

Flathead Lake Treatment Train

Project: Bigfork Stormwater Project/Grand Drive Improvements

Location: Bigfork, MT

Owner: Flathead County, Montana

Engineer: 48 North P.C.

Approving Agency: Flathead County

Product: Stormceptor® STC 900 & Jellyfish® Filter JF10



Stormwater discharge entering the Swan River and Bigfork Bay was continually carrying pollutants such as oils, grease, sediment and heavy metals directly into Flathead Lake. Residents in northwest Montana sought engineered stormwater treatment solutions to address the gradual water quality decline over recent decades as the human footprint within the region increased. Since Montana listed this water body as impaired, local residents were determined to improve Flathead Lake's water quality in order to preserve its fishing, boating and recreational opportunities in addition to protecting the ecosystem, and human health and safety.

As a result the Bigfork Stormwater Project was initiated by the Flathead County Commissioners focused on updating the stormwater infrastructure and implementing stormwater quality treatment. After a detailed review by the Bigfork Stormwater Advisory Committee (BSAC) and an Engineering Assessment was complete, a plan was put in place to upgrade the storm drain system using advanced treatment technologies.

Civil engineer, Brett Walcheck, P.E., from 48 North P.C., an engineering firm in Kalispell, MT, designed a workable stormwater treatment solution. "It was terribly important that the water quality of Flathead Lake be improved for generations to come. That's why we designed a "treatment train" approach for stormwater runoff that included a Stormceptor STC 900, Imbrium System's premier hydrodynamic oil and sediment separator, ahead of the Jellyfish Filter which captures fine sediment down to 2 microns along with nutrients like phosphorus, nitrogen as well as heavy metals. This engineered approach allowed the locality to provide maximum stormwater treatment for the roadway improvements along Grand Drive," stated Walcheck.



Jellyfish® Filter

CASE STUDY

In addition, Walcheck noted that much credit for navigating the bureaucratic shoals and securing project funding from the Montana Departments of Commerce, Environmental Quality and Natural Resources and Conservation should be given to Debbie Pierson from Flathead County and the Bigfork Stormwater Advisory Committee, chaired by Sue Hanson.

The treatment train approach using a Stormceptor STC 900 hydrodynamic separator and Jellyfish Filter JF10 unit was an excellent design option for this lakeside project. The overall treatment combination required less than 20-inches (508 mm) of drop for maximum pollutant capture which was advantageous. The combined technology approach offered minimal long-term maintenance and high water quality, making this a cost effective solution and investment.

