

The terrorist attacks of September 2001 resulted in a renewed focus on the resiliency of the Nation's water infrastructure. An "all-hazards" approach enables the water sector to prepare for and respond to a range of threats and issues that could impact public health including intentional and unintentional contamination, natural disasters, tampering, facility damage, and climate change.

In partnership with other federal agencies, public health partners, and the drinking water and wastewater community, the U.S. Environmental Protection Agency (EPA) and communicate information. has been involved in a variety of efforts to improve the security of the Nation's water and wastewater infrastructure. The programs, products, and tools developed by The recommended design for a contamination warning system includes EPA's Water Security Division can be used to improve water security, water sector detection strategies integrated with a consequence management plan to guide resiliency, and enhance collaboration with interdependent resources and response actions. infrastructures.

Through training, outreach, and collaboration with water sector partners, public health Water Quality Monitoring officials can help to ensure the availability of clean, safe drinking water to the Nation.

Community Resiliency and Water Interdependencies

Protecting public health requires community-wide awareness and support of water infrastructure. Water and wastewater utilities are part of a community's critical infrastructure and are an essential component of operations across many other sectors, including:

Emergency Medical Services/ Fire / Medical

- Health Care
- •Electric Power

EPA is launching a new water protective program designed to help city/county managers, public health officials, water utility owners/operators, and other affected stakeholders increase preparedness at the community level through a better understanding of water interdependencies. EPA is developing a suite of tools and resources to help communities:

•Better understand the interdependencies between water and other sectors •Identify the full range of health and economic impacts of a disruption in water services

•Become more resilient in the event of a water-related emergency



Graphical Depiction of Water Sector Interdependencies



EPA Office of Ground Water and Drinking Water, Water Security Division website: www.epa.gov/watersecurity

Water Security and Public Health



Water Security Initiative (WSI)

Through the Water Security initiative, EPA will test and demonstrate contamination warning systems through pilots at drinking water utilities and municipalities with the ultimate objective of developing guidance and tools to support adoption of the contamination warning system model by drinking water utilities across the nation. A contamination warning system is a proactive approach to managing threat warnings through the use of monitoring technologies and enhanced surveillance activities to collect, integrate, analyze,

WSI Components:

- Enhanced Security Monitoring
- •Consumer Compliant Surveillance
- Sampling and Analysis
- Public Health Surveillance

Public Health Surveillance

Data Sources:

- •911 and EMS data from Fire Departments •NRDM data
- •RODS data
- •DPIC data
- •LPH infectious disease data

Event Detection:

EARS algorithm detects EMS anomalies Analysis run by NRDM, RODS, DPIC Analysis of Infectious disease data by LPH SaTScan program analyzes 911 data

Alarm:

Trigger is an alert message received by LPH via email or phone call

Investigation:

Review of records from past 24 hours (suspected chemical contamination) or 21 days (biological or unknown contamination) of other CWS triggers Review of other pertinent test results, e.g., coliform

Validated Trigger:

Trigger is validated if LPH determines the trigger could be related to drinking water, and Water Utility Emergency Response Manager determines contamination is "possible," based on results of investigation

WSI Pilot Study Cities:

Cincinnati (\$12.3M), New York (\$11M), San Francisco (\$11M), Dallas(\$9M), and Philadelphia (\$9M)

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LPH Routine Monitoring of PHS: : LPH receives notification of a trigger in the 911 EMS, NRDM, and/or RODS surveillance system(s)

Water Laboratory Alliance (WLA)

This WLA provides the water/wastewater sector with an integrated nationwide network of laboratories with the analytical ability to support a response to an water contamination event involving chemical, biological, and radiochemical contaminants. The State Public Health Laboratory sector continues to be instrumental in shaping the design and launch of the WLA. In addition, WLA has partnered with the CDC to leverage the biological capacity of the Laboratory Response Network and continues to collaborate on numerous projects dedicated to increasing laboratory capability.

Water Contaminant Information Tool (WCIT)

A secure, online database that provides information on contaminants of concern for water security. As a planning tool, WCIT can be used to help create and update emergency response plans and site-specific response guidelines. As a response tool, WCIT can be used to provide real-time data on water contaminants to help utilities make decisions if contamination occurs.

Emergency Response Tabletop CD-ROM Exercises for Drinking Water and Wastewater <u>Systems</u>

The CD-based tool contains tabletop exercises to help train water and wastewater utility workers in preparing and carrying-out emergency response plans. The exercises provided on the CD can help strengthen relationships between a water supplier and their emergency response team (e.g., health officials, laboratories, fire, police, emergency medical services, and local, state, and federal officials).

Additional Programs, Products, and Tools

•Water and Wastewater Agency Response Networks •Features of an Active and Effective Program for Water and Wastewater Utilities •Water Health and Economic Analysis Tool •National Environmental Methods Index for Chemical, Biological, and Radiological Methods (NEMI-CBR)



The five Water Security Initiative cities: Philadelphia (middle), Dallas (top left), San Francisco (top right), Cincinnati (bottom left), and New York City (bottom right).

