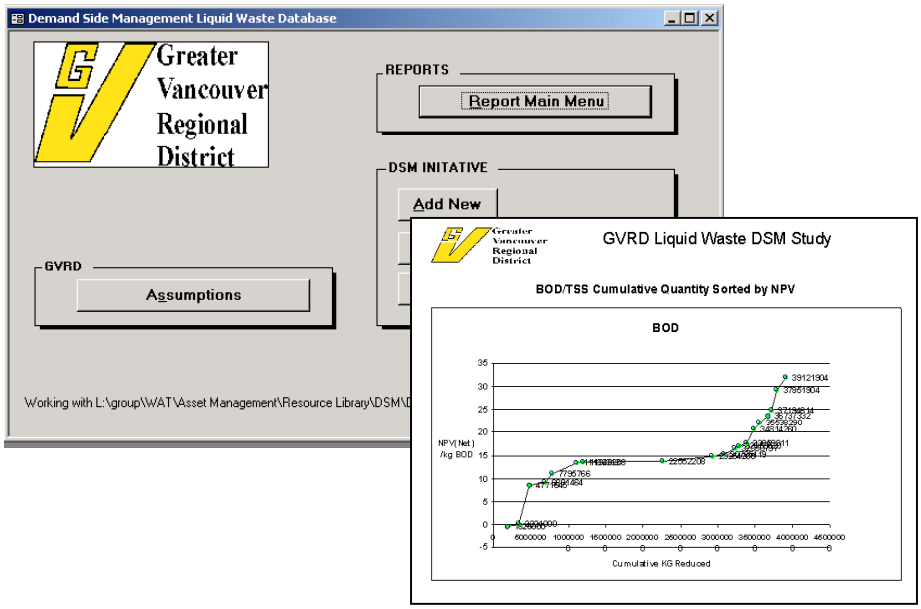
Liquid Waste Demand Side Management Options Evaluation



Earth Tech was retained by the GVRD to develop a framework to evaluate a complete range of liquid waste demand side management (DSM) strategies from both a technical and economic standpoint that have the potential to reduce TSS and BOD loadings on the Region's 5 wastewater treatment plants.

The objective of this study was to inventory a complete range of DSM options in a consistent and repeatable format, and to then rank the identified strategies according to their potential to benefit the District from a total cost/benefit ratio perspective. Finally, the approach included the development and design of a business-case methodology to quantify the total impact of the most beneficial DSM strategies in the form of a total supply curve in terms of total and per unit costs.

This project not only served to update and consolidate all of the GVRD technical data required to undertake business case evaluations of prospective DSM alternatives, but also to install a process of DSM strategy evaluation that the GVRD could continue through the normal course of operations. All project information and relevant data for each of the researched DSM options were consolidated on a small MS Access database tool that included a reporting module to present the output in a consistent format that is understandable to the various stakeholder groups that participate in developing regional liquid waste solutions.

Project Details

CLIENT: Greater Vancouver Regional District

LOCATION: British Columbia, Canada

Reference Information

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Problem

GVRD has a limited capacity to treat liquid waste. DSM options, if selected against a criterion that can identify options that can generate the highest marginal return, can ensure that the District's capacity is used in the region's best interest.

Challenges

Data concerning a range of DSM options is scattered and not normalized to allow comparisons against each other in a consistent fashion. Each DSM strategy needed to be evaluated in a consistent and relevant manner to al-low ranking and prioritization.

Solution

Earth Tech conducted analysis on a wide range of DSM options in a business case framework to allow comparison and total quantification of benefits.

Benefits

GVRD can now pursue DSM on only the options that present the highest ratio of benefits to cost, and ultimately, minimize TSS and BOD loadings on regional wastewater treatment facilities.