Technical Support Working Group
Technical Brief

Incident Command Water Modeling Tool (ICWater)

The Incident Command Tool for Protecting Drinking Water (ICWater) gives Incident Commanders the critical information they need to make informed decisions regarding the consequences of threats to public water supply intakes.

ICWater enables decision makers to evaluate and take action against attacks, industrial accidents, or acts of nature on public drinking water sources in near real time. This tool integrates multiple sources of information to give decision makers concise summaries of current conditions and forecasts of future consequences of containments introduced into public water supplies. ICWater can stand alone as a GIS enabled application or it can plug-in to other existing incident commanders tools such as the CoBRA platform, DTRA Consequences Assessment Tool Set (CATS), the Federal Emergency Management Agency's HAZUS system, and EPA's Emergency Response Analyzer.

ICWater is an ArcGIS (version 9.1 or 9.2) extension designed for emergency response teams to respond to chemical, biological and radiological materials within river systems. The tool is also capable of supporting law enforcement agencies in order to determine potential sources of incidents based upon detection.

ICWater was developed to:

- Integrate critical data needed to evaluate and respond to an incident into a GIS referenced system.
- Predict dispersion of waterborne contaminants by integrating the RiverSpill system with the National Hydrography Dataset (NHD).
- Interface with field sensors.
- Contain GIS layers and databases to display water threats in relation to surface water contamination sensor locations; sensor outputs; the location of dams, reservoirs, and locks; the location of surface water bodies; public drinking water intakes; roads and other terrestrial transportation networks; topography; and population.

- Provide the capability of tracking human pathogens, toxic chemicals, and radioactive substances that pose significant threats to public safety in case they were used to attack water sources.

SAIC, Mclean VA, under contract with the TSWG delivered copies of ICWater to the Ohio River Valley, and the Pacific Northwest. The host portion of the system (data server) is managed by the Defense Threat Reduction Agency (DTRA) and a copy of ICWater has been installed at the Water Information Sharing and Analysis Center (WaterISAC) in Washington DC.

The Defense Threat Reduction Agency (DTRA) will be maintaining, distributing and providing training on the tool. Additional information may be requested here: https://opscenter.dtra.mil/.

Additional information on ICWater can also be obtained at http://eh2o.leidos.com/SectionProjects/Transport/Surface/ICWater/ICWater.aspx.