Clean Water State Revolving Fund

RHODE ISLAND AIRPORT CORPORATION GLYCOL RECOVERY SYSTEM

STATE PROGRAM: Rhode Island Department of Environmental Management

ASSISTANCE RECIPIENT: Rhode Island Airport Corporation

ASSISTANCE AMOUNT: $33M

PROJECT DESCRIPTION

The propylene glycol recovery system at the T.F. Green Airport, in Warwick, Rhode Island, is one of only four de-icer management facilities in the world. Funded with $33 million from the Rhode Island Infrastructure Bank, this world-class approach to capturing contamination from plane de-icing chemicals allows the airport to comply with its Rhode Island Pollutant Discharge Elimination System (RIPDES) permit. The system replaces the previous management technique of using vacuum trucks to capture propylene glycol from catch basins, which was only able to recover 20-30% of the pollutant. The new collection system achieves a laudable 60% collection rate and has been sized to ensure the airport facility can grow and drive economic development.

The sophisticated system installed at T.F. Green Airport diverts stormwater runoff to storage tanks, where real-time sensors can detect de-icer contamination and divert, store, and treat the runoff using anaerobic digestion. Leaving no opportunity untouched, the system captures methane produced by the treatment process and uses it to pre-heat the incoming waste stream as well as heat the treatment facility, which reduces operations and maintenance costs by lowering natural gas usage at the facility by 95%. This well-considered process prevents propylene glycol (known for lowering dissolved oxygen in waterbodies) from entering Warwick Pond and Buckeye Brook. Buckeye Brook is undammed and, along with Warwick Pond, serves as a spawning ground for many fish such as alewife and blueback herring that migrate into Narragansett Bay. The project protects the water quality for these fish species essential to the Bay's ecosystem and the local fishing industry, and received accolades from local watershed advocates.

To read more about this case study, please visit epa.gov/sites/default/files/2017-11/documents/pisces_compendium_final2.pdf.