

Custom Designed MAX unit provides stormwater treatment in major highway upgrade

Project: Autoroute 40

Location: Montreal, Québec, Canada

Owner: Ministry of Transportation of Québec

Engineer: Dessau Longueuil

Product: Stormceptor® MAX

Licensed and Manufactured by: Lécuyer et fils Ltée.



Autoroute 40, officially known as Autoroute Félix-Leclerc, is a 347 km (215.6 mi) long freeway on the northern shore of the St. Lawrence River in Québec. As part of the Trans-Canada Highway, 140,000 vehicles on average travel on this busy stretch of highway each day.

Originally constructed in 1959, increased commuter and freight transportation resulted in the need to expand the highway to ease congestion and increase the competitiveness of the regional and Québec economies.

The section of highway being upgraded is next to the Orme River, which is the central axis of a large eco-territory located west of Montreal. Forest corridor along the river promotes dispersal and migration of plant and animal species (including some at risk) between the surrounding nature parks. The existing stormwater drainage network did not incorporate a treatment device and discharged untreated water directly into the Orme River, depositing a large amount of pollutants and suspended solids. New stormwater regulations in Québec required that any new stormwater management system capture and retain 60% of total suspended solids (TSS).



To address this requirement, engineers at Dessau Longueuil, working with the Ministry of Transportation of Québec, designed a stormwater management system consisting of new storm drains and the addition of two Stormceptor MAX Oil Grit Separators developed by Imbrium Systems, licensed and manufactured by Lécuyer. Stormceptor MAX is a customized stormwater treatment device specifically designed in modular form to treat runoff from large areas. The Stormceptor MAX slows incoming stormwater to create a non-turbulent treatment environment, allowing free oils and debris to rise and sediment to settle. The MAX is custom designed per site using the design principals developed with the standard model Stormceptor units, which has proven performance verified by the Canadian Environmental Technology Verification (ETV).

Runoff from the highway is directed to storm drains and conveyed to the Stormceptor MAX units for treatment before it is released into the adjacent Orme River. The required treatment capacity and available footprint guided the choice to design two units instead of one to achieve the treatment required. With 80% of the surrounding surface impervious, the new treatment system is designed to capture an estimated 220 m³ (over 150 tons) of sediment annually, helping to preserve the Orme River.