setting

*Landform:* Ground moraines, outwash plains, beach ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex, linear  
*Parent material:* Sandy glaciofluvial deposits

#### Typical profile

*A - 0 to 1 inches:* sand  
*E - 1 to 7 inches:* sand  
*Bs1 - 7 to 11 inches:* sand  
*Bs2 - 11 to 18 inches:* sand  
*BC - 18 to 38 inches:* sand  
*C - 38 to 79 inches:* sand

#### Properties and qualities

*Slope:* 0 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (6.00 to 20.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water capacity:* Low (about 3.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A  
*Ecological site:* F094DY007WI - Sand Barrens  
*Forage suitability group:* Low AWC, adequately drained (G090AY002WI)  
*Other vegetative classification:* Acer-Quercus-Vaccinium/Quercus-Acer-Epigea (AQV/QAE), Low AWC, adequately drained (G090AY002WI)  
*Hydric soil rating:* No

### Minor Components

#### Kalkaska

*Percent of map unit:* 5 percent  
*Landform:* Outwash plains  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Other vegetative classification:* Acer-Tsuga-Dryopteris, Dryopteris phase (ATD-D), Low AWC, adequately drained (G090AY002WI)  
*Hydric soil rating:* No

## Custom Soil Resource Report

### **Croswell**

*Percent of map unit:* 5 percent  
*Landform:* Outwash plains, beach ridges, ground moraines  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluvium  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex, linear  
*Ecological site:* F094DY008WI - Sandy Terraces And Plains  
*Other vegetative classification:* Acer-Quercus-Vaccinium (AQV), Low AWC, adequately drained (G090AY002WI)  
*Hydric soil rating:* No

### **Au gres**

*Percent of map unit:* 4 percent  
*Landform:* Outwash plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Other vegetative classification:* Tsuga-Maianthemum-Coptis, Vaccinium phase (TMC-V), Low AWC, high water table (G090AY001WI)  
*Hydric soil rating:* No

### **Kinross**

*Percent of map unit:* 1 percent  
*Landform:* Outwash plains, ground moraines  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Ecological site:* F094DY010WI - Wet Sandy Depressions  
*Other vegetative classification:* Tsuga-Thuja-Sphagnum (TTS), Mod AWC, high water table (G090AY004WI)  
*Hydric soil rating:* Yes

## **20B—Croswell sand, 0 to 3 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2xtn4  
*Elevation:* 570 to 1,800 feet  
*Mean annual precipitation:* 27 to 38 inches  
*Mean annual air temperature:* 36 to 45 degrees F  
*Frost-free period:* 70 to 170 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Croswell and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Crosswell

### Setting

*Landform:* Flats, terraces, flats  
*Landform position (three-dimensional):* Tread, rise  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex, linear  
*Parent material:* Sandy glaciofluvial deposits

### Typical profile

*Oe - 0 to 2 inches:* moderately decomposed plant material  
*E - 2 to 4 inches:* sand  
*Bs1 - 4 to 8 inches:* sand  
*Bs2 - 8 to 18 inches:* sand  
*BC - 18 to 31 inches:* sand  
*C - 31 to 79 inches:* sand

### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (6.00 to 20.00 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water capacity:* Low (about 4.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4s  
*Hydrologic Soil Group:* A  
*Forage suitability group:* Low AWC, adequately drained (G090AY002WI)  
*Other vegetative classification:* Low AWC, adequately drained (G090AY002WI),  
Acer rubrum-Quercus/Vaccinium (ArQV), Pinus/Maianthemum-Vaccinium  
(PMV)  
*Hydric soil rating:* No

## Minor Components

### Au gres

*Percent of map unit:* 8 percent  
*Landform:* Flats, drainageways, terraces, flats  
*Landform position (three-dimensional):* Tread, tal  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear, concave  
*Other vegetative classification:* Tsuga-Maianthemum-Coptis/Tsuga-Maianthemum-  
Coptis, Vaccinium phase (TMC/TMC-V), Low AWC, high water table  
(G090AY001WI)  
*Hydric soil rating:* No

### Rubicon

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes, beach ridges, flats  
*Landform position (two-dimensional):* Backslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Side slope, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Other vegetative classification:* Acer-Quercus-Vaccinium/Quercus-Acer-Epigea (AQV/QAE), Low AWC, adequately drained (G090AY002WI)  
*Hydric soil rating:* No

### **Kinross**

*Percent of map unit:* 2 percent  
*Landform:* Depressions, drainageways, depressions, drainageways  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Concave  
*Other vegetative classification:* Mod AWC, high water table (G090AY004WI), Not Assigned (wet mineral soils) (Nmin)  
*Hydric soil rating:* Yes

## **23—Deford and Leafriver soils, 0 to 2 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2xxj3  
*Elevation:* 570 to 1,770 feet  
*Mean annual precipitation:* 27 to 35 inches  
*Mean annual air temperature:* 39 to 45 degrees F  
*Frost-free period:* 80 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Deford and similar soils:* 50 percent  
*Leafriver and similar soils:* 35 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Deford**

#### **Setting**

*Landform:* Depressions, drainageways, flats, depressions, drainageways  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Concave, linear  
*Parent material:* Sandy glaciofluvial deposits

#### **Typical profile**

*Oa - 0 to 6 inches:* muck  
*A - 6 to 8 inches:* mucky loamy sand  
*Cg - 8 to 14 inches:* sand  
*C1 - 14 to 28 inches:* sand  
*C2 - 28 to 79 inches:* sand

#### **Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches

## Custom Soil Resource Report

*Drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 6.00 in/hr)  
*Depth to water table:* About 0 to 6 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water capacity:* Low (about 5.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6w  
*Hydrologic Soil Group:* A/D  
*Forage suitability group:* Low AWC, high water table (G095AY001WI)  
*Other vegetative classification:* Tsuga-Maianthemum-Coptis/Tsuga-Thuja-Sphagnum (TMC/TTTS), Low AWC, high water table (G095AY001WI)  
*Hydric soil rating:* Yes

### Description of Leafriver

#### Setting

*Landform:* Depressions, depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Organic material over sandy glaciofluvial deposits

#### Typical profile

*Oe - 0 to 2 inches:* mucky peat  
*Oa - 2 to 12 inches:* muck  
*Cg1 - 12 to 28 inches:* sand  
*Cg2 - 28 to 79 inches:* sand

#### Properties and qualities

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 6.00 in/hr)  
*Depth to water table:* About 0 to 6 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water capacity:* Moderate (about 7.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6w  
*Hydrologic Soil Group:* A/D  
*Other vegetative classification:* Fraxinus-Impatiens (FI)  
*Hydric soil rating:* Yes

### Minor Components

#### Tawas

*Percent of map unit:* 8 percent  
*Landform:* Depressions, depressions  
*Down-slope shape:* Concave

## Custom Soil Resource Report

*Across-slope shape:* Concave

*Other vegetative classification:* Tsuga Thuja Mitchella (TTM\_1), Tsuga Thuja Sphagnum (TTS\_1)

*Hydric soil rating:* Yes

### **Au gres**

*Percent of map unit:* 5 percent

*Landform:* Flats, terraces, flats

*Landform position (three-dimensional):* Tread, talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* F094DY009WI - Wet Sandy Drainageways

*Other vegetative classification:* Tsuga-Maianthemum-Coptis/Tsuga-Maianthemum-Coptis, Vaccinium phase (TMC/TMC-V), Low AWC, high water table (G090AY001WI)

*Hydric soil rating:* No

### **Croswell**

*Percent of map unit:* 2 percent

*Landform:* Flats, terraces, flats

*Landform position (three-dimensional):* Tread, rise

*Down-slope shape:* Linear

*Across-slope shape:* Convex, linear

*Other vegetative classification:* Low AWC, adequately drained (G090AY002WI), Acer rubrum-Quercus/Vaccinium (ArQV), Pinus/Maianthemum-Vaccinium (PMV)

*Hydric soil rating:* No

## **24B—Springlake loamy coarse sand, 0 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* fz8m

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Springlake and similar soils:* 93 percent

*Minor components:* 7 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Springlake**

#### **Setting**

*Landform:* Outwash plains, till plains, beach ridges

*Landform position (two-dimensional):* Footslope, backslope, shoulder, summit

*Landform position (three-dimensional):* Base slope, side slope, crest, talf, rise

## Custom Soil Resource Report

*Down-slope shape:* Linear, convex, concave  
*Across-slope shape:* Linear, convex  
*Parent material:* Sandy outwash

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 7 inches:* loamy coarse sand  
*E - 7 to 9 inches:* loamy coarse sand  
*Bhs - 9 to 14 inches:* loamy coarse sand  
*Bs - 14 to 23 inches:* loamy coarse sand  
*2BC - 23 to 26 inches:* gravelly coarse sand  
*2C - 26 to 80 inches:* gravelly coarse sand

### Properties and qualities

*Slope:* 0 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat excessively drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (6.00 to 20.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 25 percent  
*Available water capacity:* Low (about 3.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4s  
*Hydrologic Soil Group:* A  
*Other vegetative classification:* Acer-Viola-Osmorhiza/Acer-Tsuga-Dryopteris (AVO/ATD)  
*Hydric soil rating:* No

### Minor Components

#### Guardlake

*Percent of map unit:* 4 percent  
*Landform:* Till plains, outwash plains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Side slope, base slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex, linear  
*Other vegetative classification:* Acer-Viola-Osmorhiza/Acer-Viola-Osmorhiza, Adiantum phase (AVO/AVO-A)  
*Hydric soil rating:* No

#### Wallace

*Percent of map unit:* 3 percent  
*Landform:* Outwash plains, dunes, lake plains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Base slope, side slope, crest  
*Down-slope shape:* Convex, concave  
*Across-slope shape:* Convex, linear  
*Other vegetative classification:* Acer-Tsuga-Dryopteris (ATD)  
*Hydric soil rating:* No

## 27D—Greylock fine sandy loam, 6 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* fz8v  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Greylock and similar soils:* 87 percent  
*Minor components:* 13 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Greylock

#### Setting

*Landform:* End moraines, drumlins, till plains  
*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope  
*Landform position (three-dimensional):* Crest, side slope, base slope, rise, talf  
*Down-slope shape:* Convex, concave  
*Across-slope shape:* Convex, linear  
*Parent material:* Coarse-loamy till

#### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 6 inches:* fine sandy loam  
*E - 6 to 7 inches:* sandy loam  
*Bhs - 7 to 9 inches:* sandy loam  
*Bs - 9 to 19 inches:* sandy loam  
*E/B - 19 to 26 inches:* sandy loam  
*B/E - 26 to 34 inches:* sandy loam  
*C - 34 to 80 inches:* sandy loam

#### Properties and qualities

*Slope:* 6 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 30 percent  
*Available water capacity:* Moderate (about 7.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified



## Custom Soil Resource Report

*Land capability classification (nonirrigated): 4e*

*Hydrologic Soil Group: A*

*Other vegetative classification: Acer-Viola-Osmorhiza, Adiantum phase (AVO-A)*

*Hydric soil rating: No*

### Minor Components

#### Springlake

*Percent of map unit: 5 percent*

*Landform: Outwash plains, till plains, beach ridges*

*Landform position (two-dimensional): Footslope, backslope, shoulder, summit*

*Landform position (three-dimensional): Base slope, side slope, crest, talf, rise*

*Down-slope shape: Linear, convex, concave*

*Across-slope shape: Linear, convex*

*Other vegetative classification: Acer-Viola-Osmorhiza/Acer-Tsuga-Dryopteris (AVO/ATD)*

*Hydric soil rating: No*

#### Solona

*Percent of map unit: 5 percent*

*Landform: Till plains*

*Landform position (two-dimensional): Footslope*

*Landform position (three-dimensional): Rise, talf*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Other vegetative classification: Tsuga-Maianthemum-Coptis (TMC)*

*Hydric soil rating: No*

#### Longrie

*Percent of map unit: 3 percent*

*Landform: Lake terraces, till plains*

*Landform position (two-dimensional): Footslope*

*Landform position (three-dimensional): Tread, riser, talf, rise*

*Down-slope shape: Convex, concave*

*Across-slope shape: Linear, convex*

*Other vegetative classification: Acer-Viola-Osmorhiza/Acer-Viola-Osmorhiza, Adiantum phase (AVO/AVO-A)*

*Hydric soil rating: No*

## 29A—Solona loam, 0 to 3 percent slopes

### Map Unit Setting

*National map unit symbol: fz8z*

*Elevation: 570 to 1,390 feet*

*Mean annual precipitation: 28 to 33 inches*

*Mean annual air temperature: 39 to 43 degrees F*

*Frost-free period: 90 to 155 days*

*Farmland classification: Prime farmland if drained*

**Map Unit Composition**

*Solona and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Solona**

**Setting**

*Landform:* Till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Rise, tal

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Calcareous coarse-loamy till

**Typical profile**

*A - 0 to 6 inches:* loam

*E - 6 to 18 inches:* fine sandy loam

*Bt - 18 to 25 inches:* fine sandy loam

*C - 25 to 80 inches:* gravelly fine sandy loam

**Properties and qualities**

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat poorly drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* About 6 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 35 percent

*Available water capacity:* Moderate (about 8.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* B/D

*Other vegetative classification:* Tsuga-Maianthemum-Coptis (TMC)

*Hydric soil rating:* No

**Minor Components**

**Greylock**

*Percent of map unit:* 5 percent

*Landform:* Drumlins, till plains, end moraines

*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope

*Landform position (three-dimensional):* Crest, side slope, base slope, rise, tal

*Down-slope shape:* Convex, concave

*Across-slope shape:* Convex, linear

*Other vegetative classification:* Acer-Viola-Osmorhiza, Adiantum phase (AVO-A)

*Hydric soil rating:* No

**Angelica**

*Percent of map unit:* 5 percent

*Landform:* Till plains

## Custom Soil Resource Report

*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Dip, tal  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Thuja-Petasties (TTP)  
*Hydric soil rating:* Yes

### 33—Pits, sand and gravel

#### Map Unit Composition

*Pits, sand and gravel:* 100 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Pits, Sand And Gravel

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydric soil rating:* Unranked

### 35—Histosols and Aqueuts, ponded

#### Map Unit Setting

*National map unit symbol:* fz93  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Histosols, ponded, and similar soils:* 49 percent  
*Aqueuts, ponded, and similar soils:* 45 percent  
*Minor components:* 6 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Histosols, Ponded

##### Setting

*Landform:* Marshes  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip, tal  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

##### Typical profile

*Oa - 0 to 51 inches:* muck  
*C - 51 to 80 inches:* variable

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Very poorly drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 6.00 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water capacity:* Very high (about 20.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8w  
*Hydrologic Soil Group:* A/D  
*Hydric soil rating:* Yes

### Description of Aquents, Ponged

#### Setting

*Landform:* Marshes  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

#### Typical profile

*C - 0 to 80 inches:* variable

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Very poorly drained  
*Runoff class:* Very low  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8w  
*Hydric soil rating:* Yes

### Minor Components

#### Finch

*Percent of map unit:* 3 percent  
*Landform:* Lake plains, outwash plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf, dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Maianthemum-Coptis/Tsuga-Maianthemum-Coptis, Vaccinium phase (TMC/TMC-V)  
*Hydric soil rating:* No

**Rubicon**

*Percent of map unit:* 3 percent  
*Landform:* Outwash plains, till plains  
*Landform position (two-dimensional):* Shoulder, summit, footslope, backslope  
*Landform position (three-dimensional):* Side slope, crest, base slope  
*Down-slope shape:* Concave, convex  
*Across-slope shape:* Linear, convex  
*Other vegetative classification:* Acer-Quercus-Vaccinium/Quercus-Acer-Epigea (AQV/QAE)  
*Hydric soil rating:* No

**36—Markey and Carbondale mucks**

**Map Unit Setting**

*National map unit symbol:* fz94  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Markey and similar soils:* 50 percent  
*Carbondale and similar soils:* 40 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Markey**

**Setting**

*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Talf, dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Herbaceous organic material over sandy glaciolacustrine deposits

**Typical profile**

*Oe - 0 to 3 inches:* moderately decomposed plant material  
*Oa - 3 to 20 inches:* muck  
*Cg - 20 to 80 inches:* sand

**Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Very poorly drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 6.00 in/hr)

## Custom Soil Resource Report

*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Calcium carbonate, maximum content:* 10 percent  
*Available water capacity:* High (about 10.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6w  
*Hydrologic Soil Group:* A/D  
*Other vegetative classification:* Tsuga-Thuja-Mitella/Tsuga-Thuja-Sphagnum (TTM/TTS)  
*Hydric soil rating:* Yes

### Description of Carbondale

#### Setting

*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Woody organic material

#### Typical profile

*Oa1 - 0 to 6 inches:* muck  
*Oa2 - 6 to 23 inches:* muck  
*Oa3 - 23 to 38 inches:* muck  
*Oe1 - 38 to 68 inches:* mucky peat  
*Oe2 - 68 to 80 inches:* mucky peat

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Very poorly drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 6.00 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water capacity:* Very high (about 26.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6w  
*Hydrologic Soil Group:* A/D  
*Other vegetative classification:* Tsuga-Thuja-Mitella/Tsuga-Thuja-Sphagnum (TTM/TTS)  
*Hydric soil rating:* Yes

### Minor Components

#### Finch

*Percent of map unit:* 5 percent  
*Landform:* Outwash plains, lake plains  
*Landform position (two-dimensional):* Footslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Talf, dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Maianthemum-Coptis/Tsuga-Maianthemum-Coptis, Vaccinium phase (TMC/TMC-V)  
*Hydric soil rating:* No

### **Angelica**

*Percent of map unit:* 5 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Dip, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Thuja-Petasties (TTP)  
*Hydric soil rating:* Yes

## **38E—Eastport-Leafriver complex, 0 to 35 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* fz96  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Eastport and similar soils:* 50 percent  
*Leafriver and similar soils:* 37 percent  
*Minor components:* 13 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Eastport**

#### **Setting**

*Landform:* Beach ridges, dunes  
*Landform position (two-dimensional):* Backslope, shoulder, summit  
*Landform position (three-dimensional):* Crest, base slope, side slope  
*Down-slope shape:* Concave, convex  
*Across-slope shape:* Linear  
*Parent material:* Beach sand

#### **Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 4 inches:* sand  
*E - 4 to 15 inches:* sand  
*Bs1 - 15 to 25 inches:* sand  
*Bs2 - 25 to 39 inches:* sand

## Custom Soil Resource Report

*C - 39 to 80 inches: sand*

### Properties and qualities

*Slope: 0 to 35 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Excessively drained*

*Runoff class: Low*

*Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Available water capacity: Low (about 4.4 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 7s*

*Hydrologic Soil Group: A*

*Other vegetative classification: Acer-Quercus-Vaccinium (AQV)*

*Hydric soil rating: No*

## Description of Leafriver

### Setting

*Landform: Outwash plains, lake plains*

*Landform position (two-dimensional): Footslope*

*Landform position (three-dimensional): Talf, dip*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Thin organic material over sandy lacustrine deposits*

### Typical profile

*Oe - 0 to 2 inches: mucky peat*

*Oa - 2 to 8 inches: muck*

*A - 8 to 10 inches: loamy fine sand*

*Cg1 - 10 to 23 inches: fine sand*

*Cg2 - 23 to 39 inches: fine sand*

*Cg3 - 39 to 80 inches: fine sand*

### Properties and qualities

*Slope: 0 to 1 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Very poorly drained*

*Runoff class: Very low*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)*

*Depth to water table: About 0 inches*

*Frequency of flooding: None*

*Frequency of ponding: Frequent*

*Available water capacity: Moderate (about 6.9 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 6w*

*Hydrologic Soil Group: A/D*

*Other vegetative classification: Fraxinus-Mentha-Carex (FMC)*

*Hydric soil rating: Yes*



## Minor Components

### Wainola

*Percent of map unit:* 7 percent  
*Landform:* Outwash plains, lake plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Rise, tal  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Maianthemum-Coptis (TMC)  
*Hydric soil rating:* No

### Markey

*Percent of map unit:* 6 percent  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Talf, dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Thuja-Mitella (TTM)  
*Hydric soil rating:* Yes

## 43—Angelica muck

### Map Unit Setting

*National map unit symbol:* fz9c  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Prime farmland if drained

### Map Unit Composition

*Angelica and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Angelica

#### Setting

*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Dip, tal  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Calcareous fine-loamy till

#### Typical profile

*Oa - 0 to 2 inches:* muck

## Custom Soil Resource Report

*A - 2 to 6 inches: loam*  
*Bg - 6 to 10 inches: sandy loam*  
*Bw1 - 10 to 14 inches: loam*  
*Bw2 - 14 to 17 inches: sandy clay loam*  
*C - 17 to 80 inches: loam*

### Properties and qualities

*Slope: 0 to 2 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Poorly drained*  
*Runoff class: Medium*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high*  
*(0.20 to 6.00 in/hr)*  
*Depth to water table: About 0 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: Frequent*  
*Calcium carbonate, maximum content: 30 percent*  
*Available water capacity: High (about 10.6 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 5w*  
*Hydrologic Soil Group: B/D*  
*Other vegetative classification: Tsuga-Thuja-Petasties (TTP)*  
*Hydric soil rating: Yes*

### Minor Components

#### Search

*Percent of map unit: 5 percent*  
*Landform: Till plains*  
*Landform position (two-dimensional): Footslope*  
*Landform position (three-dimensional): Rise, tal*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Other vegetative classification: Acer-Viola-Osmorhiza Adiantum phase (AVO-A)*  
*Hydric soil rating: No*

#### Solona

*Percent of map unit: 5 percent*  
*Landform: Till plains*  
*Landform position (two-dimensional): Footslope*  
*Landform position (three-dimensional): Rise, tal*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Other vegetative classification: Tsuga-Maianthemum-Coptis (TMC)*  
*Hydric soil rating: No*

#### Markey

*Percent of map unit: 5 percent*  
*Landform: Depressions*  
*Landform position (two-dimensional): Toeslope*  
*Landform position (three-dimensional): Talf, dip*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Other vegetative classification: Tsuga-Thuja-Mitella (TTM)*  
*Hydric soil rating: Yes*

## **44B—Battydoe fine sandy loam, 1 to 6 percent slopes, stony**

### **Map Unit Setting**

*National map unit symbol:* fz9d  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Battydoe, stony, and similar soils:* 80 percent  
*Minor components:* 20 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Battydoe, Stony**

#### **Setting**

*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope, backslope, shoulder, summit  
*Landform position (three-dimensional):* Base slope, side slope, crest, rise, talf  
*Down-slope shape:* Convex, concave  
*Across-slope shape:* Convex, linear  
*Parent material:* Coarse-loamy till

#### **Typical profile**

*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 3 inches:* fine sandy loam  
*E - 3 to 5 inches:* loamy sand  
*Bhs - 5 to 11 inches:* fine sandy loam  
*Bs - 11 to 20 inches:* loamy sand  
*BC - 20 to 28 inches:* gravelly fine sandy loam  
*C - 28 to 80 inches:* gravelly fine sandy loam

#### **Properties and qualities**

*Slope:* 1 to 6 percent  
*Surface area covered with cobbles, stones or boulders:* 0.1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 30 percent  
*Available water capacity:* Moderate (about 7.4 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

## Custom Soil Resource Report

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* A

*Other vegetative classification:* Acer-Viola-Osmorhiza/Acer-Viola-Osmorhiza,  
Adiantum phase (AVO/AVO-A)

*Hydric soil rating:* No

### Minor Components

#### **Guardlake, stony**

*Percent of map unit:* 5 percent

*Landform:* Outwash plains, till plains

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Side slope, base slope, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex, linear

*Other vegetative classification:* Acer-Viola-Osmorhiza/Acer-Viola-Osmorhiza,  
Adiantum phase (AVO/AVO-A)

*Hydric soil rating:* No

#### **Longrie, stony**

*Percent of map unit:* 5 percent

*Landform:* Lake terraces, till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Tread, riser, talf, rise

*Down-slope shape:* Convex, concave

*Across-slope shape:* Linear, convex

*Other vegetative classification:* Acer-Viola-Osmorhiza/Acer-Viola-Osmorhiza,  
Adiantum phase (AVO/AVO-A)

*Hydric soil rating:* No

#### **Amadon, stony**

*Percent of map unit:* 5 percent

*Landform:* Terraces, till plains

*Landform position (two-dimensional):* Footslope, backslope

*Landform position (three-dimensional):* Tread, riser, talf, rise

*Down-slope shape:* Linear, convex, concave

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Maianthemum/Acer-Viola-Osmorhiza (TM/  
AVO)

*Hydric soil rating:* No

#### **Shelter, stony**

*Percent of map unit:* 5 percent

*Landform:* Lake terraces, drumlins, till plains

*Landform position (two-dimensional):* Footslope, summit, backslope

*Landform position (three-dimensional):* Riser, tread, rise, talf

*Down-slope shape:* Linear, concave

*Across-slope shape:* Linear

*Hydric soil rating:* No

## 52A—Ingalls fine sand, 0 to 3 percent slopes

### Map Unit Setting

*National map unit symbol:* fz9l  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Prime farmland if drained

### Map Unit Composition

*Ingalls and similar soils:* 87 percent  
*Minor components:* 13 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Ingalls

#### Setting

*Landform:* Lake plains, outwash plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy glaciofluvial deposits over stratified loamy lacustrine deposits

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*Oa - 1 to 3 inches:* muck  
*E - 3 to 10 inches:* fine sand  
*Bs1 - 10 to 17 inches:* loamy sand  
*Bs2 - 17 to 23 inches:* sand  
*BC - 23 to 43 inches:* loamy fine sand  
*2C - 43 to 80 inches:* stratified loamy fine sand to silt loam

#### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 6.00 in/hr)  
*Depth to water table:* About 6 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 10 percent  
*Available water capacity:* Moderate (about 7.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

## Custom Soil Resource Report

*Land capability classification (nonirrigated):* 3w

*Hydrologic Soil Group:* A/D

*Other vegetative classification:* Acer-Tsuga-Dryopteris/Tsuga-Maianthemum (ATD/TM)

*Hydric soil rating:* No

### Minor Components

#### **Wainola**

*Percent of map unit:* 5 percent

*Landform:* Outwash plains, lake plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Rise, tal

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Maianthemum-Coptis (TMC)

*Hydric soil rating:* No

#### **Borgstrom**

*Percent of map unit:* 4 percent

*Landform:* Outwash plains, lake plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Rise, tal

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga/Maianthemum-Coptis=(Dryopteris) (TMC-D),

Acer saccharum-Tsuga/Dryopteris (ATD)

*Hydric soil rating:* No

#### **Caffey**

*Percent of map unit:* 4 percent

*Landform:* Lake plains, till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Dip, tal

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Thuja-Mitella (TTM)

*Hydric soil rating:* Yes

## 62A—losco sand, 0 to 3 percent slopes

### Map Unit Setting

*National map unit symbol:* fz9t

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*losco and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of losco

#### Setting

*Landform:* Outwash plains, lake plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy over loamy lacustrine deposits

#### Typical profile

*Oe - 0 to 2 inches:* moderately decomposed plant material

*Oa - 2 to 6 inches:* slightly decomposed plant material

*E1 - 6 to 9 inches:* sand

*E2 - 9 to 11 inches:* sand

*Bs1 - 11 to 25 inches:* loamy sand

*Bs2 - 25 to 27 inches:* sand

*2Bt - 27 to 38 inches:* loam

*2C - 38 to 80 inches:* loam

#### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat poorly drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 6.00 in/hr)

*Depth to water table:* About 6 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 30 percent

*Available water capacity:* High (about 10.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3w

*Hydrologic Soil Group:* A/D

*Other vegetative classification:* Tsuga-Maianthemum-Coptis (TMC)

*Hydric soil rating:* No

### Minor Components

#### Battydoe

*Percent of map unit:* 5 percent

*Landform:* Till plains

*Landform position (two-dimensional):* Footslope, backslope, shoulder, summit

*Landform position (three-dimensional):* Base slope, side slope, crest, rise, talf

*Down-slope shape:* Convex, concave

*Across-slope shape:* Convex, linear

*Other vegetative classification:* Acer-Viola-Osmorhiza/Acer-Tsuga-Dryopteris  
(AVO/ATD)

## Custom Soil Resource Report

*Hydric soil rating:* No

### **Solona**

*Percent of map unit:* 5 percent

*Landform:* Till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Rise, tal

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Maianthemum-Coptis (TMC)

*Hydric soil rating:* No

## **64A—Search very fine sandy loam, 0 to 3 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* fz9v

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Search and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Search**

#### **Setting**

*Landform:* Till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Rise, tal

*Down-slope shape:* Linear

*Across-slope shape:* Linear

#### **Typical profile**

*A - 0 to 8 inches:* very fine sandy loam

*BA - 8 to 10 inches:* very fine sandy loam

*C1 - 10 to 15 inches:* gravelly very fine sandy loam

*C2 - 15 to 24 inches:* very gravelly very fine sandy loam

*Cr - 24 to 80 inches:* weathered bedrock

#### **Properties and qualities**

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat poorly drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 6 inches



## Custom Soil Resource Report

*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 70 percent  
*Available water capacity:* Low (about 3.9 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* C/D  
*Other vegetative classification:* Acer-Viola-Osmorhiza Adiantum phase (AVO-A)  
*Hydric soil rating:* No

### **Minor Components**

#### **Angelica**

*Percent of map unit:* 5 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Dip, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Thuja-Petasties (TTP)  
*Hydric soil rating:* Yes

#### **Satago**

*Percent of map unit:* 5 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope, backslope  
*Landform position (three-dimensional):* Base slope, side slope, talf, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Other vegetative classification:* Acer-Viola-Osmorhiza, Adiantum phase (AVO-A)  
*Hydric soil rating:* No

## **68—Wakeley muck**

### **Map Unit Setting**

*National map unit symbol:* fz9x  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Wakeley and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Wakeley

### Setting

*Landform:* Outwash plains, lake plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy outwash over clayey lacustrine deposits

### Typical profile

*Oa - 0 to 4 inches:* muck  
*A - 4 to 5 inches:* loamy fine sand  
*Cg - 5 to 7 inches:* loamy fine sand  
*C1 - 7 to 24 inches:* fine sand  
*2C2 - 24 to 80 inches:* silty clay

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Calcium carbonate, maximum content:* 30 percent  
*Available water capacity:* Moderate (about 6.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 5w  
*Hydrologic Soil Group:* C/D  
*Other vegetative classification:* Tsuga-Thuja-Petasties (TTP)  
*Hydric soil rating:* Yes

## Minor Components

### Markey

*Percent of map unit:* 8 percent  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Thuja-Mitella (TTM)  
*Hydric soil rating:* Yes

### Allendale

*Percent of map unit:* 7 percent  
*Landform:* Outwash plains, lake plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

## Custom Soil Resource Report

*Other vegetative classification:* Tsuga-Maianthemum-Coptis, Dryopteris phase (TMC-D)  
*Hydric soil rating:* No

### 69B—Satago silt loam, 1 to 6 percent slopes

#### Map Unit Setting

*National map unit symbol:* fz9y  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Farmland of local importance

#### Map Unit Composition

*Satago and similar soils:* 87 percent  
*Minor components:* 13 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Satago

##### Setting

*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope, backslope  
*Landform position (three-dimensional):* Side slope, base slope, rise, talf  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Parent material:* Loamy till over residuum weathered from calcareous shale

##### Typical profile

*Oi - 0 to 2 inches:* slightly decomposed plant material  
*A - 2 to 6 inches:* silt loam  
*BA - 6 to 10 inches:* silt loam  
*Bw - 10 to 14 inches:* silt loam  
*C - 14 to 48 inches:* silt loam  
*2Cr - 48 to 80 inches:* weathered bedrock

##### Properties and qualities

*Slope:* 1 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 70 percent  
*Available water capacity:* Moderate (about 8.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* B  
*Other vegetative classification:* Acer-Viola-Osmorhiza, Adiantum phase (AVO-A)  
*Hydric soil rating:* No

**Minor Components**

**Search**

*Percent of map unit:* 7 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Rise, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Acer-Viola-Osmorhiza Adiantum phase (AVO-A)  
*Hydric soil rating:* No

**Alpena**

*Percent of map unit:* 6 percent  
*Landform:* Eskers, outwash plains, beach ridges  
*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope  
*Landform position (three-dimensional):* Side slope, base slope, crest, rise  
*Down-slope shape:* Concave, convex, linear  
*Across-slope shape:* Convex, concave, linear  
*Hydric soil rating:* No

**70B—St. Ignace silt loam, 0 to 6 percent slopes**

**Map Unit Setting**

*National map unit symbol:* fz9z  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*St. ignace and similar soils:* 87 percent  
*Minor components:* 13 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of St. Ignace**

**Setting**

*Landform:* Lake terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Riser, tread  
*Down-slope shape:* Linear

## Custom Soil Resource Report

*Across-slope shape:* Linear

*Parent material:* Calcareous loamy till over limestone breccia-basic

### Typical profile

*A - 0 to 5 inches:* silt loam

*Bw - 5 to 15 inches:* gravelly silt loam

*2Cr - 15 to 80 inches:* weathered bedrock

### Properties and qualities

*Slope:* 0 to 6 percent

*Depth to restrictive feature:* 10 to 20 inches to paralithic bedrock

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 60 percent

*Available water capacity:* Very low (about 2.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Hydric soil rating:* No

### Minor Components

#### Alpena

*Percent of map unit:* 13 percent

*Landform:* Eskers, outwash plains, beach ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope

*Landform position (three-dimensional):* Side slope, base slope, crest, rise

*Down-slope shape:* Concave, convex, linear

*Across-slope shape:* Convex, concave, linear

*Hydric soil rating:* No

## 70D—St. Ignace silt loam, 6 to 15 percent slopes, rocky

### Map Unit Setting

*National map unit symbol:* fzb0

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*St. ignace, rocky, and similar soils:* 87 percent

*Minor components:* 13 percent

## Custom Soil Resource Report

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of St. Ignace, Rocky

#### Setting

*Landform:* Lake terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Riser, tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Calcareous loamy till over limestone breccia-basic

#### Typical profile

*A - 0 to 5 inches:* silt loam  
*Bw - 5 to 15 inches:* gravelly silt loam  
*2Cr - 15 to 80 inches:* weathered bedrock

#### Properties and qualities

*Slope:* 6 to 15 percent  
*Depth to restrictive feature:* 10 to 20 inches to paralithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 60 percent  
*Available water capacity:* Very low (about 2.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

### Minor Components

#### Alpena, rocky

*Percent of map unit:* 7 percent  
*Landform:* Beach ridges, eskers, outwash plains  
*Landform position (two-dimensional):* Backslope, summit, shoulder, footslope  
*Landform position (three-dimensional):* Side slope, base slope, crest, rise  
*Down-slope shape:* Convex, concave, linear  
*Across-slope shape:* Linear, convex, concave  
*Hydric soil rating:* No

#### Rock outcrop

*Percent of map unit:* 6 percent  
*Hydric soil rating:* Unranked

## 70F—St. Ignace-Rock outcrop complex, 35 to 70 percent slopes

### Map Unit Setting

*National map unit symbol:* fzb1  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*St. ignace and similar soils:* 57 percent  
*Rock outcrop:* 30 percent  
*Minor components:* 13 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of St. Ignace

#### Setting

*Landform:* Lake terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Riser, tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Calcareous loamy till over limestone breccia-basic

#### Typical profile

*A - 0 to 5 inches:* silt loam  
*Bw - 5 to 15 inches:* gravelly silt loam  
*2Cr - 15 to 80 inches:* weathered bedrock

#### Properties and qualities

*Slope:* 35 to 70 percent  
*Depth to restrictive feature:* 10 to 20 inches to paralithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 60 percent  
*Available water capacity:* Very low (about 2.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

### Description of Rock Outcrop

#### Typical profile

*R - 0 to 80 inches:* unweathered bedrock

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Hydric soil rating:* Unranked

### Minor Components

#### Alpena

*Percent of map unit:* 13 percent

*Landform:* Beach ridges, eskers, outwash plains

*Landform position (two-dimensional):* Backslope, summit, shoulder, footslope

*Landform position (three-dimensional):* Side slope, base slope, crest, rise

*Down-slope shape:* Convex, concave, linear

*Across-slope shape:* Linear, convex, concave

*Hydric soil rating:* No

## 88B—Croswell-Wainola complex, 0 to 6 percent slopes

### Map Unit Setting

*National map unit symbol:* fzb7

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Croswell and similar soils:* 52 percent

*Wainola and similar soils:* 35 percent

*Minor components:* 13 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Croswell

#### Setting

*Landform:* Outwash plains, lake plains, dunes

*Landform position (two-dimensional):* Backslope, shoulder, summit, footslope

*Landform position (three-dimensional):* Crest, side slope, base slope, rise, tal

*Down-slope shape:* Convex, concave, linear

*Across-slope shape:* Linear, convex

*Parent material:* Sandy outwash

#### Typical profile

*Oe - 0 to 2 inches:* moderately decomposed plant material



## Custom Soil Resource Report

*E - 2 to 4 inches: sand*  
*Bs1 - 4 to 8 inches: sand*  
*Bs2 - 8 to 19 inches: sand*  
*BC - 19 to 31 inches: sand*  
*C - 31 to 80 inches: sand*

### Properties and qualities

*Slope: 0 to 6 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Moderately well drained*  
*Runoff class: Negligible*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high*  
*(0.60 to 6.00 in/hr)*  
*Depth to water table: About 24 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Available water capacity: Low (about 4.8 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 4s*  
*Hydrologic Soil Group: B*  
*Other vegetative classification: Acer-Quercus-Vaccinium (AQV)*  
*Hydric soil rating: No*

## Description of Wainola

### Setting

*Landform: Outwash plains, lake plains*  
*Landform position (two-dimensional): Footslope*  
*Landform position (three-dimensional): Rise, tal*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Parent material: Sandy glaciofluvial deposits*

### Typical profile

*Oa - 0 to 2 inches: muck*  
*E - 2 to 12 inches: fine sand*  
*Bs - 12 to 27 inches: fine sand*  
*BC - 27 to 41 inches: fine sand*  
*C - 41 to 80 inches: fine sand*

### Properties and qualities

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Somewhat poorly drained*  
*Runoff class: Negligible*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high*  
*(0.20 to 6.00 in/hr)*  
*Depth to water table: About 6 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Available water capacity: Low (about 5.0 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 4w*

## Custom Soil Resource Report

*Hydrologic Soil Group:* A/D

*Other vegetative classification:* Tsuga-Maianthemum-Coptis, Vaccinium phase (TMC-V)

*Hydric soil rating:* No

### Minor Components

#### Eastport

*Percent of map unit:* 5 percent

*Landform:* Beach ridges, dunes

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, base slope, side slope

*Down-slope shape:* Concave, convex

*Across-slope shape:* Linear

*Other vegetative classification:* Acer-Quercus-Vaccinium/Tsuga-Maianthemum-Vaccinium (AQV/TMV)

*Hydric soil rating:* No

#### Spot

*Percent of map unit:* 4 percent

*Landform:* Outwash plains, lake plains, till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Thuja-Sphagnum (TTS)

*Hydric soil rating:* Yes

#### Leafriver

*Percent of map unit:* 4 percent

*Landform:* Outwash plains, lake plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Fraxinus-Mentha-Carex (FMC)

*Hydric soil rating:* Yes

## 94A—Markey-Spot-Finch complex, 0 to 3 percent slopes

### Map Unit Setting

*National map unit symbol:* fzbc

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Markey and similar soils: 45 percent*

*Spot and similar soils: 29 percent*

*Finch and similar soils: 17 percent*

*Minor components: 9 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Markey

#### Setting

*Landform: Depressions*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Talf, dip*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Herbaceous organic material over sandy glaciolacustrine deposits*

#### Typical profile

*Oe - 0 to 3 inches: moderately decomposed plant material*

*Oa - 3 to 20 inches: muck*

*Cg - 20 to 80 inches: sand*

#### Properties and qualities

*Slope: 0 to 2 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Very poorly drained*

*Runoff class: Very low*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high  
(0.20 to 6.00 in/hr)*

*Depth to water table: About 0 inches*

*Frequency of flooding: None*

*Frequency of ponding: Frequent*

*Calcium carbonate, maximum content: 10 percent*

*Available water capacity: High (about 10.7 inches)*

#### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 6w*

*Hydrologic Soil Group: A/D*

*Other vegetative classification: Tsuga-Thuja-Mitella/Tsuga-Thuja-Sphagnum  
(TTM/TTS)*

*Hydric soil rating: Yes*

### Description of Spot

#### Setting

*Landform: Lake plains, till plains, outwash plains*

*Landform position (two-dimensional): Footslope*

*Landform position (three-dimensional): Talf, dip*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Sandy outwash*

#### Typical profile

*Oa - 0 to 2 inches: muck*

*E - 2 to 8 inches: sand*

## Custom Soil Resource Report

*Bhsm - 8 to 10 inches: sand*  
*Bs - 10 to 18 inches: sand*  
*C - 18 to 80 inches: sand*

### Properties and qualities

*Slope: 0 to 2 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Poorly drained*  
*Runoff class: Very low*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high*  
*(0.20 to 6.00 in/hr)*  
*Depth to water table: About 0 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: Frequent*  
*Available water capacity: Very low (about 1.4 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 5w*  
*Hydrologic Soil Group: B/D*  
*Other vegetative classification: Tsuga-Thuja-Mitella/Tsuga-Thuja-Sphagnum*  
*(TTM/TTS)*  
*Hydric soil rating: Yes*

## Description of Finch

### Setting

*Landform: Lake plains, outwash plains*  
*Landform position (two-dimensional): Footslope*  
*Landform position (three-dimensional): Talf, dip*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Parent material: Sandy glaciofluvial deposits*

### Typical profile

*Oe - 0 to 1 inches: moderately decomposed plant material*  
*E - 1 to 11 inches: sand*  
*Bsm1 - 11 to 18 inches: sand*  
*Bsm2 - 18 to 42 inches: sand*  
*C - 42 to 80 inches: fine sand*

### Properties and qualities

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: 10 to 20 inches to ortstein*  
*Drainage class: Somewhat poorly drained*  
*Runoff class: Very low*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high*  
*(0.60 to 6.00 in/hr)*  
*Depth to water table: About 6 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Available water capacity: Very low (about 1.1 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 4w*  
*Hydrologic Soil Group: B/D*

## Custom Soil Resource Report

*Other vegetative classification:* Tsuga-Thuja-Mitella/Tsuga-Thuja-Sphagnum (TTM/TTS)

*Hydric soil rating:* No

### Minor Components

#### Paquin

*Percent of map unit:* 3 percent

*Landform:* Outwash plains, lake plains, till plains

*Landform position (two-dimensional):* Backslope, shoulder, summit, footslope

*Landform position (three-dimensional):* Crest, side slope, rise, talf

*Down-slope shape:* Convex, concave, linear

*Across-slope shape:* Linear, convex

*Other vegetative classification:* Acer-Tsuga-Dryopteris/Tsuga-Maianthemum-Coptis (ATD/TMC)

*Hydric soil rating:* No

#### Carbondale

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Dip, talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Thuja-Mitella/Tsuga-Thuja-Sphagnum (TTM/TTS)

*Hydric soil rating:* Yes

#### Croswell

*Percent of map unit:* 3 percent

*Landform:* Dunes, outwash plains, lake plains

*Landform position (two-dimensional):* Backslope, shoulder, summit, footslope

*Landform position (three-dimensional):* Crest, base slope, side slope, rise, talf

*Down-slope shape:* Convex, concave, linear

*Across-slope shape:* Convex, linear

*Other vegetative classification:* Acer-Quercus-Vaccinium (AQV)

*Hydric soil rating:* No

## 112—Soo silty clay loam

### Map Unit Setting

*National map unit symbol:* fz6b

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Prime farmland if drained

**Map Unit Composition**

*Soo and similar soils:* 93 percent

*Minor components:* 7 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Soo**

**Setting**

*Landform:* Lake plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Dip, talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Fine-silty lacustrine deposits

**Typical profile**

*Ap - 0 to 7 inches:* silty clay loam

*Bw - 7 to 17 inches:* silty clay loam

*C1 - 17 to 26 inches:* stratified silt loam to silty clay loam

*C2 - 26 to 80 inches:* stratified silt loam to silty clay loam

**Properties and qualities**

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Calcium carbonate, maximum content:* 20 percent

*Available water capacity:* High (about 11.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 5w

*Hydrologic Soil Group:* C/D

*Other vegetative classification:* Tsuga-Thuja-Petasties (TTP)

*Hydric soil rating:* Yes

**Minor Components**

**Rudyard**

*Percent of map unit:* 4 percent

*Landform:* Lake plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Thuja-Petasties (TTP)

*Hydric soil rating:* No

**Bowers**

*Percent of map unit:* 3 percent

*Landform:* Lake plains

## Custom Soil Resource Report

*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf, dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Tsuga-Thuja-Petasties (TTP)  
*Hydric soil rating:* No

### 116—Udipsamments and Udorthents, nearly level

#### Map Unit Setting

*National map unit symbol:* fz6d  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Udipsamments and similar soils:* 55 percent  
*Udorthents and similar soils:* 45 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Udipsamments

##### Typical profile

*C - 0 to 80 inches:* sand

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* Very high (20.00 to 28.34 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Very low (about 1.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

#### Description of Udorthents

##### Typical profile

*C - 0 to 80 inches:* variable

**Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Negligible  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydric soil rating:* No

**124D—Alpena gravelly loam, 0 to 15 percent slopes**

**Map Unit Setting**

*National map unit symbol:* fz6m  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Alpena and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Alpena**

**Setting**

*Landform:* Beach ridges, eskers, outwash plains  
*Landform position (two-dimensional):* Backslope, summit, shoulder, footslope  
*Landform position (three-dimensional):* Side slope, base slope, crest, rise  
*Down-slope shape:* Convex, concave, linear  
*Across-slope shape:* Linear, convex, concave  
*Parent material:* Sandy and gravelly glaciofluvial deposits

**Typical profile**

*Oe - 0 to 2 inches:* moderately decomposed plant material  
*A1 - 2 to 6 inches:* gravelly loam  
*A2 - 6 to 9 inches:* gravelly sandy loam  
*2C - 9 to 80 inches:* extremely gravelly sand

**Properties and qualities**

*Slope:* 0 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Runoff class:* Low



## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 30 percent

*Available water capacity:* Low (about 3.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

### Minor Components

#### Esau

*Percent of map unit:* 8 percent

*Landform:* Beach ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope

*Landform position (three-dimensional):* Crest, side slope, base slope

*Down-slope shape:* Concave, convex

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Shelter

*Percent of map unit:* 7 percent

*Landform:* Till plains, lake terraces, drumlins

*Landform position (two-dimensional):* Footslope, backslope, summit

*Landform position (three-dimensional):* Riser, tread, rise, talf

*Down-slope shape:* Linear, concave

*Across-slope shape:* Linear

*Hydric soil rating:* No

## 125B—Croswell-Markey complex, 0 to 6 percent slopes

### Map Unit Setting

*National map unit symbol:* fz6n

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Croswell and similar soils:* 52 percent

*Markey and similar soils:* 35 percent

*Minor components:* 13 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Croswell

### Setting

*Landform:* Outwash plains, lake plains, dunes

*Landform position (two-dimensional):* Backslope, shoulder, summit, footslope

*Landform position (three-dimensional):* Crest, side slope, base slope, rise, talf

*Down-slope shape:* Convex, concave, linear

*Across-slope shape:* Linear, convex

*Parent material:* Sandy outwash

### Typical profile

*Oe - 0 to 2 inches:* moderately decomposed plant material

*E - 2 to 4 inches:* sand

*Bs1 - 4 to 8 inches:* sand

*Bs2 - 8 to 19 inches:* sand

*BC - 19 to 31 inches:* sand

*C - 31 to 80 inches:* sand

### Properties and qualities

*Slope:* 0 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Runoff class:* Negligible

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 6.00 in/hr)

*Depth to water table:* About 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Low (about 4.8 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4s

*Hydrologic Soil Group:* B

*Other vegetative classification:* Acer-Quercus-Vaccinium (AQV)

*Hydric soil rating:* No

## Description of Markey

### Setting

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Herbaceous organic material over sandy glaciolacustrine deposits

### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material

*Oa - 3 to 20 inches:* muck

*Cg - 20 to 80 inches:* sand

### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Very poorly drained

*Runoff class:* Very low

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 6.00 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Calcium carbonate, maximum content:* 10 percent

*Available water capacity:* High (about 10.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6w

*Hydrologic Soil Group:* A/D

*Other vegetative classification:* Tsuga-Thuja-Mitella (TTM)

*Hydric soil rating:* Yes

### Minor Components

#### Finch

*Percent of map unit:* 5 percent

*Landform:* Lake plains, outwash plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Maianthemum-Coptis/Tsuga-Maianthemum-Coptis, Vaccinium phase (TMC/TMC-V)

*Hydric soil rating:* No

#### Leafriver

*Percent of map unit:* 4 percent

*Landform:* Outwash plains, lake plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Fraxinus-Mentha-Carex (FMC)

*Hydric soil rating:* Yes

#### Spot

*Percent of map unit:* 4 percent

*Landform:* Lake plains, till plains, outwash plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Thuja-Sphagnum (TTS)

*Hydric soil rating:* Yes

## 147B—Shelter very cobbly loam, 0 to 6 percent slopes, stony

### Map Unit Setting

*National map unit symbol:* fz70  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Shelter, stony, and similar soils:* 87 percent  
*Minor components:* 13 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Shelter, Stony

#### Setting

*Landform:* Lake terraces, drumlins, till plains  
*Landform position (two-dimensional):* Footslope, summit, backslope  
*Landform position (three-dimensional):* Riser, tread, rise, talf  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear  
*Parent material:* Calcareous, loamy-skeletal till

#### Typical profile

*A - 0 to 4 inches:* very cobbly loam  
*A/B - 4 to 6 inches:* very stony loam  
*Bw - 6 to 12 inches:* very cobbly fine sandy loam  
*Cd1 - 12 to 26 inches:* very cobbly fine sandy loam  
*Cd2 - 26 to 80 inches:* very cobbly fine sandy loam

#### Properties and qualities

*Slope:* 0 to 6 percent  
*Surface area covered with cobbles, stones or boulders:* 0.1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 6 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 60 percent  
*Available water capacity:* Very low (about 1.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6w

## Custom Soil Resource Report

*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

### Minor Components

#### **Battydoe, stony**

*Percent of map unit:* 5 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope, backslope, shoulder, summit  
*Landform position (three-dimensional):* Base slope, side slope, crest, rise, talus  
*Down-slope shape:* Convex, concave  
*Across-slope shape:* Convex, linear  
*Other vegetative classification:* Acer-Viola-Osmorhiza/Acer-Tsuga-Dryopteris (AVO/ATD)  
*Hydric soil rating:* No

#### **Alpena, stony**

*Percent of map unit:* 4 percent  
*Landform:* Beach ridges, eskers, outwash plains  
*Landform position (two-dimensional):* Backslope, summit, shoulder, footslope  
*Landform position (three-dimensional):* Side slope, base slope, crest, rise  
*Down-slope shape:* Convex, concave, linear  
*Across-slope shape:* Linear, concave, convex  
*Hydric soil rating:* No

#### **Beavertail, stony**

*Percent of map unit:* 4 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Other vegetative classification:* Tsuga-Thuja-Mitella (TTM)  
*Hydric soil rating:* Yes

## 151—Beavertail muck

### **Map Unit Setting**

*National map unit symbol:* fz72  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Beavertail and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Beavertail

### Setting

*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Parent material:* Calcareous, loamy-skeletal till

### Typical profile

*Oa - 0 to 8 inches:* muck  
*Bw - 8 to 16 inches:* very gravelly fine sandy loam  
*Cg - 16 to 29 inches:* very gravelly fine sandy loam  
*Cd - 29 to 80 inches:* very gravelly fine sandy loam

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Calcium carbonate, maximum content:* 30 percent  
*Available water capacity:* Low (about 5.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 5w  
*Hydrologic Soil Group:* B/D  
*Other vegetative classification:* Tsuga-Thuja-Mitella (TTM)  
*Hydric soil rating:* Yes

## Minor Components

### Glawe

*Percent of map unit:* 8 percent  
*Landform:* Lake plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf, dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

### Shelter

*Percent of map unit:* 7 percent  
*Landform:* Lake terraces, drumlins, till plains  
*Landform position (two-dimensional):* Footslope, summit, backslope  
*Landform position (three-dimensional):* Riser, tread, rise, talf  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## 160B—Esau extremely gravelly sandy loam, 0 to 3 percent slopes

### Map Unit Setting

*National map unit symbol:* fz73  
*Elevation:* 570 to 1,390 feet  
*Mean annual precipitation:* 28 to 33 inches  
*Mean annual air temperature:* 39 to 43 degrees F  
*Frost-free period:* 90 to 155 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Esau and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Esau

#### Setting

*Landform:* Beach ridges  
*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope  
*Landform position (three-dimensional):* Crest, side slope, base slope  
*Down-slope shape:* Concave, convex  
*Across-slope shape:* Linear  
*Parent material:* Gravelly beach sand

#### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 6 inches:* extremely gravelly sandy loam  
*2Bw - 6 to 10 inches:* extremely gravelly coarse sand  
*2C - 10 to 80 inches:* very gravelly coarse sand

#### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 6.00 in/hr)  
*Depth to water table:* About 6 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 30 percent  
*Available water capacity:* Very low (about 1.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A/D  
*Hydric soil rating:* No

## Minor Components

### Zela

*Percent of map unit:* 8 percent

*Landform:* Depressions, beach ridges

*Landform position (two-dimensional):* Toeslope, backslope, footslope, summit

*Landform position (three-dimensional):* Side slope, base slope, crest, dip

*Down-slope shape:* Linear, concave, convex

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

### Alpena

*Percent of map unit:* 7 percent

*Landform:* Beach ridges, eskers, outwash plains

*Landform position (two-dimensional):* Backslope, summit, shoulder, footslope

*Landform position (three-dimensional):* Side slope, base slope, crest, rise

*Down-slope shape:* Convex, concave, linear

*Across-slope shape:* Linear, convex, concave

*Hydric soil rating:* No

## 163B—Esau-Zela complex, 0 to 3 percent slopes

### Map Unit Setting

*National map unit symbol:* fz75

*Elevation:* 570 to 1,390 feet

*Mean annual precipitation:* 28 to 33 inches

*Mean annual air temperature:* 39 to 43 degrees F

*Frost-free period:* 90 to 155 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Esau and similar soils:* 52 percent

*Zela and similar soils:* 43 percent

*Minor components:* 5 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Esau

#### Setting

*Landform:* Beach ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope, footslope

*Landform position (three-dimensional):* Crest, side slope, base slope

*Down-slope shape:* Concave, convex

*Across-slope shape:* Linear

*Parent material:* Gravelly beach sand

#### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 6 inches:* extremely gravelly sandy loam

*2Bw - 6 to 10 inches:* extremely gravelly coarse sand



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2C - 10 to 80 inches: very gravelly coarse sand

### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat poorly drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 6.00 in/hr)

*Depth to water table:* About 6 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 30 percent

*Available water capacity:* Very low (about 1.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* A/D

*Hydric soil rating:* No

## Description of Zela

### Setting

*Landform:* Depressions, beach ridges

*Landform position (two-dimensional):* Toeslope, backslope, footslope, summit

*Landform position (three-dimensional):* Side slope, base slope, crest, dip

*Down-slope shape:* Linear, concave, convex

*Across-slope shape:* Linear

*Parent material:* Sandy and gravelly lacustrine deposits

### Typical profile

*Oa - 0 to 9 inches:* muck

*A - 9 to 12 inches:* extremely gravelly loam

*Cg - 12 to 35 inches:* very gravelly sand

*C - 35 to 80 inches:* extremely gravelly sand

### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained

*Runoff class:* Negligible

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 6.00 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Calcium carbonate, maximum content:* 30 percent

*Available water capacity:* Low (about 4.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 5w

*Hydrologic Soil Group:* A/D

*Hydric soil rating:* Yes

**Minor Components**

**Markey**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Talf, dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Tsuga-Thuja-Mitella (TTM)

*Hydric soil rating:* Yes

**Water**

*Percent of map unit:* 2 percent

*Hydric soil rating:* Unranked

**W—Water**

**Map Unit Composition**

*Water:* 100 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Water**

**Typical profile**

*W - 0 to 80 inches:* water

**Properties and qualities**

*Slope:* 0 percent

*Depth to water table:* About 0 inches

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# APPENDIX D

## Previous Studies





**Appendix D**

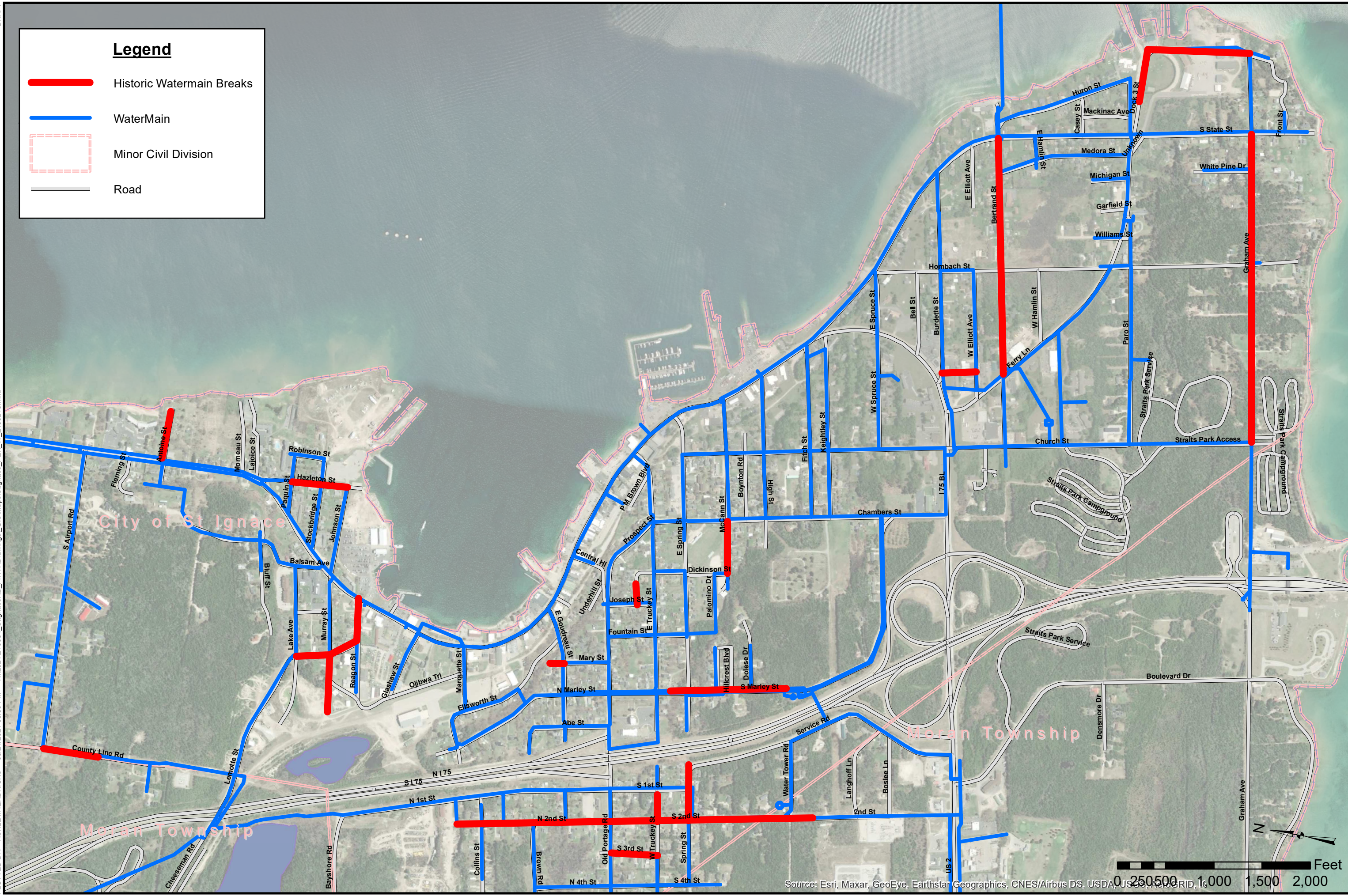
Part 1: Water Main Break Map



DRAFT  
PLOTTED BY: ASHLEY:HENDRICKS 03/24/2021 03:59 PM N:\2021\1210084\_StignaceRD\_Ph1\Drawings\_GIS\MapStignace\_PER\_W\_2100215.mxd

**Legend**

-  Historic Watermain Breaks
-  WaterMain
-  Minor Civil Division
-  Road



**FIGURE : AREAS WITH HISTORIC WATERMAIN BREAKS**

0 250 500 1,000 1,500 2,000 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**Appendix D**

Part 1: St. Ignace Water Let Run List





**Appendix D**

Part 1: Monthly Operating Report Summary  
2018 to 2020

ST IGNACE DWSRF - MONTHLY OPERATING REPORT SUMMARY - 2018 TO 2020

Month	Water Treated (Mgd)		Turbidity (NTU)		pH		Total Hardness (mg/l CaCO <sub>3</sub> )		Total Alkalinity (mg/l as CaCO <sub>3</sub> )		Temp. (C°)	Color			Chemicals (mg/l)			
	Average	Max Day	Raw	Fil. Conf.	Raw	Tap	Raw	Tap	Raw	Tap		Raw	Raw	Tap	Alum (Al+)	Fluoride (As F)	Soda Ash	Pre-Cl2
Jan-18	0.67	0.77	0.26	0.02	7.99	7.61	107	106	83	82	0.6	0.2	0.0	0.79	0.87	9.19	1.78	
Feb-18	0.68	0.79	0.20	0.02	7.95	7.64	102	101	84	85	0.0	0.3	0.0	0.78	0.86	8.40	1.78	
Mar-18	0.64	0.81	0.27	0.02	7.99	7.63	104	104	84	85	0.0	0.0	0.0	0.80	0.78	8.94	1.74	
Apr-18	0.66	0.79	1.20	0.03	8.01	7.62	109	107	86	85	0.6	19.8	0.0	0.94	0.78	9.28	1.85	
May-18	0.69	0.84	0.45	0.03	7.99	7.61	106	106	87	85	6.0	0.8	0.0	0.78	0.78	9.06	1.94	
Jun-18	0.77	1.04	0.43	0.03	8.09	7.60	102	101	85	85	12.1	0.6	0.0	0.75	0.74	8.86	2.16	
Jul-18	0.97	1.12	0.34	0.02	8.11	7.64	111	110	93	93	14.9	1.1	0.0	0.74	0.61	7.97	2.09	
Aug-18	0.91	1.07	0.32	0.02	8.03	7.56	109	108	92	91	14.8	0.4	0.0	0.82	0.73	8.18	2.03	
Sep-18	0.75	0.90	0.4	0.02	8.00	7.56	108	109	88	89	16.0	0.1	0.0	0.82	0.78	8.82	2.14	
Oct-18	0.64	0.77	0.38	0.02	7.80	7.53	104	102	84	85	10.3	0.1	0.0	0.86	0.78	9.33	2.06	
Nov-18	0.53	0.60	0.29	0.02	7.73	7.54	105	105	86	88	4.9	0.0	0.0	0.89	0.76	10.51	1.84	
Dec-18	0.53	0.61	0.36	0.02	7.75	7.57	106	106	87	89	1.8	1.6	0.0	0.85	0.79	9.91	1.83	
<b>Annual Ave.</b>	<b>0.70</b>	<b>0.84</b>	<b>0.41</b>	<b>0.02</b>	<b>7.95</b>	<b>7.59</b>	<b>106</b>	<b>105</b>	<b>87</b>	<b>87</b>	<b>6.8</b>	<b>2.1</b>	<b>0.0</b>	<b>0.82</b>	<b>0.77</b>	<b>9.04</b>	<b>1.94</b>	
<b>Summer Ave.</b>	<b>0.88</b>																	
<b>Winter Ave.</b>	<b>0.66</b>																	
Jan-19	0.57	0.75	0.45	0.02	8.00	7.69	104	101	84	85	0.3	2.6	0.0	0.88	0.76	8.37	1.77	
Feb-19	0.62	0.72	0.2	0.02	7.99	7.57	107	105	85	85	0.0	0.0	0.0	0.80	0.80	8.25	1.71	
Mar-19	0.62	0.69	0.18	0.02	7.84	7.54	109	107	87	86	0.0	0.0	0.0	0.82	0.73	8.62	1.66	
Apr-19	0.59	0.70	0.35	0.02	7.92	7.58	104	106	87	86	1.2	1.3	0.0	0.87	0.77	8.81	1.75	
May-19	0.67	0.82	0.8	0.02	7.83	7.42	98	98	80	79	5.2	8.2	0.0	1.33	0.66	9.30	2.22	
Jun-19	0.75	1.01	0.43	0.02	7.94	7.55	96	97	80	81	9.3	1.4	0.0	0.84	0.67	8.59	2.06	
Jul-19	0.95	1.07	0.4	0.02	7.97	7.46	100	100	82	82	11.7	0.5	0.0	0.84	0.73	7.54	1.95	
Aug-19	1.04	1.17	0.37	0.02	7.98	7.48	101	104	85	85	12.4	0.0	0.0	0.88	0.67	7.23	1.88	
Sep-19	0.81	1.04	0.41	0.02	7.87	7.44	104	103	84	85	12.8	0.0	0.0	0.91	0.73	8.25	1.78	
Oct-19	0.72	0.95	0.61	0.02	7.85	7.48	105	105	85	80	11.7	4.5	0.0	0.98	0.74	8.82	1.89	
Nov-19	0.61	0.65	0.59	0.02	8.09	7.64	105	106	84	85	6.0	3.5	0.0	0.93	0.74	8.10	1.87	
Dec-19	0.60	0.71	1.41	0.02	8.05	7.6	106	108	85	85	1.7	20.2	0.0	1.08	0.74	8.72	1.86	
<b>Annual Ave.</b>	<b>0.71</b>	<b>0.86</b>	<b>0.52</b>	<b>0.02</b>	<b>7.94</b>	<b>7.54</b>	<b>103</b>	<b>103</b>	<b>84</b>	<b>84</b>	<b>6.0</b>	<b>3.5</b>	<b>0.0</b>	<b>0.93</b>	<b>0.73</b>	<b>8.38</b>	<b>1.87</b>	
<b>Summer Ave.</b>	<b>0.93</b>																	
<b>Winter Ave.</b>	<b>0.60</b>																	

ST IGNACE DWSRF - MONTHLY OPERATING REPORT SUMMARY - 2018 TO 2020

Month	Water Treated (Mgd)		Turbidity (NTU)		pH		Total Hardness (mg/l CaCO <sub>3</sub> )		Total Alkalinity (mg/l as CaCO <sub>3</sub> )		Temp. (C°)	Color			Chemicals (mg/l)			
	Average	Max Day	Raw	Fil. Conf.	Raw	Tap	Raw	Tap	Raw	Tap		Raw	Raw	Tap	Alum (Al+)	Fluoride (As F)	Soda Ash	Pre-Cl <sub>2</sub>
Jan-20	0.57	0.67	0.69	0.02	8.10	7.71	106	103	86	86	0.4	6.9	0.0	0.98	0.69	8.32	1.72	
Feb-20	0.58	0.65	0.22	0.02	8.14	7.73	106	107	84	84	0.0	1.0	0.0	0.80	0.74	7.41	1.71	
Mar-20	0.57	0.65	0.35	0.02	8.16	7.73	104	104	82	83	0.1	1.9	0.0	0.83	0.73	7.75	1.73	
Apr-20	0.60	0.72	0.41	0.02	8.10	7.68	105	104	81	81	2.0	2.8	0.0	0.86	0.70	7.49	1.70	
May-20	0.64	0.72	0.44	0.02	8.14	7.64	103	102	82	82	5.8	4.2	0.0	0.89	0.73	7.57	1.90	
Jun-20	0.78	1.02	0.47	0.02	8.20	7.68	101	97	82	81	10.1	2.6	0.0	0.80	0.71	7.22	1.94	
Jul-20	1.01	1.36	0.50	0.02	8.30	7.72	105	105	86	85	12.9	2.2	0.0	0.80	0.69	6.95	1.97	
Aug-20	0.92	1.18	0.47	0.02	8.18	7.66	108	108	86	87	14.1	1.6	0.0	0.82	0.66	7.37	2.00	
Sep-20	0.81	0.91	0.45	0.02	8.04	7.59	107	107	86	86	12.6	1.2	0.0	0.86	0.70	7.78	2.00	
Oct-20	0.76	0.93	0.48	0.02	7.91	7.53	103	102	82	82	9.7	2.2	0.0	0.85	0.68	7.98	1.94	
Nov-20	0.63	0.75	0.43	0.02	7.91	7.57	102	103	82	80	6.7	4.6	0.0	0.81	0.73	8.13	1.88	
Dec-20	0.62	0.69	0.33	0.02	7.92	7.57	107	102	84	84	3.1	2.6	0.0	0.81	0.73	8.18	1.76	
<b>Annual Ave.</b>	<b>0.71</b>	<b>0.85</b>	<b>0.44</b>	<b>0.02</b>	<b>8.09</b>	<b>7.65</b>	<b>105</b>	<b>104</b>	<b>84</b>	<b>83</b>	<b>6.5</b>	<b>2.8</b>	<b>0.0</b>	<b>0.84</b>	<b>0.71</b>	<b>7.68</b>	<b>1.85</b>	
<b>Summer Ave.</b>	<b>0.91</b>																	
<b>Winter Ave.</b>	<b>0.57</b>																	
<b>3 Yr. Annual Ave.</b>	<b>0.71</b>	0.85	0.45	0.02	8.00	7.59	104.69	104.14	84.72	84.64	6.44	2.81	0.00	0.86	0.74	8.37	1.89	
<b>3 Yr. Summer Ave.</b>	<b>0.91</b>																	
<b>3 Yr. Winter Ave.</b>	<b>0.61</b>																	

## **Appendix D**

### **Part 1: History of St. Ignace's Water System**

*\* Repairs*

Value of Existing Water Mains

Date	Permit	Location	Length (ft.)	Size (in.)	Estimated Const. Cost	Cost Less Depreciation*
30 Sep. 46	8 U.P.	Portage Rd. from Fifth St. westerly	2,250	4	\$ 5,208.09	\$ 00
12 Nov. 48	74	U.S.-2 from 1500-ft. w. of Marley St. westerly	810	4	2,113.30	0
14 Dec. 49	80	Truckey St. between Prospect and Dickenson	512	6	2,400.00	\$ 540.00
14 Feb. 50	81	* Paro St. east from Hambach	316	4	1,117.17	0
14 June 50	92	Truckey St. west from Court St.	198	4	288.00	0 ?
5 July 50	96	U.S.-2 northerly from South Airport Rd.	3,600	6	7,451.75	2,608.00
24 July 50	101	Reagon St. U.S.-2 to La Motte St.	400	6	1,296.28	454.00
19 Oct. 50	129	La Motte St., Reagon to Lake	665	6	1,640.00	574.00
21 Nov. 50	133	Old RR R.O.W., between Fitch and Kneightly	198	6	458.07	160.00
18 Dec. 50	134	N. Airport Rd. west of U.S.-2	400	4	777.58	0
27 Dec. 50	135	From Stockbridge St. south across lots to Reagon St.	918	6	4,700.00	1,645.00
8 May 51	145	* Paro St., between State and Huron Sts.; and State St. south of Paro	654 100	6 6	3,539.56	1,327.00
24 Sep. 51	175	* Chambers St. south of McCann and Spruce St. west of U.S.-2	176 532	4 6	479.50 1,644.23	0 617.00
30 Oct. 52	217	Truckey St., Dickenson to 132-ft. w. of Joseph; and Joseph St. north of Truckey	523 156	6 4	2,085.05 990.05	834.00 0
3 Nov. 52	219	* Church St., Spruce to Burdette; and Spruce St. from Permit 175 to Church St.	560 350	6 4	3,300.00 1,760.00	1,320.00 0
28 Nov. 52	220	* Marquette St. NE from High St.; and * High St. northerly from Marquette	104 50	4 4	500.00 250.00	0 0
29 Sep. 53	255	Williams St. from Paro north; Murray St., from LaMotte west; Chambers St. from Permit 175 to S. High St. ; and * S. High St. from Chambers St. to Church St. (Deferred 309-ft. E. of Chambers)	350 244 102 363	4 4 4 4	1,551.00 Deferred Deferred 1,750.00	0   0
* 8 Apr. 54	276	N. High St., from Marquette to 310 ft. N. of Goodreau (Deferred 400-ft. S. of Marquette)	436	6	2,072.10	932.00
* 15 Apr. 54	279	Marley St. from Truckey south; and Spring St. from Marley west	806 75	6 4	6,088.75 370.00	2,740.00 0
16 June 54	306	Third St., from Truckey to Portage	445	6	2,044.67	920.00
20 Sep. 54	321	* Paro St. from Hombach west	1,192	4	5,813.12	0 = <i>Repairs</i>
31 Jan. 55	339	Spring St., west of Court to First St.	264	4	1,360.00	0
9 May 55	343	Hillcrest Blvd. east of Marley St.	156 210	4 2	815.00 660.00	0 0

Date	Permit	Location	Length (ft.)	Size (in.)	Estimated Const. Cost	Cost Less Depreciation
15 Aug. 55	361	Dickenson, Truckey to Spring	310	4	\$ 1,670.00	\$ 0
23 Aug. 55	363	Sixth St., Portage to Goodreau	916	4	2,240.00	0
13 Sep. 55	370	Robinson St. Stockbridge to Paquin; Mary St. north of Goodreau; and S. High St. from Chambers westerly (constructed 72-ft. of 6-in. in Chambers and 270-ft. of 4-in. in High St. w. of Chambers.)	340 142 72 270	4 4 6 4	1,067.00 568.60 485.00 1,450.00	0 0 230.00 0
30 Oct. 55	372	Second St. Portage to Truckey	449	6	3,025.00	1,437.00
20 Ec. 55	381	Hombach, Paro to Bertrand	1,279	6	8,600.00	4,085.00
29 June 56	395	Second St. Truckey to Spring	396	6	2,740.00	1,370.00
20 Aug. 56	408	Antoine St. State to Prospect; and Prospect, north from State	315 185	6 6	4,874.53	2,437.00
29 Sep. 56	414	Antoine St. from State easterly	410	6	3,315.00	1,658.00
15 Oct. 56	416	Marquette St. west of N. High St.	290	6	1,690.00	845.00
27 Nov. 56	419	Marley St. from Permit 209 south to Kneightly St. (Permit for 1234-ft., 609-ft. removed for I-75)	625	8	4,244.00	2,122.00
16 May 57	440	Marquette St. from Permit 416 west to Second St. (Permit for 531 ft. westerly 291 feet deferred)	240	6	1,718.00	902.00
17 July 57	463	Kneightly St. from Old RR R.O.W. west to Church St. (Permit for 971 ft. westerly 600 ft. deferred)	371	6	2,686.00	1,410.00
11 Dec. 57	483	Murray St. La Motte to State	765	6	5,650.00	2,966.00
8 Sep. 58	515	Fourth St. Portage to Truckey (495 ft. southerly 213 ft. deferred); Truckey St. e. of Fourth St. (1056 ft. westerly 838 ft. deferred); and Truckey east of Second St.	282 218 152	6 6 6	1,897.75 1,690.00 1,210.00	1,044.00 930.00 666.00
28 Oct. 58	520	County Line Rd. n from S. Airport Rd. (1320 ft. northerly 1188 ft. deferred)		6	1,188.00	653.00
19 June 59	540	N. High St. s. from Marquette; Second St. n. from Portage; and Marquette St. e. of Second St. (160 ft. e. 34-ft. deferred)	400 1,745 126	4 6 4	2,540.00 13,875.00 800.00	0 7,978.00 0
23 June 59	541	Spring St. e. of Second St. (286 ft. easterly 134 ft. deferred)	152	6	1,200.00	690.00
6 Oct. 59	567	Second St. s. of Spring St.	2,700	6	21,900.00	12,593.00
7 Oct. 59	568	Collins St. from Second St. e. 310-ft. and w. 670 ft. (east portion and westerly 480-ft. deferred)	190	6	1,540.00	886.00
11 Dec. 59	576	Hombach, s. from Burdette	323	6	2,650.00	1,524.00
6 Jan. '60	581	Truckey St. from Fifth St. e.	264	6	2,145.00	1,287.00

*Cost Less  
Depreciation*

Date	Permit	Location	Length (ft.)	Size (in.)	Estimated Const. Cost	Estimated Depreciation
9 Nov. 60	608	Fitch St. Church to Chambers	686	6	\$ 5,700.00	\$ 3,420.00
24 Sep. 63	743	Collins St. from Second St. east	245	6	1,766.00	1,192.00
4 Dec. 63	709	Church St. north of Spruce St.	322	8	1,466.00	990.00
25 Mar. 65	818	M-122, Elliot to Bertrand;	350	6	3,350.00	2,429.00
		Bertrand east of M-122; and	20	6	200.00	145.00
		Bertrand west of M-122	26	6	825.00	598.00
14 July 65	850	Bertrand from Permit 818 west	270	6	757.26	549.00
9 June 66	890	State St. north of Hazelton	1,900	8	19,460.00	14,595.00
11 July 66	899	Fountain St. Truckey to Portage	317	6	Deferred	
31 Mar. 67	928	Bertrand, east of Church St;	314	6	Deferred	
		and east of M-122	588	6	1,902.40	1,474.00
23 July 69	W-698024	Bertrand, east & west of Hombach;	1,200	6	15,400.00	12,704.00
		and Hombach from Bertrand to Elliot	320	6	943.00	777.00
24 May 71	W-718015	Fountain St. Truckey to Spring	310	6	Deferred	
19 Nov. 71	W-718033	U.S.-2, from Second St. west	400	6	2,500.00	2,188.00
20 Sep. 73	W-738038	Chambers St. north of McCann	160	6	1,472.16	1,362.00
2 May 74	W-748020	Truckey St. Chambers to State;	800	8	18,825.00	17,884.00
		Johnson St. State to Hazelton; and	900	8	21,200.00	20,140.00
		Hazelton, Johnson to State	800	8	18,825.00	17,884.00
6 May 74	W-748026	North of Graham, west of State	500	6	Deferred	
1 Oct. 74	W-748060	M-122, south of Bertrand	700	6	Deferred	
1 Sep. 76	W-786033	U.S.-2 from Permit W-718033 westerly	150	6	3,750.00	3,750.00
			210	2		
			9,214	4		
			27,595	6		
			5,347	8		
Totals			42,366		\$281,022.47	\$164,466.00





October 16, 2012

To: Mayor and City Council  
From: Les Therrian, City Manager

Re: additions to sewer infrastructure

Listed below are the major improvements to the Sanitary Sewer System, since the mid 80's. Listed after the description is how the project was done, whether by the City, private contractor or under a funding source..

- 1985 – West US-2, along First St. to W. Spring. 1,986 feet of 10” gravity sewer  
Funded by City & MTWSP w/EDA
- 1986 – New WWTP, North of Airport, 1288 North State St., Aerated Lagoons.  
3,400’ of 18” PVC Forcemain along Reagan, Lemotte, and Cheeseman Rd. to Boundry  
2,000’ of 18” Gravity/Forcemain on Boundry Rd. to WWTP  
7,300’ of 24” Gravity from South State along North State St. to Reagan St. Lift Station.  
800’ of 18” Gravity on South State  
1,000’ of 8” Forcemain on Stockbridge  
3 – Lift Stations, Reagan, Huron, and Stockbridge  
Funded by USDA-RD
- 1994 – Regan & LeMotte - 1,000’ of 18” Ductile Iron Forcemain, installed replacing the PVC installed in 1986, Funded by Granger and C.H. Smith (private)  
- Keightley St – Chambers to Church, 900’ of 8” gravity  
Funded by U.S. Coast Guard and installed by City crews
- 1995 – Mackinac Bridge – 2,150’ of 8” gravity, 200’ of 6” gravity,  
3,555’ of 6” forcemain. Funded by M.B.A. & given to City by MTWSP
- 1998 – Blowers installed at WWTP, replacing mechanical aerators. VFD’s installed at Reagan St. Lift Station, to reduce water hammer on existing forcemain.  
Funded by USDA-RD
- 2000 – Water Tower Rd. 350’ of 8” gravity - Private contractor  
- Fourth St. from Portage to Truckey, 485’ of 8” gravity  
Damaged during water project and installed by contractor
- 2002 – William St. – North of existing, 300’ of 8” gravity, Private Contractor
- 2003 – Spring St. – Second to Third, 400’ of 8” gravity  
City and HOME  
- Chambers St. – Keightley to Marley, ----’ of 8” gravity, private contractor  
- Marley St. – Chambers St. to West, 300’ of 8” gravity, private contractor

*The City of St. Ignace is an Equal Opportunity Employer and Provider  
TDD (800) 649-3777*

- 2004 – Paro to Hombach – 1,200' of 2" HDPE forcemain (Baker Development) Private  
 - Marley St. – from 300' W of Chambers another 160' West, w/8" gravity
- 2005 – Palamino Dr. & Dickinson St. to Spring St., 750' of 6" gravity  
 Funded by Sault Tribe and installed by City Crews  
 - St. Ignace Township Sewer Extension to Sault Tribe Housing and Casino  
 3,025' of 10", 12,043' of 8" gravity, also 5,205' of 8" forcemain and  
 9,990' of 6" forcemain, with 2 – 8' diameter lift stations and 4 grinder pump sta.  
 Funded by SITWSP and USDA-RD (Township owns, City maintains)
- 2007 – 1,500' of 6" forcemain, connecting Sault Tribe properties directly to WWTP,  
 By-passing SITWSP lift station. Funded by SITWSP and USDA-RD
- 2008 – 375' of 8" gravity, LeMotte - East along Murray to address 303.  
 250' of 8" gravity, LeMotte – West along Murray to address 409  
 Installed by private contractor and funded by special assessment
- 2008/2009 – 2,500' of 18" forcemain, Cheeseman to Boundry, new Lift Station to replace  
 USEMCO Station at Heritage, 2,200' of 6" forcemain – Lift Station @ Heritage  
 to Balsam. 1,700' of 10" gravity, Balsam thru State A to North State St.  
 \$1.274 Million project funded thru State Revolving Fund Div.A  
 WWTP Improvements – New Liner, U.V. Replacement, Screening w/new building  
 to house, Connect Generator to blowers, Instrumentation upgrades  
 SRF project - \$2.25 million. Grant of \$400,000 covered planning and design.
- 2009 – 650' of 8" gravity, new Hospital to Grondin, Private contractor
- 2010 – Portage Road – Fourth to Central Hill 3,025' of 12", 645' of 12"  
 Central Hill to N.State. S. First – Spring to Portage 845' of 12", Truckey – First  
 to Second 230' of 12", A TOTAL of 4,745' of 12" gravity sewer, \$1.4 million  
 w/40% Principal forgiveness – Stimulus Funds.
- 2011/2012 - WWTP Improvements, includes abandon Cell#3, new Cell #4a, Drying  
 beds, Building improvements, relocation of Ferric Chloride to Cell 1C, Reagan St.  
 Lift Station upgrades (New pumps, valves, By-pass pumping, electrical upgrades)  
 Funded by USDA-RD 2.78 million
- 2012 – S2 Grant to provide planning information on infiltration and N. State St. sanitary  
 sewer. Construction project plans within 3 – 4 years.

TOTALS – 19,265' of 8" gravity, 6,711' of 10" gravity, 4,725' of 12" gravity, 2,800' of  
 18" gravity, and 7,300' of 24" gravity, for a total of 40,801' of gravity sanitary sewer (of  
 this amount 17,220 was installed in the townships). Forcemain installation – 17,245' of  
 6", 6,205' of 8", & 6,900' of 18" for a total of 30,350' of forcemain (of this amount  
 20,250' was installed in the townships). The Wastewater Treatment Plant and  
 distribution system has built or rebuilt, 6 lift stations, 6 grinder pump stations, two  
 different styles of aeration, ultra-violet disinfection and screening systems.



October 16, 2012

To: Mayor and City Council  
From: Les Therrian, City Manager

Re: additions to water infrastructure

Listed below are the major improvements to the Water System since 1981. Listed after the description is how the project was done, whether by the City, private contractor or under certain Federal/State funding. The totals will be at the end. The City took over the Water system from Edison Sault Electric in 1979.

1981 -New Treatment Plant, allowing for increased pumping capabilities, larger ground storage (500,000 gallons), low and high service pumping abilities. Build a 100,000 gal. Storage tank on Second St., refurbishing of the Evergreen Shores Tank, both of which added to the storage capacity for the Department.  
Watermains – Chambers St. thru McCann to South State, from the plant, down Church to US 2 to Marley, First, Second, Cheeseman Rd. to South Airport, Marley past Goudreau thru Marley and Dickenson to North State, for transmission purposes.

Total Watermain Installed – 18,400 ft. of 12 in.  
3,000 ft. of 10 in.  
5,200 ft. of 8 in.  
1,300 ft. of 6 in.

- FHA project with MPS
- 1985 – Service Drive and along West US 2  
3,700 ft. of 14 in.  
EDA with Moran Township
- 1986 – State St. – Spring to Marquette  
3,400 ft. of 12 in. & 250 ft. of 8 in.  
City funded with Granger
- 1987 – South State St. – McCann to Spring  
600 ft. of 12 in.  
City funded w/Granger
- 1988 – Huron – Paro to Casey  
660 ft. of 6 in.  
City funded w/Granger

- 1990 – North State St. – Antoine to North Airport  
 10,000 ft. of dual 12 in. (5,000 ft. each side)  
 600 ft. of 16 in. (Antoine to South Airport)  
 relocate Evergreen Shores valve to Townline Rd.  
 City and MDOT funded w/Granger
- 1994 – Filtration capabilities added to Water Plant (four filters), with instrumentation upgrades to system.
- WATERMAINS – North State St. – Marquette to Antoine  
 4,100 ft. of 16 in., 1,000 ft. of 12 in., 350 ft. of 8 in., 220 ft. of 6 in.
  - Balsam and Bluff – to provide dual feed along North State.  
 1,850 ft. of 8 in., 350 ft. of 6 in.
  - Marley – Standpipe to Spring (increase hi-pressure areas)  
 1,000 ft. of 12 in.  
 funded with EDA & Rebuild Michigan w/MPS
  - Keightley – Church to Chambers  
 1,100 ft. of 8 in.  
 funded by USCG & City w/RS Scott and Assoc.
  - Medora – Paro to Bertrand  
 1,400 ft. of 8 in.
  - Abe – Portage thru Goudreau to end  
 570 ft. of 8 in, 830 ft. of 6 in.
  - Glashaw – North Sstate to end  
 635 ft. of 6in
  - Lake – LeMotte to State A  
 1,100 ft. of 6 in.  
 funded with Rebuild Michigan w/MPS
  - Paro – South State thru Medora to Michigan  
 400 ft. of 6 in.  
 funded with FEMA and City
- 1995 – High – South State to Church  
 1,100 ft. of 8 in.
- Marley – Goudreau to Marquette  
 1,600 ft. of 8 in.
  - Prospect – Truckey to Portage  
 1,200 ft. of 12 in.
  - Truckey – First St. East to I-75  
 400 ft. of 8 in.  
 funded Rebuild Michigan and City w/MPS
  - Huron – Bertrand south to 950 Huron  
 800 ft. of 6 in.  
 Funded by FEMA and City w/MPS
  - Repaint Second St. Elevated Tank - \$85,000.00 Funded by City

- 1995 - Fourth – Truckey to City limits  
400 ft. of 8 in.  
funded by City and private contractor
- Ben Brown Blvd. Marley to East  
450 ft. of 6 in.  
funded by City and private contractor
- Burdette, West – 300' 6"  
Funded by City and installed by City
- 1996 – Front – South State to East  
200 ft. of 6 in.
- Spring – Chambers to West  
200 ft. of 6 in.  
Funded by City and private contractor
- 1997 – Huron – 950 Huron, South to Casey  
500 ft. of 6 in.
- Brown – Second to Fourth  
600 ft. of 6 in.
- Grondin – extension of 4 in West to City limits  
650 ft. of 6 in.  
Funded by Rebuild Michigan/FEMA with City w/MPS
- 2000/2001  
South Airport Rd. – North State to Boundry, Paquin – North State to Robinson,  
Robinson – Stockbridge to Paquin, Stockbridge – North State to Robinson,  
Portage – Prospect/Joseph to Fourth, Joseph – Portage to Dickenson, Fourth –  
Truckey to Brown, Marley – Spring to Portage, Chambers – Spring to Prospect,  
Spring – Chambers to Church, Church – West US 2 to Spring, High – Church to  
Chambers, Spruce – Hombach to Church, Burdette Church to 300 ft. East of  
South State, Elliot – Hombach to Ferrry Lane, Paro – Michigan to Ferery Lane &  
South State to Huron, Fitch – Chambers to West of Church, South State – Paro to  
Graham (250 ft. left because of archeological findings), Mary – Goudreau to  
Portage, Michigan – Paro to North, William – Paro to North  
TOTAL WATERMAIN INSTALLED – 8,765 ft. of 12 in.  
1,055 ft. of 10 in.  
5,690 ft. of 8 in.  
11,390 ft. of 6 in.
- Funded by USDA-RD & City w/Tetra Tech
- Strawberry Fields Development – South Airport Rd.  
700 ft. of 6 in. - Funded by City and private contractor
- Huskey Development – Boundry Rd. West to end  
400 ft. of 6 in.- Funded by Moran Township and private contractor
- 2001 – Golf Course Road – S. of US-2  
485' of 8", City installed and funded

- 2002 - West US 2 – Burger King (top of hill) to Balsam’s Motel (Moran Creek)  
 Dual 12 in. from Pte. LaBarbe Rd. West to KOA Campground crossing.  
 17,630 ft. of watermain (11,590 ft. of 12 in., 6,040 ft. of 16 in.)  
 funded by USDA-RD and Moran Township
- William St. – where 2000 project ended to 300 ft. North  
 300 ft of 6 in. - Funded by City and private contractor
- 2003 – Spring – Second to Fourth  
 600 ft. of 8 in. – funded by City and HOME
- Graham – S. of S. State to Mulcrone Ave.  
 725’ of 6”, private contractor
- 2004 – Palamino Dr. – E.Spring to McCann  
 1,000 ft. of 8 in Funded by Sault Tribe
- 2005 – Sault Tribe Casino – North Airport Rd. to Casino property  
 along North State/Business I-75 then along Mackinac Trail  
 15,700 ft. of 16” and 800 ft. of 12 in.  
 Funded by Sault Tribe
- 2006 – Evergreen Shores Tank (raised 18.5 feet) and repainted Funded by Tribe
- 2007 – Fourth St. (South of Spring) – 300 feet of 6” installed by Private contractor
- 2009 – Mackinac Straits Hospital – 1,530 ft. of 8”  
 Funded by Mackinac Straits Hosp.
- Marley St. Standpipe - \$107,000.00 funded by City
- TOTALS – 26,440ft. of 16in., 3,700 ft. of 14in., 56,755ft. of 12in., 4,055 ft. of 10in.,  
 23,525 ft. of 8in., 23,010 ft. of 6in., for a total footage of 137,485 feet of new  
 watermain installed to the water system since 1981. (of the total 21,920 feet  
 were installed in the townships).

**Appendix D**

Part 1: 2020 Water AMP

# City of St. Ignace Asset Management Plan



Prepared By:

Name	Title	Employer	Email
John Holland	Circuit Rider	Michigan Rural Water Association	<a href="mailto:jholland@mrwa.net">jholland@mrwa.net</a>
Brain Peterson	Operator	City of St. Ignace	
Bill Fraser	DPW Director	City of St. Ignace	<a href="mailto:bfraser@lighthouse.net">bfraser@lighthouse.net</a>



## INDEX

1. Asset Management Plan Summary
2. Current Budget, Rates and Rate Analysis
3. Current Rates Resolution
4. Level of Service
5. Level of Service Resolution
6. AMP Inventory
7. Audit FY 2019



City of St. Ignace, Michigan  
Water System Asset Management Program

Executive Summary

October 2020

The asset management team consisted of the following people

<u>Name</u>	<u>Position</u>	<u>Employer</u>
John Holland	Circuit Rider	Michigan Rural Water Association
Bill Fraser	City Superintendent	City of St. Ignace
Brian Peterson	Operator	City of St. Ignace

*Description of water system*

The City of St. Ignace water system consists of a water filtration plant, two elevated towers, ground storage tank and a booster station. There is a permanent standby generator at the water filtration plant. The City of St. Ignace also supplies water to Moran and St. Ignace Townships. Moran Township consists of water mains alone and runs off the City's water towers for pressure. St. Ignace Township consists of water mains and a single elevated tower. The City of St. Ignace recently rehabilitated one of the filters in the WTP. The City of St. Ignace has purchased a GIS mapping system to utilize for as-built mapping purposes as well as tracking all maintenance activities to the water, wastewater, and storm sewer distribution systems.

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City Superintendent

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Water Superintendent

Mission Statement

We commit to improving and maintaining the public health protection and performance of our drinking water plant and distribution utility assets, while minimizing the long-term cost of operating those assets. We strive to make the most cost-effective renewal and replacement investments and provide the highest-quality customer service possible.

City of St. Ignace  
Asset Management Report Index

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## Contents of Report.

The final part of an asset management program is to take all the information assembled and use it to develop an appropriate budget that will ensure the long-term sustainability of the water utility and insure the sound financial health of the water system. All of this is done for the benefit of the customers connected to the system.

This budget is then used to determine the rate charges needed to generate enough revenue to cover the developed / anticipated budget.

This rate evaluation is based on the following data

1. Annual water budget adopted by the City, including O&M and labor
2. Debt requirements, including principal and interest payments, and any reserve requirements
3. Capital improvement plan, based on the results of the AMP - projected out 20 years
4. Equipment replacement program for assets with a life expectancy of 20 years or less
5. Number of customers connected to the system, - projected out 5 years
6. Gallons of water invoiced to customers, projected out 5 years

Section A - The Budget

The City of St. Ignace Budget

OPERATING EXPENSES				
Table 1.				
	TOTAL	Administration	Line Maintenance	Plant Operations
Labor	\$289,500.00	\$ 28,500.00	\$ 86,000.00	\$ 175,000.00
Overhead	\$178,950.00	\$ 30,630.00	\$ 58,440.00	\$ 89,880.00
Operator Supplies	\$53,000.00	\$ -	\$ 6,000.00	\$ 47,000.00
Cont. Services	\$28,000.00	\$ -	\$ 8,000.00	\$ 20,000.00
Prof. Services	\$3,500.00	\$ 3,500.00	\$ -	\$ -
Uniforms	\$1,065.00	\$ -	\$ 700.00	\$ 365.00
General Fund	\$42,500.00	\$ 42,500.00	\$ -	\$ -
Equip. Rental	\$25,000.00	\$ -	\$ 25,000.00	\$ -
Communications	\$1,000.00	\$ -	\$ -	\$ 1,000.00
Insurance, Fleet & Prop.	\$35,500.00	\$ -	\$ -	\$ 35,500.00
Repair & Maintenance	\$8,300.00	\$ -	\$ 7,000.00	\$ 1,300.00
Utilities & Cable	\$74,000.00	\$ -	\$ -	\$ 74,000.00
Office Supplies	\$0.00	\$ -	\$ -	\$ -
Transfer to 729	\$19,600.00	\$ 19,600.00	\$ -	\$ -
Education & Train.	\$4,150.00	\$ 1,000.00	\$ -	\$ 3,150.00
Moran Township	\$12,000.00	\$ -	\$ -	\$ 12,000.00
Cap. Outlay	\$3,000.00	\$ -	\$ -	\$ 3,000.00
Sundry	\$1,300.00	\$ 500.00	\$ 100.00	\$ 700.00
Travel	\$0.00	\$ -	\$ -	\$ -
Miss Dig	\$0.00	\$ -	\$ -	\$ -
Print & Publishing	\$1,200.00	\$ 1,200.00	\$ -	\$ -
Gas & Oil	\$10,500.00	\$ -	\$ 10,500.00	\$ -
Refuse Collection	\$0.00	\$ -	\$ -	\$ -
Transfer to 641	\$0.00	\$ -	\$ -	\$ -
Member Dues/Subs	\$1,500.00	\$ 1,500.00	\$ -	\$ -
Equipment Fund	\$5,700.00	\$ 5,700.00	\$ -	\$ -
Subtotals	\$799,265.00	\$ 134,630.00	\$ 201,740.00	\$ 462,895.00

Debt Expenses

The City of St. Ignace has existing water system loans on the water system with debt (principal and interest) payments of \$430,135 per year.

Section B - Available Cash Balance

The City of St. Ignace had the following Cash available on December 31, 2019.

Reserve Funds as of December 31, 2020	
TABLE 3.	
Bond Reserves	
2000 Water Supply Reserve	\$ 146,000
2012 Water Supply Reserve	\$ 26,500
Repair, Replace and Improvement Reserve	
2000 Water Supply Reserve	\$ 85,560
Unrestricted	\$ 576,025
Total Reserves	\$ 834,085

How much money a community water system has in reserve is typically dependent on the following

- Age and condition of system
- Upcoming capital projects
- Upcoming major equipment replacement and rehabilitation expenses
- Debt requirements
- Time cycle between cash received from customers VS bills paid, especially debt payments

Because the water fund is an enterprise fund it is common to have at a minimum, two billing cycles worth of expenses. Although many communities have six to twelve months of expenses in cash.

The City of St. Ignace has an annual "Rate Budget of \$799,265 dollars.

The City invoices customers on a monthly basis

Two months of expenses equate to \$799,265 divided by 12 months of the year, then doubled for two months would equal \$66,605. The available cash in the bank does exceed this.

Section C - Capital Improvement Plan

A capital improvement plan was completed as part of the asset management program and the ideas were generated based on a recent general plan / reliability study by the City's engineer with input from the City staff. It is anticipated that the projects listed to be completed in 2020 will be funded through internal funds, rather than a loan.

The City's Water Filtration Plant is approximately fifty years old. However, the City has secured inspection reports indicating that both towers and ground storage tank are still in excellent shape and should last many more years.

CAPTITAL IMPROVEMENT PROJECTS

TABLE 4.

<u>Improvement</u>	<u>Cost</u>	<u>Priority</u>	<u>Year</u>
<b><i>Water Treatment Plant</i></b>			
Low Service Pump VFD	\$45,500	1	2020
Streaming Current Monitor	\$17,500	1	2020
Complete Filter No. 2/4 Rebuild	\$119,100	1	2020
<b><i>Rehabilitate Treatment Equipment</i></b>			
Low Service Pumps	\$45,000	1	2020
High Service Pumps	\$68,000	2	2025
Flocculator Drives	\$44,000	3	2030
Backwash Pump	\$12,000	2	2025
Surface Wash Pump	\$8,000	2	2025
Filter Valves	\$50,000	4	2035
High Service Pump VFD	\$63,100	2	2025
Added Treated Water Storage Volume	\$1,625,000	5	2040
Protective Coating Existing TWST	\$143,000	5	2040
	<b>\$2,240,200</b>		
<b><i>Water Storage</i></b>			
<b><i>Paint Storage Tanks</i></b>			
Marley Street Standpipe	\$130,000	2	2025
Second Street Elevated Tank	\$150,000	1	2020
Evergreen Shores Elevated Tank	\$190,000	3	2030
Water Storage Tank Mixers	\$197,600	3	2030
Marley Street High Capacity Pump	\$77,400	1	2020
Future Moran Township Elevated Storage	\$475,000	5	2035
	<b>\$1,220,000</b>		
<b><i>Distribution</i></b>			
Second Street WM - Collins To West Spring	\$645,000	2	2025
South State St. WM - Bertrand To Ferry Lane	\$411,000	1	2020
South State St. WM - Ferry Lane South To New 8"	\$176,000	1	2020
Graham WM - Church To South State	\$967,000	1	2020
Dock 3 WM - Paro To South State	\$792,000	1	2020
Goudreau WM - North State to Abe	\$381,000	3	2030
Hillicrest WM - Marley to Dolsee	\$250,000	2	2025
McCann WM - Chambers to Dickenson	\$308,000	2	2025
Truckey WM - Marley to I-75	\$147,000	2	2025
North State WM - Hazelton to Antoine	\$358,000	3	2030
Antoine WM - East of North State	\$147,000	2	2025
ROW WM - Fitch to Keightley	\$74,000	1	2020
Keightley WM - Connection East of Church	\$103,000	1	2020
Spring Street WM - Connection East of Dickerson	\$206,000	1	2020
Burdette To Elliot St. WM - At Ferry Lane	\$118,000	3	2025
Goudreau - First To Second Streets	\$103,000	4	2035
Glashaw-Reagon-Murray Connector WM	\$264,000	4	2035
Pine Street WM - Bus I-75 To Shore (Twp.)	\$103,000	5	2040
Spruce Street WM - Bus I-75 To Shore (Twp.)	\$118,000	5	2040
Spruce, Dolsey, Chambers HP District Extension	\$469,000	4	2035
	<b>\$6,140,000</b>		
<b>Total Cost of Priority 1 Improvements</b>	<b>\$3,183,500</b>		



## Section D - Equipment Replacement

An equipment replacement fund was developed as part of the user fee rate analysis. The replacement money reserved annually is calculated using the replacement cost divided by the life of the equipment. The current reserve funds are enough to make up the difference between life of the equipment and years remaining. The anticipated annual replacement and rehabilitation expenditures have a two percent cost of living added in for each year.

The replacement schedule was developed to replace assets with a life span of 20 years or less, (short lived assets), or routinely recurring maintenance items. The replacement schedule typically contains assets with a value of greater than \$1,000 dollars. The City of St. Ignace's list includes the replacement / rehabilitation of the well pumps, motors, SCADA system, etc. It also includes painting of the water tower, and water meter replacement among other items.

Maintenance of items that occur annually are included as part of the annual budget. Items that occur only once are typically included in the capital program. This Schedule does not replace the normal annual operation and maintenance budget. It merely reflects those elements that are major budget items that do NOT occur on an annual basis and thus are not in the typically O&M annual budget. These are generally items that constitute a major budget expenditure.

NOTE: The program will set an average annual annuity payment to cover the Repair and Replacement Scheduled expenses over the long term. Some years, the annual funding amount will be greater than the year's expenses, so money would go into the Repair and Replacement Reserve. Other years, the amount collected will be less than the expenses incurred, and the additional funding needed would come from the reserve account. The amount of the annual annuity would have to be enough to cover all the expenses over the 15 /20-year period.

Larger more long-term items like water distribution piping, wells, water towers, standby generators. etc or items with a longer life expectancy of greater than 15 years, or items that occur only once are typically included in a Capital Improvement program.

The City of St. Ignace's equipment replacement program is funded with an annual budget amount of \$30,620. Of this amount \$7,130 is required through a USDA RRI (Repair, replacement, and improvement reserve requirement), and is listed in the budget as such. The \$30,620 was added to the annual budget under the Equipment Replacement line item.

The total amount of \$30,620 is figured in the rate calculation.

See table below for details on each item tracked.

Equipment Replacement Table 5.					
Equipment	Cost	Years to Replace	Eff. Life	Per Year Cost	
Original Plant					
High Service pumps (1)	\$20,000.00	25	8	\$ 1,300.00	1*9*
Low Service pumps	\$15,000.00	25	8	\$ 1,000.00	
Chlorination Equip.	\$15,000.00	15	5	\$ 1,000.00	
Instr./computers (2)	\$40,000.00	15	7	\$ 2,700.00	2*
Lab Equipment	\$20,000.00	15	4	\$ 1,300.00	3*
Fluoride pump	\$1,500.00	15	3	\$ 100.00	
Booster pumps (2)	\$10,000.00	20	3	\$ 400.00	6*
Filer Building *7*8*10					
Flow Controller and panels (4)	\$21,000.00	15	4	\$ 1,400.00	4*
Backwash pump	\$15,000.00	20	3	\$ 750.00	
Surface Wash pump	\$8,000.00	20	3	\$ 400.00	
Chemical Feed Pumps	\$15,000.00	15	2	\$ 1,000.00	5*11*
Boiler	\$20,000.00	25	8	\$ 800.00	
Floc. Drives & Motors	\$1,000.00	20	8	\$ 500.00	
Pneumatic Valve Oper.	\$33,000.00	25	8	\$ 1,320.00	
Control Valve (SITWSP)	\$1,000.00	25	20	\$ 750.00	
Water Tower Painting					
Second St.	\$ 80,000.00	15	5	\$ 5,300.00	
Evergreen Shores	\$80,000.00	15	9	\$ 5,300.00	
Marley Standpipe	\$80,000.00	15	11	\$ 5,300.00	
Total				\$ 30,620.00	

Notes:

1\*Rebuilt #1 High Service pump in 2010, #2 in 2015 (\$12 to \$13,000 ea)

2\*Replaced computer in February of 2011 (\$2,500)

3\*Replaced Spectrophotometer in 2012 (\$2,500)

4\* 1 New Controller in 2012 (\$3,500)

5\*New Fluoride pump & scale 2013 (\$1,800)

6\* Replaced Booster Pump in 2015 (\$8,800) Motor (\$1,000)

7\* Repainted Filter #1 in 2015 (\$24,500)

8\* Repainted Filter #3 in 2016 (\$24,000)

9\* Rebuilt #3 in 2016 (\$15,000.00)

10\* Repainted Filter#4 in 2017 (\$33,000)

11\*Replace #3 Alum Pump in 2017 (\$2,500)

1) The annual expenditures in the cost per year column. This is based on the anticipation of equipment replacement or rehab. Some years items break down or are scheduled for replacement and some years nothing breaks down and nothing is schedule for repair / replacement.

2) The annual funding amount of \$30,620 dollars. This amount has been added to the budget and figures into the water rate charge calculation.

Section E - Final Rate Evaluation Calculation and Confirmation of Income

In summary. Here are the final rate calculations.

Rates Per Community Table 6.							
St. Ignace City		Commodity Charge = \$5.89 / 1000 gallons					
Class	Size	# of Cust.	RTS	Avg. use / 1,000	RTS monthly	Commodity Use Revenue	Total
Resid.	3/4"	1023	\$ 16.00	2.7	\$ 16,368.00	\$ 16,600.22	\$ 32,968.22
Comm.	3/4"	139	\$ 26.00	3.9	\$ 3,614.00	\$ 3,258.02	\$ 6,872.02
Comm.	1"	48	\$ 60.00	9.726	\$ 2,880.00	\$ 2,805.76	\$ 5,685.76
Comm.	1 1/2"	21	\$ 192.00	35.69	\$ 4,032.00	\$ 4,504.43	\$ 8,536.43
Comm.	2"	27	\$ 224.00	48.05	\$ 6,048.00	\$ 7,797.07	\$ 13,845.07
Comm.	3"	4	\$ 272.00	60.9	\$ 1,088.00	\$ 1,464.04	\$ 2,552.04
					\$ 34,030.00	\$ 36,429.54	\$ 70,459.54
Moran Twp		Commodity Charge = \$8.55 / 1000 gallons (\$8.05 to City, \$0.50 to Twp)					
Class	Size	# of Cust.	RTS to City	Avg. use / 1,000	RTS monthly	Commodity Use Revenue	Total
Resid.	3/4"	62	27.2	3.2	\$ 1,686.40	\$ 1,630.85	\$ 3,317.25
Comm.	3/4"	19	44.2	5.6	\$ 839.80	\$ 874.61	\$ 1,714.41
Comm.	1"	9	102	15.6	\$ 918.00	\$ 1,154.09	\$ 2,072.09
Comm.	1 1/2"	8	326	62.7	\$ 2,608.00	\$ 4,123.15	\$ 6,731.15
Comm.	2"	2	381	74.1	\$ 762.00	\$ 1,218.20	\$ 1,980.20
					\$ 6,814.20	\$ 9,000.90	\$ 15,815.10
St. Ignace Twp.		Commodity Charge = \$5.89 / 1000 gallons					
Class	Size	# of Cust.	RTS to City	Avg. use / 1,000	RTS monthly	Commodity Use Revenue	Total
Resid.	3/4"	177	16	2.8	\$ 2,832.00	\$ 2,978.56	\$ 5,810.56
Comm.	3/4"	14	26	4.3	\$ 364.00	\$ 361.80	\$ 725.80
Comm.	1"	8	60	10.82	\$ 480.00	\$ 520.23	\$ 100.23
Comm.	3"	1	320	767	\$ 320.00	\$ 4,609.67	\$ 1,929.67
					\$ 3,996.00	\$ 8,470.25	\$ 12,466.25
Grand Total Per Month							\$ 98,740.89

This provides a revenue of approximately \$98,740.89 per month or an annual revenue of approximately \$1,184,891.00.

This table provides confirmation of income based on the results of the rate analysis. As indicated in the spreadsheet, it provides data on how the revenue is generated.

It only applies to this current or upcoming fiscal year.

Section F - Explanation of Rate Calculation

Here is how the rate calculation takes place.

The calculation divides a portion of the annual budget by the number of annual EDU's to generate the Ready to Serve charge. For instance, (see table below) the first line item in the above table list the Administration and Operating Expenses with an annual budget of \$799,265.00. Approximately Forty five percent (45%) of this budget is collected as Fixed Expenses (\$44,840.20). This figure is then divided by the total annual number of EDU's to get a cost of \$.60 per EDU per billing cycle (month).

TOTAL EXPENSES TABLE 2.	
Administration and Operating Expense	\$799,265.00
RR&I Covenants	\$55,000.00
Debt	\$430,135.00
Total System Expenses	\$1,284,400.00

The remainder of the administration budget \$53,900.69 is then divided by the anticipated units of water invoiced to customers to get a cost of \$5.89 per unit (1,000 gallons) of water invoiced.

The EDU calculation is done for each line item. The total cost per EDU for each line item is then added together for a cost of \$16.00 per EDU per month for a ¾ inch meter within the City. This rate will increase for larger meter sizes.

The cost per unit of water is done for each line item also to generate the total cost per unit of water at \$2.50 per unit (1,000 gallons).

NOTE:

As indicated in the attached resolution the calculated rates for this evaluation have already been adopted by the City Council.

## Section G - Five Year Rate and Revenue Projection

### SUMMARY OF FIVE-YEAR AND TEN-YEAR INCOME AND RATE PROJECTIONS

The past five years have seen very little new home and water installations, existing customers were downsizing commercial meters, to save money on the RTS. Our commodity charge is still relatively low, when compared to our operational costs. The RTS charge is covering the Debt payments. There is a big difference in use, or commodity, and Debt payments between Residential and Commercial, causing an adjustment in EDU charges to large commercial users. The Misc. revenue, and extra RTS charges, are covering the extra needed costs, which can lead to problems. Billable flows in the City are down almost 11% from 2015. With the new EDU structure, Debt retirement payments are slightly higher from commercial users, while commercial usage is significantly higher than residential.

Water rates are staying fairly consistent, due to the fact that most of the City's Water System improvements were done over 20 years ago. Those improvements, which seemed costly at the time, are starting to show in why our rates are comparatively low to other communities. We just finished a 3 yr. step increase in commodity, which we must revisit.

We have to remember that when looking at the improvements to our Wastewater System. Costs seem high now, but they will be even higher in the future. Our Wastewater System improvements have just started within the last 10 to 15 years

## Section H - ASSET INVENTORY -

The asset inventory was done by the City's Superintendent and DPW staff and noted in the City of St. Ignace Water System General Plan and Water System Reliability Study. The City of St. Ignace is also in the process of creating a GIS-based asset management plan (Silversmith Data, Inc.) associated with the water, wastewater, and stormwater distribution system.

As part of the AMP the City has chosen to track the following major water system assets

1 Water Treatment Plant

2 Water Tower

1 Ground Storage tank

1 Booster Station

Water mains, main valves, fire hydrants, water meters

Water Treatment Plant –The following individual components of the WTP - pumps, motors, control panels, VFD, generator, chemical feed system, and some building maintenance. Basically, all items with a value of greater than \$1,000 dollars replacement cost.

Water Towers & Ground Storage Tank –Including all painting and maintenance cost and routine inspections.

Booster Station – All components of the facility

All short-lived asset components of the water storage tank, WTP, and booster station are tracked and budgeted for in the equipment replacement program, which is part of the user fee rate evaluation.

Distribution System -The City will track the age and condition of the water mains, valves, and hydrants.

The City of St. Ignace has been very proactive in maintaining its water distribution infrastructure. From 1998 to 2019, the City of St. Ignace invested to update the water distribution system. Please refer to the City of St. Ignace Water System General Plan to review the water main inventory for the City of St. Ignace.

The water towers and ground storage tank are all in good condition and are inspected every five years. No major issues or improvements for the water towers or ground storage tank are anticipated. The City can provide a copy of the most recent water tower inspection report upon request.



## Section I - Criticality Assessment and "Condition of Item" Definitions

The three most critical items in the water system are the WTP and Elevated Towers. The inventory is maintained in the USEPA's CUPSS program by the City staff. Please refer to *Section 6* of the AMP for the criticality ratings of each item.

Rating 1 - 5

Rating Description

- 5 Asset Unserviceable -  
Over 50% of asset requires replacement
- 4 Significant deterioration - Significant renewal/upgrade required (20 -40%)
- 3 Moderate deterioration - Significant maintenance required (10 -20%)
- 2 Minor Deterioration - Minor maintenance required (5%)
- 1 New of Excellent Condition - Only normal maintenance required

Unless noted otherwise, condition of item is based on the following formula.

Percent of life Consumed

- 0-10% = 1
- 20-25% = 2
- 25-40% = 3
- 40-60% = 4
- 60-70% = 4.5
- 70+% = 5

For instance, if an item is new and has only used up an estimated 8% of its life, the program will rate it a "1".

If it has used up 50% of its life the program will rate it a "4".

This formula works well for most water mains, valves, & hydrants. However, if an item's condition is different than the above calculation it is overwritten with the actual condition based on individual assessment. The assessment might include the number of breaks a water main has had in recent years, or a valve that leaks, is difficult to operate or is broken, a fire hydrant that is broken and has been taken out of service.

The condition of items such as wells, water towers etc is first based on this formula, and then the well and water tower inspection reports are taken into consideration to develop an individual condition rating for each item.

## Probability of failure calculation

g) Probability of Failure (POF): FOR WATER MAINS AND VALVES

Per EGLE Guidelines - Probability of failure is rated as follows.

<b>Probability of Failure</b>	
<b>Performance Rating</b>	<b>Description</b>
5	Imminent - Likely to occur in the life of the item
4	Probable - Will occur several times in the life of an item
3	Occasional - Likely to occur some- time in the life of an item
2	Remote - Unlikely but possible to occur in the life of an item
1	Improbable - So unlikely, it can be assumed occurrence may not be experienced

The following is a quote from the EGLE Asset Management Guide.

*To determine the probability of failure a utility needs to look at a number of factors: asset age, condition of asset, failure history, historical knowledge, experiences with that type of asset in general, maintenance records, and knowledge regarding how that type of asset is likely to fail.*

### Criticality - Consequence of Failure

At the current time, this is the rating system being used for "Criticality, Consequence of Failure" which is slightly different than the MDEQ Water Asset Management suggestion.

- 5 Catastrophic disruption    Major Facility Failure
- 4 Major disruption            Multiple Asset Failure
- 3 Moderate disruption        Major Asset
- 2 Minor disruption            Major Component
- 1 Insignificant disruption    Minor Component Failure

Factors considered in assessing consequence of failure.

The following items were considered.

Is this loss a:

Major loss of system capacity, major health effects, major costs, important LOS compromised

Massive system failure, severe health affect, persistent and extensive damage

Moderate loss of system capacity, moderate health effects, moderate costs, important LOS still achieved

Minor effect, minor loss of system capacity, minor costs

Slight effect, slight loss of system capacity,

Describes the methodology and formula used to calculate the criticality factor.

Criticality Rating = (Probability of Failure X the Consequence of Failure)

## Section K - Level of Service Goals

The LOS Goals were developed by the City's Utility Committee, with input from the Water Department employees, Billing Clerk. Items taken into considerations when establishing the goals were, age of system, capacity of system, available manhours for the water system, annual budget which is directly related to the rate charges, effect on water quality, and customer satisfaction.

Level of Service (LOS) defines the way in which the utility stakeholders want the utility to perform over the long term. The LOS plan was completed for the City and should become a fundamental part of how the utility is operated, through the setting of practical goals for the City's water system.

This report also contains a Level of Service document which is attached in Section 4.

*It is anticipated that each LOS goal will be assessed, evaluated graded on an annual basic using a 1-3 rating system, with 1 being excellent and 3 being poor.*

An example of this would be

*"All customer complaints will be investigated within 2 business days of reporting the complaint."*

Through the course of a year if it is felt that all responses were made within the two days the grade would be a "1", if our selfevaluation determined that we did not always respond appropriately the grade would be a "2", etc.

Another example;

*"Exercise ALL water distribution valves on rotating three year program."*

If our goal was achieved and one third of the valves were exercised throughout the year the grade would be a "1". If only twenty percent of the valves are exercised, instead of one third the rating could be a "2". If things occurred that prevented the valve exercise program from occurring a rating of "3" could be assigned, indicating that very few if any valves were exercised.

USER CHARGE SYSTEM

CITY OF ST. IGNACE

WATER SYSTEM

MARCH 2020

Bill Fraser / Public Works Director  
Brian Peterson / Plant Operator

## A. INTRODUCTION

The City of St. Ignace purchased the water system from Edison Sault Electric in 1979. The City then built a new Water Treatment Plant in 1982. This plant provided more chlorine detention time than the previous operation. When the plant was built, it was done with the knowledge that filtration would be added in the near future. The filtration phase of the process was completed in 1995. The plant presently serves 1,562 users, with an average billable flow of millions of gallons per month.

The operation and maintenance of the filtration plant & distribution system costs are accounted for with 2019 budget amounts. The OM& R for the water system are covered in Table 1. Replacement costs should also be budgeted. These are costs associated with major equipment replacement. This account should be funded by the commodity charge. The replacement costs are covered in Table 2, (pg. 6)

The City of St. Ignace supplies water to two surrounding townships, Moran and St. Ignace. The flows and numbers served are shown in Table 5, (pg. 10).

Table 4 (pg 9) shows equivalent users that set up our Readiness to Serve (RTS) or Capital Charge. Commodity charges, (on usage), are used to cover OM& R (pg.8). There are an estimated 15 to 20% seasonal users of the system. The capital charge is paid monthly throughout the year. Commodity Charges, also billed monthly, are much lower during the off season.

	City	MTWSP	SITWSP
Residential	1023	62	177
Com./Public	239	38	23
Total	1,262	100	200

TOTAL CUSTOMERS ON WATER SYSTEM 1,562

## BASIC REQUIREMENTS OF A USER CHARGE SYSTEM

The community must require that adequate revenues are collected for the operation, maintenance, and replacement of the treatment works. Replacement generally refers to equipment, which has a useful life of less than 20 years.

Each user must pay their proportional share of the OM&R cost of the treatment system, based on the user's total use. Flat Rate "User Charges" are "not" acceptable except in cases where the community does not have water meters. Volume discounts are also not acceptable.

The community must have an accurate record of revenues and expenditures for the water treatment work, which must be kept separate from other utility budgets, such as wastewater & streets.

The user charge must be enforceable. If there are other communities on the water treatment system, those communities must also have a user charge system and it also must be enforceable.

The user charge must take precedence over any terms or conditions of agreement of contracts which are inconsistent with the requirements of the Safe Drinking Water Act.

The user charge rate must be reviewed at least annually to insure that it is accurate. This must be done for the life of the system.

### OPERATION AND MAINTENANCE COST (OM&R)

The user charge system for the City of St. Ignace will be based upon the actual budget for the water system for the present year. The operation and maintenance cost for the water treatment facilities will be based upon existing treatment costs.

The breakdown of the operation and maintenance costs for the City of St. Ignace is shown in Table 1.

OPERATING EXPENSES (table 1)		2020		
(values shown in dollars)		203	549	963
	TOTAL	Administration	Line Maintenance	Plant Operations
Labor	\$289,500.00	\$28,500.00	\$86,000.00	\$175,000.00
Overhead	\$178,950.00	\$30,630.00	\$58,440.00	\$89,880.00
Oper. Supplies	\$53,000.00		\$6,000.00	\$47,000.00
Cont. Services	\$28,000.00		\$8,000.00	\$20,000.00
Prof. Services	\$3,500.00	\$3,500.00		
Uniforms	\$1,065.00		\$700.00	\$365.00
General Fund	\$42,500.00	\$42,500.00		
Equip. Rental	\$25,000.00		\$25,000.00	
Communications	\$1,000.00			\$1,000.00
Insurance, Fleet & Prop.	\$35,500.00			\$35,500.00
Repair & Maint.	\$8,300.00		\$7,000.00	\$1,300.00
Utilities & Cable	\$74,000.00			\$74,000.00
Office Supplies	\$0.00			
Transfer to 729	\$19,600.00	\$19,600.00		
Education & Train.	\$4,150.00	\$1,000.00		\$3,150.00
Moran Township	\$12,000.00			\$12,000.00
Cap. Outlay	\$3,000.00			\$3,000.00
Sundry	\$1,300.00	\$500.00	\$100.00	\$700.00
Travel	\$0.00			

Miss Dig	\$0.00			
Print & Publishing	\$1,200.00	\$1,200.00		
Gas & Oil	\$10,500.00		\$10,500.00	
Refuse Collection	\$0.00			
Transfer to 641	\$0.00			
Memb. Dues/Subs	\$1,500.00	\$1,500.00		
Equipment Fund	\$5,700.00	\$5,700.00		
Subtotals	\$799,265.00	\$134,630.00	\$201,740.00	\$462,895.00
Total		\$799,265.00		
RR&I Covenants		\$55,000.00		
Operating Expense		\$854,265.00		
Debt		\$430,135.00		
Total Operating Expense		\$1,284,400.00		



REPLACEMENT COSTS (Table 2)  
(values shown in dollars)

Equipment	Cost	Years to Replace	Eff. Life	Per Year Cost	
Original Plant					
High Service pumps (1)	\$20,000.00	25	8	\$1,300.00	1*9*
Low Service pumps	\$15,000.00	25	8	\$1,000.00	
Chlorination Equip.	\$15,000.00	15	5	\$1,000.00	
Instr./computers (2)	\$40,000.00	15	7	\$2,700.00	2*
Lab Equipment	\$20,000.00	15	4	\$1,300.00	3*
Fluoride pump	\$1,500.00	15	3	\$100.00	
Booster pumps (2)	\$10,000.00	20	3	\$400.00	6*
Filer Building *7*8*10					
Flow Controller and panels (4)	\$21,000.00	15	4	\$1,400.00	4*
Backwash pump	\$15,000.00	20	3	\$750.00	
Surface Wash pump	\$8,000.00	20	3	\$400.00	
Chemical Feed Pumps	\$15,000.00	15	2	\$1,000.00	5*11*
Boiler	\$20,000.00	25	8	\$800.00	
Floc. Drives & Motors	\$1,000.00	20	8	\$500.00	
Pneumatic Valve Oper.	\$33,000.00	25	8	\$1,320.00	
Control Valve (SITWSP)	\$1,000.00	25	20	\$750.00	
Total				\$14,720.00	

Water Tower Painting

Second St.	80,000	15	5	5,300
Evergreen Shores	80,000	15	9	5,300
Marley Standpipe	80,000	15	11	5,300

(tower rent brings in \$21,000.00 per year, which helps to offset this cost)

1\*Rebuilt #1 High Service pump in 2010, #2 in 2015 (\$12 to \$13,000 ea)

2\*Replaced computer in February of 2011 (\$2,500)

3\*Replaced Spectrophotometer in 2012 (\$2,500)

4\* 1 New Controller in 2012 (\$3,500)

5\*New Fluoride pump & scale 2013 (\$1,800)

6\* Replaced Booster Pump in 2015 (\$8,800) Motor (\$1,000)

7\* Repainted Filter #1 in 2015 (\$24,500)

8\* Repainted Filter #3 in 2016 (\$24,000)

9\* Rebuilt #3 in 2016 (\$15,000.00)

10\* Repainted Filter#4 in 2017 (\$33,000)

11\*Replace #3 Alum Pump in 2017 (\$2,500)

## REPLACEMENT COST

Replacement costs are to be included as a consideration of operation and maintenance cost under the user charge system. Replacement cost shall be paid for by funds generated by the user charge system. These funds shall be used to cover the cost of replacing pieces of equipment which normally will have a useful life of 20 years or less.

The replacement costs are to be proportioned among the users according to actual use. Table 2 lists the equipment along with the projected time of replacement and cost at that time.

## CALCULATION OF USER CHARGE

The user charge system is based upon operation and maintenance, replacement and administration (OM&R) cost of the water distribution and treatment system. The user charge should also include debt requirements of the system, this is done with a Readiness to Serve Charge (RTS). User charges, as calculated, are based upon the principle of imposing the costs previously listed directly upon the demand and use of the system, so that each user pays their proportionate share. The annual costs are generated using an average billable daily pumping rate of 295,840 gpd, from the water treatment plant. The distribution of charges will be according to each users proportionate water usage. Water loss includes leakage, hydrant pumping, main flushing, faulty meter readings, let runs etc.

2019	Billable water pump	107.982 MG	46.5%
	Accounted for water	105.032 MG	45.3%
	Lost Water	18.986 MG	8.2%
	Total pumpage from WTP	232.000 MG	100.0 %
	Number of customers	1,562	

(Billable water up .872MG gals. from 2018)

( The "Accounted for water" is higher from last year due to Flushing (2 MG) WTP Service water (6.2 MG) and breaks and let runs (11.786 MG). Our plant flow during shut down hours is less than 150,000 gallons/night)

CLASS AND FLOW BREAKDOWN (table 3)

Flows are broken down into two user classes: residential & commercial/public.

Class	# of customers City-Moran-St. Ignace	Daily flow-gpd	annual billable flow-MG	%of total billable
Residential	1,023 – 62 – 177	115.650	42.160	18.4 39.3
Com/Pub	239 – 38 – 23	177.945	64.950	28.4 60.7
TOTALS	1,262 100 200	293,452	107.110	46.8 100

WATER SYSTEM OM&R RATE

The commodity charge is the charge required to recover those costs which vary with the OM&R of the system. The commodity charge for the water system is based on the projected treatment & maintenance costs, including replacement costs. The water system commodity charge is calculated below.

Water Commodity Charge:

2019 anticipated annual cost divided by previous year billable annual flow (table 3)  
 \$854,265.00 divided by 107.982 MG (sold) = \$79.11/thou.  
 The present commodity charge=\$5.89/thou.  
 (The \$854,265.00.00 annual cost, contains payment to RR&I fund of \$55,000.00)

The City's ordinance states that there be no unmetered users of the water system. There is no discount for large commercial users. The Water Department collects about \$95,000 in revenue other than commodity charges. These collections include, penalty, service charges, connection fees, hydrant rental, water tower rent and other miscellaneous charges, such as water testing. A commodity rate of \$5.49/thou., would be the charge required if the additional revenue received was counted.

The City of St. Ignace is responsible for 24 meters within the City (15 of which have sewer). These meters are not charged RTS for water or sewer. They are charged for the commodity used by each meter. These meters account for 149 EDU's for water and 75 EDU's sewer. (ex. Marina, City Hall, parks, etc.) These meters are not used for total customers or total EDU's.

EQUIVALENT DWELLING USERS (EDU) (table 4)

Equivalent users: City of St. Ignace, Moran and St. Ignace Townships ¾" (res)=1, ¾" (com./pub.)=1.6, 1"=3.7, 1.5"=12, 2"=14, 3"=17

	CITY		MTWSP		SITWSP	
	# of customers	EDU	# of cust.	EDU	# of cust.	EDU
Residential		1,023 = 1,023		62 = 62		177 = 177
Com./Public	¾"	139 = 222		19 = 31		14 = 22
	1"	48 = 178		9 = 33		8 = 30
	1 ½"	21 = 252		8 = 96		
	2"	27 = 378		1 = 14		
	3"	4 = 68				1 = 17
Sub-total		239 = 1,098		38 = 175		23 = 69
Totals		1,262 = 2,121		100 = 250		200 = 246

Total equivalent user (EDU) for the water system = 2,617  
(1,562) total users of the system)

There were 3,410 thousand gallons sold – per EDU/mo, with 2,784 gallons/res. EDU & 4,033 gallons used/ commercial/public EDU

NON-CITY USER CHARGES

Moran and St. Ignace Townships are the non-city users of the City of St. Ignace Water System. St. Ignace Township's rates are equal to the City of St. Ignace, the reason being that the system is owned by the City. Moran Township owns their system.

Moran Township residents pay a surcharge on it's capital (RTS) charge which is based upon meter size and charged accordingly.

Meter	City	MTWSP	Total RTS
¾" res.	\$27.20 +	\$7.18	= \$34.38
¾" com/pub	44.20 +	7.18	= 51.38
1"	102.00 +	17.95	= 119.95
1 ½"	326.00 +	25.13	= 351.13
2"	381.00 +	89.03	= 470.03

The surcharge is 13.5% of the overall "RTS," which is returned to Moran Township, less a 5% administrative and collection fee.

MTWSP residents also pay the City a 1.7 factor on commodity, which at the present time is \$7.81/1000. Moran Township has a commodity surcharge on their water system users. As of 10/01/08, MTWSP customers pay an additional \$0.50/thousand gal., which is a MTWSP surcharge. Total commodity charge, for MTWSP users is = \$7.93

FLOW DISTRIBUTION BETWEEN – CITY, MORAN & ST. IGNACE TOWNSHIPS.  
(Table 5)

Flows are broken down into City of St. Ignace, Moran Township & St. Ignace Township, also by residential and commercial/public.

Class	CITY		MTWP		SITWP	
	gpd	MG/yr	gpd	MG/yr	gpd	MG/yr
Residential	95,255	34.768	6,181	2.256	16,184	5.907
Com./Public	121,663	44.407	27,649	10.092	28,909	10.551

Percentage of billable flow to City of St. Ignace, Moran Twp, St. Ignace Twp.

	City	MTWP	SITWP	
Residential	32.2	2.1	5.5	39.8
Com./Public	42.2	9.3	8.7	60.2
Totals	74.4	11.4	14.2	100

DEBT SERVICE

The debt service of the Water Department should be funded by the flat rate or "Readiness to Serve" (RTS). The RTS is paid by the customers connected to the City's Water System, as a year round monthly rate. The City's debt payment for 2020 is \$430,135.00. There are 2,617 equivalent users of the water department.

The RTS for water is calculated as follows-

Debt Payment - \$430,135 divided by 2,617 (# of equivalent users),  
this equals - \$164.36 per year per equivalent user.  
Or, \$3.70 per equivalent user/month.

Currently our "per month" charge is \$16.00 per EDU

Debt Payment- \$175,000 x 2 ½ % interest for the MDOT Water Main Replacement Project 2017: Project will be completely paid in December of 2032. St. Ignace Township Users are charged a monthly fee to pay for this loan.

Residential ¾" – 177 - \$5.80/month  
Commercial ¾" – 14 - \$9.28/month  
1" - 8 - \$21.46/month  
3" - 1 - \$98.60/month  
Total per month - \$1,426.80 x 12 months = \$17,121.60

Debt Payments CITY	MTWSP	SITWSP TOTALS	
Residential	39.1%	2.3%	6.7% 48.1%
Commercial	42.5%	6.7%	2.7% 51.9%
TOTALS	81.6%	9.0%	9.4% 100%

MONTHLY USAGE & REVENUE CALCULATION (table 6) - (based on 2019 usage of 107.890 MG and 2019 rates)

City – Commodity chg. = \$5.89/1000 gal.

St. Ignace City

Class	Size	# of Cust.	RTS	Avg. use / 1,000	RTS monthly	Commodity Use	
						Revenue	Total
Resid.	3/4"	1023	16	2.7	16368.00	16600.22	32968.22
Comm.	3/4"	139	26	3.9	3614.00	3258.02	6872.02
Comm.	1"	48	60	9.726	2880.00	2805.76	5685.76
	1						
Comm.	1/2"	21	192	35.69	4032.00	4504.43	8536.43
Comm.	2"	27	224	48.05	6048.00	7797.07	13845.07
Comm.	3"	4	272	60.9	1088.00	1464.04	2552.04
					34030.00	36429.54	70459.54

Moran Township – Commodity chg. = \$8.55/1000 gal ( ) shows MTWSP rate with surcharge. \$8.05 goes to City, \$0.50 is returned to MTWSP.

Moran Twp

Class	Size	# of Cust.	RTS to City	Avg. use / 1,000	RTS monthly	Commodity Use		Total charge
						Revenue	Total	
Resid.	3/4"	62	27.2	3.2	1686.40	1630.85	3317.25	34.38
Comm.	3/4"	19	44.2	5.6	839.80	874.61	1714.41	51.38
Comm.	1"	9	102	15.6	918.00	1154.09	2072.09	119.95
	1							
Comm.	1/2"	8	326	62.7	2608.00	4123.15	6731.15	351.13
Comm.	2"	2	381	74.1	762.00	1218.20	1980.20	470.03
Comm.	3"	0						0
					6814.20	9000.90	15815.10	

St. Ignace Township – Commodity chg. = \$5.89/1000 gal.

St. Ignace Twp.

Class	Size	# of Cust.	RTS to City	Avg. use / 1,000	RTS monthly	Commodity Use		Total charge
						Revenue	Total	
Resid.	3/4"	177	16	2.8	2832	2978.56	5810.56	26.96
Comm.	3/4"	14	26	4.3	364	361.80	725.80	59.33
Comm.	1"	8	60	10.82	480	520.23	1000.23	146.66
	1							
Comm.	1/2"	0			0	0.00	0.00	
Comm.	2"	0	0		0	0.00	0.00	
Comm.	3"	1	320	767	320	4609.67	4929.67	687.47
					3996	8470.2536	12466.25	

98740.90 month 1184891.00 year

## OVERVIEW

2017 saw very little new home and water installations, existing customers were downsizing commercial meters, to save money on RTS. Our commodity charge is still relatively low, when compared to our operational costs (pg. 8 Water System OM&R Rate). The RTS (Readiness to Serve) charge is covering the Debt payments (pg. 10- Debt Service), There is a big difference in use, or commodity, and Debt payments between Residential and Commercial, causing an adjustment in EDU charges to large commercial users. The Misc. revenue, and extra RTS charges, are covering the extra needed costs, which can lead to problems. Billable flows in the City are down almost 11% from 2015. With the new EDU structure, Debt retirement payments are slightly higher from commercial users, while commercial usage is significantly higher than residential. (Table 5).

Water rates are staying fairly consistent, due to the fact that most of the City's Water System improvements were done over 20 years ago. Those improvements, which seemed costly at the time, are starting to show in why our rates are comparatively low to other communities. We just finished a 3 yr. step increase in commodity, which we must revisit.

We have to remember that when looking at the improvements to our Wastewater System. Costs seem high now, but, they will be even higher in the future. Our Wastewater System improvements have just started within the last 10 to 15 years

In 2019 we will be rebuilding a high service pump at the water plant in the amount of \$13,000.00 and we also will be replacing the booster pump at the Marley street standpipe.

CITY OF ST. IGNACE RATE HISTORY

RTS – Ready to Serve – Debt service payments

COM – Commodity - Operation and Maintenance of System & Replacement (residential rates are used for RTS)

WATER

1984	1985	1991	1992	1995	1998	2005	2012	2013	2014	2015	2016	2017	2018	2019	2020
RTS															
\$7.85	11.49	4.94	16.66	16.66	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
COM.															
\$0.99	1.43	1.43	1.66	2.36	2.36	4.72	4.81	4.91	5.06	5.21	5.39	5.55	5.76	5.89	6.01

City funded improvements to Water & Sewer System

1979 – Purchased Water System from Edison

1981 – New Treatment Plant, about 5 miles of watermain

1986 – State Street (Spring to Marquette – 3,400ft.)

1990 – North State St., - 5,600 ft. of watermain

1994 – filtration system added to Plant, 15,000 ft. of watermain

1995 – 5,300 ft. of watermain

2000 – 26,000 ft. of watermain

2004 – Repaint Marley Standpipe

2015/16 – 1,850 ft. of watermain (Fitch & Truckey)

Overall we have installed over 139,000 ft. of watermain, with a cost of almost 15 million dollars of improvements (9 mil in loans, 6 mil in grants).

SEWER

1982	*1984	1988	1994	2003	2005	2010	2012	2013	2014	2015	2016	2017	2018	2019	2020
RT															
\$6.75	3.52	6.93	16.29	15.00	15.00	16.75	18.25	19.25	19.75	19.75	20.25	20.25	20.25	20.25	20.25
COM															
\$2.25	2.27	2.91	2.63	2.93	3.68	4.68	5.53	5.78	5.95	6.12	6.70	6.80	6.90	7.00	7.21

1988 – New WWTP, Forcemain, over 3,500' san. lines \$3.5 M (EPA)

1993 – New Sanitary Sewer line for North State Street at over \$250,000.00 (State)

1999 – about \$1 M in improvements to WWTP & Reagan LSta. (USDA-RD)

2005 – St. Ignace TWSP was connected to St. Ignace WWTP (USDA-RD)

2009 – Mandated improvements needed - Forcemain on Cheeseman Rd., Heritage Lift Station and WWTP Improvements. \$3.8 M, funded by SRF

2010 – Sanitary sewer replacement on Portage Rd. 1.4 million w/\$560,000 principal forgiveness. (SRF)

2011 – WWTP upgrades, New Cell #4a, abandon Cell #3, Reagan St. Lift Station rebuild and upgrades \$2.4 million in improvements. (USDA-RD)

2016 – Sanitary sewer replacement from MSH, to the North, to Stockbridge LSta., South. 4,335' of 12" & 1,880' of 8". (Replacing 8" & 6" old pipe.) 1.57M by SRF

\* 1979 to 1984 the RTS allowed for 3 thousand gallons of usage.

Overall, over 57,000' of gravity sanitary sewer has been installed, in the City & 17,220 ft. of san. sewer in townships. 30,350 ft. of forcemain has been installed. The WWTP has been built and partially rebuilt. 6 lift stations, two different styles of aeration, ultra-violet disinfection, and an automatic screening system installed since 1988.



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*Sewer Rates*

RESIDENTIAL 1/4" 1.8(EDU) 1" 3.5(EDU) 1 1/2" 10.5(EDU) 2" 12.5(EDU) 3" 16(EDU)

WHEREAS, as provided by the City Charter for the preservation of the public peace, health or safety, all sewer users shall pay the following:

- \$6.80 per thousand gallons of water used, effective April 1, 2017
- \$6.90 per thousand gallons of water used, effective March 1, 2018
- \$7.00 per thousand gallons of water used, effective March 1, 2019
- \$7.11 per thousand gallons of water used, effective March 1, 2020
- \$7.22 per thousand gallons of water used, effective March 1, 2021

THEREFORE BE IT RESOLVED, that said Ordinances, as amended, shall remain as heretofore adopted.

THEREFORE BE IT RESOLVED, that the City of Saint Ignace adopts the above stated rates.

ROLL CALL VOTE:

Yes: Councilmembers St. Louis, Tremble, Mayor Litzner, Councilmember Clapperton.

No: None.

Absent: Mayor Pro-Tem Paquin, Councilmembers Fullerton and Paquin.

Resolution declared Adopted.

## 2. RESOLUTION FOR WATER RATES:

### RESOLUTION

The following Resolution was offered by Councilmember Tremble and supported by Councilmember Clapperton:

WHEREAS, Section 34-54, "Water Rates and Charges" of the City of Saint Ignace Water System Ordinance establishes water rates and charges for services furnished by the water system at rates currently established or as hereafter adopted by resolution of the City Council from time to time;

WHEREAS, effective April 1, 2017 as provided by the City Charter for the preservation of the public peace, health or safety, Readiness to Serve factor will be charged as follows;

Residential 1;

3/4" 1.625(EDU) 1" 3.75(EDU) 1 1/2" 12(EDU) 2" 14(EDU) 3" 17(EDU)

WHEREAS, as provided by the City Charter for the preservation of the public peace, health or safety, all water users shall pay the following:

- \$5.55 per thousand gallons of water used, effective April 1, 2017
- \$5.72 per thousand gallons of water used, effective March 1, 2018
- \$5.89 per thousand gallons of water used, effective March 1, 2019
- \$6.01 per thousand gallons of water used, effective March 1, 2020
- \$6.13 per thousand gallons of water used, effective March 1, 2021

THEREFORE BE IT RESOLVED, that said Ordinances, as amended, shall remain as heretofore adopted.

THEREFORE BE IT RESOLVED, that the City of Saint Ignace adopts the above stated rates.

ROLL CALL VOTE:

Yes: Councilmember Tremble, Mayor Litzner, Councilmembers Clapperton and St. Louis.

No: None.

Absent: Mayor Pro-Tem Paquin, Councilmembers Fullerton and Paquin.

Resolution declared Adopted.

*Water Rates*

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## Level of Service

## City of St. Ignace

### Level of Service Statement

Level of Service (LOS) defines the way in which the utility stakeholders want the utility to perform over the long term. The LOS plan below was completed and should become a fundamental part of how the utility is operated, through the setting of practical goals for the City's water system.

Areas	GOALS / OBJECTIVES	LEVEL OF SERVICE
<b>Safe Drinking Water</b>	All federal and state water quality regulations will be met	Perform all required monitoring
<b>Health, Safety</b>	To provide a safe and injury free work place	Conduct regular safety meetings  No MIOSHA safety violations
<b>Security</b>	Secure all water installations from break ins / intrusions'	Make sure all water installations have barriers of security
<b>Operator certification</b>	Must have operator in charge & backup operator on staff	The City of St. Ignace will have on staff at least one certified operator albe to run plant.
<b>Customer complaints</b>	To provide excellent customer service	All customer complaints will be investigated within 2 business days of reporting the complaint.  Results of complaint will be reported to customer verbally, via the phone, in person, or in writing
<b>Upcoming regulatory changes</b>	Be aware of regulatory changes and comply with changes as they occur	Attend industry conferences and training sessions to stay abreast of changes and requirements  Request annual meeting with local EGLE representative to insure compliance

<b>Response time</b>	To provide excellent customer service	Customer emergency response time within 2 hours  Customers will receive written notice 24 hours in advance of any planned interruption in service.
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<b>Wells -Supply water</b>	Maintain all well related equipment. Focusing on preventative maintenance to prevent unscheduled breakdown	Wells will be inspected every year or every two years by a Well Specialist  Documentation of all maintenance performed
<b>Alternative Power Source</b>	Goals - all wells have a permanent generator or back up power? - or portable generator - generator service contract	Annual inspections of generators by outside professionals.
	Maintain all well buildings	Keep building painted, and clean

<b>Quality Drinking Water</b>	To provide high quality good tasting drinking water	Comply with EGLE testing requirements
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**Distribution System**

Distribution System Valves

Exercise ALL water distribution valves on rotating 3 year program. To insure all valves are exercised every 3 years.

Provide adequate manpower to perform valve exercise program

Have written documentation of valve exercising

Insure that 90% of valves function properly

Fire Hydrants

Insure that 100% Of fire hydrants are in good working order

Water Main Flushing

Water mains will be flushed every 12 Months

Provide adequate manpower to perform water main flushing

Have written documentation of water main / hydrant flushing

Under normal conditions, pressures will be maintained between 30 and 70 psi.

General System Maintenance

Insure water rates and budget are adequate to provide manpower to perform valve exercising, hydrant maintenance, water main flushing and replacement if necessary

Strive to maintain water loss will be maintained below 17%

<b>Water Storage</b>	Maintain water tower for longer life span	<p>Professionally Inspect every five years for integrity Complete all maintenance as suggested in inspection reports</p> <p>Insure Rates and Budget are adequate to support major maintenance activities (painting) as recommended through inspection process</p> <p>All storage requirements will be met as indicated under MDEQ Reliability Study Guidelines</p>
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<b>Administrative</b>	<p>Provide excellent customer service</p> <p>Insure customers bills are accurate</p>	<p>Follow up on all complaints to insure a finite outcome</p> <p>Review any discrepancy</p>
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<b>Financial</b>	Be financially solvent & operate water system in the black including reserve funding	<p>Review Water Rates every 3 - 5 years.</p> <p>Adopt sufficient rates to meet adopted budget</p> <p>Insure adopted annual budget includes results of asset management program</p> <p>Maintain 6 months operating revenue in reserve accounts at all times</p>
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<b>Rules and Regulations</b>	Monitor & enforce	Update & review rules annually - Cross connections, Site sampling plan, Required Lab analysis, Consumer confidence report, Safety program,
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<b>Cross Connections</b>	<p>Annually review cross connection program and update as needed</p> <p>Comply with adopted ordinance</p>	<p>Perform inspections as required with in house staff</p> <p>Attend seminars to keep staff up-to-date with any changes in rule.</p>
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## RESOLUTION

The following Resolution was offered for adoption by Councilmember Fullerton, supported by Councilmember St. Louis:

**WHEREAS**, the St. Ignace City Council adopts the Level of Service done by Rural Water; and

**WHEREAS**, the St. Ignace City Council recognizes the need for this service for Water Asset Management; and

**NOW THEREFORE BE IT RESOLVED**, that the St. Ignace City Council acknowledges that the Level of Service has made the Water Asset Management compliant with EGLE; and

**BE IT FURTHER RESOLVED** that the St. Ignace City Council approves of the Level of Service done by Rural Water.

Roll Call Vote:

Yes: Councilmember Fullerton, Mayor Litzner, Mayor Pro-Tem Paquin, Councilmembers Pelter, St. Louis, Tremble and Clapperton.

No: None.

Absent: None.

Resolution declared Adopted.

I hereby certify that the above Resolution is a true copy of a Resolution presented to the St. Ignace City Council for adoption at a regular meeting held Monday, September 21, 2020, at 7:00 p.m.

  
\_\_\_\_\_  
Andrea Insley, City Clerk

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# Asset Check Up Report

**Prepared for:**

ST. IGNACE WATER TREATMENT  
ST.IGNACE, MICHIGAN

**Prepared by:**

LES C THERRIAN  
FACILITY MANAGER

**Prepared using:**

## Table Of Contents

Right-click this sentence and select "Update Field " to see the table of contents.

## 1 Introduction

*If this report will be presented to town council or other members of your asset management team you may want to customize an introduction. Below is some example text.*

The Asset Check Up report includes an overview of the [Enter your utility name], an asset summary and risk matrix which includes a listing of the high risk assets, and asset details and the associated task scheduled for the upcoming years.

If your utility is a drinking water utility:

The [Enter your utility name] consists of Source, Pumping Facility, Treatment, Storage, Distribution, Other assets serving [insert community names]. The utility delivers [XXX] million gallons per day of water to [XXX] of connections. The utility [is/is not] interconnected or shared with other drinking utilities. [if interconnected, indicate name of utilities interconnected with, points of interconnection, average and peak flows, and legal arrangements]. Maps of the utility are maintained by the utility at [insert location].

The following is a breakdown of customer categories:

1. [Example Commercial: 50%, enter your utility's breakdown]
- 2.

If your utility is a wastewater water utility:



The [Enter your utility name] consists of Pumping Facility, Treatment, Storage, Collection, Other assets serving the communities of [insert community names]. The utility manages [XXX] million gallons per day. The utility [is/is not] interconnected or shared with other wastewater utilities. [if interconnected, indicate name of utilities interconnected with, points of interconnection, average and peak flows, and legal arrangements]. The utility maintains maps of the utility at [insert location].

## 2 Asset Schematic

## 3 Asset Inventory

The following sections discuss the asset risk, asset summary and asset details including the task summaries for each asset. The asset risk matrix plots each asset according to its risk value which is assigned based on the Consequence and Probability of Failure. CUPSS calculated this risk value based on what you entered for each asset's condition, consequence of failure, redundancy and expected useful life. The Asset Inventory Summary, Table 3.1, identifies the high, medium and low risk assets. Those assets identified as high risk will need immediate attention and evaluation.

### 3.1 Asset Inventory Summary

*Figure 3.1 Asset Risk Matrix - \*NOTE REFER TO TABLE BELOW USING PRIORITY NUMBERS WITHIN THE ASSET RISK MATRIX*

*Table 3.1 Asset Inventory Summary*

Priority	Asset	Category	Asset Type	Risk	Replacement Date
1	treatment plant	Treatment	Buildings	High Risk – Immediate Attention	02/01/2019
2	12" main	Source	Transmission Mains	High Risk – Immediate Attention	02/01/2019
3	still (distilled water)	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
4	still (filters)	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
5	intake pipe	Source	Intake Structures	High Risk –	02/01/2022

				Immediate Attention	
6	watermeter & valve	Distribution	Meters	High Risk – Immediate Attention	02/01/2013
7	ground storage	Treatment	Concrete & Metal Storage Tanks	High Risk – Immediate Attention	02/01/2027
8	incubator	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2013
9	well house	Source	Buildings	High Risk – Immediate Attention	02/01/2019
10	pocket colorimeter	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
11	conductivity meter	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
12	colony counter	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
13	balance	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
14	Scada system	Pumping Facility	Motor Controls / Drives	High Risk – Immediate Attention	02/01/2012
15	W US2 water main	Distribution	Distribution / Collection Mains	High Risk – Immediate Attention	02/01/2022
16	turbidimeter	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2013
17	Chlorine cylinder scales	Treatment	Disinfection Equipment	High Risk – Immediate Attention	02/01/2012
18	12" water main	Distribution	Distribution / Collection Mains	High Risk – Immediate Attention	02/01/2024

19	booster pump 2	Distribution	Pumping Equipment	High Risk – Immediate Attention	02/01/2012
20	booster pump 1	Distribution	Pumping Equipment	High Risk – Immediate Attention	02/01/2012
21	hot/stir plate	Treatment	Lab / Monitoring Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
22	vacuum pump	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2014
23	glass ware	Treatment	Lab / Monitoring Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
24	16" water main	Distribution	Distribution / Collection Mains	High Risk – Immediate Attention	02/01/2027
25	automatic valve	Distribution	Valves	Medium Risk – Aggressive Monitoring	02/01/2030
26	lawn tractor	vehicles/equipment	Tools and Shop Equipment	High Risk – Immediate Attention	02/01/2018
27	UV light wand	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
28	incubator	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
29	autoclave	Treatment	Lab / Monitoring Equipment	High Risk – Immediate Attention	02/01/2012
30	explorer	vehicles/equipment	Transportation Equipment	High Risk – Immediate Attention	02/01/2012
31	3/4 ton pick-up	vehicles/equipment	Transportation Equipment	High Risk – Immediate Attention	02/01/2012
32	watermain valves	Distribution	Valves	High Risk – Immediate	02/01/2012

				Attention	
33	Air Valves	Treatment	Valves	High Risk – Immediate Attention	02/01/2012
34	Abe/Goudreau watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
35	8" water main	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2023
36	Turbidity meter	Treatment	Sensors	Medium Risk – Aggressive Monitoring	02/01/2017
37	Backwash Pump	Treatment	Treatment Equipment	Medium Risk – Aggressive Monitoring	02/01/2021
38	hydrants	Distribution	Hydrants	Medium Risk – Aggressive Monitoring	02/01/2026
39	standard methods	Treatment	Lab / Monitoring Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
40	6" water main	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2025
41	Flouride pump	Treatment	Chemical Feed	Medium Risk – Aggressive Monitoring	02/01/2019
42	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
43	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
44	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
45	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
46	8" watermain	Distribution	Distribution /	Medium Risk –	02/01/2031

			Collection Mains	Aggressive Monitoring	
47	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
48	Abe watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
49	Glashaw St. watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
50	Lake St.6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
51	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
52	pH meter	Treatment	Lab / Monitoring Equipment	Medium Risk – Aggressive Monitoring	02/01/2017
53	stir plate (mini)	Treatment	Lab / Monitoring Equipment	Low Risk – Routine Maintenance	02/01/2014
54	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2033
55	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2033
56	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2033
57	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2033
58	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2033
59	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2033

60	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2033
61	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2033
62	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2034
63	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2034
64	1 ton pick-up	vehicles/equipment	Transportation Equipment	Medium Risk – Aggressive Monitoring	02/01/2018
65	backhoe	vehicles/equipment	Tools and Shop Equipment	Medium Risk – Aggressive Monitoring	02/01/2022
66	Flouride Cylinder scales	Treatment	Chemical Feed	Low Risk – Routine Maintenance	02/01/2019
67	Soda Ash Mixer	Treatment	Chemical Feed	Low Risk – Routine Maintenance	02/01/2019
68	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2035
69	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2035
70	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2035
71	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
72	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
73	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive	02/01/2038

				Monitoring	
74	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
75	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
76	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
77	6" watermian	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
78	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
79	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
80	10" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
81	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
82	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
83	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
84	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
85	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
86	12" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2038
87	12" watermain	Distribution	Distribution /	Medium Risk –	02/01/2038

			Collection Mains	Aggressive Monitoring	
88	stationary generator	Treatment	Generators	Low Risk – Routine Maintenance	02/01/2035
89	pump 2	Source	Pumping Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
90	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
91	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
92	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
93	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
94	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
95	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
96	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
97	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
98	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
99	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
100	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040



101	6" watermain	Storage	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2040
102	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2041
103	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2041
104	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2041
105	mini fridg	Treatment	Lab / Monitoring Equipment	Low Risk – Routine Maintenance	02/01/2014
106	computers and office equipment	Pumping Facility	Lab / Monitoring Equipment	Low Risk – Routine Maintenance	02/01/2016
107	pump 3	Source	Pumping Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
108	filters	Treatment	Treatment Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
109	hsvc pump 2	Source	Pumping Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
110	hsvc pump1	Source	Pumping Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
111	pump 1	Source	Pumping Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
112	hsvc pump 4	Source	Pumping Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
113	hsvc pump 3	Source	Pumping Equipment	Medium Risk – Aggressive Monitoring	02/01/2012
114	marly standpipe	Storage	Concrete & Metal Storage Tanks	Medium Risk – Aggressive	02/01/2012

				Monitoring	
115	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2043
116	12" water main	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2023
117	second st. tower	Storage	Concrete & Metal Storage Tanks	Medium Risk – Aggressive Monitoring	02/01/2027
118	evergreen tower	Storage	Concrete & Metal Storage Tanks	Medium Risk – Aggressive Monitoring	02/01/2027
119	Meter Reading sytem	Distribution	Computer Equipment / Software	Low Risk – Routine Maintenance	02/01/2012
120	Chlorination regulators	Treatment	Disinfection Equipment	Low Risk – Routine Maintenance	02/01/2012
121	chlorine metering valve	Treatment	Disinfection Equipment	Low Risk – Routine Maintenance	02/01/2012
122	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2045
123	16" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
124	8" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
125	6" watermain	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2031
126	water meter	Distribution	Meters	Low Risk – Routine Maintenance	02/01/2016
127	Soda Ash Pumps	Treatment	Chemical Feed	Low Risk – Routine Maintenance	02/01/2016
128	8" watermain	Distribution	Distribution /	Medium Risk –	02/01/2047

			Collection Mains	Aggressive Monitoring	
129	Alum Pumps	Treatment	Chemical Feed	Low Risk – Routine Maintenance	02/01/2019
130	Floc mixers	Treatment	Motor Controls / Drives	Low Risk – Routine Maintenance	02/01/2019
131	Small Portable generator	Distribution	Generators	Low Risk – Routine Maintenance	02/01/2041
132	12" dual water main	Distribution	Distribution / Collection Mains	Medium Risk – Aggressive Monitoring	02/01/2027

### 3.2 Asset Details

#### Asset Maintenance Details

<b><u>Asset Priority:</u> 1</b>	
<b><u>Asset Name:</u> treatment plant</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> 999 church st.</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Buildings</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Catastrophic</b>	<b><u>Capacity:</u> Undersized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 3000000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

#### Asset Maintenance Details

<b><u>Asset Priority:</u> 2</b>	
<b><u>Asset Name:</u> 12" main</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> between wellhouse &amp; treatmentplant</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 3600</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Source</b>
<b><u>Asset Type:</u> Transmission Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Catastrophic</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 2000000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 3</b>	
<b><u>Asset Name:</u> still (distilled water)</b>	<b><u>Associated Asset:</u> still (filters)</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> water lab</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1984</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 3000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 4</b>	
<b><u>Asset Name:</u> still (filters)</b>	<b><u>Associated Asset:</u> still (distilled water)</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> water lab</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>

<b><u>Condition:</u></b> Fair (Average)	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Major	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 09/28/1999	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 2200	<b><u>Maintenance Cost:</u></b> 3000

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 5	
<b><u>Asset Name:</u></b> intake pipe	<b><u>Associated Asset:</u></b> well house
<b><u>Location:</u></b> bertrand st	<b><u>Associated Location:</u></b> bertrand st
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> 1600
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Source
<b><u>Asset Type:</u></b> Intake Structures	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Fair (Average)	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Catastrophic	<b><u>Capacity:</u></b> Oversized
<b><u>Installation Date:</u></b> 07/28/1982	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 1000000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 6	
<b><u>Asset Name:</u></b> watermeter & valve	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> throught system	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> None
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Distribution
<b><u>Asset Type:</u></b> Meters	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Good	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Major	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 01/01/2001	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 1440000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 7</b>	
<b><u>Asset Name:</u> ground storage</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Concrete &amp; Metal Storage Tanks</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Catastrophic</b>	<b><u>Capacity:</u> Undersized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 1000000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 8</b>	
<b><u>Asset Name:</u> incubator</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 12/12/2007</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 425</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 9</b>	
<b><u>Asset Name:</u> well house</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> bertrand st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Source</b>
<b><u>Asset Type:</u> Buildings</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 45000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 10</b>	
<b><u>Asset Name:</u> pocket colorimeter</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Undersized</b>
<b><u>Installation Date:</u> 03/03/1996</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 410</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 11</b>	
<b><u>Asset Name:</u> conductivity meter</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 300</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 12</b>	
<b><u>Asset Name:</u> colony counter</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 1535</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 13</b>	
<b><u>Asset Name:</u> balance</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>



<b><u>Condition:</u></b> Fair (Average)	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 07/28/1982	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 1945	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 14	
<b><u>Asset Name:</u></b> Scada system	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> treatmentplant	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> None
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Pumping Facility
<b><u>Asset Type:</u></b> Motor Controls / Drives	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Good	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 02/02/2002	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 40000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 15	
<b><u>Asset Name:</u></b> W US2 water main	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> W US 2	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> 3700
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Distribution
<b><u>Asset Type:</u></b> Distribution / Collection Mains	<b><u>ID:</u></b> None
<b><u>Size:</u></b> 14	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Good	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Major	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 07/28/1985	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 462500	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 16</b>	
<b><u>Asset Name:</u> turbidimeter</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Undersized</b>
<b><u>Installation Date:</u> 12/12/2007</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 1130</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 17</b>	
<b><u>Asset Name:</u> Chlorine cylinder scales</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Disinfection Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Catastrophic</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 09/09/1990</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 4000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 18</b>	
<b><u>Asset Name:</u> 12" water main</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> S. State st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 600</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1987</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 75000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 19</b>	
<b><u>Asset Name:</u> booster pump 2</b>	<b><u>Associated Asset:</u> marly standpipe</b>
<b><u>Location:</u> marly st</b>	<b><u>Associated Location:</u> marly street</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Pumping Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 20000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 20</b>	
<b><u>Asset Name:</u> booster pump 1</b>	<b><u>Associated Asset:</u> marly standpipe</b>
<b><u>Location:</u> marly st</b>	<b><u>Associated Location:</u> marly street</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Pumping Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 20000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 21</b>	
<b><u>Asset Name:</u> hot/stir plate</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 475</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 22</b>	
<b><u>Asset Name:</u> vacuum pump</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>

<b><u>Condition:</u></b> Fair (Average)	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 07/28/2008	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 1535	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 23	
<b><u>Asset Name:</u></b> glass ware	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> water lab	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> None
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Treatment
<b><u>Asset Type:</u></b> Lab / Monitoring Equipment	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Good	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Minor	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 07/28/1982	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 1500	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 24	
<b><u>Asset Name:</u></b> 16" water main	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> N State st	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> 600
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Distribution
<b><u>Asset Type:</u></b> Distribution / Collection Mains	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Good	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 07/28/1990	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 75000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 25</b>	
<b><u>Asset Name:</u> automatic valve</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> evergreen valve building</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Valves</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/27/2000</b>	<b><u>Original Cost:</u> 2854</b>
<b><u>Replacement Costs:</u> 3500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 26</b>	
<b><u>Asset Name:</u> lawn tractor</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> dpw</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> vehicles/equipment</b>
<b><u>Asset Type:</u> Tools and Shop Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2006</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 17000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 27</b>	
<b><u>Asset Name:</u> UV light wand</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 165</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 28</b>	
<b><u>Asset Name:</u> incubator</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 2500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 29</b>	
<b><u>Asset Name:</u> autoclave</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Poor</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 4400</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 30</b>	
<b><u>Asset Name:</u> explorer</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> vehicles/equipment</b>
<b><u>Asset Type:</u> Transportation Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Very Poor</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/1999</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 33000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 31</b>	
<b><u>Asset Name:</u> 3/4 ton pick-up</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> vehicles/equipment</b>
<b><u>Asset Type:</u> Transportation Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>



<b><u>Condition:</u></b> Fair (Average)	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 01/01/1999	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 35000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 32	
<b><u>Asset Name:</u></b> watermain valves	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> throught system	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> None
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Distribution
<b><u>Asset Type:</u></b> Valves	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Good	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 01/01/1981	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 950000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 33	
<b><u>Asset Name:</u></b> Air Valves	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> Treatmentplant	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> None
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Treatment
<b><u>Asset Type:</u></b> Valves	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Good	<b><u>Probability of Failure:</u></b> High
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 02/02/1982	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 99975	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 34</b>	
<b><u>Asset Name:</u> Abe/Goudreau watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Abe st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 830</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> 6</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 103750</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 35</b>	
<b><u>Asset Name:</u> 8" water main</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> N State st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 250</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1986</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 31250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 36</b>	
<b><u>Asset Name:</u> Turbidity meter</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Sensors</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/09/2009</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 2600</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 37</b>	
<b><u>Asset Name:</u> Backwash Pump</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Treatment Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 09/09/2009</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 17500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 38</b>	
<b><u>Asset Name:</u> hydrants</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> through system</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Hydrants</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/1981</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 1540000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 39</b>	
<b><u>Asset Name:</u> standard methods</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> High</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 295</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 40</b>	
<b><u>Asset Name:</u> 6" water main</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Huron st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 660</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>

<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 07/28/1988</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 82500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 41</b>	
<b><u>Asset Name:</u> Flouride pump</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Chemical Feed</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 09/09/2009</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 1000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 42</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> N State st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1000</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 125000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 43</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Balsam st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1850</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 231250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 44</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Bluff st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 350</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 43750</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 45</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Marley st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1000</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 125000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 46</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Keightley st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1100</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 137500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 47</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Medora st</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1400</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 175000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 48</b>	
<b><u>Asset Name:</u> Abe watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Abe</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 570</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> 8"</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 71250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 49</b>	
<b><u>Asset Name:</u> Glashaw St. watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Glashaw st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 635</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> 6"</b>	<b><u>Asset Status:</u> Active</b>



<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 79375</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 50</b>	
<b><u>Asset Name:</u> Lake St.6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Lake st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1100</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 137500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 51</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Paro st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 400</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 50000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 52</b>	
<b><u>Asset Name:</u> pH meter</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Excellent</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Undersized</b>
<b><u>Installation Date:</u> 01/12/2011</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 1600</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 53</b>	
<b><u>Asset Name:</u> stir plate (mini)</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/2008</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 200</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 54</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> High st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1100</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1995</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 137500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 55</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Marly st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1600</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1995</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 200000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 56</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Prospect st</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1200</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1995</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 150000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 57</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Truckey st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 400</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1995</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 50000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 58</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Huron st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 800</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>

<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1995</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 100000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 59</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Fourth st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 400</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1995</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 50000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 60</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Ben Brown st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 450</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1995</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 56250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 61</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Burdette st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 300</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1995</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 37500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 62</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Front st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 200</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1996</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 25000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 63</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Spring st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 200</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/28/1996</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 25000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 64</b>	
<b><u>Asset Name:</u> 1 ton pick-up</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> vehicles/equipment</b>
<b><u>Asset Type:</u> Transportation Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Excellent</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2008</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 38000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 65</b>	
<b><u>Asset Name:</u> backhoe</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> dpw</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> vehicles/equipment</b>
<b><u>Asset Type:</u> Tools and Shop Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2010</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 70000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 66</b>	
<b><u>Asset Name:</u> Flouride Cylinder scales</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Chemical Feed</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 09/09/2009</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 2000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 67</b>	
<b><u>Asset Name:</u> Soda Ash Mixer</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Chemical Feed</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>



<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 09/09/2009</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 2000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 68</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Huron st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 500</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 08/05/1997</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 62500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 69</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Brown st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 600</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 05/05/1997</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 75000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 70</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Grondin</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 650</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 05/05/1997</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 81250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 71</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Strawberry Fields Development</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 700</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 05/05/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 87500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 72</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Husky Development</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 400</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 05/05/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 50000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 73</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> South Airport</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 3332</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 416500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 74</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Antoine</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 285</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 35625</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 75</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Robinson St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 260</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 32500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 76</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Stockbridge St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1050</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>

<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 131250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 77</b>	
<b><u>Asset Name:</u> 6" watermian</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Paquin</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 620</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 86250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 78</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Portage</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 950</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 118750</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 79</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Portage</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 260</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 32500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 80</b>	
<b><u>Asset Name:</u> 10" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Portage</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1055</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 131875</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 81</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Joseph St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 360</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 45000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 82</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Mary</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 440</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 55000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 83</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Marley St</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1025</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 128125</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 84</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Fourth</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1280</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 160000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 85</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Chambers St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 335</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>



<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 41875</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 86</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Church St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 2950</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 368750</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 87</b>	
<b><u>Asset Name:</u> 12" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Spring St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 760</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 01/01/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 95000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 88</b>	
<b><u>Asset Name:</u> stationary generator</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Generators</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 04/04/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 50000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 89</b>	
<b><u>Asset Name:</u> pump 2</b>	<b><u>Associated Asset:</u> well house</b>
<b><u>Location:</u> well house</b>	<b><u>Associated Location:</u> bertrand st</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Source</b>
<b><u>Asset Type:</u> Pumping Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Major</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 20000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 90</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> High St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 615</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 76875</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 91</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Spring St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1950</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 243750</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 92</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Burdette</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 3140</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 392500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 93</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Elliotte</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1525</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 190625</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 94</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Soputh State St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 740</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>

<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 92500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 95</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Paro</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 665</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 83125</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 96</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Paro St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 400</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 50000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 97</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Paro St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1990</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 248750</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 98</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Ferry Ln.</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1130</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 141250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 99</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Michigan</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 405</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 50625</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 100</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> William St</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 475</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 59375</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 101</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Fitch</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 3660</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Storage</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 02/02/2002</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 457198</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 102</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Spring st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 600</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 05/05/2003</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 75000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 103</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> William st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 300</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>



<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 05/05/2003</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 37500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 104</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Graham</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 725</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 05/05/2003</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 90625</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 105</b>	
<b><u>Asset Name:</u> mini fridg</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> water lab</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Medium</b>
<b><u>Consequence of Failure:</u> Insignificant</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/2008</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 200</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 106</b>	
<b><u>Asset Name:</u> computers and office equipment</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Pumping Facility</b>
<b><u>Asset Type:</u> Lab / Monitoring Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 06/06/2010</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 6000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 107</b>	
<b><u>Asset Name:</u> pump 3</b>	<b><u>Associated Asset:</u> well house</b>
<b><u>Location:</u> well house</b>	<b><u>Associated Location:</u> bertrand st</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Source</b>
<b><u>Asset Type:</u> Pumping Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 20000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 108</b>	
<b><u>Asset Name:</u> filters</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Treatment Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 750000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 109</b>	
<b><u>Asset Name:</u> hsvc pump 2</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Source</b>
<b><u>Asset Type:</u> Pumping Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 20000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 110</b>	
<b><u>Asset Name:</u> hsvc pump1</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Source</b>
<b><u>Asset Type:</u> Pumping Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 20000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 111</b>	
<b><u>Asset Name:</u> pump 1</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> well house</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Source</b>
<b><u>Asset Type:</u> Pumping Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Fair (Average)</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 20000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 112</b>	
<b><u>Asset Name:</u> hsvc pump 4</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Source</b>
<b><u>Asset Type:</u> Pumping Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>

<b><u>Condition:</u></b> Fair (Average)	<b><u>Probability of Failure:</u></b> Low
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Oversized
<b><u>Installation Date:</u></b> 07/28/1982	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 20000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 113	
<b><u>Asset Name:</u></b> hsvc pump 3	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> treatment plant	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> None
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Source
<b><u>Asset Type:</u></b> Pumping Equipment	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Fair (Average)	<b><u>Probability of Failure:</u></b> Low
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Oversized
<b><u>Installation Date:</u></b> 07/28/1982	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 20000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u></b> 114	
<b><u>Asset Name:</u></b> marly standpipe	<b><u>Associated Asset:</u></b> None
<b><u>Location:</u></b> marly street	<b><u>Associated Location:</u></b> None
<b><u>Latitude:</u></b> 0.0	<b><u>Longitude:</u></b> 0.0
<b><u>Storage Capacity Days:</u></b> None	<b><u>LF:</u></b> None
<b><u>Acre:</u></b> None	<b><u>Asset Category:</u></b> Storage
<b><u>Asset Type:</u></b> Concrete & Metal Storage Tanks	<b><u>ID:</u></b> None
<b><u>Size:</u></b> None	<b><u>Asset Status:</u></b> Active
<b><u>Condition:</u></b> Good	<b><u>Probability of Failure:</u></b> Low
<b><u>Consequence of Failure:</u></b> Moderate	<b><u>Capacity:</u></b> Fullsized
<b><u>Installation Date:</u></b> 07/28/1956	<b><u>Original Cost:</u></b> 0
<b><u>Replacement Costs:</u></b> 500000	<b><u>Maintenance Cost:</u></b> 0

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 115</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Palamino dr</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1000</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Excellent</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 04/04/2004</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 125000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 116</b>	
<b><u>Asset Name:</u> 12" water main</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> State st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 3400</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1986</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 425000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 117</b>	
<b><u>Asset Name:</u> second st. tower</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> second st.</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> 1</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Storage</b>
<b><u>Asset Type:</u> Concrete &amp; Metal Storage Tanks</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> 100,000 gal</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 500000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 118</b>	
<b><u>Asset Name:</u> evergreen tower</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> evergreen shores</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Storage</b>
<b><u>Asset Type:</u> Concrete &amp; Metal Storage Tanks</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 07/28/1982</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 500000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 119</b>	
<b><u>Asset Name:</u> Meter Reading sytem</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatment plant and city hall</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Computer Equipment / Software</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/07/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 14000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 120</b>	
<b><u>Asset Name:</u> Chlorination regulators</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Disinfection Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Undersized</b>
<b><u>Installation Date:</u> 09/09/1990</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 12000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 121</b>	
<b><u>Asset Name:</u> chlorine metering valve</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> treatment plant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Disinfection Equipment</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>



<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/09/1990</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 8700</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 122</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Fourth st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 300</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/07/2007</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 37500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 123</b>	
<b><u>Asset Name:</u> 16" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> N State st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 4100</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 512500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 124</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> N State st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 350</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 43750</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 125</b>	
<b><u>Asset Name:</u> 6" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> N State st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 220</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1994</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 27500</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 126</b>	
<b><u>Asset Name:</u> water meter</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> 199 Burdettr</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Meters</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 03/31/2004</b>	<b><u>Original Cost:</u> 125</b>
<b><u>Replacement Costs:</u> 125</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 127</b>	
<b><u>Asset Name:</u> Soda Ash Pumps</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Chemical Feed</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 06/06/2006</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 5000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 128</b>	
<b><u>Asset Name:</u> 8" watermain</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Mackinac Straits Hospital</b>	<b><u>Associated Location:</u> None</b>

<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 1530</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/09/2009</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 191250</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 129</b>	
<b><u>Asset Name:</u> Alum Pumps</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Chemical Feed</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Undersized</b>
<b><u>Installation Date:</u> 09/09/2009</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 3000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 130</b>	
<b><u>Asset Name:</u> Floc mixers</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> Treatmentplant</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Treatment</b>
<b><u>Asset Type:</u> Motor Controls / Drives</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>

<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 09/09/2009</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 16000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 131</b>	
<b><u>Asset Name:</u> Small Portable generator</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> DPW</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> None</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Generators</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Minor</b>	<b><u>Capacity:</u> Oversized</b>
<b><u>Installation Date:</u> 02/02/2000</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 40000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

## Asset Maintenance Details

<b><u>Asset Priority:</u> 132</b>	
<b><u>Asset Name:</u> 12" dual water main</b>	<b><u>Associated Asset:</u> None</b>
<b><u>Location:</u> N State st</b>	<b><u>Associated Location:</u> None</b>
<b><u>Latitude:</u> 0.0</b>	<b><u>Longitude:</u> 0.0</b>
<b><u>Storage Capacity Days:</u> None</b>	<b><u>LF:</u> 10000</b>
<b><u>Acre:</u> None</b>	<b><u>Asset Category:</u> Distribution</b>
<b><u>Asset Type:</u> Distribution / Collection Mains</b>	<b><u>ID:</u> None</b>
<b><u>Size:</u> None</b>	<b><u>Asset Status:</u> Active</b>
<b><u>Condition:</u> Good</b>	<b><u>Probability of Failure:</u> Low</b>
<b><u>Consequence of Failure:</u> Moderate</b>	<b><u>Capacity:</u> Fullsized</b>
<b><u>Installation Date:</u> 07/28/1990</b>	<b><u>Original Cost:</u> 0</b>
<b><u>Replacement Costs:</u> 1250000</b>	<b><u>Maintenance Cost:</u> 0</b>

There are no tasks associated with this asset.

**City of St. Ignace, Michigan**

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**BASIC FINANCIAL STATEMENTS**

**December 31, 2019**

**CITY OF ST. IGNACE, MICHIGAN**

ORGANIZATION

MEMBERS OF THE CITY COMMISSION

MAYOR

CONNIE LITZNER

COUNCIL MEMBER/MAYOR PRO TEM

LUKE PAQUIN

COUNCIL MEMBER

ROBERT ST. LOUIS

COUNCIL MEMBER

JIM CLAPPERTON

COUNCIL MEMBER

JAY TREMBLE

COUNCIL MEMBER

PAUL FULLERTON

COUNCIL MEMBER

KAYLA PELTER

APPOINTED OFFICERS

INTERIM CITY MANAGER

BILL FRASER

CITY CLERK/TREASURER

ANDREA INSLEY

CITY ASSESSOR

KYLE MULKA



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**ANDERSON, TACKMAN & COMPANY, PLC**  
CERTIFIED PUBLIC ACCOUNTANTS

**KINROSS OFFICE**

SUE A. BOWLBY, CPA, PRINCIPAL  
KENNETH A. TALSMA, CPA, PRINCIPAL  
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PHILLIP J. WOLF, CPA  
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**MEMBER AICPA  
DIVISION FOR CPA FIRMS**

**MEMBER MACPA**

**OFFICES IN  
MICHIGAN & WISCONSIN**

**INDEPENDENT AUDITOR'S REPORT**

Honorable Mayor and Members  
of the City Commission  
City of St. Ignace  
St. Ignace, Michigan 49781

***Report on the Financial Statements***

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component unit, each major fund, and the aggregate remaining fund information, of the City of St. Ignace, Michigan, as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise the City of St Ignace, Michigan's basic financial statements as listed in the table of contents.

***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

***Auditor's Responsibility***

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Honorable Mayor and Members  
of the City Commission

### ***Opinions***

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component unit, each major fund, and the aggregate remaining fund information of the City of St. Ignace, Michigan, as of December 31, 2019, and the respective changes in financial position, and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

### ***Other Matters***

#### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, employee retirement and benefit systems, and budgetary comparison information on pages 4 through 11, pages 50 through 52, and pages 53 through 56 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

#### *Other Information*

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the City of St. Ignace, Michigan's basic financial statements. The schedule of bond covenant cash reserves and combining nonmajor fund financial statements are presented for the purposes of additional analysis and are not a required part of the basic financial statements. The schedule of expenditures of federal awards is presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, and is also not a required part of the basic financial statements.

The schedule of bond covenant cash reserves, combining nonmajor fund financial statements and schedule of expenditures of federal awards are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of bond covenant cash reserves, combining nonmajor fund financial statements and schedule of expenditures of federal awards are fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Honorable Mayor and Members  
of the City Commission

***Other Reporting Required by Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated August 28, 2020 on our consideration of the City of St. Ignace's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on effectiveness of the City of St Ignace, Michigan's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City of St. Ignace's internal control over financial reporting and compliance.



**Anderson, Tackman & Company, PLC  
Certified Public Accountants  
Kincheloe, Michigan**

August 28, 2020

## **Management's Discussion and Analysis**

---

As management of the City of St. Ignace, Michigan (the "City"), we offer readers of the City's financial statements this narrative overview and analysis of the financial activities of the City for the fiscal year ended December 31, 2019. We encourage readers to consider the information presented here in conjunction with additional information that is furnished in the financial statements and notes to the financial statements.

### Financial Highlights

- The net position of the City at the close of 2019 was \$17,989,363. Of this amount, \$(3,502,214) is unrestricted net position.
- The City's total net position decreased \$330,064, which comprised of a decrease of \$16,755 related to a prior period adjustment for the correction of long-term debt and a decrease of \$313,309 related to net current year activities.
- At the close of the current fiscal year, the City's governmental funds reported combined ending fund balances of \$3,596,705. 30% of the ending fund balance or \$1,070,280 is unassigned fund balance.

### Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the City's basic financial statements. The City's basic financial statements comprise five components: 1) government-wide financial statements, 2) fund financial statements, 3) notes to financial statements, 4) required supplementary information, and 5) other information.

**Government-wide financial statements.** The *government-wide financial statements* are designed to provide readers with a broad overview of the City's finances, in a manner similar to a private-sector business.

The *statement of net position* presents information on all of the City's assets, deferred outflows, liabilities and deferred inflows, with the difference between the two reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the City is improving or deteriorating.

The *statement of activities* presents information showing how the government's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (e.g., earned but unused vacation leave and accrued interest expense).

Both of the government-wide financial statements distinguish functions of the City that are principally supported by taxes and intergovernmental revenues (*governmental activities*) from other functions that are intended to recover all or a significant portion of their costs through user fees and charges (*business-type activities*). The governmental activities of the City include legislative, general government, public safety, public works including major and local street maintenance, and recreation and culture activities. The business-type activities of the City include water, sewer, marina, garbage collection and golf course operations.

The government-wide financial statements include not only the City itself (known as the *primary government*), but also a legally separate component unit – the Downtown Development Authority ("DDA") - for which the City is financially accountable and as such, the DDA is accountable to the City for its activities.

**Fund financial statements.** A *fund* is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The City, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All of the funds of the City can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

**Governmental funds.** *Governmental funds* are used to account for essentially the same functions reported as *governmental activities* in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on *near-term inflows and outflows of spendable resources*, as well as *on balances of spendable resources* available at the end of the fiscal year. Such information may be useful in evaluating a government's near-term financing requirements.

Because the focus of *governmental funds* is narrower than that of the government-wide financial statements, it is useful to compare the information presented for *governmental funds* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact of the City's near-term financing decisions. Both the governmental fund balance sheet and the governmental fund statement of revenues, expenditures, and changes in fund balance provide a reconciliation to facilitate this comparison between *governmental funds* and *governmental activities*.

The City maintains numerous individual governmental funds. Information is presented separately in the governmental fund balance sheet and in the governmental fund statement of revenues, expenditures, and changes in fund balance for the General, Major Streets, and Local Street funds, which are considered to be major funds. Data from the other governmental funds are combined into a single, aggregated presentation. Individual fund data for each of these nonmajor governmental funds is provided in the form of combining statements elsewhere in this report.

The City adopts an annual appropriated budget for its General and Special Revenue Funds. Budgetary comparison statements or schedules have been provided herein to demonstrate compliance with those budgets.

**Proprietary funds.** The City maintains two types of proprietary funds. *Enterprise Funds* are used to report the same functions presented as *business-type activities* in the government-wide financial statements. *Internal service funds* are an accounting device used to accumulate and allocate costs internally among the various City functions. The City uses internal service funds to account for its office equipment pool and equipment activities.

Proprietary funds provide the same type of information as the business-type activities in the government-wide financial statements, only in more detail. The proprietary fund financial statements provide separate information for the water, sewer and marina funds, which are all considered major funds of the City. Data from the other two enterprise funds, including the BFI Garbage Collection Fund and Golf Course Fund, are combined into a single, aggregated presentation. Individual fund data for each of these nonmajor enterprise funds is provided in the form of combining statements elsewhere in this report.

**Fiduciary funds.** Fiduciary funds are used to account for resources held for the benefit of parties outside the City. Fiduciary funds are not reflected in the government-wide financial statements because the resources of those funds are not available to support the City's own programs. The accounting used for fiduciary funds is much like that used for proprietary funds.

**Notes to financial statements.** The notes provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements.

**Required supplementary information.** In addition to the basic financial statements and accompanying notes, this report also presents certain required supplementary information (RSI). RSI includes this management discussion and analysis, along with the schedules of funding progress and employer contributions for the City's defined benefit pension plan, retiree health plan, and budgetary comparison schedules.



**Other information.** The combining fund financial statements referred to earlier in connection with nonmajor governmental funds are presented immediately following the notes to the financial statements.

**Government-wide Financial Analysis**

Net position may serve over time as a useful indicator of a government’s financial position. In the case of the City, assets and deferred outflows exceeded liabilities and deferred inflows by \$17,989,363 at the close of fiscal year 2019.

**City of St. Ignace  
Condensed Statement of Net Position**

	Governmental Activities		Business-type Activities		Total	
	2018	2019	2018	2019	2018	2019
Current Assets	\$ 3,717,426	\$ 4,153,035	\$ 2,610,989	\$ 2,769,693	\$ 6,328,415	\$ 6,922,728
Capital Assets	8,648,841	8,369,860	21,939,277	21,890,118	30,588,118	30,259,978
<b>Total Assets</b>	<b>12,366,267</b>	<b>12,522,895</b>	<b>24,550,266</b>	<b>24,659,811</b>	<b>36,916,533</b>	<b>37,182,706</b>
Deferred Outflows of Resources	605,526	235,392	180,870	70,310	786,396	305,702
Current Liabilities	293,167	401,716	832,848	893,111	1,126,015	1,294,827
Noncurrent Liabilities	7,969,097	7,904,809	10,139,917	10,199,142	18,109,014	18,103,951
<b>Total Liabilities</b>	<b>8,262,264</b>	<b>8,306,525</b>	<b>10,972,765</b>	<b>11,092,253</b>	<b>19,235,029</b>	<b>19,398,778</b>
Deferred Inflows of Resources	148,473	100,267	-	-	148,473	100,267
<b>Net Position</b>						
Net Investment in						
Capital Assets	6,815,707	6,643,863	12,418,823	12,275,678	19,234,530	18,919,541
Restricted	1,467,786	1,985,630	458,395	515,055	1,926,181	2,500,685
Unrestricted	(3,722,437)	(4,277,998)	881,153	847,135	(2,841,284)	(3,430,863)
<b>Total Net Position</b>	<b>\$ 4,561,056</b>	<b>\$ 4,351,495</b>	<b>\$ 13,758,371</b>	<b>\$ 13,637,868</b>	<b>\$ 18,319,427</b>	<b>\$ 17,989,363</b>

Approximately 105% of the City’s net position reflects its net investment in capital assets (e.g., land, buildings, equipment and vehicles). The City uses these capital assets to provide services to citizens; consequently, these assets are not available for future spending. Although the city’s investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities. Restricted net position represents approximately 14% of total net position. The remaining balance of unrestricted net position is \$(3,430,863) or (19)%.

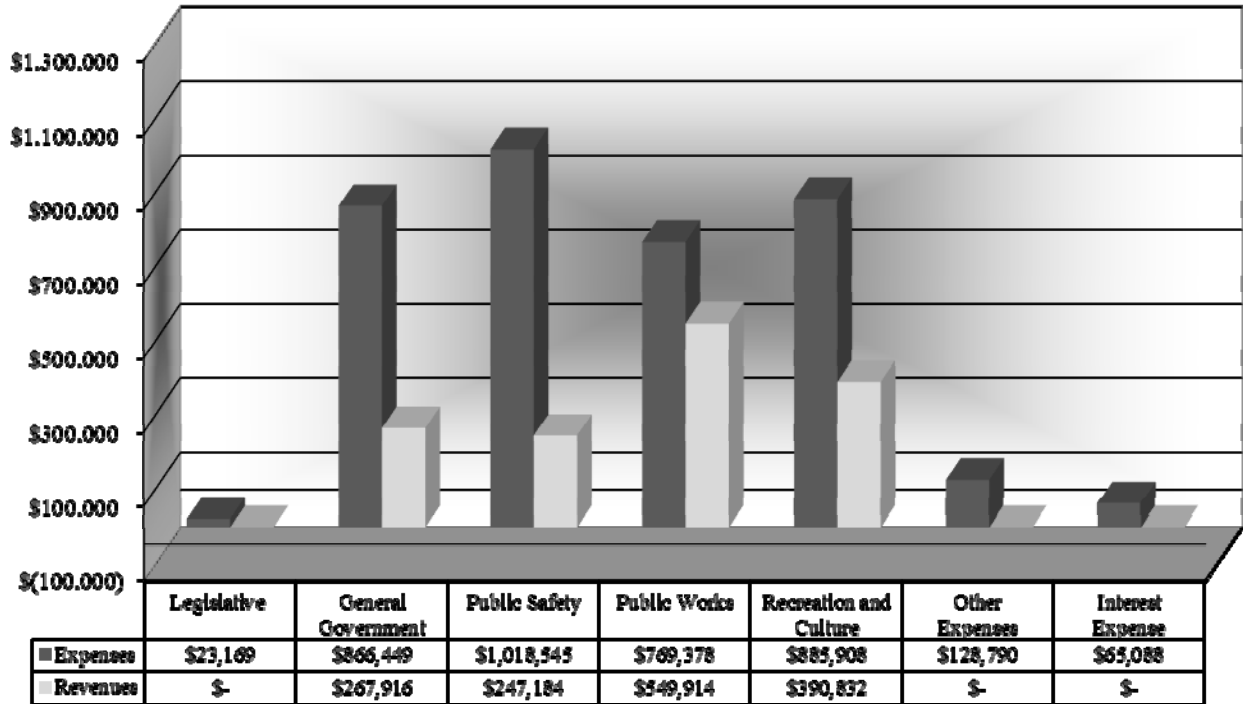
City of St. Ignace  
Condensed Statement of Changes in Net Position

	Governmental Activities		Business-type Activities		Total	
	2018	2019	2018	2019	2018	2019
Program Revenues						
Charges for Services	\$ 363,950	\$ 330,822	\$ 3,177,278	\$ 3,112,803	\$ 3,541,228	\$ 3,443,625
Capital & Operating Grants and Contributions	1,132,286	1,125,024	18,758	18,769	1,151,044	1,143,793
General Revenues						
Taxes	1,490,956	1,437,340	-	-	1,490,956	1,437,340
State Shared Revenues	232,119	200,426	-	-	232,119	200,426
Federal, State, Local	-	-	3,693	6,000	3,693	6,000
Capital Contribution (Distribution)	-	21,176	-	(21,176)	-	-
Investment Income	9,855	16,684	5,494	7,517	15,349	24,201
Other Revenue	302,301	273,449	8,110	(26,804)	310,411	246,645
<b>Total Revenues</b>	<b>3,531,467</b>	<b>3,404,921</b>	<b>3,213,333</b>	<b>3,097,109</b>	<b>6,744,800</b>	<b>6,502,030</b>
Program Expenses						
Legislative	24,132	23,169	-	-	24,132	23,169
General Government	808,798	866,449	-	-	808,798	866,449
Public Safety	1,005,902	1,018,545	-	-	1,005,902	1,018,545
Public Works	653,171	769,378	-	-	653,171	769,378
Recreation and Culture	858,844	885,908	-	-	858,844	885,908
Interest Expense	94,909	65,088	-	-	94,909	65,088
Other Expenses	165,324	128,790	-	-	165,324	128,790
Water	-	-	1,099,272	1,090,680	1,099,272	1,090,680
Sewer	-	-	1,116,783	1,210,681	1,116,783	1,210,681
Marina	-	-	577,813	503,026	577,813	503,026
BFI Garbage Collection	-	-	120,613	124,272	120,613	124,272
Golf Course	-	-	131,204	129,353	131,204	129,353
<b>Total Expenses</b>	<b>3,611,080</b>	<b>3,757,327</b>	<b>3,045,685</b>	<b>3,058,012</b>	<b>6,656,765</b>	<b>6,815,339</b>
Changes in Net Position Before Transfers	(79,613)	(352,406)	167,648	39,097	88,035	(313,309)
Transfers	88,008	119,600	(88,008)	(119,600)	-	-
Changes in Net Position	8,395	(232,806)	79,640	(80,503)	88,035	(313,309)
Net Position - Beginning, (As Restated)	4,552,661	4,584,301	13,678,731	13,718,371	18,231,392	18,302,672
Net Position - Ending	\$ 4,561,056	\$ 4,351,495	\$ 13,758,371	\$ 13,637,868	\$ 18,319,427	\$ 17,989,363

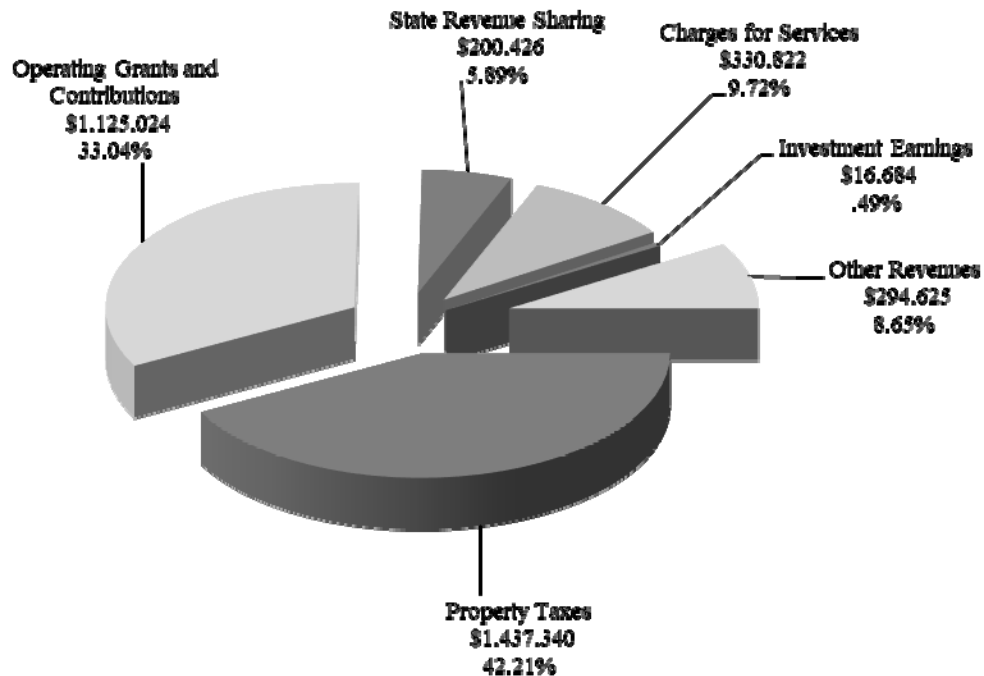
**Governmental activities.** Governmental activities decreased the City's net position by \$209,561, of which \$23,245 is a positive prior period adjustment for adjustments made to long-term debt.

The remaining decrease in governmental activities is primarily caused from a decrease in operational grants, taxes, other revenues, as well as an overall increase in expenditures in 2019.

Expenses and Program Revenues – Governmental Activities

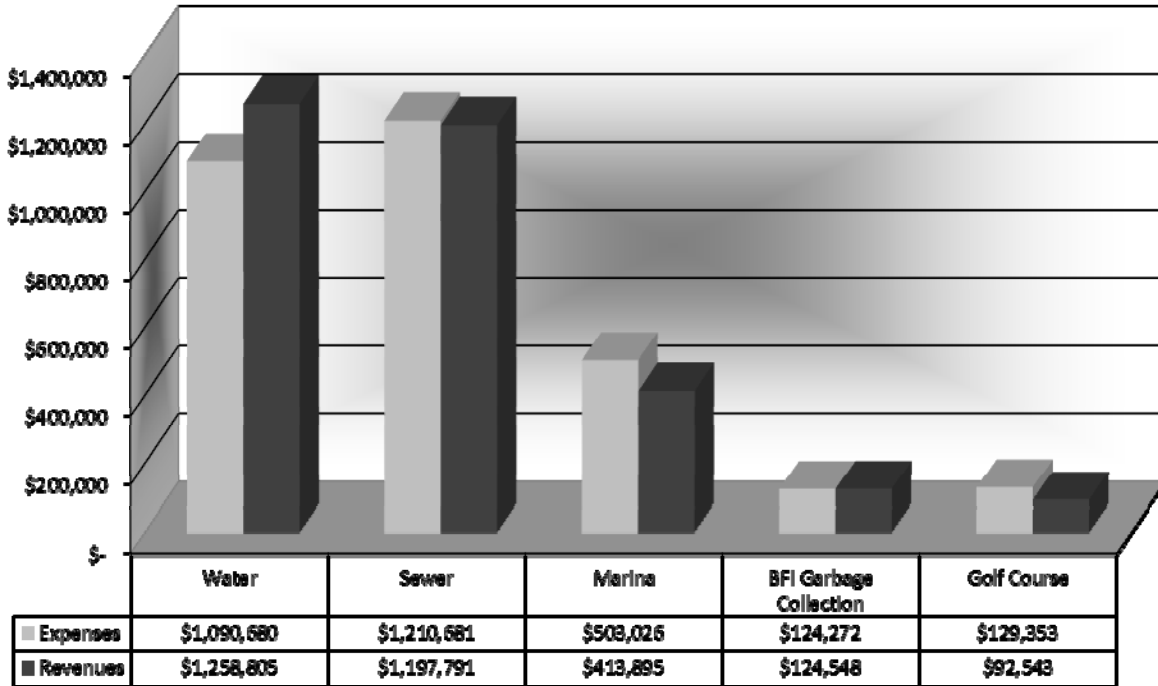


Revenues by Source – Governmental Activities



**Business-type activities.** Business-type activities decreased the City’s net position by \$119,518, of which \$40,000 is a negative prior period adjustment for adjustments made to long-term debt.

**Expenses and Revenues – Business-type Activities**



All revenues for the business-type activities resulted from charges for services and grants and contributions.

**Financial Analysis of the Government’s Funds**

As noted earlier, the City uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

**Governmental funds.** The focus of the City’s *governmental funds* is to provide information on near-term inflows, outflows, and balances of *spendable* resources. Such information is useful in assessing the City’s financing requirements. In particular, *unassigned fund balance* may serve as a useful measure of a government’s net resources available for spending at the end of the fiscal year.

The General Fund is the primary operating fund of the City. The General Fund’s fund balance decreased by \$100,810 from \$1,547,969 to \$1,447,159 during 2019. The decrease was primarily related to decreases in multiple revenue areas.

**Proprietary funds.** The City’s proprietary fund statements provide the same type of information found in the government-wide financial statements, but in more detail.

Unrestricted net position of the City’s Water, Sewer and Marina proprietary funds at the end of the year amounted to \$(11,734), \$411,369 and \$355,522, respectively. The Water Fund had an increase in net position for the year of \$196,451. This increase in net position is mainly attributable to an increase in charges for service and drop in overall expenditures. The Sewer fund has a decrease in net position for the year of \$63,623, which was the result of an increase in contracted services caused by issuance of new debt. The Marina Fund had a decrease in net position of \$160,965 primarily related to a decrease in charges for service and increase in contracted services.

**General Fund Budgetary Highlights**

The annual Budget Review highlights the proposed budget for each fiscal year and expounds upon the major budget issues. Management compares actual expenditures to budgeted amounts to determine whether amendments are required. The City did amend the 2019 budget; however, the City ended the year with excess of expenditures over appropriations in one function.

During the year, general fund budgetary estimates were exceeded by revenues by \$1,781 and budgetary estimates were exceeded by expenditures by \$36,929. The revenue variance is mainly the result of higher state and local source revenues than anticipated and lower other revenues than expected. The expense variance is primarily attributable to higher general government expenditures than originally budgeted for in 2019.

**Capital Asset and Debt Administration**

**Capital assets.** The City defines a capital asset as an asset with an original cost that exceeds \$5,000 and an estimated useful life greater than one year. Included in the cost of a capital asset are items such as labor and freight and any other costs associated with bringing the asset into full operation. Assets are depreciated using the straight-line method over the course of their estimated useful lives.

Major capital asset events during the current fiscal year included the following:

- Beginning of wastewater improvement project in current year, water plant boiler and various pumps for business-type. Continuation of fire hall construction, lighting for Dock #3 and continued work on LBE park project for general government.

**City of St. Ignace  
Capital Assets  
(net of depreciation, where applicable)**

	Governmental Activities		Business-type Activities		Total	
	2018	2019	2018	2019	2018	2019
Land	\$ 1,757,928	\$ 1,757,928	\$ 197,653	\$ 197,653	\$ 1,955,581	\$ 1,955,581
Museum Artifacts	300,000	300,000	-	-	300,000	300,000
Construction in Progress	62,253	123,514	-	745,824	62,253	869,338
Buildings	5,052,351	4,824,915	3,312,300	3,144,881	8,364,651	7,969,796
Land Improvements	240,176	295,728	-	-	240,176	295,728
Infrastructure	269,456	246,300	-	-	269,456	246,300
Machinery, Equipment and Vehicles	966,677	821,475	79,580	68,970	1,046,257	890,445
Water	-	-	5,549,231	5,368,611	5,549,231	5,368,611
Sewer	-	-	7,726,056	7,501,862	7,726,056	7,501,862
Marina	-	-	5,071,457	4,862,317	5,071,457	4,862,317
Net Capital Assets	<u>\$ 8,648,841</u>	<u>\$ 8,369,860</u>	<u>\$ 21,936,277</u>	<u>\$ 21,890,118</u>	<u>\$ 30,585,118</u>	<u>\$ 30,259,978</u>

Additional information on the City’s capital assets can be found in the notes to financial statements.

**Long-term debt.** Debt incurred in the course of constructing or acquiring a capital asset is recorded and paid through a debt service fund or proprietary fund. Debt classified as long-term if the debt matures in a period greater than one year. At the end of the current fiscal year, the City had total debt outstanding of \$11,576,866. Of this amount, \$1,962,426 was debt of governmental activities and \$9,614,440 was debt of business-type activities.

The City's total debt decreased by \$30,621 during the current fiscal year. The City also has an OPEB obligation in the amount of \$1,710,817 and a Pension obligation of \$4,378,554.

Additional information on the City's long-term debt can be found in the notes to financial statements.

**Economic Factors and Next Year's Budgets and Rates**

The City is working toward a number of core adjustments from 2019 and also to 2020, as follows:

Completion of the revision process of our property tax assessment records that will lead to a proper assessment of all properties in the City, also accomplished a resolution to our current issues with the State Tax Commission.

The construction of a new fire hall building through the City's Building Authority funded by USDA bonds that are being paid for by the Fire Authority through a millage.

Completion of the USDA funded South State St. sewer project.

Make progress toward the Little Bear East Park Project adjacent the LBE Facility.

Make progress toward certification as a Redevelopment Ready Community.

Completion of the City's 2019-2039 Master Plan.

The NAGPRA (Native American Grave Repatriation Act) is ongoing. There is continued progress with the Fort DeBaude Museum and the Museum of Ojibawa Culture.

Street condition issues are ongoing. DPW has plans to use the AMZ process to repair some roads. A priority list is compiled to accomplish more comprehensive repair on other streets.

Updates to the Water Plan facility with their roof pump system and boiler.

**Request for Information**

This financial report is designed to provide a general overview of the City's finances for all those with an interest in the City's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to Mr. Bill Fraser, Interim City Manager, 396 N. State Street, St. Ignace, Michigan, 49781.

## **Basic Financial Statements**

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**Statement of Net Position**  
**December 31, 2019**

	Primary Government		Totals	Component
	Governmental Activities	Business-type Activities		Unit DDA
<b>ASSETS:</b>				
Cash and Equivalents - Unrestricted	\$ 3,200,221	\$ 806,486	\$ 4,006,707	\$ 248,639
Cash and Equivalents - Restricted	418,367	1,382,804	1,801,171	-
Cash Held by Fiscal Agent	-	254,875	254,875	-
Accounts Receivable	160,520	247,825	408,345	989
Taxes Receivable	128,900	-	128,900	17,198
Special Assessments Receivable	-	7,938	7,938	-
Due from Other Fund	-	741	741	-
Due from Governmental Units	126,458	-	126,458	-
Prepaid Items	22,360	24,202	46,562	3,156
Inventories	96,209	44,822	141,031	20,589
Capital Assets (Not Depreciated)	2,181,442	943,477	3,124,919	182,626
Capital Assets (Net of Accumulated Depreciation)	6,188,418	20,946,641	27,135,059	741,271
<b>TOTAL ASSETS</b>	<b>12,522,895</b>	<b>24,659,811</b>	<b>37,182,706</b>	<b>1,214,468</b>
<b>DEFERRED OUTFLOWS OF RESOURCES:</b>				
Pension Related Items	235,392	70,310	305,702	-
<b>LIABILITIES:</b>				
Accounts Payable	143,334	55,090	198,424	1,953
Accrued Liabilities	48,448	31,023	79,471	4,809
Accrued Interest Payable	22,205	83,820	106,025	-
Due to Other Funds	741	-	741	-
Advances from Other Governmental Units	40,000	-	40,000	-
Installment Loans - due within one year	90,985	12,448	103,433	-
Installment Loans - due in more than one year	231,012	101,373	332,385	-
Bonds Payable - due within one year	96,000	710,730	806,730	-
Bonds Payable - due in more than one year	1,308,000	8,789,889	10,097,889	-
Net Pension Liability - due in more than one year	4,378,554	1,307,880	5,686,434	-
OPEB Obligation - due in more than one year	1,710,817	-	1,710,817	-
Vested Employee Benefits - due in more than one year	236,429	-	236,429	2,554
<b>TOTAL LIABILITIES</b>	<b>8,306,525</b>	<b>11,092,253</b>	<b>19,398,778</b>	<b>9,316</b>
<b>DEFERRED INFLOWS OF RESOURCES:</b>				
OPEB Related Items	100,267	-	100,267	-
<b>NET POSITION:</b>				
Net Investment in Capital Assets	6,643,863	12,275,678	18,919,541	923,897
Restricted for Debt Covenants	-	515,055	515,055	-
Restricted for Special Revenue	1,340,712	-	1,340,712	-
Restricted for Capital Projects	619,918	-	619,918	-
Restricted for Trust Purposes	25,000	-	25,000	-
Unrestricted	(4,277,998)	847,135	(3,430,863)	281,255
<b>TOTAL NET POSITION</b>	<b>\$ 4,351,495</b>	<b>\$ 13,637,868</b>	<b>\$ 17,989,363</b>	<b>\$ 1,205,152</b>



**Statement of Activities  
For the Year Ended December 31, 2019**

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue and Changes in Net Position			Component Unit DDA
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Primary Government		Total	
					Governmental Activities	Business-type Activities		
<b>Primary Government:</b>								
<b>Governmental Activities:</b>								
Legislative	\$ 23,169	\$ -	\$ -	\$ -	\$ (23,169)	\$ -	\$ (23,169)	\$ -
General Government	866,449	9,610	258,306	-	(598,533)	-	(598,533)	-
Public Safety	1,018,545	60,114	187,070	-	(771,361)	-	(771,361)	-
Public Works	769,378	17,333	532,581	-	(219,464)	-	(219,464)	-
Recreation and Culture	885,908	243,765	147,067	-	(495,076)	-	(495,076)	-
Other Expenses	128,790	-	-	-	(128,790)	-	(128,790)	-
Interest Expense	65,088	-	-	-	(65,088)	-	(65,088)	-
Total Governmental Activities	<u>3,757,327</u>	<u>330,822</u>	<u>1,125,024</u>	<u>-</u>	<u>(2,301,481)</u>	<u>-</u>	<u>(2,301,481)</u>	<u>-</u>
<b>Business-type activities:</b>								
Water	1,090,680	1,284,026	-	18,769	-	212,115	212,115	-
Sewer	1,210,681	1,197,791	-	-	-	(12,890)	(12,890)	-
Marina	503,026	413,895	-	-	-	(89,131)	(89,131)	-
BFI Garbage Collection	124,272	124,548	-	-	-	276	276	-
Golf Course	129,353	92,543	-	-	-	(36,810)	(36,810)	-
Total Business-type Activities	<u>3,058,012</u>	<u>3,112,803</u>	<u>-</u>	<u>18,769</u>	<u>-</u>	<u>73,560</u>	<u>73,560</u>	<u>-</u>
Total Primary Government	<u>\$ 6,815,339</u>	<u>\$ 3,443,625</u>	<u>\$ 1,125,024</u>	<u>\$ 18,769</u>	<u>(2,301,481)</u>	<u>73,560</u>	<u>(2,227,921)</u>	<u>-</u>
<b>Component Units:</b>								
DDA	<u>\$ 481,720</u>	<u>\$ 101,746</u>	<u>\$ -</u>	<u>\$ -</u>				<u>(379,974)</u>
<b>General Revenues and Transfers:</b>								
Taxes - Property					1,437,340	-	1,437,340	211,058
State Revenue Sharing					200,426	-	200,426	-
Federal, State, Local					-	6,000	6,000	67,787
Capital Contributions (Distributions)					21,176	(21,176)	-	-
Other Revenues					273,449	(26,804)	246,645	59,923
Investment Earnings					16,684	7,517	24,201	1,879
Transfers					119,600	(119,600)	-	-
Total General Revenues and Transfers					<u>2,068,675</u>	<u>(154,063)</u>	<u>1,914,612</u>	<u>340,647</u>
Change in Net Position					(232,806)	(80,503)	(313,309)	(39,327)
Net Position - Beginning (As Restated see Note 11)					<u>4,584,301</u>	<u>13,718,371</u>	<u>18,302,672</u>	<u>1,244,479</u>
Net Position - Ending					<u>\$ 4,351,495</u>	<u>\$ 13,637,868</u>	<u>\$ 17,989,363</u>	<u>\$ 1,205,152</u>

**Balance Sheet  
Governmental Funds  
December 31, 2019**

	General	Major Streets	Local Streets	Nonmajor Governmental Funds	Total Governmental Funds
<b>ASSETS:</b>					
Cash and Equivalents - Unrestricted	\$ 997,976	\$ 430,592	\$ 132,923	\$ 1,316,621	\$ 2,878,112
Cash and Equivalents - Restricted	267,359	-	-	151,008	418,367
Accounts Receivable	9,831	2,722	-	135,638	148,191
Taxes Receivable	105,251	3,630	3,630	16,389	128,900
Due from Governmental Units	40,533	52,653	18,226	15,046	126,458
Prepaid Items	13,311	-	-	2,893	16,204
Inventories	96,209	-	-	-	96,209
<b>TOTAL ASSETS</b>	<b>\$ 1,530,470</b>	<b>\$ 489,597</b>	<b>\$ 154,779</b>	<b>\$ 1,637,595</b>	<b>\$ 3,812,441</b>
<b>LIABILITIES:</b>					
Accounts Payable	\$ 7,284	\$ 443	\$ 439	\$ 121,535	\$ 129,701
Accrued Liabilities	35,286	2,293	1,179	6,536	45,294
Due to Other Funds	741	-	-	-	741
Advances from Other Governmental Units	40,000	-	-	-	40,000
<b>TOTAL LIABILITIES</b>	<b>83,311</b>	<b>2,736</b>	<b>1,618</b>	<b>128,071</b>	<b>215,736</b>
<b>FUND BALANCES:</b>					
Nonspendable	109,520	-	-	2,893	112,413
Restricted	-	486,861	153,161	1,386,593	2,026,615
Assigned	267,359	-	-	120,038	387,397
Unassigned	1,070,280	-	-	-	1,070,280
<b>TOTAL FUND BALANCES</b>	<b>1,447,159</b>	<b>486,861</b>	<b>153,161</b>	<b>1,509,524</b>	<b>3,596,705</b>
<b>TOTAL LIABILITIES AND FUND BALANCES</b>	<b>\$ 1,530,470</b>	<b>\$ 489,597</b>	<b>\$ 154,779</b>	<b>\$ 1,637,595</b>	
<b>Reconciliation to amounts reported for governmental activities in the statement of net position:</b>					
Capital assets used by governmental activities					8,036,392
OPEB obligation					(1,811,084)
Installment loans and bonds payable for governmental activities					(1,516,618)
Vested employee benefits					(236,429)
Internal service funds included in governmental activities					445,002
Net pension liability and related deferred outflows/outflows.					(4,143,162)
Accrued interest payable					(19,311)
<b>Net position of governmental activities</b>					<b>\$ 4,351,495</b>

**Statement of Revenues, Expenditures, and  
Changes in Fund Balance - Governmental Funds  
For the Year Ended December 31, 2019**

	General	Major Streets	Local Streets	Nonmajor Governmental Funds	Totals Governmental Funds
<b>REVENUES:</b>					
Taxes and Penalties	\$ 1,181,353	\$ 53,103	\$ 53,103	\$ 149,781	\$ 1,437,340
Licenses and Permits	6,452	-	-	-	6,452
Federal Sources	-	-	-	128,330	128,330
State Sources	254,412	346,372	122,676	37,004	760,464
Local Sources	25,370	11,500	11,500	388,286	436,656
Charges for Services	72,411	-	-	251,959	324,370
Interest Earnings	7,762	2,793	1,253	4,876	16,684
Rentals	25,722	-	-	-	25,722
Other Revenue	177,483	-	-	70,244	247,727
<b>TOTAL REVENUES</b>	<b>1,750,965</b>	<b>413,768</b>	<b>188,532</b>	<b>1,030,480</b>	<b>3,383,745</b>
<b>EXPENDITURES:</b>					
Legislative	23,169	-	-	-	23,169
General Government	695,314	-	-	10,709	706,023
Public Safety	582,698	-	-	197,979	780,677
Public Works	174,317	352,474	226,439	20,434	773,664
Recreation and Cultural	174,098	-	-	519,626	693,724
Capital Outlay	-	-	-	127,452	127,452
Debt Service	10,488	-	-	252,547	263,035
Other Expenditures	128,790	-	-	-	128,790
<b>TOTAL EXPENDITURES</b>	<b>1,788,874</b>	<b>352,474</b>	<b>226,439</b>	<b>1,128,747</b>	<b>3,496,534</b>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>					
	(37,909)	61,294	(37,907)	(98,267)	(112,789)
<b>OTHER FINANCING SOURCES (USES):</b>					
Bond Proceeds	-	-	-	139,000	139,000
Capital Distribution	-	-	-	21,176	21,176
Transfers In	179,690	-	-	206,606	386,296
Transfers Out	(242,591)	(12,180)	(6,030)	(23,175)	(283,976)
<b>TOTAL OTHER FINANCING SOURCES (USES)</b>	<b>(62,901)</b>	<b>(12,180)</b>	<b>(6,030)</b>	<b>343,607</b>	<b>262,496</b>
<b>NET CHANGE IN FUND BALANCES</b>	<b>(100,810)</b>	<b>49,114</b>	<b>(43,937)</b>	<b>245,340</b>	<b>149,707</b>
<b>FUND BALANCES BEGINNING OF YEAR</b>	<b>1,547,969</b>	<b>437,747</b>	<b>197,098</b>	<b>1,264,184</b>	<b>3,446,998</b>
<b>FUND BALANCES END OF YEAR</b>	<b>\$ 1,447,159</b>	<b>\$ 486,861</b>	<b>\$ 153,161</b>	<b>\$ 1,509,524</b>	<b>\$ 3,596,705</b>

**Reconciliation of the Statement of Revenues, Expenditures,  
and Changes in Fund Balance of Governmental Funds  
to the Statement of Activities  
For the Year Ended December 31, 2019**

Net changes in fund balances - total governmental funds	\$ 149,707
The change in net position reported for governmental activities in the statement of activities is different because:	
Governmental funds reported capital outlays as expenditures. However, in the statement of activities the cost of those assets is capitalized and is allocated over their estimated useful lives and reported as depreciation expense. This is the amount by which depreciation expense (\$373,609) exceeded capital outlay \$127,452.	(246,157)
Repayment of debt principal is an expenditure in the governmental funds, but the repayment reduces long-term liabilities in the statement of net position.	
Principal payments	203,756
Note proceeds are recorded as income in the governmental funds but issuing notes increases the liabilities in the statement of net position	
Bond Proceeds	(139,000)
An internal service fund is used by management to charge the costs of certain activities, such as equipment costs, to individual funds. The net revenue (expense) of the internal service funds is reported with governmental activities.	126,812
Some expenses reported in the statement of activities do not require the use of current financial resources and therefore are not reported as expenditures in the funds:	
OPEB obligation and net pension liability	(330,517)
Vested employee benefits	715
Accrued interest expense	1,878
Change in net position of governmental activities	<u>\$ (232,806)</u>

Statement of Net Position  
 Proprietary Funds  
 December 31, 2019

	Business-type Activities Enterprise Funds				Governmental Activities	
	Water	Sewer	Marina	Nonmajor Enterprise	Totals	Internal Service Funds
<b>ASSETS:</b>						
Cash and Equivalents - Unrestricted	\$ 319,030	\$ 87,293	\$ 311,235	\$ 88,928	\$ 806,486	\$ 322,109
Cash and Equivalents - Restricted	515,055	867,749	-	-	1,382,804	-
Cash held by Fiscal Agent	254,875	-	-	-	254,875	-
Accounts Receivable	117,558	113,677	1,299	15,291	247,825	12,329
Taxes Receivable	1,345	6,593	-	-	7,938	-
Due from Other Funds	-	-	-	741	741	-
Prepaid Items	12,101	7,366	3,157	1,578	24,202	6,156
Inventories	-	-	44,822	-	44,822	-
Capital Assets (Not Depreciated)	61,116	839,322	-	43,039	943,477	-
Capital Assets (Net of Accumulated Depreciation)	5,428,907	10,642,727	4,862,317	12,690	20,946,641	333,468
<b>Total Assets</b>	<b>6,709,987</b>	<b>12,564,727</b>	<b>5,222,830</b>	<b>162,267</b>	<b>24,659,811</b>	<b>674,062</b>
<b>DEFERRED OUTFLOWS OF RESOURCES:</b>						
Pension Assumptions	35,155	35,155	-	-	70,310	-
<b>LIABILITIES:</b>						
Accounts Payable	27,015	10,286	3,229	14,560	55,090	13,633
Accrued Liabilities	21,516	7,745	1,762	-	31,023	3,154
Accrued Interest Payable	49,327	34,493	-	-	83,820	2,894
Net Pension Liabilities	653,940	653,940	-	-	1,307,880	-
Installment Notes - due within one year	12,448	-	-	-	12,448	19,321
Installment Notes - due in more than one year	101,373	-	-	-	101,373	190,058
Bonds Payable - due within one year	330,730	380,000	-	-	710,730	-
Bonds Payable - due in more than one year	1,898,000	6,891,889	-	-	8,789,889	-
<b>Total Liabilities</b>	<b>3,094,349</b>	<b>7,978,353</b>	<b>4,991</b>	<b>14,560</b>	<b>11,092,253</b>	<b>229,060</b>
<b>DEFERRED INFLOWS OF RESOURCES:</b>						
Pension Investment Experience and Earnings	-	-	-	-	-	-
<b>NET POSITION:</b>						
Net Investment in Capital Assets	3,147,472	4,210,160	4,862,317	55,729	12,275,678	124,089
Restricted	515,055	-	-	-	515,055	-
Unrestricted	(11,734)	411,369	355,522	91,978	847,135	320,913
<b>TOTAL NET POSITION</b>	<b>\$ 3,650,793</b>	<b>\$ 4,621,529</b>	<b>\$ 5,217,839</b>	<b>\$ 147,707</b>	<b>\$ 13,637,868</b>	<b>\$ 445,002</b>

**Statement of Revenues, Expenses and  
Changes in Net Position - Proprietary Funds  
For the Year Ended December 31, 2019**

	Business-type Activities Enterprise Funds				Governmental Activities	
	Water	Sewer	Marina	Nonmajor Enterprise	Totals	Internal Service Funds
<b>OPERATING REVENUES:</b>						
Charges for Services	\$ 1,251,018	\$ 1,174,765	\$ 398,375	\$ 217,091	\$ 3,041,249	\$ 404,135
Other Revenue	7,787	23,026	15,520	-	46,333	-
Total Operating Revenues	<u>1,258,805</u>	<u>1,197,791</u>	<u>413,895</u>	<u>217,091</u>	<u>3,087,582</u>	<u>404,135</u>
<b>OPERATING EXPENSES:</b>						
Personnel Services	522,551	284,860	69,792	79,619	956,822	86,151
Supplies	73,657	45,475	156,848	15,746	291,726	50,732
Contracted Services	35,826	101,688	24,950	126,055	288,519	309
Insurance	29,468	17,937	9,536	3,844	60,785	14,990
Utilities	61,266	171,314	18,458	14,693	265,731	8,166
Repairs and Maintenance	6,904	-	3,337	6,841	17,082	61,382
Rental	24,710	11,785	1,297	-	37,792	-
Depreciation	232,211	395,558	209,140	1,810	838,719	51,824
Other Expenses	6,456	550	9,668	5,017	21,691	13,362
Total Operating Expenses	<u>993,049</u>	<u>1,029,167</u>	<u>503,026</u>	<u>253,625</u>	<u>2,778,867</u>	<u>286,916</u>
<b>OPERATING INCOME (LOSS)</b>	<u>265,756</u>	<u>168,624</u>	<u>(89,131)</u>	<u>(36,534)</u>	<u>308,715</u>	<u>117,219</u>
<b>NON-OPERATING REVENUES (EXPENSES):</b>						
State Grants	18,769	-	-	-	18,769	-
Local Grants	-	-	6,000	-	6,000	-
Interest Income	2,236	2,643	1,666	972	7,517	-
Interest Expense	(97,631)	(181,514)	-	-	(279,145)	(7,687)
Capital Contribution	-	(21,176)	-	-	(21,176)	-
Other	25,221	-	-	(26,804)	(1,583)	-
Total Non-operating Revenues (Expenses)	<u>(51,405)</u>	<u>(200,047)</u>	<u>7,666</u>	<u>(25,832)</u>	<u>(269,618)</u>	<u>(7,687)</u>
Income (Loss) Before Transfers	<u>214,351</u>	<u>(31,423)</u>	<u>(81,465)</u>	<u>(62,366)</u>	<u>39,097</u>	<u>109,532</u>
<b>TRANSFERS:</b>						
Transfers In	41,400	-	-	10,000	51,400	39,600
Transfers Out	(59,300)	(32,200)	(79,500)	-	(171,000)	(22,320)
Total Transfers	<u>(17,900)</u>	<u>(32,200)</u>	<u>(79,500)</u>	<u>10,000</u>	<u>(119,600)</u>	<u>17,280</u>
<b>CHANGE IN NET POSITION</b>	<u>196,451</u>	<u>(63,623)</u>	<u>(160,965)</u>	<u>(52,366)</u>	<u>(80,503)</u>	<u>126,812</u>
NET POSITION, BEGINNING OF YEAR - (as Restated, See Note 11)	<u>3,454,342</u>	<u>4,685,152</u>	<u>5,378,804</u>	<u>200,073</u>	<u>13,718,371</u>	<u>318,190</u>
<b>NET POSITION, END OF YEAR</b>	<u>\$ 3,650,793</u>	<u>\$ 4,621,529</u>	<u>\$ 5,217,839</u>	<u>\$ 147,707</u>	<u>\$ 13,637,868</u>	<u>\$ 445,002</u>

**Statement of Cash Flows**  
**Proprietary Fund Types**  
**For the Year Ended December 31, 2019**

	Business-type Activities Enterprise Funds				Governmental Activities	
	Water	Sewer	Marina	Nonmajor Funds	Totals	Internal Service Fund
<b>Cash Flows From Operating Activities:</b>						
Receipts from Customers or Users	\$ 1,241,374	\$ 1,196,670	\$ 416,306	\$ 217,700	\$ 3,072,050	\$ 403,559
Cash Payments to Vendors	(226,084)	(339,923)	(208,729)	(170,908)	(945,644)	(134,839)
Cash Paid to Employees	(458,711)	(225,996)	(69,667)	(79,619)	(833,993)	(84,231)
Internal Activity - Payments/Receipts with Other Funds	-	-	-	(741)	(741)	-
Net Cash Provided (Used) by Operating Activities	<u>556,579</u>	<u>630,751</u>	<u>137,910</u>	<u>(33,568)</u>	<u>1,291,672</u>	<u>184,489</u>
<b>Cash Flows From Noncapital and Related Financing Activities:</b>						
Federal, State, & Local Sources	18,769	-	6,000	-	24,769	-
Capital Contribution	-	633,156	-	-	633,156	-
Other Revenues	25,221	-	-	(26,804)	(1,583)	-
Operating Transfers In	41,400	-	-	10,000	51,400	39,600
Operating Transfers Out	(59,300)	(32,200)	(79,500)	-	(171,000)	(22,320)
Net Cash Provided (Used) by Noncapital and Related Financing Activities	<u>26,090</u>	<u>600,956</u>	<u>(73,500)</u>	<u>(16,804)</u>	<u>536,742</u>	<u>17,280</u>
<b>Cash Flows from Capital and Related Financing Activities:</b>						
Purchase of Capital Assets	(43,736)	(633,156)	-	-	(676,892)	(19,000)
Interest Payments	(100,185)	(180,091)	-	-	(280,276)	(7,270)
Principal Payments	(340,014)	(373,000)	-	-	(713,014)	(19,136)
Net Cash Provided (Used) by Capital and Related Financing Activities	<u>(483,935)</u>	<u>(1,186,247)</u>	<u>-</u>	<u>-</u>	<u>(1,670,182)</u>	<u>(45,406)</u>
<b>Cash Flows From Investing Activities:</b>						
Interest Income	2,236	2,643	1,666	972	7,517	-
Net Cash Provided (Used) by Investing Activities	<u>2,236</u>	<u>2,643</u>	<u>1,666</u>	<u>972</u>	<u>7,517</u>	<u>-</u>
Net Increase (Decrease) in Cash and Equivalents	100,970	48,103	66,076	(49,400)	165,749	156,363
Cash and Equivalents - Beginning of the Year	733,115	906,939	245,159	138,328	2,023,541	165,746
Cash and Equivalents - End of the Year	<u>\$ 834,085</u>	<u>\$ 955,042</u>	<u>\$ 311,235</u>	<u>\$ 88,928</u>	<u>\$ 2,189,290</u>	<u>\$ 322,109</u>
<b>Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities:</b>						
Operating Income (Loss)	\$ 265,756	\$ 168,624	\$ (89,131)	\$ (36,534)	\$ 308,715	\$ 117,219
Adjustments to Reconcile Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities:						
Depreciation Expense	232,211	395,558	209,140	1,810	838,719	51,824
Pension Expense	56,924	56,924	-	-	113,848	-
Change in Assets and Liabilities:						
(Increase) Decrease in Assets:						
Accounts Receivable	(22,535)	(2,474)	2,411	609	(21,989)	(576)
Taxes Receivable	5,104	1,353	-	-	6,457	-
Due from Other Funds	-	-	-	(741)	(741)	-
Prepaid Items	5,416	6,206	1,374	(1,578)	11,418	2,679
Inventories	-	-	11,900	-	11,900	-
Increase (Decrease) in Liabilities:						
Accounts Payable	6,787	2,620	2,091	2,866	14,364	11,423
Accrued Liabilities	6,916	1,940	125	-	8,981	1,920
Net Cash Provided (Used) by Operating Activities	<u>\$ 556,579</u>	<u>\$ 630,751</u>	<u>\$ 137,910</u>	<u>\$ (33,568)</u>	<u>\$ 1,291,672</u>	<u>\$ 184,489</u>

Statement of Net Position  
Fiduciary Funds  
December 31, 2019

	Trust and Agency
<b>ASSETS:</b>	
Cash and Equivalents - Unrestricted	\$ 303,757
Due from Others	9
Total Assets	<u>\$ 303,766</u>
<b>LIABILITIES:</b>	
Due to Governmental Units	\$ 256,178
Due to Others	47,588
Total Liabilites	<u>\$ 303,766</u>



# **Component Units**

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**Combining Balance Sheet  
Component Unit - Downtown Development Authority  
December 31, 2019**

	General Downtown	Museum Operations	Debt Service	Museum Store	Gateway Project	Totals
<b>ASSETS:</b>						
Cash and Equivalents - Unrestricted	\$ 134,919	\$ 30,596	\$ 5	\$ 60,236	\$ 22,883	\$ 248,639
Accounts Receivable	-	-	-	989	-	989
Taxes Receivable	17,198	-	-	-	-	17,198
Prepaid Items	1,578	1,578	-	-	-	3,156
Inventories	-	-	-	20,589	-	20,589
<b>TOTAL ASSETS</b>	<b>\$ 153,695</b>	<b>\$ 32,174</b>	<b>\$ 5</b>	<b>\$ 81,814</b>	<b>\$ 22,883</b>	<b>\$ 290,571</b>
<b>LIABILITIES:</b>						
Accounts Payable	\$ 294	\$ 810	\$ -	\$ 849	\$ -	\$ 1,953
Accrued Liabilities	3,801	705	-	303	-	4,809
<b>TOTAL LIABILITIES</b>	<b>4,095</b>	<b>1,515</b>	<b>-</b>	<b>1,152</b>	<b>-</b>	<b>6,762</b>
<b>FUND BALANCE:</b>						
Unassigned	149,600	30,659	5	80,662	22,883	283,809
<b>TOTAL FUND BALANCE</b>	<b>\$ 153,695</b>	<b>\$ 32,174</b>	<b>\$ 5</b>	<b>\$ 81,814</b>	<b>\$ 22,883</b>	<b>283,809</b>
<b>Reconciliation to amounts reported for the statement of net position:</b>						
Capital assets used by governmental activities						923,897
Vested Employees Benefits						(2,554)
<b>Net position of governmental governemtnal activities</b>						<b>\$ 1,205,152</b>

**Combining Statement of Revenues, Expenditures,  
and Changes in Fund Balance  
Component Unit - Downtown Development Authority  
For the Year Ended December 31, 2019**

	General Downtown	Museum Operations	Debt Service	Museum Store	Gateway Project	Total
REVENUES:						
Taxes	\$ 211,058	\$ -	\$ -	\$ -	\$ -	\$ 211,058
Charges for Services	-	529	-	101,217	-	101,746
Federal, State and Local	9,500	58,287	-	-	-	67,787
Interest Income	1,692	50	-	137	-	1,879
Other Income	37,357	22,307	-	259	-	59,923
<b>TOTAL REVENUES</b>	<b>259,607</b>	<b>81,173</b>	<b>-</b>	<b>101,613</b>	<b>-</b>	<b>442,393</b>
EXPENDITURES:						
Recreation & Culture	-	91,241	-	100,775	-	192,016
Economic Development	380,249	-	-	-	-	380,249
<b>TOTAL EXPENDITURES</b>	<b>380,249</b>	<b>91,241</b>	<b>-</b>	<b>100,775</b>	<b>-</b>	<b>572,265</b>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	<b>(120,642)</b>	<b>(10,068)</b>	<b>-</b>	<b>838</b>	<b>-</b>	<b>(129,872)</b>
OTHER FINANCING SOURCES (USES):						
Transfers In	-	23,000	-	-	-	23,000
Transfers Out	(20,000)	-	-	(3,000)	-	(23,000)
<b>TOTAL OTHER FINANCING SOURCES (USES)</b>	<b>(20,000)</b>	<b>23,000</b>	<b>-</b>	<b>(3,000)</b>	<b>-</b>	<b>-</b>
<b>NET CHANGE IN FUND BALANCES</b>	<b>(140,642)</b>	<b>12,932</b>	<b>-</b>	<b>(2,162)</b>	<b>-</b>	<b>(129,872)</b>
<b>FUND BALANCES BEGINNING OF YEAR</b>	<b>290,242</b>	<b>17,727</b>	<b>5</b>	<b>82,824</b>	<b>22,883</b>	<b>413,681</b>
<b>FUND BALANCES END OF YEAR</b>	<b>\$ 149,600</b>	<b>\$ 30,659</b>	<b>\$ 5</b>	<b>\$ 80,662</b>	<b>\$ 22,883</b>	<b>\$ 283,809</b>

**Reconciliation of the Statement of Revenues, Expenditures,  
and Changes in Fund Balance of Governmental Funds  
to the Statement of Activities  
Component Unit - Downtown Development Authority  
For the Year Ended December 31, 2019**

Net changes in fund balances - total component units \$ (129,872)

The change in net position reported for governmental activities in the statement of activities is different because:

Governmental funds reported capital outlays as expenditures. However, in the statement of activities the cost of those assets is capitalized and is allocated over their estimated useful lives and reported as depreciation expense. This is the amount by which capital outlay \$143,382 is exceeded by depreciation expense (\$52,837).

90,545

Some expenses reported in the statement of activities do not require the use of current financial resources and therefore are not reported as expenditures in the funds:

Vested employee benefits

(4,455)

Change in net position of governmental activities

\$ (43,782)

## **Notes to Financial Statements**

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**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES****A. Reporting Entity**

As required by accounting principles generally accepted in the United States of America, the financial statements of the reporting entity include those of *the City of St. Ignace* (the “City”) and its component units, entities for which the City is financially accountable. Blended component units, although legally separate entities, are, in substance, part of the City’s operations and as such, data from these units are combined with data of the primary government. Discretely presented component units, on the other hand, are reported in a separate column in the combined financial statements to emphasize that they are legally separate from the government.

***Blended Component Unit***

***St. Ignace Building Authority*** – The St. Ignace Building Authority is a blended component unit of the City. The St. Ignace Building Authority has a December 31 year end and a separate report is not prepared for the Building Authority. Its sole purpose is to account for the financing of certain building authority projects and related debt which is reported in the government-wide financial statements with the current year principal and interest expense recorded in a debt service fund.

***Discretely Presented Component Unit***

***The St. Ignace Downtown Development Authority*** – The Downtown Development Authority (the “DDA”) is a discretely presented component unit of the City. The component unit column in the government-wide financial statements include the financial data of the DDA. This component unit is reported in a separate column to emphasize that it is legally separate from the City. The members of the governing Board of the DDA are appointed by the City Council. The budgets and expenditures of the DDA must be approved by the City Council. The City also has the ability to significantly influence operations of the DDA.

***Jointly Governed Organization***

***Straits Area Fire Authority*** - The Straits Area Fire Authority (the “Authority”) was created as a corporate instrumentality in 2018 under provisions of Act 57, Michigan Public Acts of 1988. The local governments comprising the Authority include the City of St. Ignace, Moran, and St. Ignace Townships. The Authority provides fire protection, equipment and services to these municipalities. The Authority is not included in any other governmental “reporting entity” as defined by GASB 61, since none of these governmental units appoint a majority of the Authority’s board, the board members have decision making authority, the authority to set rates, the power to designate management, the ability to significantly influence operations and primary accountability for fiscal matters.

**B. Government-Wide and Fund Financial Statements**

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on all of the nonfiduciary activities of the primary government and its component units. For the most part, the effect of interfund activity has been removed from these statements. *Governmental activities*, which normally are supported by taxes and intergovernmental revenues, are reported separately from *business-type activities*, which rely to a significant extent on fees and charges for support. Likewise, the *primary government* is reported separately from the legally separate *component units* for which the primary government is financially accountable.

**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment is offset by program revenues. *Direct expenses* are those that are clearly identifiable with a specific function or segment. *Program revenues* include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as *general revenues*.

Separate financial statements are provided for governmental funds, proprietary funds, and fiduciary funds, even though the latter are excluded from the government-wide financial statements. Major individual governmental funds and major individual proprietary funds are reported as separate columns in the fund financial statements. When both restricted and unrestricted resources are available for use, it is the City's policy to use restricted resources first, then unrestricted resources as needed.

**Fund Financial Statements.** The fund financial statements provide information about the City's funds, including its fiduciary funds. Separate statements for each fund category – *governmental*, *proprietary*, and *fiduciary* – are presented. The emphasis of fund financial statements is on major governmental and proprietary funds, each displayed in a separate column. All remaining governmental funds are aggregated and reported as nonmajor funds.

The City reports the following major governmental funds:

The *General Fund* is the City's primary operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

The *Major Streets Fund* accounts for the use of motor fuel taxes which are restricted by State statutes for major street and highway purposes.

The *Local Streets Fund* accounts for the use of motor fuel taxes which are restricted by State statute for local street and highway purposes.

The City reports the following major proprietary funds:

The *Water Fund* accounts for the operations, maintenance and development of water facilities.

The *Sewer Fund* accounts for the operations, maintenance and development of sewer facilities.

The *Marina Fund* accounts for the operations, maintenance and development of marina facilities.

Additionally, the City reports the following fund types:

**Special Revenue Funds.** These funds are used to account for and report the proceeds of specific revenue sources that are restricted or committed to expenditures for specific purposes other than debt service or capital projects.

**Debt Service Funds.** These funds are used to account for and report financial resources that are restricted, committed, or assigned to expenditures for principal and interest.

**Capital Project Funds.** These funds are used to account for and report financial resources that are restricted, committed, or assigned to expenditures for capital outlays, including the acquisition or construction of capital facilities or capital assets.

**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

*Permanent Fund.* This fund accounts for the assets that are permanently restricted in the City's cemetery Perpetual Care Fund. The principal portion of these funds must stay intact, but the interest earnings are used to provide for maintenance of the City's cemetery.

*Enterprise Funds.* These funds account for operations (a) that are financed and operated in a manner similar to private business enterprises where the intent of the governing body is that the cost (expense including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriated for capital maintenance, public policy, management control, accountability, or other purposes.

*Internal Service Funds.* These funds account for operations that provide machinery and equipment and office equipment services to other departments of the City on a cost-reimbursement basis.

*Agency Funds.* These funds are custodial in nature and do not present results of operations or have a measurement focus. These funds are used to account for assets that the City holds for others in an agency capacity (such as taxes collected for other governments).

**C. Measurement Focus, Basis of Accounting, and Financial Statement Presentation**

***Government-wide, Proprietary and Fiduciary Fund Financial Statements.*** The government-wide, proprietary, and fiduciary fund financial statements are reported using the economic resources measurement focus and the accrual basis of accounting, except for agency funds which do not have a measurement focus. Revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place.

Proprietary fund operating revenues, such as charges for services, result from exchange transactions associated with the principal activity of the fund. Exchange transactions are those in which each party receives and gives up essentially equal values. Nonoperating revenues, such as subsidies and investment earnings, result from nonexchange transactions or ancillary activities.

Nonexchange transactions, in which the City gives (or receives) value without directly receiving (or giving) equal value in exchange, include property taxes, grants, and donations. On an accrual basis, revenue from property taxes is recognized in the fiscal year for which the taxes are levied. Revenue from grants and donations is recognized in the fiscal year in which all eligibility requirements have been satisfied.

***Governmental Fund Financial Statements.*** Governmental funds are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Under this method, revenues are recognized when measurable and available. The City considers all revenues reported in the governmental funds to be available if they are collected within 60 days after year-end. Property taxes, state revenue, and interest are considered to be susceptible to accrual.

Expenditures are recorded when the related fund liability is incurred, except for principal and interest on long-term debt, compensated absences, and claims and judgments, which are recognized as expenditures to the extent they have matured. Capital asset acquisitions are reported as expenditures in governmental funds. Proceeds of long-term debt and acquisitions under capital leases, if any, are reported as other financing sources.



**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes and other charges between the City's water and sewer function and various other functions of the City. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

Amounts reported as program revenues include 1) charges to customers or applicants for goods, services, or privileges provided and 2) operating grants and contributions. Internally dedicated resources are reported as general revenues rather than as program revenues. Likewise, general revenues include all taxes.

Proprietary funds distinguish operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the City's enterprise and internal service funds are charges to customers for sales and services. The City also recognizes as operating revenue the portion of tap fees intended to recover the cost of connecting new customers to the system. Operating expenses for enterprise funds and internal service funds include the cost of sales and services, administrative expenses and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

**D. Assets, Liabilities, Deferred Outflows/Inflows of Resources and Net Position/Fund Balance**

***Cash and Equivalents***

The City maintains a cash pool for certain City funds. Each fund's portion of the cash pool is displayed on the statement of net position/balance sheet as "Cash and Equivalents". The debt service and trust and agency funds cash resources are invested separately as required by law.

The City's cash and equivalents include cash on hand, demand deposits and short-term investments with original maturities of six months or less from the date of acquisition.

State statutes authorize the City to deposit in the accounts of federally insured banks, credit unions and savings and loan associations and to invest in obligations of the U.S. Treasury, certain commercial paper, repurchase agreements, banker's acceptances, and mutual funds composed of otherwise legal investments.

***Receivables and Payables***

Activity between funds that are representative of lending/borrowing arrangements outstanding at the end of the fiscal year are referred to as either "due to/from other funds" (i.e., the current portion of interfund loans) or "advances to/from other funds" (i.e., the non-current portion of interfund loans). All other outstanding balances between funds are reports as "due to/from other funds." Any residual balances outstanding between the governmental activities and business-type activities are reported in the government-wide financial statements as "internal balances."

***Property Taxes***

The City's property taxes are levied each July 1 on the taxable valuation of property located in the City as of the preceding December 31, the lien date. Property taxes are payable without penalty and interest through February 28; as of March 1, of the succeeding year, unpaid real property taxes are sold to and collected by Mackinac County. Assessed values, as established annually by the City and subject to acceptance by the City, are equalized by the State at an estimated 50% of current market value.

Property taxes are recognized in the fiscal year in which they are levied.

**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

***Inventories***

All inventories are valued at cost using the first-in/first-out (FIFO) method.

***Prepays Items***

Certain payments to vendors reflect costs applicable to future fiscal years and are recorded as prepaid items in both governmental-wide and fund financial statements.

***Restricted Assets***

Certain resources are set aside for repayment of the City’s Water and Sewer Enterprise Fund revenue bonds and are classified as restricted assets on the Statement of Net Position because their use is limited by applicable bond covenants.

***Capital Assets***

Capital assets, which include buildings, land improvements, infrastructure, marina, equipment, vehicles, and water and sewer system (e.g., roads, sidewalks, and similar items), reported in the applicable governmental or business-type activities columns in the government-wide financial statements. The City defines capital assets as assets with an initial, individual cost of more than \$5,000 and an estimated useful life in excess of two years. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated fair value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets lives are not capitalized.

Major outlays for capital assets and improvements are capitalized as projects are constructed. Interest incurred during the construction phase of capital assets of business-type activities, if any, is included as part of the capitalized value of the assets constructed. No such interest expense was incurred during the current fiscal year.

Capital assets of the primary government are depreciated using the straight-line method over the following estimated useful lives:

Buildings	15-40 years
Land improvements	10-15 years
Infrastructure	20 years
Marina	5-40 years
Equipment	5-25 years
Vehicles	5-25 years
Water and Sewer System	10-50 years

***Vested Employee Benefits***

It is the City’s policy to permit employees to accumulate earned but unused sick and vacation time benefits, subject to certain limitations. All sick and vacation time pay is accrued when incurred in the government-wide statements. A liability for these amounts is reported in governmental funds only if they have matured, for example as a result of employee resignations or retirements.

**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)*****Long-Term Obligations***

In the government-wide financial statements, and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. Bond premiums and discounts are deferred and amortized over the life of the bonds using the straight-line method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are expensed when incurred.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuance are reported as other financing sources while discounts on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

***Pensions***

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Pension Plan and additions to/deductions from the fiduciary net position have been determined on the same basis as they are reported by MERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

***Deferred Outflows of Resources***

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The City has pension items that qualify for reporting in this category.

***Deferred Inflows of Resources***

In addition to liabilities, the statement of net position and governmental funds balance sheet will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The City has OPEB items that qualify for reporting in this category.

***Interfund Transfers***

During the course of normal operations, the City has numerous transactions between funds, component units, including expenditures and transfers of resources to provide services, construct assets, and service debt. The accompanying financial statements generally reflect such transactions as transfers. Transfers between governmental or proprietary funds are netted as part of the reconciliation to the government-wide financial statements. Internal service funds are used to record charges for services to all City funds as operating revenue. All City funds record payments to the internal service funds as operating expenditures/expenses.

**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)**

*Fund Balance Classification*

The governmental fund financial statements present fund balances based on classifications that comprise a hierarchy that is based primarily on the extent to which the City is bound to honor constraints on the specific purposes for which amounts in the respective governmental funds can be spent. The classifications used in the governmental fund financial statements are as follows:

- Nonspendable: This classification includes amounts that cannot be spent because they are either (a) not spendable form or (b) are legally or contractually required to be maintained intact. The City has classified Inventories and Prepaid Items as being Nonspendable as these items are not expected to be converted to cash within the next year in the amount of \$112,413.
- Restricted: This classification includes amounts for which constraints have been placed on the use of the resources either (a) externally imposed by creditors (such as through a debt covenant), grantors, contributors, or laws or regulations of other governments, or (b) imposed by law through constitutional provisions or enabling legislation. The City has restricted \$486,861 for Major Streets, \$153,161 for Local Streets, \$700,690 for Nonmajor Special Revenue Funds, \$40,985 for Debt Service Funds, \$619,918 for Capital Project Funds and \$25,000 for the Permanent Fund.
- Committed: This classification includes amounts that can be used only for specific purposes pursuant to constraints imposed by formal action of the City. These amounts cannot be used for any other purpose unless the City removes or changes the specified use by taking the same type of action that was employed when the funds were initially committed. This classification also includes contractual obligations to the extent that existing resources have been specifically committed for use in satisfying those contractual requirements. The City has committed \$0 fund balance.
- Assigned: This classification includes amounts that are constrained by the City's intent to be used for a specific purpose but are neither restricted nor committed. This intent can be expressed by the City through the budgetary process. This classification also includes the remaining positive fund balance for all governmental funds except for the General Fund. The City has assigned funds for Special Revenue Funds.
- Unassigned: This classification includes the residual fund balance for the General Fund. The unassigned classification also includes negative residual fund balance of any other governmental fund that cannot be eliminated by offsetting of Assigned fund balance amounts.

The City would typically use Restricted fund balances first, followed by Committed resources, and then Assigned resources, as appropriate opportunities arise, but reserves the right to selectively spend Unassigned resources first to defer the use of these other classified funds.

*Use of Estimates*

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows, liabilities, and deferred inflows and disclosure of contingent assets and liabilities at the date of the reporting period. Actual results could differ from those estimates.

**NOTE 2 - STEWARDSHIP, COMPLIANCE, AND ACCOUNTABILITY**

***Budgetary Information***

Budgetary Information – Annual budgets are adopted on a basis consistent with accounting principles generally accepted in the United States of America.

Budgets and Budgetary Control – The City follows these procedures in establishing the budgetary data reflected in the financial statements:

- a. Each April, after receiving input from the individual departments, the City Manager prepares a proposed operating budget for the fiscal period commencing January 1 and lapses on December 31. The operating budget includes proposed expenditures and the means of financing them.
- b. Public hearings are conducted to obtain taxpayer comments.
- c. Prior to January 1, the budget is legally enacted through a resolution passed by the City Commission.
- d. Budgetary control is exercised at the functional level of the General Fund. Any revisions that alter the total expenditures of any function or fund (i.e., budget amendments) require approval by the City Commission. Such amendments are made in accordance with the procedures prescribed under Public Act 621 of 1978.
- e. The budget and approved appropriations lapse at the end of the fiscal year.
- f. The City does not record encumbrances in the accounting records during the year as normal practice and, therefore, no outstanding encumbrances exist at year end.

Budgeted amounts are as originally adopted or amended by the City Commission during the year. Individual amendments were not material in relation to the original appropriations which were amended. The modified accrual basis of accounting is used for budgetary purposes.

The General Fund revenue budget was adopted on the basis of activities or programs financed by the General Fund.

Michigan Public Act 621 of 1978 (the Budgeting Act) requires that budgets be adopted for Governmental Funds. U.S. generally accepted accounting principles require that the financial statements present budgetary comparisons for the Governmental Fund Types for which budgets were legally adopted. The original budget adopted for the General Fund was modified throughout the year through various budget amendments.

The budget document presents information by fund, function, department, and line items. The legal level of budgetary control adopted by the governing body is the functional level.

**NOTE 3 - CASH AND EQUIVALENTS**

At year end, the City’s cash and equivalents were reported in the basic financial statements in the following categories:

	<u>Governmental Activities</u>	<u>Business-Type Activities</u>	<u>Total Primary Government</u>	<u>Fiduciary Funds</u>	<u>Component Unit</u>
Cash and Equivalents - Unrestricted	\$ 3,200,221	\$ 807,471	\$ 4,007,692	\$ 303,757	\$ 248,639
Cash and Equivalents – Restricted	<u>418,367</u>	<u>1,382,804</u>	<u>1,801,171</u>	<u>-</u>	<u>-</u>
Total	<u>\$ 3,618,588</u>	<u>\$ 2,190,275</u>	<u>\$ 5,808,863</u>	<u>\$ 303,757</u>	<u>\$ 248,639</u>

**NOTE 3 - CASH AND EQUIVALENTS (Continued)**

The breakdown of cash and equivalents is as follows:

	<u>Primary Government</u>	<u>Fiduciary Funds</u>	<u>Component Unit</u>
Bank Deposits (checking and savings accounts, certificates of deposit and money market accounts)	\$ 5,805,750	\$ 303,757	\$ 248,639
Petty Cash and Cash on Hand	<u>3,113</u>	<u>-</u>	<u>-</u>
Total	<u>\$ 5,808,863</u>	<u>\$ 303,757</u>	<u>\$ 248,639</u>

The City also holds cash at a fiscal agent as of December 31, 2019 in the amount of \$254,875 for the purpose of making debt payments.

*Interest rate risk.* The City does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

*Credit risk.* State law limits investments in commercial paper, corporate bonds, and mutual bond funds to the top two ratings issued by nationally recognized statistical rating organizations. The City has no investment policy that would further limit its investment choices. Credit quality ratings of public money funds were not available from the financial institutions or are unrated.

*Custodial deposit credit risk.* Custodial deposit credit risk is the risk that in the event of a bank failure, the City’s deposits may not be returned. State law does not require and the City does not have a policy for deposit custodial credit risk. As of year-end, \$5,906,853 of the City’s bank balance of \$6,464,535 was exposed to credit risk because it was uninsured and uncollateralized.

*Fair value measurement.* The City categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. Investments that are measured at fair value using the net asset value per share (or equivalent) as a practical expedient are not classified in the fair value hierarchy below.

In instances where inputs used to measure fair value fall into different levels in the above fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the measurements required judgement and considers factors specific to each asset or liability.

**NOTE 3 - CASH AND EQUIVALENTS (Continued)**

Statutory Authority:

Public Act 152, entitled “An act relative to the investment of funds of public corporations of the state; and to validate certain investments,” by amending section 1 (MCL 129.91), as amended by 2009 PA 21.

Except as provided in section 5, the governing body by resolution may authorize its investment officer to invest the funds of that public corporation in one or more of the following:

- a. Bonds, securities, and other obligations of the United States or an agency or instrumentality of the United States.
- b. Certificates of deposit, savings accounts, or depository receipts of a financial institution, but only if the financial institution complies with subsection (2); certificates of deposit obtained through a financial institution as provided in subsection (5); or deposit accounts of a financial institution as provided in subsection (6).
- c. Commercial paper rated at the time of purchase within the two highest classifications established by not less than two standard rating services and matures not more than 270 days after the date of purchase.
- d. Repurchase agreements consisting of instruments listed in subdivision (a).
- e. Bankers’ acceptances of United States banks.
- f. Obligations of this state or any of its political subdivisions that at the time of purchase are rated as investment grade by not less than one standard rating service.
- g. Mutual funds registered under the investment company act of 1940, 15 USC 80a-1 to 80a-64, with authority to purchase only investment vehicles that are legal for direct investment by a public corporation. However, a mutual fund is not disqualified as a permissible investment solely by reason of any of the following:
  - (i) The purchase of securities on a when-issued or delayed delivery basis.
  - (ii) The ability to lend portfolio securities as long as the mutual fund receives collateral at all times equal to at least 100% of the value of the securities loaned.
  - (iii) The limited ability to borrow and pledge a like portion of the portfolio’s assets for temporary or emergency purposes.
- h. Obligations described in subdivisions (a) through (g) if purchased through an interlocal agreement under the urban cooperation act of 1967, 1967 (Ex Sess) PA 7, MCL 124.501 to 124.512.
- i. Investment pools organized under the surplus funds investment pool act, 1982 PA 367, MCL 129.111 to 129.118.
- j. The investment pools organized under the local government investment pool act, 1985 PA 121, MCL 129.141 to 129.150.

The City’s deposits and investment policy are in accordance with statutory authority.

These deposits are in various financial institutions in varying amounts. All accounts are in the name of the City and specific funds. They are recorded in City records at cost. Interest is recorded when the deposits mature or is credited to the applicable account.

**NOTE 4 - CAPITAL ASSETS**

Capital asset activity for the primary government for the current year was as follows:

	<u>Beginning Balances</u>	<u>Additions</u>	<u>Deductions/ Adjustments</u>	<u>Ending Balances</u>
<b>Governmental Activities:</b>				
<i>Capital assets not being depreciated:</i>				
Land	\$ 1,757,928	\$ -	\$ -	\$ 1,757,928
Museum Artifacts	300,000	-	-	300,000
Construction in Progress	<u>62,253</u>	<u>101,261</u>	<u>(40,000)</u>	<u>123,514</u>
Subtotal	<u>2,120,181</u>	<u>101,261</u>	<u>(40,000)</u>	<u>2,181,442</u>
<i>Capital assets being depreciated:</i>				
Buildings	8,483,195	-	-	8,483,195
Land improvements	495,466	66,191	-	561,657
Infrastructure	463,108	-	-	463,108
Equipment	2,472,363	-	-	2,472,363
Vehicles	<u>926,858</u>	<u>19,000</u>	<u>-</u>	<u>945,858</u>
Subtotal	<u>12,840,990</u>	<u>85,191</u>	<u>-</u>	<u>12,926,181</u>
<i>Less accumulated depreciation on:</i>				
Buildings	(3,430,844)	(227,436)	-	(3,658,280)
Land improvements	(255,290)	(10,639)	-	(265,929)
Infrastructure	(193,652)	(23,156)	-	(216,808)
Equipment	(1,912,171)	(77,564)	-	(1,989,735)
Vehicles	<u>(520,373)</u>	<u>(86,638)</u>	<u>-</u>	<u>(607,011)</u>
Subtotal	<u>(6,312,330)</u>	<u>(425,433)</u>	<u>-</u>	<u>(6,737,763)</u>
Net Capital Assets Being Depreciated	<u>6,528,660</u>	<u>(340,242)</u>	<u>-</u>	<u>6,188,418</u>
Capital Assets – Net	<u>\$ 8,648,841</u>	<u>\$ (238,981)</u>	<u>\$ (40,000)</u>	<u>\$ 8,369,860</u>

Depreciation expense was charged to functions/programs of the primary government as follows:

<b>Governmental Activities</b>	
General Government	\$ 54,873
Public Safety	34,370
Public Works	110,703
Recreation and Culture	173,663
Capital assets held by the City’s internal service funds are charged to the various functions based on their usage of the assets	<u>51,824</u>
<b>Total Depreciation Expense - Governmental Activities</b>	<u>\$ 425,433</u>



NOTE 4 - CAPITAL ASSETS (Continued)

	<u>Beginning Balances</u>	<u>Additions</u>	<u>Deductions/ Adjustments</u>	<u>Ending Balances</u>
<b>Business-type Activities:</b>				
<i>Capital assets not being depreciated:</i>				
Land	\$ 197,653	\$ -	\$ -	\$ 197,653
Construction in Progress	<u>-</u>	<u>745,824</u>	<u>-</u>	<u>745,824</u>
Subtotal	<u>197,653</u>	<u>745,824</u>	<u>-</u>	<u>943,477</u>
<i>Capital assets being depreciated:</i>				
Buildings	8,352,884	-	-	8,352,884
Machinery and Equipment	395,555	-	-	395,555
Water	11,043,467	43,736	-	11,087,203
Sewer	9,575,161	-	-	9,575,161
Marina	<u>8,308,884</u>	<u>-</u>	<u>-</u>	<u>8,308,884</u>
Subtotal	<u>37,675,951</u>	<u>43,736</u>	<u>-</u>	<u>37,719,687</u>
<i>Less accumulated depreciation on:</i>				
Buildings	(5,040,584)	(167,419)	-	(5,208,003)
Machinery and Equipment	(315,975)	(10,610)	-	(326,585)
Water	(5,494,236)	(224,356)	-	(5,718,592)
Sewer	(1,846,105)	(227,194)	-	(2,073,299)
Marina	<u>(3,237,427)</u>	<u>(209,140)</u>	<u>-</u>	<u>(3,446,567)</u>
Subtotal	<u>(15,934,327)</u>	<u>(838,719)</u>	<u>-</u>	<u>(16,773,046)</u>
Net Capital Assets Being Depreciated	<u>21,741,624</u>	<u>(794,983)</u>	<u>-</u>	<u>20,946,641</u>
Capital Assets - Net	<u>\$ 21,939,277</u>	<u>\$ (49,159)</u>	<u>\$ -</u>	<u>\$ 21,890,118</u>
<b>Business - type Activities</b>				
Water			\$ 232,211	
Sewer			395,558	
Marina			209,140	
Golf Course			<u>1,810</u>	
<b>Total Depreciation Expense – Business - type Activities</b>			<u>\$ 838,719</u>	

**NOTE 4 - CAPITAL ASSETS (Continued)**

Capital asset activity of the Downtown Development Authority (“DDA”) for the current year was as follows:

	<u>Beginning Balances</u>	<u>Additions</u>	<u>Deductions</u>	<u>Ending Balances</u>
<i>Capital assets not being depreciated:</i>				
Land	\$ 182,626	\$ -	\$ -	\$ 182,626
Subtotal	<u>182,626</u>	<u>-</u>	<u>-</u>	<u>182,626</u>
<i>Capital assets being depreciated:</i>				
Buildings	226,043	-	-	266,043
Equipment	191,155	10,938	-	202,093
Land Improvements	<u>1,663,727</u>	<u>132,444</u>	<u>-</u>	<u>1,796,171</u>
Subtotal	<u>2,120,925</u>	<u>143,382</u>	<u>-</u>	<u>2,264,307</u>
<i>Less accumulated depreciation:</i>				
Buildings	(43,365)	(9,386)	-	(52,751)
Equipment	(100,335)	(38,997)	-	(139,332)
Land Improvements	<u>(1,326,499)</u>	<u>(4,454)</u>	<u>-</u>	<u>(1,330,953)</u>
Subtotal	<u>(1,470,199)</u>	<u>(52,837)</u>	<u>-</u>	<u>(1,523,036)</u>
Net Capital Assets Being Depreciated	<u>650,726</u>	<u>90,545</u>	<u>-</u>	<u>741,271</u>
Capital assets – Net of depreciation	<u>\$ 833,352</u>	<u>\$ 90,545</u>	<u>\$ -</u>	<u>\$ 923,897</u>

Depreciation expense was charged to the Downtown Development Authority in the amount of \$52,837.

**NOTE 5 - INTERFUND RECEIVABLES, PAYABLES, AND TRANSFERS**

The City reports interfund balances between many of its funds. Some of the balances are considered immaterial and are aggregated into a single column or row. The total of all balances agrees with the sum of interfund balances presented in the statements of net position/balance sheet for governmental funds, proprietary funds, and fiduciary funds. Interfund transactions resulting in interfund receivables and payables are as follows:

DUE TO OTHER FUNDS	DUE FROM OTHER FUNDS
	Nonmajor Enterprise
General Fund	<u>\$ 741</u>

All balances resulted from the time lag between the dates that (1) interfund goods and services are provided or reimbursable expenditures occur, (2) transactions are recorded in the accounting system, and (3) payments between funds are made.

**NOTE 5 - INTERFUND RECEIVABLES, PAYABLES, AND TRANSFERS (Continued)**

Transfers are used to (1) move revenues from the fund that statute or budget requires to collect them to the fund that statute or budget requires to expend them, (2) moves receipts restricted to debt service from the funds collecting the receipts to the debt service fund as debt service payments become due, and (3) use unrestricted revenues collected in the general fund to finance various programs accounted for in other funds in accordance with budgetary authorizations.

		<b>TRANSFERS IN</b>					
<b>TRANSFERS OUT</b>		General	Nonmajor Governmental	Water	Nonmajor Enterprise	Internal Service	Total
	General	\$	62,580	\$ 98,611	\$ 41,400	\$ 10,000	\$ 30,000
Major Street		12,180	-	-	-	-	12,180
Local Street		6,030	-	-	-	-	6,030
Nonmajor Governmental		17,000	6,175	-	-	-	23,175
Water		53,600	-	-	-	5,700	59,300
Sewer		28,300	-	-	-	3,900	32,200
Marina		-	79,500	-	-	-	79,500
Internal Service		-	22,320	-	-	-	22,320
Total	\$	<u>179,690</u>	<u>\$ 206,606</u>	<u>\$ 41,400</u>	<u>\$ 10,000</u>	<u>\$ 39,600</u>	<u>\$ 477,296</u>

**NOTE 6 - LONG-TERM DEBT**

The government issues bonds to provide for the acquisition and construction of major capital facilities. General obligation bonds are direct obligations and pledge the full faith and credit of the government. City contractual agreements and installment purchase agreements are also general obligations of the government.

Bond and contractual obligation activity can be summarized as follows:

	<u>Beginning Balance</u>	<u>Increases/ Adjustments</u>	<u>Decreases/ Adjustments</u>	<u>Ending Balance</u>	<u>Due Within One Year</u>
<b>Governmental Activities</b>					
2011 General Obligation Building Authority Refunding of 2001 issue, due in annual installments of \$15,000 to \$80,000 through September 2026, plus interest at 3.50% to 4.75%, payable semi-annually.	\$ 535,000	\$ -	\$ 55,000	\$ 480,000	\$ 60,000
Installment Loan to First National Bank, payable in annual installments of \$6,398 through August 2036, plus interest at 3.25% annually, secured by equipment.	86,158	-	3,601	82,557	3,714
Installment Loan First National Bank, payable in annual installments of \$5,817 through August 2036, plus interest of 3.25%. Secured by equipment.	78,323	-	3,271	75,052	3,376

NOTE 6 - LONG-TERM DEBT (Continued)

	<u>Beginning Balance</u>	<u>Increases/ Adjustments</u>	<u>Decreases/ Adjustments</u>	<u>Ending Balance</u>	<u>Due Within One Year</u>
<b>Governmental Activities (Continued)</b>					
Installment Loan First National Bank, payable in annual installments of \$9,708 to \$10,221 through March 2020, plus interest of 2.610%. Secured by equipment.	20,182	-	9,962	10,220	10,220
Installment Loan Agreement Central Savings Bank, payable in annual installments of \$4,463 to \$5,701 through October 2026, plus interest of 2.625%. Secured by equipment.	48,724	-	5,136	43,588	5,204
2015 USDA Capital Improvement Bonds, payable in annual installments of \$8,000 to \$12,000 through October 2015, plus interest of 3.625% annually.	74,000	-	9,000	65,000	10,000
2014 USDA Capital Improvement Bonds, payable in annual installments of \$10,000 to \$80,000 through September 2026, plus interest from 3.5% to 4.75%, annually.	740,000	-	20,000	720,000	20,000
2019 Ambulance installment note payable First National Bank, payable in annual installments of \$52,755 to \$56,243 through 2021, plus interest of 3.253% annually.	163,468	-	104,658	58,810	56,243
2019 Bobcat installment note payable Central Savings Bank, payable in annual installments of \$14,192 through 2023, including interest of 3.790% annually.	64,034	-	12,264	51,770	12,228
2019 USDA Capital Improvement Bonds Series 2019A, payable in annual installments of \$49,000 to \$111,000 through 2049, plus interest of 3.00% annually.	-	124,000	-	124,000	-
2019 USDA Capital Improvement Bonds Series 2019B, payable in annual installments of \$6,000 to \$12,000 through 2048, plus interest of 3.00% annually.	-	15,000	-	15,000	6,000
Vested Employee Benefits – (net)	<u>237,144</u>	<u>-</u>	<u>715</u>	<u>236,429</u>	<u>-</u>
Total Governmental Activities – Long-Term Debt	<u>2,047,033</u>	<u>139,000</u>	<u>223,607</u>	<u>1,962,426</u>	<u>186,985</u>

NOTE 6 - LONG-TERM DEBT (Continued)

	<u>Beginning Balance</u>	<u>Increases/ Adjustments</u>	<u>Decreases</u>	<u>Ending Balance</u>	<u>Due Within One Year</u>
<b>Business-type Activities</b>					
2015 Revolving Sewer Fund Loan, due in annual installments of \$61,561 to through 2041, plus interest at 2.50%, payable semi-annually.	1,485,108	-	65,000	1,420,108	65,000
2008 Revolving Sewer Fund Loan, due in annual installments of \$155,000 to \$240,000 through October 2029, plus interest at 2.50%, payable semi-annually.	2,325,000	-	185,000	2,140,000	190,000
2000 Water Supply System Revenue Bonds, due in annual installments of \$42,000 to \$142,000 through July 2040, plus interest at 4.50%, payable semi-annually.	2,011,000	-	55,000	1,956,000	58,000
2012 Water Supply System Revenue Refunding of the 2002 issue, due in annual installments of \$175,000 to \$265,000 through January 2020, plus interest at 2.00% to 3.00%, payable semi-annually.	530,000	-	265,000	265,000	265,000
2010 USDA Rural Development Sewer Capital Improvement Project Bonds, due in annual installments of \$32,000 to \$101,000 through 2050, plus interest at 2.25%, payable semi-annually.	2,041,000	-	49,000	1,992,000	50,000
2009 Sewage Disposal System Junior Lien Revenue Bonds, maturing serially to 2030, in annual amounts ranging from \$30,000 to \$40,000, plus interest at 2.50%, payable semi-annually.	430,771	-	35,000	395,771	35,000
1999 A Series Sewage Disposal Revenue Bonds, due in annual installments of \$13,000 to \$38,000 through December 2038, plus interest at 4.50%, payable semi-annually.	524,000	-	17,000	507,000	17,000
1999 B Series Sewage Disposal Revenue Bonds, due in annual installments of \$2,000 to \$8,010 through December 2038, plus interest at 4.50%.	72,010	-	2,000	70,010	2,000

NOTE 6 - LONG-TERM DEBT (Continued)

	Beginning Balance	Increases/ Adjustments	Decreases	Ending Balance	Due Within One Year
<b>Business-type Activities (Continued)</b>					
2018 State Infrastructure Loan, payable in annual installments of \$9,759 to \$13,819 through May 2032, plus interest of 2.5%.	103,126	-	6,479	96,647	6,422
2018 Installment Loan Payable, First National Bank, due in monthly installments of \$535, including interest of 2.60%, through October 2022.	22,981	-	5,807	17,174	6,026
2019 USDA Capital Improvement Bond, due in annual installments of \$20,000 to \$57,000 through 2058, plus interest of 4.50%.	-	767,000	20,000	747,000	21,000
Premium on 2012 Water Supply System Revenue Refunding Bonds	15,458	-	7,728	7,730	7,730
Total Business – type Activities – Long-Term Debt	<u>9,560,454</u>	<u>767,000</u>	<u>713,014</u>	<u>9,614,440</u>	<u>723,178</u>
<b>Total Long-Term Debt</b>	<b><u>\$ 11,607,487</u></b>	<b><u>\$ 906,000</u></b>	<b><u>\$ 936,621</u></b>	<b><u>\$ 11,576,866</u></b>	<b><u>\$ 910,162</u></b>

Vested employee benefits are generally liquidated by the General Fund for all governmental activities, business-type activities and the component unit.

Annual debt service requirements to maturity for the above obligations are as follows:

Year End December 31	Governmental Activities		Business-type Activities	
	Principal	Interest	Principal	Interest
2020	\$ 186,984	\$ 67,656	\$ 723,178	\$ 305,582
2021	172,852	59,282	460,776	288,167
2022	175,073	51,491	470,704	274,344
2023	152,888	44,403	482,916	260,200
2024	114,540	38,316	494,089	245,647
2025-2029	348,274	127,520	2,690,195	994,966
2030-2034	192,097	84,753	1,641,465	629,367
2035-2039	188,289	50,229	1,616,117	325,143
2040-2044	195,000	17,413	781,000	91,205
2045-2049	-	-	254,000	10,506
Total	<u>\$ 1,725,997</u>	<u>\$ 541,063</u>	<u>\$ 9,614,440</u>	<u>\$ 3,425,127</u>

**NOTE 7 - EMPLOYEE RETIREMENT AND BENEFIT SYSTEMS**

Description of Plan and Plan Assets

The City is in an agent multiple-employer defined benefit pension plan with the Municipal Employees’ Retirement System (MERS). The system provides the following provisions: normal retirement, deferred retirement and service retirement to plan members and their beneficiaries. The service requirement is computed using credited service at the time of termination of membership multiplied by the sum of 1.50% and 2.5% for officers times the final compensation (FAC). The most recent period of which actuarial data was available was for year ended December 31, 2018.

General Information about the Pension Plan

*Plan Description.* The employer’s defined benefit pension plan provides certain retirement, disability and death benefits to plan members and beneficiaries. The employer participates in the Municipal Employees Retirement System (MERS) of Michigan. MERS is an agent multiple-employer, statewide public employee pension plan established by the Michigan Legislature under Public Act 135 of 1945 and administered by a nine-member Retirement Board. MERS issues a publicly available financial report that includes financial statements and required supplementary information. This report may be obtained accessing the MERS website at [www.mersofmich.com](http://www.mersofmich.com).

**01 – Gnr/ Union: Closed to new hires, linked to Division 12**

	<u>2018 Valuation</u>
<b>Benefit Multiplier:</b>	2.50% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60
<b>Vesting:</b>	10 Years
<b>Early Retirement (Unreduced):</b>	55/25
<b>Early Retirement (Reduced):</b>	50/25
	55/15
<b>Final Average Compensation:</b>	5 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)
<b>COLA for Current Retirees:</b>	2.50% (Non-Compound)
<b>Employee Contributions:</b>	0%
<b>Act 88:</b>	Yes (Adopted 6/5/1972)

**02 – Pol/Fire: Closed to new hires, linked to Division 20**

	<u>2018 Valuation</u>
<b>Benefit Multiplier:</b>	2.50% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60
<b>Vesting:</b>	10 Years
<b>Early Retirement (Unreduced):</b>	25 and Out
<b>Early Retirement (Reduced):</b>	55/15
<b>Final Average Compensation:</b>	3 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)
<b>COLA for Current Retirees:</b>	2.50% (Non-Compound)
<b>Employee Contributions:</b>	1.20%
<b>Act 88:</b>	Yes (Adopted 6/5/1972)

NOTE 7 - EMPLOYEE RETIREMENT AND BENEFIT SYSTEMS (Continued)

**10 – Gnrl NonUn: Closed to new hires, linked to Division 11**

	<u>2018 Valuation</u>
<b>Benefit Multiplier:</b>	2.50% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60
<b>Vesting:</b>	10 Years
<b>Early Retirement (Unreduced):</b>	55/15
<b>Early Retirement (Reduced):</b>	50/25
<b>Final Average Compensation:</b>	5 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)
<b>COLA for Current Retirees:</b>	2.50% (Non-Compound)
<b>Employee Contributions:</b>	0%
<b>Act 88:</b>	Yes (Adopted 6/5/1972)

**11 – General non-union at 1/1/2012: Open Division, linked to Division 10**

	<u>2018 Valuation</u>
<b>Benefit Multiplier:</b>	1.50% Multiplier (no max)
<b>Normal Retirement Age:</b>	60
<b>Vesting:</b>	10 Years
<b>Early Retirement (Unreduced):</b>	-
<b>Early Retirement (Reduced):</b>	50/25
	55/15
<b>Final Average Compensation:</b>	5 years
<b>Employee Contributions:</b>	0%
<b>Act 88:</b>	Yes (Adopted 6/5/1972)

**12 – General Union after 1/1/2013: Open Division, linked to Division 01**

	<u>2018 Valuation</u>
<b>Benefit Multiplier:</b>	1.50% Multiplier (no max)
<b>Normal Retirement Age:</b>	60
<b>Vesting:</b>	10 Years
<b>Early Retirement (Unreduced):</b>	55/25
<b>Early Retirement (Reduced):</b>	50/25
	55/15
<b>Final Average Compensation:</b>	5 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)
<b>Employee Contributions:</b>	0%
<b>Act 88:</b>	Yes (Adopted 6/5/1972)



NOTE 7 - EMPLOYEE RETIREMENT AND BENEFIT SYSTEMS (Continued)

20 – Police/Fire after 01/01/2013: Open Division, linked to Division 02	
	<u>2018 Valuation</u>
<b>Benefit Multiplier:</b>	1.50% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60
<b>Vesting:</b>	10 Years
<b>Early Retirement (Unreduced):</b>	55/25
<b>Early Retirement (Reduced):</b>	50/25
	55/15
<b>Final Average Compensation:</b>	5 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)
<b>Employee Contributions:</b>	0%
<b>Act 88:</b>	Yes (Adopted 6/5/1972)

Employees Covered by Benefit Terms

At December 31, 2019, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits	34
Inactive employees entitled to but not yet receiving benefits	5
Active employees	<u>31</u>
	70

Funding Policy

The obligation to contribute to and maintain the system for these employees was established by negotiation with the City’s competitive bargaining unit and personnel policy, which require employees to contribute to the plan. The City is required to contribute at an actuarially determined rate.

The monthly employer contribution rate at December 31, 2019 is as follows:

General Union	\$ 14,966
Police/Fire	6,499
General Non-Union	12,947
General Non-Union	847
General Union After	1,970
Police/Fire After	433

Net Pension Liability

The City’s net pension liability was measured as of December 31, 2019, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

*Actuarial Assumptions.* The total pension liability in the December 31, 2018 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50 %
Salary increases	3.75 %, in the long term
Investment rate of return	7.75 %, net of investment expense, including inflation

**NOTE 7 - EMPLOYEE RETIREMENT AND BENEFIT SYSTEMS (Continued)**

Mortality rates used were based on the RP 2014 Group Annuity Mortality Table of a 50% Male and 50% Female blend

The actuarial assumptions used in valuation were based on the results of the most recent actuarial experience study of 2009-2013.

The long-term expected rate of return on pension plan investments was determined using a model method in which the best-estimate ranges of expected future real rates of return (expected returns, net of investment and administrative expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	55.5%	3.41%
Global Fixed Income	18.5%	0.24%
Private Investments	26.0%	1.60%

*Discount Rate.* The discount rate used to measure the total pension liability is 8.00%. The projection of cash flows used to determine the discount rate assumes that employer and employee contributions will be made at the rates agreed upon for employees and the actuarially determined rates for employers. Based on these assumptions, the pension plan’s fiduciary net position was projected to be available to pay all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

**Changes in the Net Pension Liability:**

	Increases (Decreases)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
<b>Balances at December 31, 2018</b>	\$ 12,500,378	\$ 6,828,242	\$ 5,672,136
Service cost	136,812	-	136,812
Interest on total pension liability	971,145	-	971,145
Changes in benefits	-	-	-
Difference between expected and actual experience	287,442	-	287,442
Changes in assumptions	-	-	-
Employer contributions	-	509,310	(509,310)
Employee contributions	-	1,536	(1,536)
Net investment income	-	911,769	(911,769)
Benefit payments, including employee refunds	(858,946)	(858,946)	-
Administrative expense	-	(15,703)	15,703
Other changes	25,811	-	25,811
<b>Net changes</b>	<b>562,264</b>	<b>547,966</b>	<b>14,298</b>
<b>Balances as of December 31, 2019</b>	<b>\$ 13,062,642</b>	<b>\$ 7,376,208</b>	<b>\$ 5,686,434</b>

**NOTE 7 - EMPLOYEE RETIREMENT AND BENEFIT SYSTEMS (Continued)**

*Sensitivity of the net pension liability to changes in the discount rate.* The following presents the net pension liability of the City, calculated using the discount rate of 8.00%, as well as what the City's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.00%) or 1-percentage-point higher (9.00%) than the current rate:

	<b>1% Decrease (7.00%)</b>	<b>Current Discount Rate (8.00%)</b>	<b>1% Increase (9.00%)</b>
City's net pension liability	\$7,114,112	\$5,686,434	\$4,476,186

*Pension plan fiduciary net position.* Detailed information about the pension plan's fiduciary net position is available in the separately issued MERS financial report.

**Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions**

For the year ended December 31, 2019, the City recognized pension expense of \$1,004,303. At December 31, 2019, the City reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	<b>Deferred Outflows of Resources</b>	<b>Deferred Inflows of Resources</b>
Difference between expected and actual experience	\$ 273,670	\$ -
Changes in assumptions	-	-
Net difference between projected and actual earnings on pension plan investments	32,032	-
Total	<u>\$ 305,702</u>	<u>\$ -</u>

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recorded in pension expense as follows:

<u>Year Ended December 31:</u>	
2020	72,427
2021	139,723
2022	169,565
2023	(76,013)

**NOTE 8 - OTHER POST EMPLOYMENT BENEFITS**

*Plan Description.* The City administers a single-employer healthcare plan (“the Retiree Health Plan”). The plan provides lifetime healthcare insurance for eligible retirees through the City’s group health insurance plan, which covers both active and retired members. Benefit provisions are established through negotiations between the City and employees. The Retiree Health Plan does not issue a publicly available financial report. No assets are accumulated in a trust that meets the criteria in GASB Statement No. 75, paragraph 4.

*Funding Policy.* Currently the city does not pre-fund retiree health benefits and instead provides for benefits on a pay-as-you-go basis.

*Employees Covered by Benefit Terms*

As of Actuarial date 1/1/18, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefit payments	22
Inactive employees entitled to but not yet receiving benefits	-
Active employees	<u>15</u>
Total participants covered by OPEB Plan	<u><u>37</u></u>

The City’s OPEB Plan is closed to new entrants.

*Total OPEB Liability and Net OPEB Liability*

The City’s total OPEB liability of \$1,710,817 was measured as of December 31, 2018, and was determined by an actuarial valuation as of January 1, 2018.

*Actuarial assumptions and other inputs.*

The total OPEB liability in the January 1, 2019 actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified.

Discount Rate	4.10%
2018 Current Year Trend (Pre 65/Post 65)	1.05% / (16.35%)
2019 Trend	9.50%
Decrement	0.50%
Ultimate Trend	5.0%
Salary Increases	2.00%
Actuarial Cost Method	Entry Age Normal

The discount rate was based on the index provided by Bond Buyer 20-Bond General Obligation Index based on the 20-year AA municipal bond rate as of January 1, 2019.

Mortality rates: SOA RP-2014 Total Dataset Mortality with Scale MP-2018 (Base Year 2006)

NOTE 8 - OTHER POST EMPLOYMENT BENEFITS (Continued)

Changes in the Total OPEB Liability

	<u>Total OPEB Liability</u>	<u>Plan Fiduciary Net Position</u>	<u>Net OPEB Liability</u>
<b>Balances at December 31, 2018</b>	\$ 1,713,238	\$ -	\$ 1,713,238
Service cost	18,142	-	18,142
Interest	68,419	-	68,419
Assumption Changes	-	-	-
Contributions - Employer	-	88,982	(88,982)
Benefit payments	(88,982)	(88,982)	-
Administrative expense	-	-	-
<b>Net changes</b>	<u>(2,421)</u>	<u>-</u>	<u>(2,421)</u>
<b>Balances as December 31, 2019</b>	<u>\$ 1,710,817</u>	<u>\$ -</u>	<u>\$ 1,710,817</u>

*Sensitivity of the total OPEB liability to changes in the discount rate.*

The December 31, 2018 valuation was prepared using a discount rate of 4.10%. If the discount rate were 1% higher than what was used in this valuation, the net OPEB Liability would decrease. If the discount rate were 1% lower than what was used in this valuation, the net OPEB Liability would increase.

	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
Net OPEB liability	\$1,859,075	\$1,710,817	\$1,597,942

*Sensitivity of the total OPEB liability to changes in the healthcare cost trend rate.*

The December 31, 2018 valuation was prepared using a discount rate of 1.05% / (16.35%) pre 65 / post 65. If the trend rate were 1% higher than what was used in this valuation, the net OPEB Liability would increase. If the trend rate were 1% lower than what was used in this valuation, the net OPEB Liability would decrease.

	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
Net OPEB liability	\$1,384,616	\$1,710,817	\$2,048,813

For the year ended December 31, 2019, the County recognized an OPEB expense as follows:

Service Cost	\$ 18,142
Interest on total OPEB liability	68,419
Deferred outflows/inflows from assumption changes	<u>(48,206)</u>
<b>Net OPEB Expense</b>	<u>\$ 38,355</u>

**NOTE 9 - OTHER POST EMPLOYMENT BENEFITS (Continued)**

*Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB*

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year Ended December 31:

2020	48,206
2021	48,206
2022	<u>3,855</u>
Total	<u>\$ 100,267</u>

**NOTE 9 - RISK MANAGEMENT**

The City is exposed to various risks of losses related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The City was unable to obtain general liability insurance at a cost it considered to be economically justifiable. The City joined together with other governments and created a public entity risk pool currently operating as a common risk management and insurance program. The City pays an annual premium to the pool for its automobile, property, and general liability insurance coverage. The agreement provides that the pool will be self-sustaining through member premiums and will reinsure through commercial companies for claims in excess of \$25,000 for each insured event.

The pooling agreement allows for the pool to make additional assessments to make the pool self-sustaining. The City is unable to provide an estimate of the amounts of any potential additional assessments.

The City continues to carry commercial insurance for all other risks and loss. The City has had no settled claims resulting from these risks that exceeded their commercial coverage in any of the past three years.

**NOTE 10 - EXCESS EXPENDITURES OVER APPROPRIATIONS**

Public Act 2 of 1968, as amended provides that a local unit shall not incur expenditures in excess of the amount appropriated. In the body of the financial statements, the City’s actual expenditures were in excess of amounts appropriated as follows:

	<u>Total Appropriations</u>	<u>Amount of Expenditures</u>	<u>Budget Variance</u>
General Fund:			
General Government	\$ 654,940	\$ 695,314	\$ (40,374)

**NOTE 11 - RESTATEMENT**

	<u>Governmental Net Position</u>
Beginning net position as previously stated at January 1, 2019	\$ 4,561,056
Restatement of Net Position – for adjustment of long-term debt	<u>23,245</u>
Beginning net position as restated at January 1, 2019	<u>\$ 4,581,301</u>
	<u>Business-Type Net Position</u>
Beginning net position as previously stated at January 1, 2019	\$ 13,758,371
Restatement of Net Position – for adjustment of long-term debt	<u>(40,000)</u>
Beginning net position as restated at January 1, 2019	<u>\$ 13,718,371</u>

**NOTE 12 - SUBSEQUENT EVENT**

The COVID-19 outbreak in the United States has caused business disruption through mandated and voluntary closings of local units of government. While the disruption is currently expected to be temporary, there is considerable uncertainty around the duration of the closings. Therefore, the City expects this matter to negatively impact its operating results. However, the related financial impact and duration cannot be reasonably estimated at this time.

## **Required Supplementary Information**

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**Required Supplementary Information  
Employee Retirement and Benefit Systems  
Schedule of Changes in Pension Liability  
For the Year Ended December 31, 2019**

	2019	2018	2017	2016	2015
<b>Total pension liability</b>					
Service cost	\$ 136,812	\$ 117,039	\$ 124,471	\$ 121,656	\$ 117,999
Interest	971,145	936,705	921,588	858,648	827,267
Difference between expected and actual experience	287,442	169,315	(106,275)	106,359	(15,708)
Changes in assumptions	-	-	-	640,117	-
Other Changes	25,811	29,490	(38,389)	(17,146)	-
Benefit payments, including refund of member contributions	(858,946)	(804,931)	(615,324)	(579,952)	(523,877)
<b>Net change in total pension liability</b>	562,264	447,618	286,071	1,129,682	405,681
<b>Total pension liability - beginning</b>	12,500,378	12,052,760	11,766,689	10,637,007	10,231,326
<b>Total pension liability - ending</b>	<u>\$ 13,062,642</u>	<u>\$ 12,500,378</u>	<u>\$ 12,052,760</u>	<u>\$ 11,766,689</u>	<u>\$ 10,637,007</u>
<b>Plan fiduciary net position</b>					
Contributions - employer	\$ 509,310	\$ 413,428	\$ 381,917	\$ 329,047	\$ 300,727
Contributions - employee	1,536	2,056	1,976	1,897	2,690
Net investment income	911,769	(283,500)	899,933	721,074	(99,000)
Benefit payments, including refunds of member contributions	(858,946)	(804,931)	(615,324)	(579,951)	(523,877)
Administrative expense	(15,703)	(14,327)	(14,257)	(14,242)	(14,652)
Other Changes	-	(2)	-	-	-
<b>Net change in plan fiduciary net position</b>	547,966	(687,276)	654,245	457,825	(334,112)
<b>Plan fiduciary net position - beginning</b>	6,828,242	7,515,518	6,861,273	6,403,448	6,737,560
<b>Plan fiduciary net position - ending</b>	<u>\$ 7,376,208</u>	<u>\$ 6,828,242</u>	<u>\$ 7,515,518</u>	<u>\$ 6,861,273</u>	<u>\$ 6,403,448</u>
<b>City's net pension liability - ending</b>	<u>\$ 5,686,434</u>	<u>\$ 5,672,136</u>	<u>\$ 4,537,242</u>	<u>\$ 4,905,416</u>	<u>\$ 4,233,559</u>
<b>Plan fiduciary net position as a percentage of the total pension liability</b>	56%	55%	62%	58%	60%
<b>Covered - employee payroll</b>	\$ 1,364,159	\$ 1,122,251	\$ 1,135,338	\$ 1,114,150	\$ 1,054,102
<b>City's net pension liability as a percentage of covered-employee payroll</b>	417%	505%	400%	440%	402%

**Required Supplementary Information  
Employee Retirement and Benefit Systems  
Schedule of Employer Contributions  
For the Year Ended December 31, 2019**

	2019	2018	2017	2016	2015
Actuarially determined contribution	\$ 451,944	\$ 410,796	\$ 329,048	\$ 300,728	\$ 324,396
Contributions in relation to the actuarially determined contribution	509,310	413,428	381,917	329,047	300,727
Contribution deficiency (excess)	\$ (57,366)	\$ (2,632)	\$ (52,869)	\$ (28,319)	\$ 23,669
Covered - employee payroll	\$ 1,364,159	\$ 1,122,251	\$ 1,135,338	\$ 1,114,150	\$ 1,054,102
Contributions as a percentage of covered-employee payroll	37%	37%	34%	30%	29%

**Notes to Schedule:**

Actuarially determined contribution rates are calculated as of December 31st, two years prior to the end of the fiscal year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed
Remaining amortization period	22 years
Asset valuation method	5-years smoothed market
Inflation	2.50%
Salary increases	3.75%, average, including inflation
Investment rate of return	7.75%
Retirement age	Varies depending on plan adoption
Mortality	50% Female/50% Male RP-2014 Group Annuity Mortality Table

**Required Supplementary Information  
Employee Retirement and Benefit Systems  
Schedule of Changes in the OPEB Liability and Related Ratios  
Year Ended December 31, 2019**

	2019	2018
<b>Total OPEB Liability - Beginning of Year</b>	\$ 1,713,238	\$ 1,909,429
Service cost	18,142	21,751
Interest	68,419	64,214
Assumption changes and differences between actual and expected experience	-	(196,679)
Benefit payments	(88,982)	(85,477)
<b>OPEB Liability - End of Year</b>	<u>\$ 1,710,817</u>	<u>\$ 1,713,238</u>
<b>Plan fiduciary net position</b>		
Contributions - employer	\$ 88,982	\$ 85,477
Net investment income	-	-
Benefit payments	(88,982)	(85,477)
Administrative expense	-	-
<b>Net change in plan fiduciary net position</b>	-	-
<b>Plan fiduciary net position - Beginning of Year</b>	-	-
<b>Plan fiduciary net position - End of Year</b>	<u>\$ -</u>	<u>\$ -</u>
<b>Net OPEB liability - End of Year</b>	<u>\$ 1,710,817</u>	<u>\$ 1,713,238</u>
<b>Plan fiduciary net position as a percentage of the total OPEB liability</b>	0%	0%
<b>Covered Payroll</b>	\$ 784,905	\$ 769,515
<b>Net OPEB liability as a percentage of covered payroll</b>	217.96%	222.64%
<b>Schedule of Employer Contributions</b>		
Service cost	\$ 18,142	\$ 21,750
30 year amortization of NOL at 8.0%	96,334	99,613
Actuarially determined contribution	114,476	121,363
Actual Contribution	88,982	85,477
Contribution deficiency/(excess)	<u>\$ 25,494</u>	<u>\$ 35,886</u>
<b>Covered Payroll</b>	\$ 784,905	\$ 769,515
<b>ADC as a percentage of payroll</b>	14.58%	15.77%
<b>Key Assumptions:</b>		
Census Collection Date	January 1, 2018	
Discount rate	4.10%	
Year 1 per 65/post 65 inflation rates (Medical/RX)	1.05% / (16.35%)	
Year 2 inflation rate	9.50%	
Ultimate inflation rate	5.00%	
Year Ultimate inflation rate is reached	2028	
Actuarial Cost Method	Entry age normal (percent of salary)	

**Required Supplementary Information**  
**Budgetary Comparison Schedule**  
**General Fund**  
**For the Year Ended December 31, 2019**

	Budgeted Amounts		Actual Amounts	Variance with
	Original	Final		Final Budget - Positive (Negative)
<b>REVENUES:</b>				
Taxes	\$ 1,172,249	\$ 1,178,679	\$ 1,181,353	\$ 2,674
Licenses and Permits	4,800	8,909	6,452	(2,457)
State Sources	226,500	239,111	254,412	15,301
Local Sources	8,500	15,000	25,370	10,370
Charges for Services	62,050	73,285	72,411	(874)
Rentals	21,600	25,720	25,722	2
Interest Earnings	1,800	6,450	7,762	1,312
Other Revenue	143,900	202,030	177,483	(24,547)
<b>TOTAL REVENUES</b>	<b>1,641,399</b>	<b>1,749,184</b>	<b>1,750,965</b>	<b>1,781</b>
<b>EXPENDITURES:</b>				
Legislative:				
City Commission	22,820	22,820	23,169	(349)
General Government:				
City Manager	172,840	188,810	189,874	(1,064)
Board of Review	2,090	2,090	1,227	863
City Assessor	54,850	79,850	78,778	1,072
City Attorney	19,000	19,000	56,538	(37,538)
City Clerk/Treasurer	193,850	210,265	215,804	(5,539)
Elections	4,075	4,075	3,707	368
City Hall & Grounds	33,200	33,200	32,602	598
Non-Departmental	66,850	117,650	116,784	866
<b>Total General Government</b>	<b>546,755</b>	<b>654,940</b>	<b>695,314</b>	<b>(40,374)</b>
Public Safety:				
Police	432,611	477,686	492,638	(14,952)
Safety & Health	400	400	321	79
Planning & Zoning	5,080	1,580	970	610
Fire	97,625	97,625	88,769	8,856
<b>Total Public Safety</b>	<b>535,716</b>	<b>577,291</b>	<b>582,698</b>	<b>(5,407)</b>

**Required Supplementary Information  
Budgetary Comparison Schedule  
General Fund  
For the Year Ended December 31, 2019**

	Budgeted Amounts		Actual Amounts	Variance with Final Budget - Positive (Negative)
	Original	Final		
Public Works:				
DPW	106,950	123,880	127,511	(3,631)
Sidewalks	2,573	2,573	4,989	(2,416)
Engineering	4,000	-	-	-
Garbage Collection	2,500	2,500	3,072	(572)
Street Lighting	41,000	41,000	38,745	2,255
Total Public Works	<u>157,023</u>	<u>169,953</u>	<u>174,317</u>	<u>(4,364)</u>
Recreation and Culture:				
Park Maintenance	49,543	93,043	91,795	1,248
Boat Launch	4,970	3,310	2,881	429
General Recreation and Culture	73,300	79,500	79,422	78
Total Recreation and Culture	<u>127,813</u>	<u>175,853</u>	<u>174,098</u>	<u>1,755</u>
Debt Service	<u>10,488</u>	<u>10,488</u>	<u>10,488</u>	<u>-</u>
Other Expenditures:				
Insurance and Bonds	25,000	25,000	16,655	8,345
Fringe Benefits	92,300	95,600	94,135	1,465
General Appropriations	20,000	20,000	18,000	2,000
Total Other Expenditures	<u>137,300</u>	<u>140,600</u>	<u>128,790</u>	<u>11,810</u>
<b>TOTAL EXPENDITURES</b>	<u>1,537,915</u>	<u>1,751,945</u>	<u>1,788,874</u>	<u>(36,929)</u>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	<u>103,484</u>	<u>(2,761)</u>	<u>(37,909)</u>	<u>(35,148)</u>
<b>OTHER FINANCING SOURCES (USES):</b>				
Transfers In	144,390	189,390	179,690	(9,700)
Transfers Out	<u>(228,449)</u>	<u>(228,449)</u>	<u>(242,591)</u>	<u>(14,142)</u>
<b>TOTAL OTHER FINANCING SOURCES (USES)</b>	<u>(84,059)</u>	<u>(39,059)</u>	<u>(62,901)</u>	<u>(23,842)</u>
<b>NET CHANGE IN FUND BALANCES</b>	<u>\$ 19,425</u>	<u>\$ (41,820)</u>	<u>(100,810)</u>	<u>\$ (58,990)</u>
<b>FUND BALANCES BEGINNING OF YEAR</b>			<u>1,547,969</u>	
<b>FUND BALANCES END OF YEAR</b>			<u>\$ 1,447,159</u>	

**Required Supplementary Information  
Budgetary Comparison Schedule  
Major Streets Fund  
For the Year Ended December 31, 2019**

	Budgeted Amounts		Actual Amounts	Variance with
	Original	Final		Final Budget - Positive (Negative)
<b>REVENUES:</b>				
Taxes	\$ 56,200	\$ 56,200	\$ 53,103	\$ (3,097)
State Sources	263,978	329,793	346,372	16,579
Local Sources	8,250	11,500	11,500	-
Interest Earnings	1,000	2,260	2,793	533
<b>TOTAL REVENUES</b>	329,428	399,753	413,768	14,015
<b>EXPENDITURES:</b>				
Public Works	316,603	386,738	352,474	34,264
<b>TOTAL EXPENDITURES</b>	316,603	386,738	352,474	34,264
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	12,825	13,015	61,294	48,279
<b>OTHER FINANCING SOURCES (USES):</b>				
Transfers Out	(12,180)	(12,180)	(12,180)	-
<b>NET CHANGE IN FUND BALANCES</b>	\$ 645	\$ 835	49,114	\$ 48,279
<b>FUND BALANCES BEGINNING OF YEAR</b>			437,747	
<b>FUND BALANCES END OF YEAR</b>			\$ 486,861	

**Required Supplementary Information  
Budgetary Comparison Schedule  
Local Streets Fund  
For the Year Ended December 31, 2019**

	Budgeted Amounts		Actual Amounts	Variance with Final Budget - Positive (Negative)
	Original	Final		
<b>REVENUES:</b>				
Taxes	\$ 55,762	\$ 55,762	\$ 53,103	\$ (2,659)
State Sources	88,171	128,952	122,676	(6,276)
Local Sources	8,250	11,500	11,500	-
Charges for Services	300	300	-	(300)
Interest Earnings	370	1,070	1,253	183
Other Revenue	100	100	-	(100)
<b>TOTAL REVENUES</b>	<u>152,953</u>	<u>197,684</u>	<u>188,532</u>	<u>(9,152)</u>
<b>EXPENDITURES:</b>				
Public Works	<u>142,358</u>	<u>228,764</u>	<u>226,439</u>	<u>2,325</u>
<b>TOTAL EXPENDITURES</b>	<u>142,358</u>	<u>228,764</u>	<u>226,439</u>	<u>2,325</u>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	<u>10,595</u>	<u>(31,080)</u>	<u>(37,907)</u>	<u>(6,827)</u>
<b>OTHER FINANCING SOURCES (USES):</b>				
Transfers Out	<u>(6,030)</u>	<u>(6,030)</u>	<u>(6,030)</u>	<u>-</u>
<b>NET CHANGE IN FUND BALANCES</b>	<u>\$ 4,565</u>	<u>\$ (37,110)</u>	<u>(43,937)</u>	<u>\$ (6,827)</u>
<b>FUND BALANCES BEGINNING OF YEAR</b>			<u>197,098</u>	
<b>FUND BALANCES END OF YEAR</b>			<u>\$ 153,161</u>	

## **Other Information**

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**Schedule of Bond Covenant Cash Reserves  
Required and Actual Balances  
December 31, 2019**

	<b>Required Balance</b>	<b>Actual Balance</b>
<b>Water Fund - Restricted Cash</b>		
<b>Operation and Maintenance Funds</b>	\$ 183,524	\$ 183,524
<b>Bond and Interest Redemption</b>		
2000 Series Water Supply System Revenue Bonds	101,358	101,358
2012 Series Water Supply System Revenue Bonds	226,988	226,988
<b>Bond Reserves</b>		
2000 Series Water Supply System Revenue Bonds	146,000	146,000
2012 Series Water Supply System Revenue Bonds	26,500	26,500
<b>Repair, Replacement and Improvement Accounts</b>		
2000 Series Water Supply System Revenue Bonds	85,560	85,560
	<b>\$ 769,930</b>	<b>\$ 769,930</b>
<b>Sewer Fund Restricted Cash</b>		
<b>Operation and Maintenance Funds</b>	\$ 77,210	\$ 77,210
<b>Bond and Interest Redemption</b>		
1999A / 1999B Series Sewage Disposal Revenue Bonds	22,483	22,483
2009 Sewage Disposal System Junior Lien Revenue Bond	3,705	3,705
2010 USDA Rural Development Sewer Capital Improvement Project Bonds - Net	8,317	8,317
2008 Revolving Sewer Fund Loan	60,875	60,875
2015 Revolving Sewer Fund Loan	57,423	57,423
<b>Bond Reserves</b>		
1999A / 1999B Series Sewage Disposal Revenue Bonds	46,500	46,500
2010 USDA Rural Development Sewer Capital Improvement Project Bonds	101,500	101,500
2019 USDA Rural Development Sewer Capital Improvement Project Bonds	2,900	2,900
<b>Repair, Replacement and Improvement Accounts</b>		
1999A / 1999B Series Sewage Disposal Revenue Bonds	221,146	221,146
2010 USDA Rural Development Sewer Capital Improvement Project Bonds	215,676	215,676
2019 USDA Rural Development Sewer Capital Improvement Project Bonds	50,014	50,014
	<b>\$ 867,749</b>	<b>\$ 867,749</b>

	Special Revenue Funds						
	Law Enforcement	Library	Cemetery	Recreation Program	Community Center	Building Inspector	Fire
<b>ASSETS:</b>							
Cash and Equivalents - Unrestricted	\$ 119,573	\$ 340,003	\$ 42,460	\$ 50,696	\$ 91,745	\$ 15,057	\$ -
Cash and Equivalents - Restricted	-	-	-	-	-	-	126,008
Accounts Receivable	-	-	1,300	-	17,854	-	-
Taxes Receivable	-	11,547	-	4,630	212	-	-
Prepaid Items	-	1,315	-	1,578	-	-	-
Due from Other Governmental Units	15,046	-	-	-	-	-	-
<b>TOTAL ASSETS</b>	<b>\$ 134,619</b>	<b>\$ 352,865</b>	<b>\$ 43,760</b>	<b>\$ 56,904</b>	<b>\$ 109,811</b>	<b>\$ 15,057</b>	<b>\$ 126,008</b>
<b>LIABILITIES:</b>							
Accounts Payable	\$ 7,373	\$ 984	\$ -	\$ 25	\$ 485	\$ -	\$ -
Accrued Liabilities	-	2,191	-	-	4,345	-	-
<b>TOTAL LIABILITIES</b>	<b>7,373</b>	<b>3,175</b>	<b>-</b>	<b>25</b>	<b>4,830</b>	<b>-</b>	<b>-</b>
<b>FUND BALANCES:</b>							
Nonspendable	-	1,315	-	1,578	-	-	-
Restricted	127,246	348,375	43,760	55,301	-	-	126,008
Assigned	-	-	-	-	104,981	15,057	-
<b>TOTAL FUND BALANCES</b>	<b>127,246</b>	<b>349,690</b>	<b>43,760</b>	<b>56,879</b>	<b>104,981</b>	<b>15,057</b>	<b>126,008</b>
<b>TOTAL LIABILITIES AND FUND BALANCES</b>	<b>\$ 134,619</b>	<b>\$ 352,865</b>	<b>\$ 43,760</b>	<b>\$ 56,904</b>	<b>\$ 109,811</b>	<b>\$ 15,057</b>	<b>\$ 126,008</b>

**Combining Balance Sheet  
Nonmajor Governmental Funds  
December 31, 2019**

	Debt Service Funds			Capital Project Funds			
	City Hall DPW Debt Fund	Building Authority	Ambulance	Fire Truck	Building Improvement	Dock No. 3 Improvements	LBE Park Construction
<b>ASSETS:</b>							
Cash and Equivalents - Unrestricted	\$ 6,784	\$ 671	\$ 30,046	\$ 46	\$ 39,948	\$ 233,106	\$ 71,193
Cash and Equivalents - Restricted	-	-	-	-	-	-	-
Accounts Receivable	-	-	3,484	-	-	-	-
Taxes Receivable	-	-	-	-	-	-	-
Prepaid Items	-	-	-	-	-	-	-
Due from Other Governmental Units	-	-	-	-	-	-	-
<b>TOTAL ASSETS</b>	<u><u>\$ 6,784</u></u>	<u><u>\$ 671</u></u>	<u><u>\$ 33,530</u></u>	<u><u>\$ 46</u></u>	<u><u>\$ 39,948</u></u>	<u><u>\$ 233,106</u></u>	<u><u>\$ 71,193</u></u>
<b>LIABILITIES:</b>							
Accounts Payable	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Accrued Liabilities	-	-	-	-	-	-	-
<b>TOTAL LIABILITIES</b>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<b>FUND BALANCES:</b>							
Nonspendable	-	-	-	-	-	-	-
Restricted	6,784	671	33,530	46	39,948	233,106	71,193
Assigned	-	-	-	-	-	-	-
<b>TOTAL FUND BALANCES</b>	<u>6,784</u>	<u>671</u>	<u>33,530</u>	<u>46</u>	<u>39,948</u>	<u>233,106</u>	<u>71,193</u>
<b>TOTAL LIABILITIES AND FUND BALANCES</b>	<u><u>\$ 6,784</u></u>	<u><u>\$ 671</u></u>	<u><u>\$ 33,530</u></u>	<u><u>\$ 46</u></u>	<u><u>\$ 39,948</u></u>	<u><u>\$ 233,106</u></u>	<u><u>\$ 71,193</u></u>

	Capital Project Funds			Permanent	Total
	Capital Improvement Trust	Fire Hall Construction	Wastewater Improvements	Fund Perpetual Care Cemetery	
<b>ASSETS:</b>					
Cash and Equivalents - Unrestricted	\$ 49,384	\$ 225,499	\$ 410	\$ -	\$ 1,316,621
Cash and Equivalents - Restricted	-	-	-	25,000	151,008
Accounts Receivable	-	-	113,000	-	135,638
Taxes Receivable	-	-	-	-	16,389
Prepaid Items	-	-	-	-	2,893
Due from Other Governmental Units	-	-	-	-	15,046
<b>TOTAL ASSETS</b>	<u>\$ 49,384</u>	<u>\$ 225,499</u>	<u>\$ 113,410</u>	<u>\$ 25,000</u>	<u>\$ 1,637,595</u>
<b>LIABILITIES:</b>					
Accounts Payable	\$ -	\$ -	\$ 112,668	\$ -	\$ 121,535
Accrued Liabilities	-	-	-	-	6,536
<b>TOTAL LIABILITIES</b>	<u>-</u>	<u>-</u>	<u>112,668</u>	<u>-</u>	<u>128,071</u>
<b>FUND BALANCES:</b>					
Nonspendable	-	-	-	-	2,893
Restricted	49,384	225,499	742	25,000	1,386,593
Assigned	-	-	-	-	120,038
<b>TOTAL FUND BALANCES</b>	<u>49,384</u>	<u>225,499</u>	<u>742</u>	<u>25,000</u>	<u>1,509,524</u>
<b>TOTAL LIABILITIES AND FUND BALANCES</b>	<u>\$ 49,384</u>	<u>\$ 225,499</u>	<u>\$ 113,410</u>	<u>\$ 25,000</u>	<u>\$ 1,637,595</u>

**Combining Statement of Revenues, Expenditures,  
and Changes in Fund Balance  
Nonmajor Governmental Funds  
For the Year Ended December 31, 2019**

	Special Revenue Funds						
	Law Enforcement	Library	Cemetery	Recreation Program	Community Center	Building Inspector	Fire
<b>REVENUES:</b>							
Taxes	\$ -	\$ 79,190	\$ -	\$ 70,591	\$ -	\$ -	\$ -
Federal Sources	128,330	-	-	-	-	-	-
State Sources	33,450	3,554	-	-	-	-	-
Local Sources	-	58,183	-	31,918	53,412	-	9,447
Charges for Services	-	40,901	8,267	18,603	180,259	3,929	-
Interest Earnings	-	2,255	625	243	572	-	567
Other Revenue	2,959	8,572	-	3,165	27,183	-	-
<b>TOTAL REVENUES</b>	<u>164,739</u>	<u>192,655</u>	<u>8,892</u>	<u>124,520</u>	<u>261,426</u>	<u>3,929</u>	<u>10,014</u>
<b>EXPENDITURES:</b>							
General Government	-	-	10,709	-	-	-	-
Public Safety	156,298	-	-	-	-	3,898	281
Public Works	-	-	-	-	-	-	-
Recreation and Culture	-	157,906	-	90,367	264,328	-	-
Capital Outlay	-	-	-	-	-	-	-
Debt Service	-	-	-	-	6,414	-	-
<b>TOTAL EXPENDITURES</b>	<u>156,298</u>	<u>157,906</u>	<u>10,709</u>	<u>90,367</u>	<u>270,742</u>	<u>3,898</u>	<u>281</u>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	<u>8,441</u>	<u>34,749</u>	<u>(1,817)</u>	<u>34,153</u>	<u>(9,316)</u>	<u>31</u>	<u>9,733</u>
<b>OTHER FINANCING SOURCES (USES):</b>							
Bond Proceeds	-	-	-	-	-	-	-
Capital Distribution	-	-	-	-	-	-	-
Transfers In	-	-	6,180	-	26,175	3,000	7,303
Transfers Out	-	(2,000)	-	(8,675)	(2,500)	-	-
<b>TOTAL OTHER FINANCING SOURCES (USES)</b>	<u>-</u>	<u>(2,000)</u>	<u>6,180</u>	<u>(8,675)</u>	<u>23,675</u>	<u>3,000</u>	<u>7,303</u>
<b>NET CHANGE IN FUND BALANCES</b>	8,441	32,749	4,363	25,478	14,359	3,031	17,036
<b>FUND BALANCES BEGINNING OF YEAR</b>	<u>118,805</u>	<u>316,941</u>	<u>39,397</u>	<u>31,401</u>	<u>90,622</u>	<u>12,026</u>	<u>108,972</u>
<b>FUND BALANCES END OF YEAR</b>	<u>\$ 127,246</u>	<u>\$ 349,690</u>	<u>\$ 43,760</u>	<u>\$ 56,879</u>	<u>\$ 104,981</u>	<u>\$ 15,057</u>	<u>\$ 126,008</u>

**Combining Statement of Revenues, Expenditures,  
and Changes in Fund Balance  
Nonmajor Governmental Funds  
For the Year Ended December 31, 2019**

	Debt Service Funds			Capital Project Funds			
	City Hall DPW Debt Fund	Building Authority	Ambulance	Fire Truck	Building Improvement	Dock No. 3 Improvements	LBE Park Construction
<b>REVENUES:</b>							
Taxes	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Federal Sources	-	-	-	-	-	-	-
State Sources	-	-	-	-	-	-	-
Local Sources	-	-	85,326	-	-	-	-
Charges for Services	-	-	-	-	-	-	-
Interest Earnings	20	-	-	-	353	-	-
Other Revenue	-	-	-	-	-	28,365	-
<b>TOTAL REVENUES</b>	<b>20</b>	<b>-</b>	<b>85,326</b>	<b>-</b>	<b>353</b>	<b>28,365</b>	<b>-</b>
<b>EXPENDITURES:</b>							
General Government	-	-	-	-	-	-	-
Public Safety	-	-	-	-	-	-	-
Public Works	-	-	-	-	-	-	-
Recreation and Culture	-	-	-	-	-	5,728	1,297
Capital Outlay	-	-	-	-	-	25,496	695
Debt Service	56,955	79,462	109,716	-	-	-	-
<b>TOTAL EXPENDITURES</b>	<b>56,955</b>	<b>79,462</b>	<b>109,716</b>	<b>-</b>	<b>-</b>	<b>31,224</b>	<b>1,992</b>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	<b>(56,935)</b>	<b>(79,462)</b>	<b>(24,390)</b>	<b>-</b>	<b>353</b>	<b>(2,859)</b>	<b>(1,992)</b>
<b>OTHER FINANCING SOURCES (USES):</b>							
Bond Proceeds	-	-	-	-	-	-	-
Capital Distribution	-	-	-	-	-	-	-
Transfers In	56,960	79,500	27,488	-	-	-	-
Transfers Out	-	-	-	-	(10,000)	-	-
<b>TOTAL OTHER FINANCING SOURCES (USES)</b>	<b>56,960</b>	<b>79,500</b>	<b>27,488</b>	<b>-</b>	<b>(10,000)</b>	<b>-</b>	<b>-</b>
<b>NET CHANGE IN FUND BALANCES</b>	<b>25</b>	<b>38</b>	<b>3,098</b>	<b>-</b>	<b>(9,647)</b>	<b>(2,859)</b>	<b>(1,992)</b>
<b>FUND BALANCES BEGINNING OF YEAR</b>	<b>6,759</b>	<b>633</b>	<b>30,432</b>	<b>46</b>	<b>49,595</b>	<b>235,965</b>	<b>73,185</b>
<b>FUND BALANCES END OF YEAR</b>	<b>\$ 6,784</b>	<b>\$ 671</b>	<b>\$ 33,530</b>	<b>\$ 46</b>	<b>\$ 39,948</b>	<b>\$ 233,106</b>	<b>\$ 71,193</b>

**Combining Statement of Revenues, Expenditures,  
and Changes in Fund Balance  
Nonmajor Governmental Funds  
For the Year Ended December 31, 2019**

	Capital Improvement Trust	Fire Hall Construction	Wastewater Improvements	Permanent Fund Perpetual Care Cemetery	Totals
<b>REVENUES:</b>					
Taxes	\$ -	\$ -	\$ -	\$ -	\$ 149,781
Federal Sources	-	-	-	-	128,330
State Sources	-	-	-	-	37,004
Local Sources	-	150,000	-	-	388,286
Charges for Services	-	-	-	-	251,959
Interest Earnings	241	-	-	-	4,876
Other Revenue	-	-	-	-	70,244
<b>TOTAL REVENUES</b>	<b>241</b>	<b>150,000</b>	<b>-</b>	<b>-</b>	<b>1,030,480</b>
<b>EXPENDITURES:</b>					
General Government	-	-	-	-	10,709
Public Safety	-	37,502	-	-	197,979
Public Works	-	-	20,434	-	20,434
Recreation and Culture	-	-	-	-	519,626
Capital Outlay	-	101,261	-	-	127,452
Debt Service	-	-	-	-	252,547
<b>TOTAL EXPENDITURES</b>	<b>-</b>	<b>138,763</b>	<b>20,434</b>	<b>-</b>	<b>1,128,747</b>
<b>EXCESS OF REVENUES OVER (UNDER) EXPENDITURES BEFORE OTHER FINANCING SOURCES (USES)</b>	<b>241</b>	<b>11,237</b>	<b>(20,434)</b>	<b>-</b>	<b>(98,267)</b>
<b>OTHER FINANCING SOURCES (USES):</b>					
Bond Proceeds	-	139,000	-	-	139,000
Capital Distribution	-	-	21,176	-	21,176
Transfers In	-	-	-	-	206,606
Transfers Out	-	-	-	-	(23,175)
<b>TOTAL OTHER FINANCING SOURCES (USES)</b>	<b>-</b>	<b>139,000</b>	<b>21,176</b>	<b>-</b>	<b>343,607</b>
<b>NET CHANGE IN FUND BALANCES</b>	<b>241</b>	<b>150,237</b>	<b>742</b>	<b>-</b>	<b>245,340</b>
<b>FUND BALANCES BEGINNING OF YEAR</b>	<b>49,143</b>	<b>75,262</b>	<b>-</b>	<b>25,000</b>	<b>1,264,184</b>
<b>FUND BALANCES END OF YEAR</b>	<b>\$ 49,384</b>	<b>\$ 225,499</b>	<b>\$ 742</b>	<b>\$ 25,000</b>	<b>\$ 1,509,524</b>

**Combining Statement of Net Position  
Internal Service Funds  
December 31, 2019**

	<u>Equipment</u>	<u>Office Equipment Pool</u>	<u>Totals</u>
<b>ASSETS:</b>			
Cash and Equivalents - Unrestricted	\$ 274,250	\$ 47,859	\$ 322,109
Accounts Receivable	12,329	-	12,329
Prepaid Items	6,156	-	6,156
Capital Assets (Net of Accumulated Depreciation)	331,623	1,845	333,468
TOTAL ASSETS	<u>\$ 624,358</u>	<u>\$ 49,704</u>	<u>\$ 674,062</u>
<b>LIABILITIES:</b>			
Accounts Payable	\$ 13,410	\$ 223	\$ 13,633
Accrued Liabilities	3,154	-	3,154
Accrued Interest Payable	2,894	-	2,894
Installment Loans - due within one year	19,321	-	19,321
Installment Loans - due in more than one year	190,058	-	190,058
TOTAL LIABILITIES	<u>228,837</u>	<u>223</u>	<u>229,060</u>
<b>NET POSITION:</b>			
Net Investment in Capital Assets	122,244	1,845	124,089
Unrestricted	273,277	47,636	320,913
TOTAL NET POSITION	<u>395,521</u>	<u>49,481</u>	<u>445,002</u>
TOTAL LIABILITIES AND NET POSITION	<u>\$ 624,358</u>	<u>\$ 49,704</u>	<u>\$ 674,062</u>



**Combining Statement of Revenues, Expenses and  
Changes in Net Position - Internal Service Funds  
For the Year Ended December 31, 2019**

	<u>Equipment</u>	<u>Office Equipment Pool</u>	<u>Totals</u>
<b>OPERATING REVENUES:</b>			
Charges for Services	\$ 403,835	\$ 300	\$ 404,135
<b>OPERATING EXPENSES:</b>			
Personnel Services	86,151	-	86,151
Contracted Services	309	-	309
Insurance	14,990	-	14,990
Utilities	8,166	-	8,166
Repair and Maintenance	55,888	5,494	61,382
Supplies	50,732	-	50,732
Depreciation	50,242	1,582	51,824
Other Expenses	106	13,256	13,362
Total Operating Expenses	<u>266,584</u>	<u>20,332</u>	<u>286,916</u>
<b>OPERATING INCOME (LOSS)</b>	137,251	(20,032)	117,219
<b>NON-OPERATING REVENUES (EXPENSES):</b>			
Interest Expense	<u>(7,687)</u>	-	<u>(7,687)</u>
Total Nonoperating Revenues (Expenses)	<u>(7,687)</u>	-	<u>(7,687)</u>
Income (Loss) Before Transfers	129,564	(20,032)	109,532
<b>TRANSFERS:</b>			
Transfers In	10,000	29,600	39,600
Transfers (Out)	<u>(22,320)</u>	-	<u>(22,320)</u>
Total Transfers	<u>(12,320)</u>	<u>29,600</u>	<u>17,280</u>
<b>CHANGE IN NET POSITION</b>	117,244	9,568	126,812
NET POSITION, BEGINNING OF YEAR	<u>278,277</u>	<u>39,913</u>	<u>318,190</u>
<b>NET POSITION, END OF YEAR</b>	<u><u>\$ 395,521</u></u>	<u><u>\$ 49,481</u></u>	<u><u>\$ 445,002</u></u>

**Internal Service Funds  
Combining Statement of Cash Flows  
For the Year Ended December 31, 2019**

	<u>Equipment</u>	<u>Office Equipment Pool</u>	<u>Total</u>
<b>Cash Flows From Operating Activities:</b>			
Receipts from Customers or Users	\$ 403,259	\$ 300	\$ 403,559
Cash Paid to Vendors	(116,245)	(18,594)	(134,839)
Cash Paid to Employees Wages and Benefits	(84,231)	-	(84,231)
Net Cash Provided (Used) By Operating Activities	<u>202,783</u>	<u>(18,294)</u>	<u>184,489</u>
<b>Cash Flows From Noncapital and Related Financing Activities:</b>			
Transfers (Out) In	(12,320)	29,600	17,280
Net Cash Provided (Used) for Noncapital and Related Financing Activities	<u>(12,320)</u>	<u>29,600</u>	<u>17,280</u>
<b>Cash Flows From Capital and Related Financing Activities:</b>			
Capital Asset Purchases	(19,000)	-	(19,000)
Principal Payments	(19,136)	-	(19,136)
Interest Payments	(7,270)	-	(7,270)
Net Cash Provided (Used) by Capital and Related Financing Activities	<u>(45,406)</u>	<u>-</u>	<u>(45,406)</u>
Net Increase (Decrease) in Cash	145,057	11,306	156,363
Cash and Equivalents at Beginning of Year	<u>129,193</u>	<u>36,553</u>	<u>165,746</u>
Cash and Equivalents at End of Year	<u><u>\$ 274,250</u></u>	<u><u>\$ 47,859</u></u>	<u><u>\$ 322,109</u></u>
<b>Reconciliation of Operating Income (Loss) to</b>			
<b>Net Cash Provided (Used) by Operating Activities:</b>			
Operating Income (Loss)	\$ 137,251	\$ (20,032)	\$ 117,219
Adjustments to Reconcile Operating Income (Loss) to			
Net Cash Provided (Used) by Operating Activities:			
Depreciation Expense	50,242	1,582	51,824
Changes in Assets and Liabilities:			
Decrease (Increase) in Assets:			
Accounts Receivable	(576)	-	(576)
Prepaid Items	2,679	-	2,679
Increase (Decrease) in Liabilities:			
Accounts Payable	11,267	156	11,423
Accrued Liabilities	1,920	-	1,920
Net Cash Provided (Used) By Operating Activities	<u><u>\$ 202,783</u></u>	<u><u>\$ (18,294)</u></u>	<u><u>\$ 184,489</u></u>

**Combining Statement of Net Position  
Nonmajor Enterprise Funds  
December 31, 2019**

	BFI Garbage Collection	Golf Course	Totals
<b>ASSETS:</b>			
Cash and Equivalents - Unrestricted	\$ 42,075	\$ 46,853	\$ 88,928
Account Receivable	15,291	-	15,291
Due From Other Funds	-	741	741
Capital Assets (Not Depreciated)	-	43,039	43,039
Capital Assets (Net of Accumulated Depreciation)	-	12,690	12,690
Prepaid Items	-	1,578	1,578
<b>TOTAL ASSETS</b>	<b>\$ 57,366</b>	<b>\$ 104,901</b>	<b>\$ 162,267</b>
<b>LIABILITIES:</b>			
Accounts Payable	\$ 10,453	\$ 4,107	\$ 14,560
<b>NET POSITION:</b>			
Net Investment in Capital Assets	-	55,729	55,729
Unrestricted	46,913	45,065	91,978
<b>TOTAL NET POSITION</b>	<b>46,913</b>	<b>100,794</b>	<b>147,707</b>
<b>TOTAL LIABILITIES AND NET POSITION</b>	<b>\$ 57,366</b>	<b>\$ 104,901</b>	<b>\$ 162,267</b>

**Combining Statement of Revenues, Expenses and  
Changes in Net Position - Nonmajor Enterprise Funds  
For the Year Ended December 31, 2019**

	BFI Garbage Collection	Golf Course	Totals
<b>OPERATING REVENUES:</b>			
Sales and Charges for Services	\$ 124,548	\$ 92,543	\$ 217,091
Total Operating Revenues	124,548	92,543	217,091
<b>OPERATING EXPENSES:</b>			
Personnel Services	-	79,619	79,619
Contracted Services	124,272	1,783	126,055
Insurance	-	3,844	3,844
Repairs and Maintenance	-	6,841	6,841
Supplies	-	15,746	15,746
Utilities	-	14,693	14,693
Depreciation	-	1,810	1,810
Other Expenses	-	5,017	5,017
Total Operating Expenses	124,272	129,353	253,625
<b>OPERATING INCOME (LOSS)</b>	276	(36,810)	(36,534)
<b>NON-OPERATING REVENUES (EXPENSES):</b>			
Interest Income	-	972	972
Other	-	(26,804)	(26,804)
Total Non-operating Revenues (Expenses)	-	(25,832)	(25,832)
Income (Loss) Before Transfers	276	(62,642)	(62,366)
<b>TRANSFERS:</b>			
Transfers In	-	10,000	10,000
<b>CHANGE IN NET POSITION</b>	276	(52,642)	(52,366)
NET POSITION, BEGINNING OF YEAR	46,637	153,436	200,073
<b>NET POSITION, END OF YEAR</b>	\$ 46,913	\$ 100,794	\$ 147,707

**Nonmajor Enterprise Funds  
Combining Statement of Cash Flows  
For the Year Ended December 31, 2019**

	BFI Garbage Collection	Golf Course	Totals
<b>Cash Flows From Operating Activities:</b>			
Cash Received from Customers	\$ 125,157	\$ 92,543	\$ 217,700
Cash Paid to Employees Wages and Benefits	-	(79,619)	(79,619)
Cash Paid to Vendors	(123,981)	(46,927)	(170,908)
Internal Activity - Payments/Receipts with Other Funds	-	(741)	(741)
Net Cash Provided (Used) by Operating Activities	<u>1,176</u>	<u>(34,744)</u>	<u>(33,568)</u>
<b>Cash Flows from Investing Activities:</b>			
Interest Income	-	972	972
Net Cash Provided (Used) by Investing Activities	<u>-</u>	<u>972</u>	<u>972</u>
<b>Cash Flows From Noncapital and Related Financing Activities:</b>			
Other Revenues	-	(26,804)	(26,804)
Transfers In	-	10,000	10,000
Net Cash Provided (Used) by Noncapital and Related Financing Activities	<u>-</u>	<u>(16,804)</u>	<u>(16,804)</u>
Net Increase (Decrease) in Cash	1,176	(50,576)	(49,400)
Cash and Equivalents, Beginning of Year	<u>40,899</u>	<u>97,429</u>	<u>138,328</u>
Cash and Equivalents, End of Year	<u>\$ 42,075</u>	<u>\$ 46,853</u>	<u>\$ 88,928</u>
<b>Reconciliation of Operating Income (Loss) to</b>			
<b>Net Cash Provided (Used) by Operating Activities:</b>			
Operating Income (Loss)	\$ 276	\$ (36,810)	\$ (36,534)
Adjustments to Reconcile Operating Income (Loss) to			
Net Cash Provided (Used) by Operating Activities:			
Depreciation Expense	-	1,810	1,810
Change in Assets and Liabilities:			
(Increase) Decrease in Assets:			
Accounts Receivable	609	-	609
Due from Other Funds	-	(741)	(741)
Prepaid Expenses	-	(1,578)	(1,578)
(Decrease) Increase in Liabilities:			
Accounts Payable	<u>291</u>	<u>2,575</u>	<u>2,866</u>
Net Cash Provided (Used) by Operating Activities	<u>\$ 1,176</u>	<u>\$ (34,744)</u>	<u>\$ (33,568)</u>

**Combining Statement of Net Position  
Fiduciary Funds  
December 31, 2019**

	Trust & Agency		
	Tax Collection	Payroll Clearing	Total
<b>ASSETS:</b>			
Cash and Equivalents - Unrestricted	\$ 256,178	\$ 47,579	\$ 303,757
Due from Others	-	9	9
Total Assets	\$ 256,178	\$ 47,588	\$ 303,766
<b>LIABILITIES:</b>			
Due to Governmental Units	\$ 256,178	-	\$ 256,178
Due to Others	-	47,588	47,588
Total Liabilites	\$ 256,178	\$ 47,588	\$ 303,766

## **Reports on Compliance**

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**ANDERSON, TACKMAN & COMPANY, PLC**  
CERTIFIED PUBLIC ACCOUNTANTS

**KINROSS OFFICE**

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KENNETH A. TALSMA, CPA, PRINCIPAL  
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**MEMBER AICPA  
DIVISION FOR CPA FIRMS**

**MEMBER MACPA**

**OFFICES IN  
MICHIGAN & WISCONSIN**

**INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL  
REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN  
AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE  
WITH *GOVERNMENT AUDITING STANDARDS***

Honorable Mayor and Members  
of the City Commission  
City of St. Ignace, Michigan

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component unit, each major fund, and the aggregate remaining fund information of the City of St. Ignace, Michigan as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise the City of St. Ignace, Michigan's basic financial statements and have issued our report thereon, dated August 28, 2020.

**Internal Control Over Financial Reporting**

In planning and performing our audit of the financial statements, we considered the City of St. Ignace, Michigan's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the City of St. Ignace, Michigan's internal control. Accordingly, we do not express an opinion on the effectiveness of the City of St. Ignace, Michigan's internal control.

Our consideration of internal control was for the limited purpose described in the preceding paragraph and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that have not been identified. However, as described in the accompanying schedule of findings and questioned costs, we did identify certain deficiencies in internal control that we consider to be material weaknesses and significant deficiencies.

*A deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. *A material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. We consider the deficiency described in the accompanying schedule of findings and questioned costs as item 2019-004 to be a material weakness.



Honorable Mayor and Members  
of the City Commission

A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance. We consider the deficiencies described in the accompanying schedule of findings and questioned costs as items 2019-001, 2019-002 and 2019-003 to be significant deficiencies.

### **Compliance and Other Matters**

As part of obtaining reasonable assurance about whether the City of St. Ignace, Michigan's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards* and which are described in the accompanying schedule of findings and questioned costs as items 2019-003 and 2019-004.

### **City of St. Ignace, Michigan's Response to Findings**

The City of St. Ignace, Michigan's responses to the findings identified in our audit are described in the accompanying schedule of findings and questioned costs. The City of St. Ignace, Michigan's responses were not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

### **Purpose of this Report**

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.



**Anderson, Tackman & Company, PLC**  
**Certified Public Accountants**  
**Kincheloe, Michigan**

August 28, 2020



**ANDERSON, TACKMAN & COMPANY, PLC**  
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**INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE FOR EACH  
MAJOR PROGRAM AND ON INTERNAL CONTROL OVER COMPLIANCE  
REQUIRED BY THE UNIFORMED GUIDANCE**

Honorable Mayor and Members  
of the City Council  
City of St. Ignace, Michigan

**Report on Compliance for Each Major Federal Program**

We have audited the City of St. Ignace, Michigan's compliance with the types of compliance requirements described in the OMB Compliance Supplement that could have a direct and material effect on each of the City of St. Ignace, Michigan's major federal programs for the year ended December 31, 2019. City of St. Ignace, Michigan's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

**Managements Responsibility**

Management is responsible for compliance with federal statutes, regulations, and the terms and conditions of its federal awards applicable to its federal programs.

**Auditor's Responsibility**

Our responsibility is to express an opinion on the compliance for each of the City of St. Ignace, Michigan's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the City of St. Ignace, Michigan's compliance with those requirements and performing such other procedures, as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination of the City of St. Ignace, Michigan's compliance.

Honorable Mayor and Members  
of the City Council

### **Opinion on Each Major Federal Program**

In our opinion, the City of St. Ignace, Michigan complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended December 31, 2019.

### **Report on Internal Control Over Compliance**

Management of the City of St. Ignace, Michigan is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the City of St. Ignace, Michigan's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the City of St. Ignace, Michigan's internal control over compliance.

*A deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. *A material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

### **Purpose of This Report**

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.



**Anderson, Tackman and Company, PLC**  
**Certified Public Accountants**  
**Kincheloe, Michigan**

August 28, 2020

**Schedule of Expenditures of Federal Awards  
For the Year Ended December 31, 2019**

<u>Federal Grantor/Pass-Through Grantor/Program Title</u>	<u>Federal CFDA Number</u>	<u>Agency or Pass-Through Number</u>	<u>Federal Expenditures</u>
<b>U.S. DEPARTMENT OF AGRICULTURE:</b>			
Direct Award from the Department of Agriculture Community Facilities - Loan	10.780	N/A	<u>\$ 906,000</u>
<b>U.S. DEPARTMENT OF TRANSPORTATION:</b>			
Pass-through from the Michigan Department of State Police, Office of Highway Safety Planning: Child Safety and Booster Seats Grant	20.616	OP-20-01	<u>128,330</u>
<b>U.S. DEPARTMENT OF INTERIOR:</b>			
Direct Award from the Department of Interior National Park Service Native American Graves Protection and Repatriation Act	15.922	P19AP00247	<u>2,405</u>
TOTAL EXPENDITURES OF FEDERAL AWARDS			<u><u>\$ 1,036,735</u></u>

See accompanying notes to schedule of expenditures of federal awards.

**NOTE A - BASIS OF PRESENTATION**

The accompanying schedule of expenditures of federal awards (the Schedule) includes the federal award activity of City of St. Ignace, Michigan under programs of the federal government for the year ended December 31, 2019. The information in this Schedule is presented in accordance with the requirements of Title 2 U.S. Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance). Because the Schedule presents only a selected portion of the operations of the City of St. Ignace, Michigan it is not intended to and does not present the financial position, changes in net position, or cash flows of the City of St. Ignace, Michigan.

**NOTE B - COGNIZANT AGENCY**

The City has not been assigned a cognizant agency. Therefore, the City is under the general oversight of the U.S. Department of Agriculture which provided the greatest amount of direct federal funding to the City during 2019.

**NOTE C - INDIRECT COST**

For purposes of charging indirect costs to federal awards, the City has elected to use the 10% de minimis cost rate as permitted by CFR Section 200.414 of the Uniform Guidance, though in all federal grant received in the current fiscal year no indirect costs were charged to the grants.

**Section I – Summary of Auditor’s Results**

**Financial Statements**

Type of auditors' report issued:	Unmodified
Internal control over financial reporting: Material weaknesses identified?	Yes
Significant deficiencies identified that are not considered to be material weaknesses?	Yes
Noncompliance material to financial statements noted?	Yes

**Federal Awards**

Internal control over major programs:  Material weaknesses identified?	No
Significant deficiencies identified that are not considered to be material weaknesses?	No
Type of auditors' report issued on compliance for major programs:	Unmodified
Any audit findings disclosed that are required to be reported in accordance with Title 2 (CFR) part 200, Uniform Guidance?	No

**Identification of Major Programs**  
**CFDA NUMBERS**

**Name of Federal Program or Cluster**

10.780	Community Facilities Loans and Grants
Dollar threshold used to distinguish between type A and type B programs:	\$750,000
Auditee qualified as low-risk auditee?	No

Section II – Financial Statement Findings

Internal Control Over Financial Reporting

*Significant Deficiencies*

Lack of Segregation of Duties

*Finding 2019-001*

Condition: As is the case with many organizations of similar size, the City lacks a sufficient number of accounting personnel in order to ensure a complete segregation of duties within its accounting function. Ideally, no single individual should ever be able to authorize a transaction, record the transaction in the accounting records, and maintain custody of the assets resulting from the transaction. Effectively, proper segregation of duties is intended to prevent an individual from committing an act of fraud or abuse and being able to conceal it.

Criteria: Management is responsible for establishing effective internal controls to safeguard the City’s assets, and to prevent or detect misstatements to the financial statements. In establishing appropriate internal controls, careful consideration must be given to the cost of a particular control and the related benefits to be received. Accordingly, management must make the difficult decision of what degree of risk it is willing to accept, given the City's unique circumstances.

Effect: As a result of this condition, the City is exposed to an increased risk that misstatements or misappropriations might occur and not be detected by management in a timely manner.

Cause: This condition is a result of the City’s limited resources, and the small size of its accounting staff.

Recommendation: While there are no easy answers to the challenge of balancing the costs and benefits of internal control and segregation of duties, we would nevertheless encourage management to actively seek ways to further strengthen its internal control structure by requiring as much independent review, reconciliation and approval of accounting functions by qualified members of management as possible.

Planned Corrective Action: The City Council is aware of the risks associated with this condition and has made the determination that given the City’s limited resources, full segregation of duties is not feasible at this time. Accordingly, the Finance Committee will continue to review monthly information to mitigate this risk and rely on the external audit to help identify and correct misstatements, as needed.

- Contact Person(s) Responsible for Correction:  
Bill Fraser – Interim City Manager

Status: Unchanged.

**Internal Control Over Financial Reporting**

*Significant Deficiencies*

Significant Audit Adjustments

*Finding 2019-002*

Condition: During our audit, we identified and proposed several significant adjustments (which were approved and posted by management) to adjust the City’s general ledger to the appropriate balances.

Criteria: Management is responsible for maintaining its accounting records in accordance with generally accepted accounting principles (GAAP).

Effect: As a result of this condition, the City’s accounting records were initially misstated by amounts material to the financial statements.

Cause: This condition was the result of dependence on external auditors, who by definition cannot be a part of the City’s internal control, to make adjustments to the general ledger and reconcile certain balance sheet accounts to their underlying detail.

Recommendation: The City should record all journal entries necessary to arrive at a reasonably adjusted trial balance prior to generating trial balances to be used for preparation of year-end financial statements.

Planned Corrective Action: The City will continue its efforts to record all known adjustments in order to provide a reasonably adjusted trial balance for the purposes of the audit. Additionally, more frequent detail review of budget to actual amounts should assist management in identifying accounts that should be adjusted.

- Contact Person(s) Responsible for Correction:  
Bill Fraser – Interim City Manager

Status: Unchanged



**Compliance and Other Matters**

***Significant Deficiencies***

**Excess Expenditures Over Appropriations**

***Finding 2019-003***

Condition: Our examination of procedures used by the City to adopt and maintain operating budgets for the City’s budgetary fund revealed the following instance of noncompliance with the provisions of Public Act 621 of 1978, Section 18(1), as amended, the Uniform Budgeting and Accounting Act.

The General Appropriations Act (budget) provided for expenditures of the General Fund to be controlled to the activity level. During the fiscal year ended December 31, 2019, expenditures were incurred in excess of amounts appropriated in the amended budgets for the General Fund.

Criteria: The expenditures of funds in excess of appropriations are contrary to the provisions of Public Act 621 of 1978, as amended.

	<u>Total Appropriations</u>	<u>Amount of Expenditures</u>	<u>Budget Variance</u>
General Fund:			
General Government	\$ 654,940	\$ 695,314	\$ (40,374)

Effect: The City has not complied with various State Statutes.

Cause: Failure to amend the budget for the General Fund during the year.

Recommendation: We recommend that the City personnel responsible for administering the activities of the various funds of the City, develop budgetary control procedures for the General Fund, which will assure that expenditures do not exceed amounts authorized in the General Appropriations Act, or amendments thereof.

Planned Corrective Action: Management has agreed to correct the problem by monitoring the budgets more closely and performing budget amendments on a timely basis.

- Contact Person(s) Responsible for Correction:  
    Bill Fraser – Interim City Manager

Status: Unchanged

**Compliance and Other Matters**

*Material Weakness*

**Bank Reconciliation Process**

***Finding 2019-004***

*Condition:* The City is required to perform monthly reconciliations between the treasurer's records, and bank records as prescribed by the Michigan Department of Treasury Uniform Accounting Procedures Manual for Local Governments.

*Criteria:* Reconciliation of the cash balances recorded by the clerk were incomplete and not prepared timely.

*Effect:* Noncompliance with applicable state requirements.

*Cause:* Oversight by management.

*Recommendation:* The City should reconcile between the treasurer's records, and bank records on a timely monthly basis.

*Management's Response – Corrective Action Plan:* The City will implement necessary reconciliation processes.

- *Contact Person(s) Responsible for Correction:*  
Andrea Insley, Treasurer

**Section III – Federal Award Findings and Questioned Costs**

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**NONE.**

**Section III – Federal Award Findings and Questioned Costs**

---

NONE.



**ANDERSON, TACKMAN & COMPANY, PLC**  
**CERTIFIED PUBLIC ACCOUNTANTS**

**KINROSS OFFICE**

SUE A. BOWLBY, CPA, PRINCIPAL  
KENNETH A. TALSMA, CPA, PRINCIPAL  
AMBER N. MACK, CPA, PRINCIPAL

PHILLIP J. WOLF, CPA  
LESLIE BOHN, CPA  
TORI KRUISE, CPA

**MEMBER AICPA**  
**DIVISION FOR CPA FIRMS**

**MEMBER MACPA**

**OFFICES IN**  
**MICHIGAN & WISCONSIN**

**COMMUNICATION WITH THOSE CHARGED WITH GOVERNANCE**

Honorable Mayor and Members  
of the City Council  
City of St. Ignace

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component unit, each major fund, and the aggregate remaining fund information of the City of St. Ignace, as of and for the year ended December 31, 2019, and have issued our report thereon dated August 28, 2020. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards and *Government Auditing Standards*, as well as certain information related to the planned scope and timing of our audit. Professional standards also require that we communicate to you the following information related to our audit.

**Our Responsibility under U.S. Generally Accepted Auditing Standards, *Government Auditing Standards*, and the Uniform Guidance**

As stated in our engagement letter dated December 3, 2019 our responsibility, as described by professional standards, is to express opinions about whether the financial statements prepared by management with your oversight are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles. Our audit of the financial statements does not relieve you or management of your responsibilities.

In planning and performing our audit, we will consider the City of St. Ignace's internal control over financial reporting in order to determine our auditing procedures for the purpose of expressing our opinions on the financial statements and not to provide assurance on the internal control over financial reporting. We will also consider internal control over compliance with requirements that could have a direct and material effect on a major federal program in order to determine our auditing procedures for the purpose of expressing our opinion on compliance and to test and report on internal control over compliance in accordance with the Uniform Guidance.

As part of obtaining reasonable assurance about whether the City of St. Ignace's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grants. However, providing an opinion on compliance with those provisions is not an objective of our audit. Also, in accordance with the Uniform Guidance, we will examine, on a test basis, evidence about the City of St. Ignace's compliance with the types of compliance requirements described in the U.S. Office of Management and Budget (OMB) Compliance Supplement applicable to each of its major federal programs for the purpose of expressing an opinion on the City of St. Ignace's compliance with those requirements. While our audit will provide a reasonable basis for our opinion, it does not provide a legal determination on the City of St. Ignace's compliance with those requirements.

Generally accepted accounting principles provide for certain required supplementary information (RSI) to supplement the basic financial statements. Our responsibility with respect to the management's discussion, and analysis, employee retirement and benefit systems and budgetary comparison schedules, which supplement(s) the basic financial statements, is to apply certain limited procedures in accordance with generally accepted auditing standards. However, the RSI will not be audited and, because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance, we will not express an opinion or provide any assurance on the RSI.

We have been engaged to report on the bond covenant cash reserves, combining fund financial statements and scheduled of expenditures of federal awards which accompany the financial statements but are not RSI. Our responsibility for this other information, as described by professional standards, is to evaluate the presentation of the other information in relation to the financial statements as a whole and to report on whether the other information is fairly stated, in all material respects, in relation to the financial statements as a whole.

### **Planned Scope and Timing of the Audit**

We performed the audit according to the planned scope and timing previously communicated to you in our letter about planning matters on December 3, 2019.

### **Significant Audit Findings**

#### ***Qualitative Aspects of Accounting Practices***

Management is responsible for the selection and use of appropriate accounting policies. In accordance with the terms of our engagement letter, we will advise management about the appropriateness of accounting policies and their application. The significant accounting policies used by the City of St. Ignace are described in Note 1 to the financial statements. No new accounting policies were adopted and application of existing policies was not changed during the year. We noted no transactions entered into by the governmental unit during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the financial statements were:

- Management's estimate of the depreciation expense is based on estimated lives. We evaluated the key factors and assumptions used to develop the estimate in determining that it is reasonable in relation to the financial statements taken as a whole.
- Management's estimate of the vested employee benefits is based on current hourly rates and policies regarding payment of sick and vacation time.
- Management's estimate of the Annual Required Contribution for OPEB Obligations and pension benefits were based on various assumptions regarding life expectancies, inflation, premium increases, and investment rates.
- Management's estimate of the allowance for uncollectible accounts receivable is based on past experience and future expectations for collection of various account balances and has been determined to be \$0.

The financial statement disclosures are neutral, consistent and clear.

### ***Difficulties Encountered in Performing the Audit***

We encountered no significant difficulties in dealing with management in performing and completing our audit.

### ***Corrected and Uncorrected Misstatements***

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to the financial statements taken as a whole.

### ***Disagreement with Management***

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

### ***Management Representations***

We have requested certain representations from management that are included in the management representation letter dated August 28, 2020.

### ***Management Consultations with Other Independent Accountants***

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the governmental unit's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

### ***Other Audit Findings or Issues***

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the governmental unit's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

### ***Comments and Recommendations***

The following is a summary of our observations with suggestions for improvements we believe should be brought to your attention. We noted no material matters involving the internal control over financial reporting and compliance, as reported in a separate letter in accordance with Government Auditing Standards of the basic financial statement audit report.

### ***Chart of Accounts (Prior Year)***

During testing, it was noted that a transfer in was accounted for in a miscellaneous income account. Also, it was noted that some funds had improper fund numbers. We recommend that transfers be recorded in their own account and all funds have the correct fund numbers in accordance with the uniform chart of accounts.

Status: In progress of being corrected waiting to finalize when state issues final chart.

### **Internal Control Reports (Prior Year)**

Our firm issued several recommendations regarding accounting and internal control procedures which was issued during March 2018. Our review of the status of these recommendations, indicated several items remain outstanding regarding improvements to these systems. The Council should establish a management team or audit committee to review the recommendations and establish an implementation plan to assure these changes are implemented in accordance with City policy and reported to the Council or audit committee.

Status: In the Progress of being corrected

### **Cash Reconciliations (Prior Year)**

During our audit of cash balances and reconciliations it was noted that several of the bank reconciliations for year end had unreconciled differences. Although these unreconciled differences were immaterial to the financial statements as a whole, the reconciliations should not be considered complete until there are effectively no unreconciled differences.

Status: Uncorrected

### **Cash Reconciliations (Prior Year)**

It was noted during our review of cash reconciliations that the bank statements are not being reconciled on a timely basis. We recommend that all cash accounts are reconciled within 30 days of the month end to ensure compliance with state requirements.

Status: Uncorrected

### **Agency Funds (Prior Year)**

It was noted in our review of agency funds that the city is currently coding revenues to their agency funds and we also noted that the agency funds had a few stale and negative items within the funds. We recommend that the city review the rules relating to Agency funds to ensure that all future coding to these funds is correct, and that a review of all outstanding balances be performed on all outstanding balances.

Status: Uncorrected

### **Outstanding Checks (Prior Year)**

During our review of cash balance, it was noted that the city currently has long outstanding check in their reconciliations that are beyond the timeframe set by the state to have been escheated. We recommend that the City review its outstanding check and the State's Unclaimed Property Manual to ensure compliance with state law.

Status: Corrected

### **Year End Accruals (Prior Year)**

It was noted in our review of the balance sheet that the City did not book all of their year-end accruals for accounts payable, accounts receivable, or prepaid expenses. We recommend that the city perform at a minimum a yearend review of expenditures, and revenues from year end through sixty days post year end to ensure that items are recorded in the proper period.

Status: Uncorrected



### **Pro Shop Contract (Prior Year)**

It was noted in our review that currently the golf courses pro shop is run by the golf course manager, a City employee, but most of the items bought and sold in the shop are for a third party company owned by the golf course manager and that there is not currently a contract for these activities. We recommend that the board review these activities and create a contract that clearly defines their agreement with the shop owner.

Status: Included in employee contract signed by golf course manager in April 2020.

### **Transmittals (Prior Year)**

It was noted in our review of the transmittal process that not all transmittals are being submitted with the date ranges for the items that are to be transmitted. We recommend that all transmittals include the date range for all items to be transmitted to help ensure proper period recording.

Status: Corrected

### **Bid Process (Prior Year)**

It was noted during our review of the bidding process that the city did not follow its purchasing policy for some of the items tested. We recommend that the city continue with their effort to train all department heads on the proper purchasing procedures and bidding process.

Status: Uncorrected

### **Inventory**

It was noted during our review of inventory that some general ledger accounts have not been updated to reflect year-end balances. We recommend that the City update the inventory based on a physical count at year-end to reflect actual inventory levels.

### **Single Approach for Reporting Leases**

The Governmental Accounting Standards Board (GASB) issued guidance that establishes a single approach to accounting for and reporting leases by state and local governments. The single approach is based on the principle that leases are financing of the right to use an underlying asset.

GASB Statement No. 87, *Leases*, provides guidance for lease contracts for nonfinancial assets – including vehicles, heavy equipment, and buildings – but excludes nonexchange transactions, including donated assets, and leases of intangible assets.

Under the new Statement, a lessee government is required to recognize (1) a lease liability and (2) an intangible asset representing the lessee's right to use the leased asset. A lessor government is required to recognize (1) a lease receivable and (2) a deferred inflow of resources. A lessor will continue to report the leased asset in its financial statements.

A lease also will report the following in its financial statements:

- Amortization expense for using the lease asset (similar to depreciation) over the shorter of the term of the lease or the useful life of the underlying asset.
- Interest expense on the lease liability.
- Note disclosures about the lease, including a general description of the leasing arrangement, the amount of the lease assets recognized, and a schedule of future lease payments to be made.

Limited exceptions to the single-approach guidance are provided for:

- Short-term leases, defined as lasting a maximum of 12 months at inception, including any options to extend.
- Financial purchases.
- Certain regulated leases, such as between municipal airports and air carriers.

The full text of Statement 87 is available on the GASB website, [www.gasb.org](http://www.gasb.org).

### **GASB 83 – Certain Asset Retirement Obligations**

*Effective 06/15/2020 (your FY 2020)*

This statement addresses accounting and financial reporting for certain asset retirement obligations--legally enforceable liabilities associated with the retirement of tangible capital assets.

### **GASB 84 – Fiduciary Activities**

*Effective 12/15/2020 (your FY 2020)*

This standard establishes new criteria for determining how to report fiduciary activities in governmental financial statements. The focus is on whether the government is controlling the assets, and who the beneficiaries are. Under this revised standard, certain activities previously reported in agency funds may be reclassified in future periods.

Due to the number of specific factors to consider, management should assess the degree to which this standard may impact the City.

### **State Chart of Accounts**

*Effective 9/30/2021 (your FY 2021)*

The Uniform Chart of Accounts for Local Units of Government (Counties, Cities, Villages and Townships; and Authorities and Commissions established by counties, cities, villages and townships) has been developed by the Local Government Fiscal Accountability Division of the Michigan Department of Treasury with the assistance of the Michigan Committee on Governmental Accounting and Auditing. All local units of government in Michigan must use the Uniform Chart of Accounts. The new Chart of Accounts must be implemented for fiscal years ending Sept. 30, 2021, and thereafter. Early implementation, after the reviewed Chart of Accounts is issued on Dec. 31, 2019, will be allowed and encouraged.

### **Other Matters**

We applied certain limited procedures to the management's discussion and analysis and budgetary, schedule of funding progress, and comparison schedules, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquires of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquires, the basic financial statements, and our knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the scheduled of bond covenant cash reserves and combining fund financial statements, which accompany the financial statements but are not RSI. With respect to this other information, we made certain inquires of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the other information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

**Conclusion**

This information is intended solely for the use of the Mayor, City Council and management of the City of St. Ignace, is not intended to be, and should not be used by anyone other than these specified parties.

We would like to express our appreciation, as well as that of our staff for the excellent cooperation we received while performing the audit. If we can be of any further assistance, please contact us.



**Anderson, Tackman & Company, PLC**  
**Certified Public Accountants**  
**Kincheloe, Michigan**

August 28, 2020

# APPENDIX E

## PUBLIC PARTICIPATION

**Appendix E**

Part 1: Public Hearing Advertisement

**PUBLIC HEARING  
CITY OF ST. IGNACE**

Public hearing on the proposed Phase 1 - Water Plant  
for receiving comments from interested persons.

on Monday, June 7, 2021 at the following location:  
St. Ignace, Michigan 49781

Meeting ID:  
5886184757

Rehabilitate the City's water distribution facilities including  
water treatment plant. This rehabilitation will improve the  
water quality standards, and replace outdated and deteriorated  
equipment. Operation costs.

Water pump station  
Lake  
Pumps, and equipment upgrades at the water treatment plant  
Green Shores Elevated Tank, Second Street Elevated

Short term construction related impacts and financial  
impacts. No significant long term adverse impacts are  
expected on environmentally sensitive resources.

Estimated project will be approximately \$2,027,000 total  
costs dependent on the level and type of project  
scope for the project. The City intends to pursue project  
impacts to the system users

Project plans are available for inspection at the following

in the City Clerk's Office:

City of St. Ignace website at [www.cityofstignace.com](http://www.cityofstignace.com)  
Public hearing record is closed on June 7, 2021 by 2:00 p.m. will  
Written comments should be sent to:

# State of Michigan

In the City of St. Ignace for the County of Mackinac

City of St. Ignace Notice of Hearing

In the Matter of

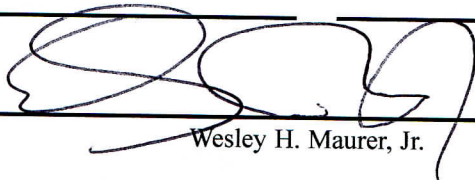
Proposed Phase 1 - Water Plant Rehabilitation Project

COUNTY OF MACKINAC, ss

Wesley H. Maurer, Jr. of St. Ignace, Mackinac County, Michigan, being  
duly sworn says: I am the publisher and editor of The St. Ignace News, a news-  
paper published and circulated in said county. The annexed is a printed copy  
of a notice which was published in said paper on the following dates, to wit:

May 6, 2021

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Wesley H. Maurer, Jr.

Subscribed and sworn to at St. Ignace, in said county,

this 6th day of May, 2021

Before me Wendy Colegrove, Notary  
Wendy Colegrove

Public of Mackinac County, Acting in Mackinac County.

My Commission expires: December 26, 2024

WENDY COLEGROVE, Notary Public  
Mackinac County, State of Michigan  
My Commission Expires: 12-26-2024



# NOTICE OF PUBLIC HEARING

## THE CITY OF ST. IGNACE

The City of St. Ignace will hold a public hearing on the proposed Phase 1 – Water Plant Rehabilitation project for the purpose of receiving comments from interested persons.

The hearing will be held at 7:00 p.m. EST on Monday, June 7, 2021 at the following location:  
Little Bear East Area, 275 Marquette St., St. Ignace, Michigan 49781

Or via Zoom using the following link/meeting ID:

Zoom Meeting: <https://us02web.zoom.us/j/5886184757>

Meeting ID: 5886184757

The purpose of the proposed project is to rehabilitate the City's water distribution facilities including storage tanks, pump stations, and the water treatment plant. This rehabilitation will improve the performance to meet present day regulatory standards, and replace outdated and deteriorated treatment systems to minimize long term operation costs.

### Project construction will involve:

Pump rehabilitation at the low service pump station

Valve replacement at the raw water intake

Pump replacement, general rehabilitation, and equipment upgrades at the water treatment plant

Recoating and resurfacing of the Evergreen Shores Elevated Tank, Second Street Elevated Tank, and Marley Standpipe

Impacts of the proposed project include **short term construction related impacts and financial impacts to the City's water system users. No significant long term adverse impacts are anticipated on either cultural or environmentally sensitive resources.**

The estimated cost to users for the proposed project will be **approximately \$2,027,000 total project costs with costs to individual users dependent on the level and type of project financing that can be secured by the City for the project. The City intends to pursue project financing with the goal of minimizing impact to the system users**

Copies of the plan detailing the proposed project are available for inspection at the following location(s):

**A physical copy is available at City Hall in the City Clerk's Office:**

396 North State Street  
St. Ignace, MI 49781

An electronic PDF is available on the City of St. Ignace website at [www.cityofstignace.com](http://www.cityofstignace.com)

Written comments received before the hearing record is closed on June 7, 2021 by 2:00 p.m. will receive responses in the final project plan. Written comments should be sent to:

City of St. Ignace Manager's Office  
C/O Darcy Long, City Manager  
396 North State Street  
St. Ignace, MI 49781

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# The St. Ignace News

*and Les Cheneaux Islands Weekly Wave*

SERVING THE STRAITS OF MACKINAC AND MICHIGAN'S EASTERN UPPER PENINSULA SINCE 1878

"UPBUILDER OF THE HOME - NOURISHER OF THE COMMUNITY SPIRIT - ARTS, LETTERS AND SCIENCE OF THE COMMON PEOPLE"

## CITY OF ST. IGNACE

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Advertiser: City of St. Ignace

Email: [sisec@lighthouse.net](mailto:sisec@lighthouse.net)

Website: [cityofstignace.com](http://cityofstignace.com)

Phone: 643-9671



# NOTICE OF PUBLIC HEARING

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**St. Ignace, MI 49781**

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Written comments received before the hearing record is closed on June 7, 2021 by 2:00 p.m. will receive responses in the final project plan. Written comments should be sent to:

City of St. Ignace Manager's Office

C/O Darcy Long, City Manager

396 North State Street

St. Ignace, MI 49781

**Appendix E**

Part 2: Public Hearing Transcript

THE CITY OF ST. IGNACE  
CITY COUNCIL MEETING

***Public Hearing on Drinking Water State Revolving Fund***

Held at the Little Bear East Arena Conference Room,  
275 Marquette Street, in St. Ignace, Michigan,  
on Monday, June 7, 2021, at 7:00 p.m.

PRESENT: Connie Litzner, Mayor  
Robert St. Louis, Mayor Pro Tem  
Jim Clapperton, Councilmember  
Paul Fullerton, Councilmember  
William LaLonde, Councilmember  
Kayla Pelter, Councilmember  
Jay Tremble, Councilmember  
Andrea Insley, City Clerk/Treasurer  
Bill Fraser, DPW Director  
Darcy Long, City Manager  
Mr. Kelly Heidbrier, EIT Project Manager  
Mr. Tom Dellamoretta  
Mr. Eric Doerr, *St. Ignace News* Reporter

REPORTED BY: Kelly A. Moran, CSR, CER 4380  
(906) 643-8321 or 430-8480

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St. Ignace, Michigan

Monday, June 7, 2021 - 7:00 p.m.

MAYOR LITZNER: Meeting called to order 7 p.m..

Say the Pledge of Allegiance.

(At 7:00 p.m., Pledge of Allegiance recited)

MAYOR LITZNER: Councilman Clapperton, will you please lead us in the Invocation.

COUNCILMEMBER CLAPPERTON: Heavenly Father, we would ask your blessing upon this meeting tonight and all those in attendance. Walk with us, Lord, and be with us in our thoughts and actions as we consider the issues before us. In your name, we pray. Amen.

MAYOR LITZNER: City Clerk, please take the roll.

CLERK INSLEY: Councilmember Clapperton?

COUNCILMEMBER CLAPPERTON: Here.

CLERK INSLEY: Councilmember LaLonde?

COUNCILMEMBER LALONDE: Here.

CLERK INSLEY: Councilmember Pelter?

COUNCILMEMBER PELTER: Here.

CLERK INSLEY: Councilmember/Mayor Pro Tem St. Louis?

COUNCILMEMBER ST. LOUIS: Here.

CLERK INSLEY: Councilmember Tremble?

COUNCILMEMBER TREMBLE: Here.



1                   MAYOR LITZNER:  Somebody out there, can you  
2                   please mute your microphone?  We can hear a TV.  Thank  
3                   you.

4                   At this time we open for a public hearing on  
5                   DWRF.  If you speak from the Zoom or from the platform,  
6                   please state your name and address.

7                   Thank you.

8                   Bill, are you going to open this or -- okay.

9                   CLERK INSLEY:  Kelly.

10                  MR. KELLY HEIDBRIER:  My name is Kelly  
11                  Heidbrier.  I am with c2ae.  I'm assisting the City of St.  
12                  Ignace with the application for the State of Michigan  
13                  Drinking Water State Revolving Fund application.  I'm  
14                  going to describe the Project Plan and some of the major  
15                  power points of the Project Plan that's being submitted on  
16                  their behalf.

17                  MAYOR LITZNER:  Can you stop for one second?  
18                  Can you guys hear him?

19                  UNIDENTIFIED SPEAKER:  No.

20                  MANAGER LONG:  Can you turn the mic?

21                  MAYOR LITZNER:  Turn the mic.  Okay.  Try that.

22                  MR. KELLY HEIDBRIER:  Everybody hear me now?

23                  MR. TOM DELLAMORETTA:  That's better.

24                  MAYOR LITZNER:  Thank you.

25                  MR. KELLY HEIDBRIER:  So I will start with the

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project background.

This study or Project Plan was authorized by the City of St. Ignace via execution of a letter proposal on January 20th, 2021. The purpose of the Project Plan is to evaluate needs and recommend alternatives for improvements to the City's water system.

The City of St. Ignace is the responsible entity for the municipal water treatment plant serving the City, and the adjacent areas of Moran and St. Ignace Townships. The entire service district lies within Mackinac County in Michigan's Upper Peninsula.

The City's facilities include a 500,000-gallon in-ground concrete treated water storage tank at the water treatment plant, one 300,000-gallon steel standpipe with booster pumping at Marley Street, a 100,000-gallon elevated storage tank on Second Street, and a 100,000-gallon elevated storage tank in Evergreen Shores. These facilities and the distribution system are currently owned, operated, and maintained by the City. The distribution system includes about 200,000 feet of water main, includes hydrants, valves, and services. The City water source is Lake Huron near the Straits of Mackinac.

The primary goal of the water treatment plant and distribution system is to protect the quality of the water supply and to protect public health. Ultimately,

1 the driving force for this study and the potential  
2 construction of the recommended improvements is the  
3 protection and enhancement of the quality of the water  
4 supply to the service area.

5           Reliable operation of the water distribution  
6 system within the City of St. Ignace's utility systems are  
7 imperative to protect the health and safety of the City's  
8 citizens and visitors. The City has been operating and  
9 maintaining the water treatment facility effectively, but  
10 there are areas of escalating deterioration and  
11 obsolescence that require a larger preventive replacement  
12 and rehabilitation effort. Operators, consultants, and  
13 regulators have collaborated on the proposed solutions for  
14 these areas of work.

15           Now we're going to describe the alternatives  
16 that were analyzed and how we selected the chosen  
17 selective alternatives.

18           The principal alternatives that were considered  
19 were Alternative Number 1, and that was no action. The  
20 water treatment plant may continue to maintain operations,  
21 but escalating deterioration of existing equipment and  
22 structures risk inefficiency, additional hazards, and  
23 control failures.

24           Second alternative was upgrade existing  
25 facilities. The rehabilitation of existing treatment



1 systems can be done with relatively minor additions,  
2 modifications, and replacements.

3 The selective alternative to upgrade of existing  
4 facilities is considered the preferred alternative. The  
5 fundamental effectiveness of existing treatment plant  
6 systems is not in need of major changes, but minor  
7 improvements can prevent decline and improve efficiency of  
8 current operations.

9 The recommended treatment option for St. Ignace  
10 is to upgrade facilities or rehabilitate unit processes,  
11 which include the following:

12 Replacement of the shorewell isolation valve  
13 with improvements to the pump station itself.

14 Upgrade low service pumps with various frequency  
15 drive controllers.

16 Rehabilitation of flocculation cells and drive  
17 replacement.

18 Rehabilitation of Filter Bed Number 2, including  
19 filter media.

20 Upgrade high service pumps with VFD controllers.

21 Coating of the existing treated water storage  
22 tank at the water treatment plant and elevated storage  
23 tanks throughout the City.

24 Soda ash feed improvements, ensuring  
25 distribution system corrosion control efforts are

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maintained.

Sludge lagoon rehabilitation.

General water treatment plant improvements and equipment upgrades to promote reliability, sustainability, and energy efficiency.

Replacement of existing lighting fixtures for more energy efficient fixtures.

And I'm now going to discuss the project costs.

So the estimated construction costs for this project was \$1,596,000.

Administration, legal, bonding, permits, and miscellaneous costs were \$24,000.

Engineering total was \$292,000.

Contingencies, \$115,000.

The total project costs estimated right now is \$2,027,000.

The costs to the users in the City or the total DWSRF loan amount is 2,027,000.

The City of St. Ignace qualified as a disadvantaged community, which allowed the City to extend the loan from 20 years to 30 years. So with that estimated project costs in a 30-year term and an annual debt service amount of \$92,068, the estimated user rate impact per EDU is \$3 per month. And this is covered under your existing rate structure with your current debt retirement.

1                   An environmental evaluation was done. The  
2                   anticipated environmental impacts resulting from  
3                   implementation of the selected alternative are relatively  
4                   minor. There is no increase in the extent of the water  
5                   system and no major changes in terms of residuals or other  
6                   material effects. There's a full detail that can be found  
7                   in the Project Plan under the appendix titled  
8                   "Environmental Evaluation."

9                   Mitigation measures were also considered. Where  
10                  adverse impacts due to installation of the recommended  
11                  improvements cannot be avoided, mitigation measures will  
12                  be implemented. Costs for mitigation measures will be  
13                  considered where applicable in project opinions of  
14                  probable cost and included in construction contract  
15                  documents. A full discussion of the mitigation measures  
16                  can also be found inside the Project Plan under the  
17                  section titled "Mitigation Measures."

18                  At this time I don't have anything else to cover  
19                  here today.

20                  You can open up the hearing for questions. And  
21                  if there are none, we may close the hearing.

22                  MAYOR LITZNER: Okay. We're going to start with  
23                  questions of everybody in the room, and then we'll go to  
24                  Zoom.

25                  Councilmember Pelter.

1 COUNCILMEMBER PELTER: I didn't understand the  
2 statement you said that it would cost the user rate of \$3  
3 per month, but that was covered in our existing rate  
4 structure.

5 Does that mean there will be no rate increase?

6 MR. KELLY HEIDBRIER: Correct.

7 COUNCILMEMBER PELTER: So we take it out of the  
8 current payment. Thank you.

9 COUNCILMEMBER FULLERTON: I only have the  
10 contingency. The project seems pretty straightforward,  
11 and it just seems a little high for this project, but it  
12 may not be. If we don't use it all, we don't pay it.

13 MR. KELLY HEIDBRIER: Correct.

14 COUNCILMEMBER FULLERTON: I thought so. You put  
15 that in there. So if you need it, you have it. I  
16 understand. Thank you.

17 MAYOR LITZNER: Mr. Dellamoretta.

18 MR. TOM DELLAMORETTA: To follow up on  
19 Councilperson Pelter's question, if there is no need to  
20 raise rates, based upon what is being collected today, is  
21 that based upon the upcoming debt retirement that we're  
22 anticipating? Because there's a lot of projects that the  
23 debt is going to be paid off in the near future. Right?

24 MR. BILL FRASER: We have the debt paid off  
25 already.



1 MR. TOM DELLAMORETTA: That's why it's not  
2 needed.

3 MR. BILL FRASER: That's correct. We just paid  
4 one last year of almost two hundred and -- yeah. 240,  
5 250,000 a year payment, and this is only 19 so --

6 MR. TOM DELLAMORETTA: Okay. Cool.

7 MAYOR LITZNER: Thank you.

8 Any other questions in the room?

9 COUNCILMEMBER PELTER: I just have a really  
10 general one.

11 Bill, is this what you think is the best of the  
12 plans that were selected? Like, were you on board a  
13 hundred percent here?

14 MR. BILL FRASER: Yeah. This is all water plant  
15 upgrades. Not upgrades, but to rebuild what is existing  
16 there.

17 MR. KELLY HEIDBRIER: Instead of trying to, like  
18 you said, the option is to overhaul everything. I just  
19 want to make sure you got to have your opinions expressed.

20 MR. BILL FRASER: Oh, yeah. Kelly and I worked  
21 together for over a year on this, so yep.

22 MR. KELLY HEIDBRIER: If you work with me on a  
23 year, you will never get your opinion so --

24 MR. BILL FRASER: Yeah.

25 MAYOR LITZNER: Mr. Dellamoretta.

1 MR. TOM DELLAMORETTA: I'm sorry. But maybe an  
2 unfair question.

3 Is there an understood life expectancy of the  
4 water plant?

5 MR. KELLY HEIDBRIER: That's a complicated  
6 answer. Different components have different expected  
7 life. So I couldn't say a life expectancy of the plant  
8 itself. The City has done a great job maintaining  
9 different components of the facility. It's just time for  
10 a larger capital improvement project to keep up on the  
11 rest of it, I guess.

12 MR. BILL FRASER: Tom, we have already done a  
13 lot of upgrades on our own.

14 MR. TOM DELLAMORETTA: Sure.

15 MR. BILL FRASER: Like rebuilding pumps. Now  
16 it's to the point where there is funding there that we  
17 want to do a little bit more maybe at one given time.  
18 Like the buildings, the bricks are deteriorating a little  
19 bit. We want to upgrade that maybe and just that there's  
20 help there that we want to take advantage of.

21 MR. TOM DELLAMORETTA: Sure.

22 MR. BILL FRASER: I guess it's the best guess  
23 thing.

24 MAYOR LITZNER: Okay. And I'm sorry. I forgot.  
25 You got Tom. Do you need Tom's address?

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CLERK INSLEY: (Nods).

MAYOR LITZNER: Okay. So stand up. State your name.

MR. ERIC DOERR: Eric Doerr, 620 West Spring Street, St. Ignace.

Do you have any timeline for when work would begin?

MR. KELLY HEIDBRIER: We're hoping winter of this coming year.

MR. ERIC DOERR: Thank you.

MR. KELLY HEIDBRIER: Sure.

MAYOR LITZNER: Is there anybody on Zoom that would like to answer a question or make a statement? Please remember your name and address.

Okay. Anybody else in the room?

Okay. We're going to close this portion of the public hearing.

Thank you.

(At 7:14 p.m., public hearing concluded)

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June 10, 2021

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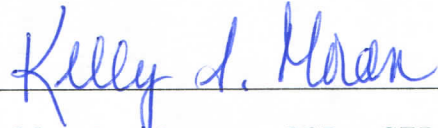
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I certify that this transcript, consisting of 14 pages, is a complete, true, and correct transcript to the best of my ability of the minutes of the St. Ignace City Council Public Hearing on the Drinking Water State Revolving Fund held on Monday, June 7, 2021, in St. Ignace, Michigan.



Kelly A. Moran, CSR, CER 4380

P.O. Box 27

St. Ignace, MI 49781

(906) 643-8321 or 430-8480



## DWSRF PROJECT PUBLIC HEARING

June 7, 2021 Regular City Council meeting at Little Bear East

### Attendance/In-Person:

Jim Clapperton, Councilmember  
318 Lake Street  
St. Ignace, MI 49781

Jay Tremble, Councilmember  
818 West Portage Street  
St. Ignace, MI 49781

Willie LaLonde  
29 South Marley Street  
St. Ignace, MI 49781

Connie Litzner, Mayor  
1150 South State Street  
St. Ignace, MI 49781

Robert St. Louis, Mayor Pro-Tem  
373 Underhill Street  
St. Ignace, MI 49781

Darcy Long, City Manager  
20 Bertrand Street  
St. Ignace, MI 49781

Tony Brown, Police Chief  
165 White Pine Drive  
St. Ignace, MI 49781

Charles Palmer, City Attorney  
545 Ashmun Street, Ste #9  
Sault Ste. Marie, MI 49783

Andrea Insley, City Clerk/Treasurer  
1010 Medora Street  
St. Ignace, MI 49781

Bill Fraser, DPW Director  
190 2<sup>nd</sup> Street  
St. Ignace, MI 49781

Stephanie Baar, Asst, to the City Manager  
898 North State Street, Apt #1  
St. Ignace, MI 49781

Kelly Moran  
44 Spring Street  
St. Ignace, MI 49781

Kelly Heidbrier, C2AE  
1211 Ludington Street  
Escanaba, MI 49829

Fred Paquin  
243 East Portage Street  
St. Ignace, MI 49781

Tim Matelski  
280 South Airport Road  
St. Ignace, MI 49781

Les Therrian  
199 Burdette Street  
St. Ignace, MI 49781

Tom Cronan  
610 South State Street  
St. Ignace, MI 49781

Dan Litzner  
1150 South State Street  
St. Ignace, MI 49781

Kaylie Fech  
248 South Airport Road Apt #  
St. Ignace, MI 49781

**Attendance via Zoom:**

Rich and Mary Cullen  
291 East Portage Street  
St. Ignace, MI 49781

Tom & Nancy Washburn  
181 Elliott Street  
St. Ignace, MI 49781

Elle Jansen  
380 Church Street, Apt #4  
St. Ignace, MI 49781

Sam & Rachel Conant  
40 North State Street  
St. Ignace, MI 49781

Kelly Simmons  
W1356 Pte LaBarbe Road  
St. Ignace, MI 49781

Mike & Aimee Williford  
188 Fitch Street  
St. Ignace, MI 49781

Clyde Hart  
49 Spring Street  
St. Ignace, MI 49781

**Public comment:**

Kayla Pelter, City Councilmember  
451 West Spring Street  
St. Ignace, MI 49781

Paul Fullerton  
30 East Bluff Street  
St. Ignace, MI 49781

Tom Della-Moretta  
141 Mission Ridge  
St. Ignace, MI 49781

Eric Doerr, St. Ignace News  
620 West Spring Street  
St. Ignace, MI 49781

**Appendix E**

Part 3: Comments

## MEMO

**To:** C2AE Files  
**From:** Ashley Hendricks, PE  
**Date:** June 21, 2021  
**Re:** 21-0076 St. Ignace DWSRF Public Hearing Comments Summary

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This memo is to serve as a summary of the comments received at the public hearing. No changes were made to the project as a result of the public participation process.

A DWSRF Formal Public Hearing was held on June 7, 2021 at 7 pm at Little Bear East Arena in St. Ignace. Advertisement of the public hearing was placed in the St. Ignace News on May 6, 2021; copies of the project plan were available for public review on the City's website and at City Hall beginning May 6. Official transcript is provided in Appendix E. Kelly Heidbrier of C2AE reviewed the project scope and dollars associated with the proposed improvements.

Abbreviated public comments at the public hearing were received as follows, responses are provided on the following paragraph:

- 1) Councilmember Pelter (City): "The project will cost the user rate of \$3 per month, but that was covered in our existing rate structure. Does that mean there will be no rate increase?"
- 2) Councilmember Fullerton (City): "If not all the funds are used, do we still have to pay?"
- 3) Mr. Tom Dellamoretta (Public): "Is there an understood life expectancy of the water plant?"
- 4) Mr. Eric Doerr (Public): "Is there any timeline for when work would begin?"

A summary of the responses addressing the comments are below, and correspond with the numbered comments above:

- 1) Kelly Heidbrier (C2AE): "Correct"
- 2) Kelly Heidbrier (C2AE): "No"
- 3) Kelly Heidbrier (C2AE): "Difference components have different expected life. The City has done a great job maintaining different components of the facility. It's just time for a larger capital improvement project to keep up on the rest of it."
- 4) Kelly Heidbrier (C2AE): "We are hoping winter of this coming year"

Council requested any final comments, none were presented. A motion was passed to support the project plan. The public hearing concluded at 7:14 pm.

## **Appendix E**

### Part 4: Adoption of the Project Plan

**A RESOLUTION ADOPTING A FINAL PROJECT PLAN  
FOR WATER SYSTEM IMPROVEMENTS AND  
DESIGNATING AN AUTHORIZED PROMCT REPRESENTATIVE**

**WHEREAS**, the City of St. Ignace recognizes the need to make improvements to its existing water treatment and distribution system; and

**WHEREAS**, the City of St. Ignace authorized C2AE to prepare a Project Plan, which recommends the construction of: Project shall consist of improvements to the City's water distribution facilities. Scope of work will include, but not limited to: pump rehabilitation at the low service pump station; valve replacement at the raw water intake; pump replacement, general rehabilitation, and equipment upgrades at the water treatment plant; and recoating and resurfacing of the Evergreen Shores Elevated Tank, Second Street Elevated Tank, and Marley Standpipe; and

**WHEREAS**, said Project Plan was presented at a Public Hearing held on June 7, 2021 at 7:00 pm EST and all public comments have been considered and addressed;

**NOW THEREFORE BE IT RESOLVED**, that the City of St. Ignace formally adopts said Project Plan and agrees to implement the selected alternative (Alternative 2).

**BE IT FURTHER RESOLVED**, that the City Manager, a position currently held by Mr. Darcy Long, is designated as the authorized representative for all activities associated with the project referenced above, including the submittal of said Project Plan as the first step in applying to the State of Michigan for a Drinking Water Revolving Fund Loan to assist in the implementation of the selected alternative.

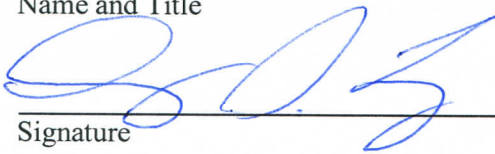
Yeas: Mayor Litzner, Councilmember Pelter, Mayor Pro-Tem St. Louis, Councilmembers Tremble, Clapperton, Fullerton and LaLonde.

Nays: None.

I certify that the above Resolution was adopted by City of St. Ignace Council on June 7, 2021.

BY: Mr. Darcy Long, City Manager

Name and Title

  
Signature

  
Date

# APPENDIX F

## MAPS (FULL SIZE)



