LEARNING EXCHANGE

FORMING & SUSTAINING COLLABORATIVES

CASE STUDY

Newport, RI Water System Forms Collaboration To Protect its Source Water Reservoirs

How did the partnership form? The *Source Water Protection Initiative for Newport Water Supply Reservoirs* is an effort initiated by the Rhode Island Department of Environmental Management (RIDEM) in coordination with the Rhode Island Department of Health (RIDOH) to restore the quality of the Newport Water System's (Newport Water) nine source water reservoirs serving the residents of Aquidneck Island.

- Rhode Island Department of Environmental Management (Clean Water Act Program)
- Rhode Island Department of Health (Drinking Water Program)
- Rhode Island Department of Health (Drinking Water Program)
- National Science Foundation
- University of Rhode Island and Salve Regina University
- U.S. Department of Agriculture
- U.S. Environmental Protection Agency
- U.S. Department of Interior
- National Fish and Wildlife Foundation

What are the partnership's shared concerns?

The drinking water program (in the RIDOH) initially raised concern about the impairment of the drinking water sources and worked with Newport Water to collect monitoring data that substantiated their condition in consultation with the RIDEM. Though Newport Water recently constructed two new drinking water treatment facilities with advanced treatment processes to improve the finished drinking water quality, all nine source water reservoirs are impaired for drinking water and aquatic life uses because of moderate to severe nutrient enriched conditions causing elevated levels of total phosphorus and chlorophyll a, low water clarity, frequent algal and cyanobacteria blooms, and low levels of dissolved oxygen. The specific parameters causing these impairments are total phosphorus and total organic carbon that also contribute to elevated levels of

trihalomethanes in finished drinking water. Improving the quality of the source waters will enhance protection of public health, and is expected to lessen Newport Water's use of the advanced treatment processes and associated operational costs.

How has the partnership sought to address these concerns?

RIDEM has now begun steps to develop Total Maximum Daily Loads (TMDLs) to restore the nine reservoirs to a condition that supports their designated uses for public drinking water supplies, primary and secondary contact recreational activities, and fish and wildlife habitat, and protects them from future degradation. This included developing a monitoring strategy, evaluating the causative relationships between nutrients and algal growth and total organic carbon, and establishing a target concentration for reducing phosphorus loads.

FOR MORE INFORMATION:
Elizabeth Scott
Deputy Chief
Rhode Island Department of Environmental Management
401-222-4700 ext. 7300
Elizabth.scott@dem.ri.gov

What key steps has the partnership taken to sustain progress towards its goals?

Complementary to the TMDL development efforts, RIDEM is also developing a watershed plan that will serve to integrate the full range of actions recommended for protecting and restoring water quality and aquatic habitat on Aquidneck Island. RIDEM will identify partners and collaborate across all levels of the public and private sectors to prioritize nonpoint source pollution and other water quality problems, and work on a watershed basis to optimize results in terms of environmental outcomes and the other societal benefits associated with improved water quality and habitat.

RIDEM has been working closely with the City of Newport and other Aquidneck Island communities and organizations on a number of water quality monitoring and/or watershed management initiatives in specific areas that include:

- Deploying water quality sensors with funding from the National Science Foundation's Experimental Program to Stimulate Competitive Research through the University of Rhode Island and Salve Regina University;
- Conducting a source water phosphorus reduction study with funding from EPA's Southern New England Coastal Watershed Restoration Program;
- Partnering with USDA and EPA to prioritize existing USDA NRCS National Water Quality Initiative funding for agricultural best management practices and conduct monitoring to assess water quality improvements; and
- Preparing for climate change with funding from the Hurricane Sandy Coastal Resiliency Competitive Grant Program (through the U.S. Department of Interior and National Fish & Wildlife Foundation) for the Sachuest Bay Coastal Resiliency Project.