

Case Study: Toyota

Background:

Toyota Motor Manufacturing Canada (TMMC) is an automotive manufacturer located in Cambridge and Woodstock, ON. TMMC produces the Toyota Matrix, Corolla, RAV4 and the Lexus RX 350. It is the only plant outside of Japan to produce a Lexus vehicle.

The Cambridge facility includes a water treatment plant consisting of Reverse Osmosis (RO) units. The RO units remove the hardness and minerals from the municipal water to produce ultra pure water for the painting process.

Twenty-five per cent (25%) of the incoming municipal water is rejected to the sewer as concentrate water by these RO units. This lost concentrate water was seen as a water reduction opportunity.



Water Savings Solution:

Using a Brackish Water RO, TMMC designed and installed a RO Concentrate Recovery System. This RO system was designed to recover up to fifty percent (50%) of the company's rejected concentrate water. The installation of the new concentrate recovery system plays a significant role in the company's environmental water reduction plan.

Economic Benefits:

\$76,680 in municipal water savings per year was achieved based on the use of the RO Concentrate Recovery System. With a one time incentive of \$35,870 from the Region of Waterloo's W.E.T. Program, the project payback period was reduced to one year.

Water Savings:

Toyota now saves 36,000 m³ of water per year or 100 m³ per day. This is enough water to offset the daily requirements of around 154 homes.

Water Reducing Measures	Cost of Implementation	Cost Savings (Rebate)	Water Savings m3/year	Annual Savings
RO Concentrate Recovery	\$ 116,000	\$ 35,870	36,000 m3/year	\$ 76,680