

Baltimore CitiWatch Program

Video Monitoring for the City of Baltimore

Baltimore's location on the northern Chesapeake Bay has been at the heart of its social and economic development. Farther inland than other eastern seaports, the city is convenient to landlocked areas. Through careful city planning and cooperation between public and private investors, Baltimore has entered the ranks of America's "comeback cities" in recent years. Its downtown business district has been transformed into a mecca of sparkling new hotels, retail centers, and office buildings. However, as one of the nation's most violent cities in recent years, Baltimore needs innovative, cost-effective assistance in fighting crime and creating safer neighborhoods.

The Challenge

After a number of years of falling crime rates, violent crime in most of America's cities is on the rise again. In early 2005, Baltimore sought to provide better protection in high profile, tourist areas and to give the police additional tools to better do their jobs.

After observing a sophisticated surveillance project in the Westminster area of London and a small citizen-led video surveillance project in his own city's Greektown neighborhood, Baltimore's Mayor O'Malley hit upon the idea to harness video technology to help in the fight against crime. In late 2005, O'Malley announced the first phase of the Baltimore CitiWatch Program with the opening of the state-of-the-art Atrium Control Center. The program was established with Department of Homeland Security funds totaling several million dollars. After installing some 50 plus IP cameras directly on the city's network to cover the commercial areas of downtown, the challenge remained how to extend Citiwatch to Baltimore's meaner streets which lacked a fiber network and where support may not be as enthusiastic.

The Solution

Two years on, the Citiwatch program continues to grow into new Baltimore neighborhoods because of its effectiveness and proven public support. Today the solution numbers close to 400 cameras, most mounted on top of street light poles, and provides 24-hour surveillance of downtown tourist areas, some of the cities most violent neighborhoods, and in five public housing projects. The program's goal is to enhance the safety and security of residents, workers, visitors, public buildings, educational institutions, healthcare facilities, cultural and entertainment attractions, and other tourist venues.

The Mayor's Office of Information Technology drives overall planning and implementation and then turns each completed project phase over to the Baltimore Police, while assisting with on-going maintenance and future planning.

The DVTel intelligent Security Operations Center (iSOC) platform, with the Network Video Management System (NVMS) at its core, was selected as the primary command and control management software to provide IP network video surveillance for what will eventually number several hundred DVTel IP surveillance cameras. The color, all-weather cameras are equipped with low light and pan-tilt-zoom (PTZ) capability. The Citiwatch Atrium Center has access to all project video feeds from the DVTel PTZ cameras located throughout five high-crime neighborhoods and the central business district. The Atrium Center can also access video feeds from the housing project cameras.

In addition to the Atrium Center, Baltimore Police have established five police station monitoring centers which utilize the DVTel NVMS to provide round-the-clock proactive monitoring from dedicated surveillance rooms. Camera coverage has expanded to include the most crime-ridden Baltimore neighborhoods along Monument St., Greenmount Ave, and in Park Heights. All cameras record 24 hours a day at 30 frames per second. Live video is viewed at 15 fps and the city maintains an archive of 30 days of recording. However, post-event analysis is not the primary focus of the Citiwatch program. The program staff engage in pro-active monitoring with the goal to prevent violent crime when possible and to direct police officers to the scene while providing maximum intelligence on what arriving officers will find and how best to deal an unfolding situation.

The Highlights

With literally thousands of arrests coming directly from video surveillance, Baltimore Police estimate violent crime is down year-on-year more than 15% in the areas covered by the project.

As the command and control software, the iSOC NVMS accesses and correlates camera data from upwards to 400 cameras and counting. The cameras are spread throughout the city of Baltimore and monitored at five separate police stations, five public housing projects, and the central Atrium headquarters.

DVTel fixed and PTZ IP cameras were chosen for their high quality images and reliability.

Tele-Tector of Maryland designed the dedicated fiber backbone and managed the project installation. Many of the city surveillance cameras and all of the housing cameras are wireless, which was part of the appeal of the DVTel solution. With no fiber optic running under the streets to where the program had expanded, Baltimore got innovative. "We couldn't be trenching for blocks and blocks, so DVTel's combination of wired and wireless technology was very appealing to us," said Beth Hart, CCTV Manager for the Mayor's Office of Information Technology.

Wireless camera signals from groups of cameras are brought back to a fiber node and then video signals travel by fiber back to the DVTel head end. All camera feeds are available at the Central Command Center via an 800 MHz ring around the city, to which all the neighborhood and housing cameras are connected. The fiber ring has a portion solely dedicated for surveillance use.

At the Eastern District monitoring station, Officer David Hare manning the computer monitors took but moments to pull up multiple incidents of recent violent crimes that had been captured and investigated out of the district. Of the DVTel technology, Hare noted, "[It's] very easy, anybody can do it. You need a bit more practice to manage the review and investigation aspects, but if you can't operate this system, you shouldn't be here."

Since the program's inception, proactive monitoring using the DVTel software has proven highly effective. Numerous violent acts have been successfully investigated and are often caught live so monitoring personnel can effectively support police reaching the scene. In a recent example of proactive monitoring, staff viewed a man on a street corner putting on a ski mask, a police car was immediately dispatched to the location, and a robbery was foiled.

When asked where the program will be in a year or two, Lt. Bauler, who has been with Citiwatch practically from inception, responded, "I see it getting bigger; I can't tell you how many calls we get asking for cameras in their neighborhood." The city is looking at additional neighborhoods to add to the program including Cherry Hill and the SW District.

With several thousand incidents caught on video; more effective prosecutions; fewer false crime reports; perpetrators often pleading guilty when confronted with video evidence; more focused police patrols and improved productivity; and greater citizen cooperation, the Citiwatch program has been an impressive success to date and the future looks equally promising for Baltimore's efforts to provide improved safety for its citizens.



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