



City of Marine City
303 S. Water St.
Marine City, MI 48039

Long Term Capital Equipment Replacement/Improvement Plan

Department: Waste Water System, Plant & Pump Stations

Item	Comments	Category	In Service Year	Useful Life Yrs	Rem Life Years	Life Based On Condition	Budget Year(s)										
							2017 replacement cost	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	5 Years 2024-28	5 Years 2029-33	5 Years 2034-38	5 Years 2039-43
Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Misc. piping, valves, updates, electrical	Waste Water Treatment Plant								\$20,000								
Raw Sewage Pump - Influent Pump 1	Belle River Pump Station	Process	1994	30	7	12									\$45,000		
Raw Sewage Pump - Influent Pump 2	Belle River Pump Station	Process	1994	30	7	12									\$45,000		
Raw Sewage Pump - Influent Pump 3	Belle River Pump Station	Process	1994	30	7	12									\$45,000		
Raw Sewage Pump - Influent Pump 4	Belle River Pump Station	Process	1994	30	7	12									\$27,000		
Roof Ventilator: RV-5	Belle River Pump Station: Roof	HVAC	1995	30	8	13									\$1,500		
Roof Fan: RF-16	Belle River Pump Station: Roof	HVAC	1995	25	3	8						\$3,000					
Roof Fan: RF-17	Belle River Pump Station: Wet Well	HVAC	1995	25	3	3				\$3,500							
Automatic Damper: D-14	Belle River Pump Station	HVAC	1995	20	-2	3				\$3,500							\$3,500
Sump Pump: SP-7	Belle River Pump Station	MECH.	2010	20	13	13									\$1,000		
Air Compressor: AC-3	Belle River Pump Station	MECH.	1995	20	-2	-2				\$6,000							\$6,000
Air Dryer: Airdryer 2	Belle River Pump Station	MECH.	1995	20	-2	-2				\$1,000				\$1,000			
Gas Unit Heater: GUH-8	Belle River Pump Station: Dry Well	HVAC	2010	20	13	18										\$5,000	
Analytical Meter: AIT-100	Belle River Pump Station: First Floor	INSTRUM.	1992	15	-10	-10				\$6,000					\$6,000		
Flow Meter: FIT-50-1	Belle River Pump Station: Intermediate Plan	INSTRUM.	1992	15	-10	-10				\$24,000						\$24,000	
Level Meter: LIT-50-1	Belle River Pump Station: Foundation Plan	INSTRUM.	1992	15	-10	-10				\$4,500						\$4,500	
Level Meter: LIT-50-2	Belle River Pump Station: Foundation Plan	INSTRUM.	1992	15	-10	-10				\$4,500						\$4,500	
Control Panel: I/P Panel	Belle River Pump Station: Foundation Plan	SCADA	1992	20	-5	-5						\$20,000					\$20,000
Control Panel: PSCP	Belle River Pump Station: First Floor	SCADA	1992	20	-5	-5				\$60,000							\$60,000
Generator	Belle River Pump Station: First Floor	ELECTRICAL	1992	30	5	5										\$70,650	
Auto Transfer Switch: 400A ATS	Belle River Pump Station: First Floor	ELECTRICAL	1992	40	15	15									\$11,925		
Lighting Contactor: LC-R	Belle River Pump Station: First Floor	ELECTRICAL	1992	20	-5	-5										\$1,600	
Transformer: Outdoor Transformer	Belle River Pump Station: First Floor	ELECTRICAL	1992	40	15	15									\$37,350		

Duty Load:
1-Used Rarely or Emergency Only
2-Light Use
3-Moderate Use
4-Daily Use
5-Extreme Use or 24/7 Use



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							Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%
Transformer: Transformer LPR	Belle River Pump Station: First Floor	ELECTRICAL	1992	40	15	15										\$4,050		
Motor Control Center: MCC-R	Belle River Pump Station: First Floor	ELECTRICAL	1992	40	15	15										\$72,938		
Lighting Panel: LP-R	Belle River Pump Station: First Floor	ELECTRICAL	1992	40	15	20										\$4,538		
Disconnect Switch: Service Entrance Disconnect	Belle River Pump Station: First Floor	Process	1992	30	5	0						\$8,363						
Sodium Hypochlorite Tank: Tank Chlorine-1	Chemical Bldg No. 2	Process	1994	35	12	17											\$18,000	
Sodium Hypochlorite Tank: Tank Chlorine-2	Chemical Bldg No. 2	Process	1994	35	12	17											\$18,000	
Sodium Hypochlorite Pump: Pump Chlorine-1	Chemical Bldg No. 2	Process	1998	35	16	16										\$2,000		
Sodium Hypochlorite Pump: Pump Chlorine-2	Chemical Bldg No. 2	HVAC	1998	35	16	16										\$2,000		
Gas Unit Heater: GUH-1	Chemical Bldg No. 2: Chlorination Room	HVAC	2010	20	13	13											\$3,900	
Gas Unit Heater: GUH-2	Chemical Bldg No. 2: Dechlorination Room	HVAC	2010	20	13	13											\$2,750	
Roof Fan: RF-9	Chemical Bldg No. 2: Chlorination Room	HVAC	1995	25	3	8							\$2,000					
Roof Fan: RF-10	Chemical Bldg No. 2: Dechlorination Room	HVAC	1995	25	3	8							\$1,000					
Automatic Damper: D-7	Chemical Bldg No. 2: Chlorination Room	HVAC	1995	20	-2	3					\$2,000							
Automatic Damper: D-8	Chemical Bldg No. 2: Dechlorination Room	HVAC	1995	20	-2	3					\$1,750							
Automatic Damper: D-9	Chemical Bldg No. 2: Near Stairs	HVAC	1995	20	-2	3					\$2,500							
Tepid Water Tank	Chemical Bldg No. 2	MECH.	1995	25	3	8							\$1,500					
Emergency Shower: ES-2-2	Chemical Bldg No. 2	MECH.	1995	25	3	8							\$2,500					
Slide Gate: F-50-1	Chlorine Contact Tanks: Tank No. 1	Process	1994	35	12	17											\$12,000	
Slide Gate: F-50-2	Chlorine Contact Tanks: Tank No. 2	Process	1994	30	7	12											\$12,000	
Sluice Gate: S-50-1	Chlorine Contact Tanks: Tank No. 1	Process	1994	30	7	12											\$29,000	
Sluice Gate: S-50-2	Chlorine Contact Tanks: Tank No. 2	Process	1994	35	12	17											\$29,000	
Telescoping Valve: TSV-50-1	Chlorine Contact Tanks: Tank No. 1	Process	1994	35	12	17											\$9,000	

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							Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%
Telescoping Valve: TSV-50-2	Chlorine Contact Tanks: Tank No. 2	Process	1994	30	7	12										\$9,000		
Chlorine Mixer: Mixer-01	Chlorine Contact Tanks	INSTRUM.	1994	30	7											\$7,000		
Flow Meter: FIT-10	Chlorine Contact Tanks	Process	1992	15	-10	-10				\$4,500								
Scum Pump: Scum Pump-02	Chemical Bldg No. 2: Basement	Process	1994	35	12	17											\$61,000	
Plant Effluent Water: PEW System-01	Chemical Bldg No. 2: Basement	Process	1994	35	12	12										\$54,000		
Plant Effluent Water Strainer: PEW Strainer	Chemical Bldg No. 2: Basement	Process	1994	35	12	12										\$45,000		
Gas Unit Heater: GUH-3	Chemical Bldg No. 2: Entry	HVAC	2010	20	13	18											\$2,750	
Electric Unit Heater: EUH-3	Chemical Bldg No. 2: Basement	HVAC	1995	15	-7	-2				\$4,500							\$4,500	
Roof Fan: RF-11	Chemical Bldg No. 2: Basement	HVAC	1995	25	3	8							\$3,000					
Sump Pump: SP-1	Chemical Bldg No. 2	MECH.	2010	20	13	18										\$1,000		
Sump Pump: SP-2	Chemical Bldg No. 2	MECH.	2010	20	13	18										\$1,000		
AODD Pump: SP-5	Chemical Bldg No. 2	MECH.	2010	20	13	13										\$1,000		
Control Panel: PEW Pumps Control Panel	Chemical Bldg No. 2: Electrical Room Basement	ELECTRICAL	1992	20	-5	-10				\$8,000							\$8,000	
Transformer: Transformer-LP-1	Chemical Bldg No. 2: Electrical Room	ELECTRICAL	1992	40	15	15										\$4,350		
Sampler Pump: Pump Samler-1	Service Building	Process	1994	30	7	7								\$5,000				
Sampler Pump: Pump Sampler-2	Service Building	Process	1994	30	7	7								\$5,000				
Sampler Pump: Pump Sampler-3	Service Building: In manhole W of Service Building	Process	1994	30	7	7								\$5,000				
Variable Air Volume Box: VAV-1	Service Building: Sample Room	HVAC	1995	20	-2	3							\$1,500					\$1,500
Variable Air Volume Box: VAV-2	Service Building: Electrical Room	HVAC	1995	20	-2	3							\$1,500					\$1,500
Variable Air Volume Box: VAV-3	Service Building: Laboratory	HVAC	1995	20	-2	3							\$3,000					\$3,000
Variable Air Volume Box: VAV-4	Service Building: Locker Room	HVAC	1995	20	-2	3							\$1,500					\$1,500
Variable Air Volume Box: VAV-5	Service Building: Corridors	HVAC	1995	20	-2	3							\$1,500					\$1,500
Variable Air Volume Box: VAV-6	Service Building: Lunch Room	HVAC	1995	20	-2	3							\$1,500					\$1,500

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Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Variable Air Volume Box: VAV-7	Service Building: Office	HVAC	1995	20	-2	3							\$1,500				\$1,500
In-Line Fan: IF-1	Service Building: Mechanical Room	HVAC	1995	25	3	8								\$2,500			
Heating, Ventilation, & Conditioning: HVAC-1	Service Building: Mechanical Room	HVAC	1995	25	3	8							\$17,500				
Air Cooled Condensing Unit: ACC-1	Service Building: Mechanical Room	HVAC	1995	20	-2	-2						\$12,500					\$12,500
Electric Humidifier: EH-1	Service Building: Mechanical Room	HVAC	1995	20	-2	3				\$10,000							\$10,000
Boiler: B-1	Service Building: Mechanical Room	HVAC	1995	25	3	8								\$35,000			
Heating Water Pump: P-1	Service Building: Mechanical Room	HVAC	1995	20	-2	3						\$2,500					\$2,500
Heating Water Pump: P-2	Service Building: Mechanical Room	HVAC	1995	20	-2	3						\$2,500					\$2,500
Hot Water Unit Heater: UH-1	Service Building: Mechanical Room	HVAC	1995	25	3	8								\$1,500			
Hot Water Unit Heater: UH-2	Service Building: Electrical Room	HVAC	1995	25	3	8								\$1,500			
Hot Water Unit Heater: UH-3	Service Building: Garage	HVAC	1995	25	3	8								\$3,250			
Hot Water Unit Heater: UH-4	Service Building: Grit & Screen Room	HVAC	1995	25	3	8								\$3,250			
Hot Water Unit Heater: UH-5	Service Building: Pump Room	HVAC	1995	25	3	8								\$1,500			
Hot Water Reheat Coil: RHC-1	Service Building: Mechanical Room	HVAC	1995	30	8	13							\$3,000				
Force Flow Heater: FF-1	Service Building: Entry	HVAC	1995	25	3	8				\$1,750							\$1,750
Roof Ventilator: RV-1	Service Building: Mechanical Room	HVAC	1995	30	8	13									\$3,500		
Roof Ventilator: RV-2	Service Building: Mechanical Room	HVAC	1995	30	8	13									\$3,000		
FIN-Tube Radiator: FT-1	Service Building: Lunch Room	HVAC	1995	30	8	13								\$1,500			
Roof Fan: RF-1	Service Building: Garage	HVAC	1995	25	3	8								\$3,000			
Roof Fan: RF-2	Service Building: Electrical Room	HVAC	1995	25	3	8								\$2,000			
Roof Fan: RF-3	Service Building: Grit & Screen Room	HVAC	1995	25	3	3				\$6,000							\$6,000
Roof Fan: RF-4	Service Building: Pump Room	HVAC	1995	25	3	8								\$2,500			

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Roof Fan: RF-5	Service Building: Lab Fume Hood	HVAC	1995	25	3	3							\$3,000					\$3,000
Roof Fan: RF-6	Service Building: Lab Canopy Hood	HVAC	1995	25	3	8									\$2,750			
Roof Fan: RF-7	Service Building: Lunch Room	HVAC	1995	25	3	8									\$1,000			
Roof Fan: RF-8	Service Building: Sample Room	HVAC	1995	25	3	3							\$1,000					\$1,000
Roof Fan: RF-9	Service Building: Service Building	HVAC	1995	25	3	8									\$1,000			
Ceiling Exhaust Fan: CE-1	Service Building: Toilet Room	HVAC	1995	25	3	8									\$1,000			
Ceiling Exhaust Fan: CE-2	Service Building: Toilet Room	HVAC	1995	25	3	8									\$1,000			
Ceiling Exhaust Fan: CE-3	Service Building: Toilet Room	HVAC	1995	25	3	8									\$1,000			
Automatic Damper: D-1	Service Building: Mechanical Room	HVAC	1995	25	3	8									\$3,250			
Automatic Damper: D-2	Service Building: Mechanical Room	HVAC	1995	25	3	8									\$2,500			
Automatic Damper: D-3	Service Building: Garage	HVAC	1995	25	3	8									\$3,250			
Automatic Damper: D-4	Service Building: Electrical Room	HVAC	1995	25	3	8									\$3,250			
Automatic Damper: D-5	Service Building: Grit & Screen Room	HVAC	1995	25	3	8									\$6,000			
Automatic Damper: D-6	Service Building: Pump Room	HVAC	1995	25	3	8									\$3,250			
Automatic Damper: D-15	Service Building: Mechanical Room	HVAC	1995	25	3	8									\$2,000			
Emergency Shower: ES-1	Service Building: Laboratory	MECH.	1995	35	13	18										\$3,000		
Water Heater-Tank: WH-1	Service Building: Mechanical Room	MECH.	2005	20	8	13									\$7,000			
Water Tank: TW-3	Service Building: Mechanical Room	MECH.	2005	30	18	23											\$2,500	
Air Compressor: AC-1	Service Building: Mechanical Room	MECH.	1995	25	3	3									\$10,000			
Vacuum Pump: VP-1	Service Building: Mechanical Room	MECH.	1995	25	3	3									\$5,000			
Air Dryer: Airdryer-1	Service Building: Mechanical Room	MECH.	1995	20	-2	-2							\$3,000					\$3,000
Sampler: Samp-1	Service Building: Sample Room	Process	1995	30	8	13								\$5,000				

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Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Sampler: Samp-2	Service Building: Sample Room	Process	1995	30	8	13							\$5,000				
Backflow Preventor: BFP-1	Service Building: Mechanical Room	MECH.	1995	30	8	13							\$3,500				
Backflow Preventor: BFP-2	Service Building: Mechanical Room	MECH.	1995	30	8	13							\$3,500				
Backflow Preventor: BFP-3	Service Building: Mechanical Room	MECH.	1995	30	8	13							\$3,000				
Backflow Preventor: BFP-4	Service Building: Mechanical Room	MECH.	1995	30	8	13							\$3,000				
Control Panel: Temp/Boiler Control Panel	Service Building: Mechanical Room 112	HVAC	1994	20	-3	-3				\$12,500							\$12,500
Control Panel: Air Compressor Control Panel	Service Building: Mechanical Room 112	HVAC	1992	20	-5	-5				\$10,000							\$10,000
Generator	Service Building: Outside of Elec. Room 119	ELECTRICAL	2007	30	20	20											\$70,650
Lighting Contractor: LC-A	Service Building: Electrical Room 119	ELECTRICAL	1992	20	-5	-5		\$850									\$850
Transformer: T-3 (LP-A)	Service Building: Electrical Room 119	ELECTRICAL	1992	40	15	15									\$5,063		
Transformer: T-5 (LP-L)	Service Building: Control Room 109	ELECTRICAL	1992	40	15	15									\$4,650		
Transformer: T-4 (LP-C)	Service Building: Control Room 109	ELECTRICAL	1992	40	15	15									\$4,350		
Transformer: T-1	Service Building: Outside of Electrical Room 119	ELECTRICAL	1992	40	15	15									\$90,000		
Transformer: T-2	Service Building: Outside of Elec. Room 119	ELECTRICAL	1992	40	15	15									\$90,000		
Low Voltage Unit Substation: LVUS	Service Building: Electrical Room 119	ELECTRICAL	1994	40	17	17											\$178,875
Disconnect Switch: Fused Load Break Switch	Service Building: Outside of Electrical Room 119	ELECTRICAL	1992	40	15	15									\$51,600		
Disconnect Switch: Fused Load Break Switch	Service Building: Outside of Electrical Room 119	ELECTRICAL	1992	40	15	15									\$51,600		
Screw Pump: Screw Pump-01	Influent Pump Station	Process	1994	30	7	7							\$195,000				
Screw Pump: Screw Pump-02	Influent Pump Station	Process	1994	30	7	7							\$195,000				
Screenings Conveyor: Conveyor Screening	Service Building: Grit & Screen Room	Process	1994	30	7	12									\$27,000		
Manual Bar Screen: BAR-Screen-01	Service Building: Grit & Screen Room	Process	1994	30	7	12									\$5,000		

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Manual Bar Screen: BAR-Screen-02	Service Building: Grit & Screen Room	Process	1994	30	7	12									\$224,000		
Grit Dewatering System: Grit Dewatering-1	Service Building: Grit & Screen Room	Process	1994	30	7	7								\$90,000			
Grit Pump: Grit Pump-01	Service Building: Pump Room	Process	1994	30	7	2				\$27,000							
Grit Drive: Grit Drive-01	Service Building: Grit Chamber	Process	1994	30	7	12								\$72,000			
Parshall Flume: Parshall Flume-01	Service Building: Grit Chamber	Process	1994	50	27	32											
Analytical Meter: AIT-18	Service Building: Outside of Grit & Screen Room	INSTRUM.	1992	15	-10	-10				\$6,000						\$6,000	
Flow Meter: FIT-1	Service Building: Outside of Pump Room	INSTRUM.	1992	15	-10	-10					\$18,000						
Control Panel: MCP	Service Building: Control Room 109	SCADA	1992	20	-5	-5				\$60,000						\$60,000	
Control Panel: FICP (Fire Alarm)	Service Building: Outside of Control Room	FIRE PROT	1992	20	-5	-5				\$10,000						\$10,000	
Control Panel (Update All System): Grit System Control Panel	Service Building: Pump Room	ELECTRICAL	1992	20	-5	-5				\$15,000						\$15,000	
Starter: A1 Starter (Raw Sewage Pump)	Service Building: Electrical Room 119	ELECTRICAL	1992	20	-5	-5				\$3,150						\$3,150	
Starter: B1 Starter (Raw Sewage Pump)	Service Building: Electrical Room 119	ELECTRICAL	1992	20	-5	-5				\$3,150						\$3,150	
Motor Control Center: MCC-A	Service Building: Electrical Room 119	ELECTRICAL	1994	40	17	17										\$64,575	
Motor Control Center: MCC-B	Service Building: Electrical Room 119	ELECTRICAL	1994	40	17	17										\$60,113	
Lighting Panel: LP-A	Service Building: Electrical Room 119	ELECTRICAL	1992	40	15	15									\$7,388		
Lighting Panel: LP-C	Service Building: Control Room 109	ELECTRICAL	1991	40	14	14									\$6,338		
Lighting Panel: LP-L	Service Building: Control Room 109	ELECTRICAL	1992	40	15	15									\$6,338		
Disconnect Switch: Raw Sewage Pump-1 (DS)	Service Building: Electrical Room 119	ELECTRICAL	1992	40	15	15									\$1,613		
Disconnect Switch: Raw Sewage Pump-2 (DS)	Service Building: Electrical Room 119	ELECTRICAL	1992	40	15	15									\$1,613		
Ferric Chloride Tank: Tank Ferric 01	Chemical Building No. 1	Process	1985	40	8	13									\$27,000		
Ferric Chloride Pump: Pump Ferric-01	Chemical Building No. 1	Process	1998	30	11	16									\$4,000		

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							Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%
Ferric Chloride Pump: Pump Ferric-02	Chemical Building No. 1	Process	1994	30	7	12										\$4,000		
Polymer Feed Pump: Pump Polymer-1	Chemical Building No. 1	Process	1994	30	7	12										\$4,000		
Polymer Feed Pump: Pump Polymer-2	Chemical Building No. 1	Process	1994	30	7	12										\$4,000		
Anionic Polymer Storage Tank: Tank Polymer-1	Chemical Building No. 1	Process	1994	30	7	12										\$9,000		
Anionic Polymer Mixer: Mixer Polymer-1	Chemical Building No. 1	Process	1994	30	7	7								\$6,000				
Gas Unit Heater: GUH-5	Chemical Building No. 1	HVAC	1995	20	-2	-2				\$4,500								\$4,500
Electric Unit Heater: EUH-1	Chemical Building No. 1: Electrical Room	HVAC	1995	20	-2	3								\$2,000				
Roof Fan: RF-13	Chemical Building No. 1: Roof	HVAC	1995	25	3	8							\$2,750					\$2,750
Ceiling exhaust Fan: CE-4	Chemical Building No. 1: Electrical Room	HVAC	1995	25	3	8							\$1,000					\$1,000
Automatic Damper: D-11	Chemical Building No. 1: Chemical Room	HVAC	1995	20	-2	3							\$2,000					\$2,000
Automatic Damper: D-12	Chemical Building No. 1: Electrical Room	HVAC	1995	20	-2	3							\$3,000					\$3,000
Water Heater Tank: WH-2	Chemical Building No. 1	MECH.	1995	20	-2	3				\$3,000								\$3,000
Tepid Water Tank: TW-1	Chemical Building No. 1	MECH.	2002	25	10	15									\$1,500			\$1,500
Sump Pump: SP-6	Chemical Building No. 1	MECH.	2010	20	13	13							\$1,500					\$1,500
Emergency Shower: ES-2-1	Chemical Building No. 1	MECH.	1995	20	-2	3							\$2,500					\$2,500
Level Meter: LIT-21	Chemical Building No. 1: Outside of Electrical Room 119	INSTRUM.	1992	15	-10	-10				\$4,500						\$4,500		
Control Panel: CP-1	Chemical Building No. 1: Electrical Room	SCADA	1992	20	-5	-5				\$50,000								\$50,000
Lighting Contactor: LC-C	Chemical Building No. 1: Electrical Room	ELECTRICAL	1992	20	-5	-5												\$850
Motor Control Center: MCC-C	Chemical Building No. 1: Electrical Room	ELECTRICAL	1992	40	15	15										\$22,913		
Lighting Panel: LP-D	Chemical Building No. 1: Electrical Room	ELECTRICAL	1991	40	14	14										\$4,538		
Disconnect Switch: MCC-D Main Service Disconnect	Chemical Building No. 1: Electrical Room	ELECTRICAL	1992	40	15	15										\$1,208		
Disconnect Switch: MCC-C Main Service Disconnect	Chemical Building No. 1: Electrical Room	ELECTRICAL	1992	40	15	15										\$1,208		
Slide Gate: F-20-1	Oxidation Ditch: Blending Chamber	Process	1994	30	7	12										\$13,000		

Duty Load:
1-Used Rarely or Emergency Only
2-Light Use
3-Moderate Use
4-Daily Use
5-Extreme Use or 24/7 Use



Long Term Capital Equipment Replacement/Improvement Plan

Item	Comments	Category	In Service Year	Useful Life Yrs	Rem Life Years	Life Based On Condition	Budget Year(s)										
							2017 replacement cost	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	5 Years 2024-28	5 Years 2029-33	5 Years 2034-38	5 Years 2039-43
Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Slide Gate: F-20-2	Oxidation Ditch: Blending Chamber	Process	1994	30	7	12									\$13,000		
Sluice Gate: S-20-1	Oxidation Ditch: Channel 2	Process	1994	30	7	12									\$24,000		
Sluice Gate: S-20-2	Oxidation Ditch: Channel 3	Process	1994	30	7	12									\$24,000		
Aeration Rotor: AR-1A & 1B	Oxidation Ditch: Channel 2-3	Process	1994	35	12	17										\$125,000	
Aeration Rotor: AR-2A & 2B	Oxidation Ditch: Channel 2-3	Process	1994	35	12	17										\$125,000	
Aeration Rotor: AR-3	Oxidation Ditch: Channel 1	Process	1994	30	7	12									\$62,000		
Aeration Rotor: AR-4	Oxidation Ditch: Channel 1	Process	1994	30	7	12									\$62,000		
Aeration Rotor: AR-5	Oxidation Ditch: Channel 1	Process	1994	30	7	12									\$62,000		
Aeration Rotor: AR-6	Oxidation Ditch: Channel 1	Process	1994	30	7	12									\$62,000		
Tilting Weir: TW-1	Oxidation Ditch: Channel 1-2	Process	1994	30	7	12									\$27,000		
Tilting Weir: TW-2	Oxidation Ditch	Process	1994	30	7	12									\$27,000		
Motor Control Center: MCC-E	Oxidation Ditch & Final Clarifiers: North of Clarifier	ELECTRICAL	1992	40	15	15									\$47,475		
Motor Control Center: MCC-F	Oxidation Ditch & Final Clarifiers: North of Clarifier	ELECTRICAL	1992	40	15	15									\$49,275		
Lighting Panel: LP-E (Inside MCC-E)	Oxidation Ditch & Final Clarifiers: North of Clarifier	ELECTRICAL	1992	40	15	15									\$3,225		
Lighting Panel: LP-F (Inside MCC-F)	Oxidation Ditch & Final Clarifiers: North of Clarifier	ELECTRICAL	1992	40	15	15									\$3,225		
Sludge Collector Mechanism: Sludge Collector-1	Final Clarifier No. 1	Process	1994	35	12	12									\$224,000		
Sludge Collector Mechanism: Sludge Collector-2	Final Clarifier No. 2	Process	1994	35	12	12									\$224,000		
Slide Gate: F-30-1	Final Clarifiers: Tank No. 1	Process	1994	35	12	17										\$13,000	

Duty Load:
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Long Term Capital Equipment Replacement/Improvement Plan

Item	Comments	Category	In Service Year	Useful Life Yrs	Rem Life Years	Life Based On Condition	Budget Year(s)											
							2017 replacement cost	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	5 Years 2024-28	5 Years 2029-33	5 Years 2034-38	5 Years 2039-43	
Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Slide Gate: F-30-2	Final Clarifiers: Tank No. 2	Process	1994	35	12	17											\$13,000	
Waste Sludge Pump: Waste Sludge Pump 1	Pump Building: Basement	Process	2014	30	27	32												
Waste Sludge Pump: Waste Sludge Pump 2	Pump Building: Basement	Process	1994	30	7	7								\$61,000				
Flow Meter: FIT-8	Pump Building: Basement	INSTRUM.	1992	15	-10	-10				\$3,000						\$3,000		
Control Panel: Polyblend Control Panel	Pump Building: First Floor	ELECTRICAL	1992	20	-5	-5				\$15,000							\$15,000	
Transformer: Transformer LP-H	Pump Building: First Floor	ELECTRICAL	1992	40	15	15										\$4,050		
Motor Control Center: MCC-G	Pump Building: First Floor	ELECTRICAL	1992	40	15	15										\$24,525		
Motor Control Panel: MCC-H	Pump Building: First Floor	ELECTRICAL	1992	40	15	15										\$29,288		
Lighting Panel: LP-H	Pump Building: First Floor	ELECTRICAL	1992	40	15	15										\$3,938		
Disconnect Switch: MCC-H Service Disconnect	Pump Building: Basement	ELECTRICAL	1992	40	15	15										\$1,208		
Disonnct Switch: MC-G Service Disconnect	Pump Building: Basement	ELECTRICAL	1992	40	15	15										\$1,208		
Screw Pump: Screw Pump-03	Return Sludge Pum Station	Process	1994	30	7	7								\$359,000				
Screw Pump: Screw Pump-04	Return Sludge Pum Station	Process	1994	30	7	7								\$359,000				
Slide Gate: F-40-1	Return Sludge Pum Station	Process	1994	30	7	12										\$12,000		
Slide Gate: F-40-2	Return Sludge Pum Station	Process	1994	30	7	12										\$12,000		
Flow Meter: FIT-7	Return Sludge Pum Station	INSTRUM.	1992	15	-10	-10				\$13,500						\$13,500		
Sludge Transfer Pump: Sludge Pump-01	Chemical Building No. 2: Basement	Process	1994	35	12	17											\$61,000	
Roof Ventilator: RV-3	Chemical Building No. 2: Near Stairs	HVAC	1995	30	8	13										\$2,500		
Roof Ventilator: RV-4	Chemical Building No. 2: Wet Well	HVAC	1995	30	8	13										\$1,750		
Roof Fan: RF-15	Chemical Building No. 2: Wet Well	HVAC	1995	25	3	8				\$9,000								
Flow Meter: FIT-2	Chemical Building No. 2: Electrical Room First Floor	INSTRUM.	1992	15	-10	-10				\$4,500						\$4,500		
Control Panel: CP-2	Chemical Building No. 2: Electrical Room First Floor	SCADA	1992	20	-5	-5					\$50,000							
Motor Control Center: MCC-1	Chemical Building No. 2: Electrical Room	ELECTRICAL	1992	30	5	5						\$30,150						
Sludge Blower: Blower-01	Pump Building: Basement	Process	1994	35	12	17												
Sludge Blower: Blower-02	Pump Building: Basement	Process	1994	35	12	17												
Sludge Blower: Blower-03	Pump Building: Basement	Process	1994	50	27	32												

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City of Marine City
303 S. Water St.
Marine City, MI 48039

Long Term Capital Equipment Replacement/Improvement Plan

Department: Waste Water System, Plant & Pump Stations

Item	Comments	Category	In Service Year	Useful Life Yrs	Rem Life Years	Life Based On Condition	Budget Year(s)											
							2017 replacement cost	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	5 Years 2024-28	5 Years 2029-33	5 Years 2034-38	5 Years 2039-43	
							Estimated Inflation Rate (Per/Yr):							0.0%	2.0%	2.0%	2.0%	2.0%
Cationic Polymer Feed Pump: Pump Polymer-3	Pump Building	Process	1994	30	7	7									\$4,000			
Roof Fan: RF-14	Pump Building: Roof	HVAC	1995	25	3	8							\$3,000					
Roof Fan: RF-18	Pump Building: Wet Well	HVAC	1995	25	3	8				\$3,000								
Automatic Damper: D-13	Pump Building	HVAC	1995	20	-2	3				\$2,500							\$2,500	
Sump Pump: SP-4	Pump Building: Basement	MECH.	2010	20	13	18			\$1,000								\$1,000	
Gas Unit Heater: GUH-6	Pump Building: First Floor	MECH.	2010	20	13	18										\$2,750		
Gas Unit Heater: GUH-7	Pump Building: First Floor	MECH.	2010	20	13	18										\$2,750		
Electric Unit Heater: EUH-2	Pump Building: Basement	HVAC	2010	15	8	13								\$2,500				
Sludge Thickener Screen: Sludge Screen-1	Sludge Thickener No. 1	Process	1994	30	7	12										\$14,000		
Sludge Thickener Screen: Sludge Screen-2	Sludge Thickener No. 2	Process	1994	30	7	12										\$14,000		
Gas Unit Heater: GUH-4	Sludge Storage Building	HVAC	2010	20	13	8										\$2,750		
Roof Fan: RF-12	Sludge Storage Building: Roof	HVAC	1995	25	3	3							\$1,500					
Automatic Damper: D-10	Sludge Storage Building	HVAC	1995	20	-2	-2						\$3,000					\$3,000	
Departmental Server-City Offices	PD Server-Total Cost is \$27,000. Split with Police/Buildings & Grounds/ Water & Sewer									\$4,500								
Sump Pump: SP-3	Sludge Storage Building	MECH.	2010	20	13	13				\$1,000						\$1,000		
Present Value:							\$0	\$850	\$20,000	\$223,800	\$246,000	\$104,013	\$72,750	\$1,413,250	\$2,292,488	\$1,156,863	\$193,000	
Total Cost:							\$ -	\$ 850	\$20,000	\$ 223,800	\$ 246,000	\$ 104,013	\$ 72,750	\$ 1,413,250	\$ 2,292,488	\$ 1,156,863	\$ 193,000	

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