

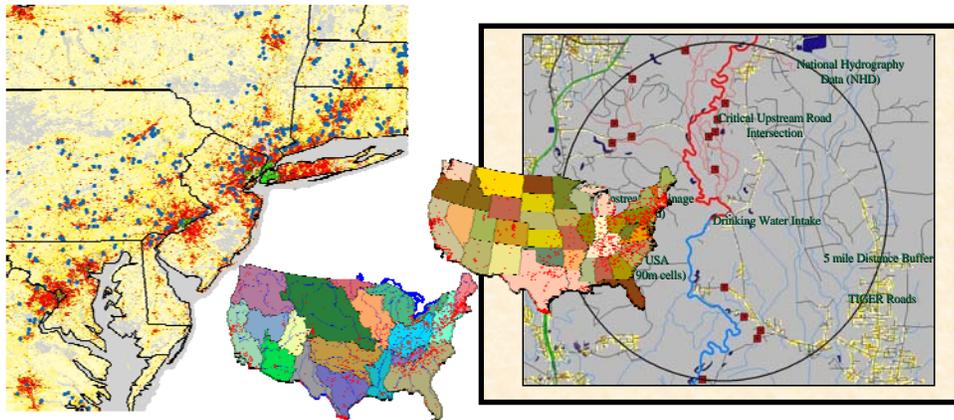
Pollutant Fate and Transport in Water Bodies

Hydrologic Transport Assessment System (HYTRAS)

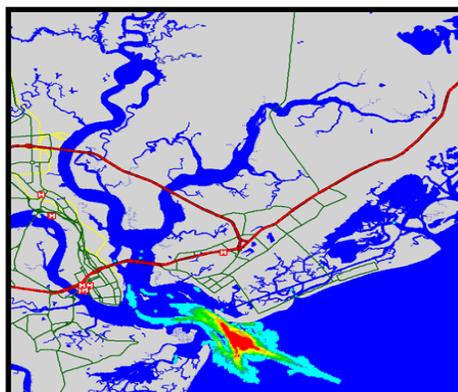
The Modeling and Simulation Group (MSG) has developed the Hydrologic Transport Assessment System (*HYTRAS*) software suite. *HYTRAS* is a numerical model for simulating the transport and fate of nuclear, biological, and chemical agents in water bodies. The model predicts agent concentrations over time and distance in rivers or lakes. At present, approximately 731 rivers worldwide are included in *HYTRAS*' river/map database. A new database currently under development will contain thousands of rivers, including drinking-water intakes, for the United States. In addition, *HYTRAS* utilizes population and human-health-effects data to estimate dosage to at-risk populations. Advanced visualization provides simulation results to users. *HYTRAS* analysis capabilities are currently being expanded to include the following.

- A range of analysis granularities; fast models that execute in minutes for emergency response applications and high-fidelity models that must execute on high-performance machines and are used for planning and assessment.
- Runoff models as well as an estuary/bay model (called HYTRAS/CH1D, /CH2D, /CH3D).

HYTRAS' robust highly integrated capabilities make it the ideal hazard analysis software tool for an extremely broad range of R&D, industrial, homeland defense, and military applications. We welcome the opportunity to discuss your potential applications and ways *HYTRAS* can contribute to a solution.

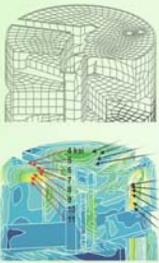


The MSG-developed HYTRAS code can be coupled with GIS-derived infrastructure data to estimate, for example, drinking water contamination resulting from transport of NBC agents in water bodies & sediments



As shown in this MSG-generated notional representation of Charleston Harbor, HYTRAS/CH2D would be capable of simulating agent transport from estuaries into the open ocean

Point of Contact:
 David M. Hetrick
 Oak Ridge National Laboratory
 P.O. Box 2008
 Oak Ridge, TN 37831-6085
 Phone: 865-576-7556
 FAX: 865-576-0003
 E-mail: hetrickdm@ornl.gov



Modeling and Simulation Group

