

The Right Technology. Right Away.™
CDWG.com • 800.581.4239



LENSEC

Enterprise-Wide Video Surveillance
LenSec.com • 800.348.4234

Case Study > Video Surveillance
Increases School Safety in
Spotsylvania County, Virginia

> CDW•G and
LenSec Promote
Child and Law
Enforcement
Safety

Introduction

When responding to hostage and other emergency situations inside of school buildings, police officers, Special Weapons and Tactics (SWAT) teams and other first responders are often unable to take swift, life-saving actions due to insufficient awareness of what is occurring inside the building. This problem, made starkly clear after the incident at Columbine High School on April 20, 1999, became a matter of serious concern to law enforcement officials in Spotsylvania County, Virginia. Security concerns mounted across the county following the 2002 sniper shootings that terrorized the greater Washington, D.C., region, with two shootings in Spotsylvania County during October 2002. Sheriff's deputies were on high alert and stationed outside schools throughout the county.

However, a permanent police presence at each school was not feasible. Initiating an effort to empower emergency workers and school administrators with a common operational picture that could help save lives, Spotsylvania County decided to implement a sophisticated video surveillance network in local school buildings. The system is accessible to first responders and other authorized users via a municipal wireless network. Using the video surveillance system, responding officials have a real-time, accurate picture of events inside of every school building. Spotsylvania County turned to CDW Government, Inc. (CDW-G) of Vernon Hills, Ill., and LenSec, LLC of Houston, Texas, to provide the technical expertise, technology guidance and industry-leading solution components necessary to implement the surveillance system in all of its schools.

At a Glance

- Spotsylvania County's 407 square miles are rapidly morphing from rural to suburban, growing outward from the Fredericksburg city line
- Spotsylvania is one of Virginia's fastest-growing counties, largely because of its location along Interstate 95, midway between Richmond, Va., and Washington, D.C.
- Spotsylvania County's 2005 estimated population is 116,375, up more than 34 percent since 1999
- Public safety and emergency response services are provided by the Sheriff's Department, as well as nine fire companies and nine rescue stations

The Challenge:

Improving Intelligence Gathering Inside Schools

When reviewing school shootings incidents like Columbine, Spotsylvania County officials realized that law enforcement officers would be blind to actions taking place within the walls of a shooter-controlled school. Without improved situational awareness, responders would have to delay entry, significantly increasing the likelihood for casualties. Additionally, school administrators and law enforcement officers were hampered in reviewing and acting upon more common occurrences, such as fighting, vandalism and theft, which often take place out of sight from school administrators.

Limited personnel resources within the school system also constrained efforts to improve security. The school system employed two health and safety officers at each of its five high schools, who were supplemented by principals and other administrative staff at each one of the 29 schools in the district. Hiring additional security staff was not a feasible option, and school officials recognized that they would need to leverage a technology solution to bring greater security to the schools.

Complicating matters, however, Spotsylvania technology leaders recognized that surveillance must be easily accessible to responders, but that video images could easily become a double-edged sword without airtight security architecture. Decision makers felt that they needed the functionality of a Web-based solution, but expressed strong reservations about the threat of unauthorized third parties.

The Solution:

Enterprisewide Video Surveillance

Focused on delivering the best mix of technology to meet Spotsylvania's needs, CDW-G and LenSec validated, designed and implemented an enterprisewide video surveillance solution that provides real-time visibility into activity inside and outside the schools.

Using a team of technology experts, LenSec installed the video surveillance system inside the schools. Cameras linked to motion detectors automatically turn on when activity occurs; the captured video is archived for at least 21 days, allowing administrators and law enforcement officials to review footage for use in identifying incidents.

The video is routed through the school and county Wireless Local Area Network (WLAN), allowing authorized users with Internet access to view the camera feeds through any standard Web browser. School administrators and safety officers can virtually patrol all schools within the district from any location in the county at only a moment's notice.

Administrators can also monitor any school from any location, ensuring visibility into activities during off hours.

Spotsylvania County turned to CDW-G for secure access to real-time video within the schools. CDW-G advised Spotsylvania on the mobile computing solution that would meet the demanding requirements of officers in the field, equipping local police cars, SWAT units and some fire department vehicles with ruggedized Itronix GoBook Max laptops connected to the Internet countywide via Sprint's 2.5G 56 kbps CDMA network. Responders arriving at the scene connect to the WLAN, validate their identities, select the desired video feed and capture a real-time snapshot of the situation.

The Results:

Schools Safer for All

The enterprisewide video surveillance solution has brought greater visibility into actions taking place in all school buildings without increasing staff size, while increasing the productivity of first responders and security staff, as well as school teachers and administrators.

School security personnel are able to search for video footage that corresponds to a specific incident, quickly identifying perpetrators. As a result, personnel no longer have to spend hours interviewing students to determine who was responsible for wrongdoing. Administrators and teachers can now spend more time educating students rather than monitoring hallways and investigating incidents.

Additionally, sheriff's deputies and other first responders are able to access real-time video from their stations or in their vehicles before arriving at the scene. In the event of a potentially catastrophic incident, responders would have a secure picture of events inside, enabling a faster, more coordinated response that ultimately would save lives.

Moreover, theft, vandalism, and fighting have already declined in the schools. Students, school staff, and school visitors quickly recognized the power of their cameras to capture their actions, and as a result, they have been less likely to commit these crimes on school property.

The Challenge:

Schools a Possible Target for Violence

Sandwiched between Richmond, Va., and Washington, D.C., Spotsylvania County is one of Virginia's fastest-growing regions. Many residents worried that local schools would be a target for increased violence due to the county's rapid urbanization and its location near the nation's capital. Security concerns were heightened further when two people were hit by snipers in Spotsylvania in October 2002. In response, county officials and school administrators sought to bolster protections for students on campus during and after school hours.

The school system employs two health and safety officers at each of five high schools in the school

At the same time, Spotsylvania technology leaders recognized that building the technology solution would be more complicated than simply plugging cameras into a video recorder. During the needs assessment phase, county officials realized that the surveillance system must allow administrators to monitor actions inside each school from any location with Internet access – including their homes and other remote sites. They also recognized that the real-time video must be readily accessible to responders who might not have physical access to the school building.

Based upon those requirements, county officials reasoned that they needed the functionality of a wireless solution, but expressed strong reservations about their ability to fully control access to the system. They understood that video images could easi-



system of 29 schools – five high schools, seven middle schools, 16 elementary schools, and one career and technical center. School administrators recognized that hiring additional security personnel to watch monitors was not a feasible option. To improve students' safety on campus without adding personnel, Spotsylvania County decided to deploy an enterprisewide video surveillance system to provide both archived video and real-time situational information to school administrators and first responders throughout the county.

ly become a double-edged sword, aiding suspects rather than officers, without an airtight security architecture. With those requirements and concerns, Spotsylvania County officials turned to CDW-G and LenSec for the expertise and technology solutions they needed to turn their technology vision into a reality. Immediately recognizing the urgency of the situation, CDW-G and LenSec responded with a technology solution comprised of numerous industry-leading components.

The Solution:

Video Surveillance Provides Lifesaving Knowledge

Assessing the needs and requirements of local school and law enforcement personnel, CDW-G and LenSec provided the technical expertise that allowed the county to select the right solution to meet its needs. For example, Spotsylvania County decided to



implement fixed lens digital cameras instead of pan-tilt-zoom cameras. While this decision meant that more cameras were required to view all potential trouble spots in the schools, the solution simplified the user interface, enabling officers to quickly switch between camera views and track events occurring in multiple sectors.

To provide Spotsylvania County sheriff's deputies and school officials with a live picture of events inside local schools, LenSec implemented its Enterprise-Wide Video Surveillance solution utilizing more than 600 Axis Communications cameras positioned at strategic points inside and outside schools. Approximately 30 to 40 cameras are installed at each school.

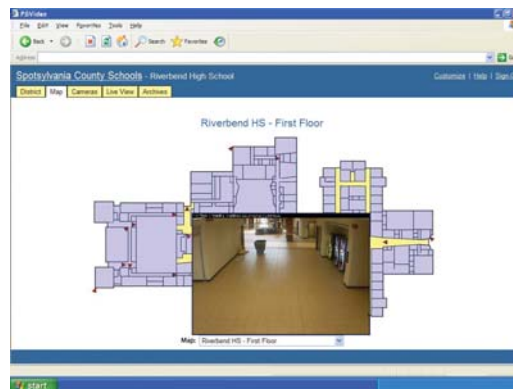
Each school's individual video surveillance system is mapped to the school's floor plan, displaying the exact location of all cameras. The motion-sensitive

cameras record digital video automatically onto the school's file server when there is motion in the area, and the captured video is archived for at least 21 days, allowing school and law enforcement officials to review video footage and quickly identify participants in an incident, as well as their exact actions. Video tied to an incident can be saved permanently for use in law enforcement proceedings.

"When we find out something has happened, we just need the date, location, and the approximate time, and we go back to the video. It's a huge time-saver," said Don Alvey, director of secondary education for the Spotsylvania County Schools. "Our assistant principals don't have to waste a lot of time doing 15 interviews and getting 15 different stories. They can quickly determine what happened and get back to their main work as instructional leaders."

To interface with the video surveillance system, CDW-G equipped local police cars, SWAT units and some fire department vehicles with ruggedized Itronix GoBook Max laptops that are connected to the Internet countywide via Sprint's 2.5G 56 kbps CDMA network. Because the system is IP-based, the video can be accessed via the Internet in patrol vehicles on the Sprint network or on any handheld device with Internet access.

While the video surveillance system design is user-friendly for speed and ease of access, system access



CDW-G Improves Situational Awareness, Securely

CDW-G can help you design and implement a mobile wireless solution that provides secure access to real-time situational information, enabling law enforcement officials and other personnel to respond to any emergency quickly, and with the right tools.

LenSec Ensures Real-Time Information Delivery

LenSec can help you design and implement a video surveillance system that effectively extends the footprint of security, administrative, and law enforcement personnel, improving productivity while eliminating the burden of system maintenance.

is strictly controlled. For example, sheriff's deputies have logon access to all 29 schools, while school administrators only have logon access to their assigned facility. The video surveillance system has had no breaches of its security policy, while authorized user access is still easily facilitated within tactical time frames.

The LenSec solution is based on a thin-client architecture, which eliminates the need for software to be loaded and maintained on each computer accessing the system. Any Windows-based device can obtain real-time access in an instant – a huge advantage in a critical response situation where it is unknown who will arrive at the scene first or require access to the system. Responders arriving at the scene would simply connect to the WLAN, validate their identities, select the desired video feed and capture an instant grasp of activities within the schools. In addition, county officials could keep track of events at the incident, logging on to the password-protected system to review the situation remotely.

To ensure 24/7 operation, LenSec manages the system remotely with monitoring and diagnostic software that assesses every component of each school's surveillance system every 60 seconds, every day. If system slowdown or a server or camera failure occurs, LenSec responds immediately, fixing the problem remotely or dispatching on-site service. LenSec's remote management allows school administrators and IT staff to focus on student achievement – not the burden of day-to-day system maintenance. Additionally, because each school has its own server connected to the central system IP address, an outage at one school only affects that building, rather than enterprisewide operations.

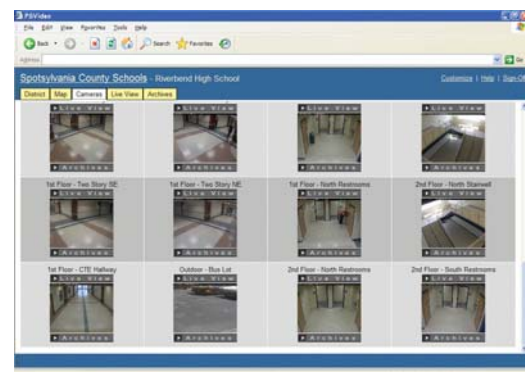
The Results:

Increased Situational Awareness for Faster Response Time

The enterprisewide video surveillance solution has brought greater visibility into actions taking place in all school buildings, improving student safety without increasing staff size. Administrators and school security officers can virtually patrol all 29 schools at a moment's notice. In addition, administrators can monitor any school from any location, ensuring visibility into activities taking place during off hours and quick action if emergency response is needed.

Also benefiting day-to-day operations, the surveillance system allows school officials to make better decisions about whether to close schools or delay openings in the event of inclement weather. Up to 25 percent of cameras at each school building are located outside, and by accessing their video feeds from home, officials avoid lengthy and often dangerous treks to analyze road conditions.

In the event of school violence, law enforcement officials located within the command center or in mobile units with access to the surveillance system are now equipped to quickly analyze hazardous situations and take decisive action, improving response time and saving lives. Based on the real-time information provided by the cameras, other emergency responders, such as firefighters and emergency medical technicians, can better select the tools and equipment necessary to handle casualties and injuries.



Ultimately, the value of such a system will extend beyond the school system to state and federal law enforcement agencies responding to a large-scale incident. The wireless network and remote access capabilities will allow state, local and federal levels of government to collaborate using the same information, speeding decision-making and ensuring a coordinated response. Further, with the archived video functionality, government officials have unprecedented ability to conduct post-incident evaluations, learning from past events and improving upon future responses.

Finally, the surveillance system also provides an essential benefit to Spotsylvania County: reduced school crime. The cameras act as a deterrent for illegal or disruptive behavior because students are less inclined to act out in monitored areas. Vandalism and theft has dramatically reduced since the cameras were introduced, along with a county-wide campaign to publicize the video surveillance

capabilities in the schools.

"The IP surveillance system is an invaluable crime-fighting tool," said Greg Call, Rappahannock Regional Criminal Information Network administrator. "Beyond its use in a catastrophic incident, county law enforcement officials use the system to respond to schoolyard fights, monitor school hallways and assess situations before they arrive at the scene, at any time of the day or night." More than just aiding intervention, the system improves enforcement and prosecution, as law enforcement officials use the video archive to create more accurate reports, find the source of incidents and build criminal cases.



Partner Technical Specifications

- ▶ Itronix GoBook Max laptops
- ▶ Sprint's 2.5G 56 kbps CDMA network
- ▶ LenSec Enterprise-Wide Video Surveillance software
- ▶ 34 Servers with a total of 24.5 TB of storage
 - 12 – 1 TB Servers
 - 6 – 750 GB Servers
 - 16 – 500 GB Servers
- ▶ 652 Axis Communication cameras
 - 454 Axis 210 Fixed Cameras
 - 197 Axis 211 Fixed Cameras
 - 1 Axis 213 Pan/Tilt/Zoom Camera
- ▶ Cat-5 Cabling
- ▶ 117 Switches
 - 29 – 1 GB D-Link DGS1016
 - 88 – 10/100 Linksys and D-Link Units, 2-port
- ▶ 30 – APC Reboot Units, 8-port
- ▶ 30 – Server Technology Reboot Units, 2-port



LENSEC

Enterprise-Wide Video Surveillance
LenSec.com • 800.348.4234



The Right Technology. Right Away.™
CDWG.com • 800.581.4239

Corporate Headquarters
230 N. Milwaukee Avenue | Vernon Hills, IL | 60061
P: 847.371.5600 | F: 847.419.6200 | W: CDW.COM