FLOW-3D® HYDRO
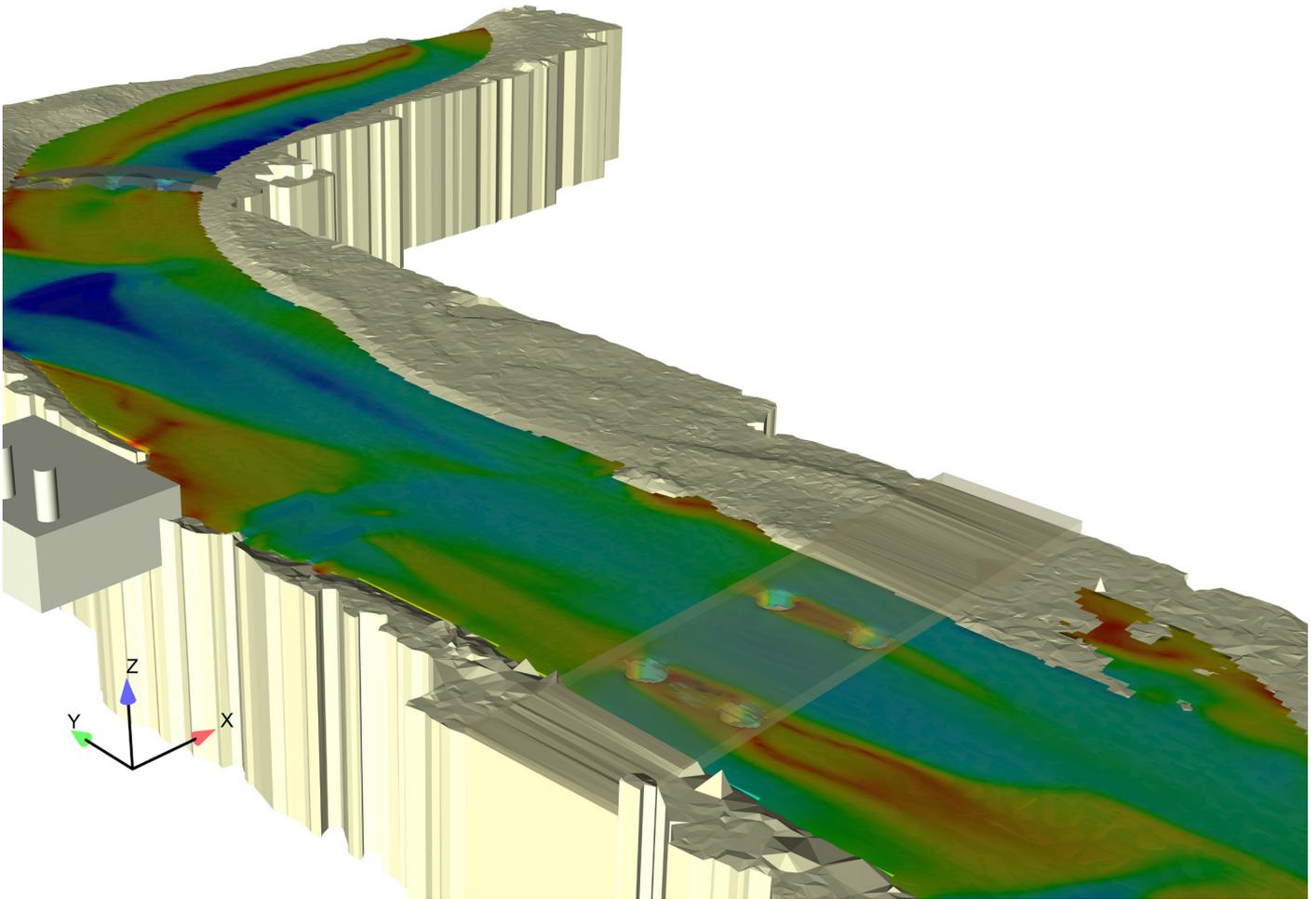
FLOW-3D HYDRO is widely used in the Water and Environmental industry to address complex river dynamics and to predict fluvial behavior. In addition to solving free-surface flow problems, **FLOW-3D HYDRO**'s broad selection of powerful physics models are applied to some of the most challenging problems in water resource management and environmental protection.

Processes that are regularly modeled with **FLOW-3D HYDRO** include thermal and saline transport and stratification, pollutant fate and transport, turbulence and air entrainment, and sediment erosion, transport and deposition.
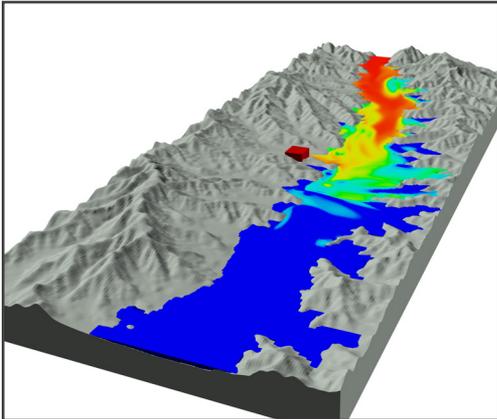
FLOW-3D®
HYDRO

RIVER HYDRAULICS

River hydraulics encompass a wide range of industrial and environmental applications, including HZI analysis, ice pack and debris motion, plume discharge, estuarine modeling, flash flooding, contaminant transport, fishway passage analysis, and much more. *FLOW-3D HYDRO* offers seamless navigation between depth-averaged shallow water methods and fully resolved 3D non-hydrostatic modeling of river hydraulics.

BRIDGE PIERS

FLOW-3D HYDRO provides capabilities for mobile bed 3D sediment transport modeling. This is a powerful approach for simulating sediment scour around complex bridge pier configurations and hydraulic environments. The sediment scour model integrates with *FLOW-3D HYDRO*'s advanced turbulence models and its shallow water model for larger scale sediment and scour analyses.
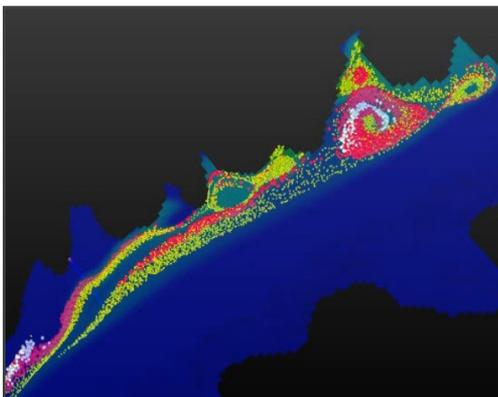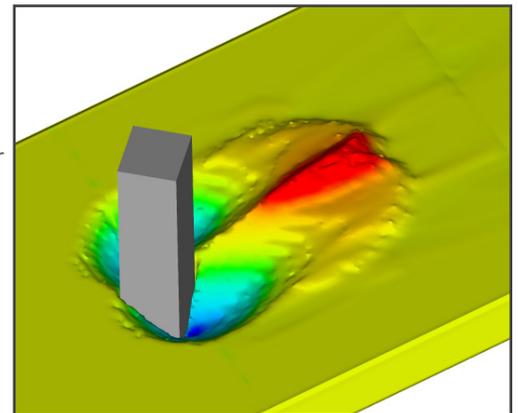
HYDRAULIC ZONES OF INFLUENCE

FLOW-3D HYDRO is used by engineers to accurately evaluate upstream and downstream hydraulic zones of influence for cooling water intakes. *FLOW-3D HYDRO*'s scalar release and particle tracking models, coupled with its validated open channel hydraulic solvers, offer precise insights into dispersion and mixing of thermal discharges.

CONTAMINANT MODELING

FLOW-3D HYDRO plays a valuable role in water resource management and environmental protection. *FLOW-3D HYDRO*'s scalar transport and drift-flux models simulate the dispersion of contaminants in rivers, oceans and estuaries for applications related to pollution point sources, oil separators and oil-spill modeling.