Decision Support Systems for Wastewater Facilities Management

Municipalities not only have a need for purely transactional systems (accounting, personnel, billing, etc.), but they also need to integrate the sophisticated analytical tools that are used to address the scientific or engineering issues that are very important for the performance of wastewater utility. Most commercially available systems are structured to function within the transactional paradigm and may be inadequate for full range of business processes encountered in a wastewater utility.

Wastewater utilities are overwhelmed with data, yet often, managers do not have enough information to efficiently support many of their business functions. Although significant investments into information technology have been made in the last two decades, decision makers often cannot access their organization's information.

Decision analysis provides the conceptual framework and specific tools for describing the decision-making process. The framework provides methods and a standard notation for presenting decision-making processes in a structured way. This project describes decision support concepts, examines how private industry has approached this problem, and discusses how this technology could be applied to improve the management of wastewater facilities.

This report:

- Assists decision maker to better use their information technology (IT) resources to address their business needs.
- Highlights the diversity and complexity of decision support system applications.
- Describes how investments into IT are best leveraged to improve the management of wastewater agencies.
- Defines the specific functional requirements for DSS that would work well for a wastewater agency.
- Describes decision support systems and identifies their components.
- Demonstrates how private industry addresses issues related to decision support.
- Reviews practices related to decision support in wastewater industry.