

Key Features in Action – Pima County Regional Wastewater Reclamation Department

The Key Features of an Active and Effective Protective Program (Key Features) help owners and operators of drinking water and wastewater utilities prevent, detect, respond to, mitigate and recover from adverse effects of all hazards including criminal and terrorist attacks, accidents and natural disasters. The Key Features describe the basic elements of a protective program for utility owners/operators to consider as they develop utility-specific approaches. The Key Features can help drinking water and wastewater utilities reduce the public health, environmental, economic and psychological consequences of water service interruptions and can promote overall improvements in utility operations.

THE KEY FEATURES

1. Integrate protective concepts into organizational culture, leadership and daily operations
2. Identify and support protective program priorities, resources and utility-specific measures
3. Employ protocols for detection of contamination
4. Assess risks and review vulnerability assessments (VAs)
5. Establish facility and information access control
6. Incorporate resiliency concepts into physical infrastructure
7. Prepare, test, and update emergency response and business continuity plans
8. Develop partnerships with first responders, managers of critical interdependent infrastructure, other utilities and response organizations
9. Develop and implement internal and external communication strategies
10. Monitor incidents and threat-level information

Background

Pima County Regional Wastewater Reclamation Department (RWRD) serves a population of approximately one million people across a 700-square-mile service area in Pima County, Arizona. The county service area encompasses four incorporated towns and cities, including Tucson, and two tribal nations.

The objectives of this case study were to:

- Document how Pima County RWRD has successfully incorporated the Key Features into its operations
- Provide examples of specific protective practices that can be replicated by other wastewater utilities
- Highlight benefits of implementing the Key Features to wastewater utilities



Pima County Programs Highlighting the Key Features

Pima County RWRD implemented a number of the Key Features through an array of multi-faceted programs. This fact sheet highlights three of the most prominent efforts, including the security scorecard, a dedicated security/law enforcement officer, and the utility's continuity of operations plan (COOP). Each of these three programs addresses multiple Key Features.

Security Scorecard (Key Features 1, 2, 4 and 5)

Pima County RWRD initiated a security scorecard program to evaluate and improve its current security practices and achieve a sustained commitment to security by staff. The department goal was to establish a culture of security that would complement the planned “hard” improvements. As part of the security scorecard program, a team of security specialists made unannounced visits and rated or scored 20 key RWRD locations on their adherence to basic security protocols, such as checking employee identification badges, questioning unauthorized visitors, and locking gates and critical buildings. The program was a hands-on test of staff compliance with basic security protocols and provided measurable results over a four-year period.

Several challenges influenced the development of the security scorecard program, including:



- Lack of a federal mandate or regulation to require security
- Constrained budgets and lack of direct funding for security
- Need for the benefits to overwhelmingly outweigh the costs

Initial results provided Pima County RWRD management with a list of security-related strengths and weaknesses. RWRD addressed the identified weaknesses and follow-up visits yielded measurable improvements. Between 2007 (the first year of the program) and 2010, scores across the system improved dramatically – with scores about 40 percent higher in 2008, and further improvement seen in 2009. By 2010, all offices and facilities had a passing grade of C or better, with most ranking at B or A.

The scorecard program directly supports several Key Features, including Key Feature 1: integrate protection as part of business culture; Key Feature 2: identify protective program priorities on an annual basis; and Key Feature 4: assess risks and update vulnerability assessments. Additionally, the unplanned, and at times covert, visits by security investigators provided an opportunity for Pima County RWRD staff to train employees in intrusion response and site security practices [Key Feature 5].

Written recommendations included as part of the scorecard report led to the adoption of specific security initiatives and practices, including:

- Creation of written security policies and procedures (e.g., for visitor escorts, tracking of keys, etc.)
- Establishment of a security training program
- Prominent display of employee ID badges and adoption of company apparel (polo shirts with logos)
- Locking out screens of unattended computers
- Enhanced monitoring and maintenance of perimeter fencing



Benefits

- The security scorecard program enabled the utility to achieve a change in security culture.
- Results of the security scorecard program led to improved security performance for facilities and offices; the competition inspired staff to improve security practices.
- The security scorecard program offers a low-cost and highly effective approach for providing measureable results to security and increased awareness among staff.

Utility Comments

1. Prior to the security scorecard program, Pima County RWRD transitioned from open campus facilities to a more traditional security program. However, the utility found that the active exercises, which were a fundamental part of the scorecard program, were much more effective at helping employees identify problems, keep management directives in mind and sustain long-term behavior changes.
2. During the security scorecard program, access control for on-site recreational activities, such as birding activities, was identified as a potential vulnerability. Birding is an important recreational activity that helps support Pima County's economy, and wastewater reclamation facilities' release of treated wastewater into percolation ponds or streams provides an important habitat for birds in the arid climate. RWRD has worked with outside interest groups to reach agreements on how to continue providing public access for birding, while simultaneously keeping critical infrastructure off limits to unwanted or unintended visitors.

Hiring of Dedicated Security Officer (Key Features 1 and 6)

Pima County RWRD is one of the few Water Sector utilities in the nation with a law enforcement official on its staff. It hired a certified law enforcement official in 2006, who has full powers to arrest and detain perpetrators. The law enforcement addition allowed RWRD to quickly investigate and prevent theft, vandalism and criminal damage to wastewater infrastructure.

The existing law enforcement investigation program is in addition to a National Industrial Pretreatment Program, and a Fats, Oils and Grease prevention program. Complementary investigations by the detective into RWRD infrastructure theft and damage further reduces the potential for sewer overflows and adds a strong deterrent for theft and vandalism due to the prompt response. The department saves significant monies and averts the regulatory fines which can be assessed due to sewer overflows. The program pays for itself through the law enforcement deterrents. The detective also works with employees to reinforce the importance of security as an integral component of utility operations [Key Feature 1]. Additionally, the detective has ensured that, whenever possible, new facilities incorporate state-of-the-art security infrastructure [Key Feature 6].

Benefits

- In addition to providing official capability to investigate incidents, the Pima County RWRD's law enforcement staff member also serves as a training resource for RWRD employees and works with the local community to reduce vandalism at RWRD facilities.
- The money saved via two sources has resulted in significant cost offsets for funding the full-time position. First, deterring key sources of fines (i.e., from sewer overflows caused by acts of vandalism or theft). Second, the cost recovery via prosecuting offenders has provided an additional offset.

Utility Comments

1. Funding from the Pima County RWRD, and staffing through the Pima County Attorney's Office, enabled RWRD to hire its certified law enforcement official. Cost savings, through equipment recovery and law enforcement deterrents, have kept it funded.
2. Outreach is at all levels. The law enforcement official hosted educational sessions at a local school to raise awareness on the consequences of dumping into the sewer systems. He and other security staff have given presentations on the RWRD/County Attorney law enforcement partnership to local groups, as well as at state and national emergency management meetings.
3. Timely local prosecution and fines act as a deterrent to help prevent illegal dumping, theft and vandalism—a source of sewer overflows.



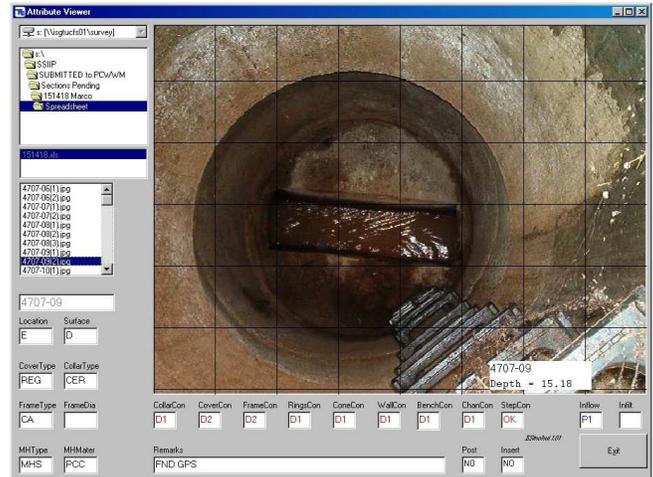
Continuity of Operations Plan (Key Features 7, 8 and 9)

Pima County RWRD developed a continuity of operations plan (COOP) in 2009, to ensure adequate preparedness for the then-looming threat of a pandemic flu outbreak. The RWRD COOP includes a requirement for annual readiness training [Key Feature 7].

The first training exercise included RWRD facilities and staff as well as outside observers such as representatives from the City of Tucson Water Department and the Arizona Department of Emergency Management. RWRD additionally has had COOP training for all staff and RWRD critical partners. RWRD has participated in local and state exercises as a part of the plan compliance. External involvement in the exercises helped strengthen partnerships with organizations that would likely be involved during actual emergencies or incidents [Key Feature 8].

In conjunction with the development of the COOP, RWRD created a crisis communication plan specifically to address the pandemic flu outbreak. An additional communication plan is in place for emergency situations other than flu pandemics. Both of the RWRD crisis communication plans include emergency contact information for critical staff and county/city officials [Key Feature 9].

Pima County RWRD is a member of the Arizona Water/Wastewater Agency Response Network (AZWARN). AZWARN is a mutual aid agreement which provides intrastate access to specialized resources from other utilities during an emergency. Currently, most of Arizona's major municipalities are partners in the AZWARN mutual aid agreement and the agreement covers more than 70% of Arizona's water utility customers.



Benefits

- The COOP establishes a requirement for annual preparedness training and exercises, ensuring that utility staff participates in tabletop or other pertinent training at least once a year.

Utility Comments

1. Pima County RWRD funded the creation of a COOP for the county's Fleet Services Department. Pima County RWRD identified the Fleet Services Department as a critical resource necessary during emergency response efforts.
2. Pima County RWRD plans to update its COOP by 2015.
3. Pima County RWRD has made several presentations to local emergency service providers, such as fire departments, law enforcement, and the Pima County Health Department on the nature of wastewater vulnerabilities and emergency response plans.

Conclusions

Targeted protective programs undertaken by utilities, such as Pima County RWRD, can achieve a wide range of security benefits. In doing so, utilities can address multiple Key Features at low to moderate costs. Innovative programs, such as RWRD's security scorecard, engage personnel across the utility on security-related initiatives and track progress from year to year.

Pima County RWRD has incorporated security measures in its project and budget plans in order to meet industry standards for security. It actively participates in Water Sector working groups to stay up-to-date with current industry standards. One strategy to stay up-to-date is to test emerging methodologies, such as EPA's Vulnerability Self Assessment Tool (VSAT) and the Water Sector RAMCAP Methodology. The utility's active participation allows RWRD to stay informed about changing industry standards and security improvements, and serves as an example to other utilities on how to implement Key Features of an Active and Effective Protective Program.

Pima County RWRD recognizes security, not as a line-item expense, but rather as a necessity and industry standard in today's world.

AVAILABLE RESOURCES AND ADDITIONAL INFORMATION

For more information on Pima County RWRD, please visit: <http://www.pima.gov/wwm>. In addition, EPA offers many low- to no-cost tools to assist drinking water and wastewater utilities in implementing the Key Features. For more information, please visit: <http://water.epa.gov/infrastructure/watersecurity/features/index.cfm> or email: WSD-Outreach@epa.gov.