

The All-Seeing City

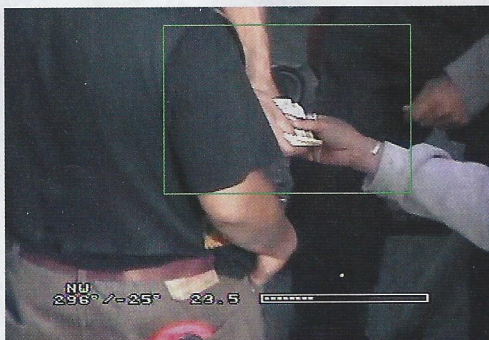
Considerations when implementing a citywide surveillance system

By Ray Leblond

It's just past midnight and Redlands' historic park is closed. Despite posted signs, a group of youths enter the park, which is almost completely dark. As they make their way deep into the park they hear the sound of a clicking microphone. Shocked and surprised, they collectively and unknowingly display their actions to a surveillance video camera operator some four miles away. They don't realize they have crossed a virtual tripwire drawn across the cameras' view. The scene turns to a vaudeville act when the group scatters in every direction as they hear a voice from the sky: "The park is closed, leave immediately."

"The cameras, intrusion detection and audio system in Prospect Park have proven to be an unparalleled success," says Lt. Russ Dalzell (Ret.) of the Redlands (Calif.) PD. "Our ability to identify potential issues and intervene without sending a uniformed officer has made a real difference."

Imagine another scenario: A call comes to police dispatch that the roof alarm to a local business has been tripped. A surveillance camera is turned to the front window in time to see two suspects drop into the store from the ceiling. A call goes out for a patrol officer to respond. The surveillance camera operator remotely guides the camera to follow the suspects. This real-time information is relayed to the responding officer. The suspects exit the rear door of the business, their hands full of evidence, and—to their surprise—a police officer stands in front of them.



A well-considered video surveillance system will go a long way in deterring crime and catching criminals.

"The cutbacks we have been forced to deal with make developing alternative, non-traditional approaches to crime suppression, intervention and suspect apprehension a high priority," says Lt. Chris Catren, Redlands Patrol Services Bureau. "The presence of proactively monitored cameras placed in strategic locations has reduced crime, increased officer safety and positively impacted the quality of life in our community. We like to refer to the cameras as 'virtual police officers.'"

These are just two examples of how citywide surveillance is changing law enforcement. Other potential uses include:

- A school campus is dark and quiet at night, but sentries are posted. They do their job with exacting skill and purpose, while never taking a break. The sentries are surveillance cameras, placed in strategic locations with advanced technologies that can sense when a perpetrator has breached the campus perimeter. Back at police dispatch, a camera automatically turns toward the suspect. The surveillance camera operator follows the suspect and captures

his every move, while providing an ongoing dialog to the responding patrol officer. Knowing exactly where the escape routes are, the patrol officer catches the suspect in the very act of tagging the campus.

- Shoplifting suspects are caught blocks away from the scene of the crime as they calmly walk hand-in-hand, not realizing that an alert camera surveillance operator heard the 9-1-1 call and the description of the suspects, then moved cameras to follow them while directing responding officers. Arrest made, case closed.
- An assault requires five city cameras to track the fleeing vehicle, but the arrest is made.
- A suspect leaves a bar stumbling to his car, but he does not get too far. A DUI arrest is made thanks to cameras that capture his actions and alert nearby officers.

Paradigm Shift

Effective citywide surveillance is proven to dramatically reduce crime, improve public safety and heighten trust between law enforcement and the

PHOTO: COURTESY LEVERAGE INFORMATION SYSTEMS

community, all while reducing costs. The City of Redlands, Calif., conducted an analysis of criminal activity at one venue for the year before and the year after a proactive surveillance system was installed in a park riddled with criminal activity. The results are documented in the chart below.

	May 2009- Apr 2010	May 2010- Apr 2011	Difference	% Change
Total Incidents	354	673	319	+90%
Officer Response	172	99	-73	-42%
Citizen Volunteer/ Ranger Response	182	155	-27	-15%
Camera Operator Disposition	0	419	419	
Remote Resolution Rate	51%	85%		

IMAGE CREDIT: COURTESY REDLANDS POLICE DEPARTMENT

Notice that although the number of incidents rose (due to real-time video surveillance within the park), the number of officer responses dropped by 42%. Responses involving local volunteers also decreased. However, a new category was created, which involved a remote camera operator preventing the criminal activity from taking place. *The result:* a more effective utilization of the city's police resources and improved quality of life for the citizens who frequent the park. Similar results were achieved in other parks, schools and public venues throughout the city.

Another successful citywide surveillance system is installed in the city of Lynwood, Calif. It won an All-American City award, due in part to a reduction in five major categories of crime to historic lows.

And these results aren't an anomaly; several cities have deployed citywide surveillance systems and are achieving similar results. Implemented properly, a citywide surveillance system could be a paradigm shift in improving police department efficiency, with the end result of improving citizen quality of life.

Is it possible to provide surveillance video of a crime in progress, and to intervene in order to prevent or mitigate its impact? The answer is a resounding "Yes."

Getting Started

All successful citywide surveillance systems share one thing in common: vision. Envisioning the impact of this game-changing capability requires exposure to other cities' successes and understanding the needs of the community. Spend time researching cities that have deployed both successful and unsuccessful systems.

"We traveled throughout the country reviewing the best practices and best systems in order to provide a system capable of deterring crime while integrating its capabilities into the daily needs of the Gardena (Calif.) Police Department," says Gardena Chief of Police Edward Medrano. →→

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"We developed a Request for Information, and subsequently a Request for Proposal based upon our findings. Our system continues to serve the purpose it was intended to accomplish."

Most communities have camera systems in use by isolated city agencies or departments. These may provide a starting point for developing a strategy for unification. Consider whether you can take advantage of overlap in either the cameras or locations that existing camera systems use. For agencies within a community that participate in the unification of resources, many benefits are possible. Funding sources for capital equipment and maintenance can be pooled together. Overall reliability and uptime will improve with a commonality of components. Training and support becomes a commonly shared task. From experience, the public safety agency within a community can provide a focal point for the unification effort.

Choosing a Solutions Provider

The success of a citywide surveillance system is dependent upon executive leadership within the community to support and convey the vision. There must also be acceptance by those who will integrate surveillance into their work processes, and the system must satisfy the established requirements and operate reliably. The solutions provider must possess the skills, experience and knowledge required for mission-essential reliability. Consider the following requirements during the selection process of a solutions provider:

- *Networking expertise:* Must be highly accredited by industry leaders in networking. Provisioning video across an IP

network while meeting performance and security requirements is an extremely complex undertaking.

- *Experience:* Multiple successful citywide IP surveillance references on a similar scale as yours should be provided. These must consist of multiple outdoor cameras deployed using wireless, all at least one-half mile from the core video surveillance network equipment.
- *Local support:* Must currently support citywide IP surveillance references. Be wary of subcontractors performing support. Local on-site support will most likely be necessary.
- *System effectiveness:* Must provide multiple video incidents from citywide IP surveillance systems. A video incident is defined as one or more video clips depicting an incident of interest to the police department.
- *Post-installation support track record:* Must provide multiple citywide IP surveillance references wherein the system has been completely installed and maintained for at least two years.
- *Video quality:* Must provide high-quality video that is acceptable in frames per second and resolution. Video quality can be subjective, so be sure to request video clips from cities that have accomplished what you desire.
- *System scalability:* Must defend their architecture's ability to scale and explain to the city their recommendations to scale the system based upon requirements. They should provide references for multiple citywide IP surveillance systems where they have expanded from the original deployment.
- *System interoperability:* Must discuss and defend



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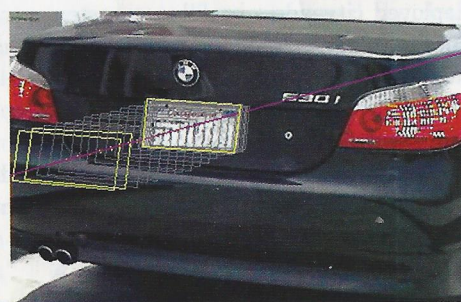
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the ability to integrate other systems (Computer Aided Dispatch, etc.) and camera types. The solutions provider must provide proof of deployments where they integrated into other systems and incorporated multiple camera manufacturers.

- **System latency:** Must demonstrate through existing citywide IP

surveillance system deployments that latency is less than one second. Proactive video policing requires that video has minimal latency.

- **Disaster recovery/emergency operations:** The camera system must be able to operate from an Emergency Operations Center if the primary dispatch location becomes unavailable.

The solutions provider must provide examples of multiple deployments where they have designed and deployed an emergency operations capability.

- **Technical certification:** Must be able to demonstrate via certifications that they are technically qualified by an OEM to design, deploy and support the proposed products. The certifications should be held by full-time employees.
- **Video retention capabilities:** Citywide IP surveillance systems require two distinct video storage policies. Video buffering, or temporary storage, may be required for street-level cameras. Video retention, or long-term storage, is governed by state and local authorities for jails and other government facilities. Recorded video is critical evidence; therefore, the solutions provider must demonstrate multiple reference sites where they met this requirement.
- **Integration between agencies/organizations:** Citywide IP surveillance systems would require the ability to integrate other camera systems with the police department's system for viewing of live, latent-free video. The solutions provider should provide proof of multiple deployments where this capability is operational.

Return on Investment

Citywide surveillance systems can help communities realize the goal of improving citizen safety while reducing costs. Implementing such a system requires careful planning and myriad technical considerations, as well as the determined support of key leaders in law enforcement and city government. But the results already happening in Redlands and other cities are proof that the hard work has a huge payoff.

RAY LEBLOND is the director of the IP Surveillance Practice for Leverage Information Systems, a complete integration firm capable of consultative services, requirement development, system design and deployment, training and post-installation support. Leverage also develops hardware and software specific for citywide public safety surveillance. Contact Leblond at ray@leverageis.com or 800-825-6680.



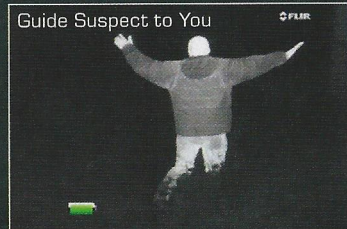
Detect Suspect



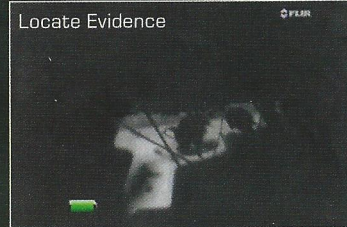
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