

CITY OF PORTAGE LA PRAIRIE WATER TREATMENT PLANT UPGRADE/EXPANSION PROJECT

PURPOSE OF OPEN HOUSE

Welcome and Introduction

The City of Portage la Prairie (City) welcomes you to this Open House to update you on the proposed construction of the existing Water Treatment Plant (WTP) upgrades, membrane treatment equipment, new intake, and associated works.

Representatives from the City and, Manitoba Water Services Board (MWSB) and Stantec Consulting are here today to address your questions and any concerns. Your feedback is important, and we would appreciate if you can fill out the comment sheet before you leave. We thank you for attending.

CITY OF PORTAGE LA PRAIRIE WATER TREATMENT PLANT UPGRADE/EXPANSION PROJECT

PROJECT BACKGROUND

- The City of Portage la Prairie (City) operates a water treatment plant (WTP) located on the Yellowquill Trail. Raw water is obtained from the Assiniboine River, immediately upstream of the spillway.
- The WTP provides potable supply water to the City residents, regional customers: Southport, Yellowhead Regional Water System (YRWC), Cartier Regional Water Cooperative (CRWC) and several industries in the area (McCain Foods, Nutri-Pea, Simplot, and Roquette).
- The existing treatment processes includes: Ballasted flocculation, lime softening, re-carbonation, ozonation, dual media filtration, granular activated carbon filtration and chlorine disinfection.



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NEED FOR THE PROJECT

- **Improve Water Quality:** The regional water supply system has historically exceeded the regulated trihalomethane (a suspected carcinogen) target of ≤ 0.1 mg/L due to moderately elevated levels of residual organic carbon and long retention times in the distribution system.
- **Improve Redundancy/Reliability:** The existing WTP only has a firm design capacity of **17 MLD** with the largest clarifier out of service and a total design capacity of **34 MLD** due to the limitation of the filtration process.
- **Support Regional Growth:** The WTP expansion will support City's population growth and enhance regional economic development.



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PROJECT BENEFITS

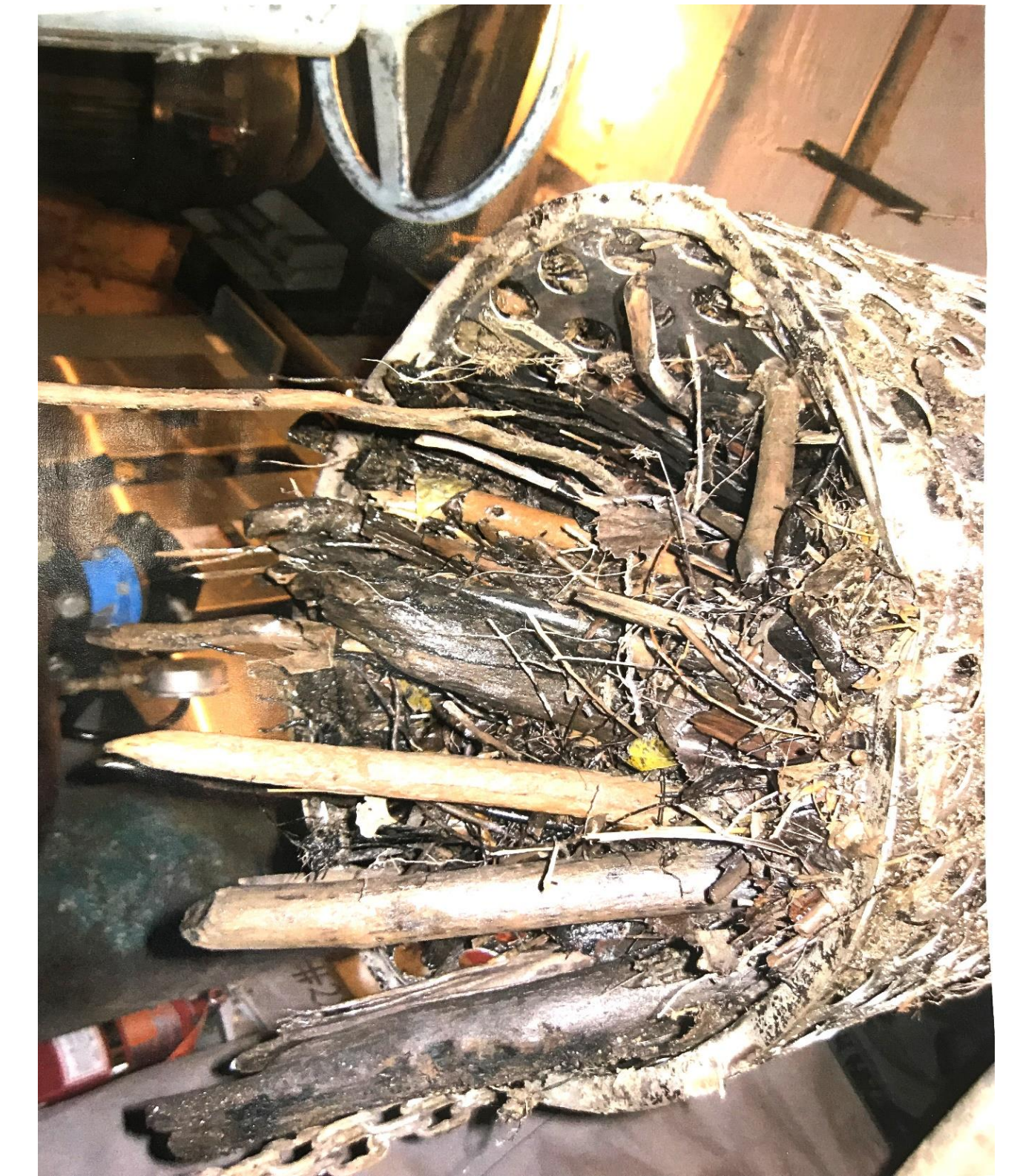
- An integrated membrane treatment process consisting of immersed ultrafiltration (UF) membranes followed by a second stage reverse osmosis (RO) is proposed to improve the WTP process **redundancy** and **reliability**.
- The proposed membrane treatment system will operate in parallel with the existing WTP process to meet future water demands and improve the **quality of the treated water supply**.
- Eliminate the current operational issues and maintenance challenges related to the existing intake infrastructure and significantly improve the **reliability** of WTP operations.



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UPGRADED RIVER INTAKE

- The existing intake ports are on the face of the Portage Diversion River Control Structure and are blinded with debris which also enters the wet well and results in pump plugging.
- The intake screen does not meet the Department of Fisheries and Oceans (DFO) requirements.
- The existing pumping capacity is insufficient to meet the projected demand and there is no room for expansion in the existing pumphouse.
- A new river intake structure, travelling screens and raw water pumping system will be constructed downstream of the spillway to address current operational challenges, meet DFO requirements and City's concerns for zebra mussels.



CITY OF PORTAGE LA PRAIRIE

WATER TREATMENT PLANT UPGRADE/EXPANSION PROJECT

WTP DESIGN BASIS

Design City Population: 15,763 for Year 2050

Projected Water Design Year Total Water Demands (2050)

Source/Location	ADD (MLD)	MDD (MLD)	PHD ^a (L/s)
City of Portage	8	11	237
Regional Water Systems	4	5	79
Current and Future Industries	28	36	543
Total (rounded)	40	52	
City of PLP Distribution System	21	28	560
Poplar Bluff Industrial Park Distribution System	19	24	299

^a New reservoir at the PBIP will buffer peak hour demands for local industries and YRWC.

WTP Capacity :

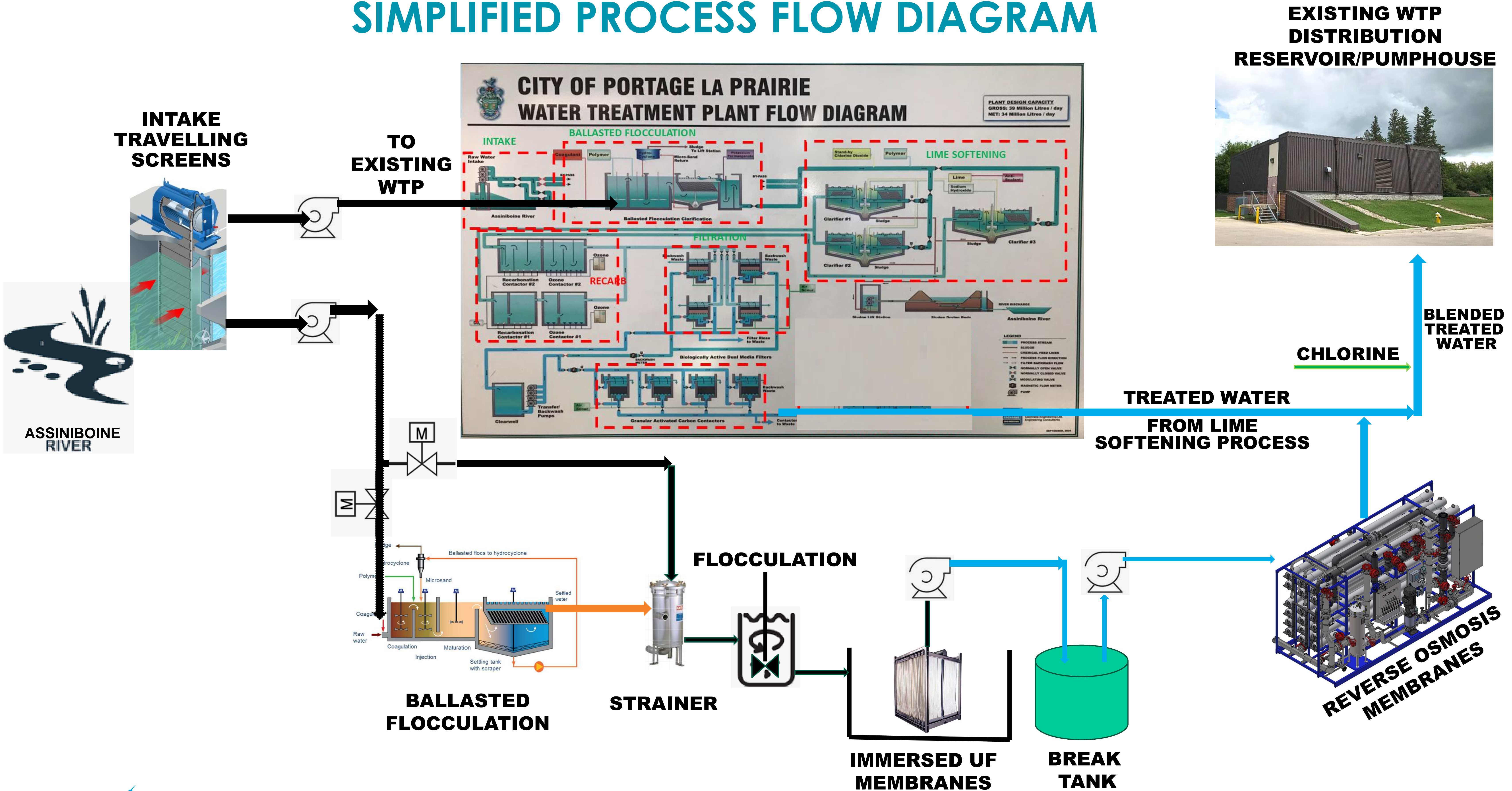
- Total Process Capacity: Meet Projected MDD of 52 MLD + Existing 3 MLD Process Waste = **55 MLD**
- Exist. Lime Softening Process: **17 MLD** (Firm Capacity)
- Proposed UF/RO Process: 55 MLD – 17 MLD = **38 MLD**

Proposed Treatment Process

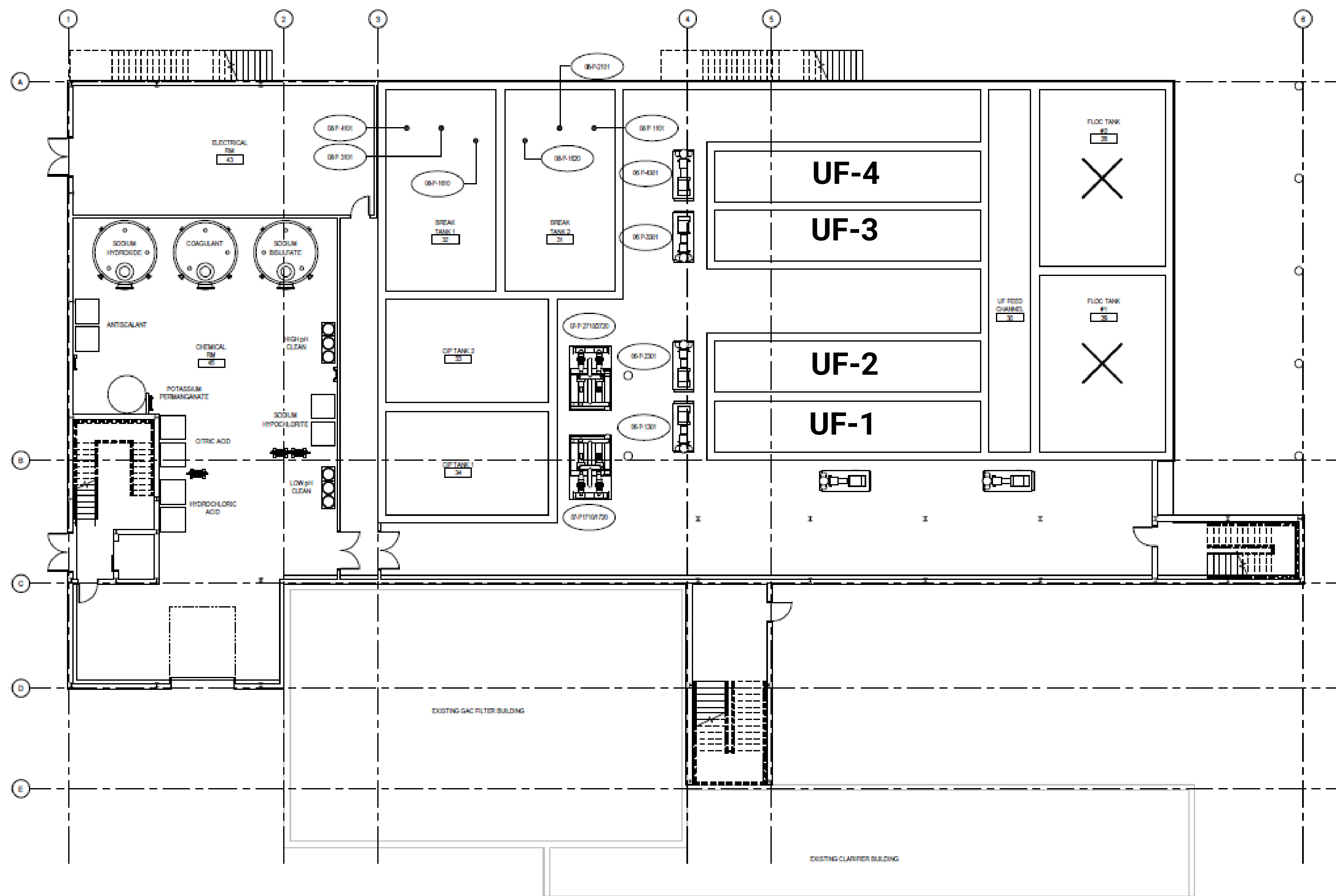
- The existing lime softening process will be operated parallel with the UF/RO membrane process.
- pH adjustment/stabilization of membrane treated water with Caustic Soda (NaOH) before blending.
- Chlorine disinfection prior to water distribution system.

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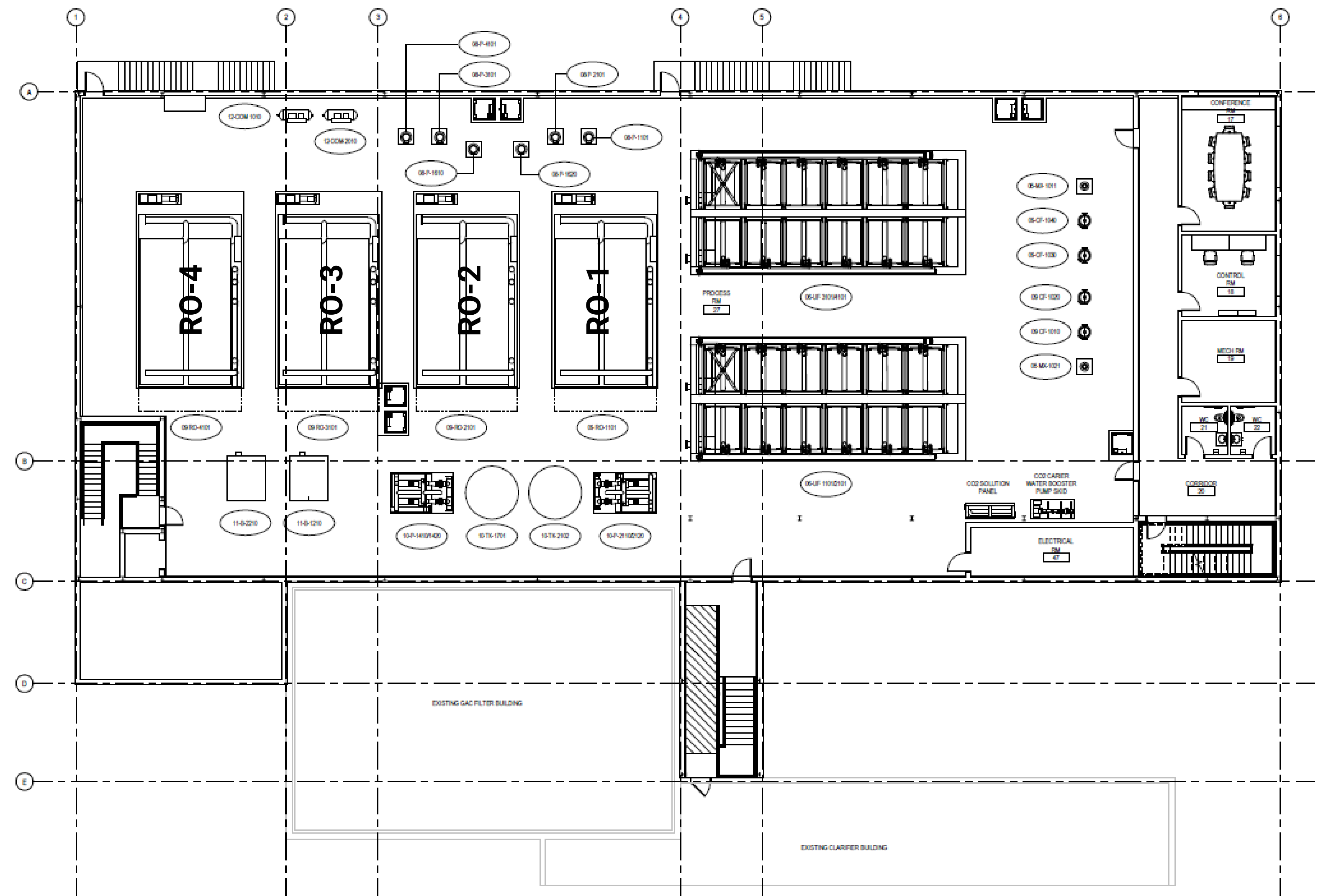
SIMPLIFIED PROCESS FLOW DIAGRAM



CITY OF PORTAGE LA PRAIRIE WATER TREATMENT PLANT UPGRADE/EXPANSION PROJECT MEMBRANE BUILDING FLOOR PLANS

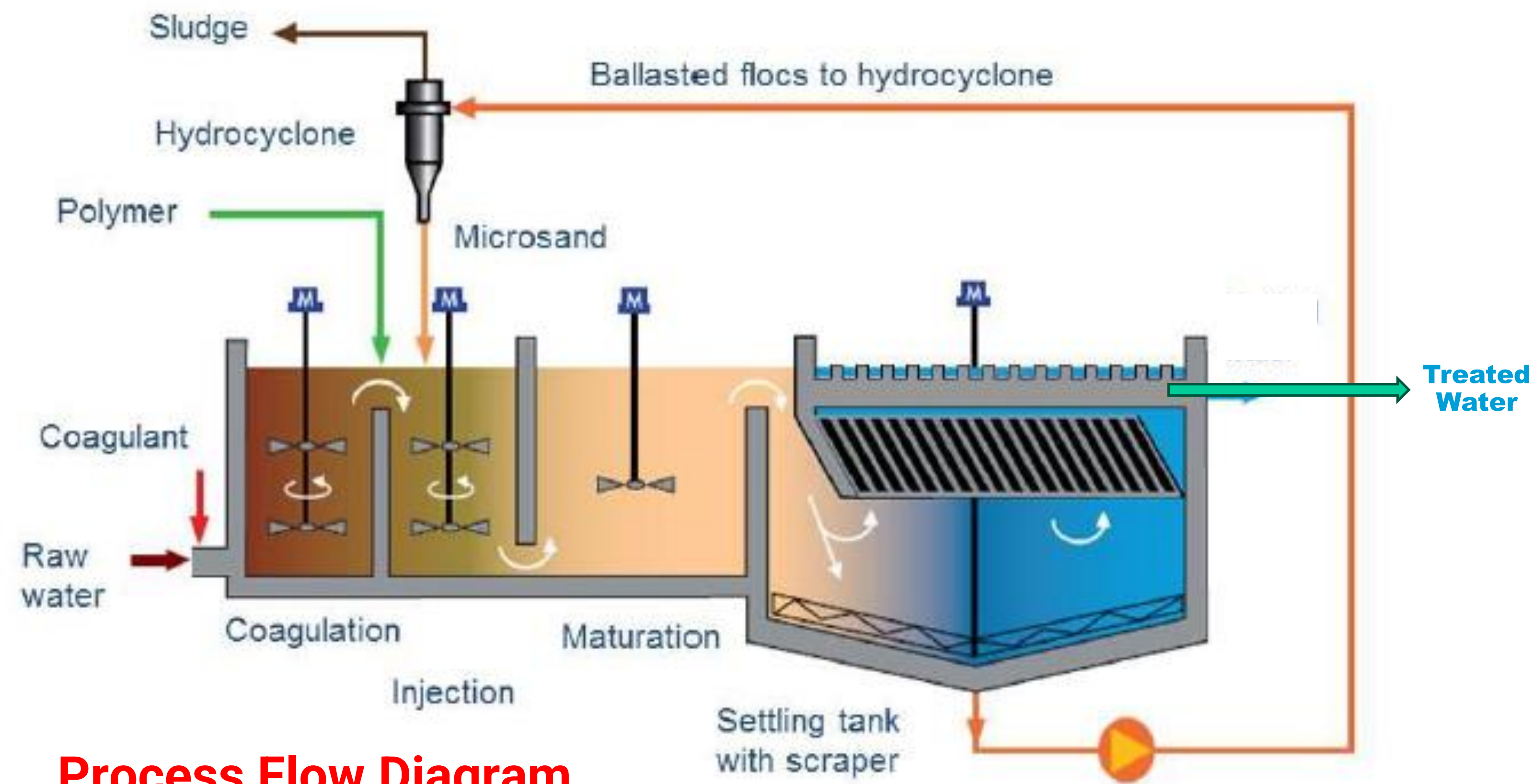


Lower Level

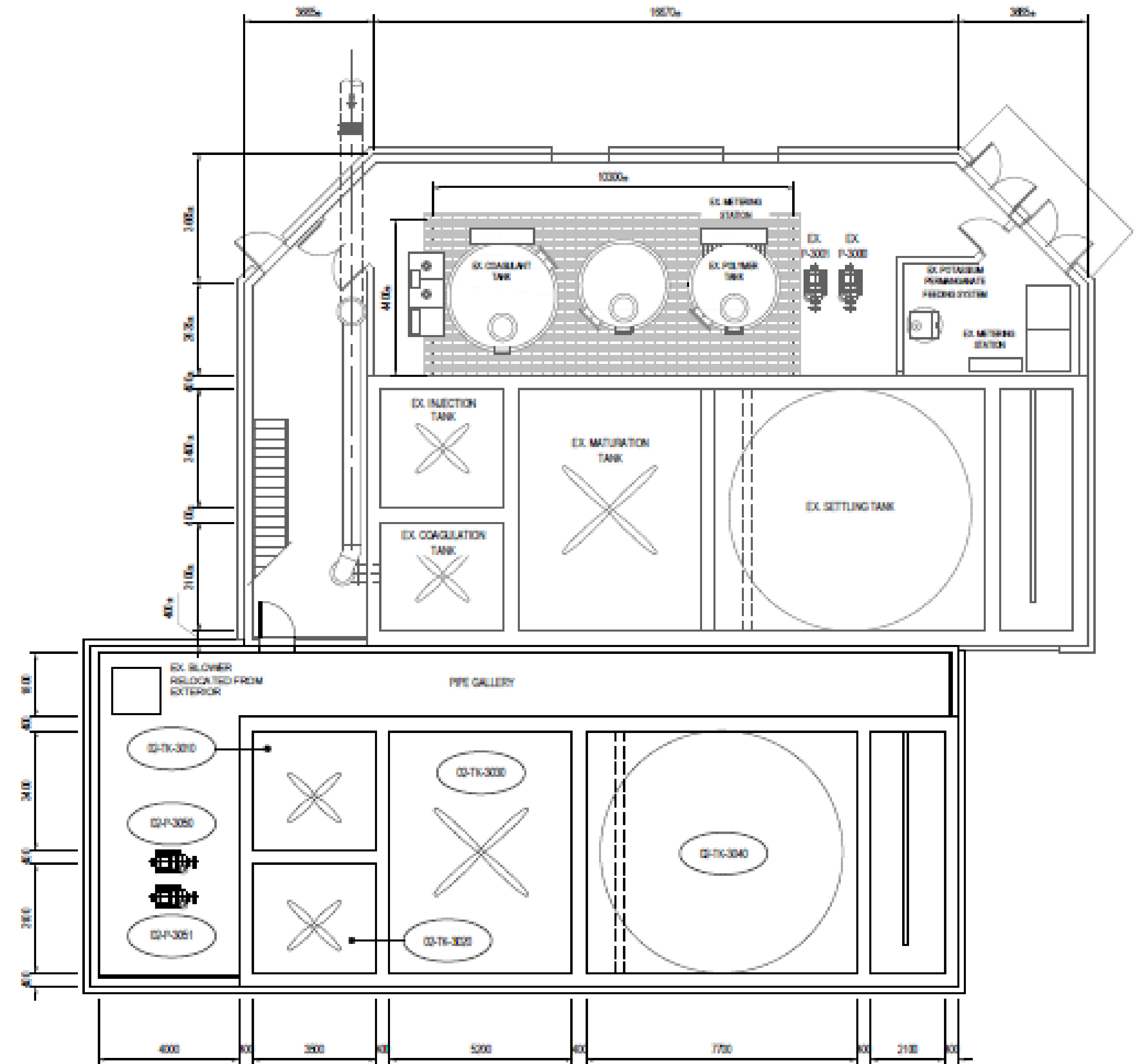


Upper Level

CITY OF PORTAGE LA PRAIRIE WATER TREATMENT PLANT UPGRADE/EXPANSION PROJECT PRE-TREATMENT BUILDING (BALLASTED FLOCCULATION)



Process Flow Diagram



Main Floor

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OPINION OF PROBABLE CONSTRUCTION COSTS

<u>Description</u>	<u>Total Amount</u>
A. Intake and Raw Water Pumphouse	\$ 10,000,000
B. Pre-Treatment/Ballasted Flocculation Expansion	\$ 4,900,000
C. Membrane Treatment Process Building	\$ 44,600,000
D. Underground and Yard Piping	\$ 1,600,000
E. Existing WTP – General Code and Condition Upgrades	\$ 3,000,000
F. 66 kV Electrical Substation	\$ 4,400,000
G General Conditions	<u>\$ 6,900,000</u>
H. Construction Sub-total (rounded)	\$ 75,400,000
I. Engineering (10%),	\$ 7,500,000
J. Contingency and Estimation Allowances (15%)	\$ 11,300,000
K. Inflation Allowance (3.2%)	<u>\$ 2,400,000</u>
L Project Construction Costs (rounded)	\$ 96,600,000
M. Administration/Financing	<u>\$ 3,864,000</u>
N. TOTAL PROJECT COSTS (rounded)	\$ 100,464,000

CITY OF PORTAGE LA PRAIRIE WATER TREATMENT PLANT UPGRADE/EXPANSION PROJECT

PROJECT FUNDING BREAKDOWN

Project Costs:

Project Construction Costs:	\$96,600,000
Project Admin./Financing:	<u>\$3,864,000</u>
Total Project Costs	\$100,464,000

Confirmed Grants and Funds

Provincial Funding:	\$40,250,000
Interest on Provincial Funding:	\$3,260,000
City Utility Reserve:	<u>\$1,750,000</u>
Total Confirmed Funds	\$45,260,000

City Debenture Debt **\$55,204,000**

Impact on Water Rates

Water Rate Steps	Volume/Quarter	2025 Rate/Cubic Meter	Rate Increase	Rate With WTP Upgrade
1 st Step	0 to 227	\$2.64	\$1.58	\$4.22
2 nd Step	228 to 2,273	\$2.19	\$1.31	\$3.50
3 rd Step	2,274 to 18,184	\$2.07	\$1.24	\$3.31
4 th Step	Over 18,184	\$0.89	\$0.53	\$1.42

Impact on Utility Bill

	Cubic Meter	Current 2025	WTP Upgrade	Increase
Minimum Bill	14	\$84.29	\$106.47	\$22.18
Average Bill	40	\$198.69	\$262.05	\$63.36

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PRELIMINARY IMPLEMENTATION SCHEDULE/NEXT STEPS

- Conduct Open House: February 6, 2025
- Submit Environment Act Proposal: February 2025
- Membrane/Ballasted Flocculation Equipment Pre-selection: February 2025
- Detailed Design Development: February to October 2025
- Shortlist General Contractors: September to October 2025
- Project Tendering: October to November 2025
- Award Construction Contract: December 2025 to January 2026
- Project Construction Period: May 2026 to May 2028
- Project Commissioning: June to August 2028
- Substantial Completion: September 2028