

# MBR

A greenfield municipal  
wastewater treatment system

**APPLICATION:** Municipal Wastewater

**CAPACITY:** 16 500 - 126 800 GPD  
(62 - 480 m<sup>3</sup>/d)

**LOCATION:** Riviere-Beaudette, QC, Canada

**COMMISSIONED:** November 2018

**TECHNOLOGY:** MBR

## CHALLENGE

Riviere-Beaudette is a community of residential and vacation properties in Secteur Pointe Lalonde, QC. As part of an infrastructure upgrade due to expanding demand, it was decided to centralize wastewater treatment rather than continue to use local septic systems. The municipality decided to construct the necessary sewer lines, pump stations, wastewater treatment building and construct an MBR wastewater treatment facility.

## SOLUTION

H2O Innovation was selected to provide a wastewater treatment system. Based on space and budget constraints, a flat-sheet MBR system using Toray TMR140-100S membranes was proposed. The system is comprised of 2 biological trains, each with two membrane modules per train. The design was selected to accommodate the expected increased demand over the life of the plant. Trains are modular, designed to be commissioned individually as average flows increase.

Working in collaboration with the engineer and mechanical contractor, H2O Innovation provided the mechanical equipment for the wastewater treatment plant: fine screens, equalization tank equipment, aerobic biological treatment, membrane equipment, and sludge holding equipment.

In order to minimize building footprint, the majority of the tankage and equipment was installed in buried concrete tanks. Common equalization and sludge holding volume was provided in below grade concrete tanks, and the two biological trains, each comprising of an aerobic bioreactor tank and membrane tank, were installed below the mechanical building. The mechanical building itself provides the space for membrane access, permeate skids for the two membrane trains, electrical controls and chemical dosing equipment.

H2O Innovation and the mechanical contractor also collaborated to provide value added services to the municipality by taking on the plant operations and water quality testing for the first two years of operation. Because of its strong local presence, staff is able to operate, troubleshoot and communicate effectively with respect to all plant operations.



Riviere Beaudette WWTP



Membrane Permeate Skids in the Building

### RESULTS

Wastewater quality was projected at 150 mg/L BOD and 180 mg/L TSS on the influent. The effluent limits for the plant are currently 10 mg/L BOD and 10 mg/L TSS, with fecal coliform limits at 200 counts per 100 mL.

Operations began mid-December of 2018 and since then, the system has demonstrated stable effluent quality and operation. It continues to run well as the load and flows increase slowly as more houses in the community are brought online to the centralized system.

Samples run by an accredited lab have consistently shown effluent water well below the required limits stated.

