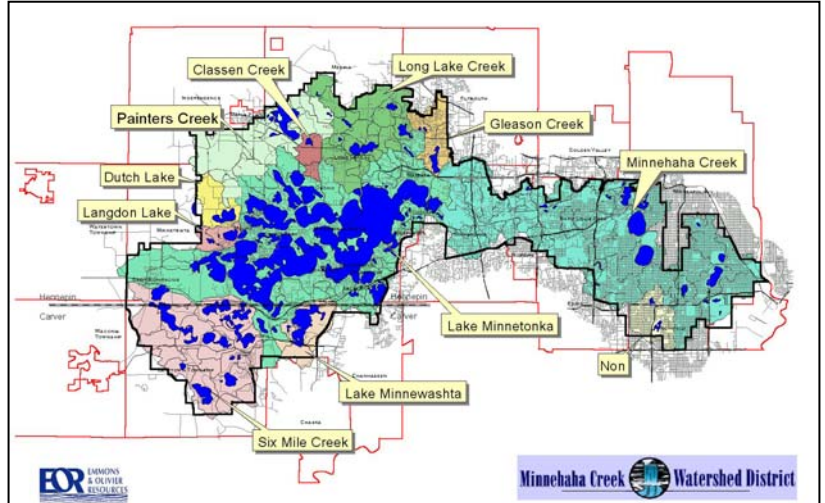




Calibrated, continuous simulation of a metropolitan watershed using XP-SWMM spanning rural to urban, lakes to streams, and simple to complex structures.

MINNEHAHA CREEK HYDROLOGIC/ HYDRAULIC AND POLLUTANT LOADING STUDY

The Minnehaha Creek Watershed District extends from the western fringes of the Twin Cities Metropolitan area to the urban core of Minneapolis, encompassing a total land area of 181 square miles. The upper watershed which drains to Lake Minnetonka, is a region of rolling farmland interspersed with numerous lakes and wetlands. Minnehaha Creek itself flows from Lake Minnetonka through a control dam which forms the division between the upper and lower parts of the watershed. The lower watershed through which Minnehaha Creek flows, is predominately composed of fully developed urban residential and commercial land use typical of the south Minneapolis metropolitan area.



XP-SWMM2000 was chosen by the projects Technical Advisory Committee because of its superior modeling capabilities that provided the flexibility to model a wide diversity of landscapes, a variety of waterbodies including lakes, wetlands, and streams, its handling of complex hydraulic structures, and most importantly its ability to perform long-term continuous simulations. The Study provided the Minnehaha Creek Watershed District with vital information needed in the day to day management of its resources as well as a powerful and flexible planning tool providing them with the capability to make educated resource decisions.

A key outcome of study was the development of a calibrated hydrologic and hydraulic XP-SWMM model of the entire watershed district. The model is used for:

- Predicting peak discharges flood elevations for water bodies in the entire watershed, for both existing and 2020 developed conditions
- Data sharing and development coordination with municipalities in the MCWD.
- Project design and permitting.
- Flood forecasting.

