Hydrodynamic and Water Quality Modeling

Kleinfelder brings significant expertise in computer modeling of environmental systems and has extended the state-of-the-art in this field for several projects by developing new models and algorithms.

Services within our practice include:

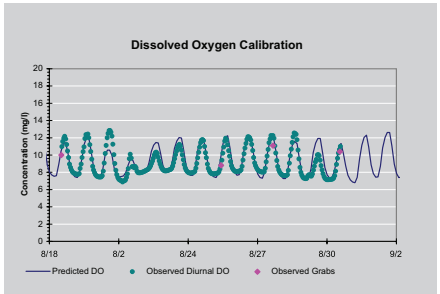
- Combined Sewer Overflow Management
- Dilution Studies
- Groundwater Contamination Cases
- Lake Studies
- NPDES Permitting Support
- Stormwater Management
- Sanitary Sewer Overflow Management
- TMDL Studies
- Wasteload Allocation Studies
- Water/Wastewater Treatment Facility Design
- Watershed Management

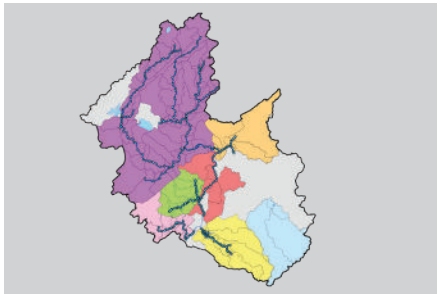
DEVELOPING THE RIGHT MODELING TOOLS

Although Kleinfelder is quite capable of handling very complex mathematical simulation models, our philosophy is that the complexity of the model chosen should be appropriate to the case under study. In many situations, simplified mathematical models, even graphical models, are better employed for arriving at substantive and definitive conclusions. Kleinfelder has developed and successfully applied hydrodynamic (flow and velocity), hydrologic (runoff and baseflow), pollutant loading (point and nonpoint source loads), hydraulic (channel characteristics, such as depth and velocity), and water quality (pollutant fate and transport) models.

APPLYING MODELING TOOLS TO SOLVE PROBLEMS

Kleinfelder's modeling efforts have been adopted into USEPA modeling tools, won the ASCE Wesley W. Horner award in 2010, and passed rigorous technical review by a panel of academic experts. Kleinfelder has developed and applied computer modeling to address total maximum daily loads (TMDLs), wasteload allocations, groundwater simulation of toxic substances, nutrient studies, flow and water quality in water distribution systems, and dilution/plume studies for coastal and tidally influenced waterways.





KLEINFELDER
Bright People. Right Solutions.