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Vulnerability Assessments and Security System Upgrades for Public Water Systems

In the wake of the tragic 9/11 terrorist attacks on the World Trade Center and the Pentagon, there is widespread concern about the vulnerability of water utilities and other critical infrastructure as possible terrorist targets. As a result, in June 2002 President Bush signed the Public Health Security and Bioterrorism Preparedness and Response Act which requires all water treatment plants serving populations of over 3,300 to perform vulnerability assessments, and to update their Emergency Response/Operating Plans (EOPs) accordingly. The U.S. Environmental Protection Agency (EPA) is responsible for administering the program and vulnerability assessments of public water supplies must be completed and submitted by June 2004.

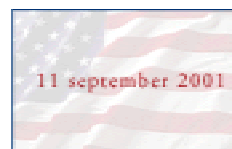
Grants of up to \$115,000 for the performance of these assessments have been awarded to 449 water systems serving populations of over 100,000. Although it is unlikely that grants will be available for smaller facilities, more information about possible funding should be forthcoming in the next few months.

Qualified assessors are trained and certified to use RAM-Wsm (Risk Assessment Methodology for Water Utilities) methodology to perform vulnerability assessments. This methodology was developed by Sandia National Laboratories in conjunction with the American Water Works Association Research Foundation, and is recommended by the EPA for conducting the assessments.

Using a specified methodology, the critical assets of the utility are determined, and their vulnerabilities identified. This is followed by the identification of the most likely threats. The risks of these threats and the ramifications (economic and public health) of a possible attack are determined, taking into account current security measures. Finally, recommendations for security upgrades to reduce risks to acceptable levels are made and prioritized. These security upgrades could include improved detection systems, improved responses to attacks, or barriers that deter or delay attackers.

Each facility is different, and there is no cookie-cutter approach to performing vulnerability assessments. It is, therefore, important for utilities to partner with a qualified assessor to ensure that EPA requirements are met and an effective security program is in place.

For more information on vulnerability assessments and their potential impact on your facilities, please contact Samuel A. McClintock, Ph.D., P.E. via telephone at (717) 560-6066 or via email at sam.mcclintock@thearrogroup.com.



Geographic Information System – Maps for Land Use Planning

ESRI, a world leader in computer mapping systems, is partnering with the Pennsylvania Department of Environmental Protection to provide municipal governments and municipal authorities interested in using GIS for land use planning with an updated version of their ArcView software. If selected, two people from each organization can receive two days of training on the use of ArcView software by instructors from The Pennsylvania State University at State College, PA. Training on the use of the software is a mandatory requirement to receive the software.

Would your community benefit from specialized maps that could show:

- Current land use and zoning districts?
- Existing infrastructure – roads, water and sewer lines?
- Proposed parks, historic districts, or opportunities for in-fill development?
- What your area might look like in 20 years given current subdivision and land development ordinances?

For more information, contact your ARRO project manager, Cyndie Fuhrer via telephone at (717) 560-6012 or via email at cynthia.fuhrer@thearrogroup.com, or visit the DEP website at www.dep.state.pa.us/external_gis/GIS_info_rmination.htm.

NOTABLE QUOTE

No day in which you learn something is a complete loss.

David Eddings



ARRO Projects

Orwigsburg Wastewater Treatment Plant Expansion

On June 19, 2002, the Municipal Authority of the Borough of Orwigsburg held a groundbreaking ceremony for the enlargement of the Orwigsburg wastewater treatment plant on South Liberty Street in Schuylkill County, Pennsylvania. The \$6.2 million project was funded through a PennVEST loan and designed by ARRO's Reading office. The work is being done in accordance with Pennsylvania Department of Environmental Protection (PA DEP) guidelines to correct an overloading problem and enable the Borough to meet effluent requirements.

Newly Constructed North Ranck Avenue

The Borough of New Holland, Pennsylvania held a celebration on November 15, 2002, to officially open the newly constructed Ranck Avenue. Residents, local officials, legislators, and businesses who helped with the project were included in the celebration. ARRO designed this project which involved the relocation of the intersection at the street 35 feet to the west and extended it across PA Route 23 north to Grandview Drive. The existing Weaver Avenue, located 250 feet west of the intersection, is now closed to PA Route 23 and will be made into a cul-de-sac. A new traffic signal and pedestrian crosswalk were also added to the intersection resulting in a safer intersection for both motorists and pedestrians.

New Water Tank

The Town of Union Bridge, located in Carroll County, Maryland, was in need of an alternate water source. After evaluating several options, the Town secured funding for upgrades to the water system, including several thousand feet of main replacement and replacement of water meters. As a result of repairs made to major leaks found during the project, the Town's daily water consumption has been reduced by approximately 50%. A new 300,000 gallon water tower was constructed to replace the existing tank dating to the 1940s. ARRO provided the design and bidding assistance on these projects.



For more information about ARRO, please contact Lauren Maxwell or Darla Benner at (717) 569-7021 or via fax: (717) 560-0577 or e-mail: info@thearrogroup.com

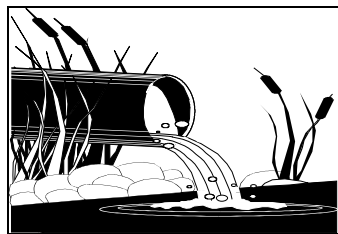
Noteworthy Awards

Water Works Operators' Association of Pennsylvania Award

Dale D. Heckman, an ARRO employee, received the "Elton David Walker Award" for Outstanding Organizational Leadership and Service to the Association as Eastern Section Director for the Year 2001 - 2002. Dale has been an engineering technician with ARRO for 34 years.

Pennsylvania Municipal Authorities Association Employee of the Year

Greg Wilt, assistant general manager of the Municipal Authority of the City of Sunbury, Northumberland County, Pennsylvania, was honored at the PMAAs 60th Annual Convention and Trade Show in Pittsburgh with the "Authority Employee of the Year" Award. The award, sponsored by The ARRO Group, Inc., has been created to acknowledge an authority employee's contribution to community service, as well as service to their respective authority. Mr. Wilt was chosen by a five-person selection committee. In addition to a personalized plaque, he received a monetary award of \$750 to be designated by the awardee to the institute of higher learning or non-profit organization of his choice.



Pollution Prevention/Energy Efficiency Site Assessments

Do you operate a wastewater treatment plant or own a small business? Are you interested in saving money? If so, this article is for you.

The Pennsylvania Department of Environmental Protection (DEP) is now accepting applications for grants to fund pollution prevention and energy efficiency site assessments for wastewater treatment plants and small businesses.

Grants under the Pollution Prevention/Energy Efficiency (P2/E2) Site Assessment Grant Program are available to fund 80 percent of the total cost of a P2/E2 site assessment. Grants up to a maximum of \$5,000 are available for Pennsylvania small businesses with 100 or fewer employees. For organizations holding an NPDES permit, grants ranging from \$5,000 up to a maximum of \$15,000 (grants available vary depending on the design flow rate) are available.

With 80 percent of the cost paid by the DEP grants, facilities are virtually guaranteed of recouping their investment if potential improvements are implemented.

What is Pollution Prevention?

Pollution prevention (P2) is a practice that reduces or eliminates the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other natural resources by conservation.

What is Energy Efficiency?

Energy efficiency (E2) is a practice that reduces the use of non-renewable energy forms such as electricity and natural gas. E2 improves environmental quality, lowers operating costs, and can contribute to a company's bottom line without affecting productivity or safety.

What is a P2/E2 Site Assessment and What are the Benefits?

A site assessment is an opportunity to have objective, qualified engineers come on-site to evaluate operations and suggest ways of preventing pollution and increasing energy efficiency. For each recommendation made, the implementation costs are estimated and the payback period is calculated to help the company decide whether or not to implement the recommendation. The company is not obligated to implement the recommendations, but must complete a follow-up survey one year after the recommendations are made.

By using resources more efficiently and reducing wastes, companies can realize both environmental and economic benefits. Many wastewater treatment plants and businesses that implement pollution prevention and energy efficiency improvements can realize significant savings through reduced costs for materials, energy, waste handling and disposal, and decreased regulatory compliance and liability expenses.

The staff at ARRO is well qualified to perform these assessments, and is currently providing these services at several facilities. Please contact Samuel A. McClintock, Ph.D., P.E. via telephone at (717) 560-6066 or via email at sam.mcclintock@thearrogroup.com, if you are interested or would like more information.

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ARRO provides advice, design, project management, and consulting services for a wide range of infrastructure, including water, wastewater, and transportation services.

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ADDRESS CORRECTION REQUESTED



Customized GIS Applications

As a demonstration of ARRO's efforts to remain on the cutting edge of technology, ARRO's GIS department is programming several advanced GIS applications and tools utilizing Visual Basic. These applications are often an alternative to purchasing expensive commercially available third party public works solutions for GIS. Custom applications are tailored to individual client needs, which increase end-user productivity through enhanced (yet simplistic) data entry, analysis, and modification and map production. An example of a custom application created is our Utility Inspection 2.0 program.

This application works within the ArcView 8.x program to document multiple utility inspections for later retrieval.

For an onsite demonstration of these customized GIS applications, please contact Brian Higgins at (610) 495-2106 or email brian.higgins@thearrogroup.com.

Contract Awarded for First Phase of Hill Street Park

The City of Frederick, Maryland, recently awarded a \$2.3 million contract to a contractor for the construction of a public park along Hillcrest Drive and Hill Street. Facilities in the 18-acre park will include two soccer

fields, a skateboard park, a pavilion, playground, in-line skating rinks, stadium lights, and eventually, a water park.

After receiving a "wish list" from the City, ARRO prepared several plans for the park to incorporate everything that the City wanted and mutually agreed upon a design.

This project was funded in part by a state grant under Program Open Space, a nationally recognized program providing dedicated funds for Maryland's state and local parks and conservation areas. For more information on Open Space Grants visit the Maryland DNR website at www.dnr.state.md.us/pos.html or Pennsylvania DCNR website at www.dcnr.state.pa.us/recreation/grants/.
