

Transmission Operations Optimizer Study

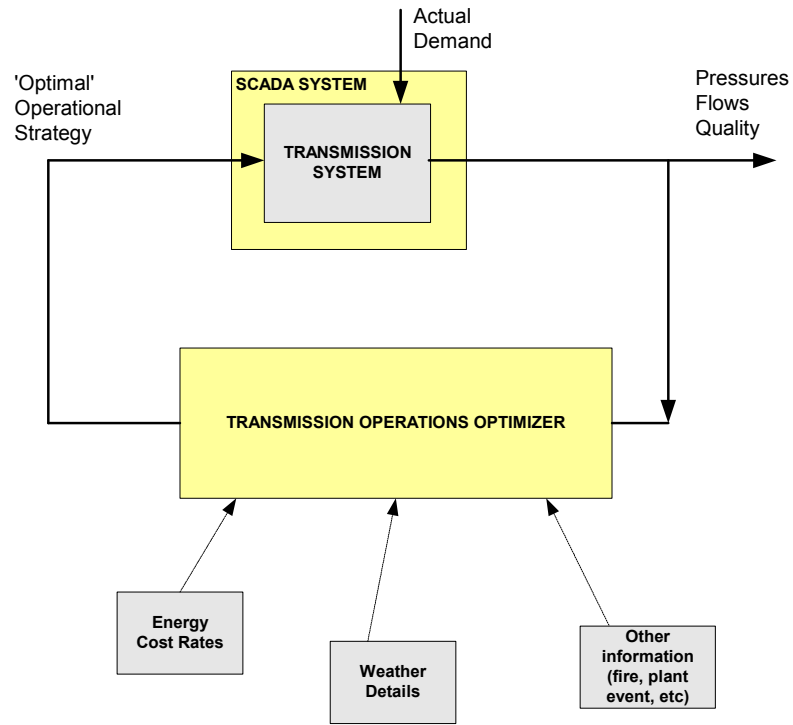
The City of Toronto and southern portion of the Region of York are supplied by four (4) water filtration plants located at the north shore of Lake Ontario. Additionally there are a number of wells that provide water in the southern part of Region of York. The existing water supply system serving a population of 4 million is the largest in Canada and the fifth largest in North America.

While the City of Toronto and the Region of York provide the water delivery/service requirements in a cost effective and uninterrupted manner, the complexity of the water system presents potential opportunities for optimizing operations. The City of Toronto and the Region of York are working together to optimize the water transmission system serving the City of Toronto and the southern part of the Region of York. Accomplishing this objective requires the development of an optimization system, the Transmission Operations Optimizer (TOO).

The overall goal of the TOO is to optimize water pumping and transmission operations such that the service delivery requirements (pressure, flow) are met while optimizing water quality, and minimizing energy cost. The Optimizer will be based on a system hydraulic and water quality model, water demand forecast model, and control strategies as well as other information such as energy cost rates.

This project assignment is aimed at performing a detailed study targeted towards implementation of the TOO. The required deliverables of the study include functional specifications for the TOO, together with a refined hydraulic system model with the incorporation of the water quality component, a water demand forecast model and optimized control strategies and practices recommended for the TOO.





ULTIMATE TARGET SYSTEM