

### Duluth Airport Project Flies High

**T**riton Stormwater Solutions' underground storm water system saved land and helped eliminate the hazards associated with above-ground retention ponds at Minnesota's Duluth International Airport.

The desire to upgrade facilities and expand the travel options of people in the greater Duluth region led airport planners and the state of Minnesota to build a new terminal at the airport. The new construction and associated impervious surface will cover roughly 13 acres, creating the need for a robust and easily maintained storm water management system.

The Duluth area has several challenging aspects for developers—rocky landscapes and subsoil, extreme weather and an awe-inspiring natural environment that needs to be protected. Additionally, because of the problems associated with wildlife being attracted to the standing waters of retention ponds—and the risks this poses near airports—developers were required to seek an underground storm water management solution.

Triton Stormwater Solutions was able to meet the needs of the project on every metric. Triton underground chambers have more storage capacity than similar products, and the flexibility the system gives designers makes it ideal for projects with challenging terrain, existing infrastructure or other limitations. Because of the design of the system, chambers can be installed in a wide variety of configurations, making it possible to customize a storage field to meet nearly any need. The chambers can even be utilized in a stacked configuration if necessary to create additional storage in a small footprint.

Additionally, the system is ideal for the addition of pretreatment devices to mitigate contamination and protect the environment and municipal water supplies. In the Duluth International Airport installation, a pretreatment system was employed to target hydrocarbons, but the system is flexible enough to incorporate traps and filters to remove a wide range of general and site-specific pollutants.

Ultimately, the development team utilized a design that placed the Triton Stormwater Solutions main header row at the midpoint of the drainfield. After settling out



sediments onto a special floor that is easily accessed and cleaned, the main header row distributes water to long storage rows, where it is held and leached through a special glycol treatment zone before being released to the existing retention area.

Despite the large scope of the project—which included installation of chambers, connecting pipes, inspection ports and underdrain pipe—a three-man crew was able to complete the work in just 8.5 hours. The entire storm water portion of the project—including excavation, installation and backfill—was done in less than a week.

Such rapid installations are common with the Triton chambers, as their lightweight design and fool-proof connectors require no special machinery.

The development team was able to create 32,000 cu ft of storage in a 200-ft-by-85-ft trench. The ease of installation of the chambers allowed the three-man team to manage the storm water portion of the project, ahead of schedule and under budget.

Developers finished the storm water management phase in October 2012, and the new terminal is scheduled to begin serving customers in the fall of 2013.

“The Triton Stormwater Solutions system fit the niche,” said Ryan Erdmann of PE Aviation, one of the supervisors on site. “It’s a nice tool to have, especially for airports where surface storage is restricted.” **SWS**

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