

Understanding DSS, continued from page 17
relationship that can be coded into the software. Software packages provide a convenient method of accounting to keep track of objects and processes in a graphical format. Conversely, more mathematically complex and potentially more powerful approaches such as MATLAB require more knowledge and training by the user both to develop the DSS and interpret the results.

Data Needs

For the most part, DSS models use data that many organizations may already have but are not using to full advantage. These include the basic building blocks needed to create a DSS

such as a groundwater model, a surface-water model, climate and streamflow data, and population projections. One component of the DSS process is the technique of "data mining" by which various processes are used to extract valuable insights from existing data.

The level of difficulty in making all of the different kinds of data interface with each other depends on a variety of factors, including the desired complexity of the DSS, the number of input parameters, the range of conditions chosen to represent different scenarios, and the software used.

Challenges and Potentials

As in any modeling exercise, judging when enough detail has been included in

a DSS to reliably simulate the behavior of a system can be difficult. The user must determine the point at which the dynamics of the system have been reasonably represented so that the model adequately serves decision-making purposes.

The credibility and popularity of DSSs for evaluating complex system behavior and analyzing management decisions are growing. The great advantage of these systems is their ability to evaluate multiple (and sometimes conflicting) objectives in reproducible fashion, using stakeholder input to weight the decision-making process and arrive at an optimal solution.

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