

# SUCCESS STORY

## ▶▶▶ USING GIS TO MANAGE LAKE PHOSPHORUS LEVELS

### PROBLEM

The Burnett County Land & Water Conservation Department has a number of lake watershed management projects designed to evaluate the pollutant loads to the lakes and determine best management practices (BMPs) which help to reduce those pollutant loads. As with most lake projects, phosphorus delivery is considered one of the most important issues facing lakes in Burnett County.

ADC was selected by the county to evaluate the current and future impact of phosphorus delivery to lakes in Burnett County. The project included an evaluation of available models, development of lake and land use maps for the project areas, development of a GIS user interface to run the model, and an evaluation of model results.

### SOLUTION

For this project, the US-EPA Phosphorus Coefficient Model was selected. The model was fully integrated into ArcView to provide a simple, visual interface for model operation. Lake drainage areas were derived from USGS 1:24000 topographic maps, and land use data was created using existing county orthophotography. An ArcView graphical user interface was then developed which makes use of this digital data as well as user input values for remaining model parameters.

### RESULTS

The interface allows users to change land use values within the drainage area and immediately calculate the resulting estimated phosphorus delivery. In addition, model runs can be sent to an ArcView layout and printed for future reference or planning.

