

Technical Support for Assessment and Watershed Protection (TSAWP)



RTI International held the previous TSAWP contracts and has provided continuous technical support to the EPA Office of Water’s assessment and watershed protection efforts since 1982. This experience gives us extensive insight into how to best support EPA’s implementation of the Clean Water Act, develop and measure science-based performance indicators, and present our findings at an understandable level to Congress, the public, and other key stakeholders.

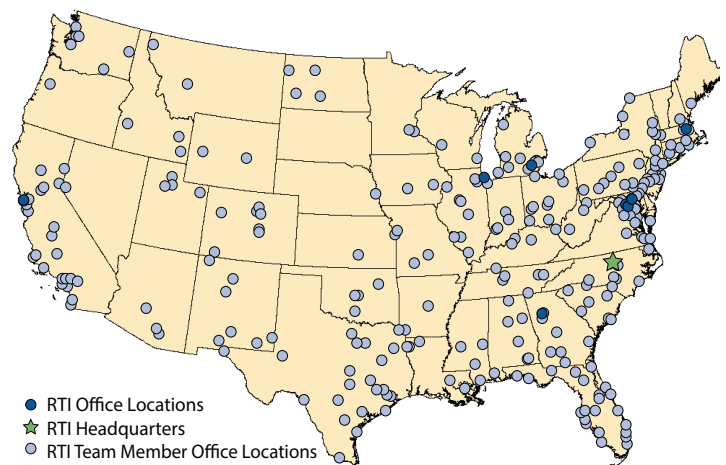
Background

EPA’s TSAWP contract is offered by the Office of Water Assessment and Watershed Protection Division (AWPD) and serves AWPD, other Office of Water programs, and EPA’s Regional Offices and Office of Research and Development laboratories. TSAWP is a 5-year IDIQ contract (September 2012 through September 2017) under which technical support is provided through task orders. The contract’s performance work statement (PWS) is broadly centered on watershed-based protection and restoration, with a focus on water quality monitoring; management and use of water-related data; assessment of water quality conditions; and reporting on national, regional, and local progress toward clean, safe water nationwide.

Under this contract, RTI will continue to develop and apply innovative solutions across a broad spectrum of water quality and aquatic resource management needs.

The RTI Team

We have built an experienced, responsive team to successfully address EPA’s most challenging watershed assessment and protection problems. In addition to RTI,



The RTI team has offices across the United States.

the team consists of six large firms, nine small businesses, and two universities, all positioned to offer innovative solutions that provide measureable benefits to EPA and water quality. Together, we offer a depth and breadth of expertise across the United States and the ability to support the PWS work areas at headquarters or in any EPA Region. Each company has specific strengths, and overlap among the firms ensures a deep bench to address water quality management for any impairment or location.



National Coastal Condition Report IV

Our small business partners provide specialized skills in many of the PWS work areas, including water information technology (IT) support, watershed planning and restoration, chemical and biological sampling and monitoring, total maximum daily load (TMDL) development, coastal issues, and general mission support. Our commitment to forming working partnerships with our subcontractors means that EPA will benefit from effective and innovative solutions to watershed management problems.

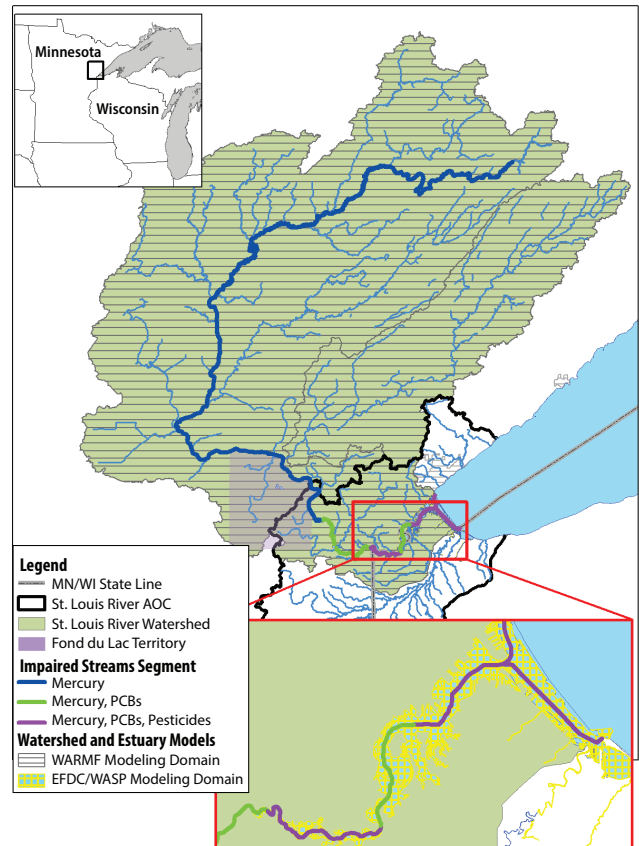
Project Highlights

The following projects have been selected to illustrate our innovative and effective approach to key PWS work areas.

TMDL Planning, Development, and Implementation

Our team has successfully completed many TMDLs, encompassing innovative techniques to address a broad mix of water quality stressors, including nutrients, sediments, toxic chemicals, pathogens, and multiple pollutants, under a wide variety of watershed conditions across the country. For example, RTI partnered with ECT, EPA Region 5, and the state of Illinois to develop a TMDL addressing pathogen impairments for 51 Illinois shoreline segments on Lake Michigan. Facing the inability of commonly applied TMDL models to address non-chemical water quality impairments, we implemented a probabilistic modeling approach that took advantage of the large amount of data related to bacterial water quality that have been collected by beach managers.

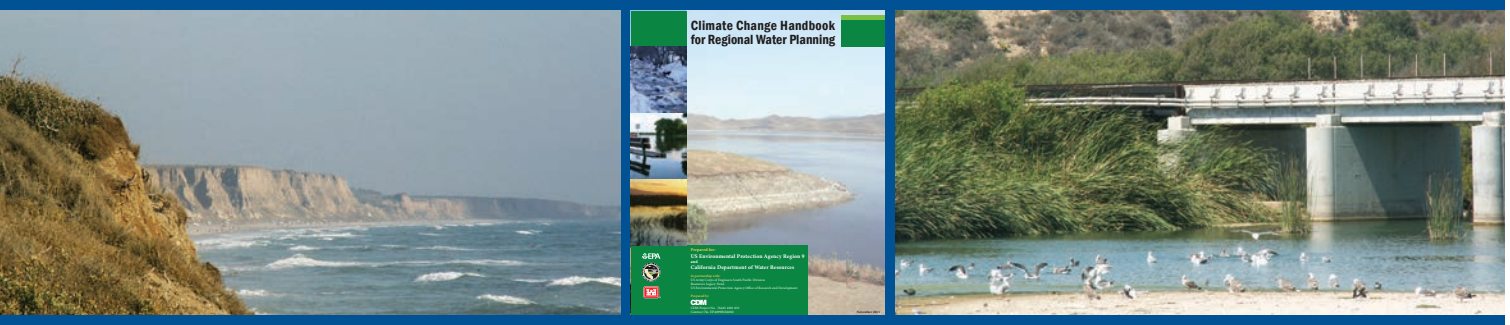
In another example of a complex TMDL analysis, RTI, URS, GLEC, and EPA Region 5 addressed a multimedia, multi-pollutant, and multi stressor list of impairments in the St. Louis River Watershed, which crosses lands within Minnesota, Wisconsin, and the Fond du Lac reservation. The impairments include both current and legacy pollutant sources of mercury and toxic organic chemicals, and involve mining permitting issues and fish consumption advisories throughout the watershed. To address these impairments, the RTI team used a linked watershed and estuary modeling analysis with additional bioaccumulation modeling; conducted additional sediment, water, and biota sampling to address data gaps; and created a single data repository that tracks deliverable progress and completion and enables all stakeholders to access project results, supporting data, and quality assurance records.



St. Louis River TMDL Project. The RTI team consists of experts in the areas of water quality modeling, field sampling, data management, and stakeholder coordination.

Technical, Logistical, and Administrative Support for Nonpoint-Source (NPS) Management

The RTI team has strong skills in the areas of NPS identification, impact assessment, and control strategy development. RTI's ongoing cooperative agreement with the EPA Office of Wastewater Management to implement comprehensive environmental assessments and nutrient management plans for livestock operations has allowed us to build on our capabilities in NPS nutrient management strategies and agriculture implementation challenges. Our expertise in the evaluation of NPS best management practices (BMPs) has provided cost-benefit evaluations of various BMPs and the integration of "green infrastructure" at both the local and watershed scale. RTI and Versar conducted stormwater



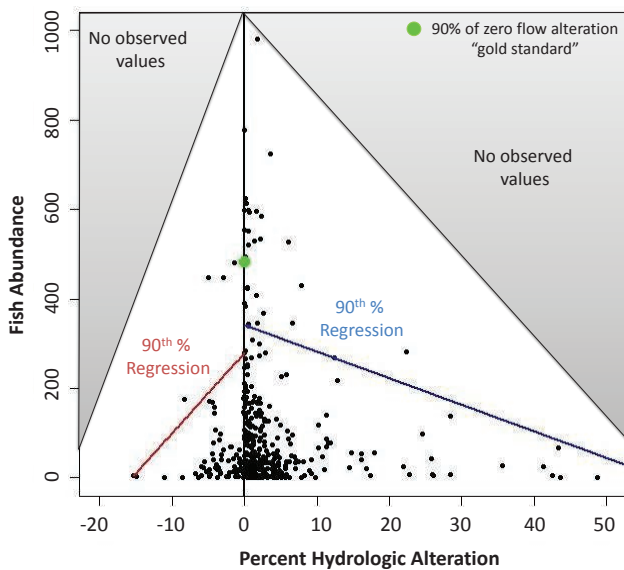
contaminant and flow monitoring at seven sampling stations in Clarksburg, MD, using a precise design for evaluating green infrastructure versus traditional “gray infrastructure.” These monitoring results informed the EPA mass balance model for calculation of future green infrastructure benefits.

Guidance and Technical Support for the Protection of Healthy Watersheds

One important emerging need is determining ecological flows, which relate water supply management to the flow regimes required to maintain healthy aquatic ecosystems. Through partnerships with states and environmental conservation organizations, RTI is researching how to best establish ecological flows in North Carolina and other states in the Southeast. RTI’s multidisciplinary approach relies on the evaluation of multiple levels of biological/ecological indicators, hydrologic metrics, stream classification systems, and statistical designs that best fit and explain the relationships needed to set protective ecological flows and preserve healthy watersheds.

Economic Modeling and Ecosystem Services Support

RTI’s economists have a long history of providing the EPA with mission-critical support to evaluate regulatory policies with economic impact assessments. Our economists have an integral understanding of how economic impacts are considered, measured, and modeled in developing and evaluating water quality standards. RTI developed an economic-ecological cost-benefit modeling framework to consider the role of green infrastructure and other BMPs in reducing nutrient and sediment loads to the Chesapeake Bay. Poor water quality in the Bay has resulted in the loss of ecosystem services, including fisheries, flood control and water storage, recreational hunting and fishing, and wildlife habitat. This watershed-scale project assessed the costs and co-benefits of urban and rural land use strategies to reduce nutrient and sediment pollution to the Bay while providing alternative sources of revenue to landowners through the installation of green infrastructure.



Contract Information

RTI Contract No. EP-C-12-054
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RTI combines complex statistical analysis with hydrologic modeling, geographic information systems (GIS), and biological data assessments to develop regional flow–biology relations for the establishment of ecological flows in the southeastern United States.

The RTI Team

Team Member and Principal Office Location	Key Capabilities
RTI International Research Triangle Park, NC www.rti.org	Prime contractor. Innovative solutions for integrated watershed resource management and decision support; TMDL development and implementation; NPS impact assessment and control strategies; ecosystem services valuation and economic modeling; IT support
Large Firms	
CDM Smith Cambridge, MA www.cdmsmith.com	TMDL development; watershed and water quality studies for all 50 states; industry-leading knowledge and capabilities in green infrastructure; development of guidance documents such as <i>Guidelines for Water Reuse</i> and <i>Climate Change Handbook for Regional Water Planning</i>
Concurrent Technologies Corporation (CTC) Johnstown, PA www.ctc.com	Development of guidebooks for TMDL implementation; watershed modeling; development of decision support tools for selection of watershed best management practices
Environmental Consulting & Technology (ECT) Gainesville, FL www.ectinc.com	Point and nonpoint source evaluation and monitoring; design implementation and construction of BMPs and green infrastructure projects; TMDL development and implementation; riverine/estuarine modeling
HDR/HydroQual, Mahwah, NJ www.hydroqual.com	Hydrodynamic and water quality modeling and data interpretation for establishing numeric TMDL targets, innovative approaches to bring impaired waterways into attainment, green infrastructure performance assessment
URS Corporation, San Francisco, CA www.urscorp.com	TMDL development, watershed modeling and assessment, analysis of point and nonpoint sources, green infrastructure planning and engineering, ecosystem restoration engineering and analysis
Versar, Inc., Springfield, VA www.versar.com	Bioassessment, indicator, and criteria development; stressor identification analysis; watershed studies and restoration; stormwater monitoring and green infrastructure planning
Small Business Partners	
Cosmic Events, LLC Herndon, VA	Organization and management of conferences, executive meetings, social events, and tradeshows; supports groups of all sizes, from small meetings to conventions with thousands of attendees
Gold Systems, Inc., Salt Lake City, UT www.goldsystems.com	Design, delivery, support, and maintenance of water quality databases and applications, including WQX and WQX Web; data management support for states, tribal programs, and watershed groups
Great Lakes Environmental Center (GLEC) Traverse City, MI www.glec.com	Design, delivery, and management of water quality monitoring programs; NPS management; training and outreach
Gulf Coast STORET, LLC, Tomball, TX www.gulfcoaststoret.com	WQX/STORET data entry, migration, and analysis tools and services
Kieser & Associates, Kalamazoo, MI www.kieser-associates.com	Design of nonpoint source BMPs; waste load allocations; TMDL development; MS4 management and NPDES permitting services; watershed models; advanced GIS applications (e.g., terrain analysis)
LandStudies, Inc., Lititz, PA www.landstudies.com	Development and implementation of watershed restoration plans, Healthy Watershed Program support, Municipal Separate Storm Sewer System (MS4)/TMDL compliance modeling and support, stormwater management, green master planning
Porter Scientific, Inc., Pembroke, NC www.porterscientific.com	Specialist in use of GIS systems for municipal watershed protection; National Pollutant Discharge Elimination System (NPDES) compliance monitoring and permitting; watershed protection and land use planning; stormwater pollution prevention planning
Systalex, Inc., Gaithersburg, MD www.systalex.com	Application development and information management solutions; business intelligence, data integration, information access, management, and distribution solutions
TTL Associates, Inc., Toledo, OH www.ttlassoc.com	Collection and analysis of sediment and surface water samples; identification of watershed biota; technical support to assess impaired watersheds
Universities	
NC Sea Grant (NCSU), Raleigh, NC www.ncseagrant.org	Research, education, and outreach relating to current issues affecting the North Carolina coast; research areas include coastal hazards, water quality, and sustainable coastal communities
Texas A&M AgriLife Research, College Station, TX www.agrilife.org	Water quality modeling development and support; geospatial analysis tools; database development and analysis; BMP design; green infrastructure design for stormwater management



RTI International is one of the world's leading research institutes, dedicated to improving the human condition by turning knowledge into practice. Our staff of more than 2,800 provides research and technical services to governments and businesses in more than 40 countries in the areas of health and pharmaceuticals, education and training, surveys and statistics, advanced technology, international development, economic and social policy, energy and the environment, and laboratory testing and chemical analysis. For more information, visit www.rti.org.

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