



RISK ASSESSMENT

Risks associated with both high-flow events and extended droughts are of significant and growing concern in nearly all parts of the world. Communities are vulnerable not only to the direct impacts of flood and drought, but also to indirect impacts resulting from infrastructure failure. As a result, managers must regularly assess the safety and reliability of their systems and need tools that can help them quantify risk and prioritize capital improvements.

Our hydrologic risk assessment services support planning-scale decisions related to public safety, water security, dam safety, and capital improvement. We also perform dam failure consequence analyses that measure economic damage and loss of life through hydraulic modeling, flood mapping, and consequence tools.

Our experts are recognized leaders in advanced methods for probabilistic hydrologic risk assessment, and we apply similar approaches to assess long-term risk and vulnerability in water supply systems given highly uncertain future conditions.

**Characterizing
water-related risk to
inform strategy and
minimize adverse
outcomes**





FEATURED PROJECT

TVA Downstream Consequences Evaluation to Support Dam Safety Risk Assessment

Client: Tennessee Valley Authority (TVA)

Country: United States

Sector: Floods

Related Services: River Basin Operations



RTI has conducted downstream consequences evaluation for several large dams in the TVA system to support planning and decision making related to dam operations. The analysis has included unsteady HEC-RAS modeling (including 2D), evaluation of interim operational policies using RiverWare, and assessment of direct economic and life loss consequences through the development of HEC Flood Impact Analysis (HEC-FIA) and LifeSim consequences models.

ADDITIONAL RISK ASSESSMENT SERVICES

Probabilistic flood hazards and drought analyses

Dam failure consequence analyses of economic damage and life loss

Rapid risk screening on large portfolio of dams

Dam breach analyses and inundation mapping

Probable Maximum Flood and Inflow Design Flood studies

Development of flood maps for emergency action plans

Analyses of water supply risks under deep uncertainty



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