



PROJECT:

Buffalo Airport

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LOCATION

Buffalo, New York

PROJECT TYPE

Airport Deicing

COMPLETION DATE

Under Design

DESIGN FLOW

Up to 1.2 MGD

TREATMENT

Subsurface Flow Wetland
with Forced Bed Aeration

NEED

To reduce sewerage costs and meet storm water discharge limits, the Buffalo airport required an on-site treatment option for deicing liquid. To be an effective option, the system would have to achieve the following criteria:

- Fit within the airport
- Treatment of cold and dilute deicing liquid
- Low profile
- Not a bird strike hazard
- Low sludge and odor production
- Capable of handling seasonal variations
- Integrated into the existing storm water management system

SOLUTION

Engineered Wetlands are an essential component to the redesign of the airport's storm water management system. The wetland provides treatment of "first flush" storm water, which is heavily laden with glycols during the deicing season. To treat the glycol, the wetland includes Forced Bed Aeration that supplies oxygen uniformly over the system and permits operator control of treatment. The distribution of wetland influent is also optimized so as to reduce "bio-clots" within the wetland media. Also important to the project was a treatability study conducted at Alfred College in Ontario that established cold weather reaction rates for the treatment of spent deicing liquid.

BENEFIT

The use of an engineered wetland to meet the airport's needs results in a **simple and robust solution** that is low maintenance. As designed, the project is at grade with no above ground structures that could present an airside hazard. Most importantly, the subsurface nature of the wetland prevents the need for an open water body that would be a bird strike hazard for the airport. With airport deicing soon to be **regulated by the EPA**, engineered wetlands are fulfilling a role of providing simple, effective treatment. Advanced engineering practices, like the use of forced bed aeration, allow natural solutions for industrial-sized problems.



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