

THE DELAWARE VALLEY EARLY WARNING SYSTEM

AN INTEGRATED MONITORING, NOTIFICATION AND COMMUNICATION SYSTEM

PROVIDING ADVANCED WARNING OF SURFACE WATER CONTAMINATION EVENTS IN THE LOWER DELAWARE AND SCHUYLKILL WATERSHEDS

The Philadelphia Water Department (PWD) received federal and state funding for the development of the Delaware Valley Early Warning System (EWS) in 2002. After two years of development and rigorous testing, the EWS was deployed as a fully functional system, providing valuable services to subscribing public and private water suppliers, surface water dependent industries, and government agencies throughout the lower Delaware and Schuylkill Watersheds. The successful application and development of the EWS is largely dependent on this *Partnership* of stakeholders. In addition to comprising the EWS steering committee, the EWS Partnership provides important information regarding the occurrence and status of contamination events in the coverage area.

Technological components of the system such as a sophisticated notification system, secure database portal, user-friendly website, and comprehensive water quality and flow monitoring network create the advanced functionality and unique capabilities that make the EWS an international model for surface water notification and monitoring systems.

The EWS *notification system* was developed to support existing downstream notification protocols. The notification process is initiated when an emergency responder reports the water quality event via the EWS hotline or website. An event report will then trigger email notifications to the entire user base and supplemental telephone notifications for high risk events in a matter of minutes.

Both the EWS *database portal and website* are fully integrated with the notification system and monitoring network. Event reports and additional event information, including estimated contaminant arrival times to each system intake and advanced mapping of contaminant transport, can be obtained through the website immediately following the initial report. A comprehensive history of all reported events is stored in the website's database for future reference. Water quality and flow data from the EWS *monitoring network*, consisting of approximately 90 on-line monitoring stations at USGS sites and drinking water treatment plant intakes throughout the coverage area, can be viewed and downloaded through the website's *Real-Time and Historic Data Query* functions. The website also features a *Spill Model Analysis Tool* that generates an event simulation to aid planning and response decisions.

The PWD supports ongoing system upgrades and enhancements to ensure that the EWS serves as the most advanced and robust system possible, helping to protect the drinking water supplies for over 3 million people.

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