



CWSS – RAPTOR

COUNTY WIDE

SURVEILLANCE SYSTEMS

RAPTOR

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Revised – February 27, 2009

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I. EXECUTIVE BRIEF

Project Unity USA has worked in Richland County communities for approx. two and a half years and during this time we have been able to experience crime issues through both the victim and those that commit crime.

Richland County residences (including the city of Columbia, Forest Acers, and Irmo) have and continue to experience crimes such as burglary, bank robberies, homicides, vandalism, narcotic activity and many other crimes against person and property. Law enforcement personnel even when having a quick response time are having a difficult time catching these persons, because they are generally gone by the time the officer arrives on scene. The ability to investigate and apprehend suspects is also detracted by the reluctance of witnesses to provide information, due to fear of retaliation.

This problem calls for solutions affording law enforcement personnel the intelligence to intervene and prevent crime, as well as gather evidence required to apprehend suspects and convict them in a court of law without endangering witnesses.

RAPTOR's Strategic Aim

Criminals rely upon the use of vehicles to commit crime and the fact that many witnesses will not get involved. The opportunity exists, through targeting offences associated with vehicles, to make it extremely difficult for criminals to operate in cars, and to leave the frightened witness out of the situation. Intensive policing using the RAPTOR system can deliver this, helping to achieve the strategic aim: to “reduce the need to rely on witnesses for evidence and better utilize law enforcement resources.” By tackling the very heart of criminals ability to intimidate witnesses, a whole range of criminality can be prevented, delivering reductions in crime, enhanced community safety and safer streets. The whole range of criminality is affected, from volume crimes such as auto theft and burglary to terrorism, drug trafficking and homicides.

Concept of Operation

The concept of the Countywide Surveillance System (CWSS) centers on the creation of a private network, utilizing a combination of wireless communications network and VPN using Time Warner's vast network, which would blanket the physical locations policed by Richland County Sheriff's Department and the City of Columbia Police Department initially then would expand to cover areas policed by Forest Acers and Irmo Police Departments. This network would enable the use of wireless High Resolution, high impact, Day Nigh, digital video surveillance cameras, mounted at designated public areas throughout Richland County. The cameras would be linked via it's private network, to a situation room (Command Center). This system will also have the ability to connect directly to the Sheriff's Department or City Police's mobile command vehicles. Video from law enforcements aircraft will also be able to be viewed by vehicles on the ground.

Wireless High-Resolution Surveillance Cameras

Initially twelve high-resolution, digital, high impact, day/night cameras would be mounted on public utility poles in designated areas throughout Richland County and the city of Columbia. The cameras would have the ability to obtain clear video during times of darkness and the ability to read a license plate up to 200 yards away. The wireless system of the cameras will allow for simple and cost effective expansion, redeployment and reconfiguration of the surveillance system. Officer safety and risk management would be improved, and criminal cases would be strengthened with video evidence. Public knowledge of RAPTOR's capabilities would also serve as a crime deterrent.

Mobile Wireless Surveillance Cameras

A mobile surveillance camera located in a parked vehicle would replace a traditional surveillance crew. The vehicle would be parked next to targeted locations and monitored via wireless link. The risk of compromise is minimal since decoy vehicles would appear unoccupied. This system offers a substantial cost savings to law enforcement as only one officer/deputy would be needed to conduct surveillance from a safe location versus utilizing a team of officers/deputies in the field.

Acoustic Gunshot Detection Technology

Acoustic gunshot detection technology (AGDT) is a gunfire location system that incorporates several elevated sensors with a computerized mapping system that accurately, and within seconds of the occurrence, pinpoints locations of gunfire within 25-foot area. AGDT can be deployed in a wireless configuration. This system has been deployed by the Los Angeles Sheriff's department and has contributed to decreases in gunfire ranging from 60% to 90% in the areas of deployment.

Creation of a Command Center

The Command Center would consist of a room containing numerous flat screen video monitors necessary to conduct surveillance via the wireless camera system. The Command Center would also have the ability to download recorded video onto removable medium (such as a CD, DVD or a thumb drive) to later book as evidence. The recorded video will be encrypted such that it, cannot be edited or tampered with.

Live Supervision of Police Pursuits by Watch Commanders

RAPTOR surveillance cameras will give the on-duty watch commander the ability to view and supervise an ongoing police pursuit by law enforcement

personnel thereby increasing supervision and lowering liability to law enforcement (The Sheriff's Department and Columbia Police)

Cost (Overview)

The initial cost of implementing RAPTOR is based on the following expenses: purchase and installation of approximately 24 cameras and 12 remote monitoring units for law enforcement vehicles; set-up and installation of a video network and infrastructure. The cost would also include the implementation of remote viewing of video shot from law enforcement aircraft.

The cost for setting up the system is estimated between \$650,000.00 and \$675,000.00. The final cost depends on equipment and installation needs specific to Richland County. We are currently working in co operation with The Vicon Corporation, Time Warner, and other local companies to design this system. Project Unity USA is gearing up to launch a massive one month campaign to get the residences of Richland County and the City of Columbia to donate to this project. According to the 2007 census, Richland county has 375 thousand plus persons living here. We calculated that if each only donated \$5.00 we would have the funds to implement this system at no cost to the Richland County Sheriff's Department or The City of Columbia Police Department.

II. Introduction

Project Unity USA is a non-profit 501©3 organization. Our goal is to reduce crime in all communities that we have an existence in. Our motto is “Promoting unity in our community to reduce crime and enhance the quality of life for all”

We have worked in the Richland county area for more than two years. We have hosted many projects that work toward the reduction in crime in our communities. Projects such as “Meet me where I am”, this is one of our most successful projects. In this project a group of four men all trained in the art of self defense, law enforcement and reconnoitering. Go out into high crime areas and speak directly with criminals during the hours of 2:00 a. m. and 4:30 a.m. .Doing this we are able to not only help some of them off of the street but, in short we are also able to obtain information about criminal activity. With this information and information given to us from good citizens of Richland County/City of Columbia we are well aware of criminal hot spots in and around Richland County and the City of Columbia. We have shared this information with both agencies and have been successful in assisting in the either capture of criminals or them turning themselves in to law enforcement. These criminals ranged from homicide suspects to vandalism suspects.

Some of the other projects that have been successful: The Turning Point Fatherhood Summit, Sisters Helping Sisters, and Unity Fest. In the Charleston area Project Unity offers the following projects that have been successful: Reach Back, Mentorship, Unity March Against Crime, Summer Hire, and Street Patrol.

Richland County residence (including the city of Columbia, Forest Acers, and Irmo) have and continue to experience crimes such as burglary, bank robberies, homicides, vandalism, narcotic activity and many other crimes against person and property. Law enforcement personnel even when having a quick response time are having a difficult time catching these persons, because they are generally gone by the time the officer arrives on seen. The ability to investigate and apprehend suspects is also detracted by the reluctance of witnesses to provide information, due to fear of retaliation.

This problem calls for solutions affording law enforcement personnel the intelligence to intervene and prevent crime, as well as gather evidence required to apprehend suspects and convict them in a court of law without endangering witnesses.

The County Wide Surveillance Systems plan (CWSS-RAPTOR) described in this proposal seeks to deploy several new and innovative technologies throughout Richland County and the City of Columbia to strengthen public safety and Homeland Security concerns.

III. RAPTOR's Strategic Aim:

Criminals rely on stealth, the high possibility that witnesses will not get involved, there is not enough law enforcement resources in high crime areas, and that they will be able to see law enforcement vehicles before officers/deputies can see them.

By tackling the very heart of criminal's ability to have stealth as a lethal weapon against the public and tactics of intimidation; a whole range of criminality can be prevented, delivering reduction in crime and enhanced community safety and safer streets. The whole range of criminality is affected, from volume crimes such as auto theft and burglary at one end of the spectrum, to terrorism, drug trafficking and homicides at the other end of the spectrum.

There are clear policing benefits to this technology, not least of which is the ability to ascertain, in real time, the location of criminal activity without placing the community in any danger of retaliation. The added value in this is the increase in productivity that can be achieved by operational law enforcement staff, simply by targeting those areas that are likeliest to be of interest to law enforcement. As a consequence, officers/deputies using this technology will engage criminality at much higher levels than can be achieved through traditional policing methods.

Research has shown that law patrol officers/deputies with similar technology are more than twice as effective, in terms of performance, than officers/deputies working without it. In the long run, this will offer a cost benefit/savings to Richland county Sheriff's Department (Richland County) and The City of Columbia Police Department (City Of Columbia) in paying for extra deputies/officers for an infinite period of time.

IV. Concept of Operation

The concept of the CWSS-RAPTOR centers on the creation of a private wireless network (Not virtual, totally private network), which could eventually blanket the physical location policed by the Richland County Sheriff's Department and the City of Columbia Police Department. This network would enable the use of wireless high resolution, high impact, and color day/night digital cameras throughout the covered areas. These cameras have the ability to rotate 360 degrees, include night-vision capability and can view a vehicle's license plate from a distance of over 200 yards.

The cameras would be linked via wireless signal to a video networked with monitors housed in a situation room (Command Center) location TBA. RAPTOR would also include Acoustic Gunshot Detection capable cameras allowing law enforcement to instantly detect and locate the illegal discharge of a firearm in it's policing area.

Raptor will also include several covert cameras. These cameras will be made to look like electrical transformers and other objects that are a part of the norm in many communities. These types of cameras are vital covert operations.

V. RAPTOR Includes the Following Assets and Capabilities:

- Wireless high-resolution digital mega-pixel cameras
- Mobile high-resolution digital mega-pixel cameras
- Covert high-resolution digital mega-pixel camera
- The ability to send live video from law enforcement aircraft to officers/deputies on the ground
- Ability to remotely view live video of areas of interest
- Ability of offices/deputies driving equipped vehicles to view live video from their vehicles
- Acoustic Gunshot Detection Technology
- Ability to connect with current surveillance systems (such as at banks and schools)
- Ability to send live and recorded video to mobile command vehicles
- Provides digitally recorded evidence usable in the court of law

VI. Wireless High-Resolution Surveillance Cameras

Over twenty-four high-resolution (mega-pixel) digital video cameras would be mounted on SCE&G light poles and buildings in designated public areas throughout Richland County and The City of Columbia. The cameras will be of high impact material, have the ability to rotate 360 degrees; including night-vision capability and can view a vehicle's plate from a distance of over 200 yards.

RAPTOR will provide intelligence for law enforcement field unit prior to their arrival at priority calls for service, expand the ability for officers/deputies to interrupt crimes in progress, contain fleeing suspects, and other public safety and Homeland Security surveillance needs. Officer Safety and risk management would be improved, and criminal cases would be strengthened with video evidence. Public knowledge of advanced surveillance capabilities would also serve as a crime deterrent.

Mounting the wireless cameras on light poles and on tall building will offer a high-unobstructed location, which will produce a good wireless signal and offer a visible presence of the cameras, which will further act as a deterrent against crime. The light poles will also make vandalism of the cameras extremely difficult due to the height at which they will be mounted.

The wireless system of the cameras will allow for a simple expansion, redeployment and reconfiguration of the surveillance system. Additional cameras can be incorporated into the system with reduced cost (cost of the additional camera). The cost of "rewiring" a surveillance system to incorporate additional cameras is eliminated with a wireless system.

The greater the amount of cameras utilized, the more effective this system becomes. Local business should be allowed the option to fund the purchase of additional cameras, which can be mounted in front of or near their business. This option will provide a direct and immediate impact on perceived increase in public safety for their location. Raptor also has a module that can connect directly with businesses that currently have video surveillance systems, such as Banks, Schools, Hospitals, and other large facilities. This will provide a motivation for many businesses to donate funds for the purchase of these systems, which will increase the overall effectiveness.

The cameras would be linked via wireless signal to a high speed digital video network with monitors and digital video recorders/controllers and housed at a location to be announced.

Covert (hidden) cameras can be temporally deployed in high crime areas where there is a high rate of narcotic activity and where there is a great need to apprehend suspect(s) that are concentrating their crime spree in a small geographical area. This will be an excellent tool for officers/deputies in areas and incidents such as burglaries from home, motor vehicles and businesses in locations like 5-Points, The Vista, and Sand Hills Mall or Greenview or Wildwood, and Lake Carolina, and etc.

“Dummy cameras” can be placed throughout the county and city as a visible deterrent to criminal activity. Potential suspects will never know if the camera positioned in the area is real or a decoy. Due to the minimal cost, visible deterrent to crime can be achieved by fielding a large amount of decoy cameras.

VII. Mobile Wireless Surveillance Cameras

Utilizing a wireless surveillance system offers innovative surveillance options. Traditional surveillance crews can be replaced by a more effective and fiscally efficient option. Traditionally surveillance crews conduct multi officer/deputy surveillance on specific locations. Reasons for surveillance can include watching for narcotic activity, locating a murder suspect, burglary activity, etc. Several deputies/officers are required for the surveillance team and as a “back up” team. The backup team is necessary because an occupied parked vehicle runs a high risk of discovery by the targeted suspects or other criminals in the area. Exposure of the surveillance crew can potentially result in a shooting or a compromise of the investigation.

A mobile surveillance camera located in a parked vehicle can replace the traditional surveillance crew. The vehicle can be parked next to the targeted location and monitored via a wireless link. The risk of compromise is minimal because the vehicle will appear unoccupied to anyone nearby and can remain in the same location for weeks.

A covert wireless surveillance system can be operated via a battery system in the vehicle and live video and audio can be transmitted back to RAPTOR. Additionally, the video and audio can be recorded at the command center (TBA) and then downloaded to removable media, such as a DVD disc or thumb drive for

entry into evidence. This system can also be configured so that the wireless camera can note and flag the times when movement is detected in the field of view of the camera (motion detector software built into RAPTOR). This intelligence is recorded digitally and thus saving the cost of the department using video tape and searching it's content for evidence. This will further producing a cost savings to the department in time and man power (only the flagged times are reviewed). The surveillance system can be simply be moved or driven to any location in the county of Richland. The cameras do not have to be reconfigured as they will always be connected via wireless Internet to the command center.

This system will offer a substantial cost savings the Richland County Sheriff's Department and the City of Columbia Police Department. Now one deputy/officer will be able to conduct surveillance from a safe location versus utilizing a team of deputies/officers. Additionally, the video feed can be routed via the Internet directly to Homicide, Major Crime or the Narcotics task force allowing investigators to monitor a location from their perspective units versus having to remain in the area of long periods of time.

The wireless camera surveillance system can also be utilized 24 hours a day, 7 days a week with little to no cost.

VIII. Acoustic Gunshot Detection Technology

Acoustic Gunshot Detection Technology is an acoustic gunfire location system that incorporates several elevated sensors with a computerized mapping system that accurately, and within seconds of the occurrence, pinpoints the location of the gunfire within a 25-foot area. Acoustic Gunshot Detection Technology is a "live" system, which immediately alerts the command center of gunshots, and automatically displays the location of its origin. The system was designed to give law enforcement the ability to locate gunfire and immediately dispatch units to a precise location.

Acoustic Gunshot Detection Technology is already in use by the Los Angeles County Sheriff's department. Acoustic Gunshot Detection Technology has contributed to decreases in gunfire ranging from 60% to 90% in areas in which the system has been deployed.

Acoustic Gunshot Detection Technology can now be deployed in a wireless configuration. The wireless configuration reduces the cost of the system, as

extensive wiring is not needed. Repositioning wireless Acoustic Gunshot Detection sensors requires no re-configuration of the server software.

The ability to quickly and easily move Acoustic Gunshot Detection sensors will allow law enforcement gang experts an unprecedented ability to redeploy this valuable tool.

IX. Creation of Mobile Command Vehicles

Both Richland County Sheriff's Department and the City of Columbia Police Departments currently have mobile command vehicles. These vehicles can be outfitted with MVCU (Mobile Video Command Units) which can give them total access to all cameras on the system. These units will have the same abilities of that of the Main command center.

MVCU can also be implemented in Fire department mobile command vehicles to assist in deployment of vital resources during times of natural disasters.

X. Implementation

Implementation of RAPTOR requires the following action:

Strategic planning with Project Unity USA officials, City and County officials, residents, the Sheriff's Department and the City of Columbia Police Department to determine safety needs and guidelines for implementation, Project Unity USA would request that the Sheriff's Department and the City of Columbia Police Department and council members to encourage community support through open discussion and town hall meetings, making the project a welcomed community-based effort.

Establishing legal guidelines with Richland County and City of Columbia court systems, for acceptable use and successful prosecution. In order to minimize privacy concerns and uphold public trust, video would be strictly limited to publicly viewable areas.

Dedicate financial resources to pay for deployment of cameras and installation of computer technology to monitor and record video. The cost would be limited to one time set-up and installation, continuing maintenance and system upgrades. Primarily we are raising funds through public and private donations.

Train and organize personnel and volunteers to effectively utilize advanced surveillance technology. The use of this technology will be integrated with existing deployment of Richland County Sheriff's Department and City of Columbia Police Department personnel as well as alternative concepts for staffing.

XI. Cost (Overview)

The cost of implementing CWSS-RAPTOR is based on the initial expense of: purchase and installation of approximately 24 cameras; set-up and installation of a private digital high speed network and infrastructure for remote viewing/recording. The cost would include the implantation of Acoustic Gunshot Detection Technology.

The initial cost for setting up the system is estimated \$650,000.00 and \$675,000.00 dollars. However, it is important to note that cost may vary based on vendor price, and special installation needs in the Richland County and City of Columbia area.

XII. Deployment

Project Unity USA along with input from Richland County Sheriff's Department and the City of Columbia Police department will deploy the cameras in strategic positions throughout Residential and Business areas, with an emphasis on school, critical facilities and high crime areas. The video monitors are equipped with split screen capability, and will scan or zoom on fixed locations when applicable. The viewer may monitor high crime areas to watch for criminal activity, or direct the positioning of cameras based on calls for service, or other public safety needs.

To minimize privacy concerns, cameras would be utilized according to approved guidelines. The surveillance video would be recorded on digital video disks (Blue Ray or DVD) and maintained through established evidence procedures. The *Camera Deployment Strategy* would be established and maintained according to public safety needs, and organized by existing Residential Districts.

Camera Deployment Strategy

City of Columbia

SOUTH REGION

Camera #1 Location: Green Street / Harden Street (N/W corner)
Coverage: This position will cover critical areas of Harden St.
Issues: Burglary from motor vehicles and fights.

WEST REGION

Camera #2 Location: Afton Court (near the theater)
Coverage: This position will cover the parking lots of this
strip mall area.
Issues: Large number of burglary from motor vehicles

Camera #3 Location: Columbiana Dr. near Texas Road House
Coverage: This position will cover the parking lots of several
restaurants in the area
Issues: Burglary from motor vehicles

NORTH REGION

Camera #4 Location: Intersection of Duke Ave and Monticello Rd
Coverage: Will cover areas problem areas of Duke Ave and
Monticello road.
Issues: Narcotic activity, robberies and vandalism

Camera #5 Location: Intersection of Colonial Dr. and Prescott Rd
Coverage: Cover stores on N Main & Prescott Rd.,
Shopping center and ATM
Issues: Corridor use for high speed chases,
Narcotic activity, prostitution, robberies and
vandalism.

METRO REGION

Camera #6 Location: N/W corner of Blanding St. & Barnwell St.
Coverage: View of Blanding St. & Barnwell St parking
Issues: Burglary from motor vehicle, aggravated assaults,
and stolen vehicles