

# 2015 Achievement Awards Virginia Association of Counties

## APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: June 1, 2015.** Please include this application form with electronic entry.

### PROGRAM INFORMATION

Locality: Henry County, Virginia

Program Title: Monitoring the public safety radio system in 2015

Program Category: 6. Information Technology

### CONTACT INFORMATION

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### SIGNATURE OF COUNTY ADMINISTRATOR OR CHIEF ADMINISTRATIVE OFFICER

Name: Jim Hall

Title: County Administrator

Signature: [Handwritten Signature]

## **Monitoring the public safety radio system in 2015**

### **Problem**

Henry County maintains a complex network of radios, towers, and systems to enable bi-directional communications among Public Safety, Rescue Squads, Fire Departments, Sheriff, and E911 center. Any outage in this system could result in loss of property or life, and the existing monitoring system had become antiquated and unreliable. An updated system, with real-time alerts, was needed to ensure mission-critical systems remained operational. Expensive solutions were proposed by outside Vendors, but the County's Information Services Department felt that they could collaborate with the various users to design an innovative, in-house solution, with better results and at a lower cost.

### **Background**

Henry County employs one full-time employee to support the radio communication system for all emergency agencies. This system is spread across the County at five locations. The original monitoring system had the ability to display limited warnings as they occurred. However, someone had to physically be watching that display in order to observe the warning. The radio technician attempted to observe this system during the day, while performing his other duties, and 911 operators attempted to do the same after hours. It was not an effective means of monitoring critical infrastructure.

### **Proposed solution**

Various solutions for improving the radio system were considered. One Vendor suggested a hosted solution in which they would monitor the sites, send alerts, and perform updates as needed. Their model was based on an annual fee. A second Vendor, with similar capabilities to the first, suggested new hardware and a customized software package that would require a capital investment.

The Henry County information services department provided the third option. They suggested using SolarWinds network monitoring software on local hardware, recycling many of the configurations from the existing system, and customizing the alert system to the needs of the technician. This would require a one-time investment, but proved substantially less expensive than the alternative options.

Vendor 1	Vendor 2	In-House
\$10,500 / year	\$38,000 / once	\$6,300 / once

Henry County opted to purchase the software and hardware for the in-house solution. This was a one-time expense that was financed by the County Administrator under the assurance that the product would produce future savings and increased reliability.

### **Final product**

Henry County chose to implement the in-house solution, utilizing SolarWinds software to gather data from each of the tower locations. Mark Alley (systems analyst) was assigned the project and spent approximately 80-hours learning the product and customizing it to meet the requests of the radio technician and 911.

Determining what devices had the ability for monitoring and what alerts were requested was essential. Some of the most basic alerts include the opening of a door/gate, a generator starting, or a high/low voltage situation. Complex devices such as network switches, power inverters, and radio transceivers could now give detailed information for any problem that was being experienced and were configured appropriately.

Working collaboratively with the radio shop, the information services department created a graphical, web-based system that displays a map of Henry County along with each of the radio tower sites. A color

coded system is used to quickly identify any site that is experiencing a problem. As with the previous system, devices routinely send status messages for a limited amount of circumstances. Additionally, the new system polls each site's many devices for greater detail.

All events are logged for a predetermined amount of time and the 20-most recent events are displayed on the homepage of a custom website. Any event deemed critical by the radio shop is automatically emailed to designated recipients. Users can then login to the website for additional detail and to clear alarms.

### **End result**

The goal of this project was to provide timely notifications of all events related to the radio system. The system has now been operational for six months and successfully notifies the proper staff via email whenever warranted. Staff is able to view the alert and login to the monitoring system for additional information and is no longer required to watch a display for errors.

Has the project been successful? Who better to answer that question than Chris McCulloch, radio technician and primary user of the system. He writes the following:

“With the old software, the only way I knew we were having a problem was if I walked by the computer monitor showing the error. Now, when problems arise, designated personnel are notified via email and can login from anything to check the status of the sites. During the first few weeks of having it, we were notified of several problems that we were previously unaware of and were able to resolve them. In many instances, we are able to fix minor issues before they become major issues.”

Finally, it is important to mention that the end product is completely supported by in-house expertise. There are no future support fees or maintenance contracts. The information services

team acquired a new skill and public safety received a system with expansive capabilities, such as the additional monitoring of the jail's generator that has just been added. This will be a great tool for years to come.

## **Monitoring the public safety radio system in 2015**

### **Brief summary**

Henry County maintains a complex network of radios to enable communications among Public Safety, Rescue Squads, Fire Departments, Sheriff, and E911 center. Any outage in this system could result in loss of property or life, and the existing monitoring system had become antiquated and unreliable. An updated system, with real-time alerts, was needed.

Rather than accepting one of the various solutions that was proposed by outside Vendors, the County's Information Services Department proposed collaborating with all stakeholders to create an innovative, in-house solution. The goal was to provide better results, at a lower cost, while creating a system that could accommodate future expansion and still be maintained by existing personnel.

The new monitoring system features a graphical, web-based system that displays a map of Henry County along with each of the radio tower sites. Sites are monitored in real-time and a color coded system is used to quickly identify any site that is experiencing a problem. All events are archived while the 20-most recent events are displayed on the homepage of a custom website. Any event deemed critical by the radio shop is automatically emailed to designated recipients. Users can then login to the website for additional detail and to clear alarms.

The project has been in use for six months and has become invaluable. Problems are routinely corrected before they become an issue to our users and having a notification system that sends email allows other departments, such as 911, to assist the single-person radio shop with monitoring. Additional items, such as a generator to power the Jail & EOC, have just been added, proving that resident expertise will provide continued savings for the future.