

The Automatic License Plate Recognition (ALPR): Is it worth the cost?

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Abstract

This research focused on the uses of the Automatic License Plate Recognition (ALPR) system with the benefits that this technology may offer to an agency. The various agencies that used this system have a great tool in different units and/or areas of law enforcement such as Traffic, Intelligence and Criminal Investigation. There is also a look at some shortcomings and limitations of this system, one of which is the cost. With many agencies having a tight budget, the question is asked, "Can we afford this system?" This research was conducted to determine if the benefits outweigh the cost.

Introduction

Do you remember the television dramas where police officers would call in to the station to have someone check a license number for "wants and warrants?" Those days are behind us. New technology has significantly improved the efficiency and accuracy of this process. This paper will address the future of technology in Law Enforcement.

What is the Automatic License Plate Recognition (ALPR) System? Simply put, this system consists of cameras, software, a laptop computer and a server, the Back Office Software System (BOSS).

The ALPR captures an image of a license plate and stores it in a server. The captured image will have the license plate, date and time, and the location. The information is stored in the BOSS for up to 60-days. The information is automatically deleted unless it was tagged to retain for an extended period.

The ALPR System has many applications such as Amber/Silver Alerts, warrants, stolen vehicle detection, Crime Investigation/Analysis, and many others (Harper, 2012).

"The Automatic License Plate Recognition System is an extremely useful tool for Law Enforcement. One very important benefit of the ALPR System is officer safety. In addition to identifying a stolen vehicle, the ALPR System can be used to locate wanted fugitives and to track the movement of suspects in active investigations. The ALPR System is a great asset when dealing with manpower shortages and budget cuts." (Tammy Templeton, Escambia County Sheriff's Office Criminal Intelligence Technician, 2012).

There are real examples in utilizing the ALPR in criminal investigations. In July 2011, a death investigation was conducted where a deceased female's body was found in her condominium on Pensacola Beach and it was ruled a homicide. During the investigation, the victim's boyfriend was a prime suspect. The male suspect stated that he was out-of-town during the time of death. The Escambia County Sheriff's Office has access to two mobile units and a fixed ALPR system, one of which is located on Pensacola Beach. The suspect's license plate was read by the ALPR system and the

investigator was able to collect the date, time and location. With this vital information, the investigator was able to use the information to build a case against the suspect. The suspect was arrested and charged with the homicide and to date, the suspect is awaiting trial.

Literature Review

The first Automatic Number Plate Recognition (ANPR), currently known as the Automatic License Plate Recognition (ALRP), system was installed in London in 1979 at the entrance to the Dartford Tunnel, which is east of London. Its purpose was to detect stolen vehicles and other vehicles of interest and notify the police. The first ALPR system was far less sophisticated and far less accurate than the ALPR systems of today, but it's worth noting that the people of London are more accustomed to the appearance of ALPR systems and camera systems throughout the city. Nothing significant came of this first experiment until much later (Transport for London, 2007).

Today an increasing number of entities, including law enforcement agencies, are looking to advanced electronic technology to meet their needs. For instance, many Department of Transportation (DOT) agencies in the United States and abroad have used electronic technology in toll lanes, while law enforcement agencies have used plate recognition cameras to enforce the law (Apuzzo, 2003).

Automatic License Plate Recognition (ALPR) programs are one of law enforcement officers' newest weapons against crime. Using car-mounted infrared cameras linked to Optical Character Recognition (OCR) software, these systems scan the license plates of cars that pass on the street. The software will automatically check license numbers against databases of stolen vehicles, outstanding warrants, etc (Miller, 2010).

The Garden Grove, CA Police Department's deployment of the Automatic License Plate Recognition (ALPR) technology has been in existence since August 2010. The system this agency use is a dual-camera, light bar-mounted system manufactured by the Federal Signal Corporation. The agency describes this technology as easy to use and capable of data sharing with other law enforcement agencies. This technology is available for officers and would be proactive for gathering intelligence and a creating a safer community (Internet Press Release, 2003).

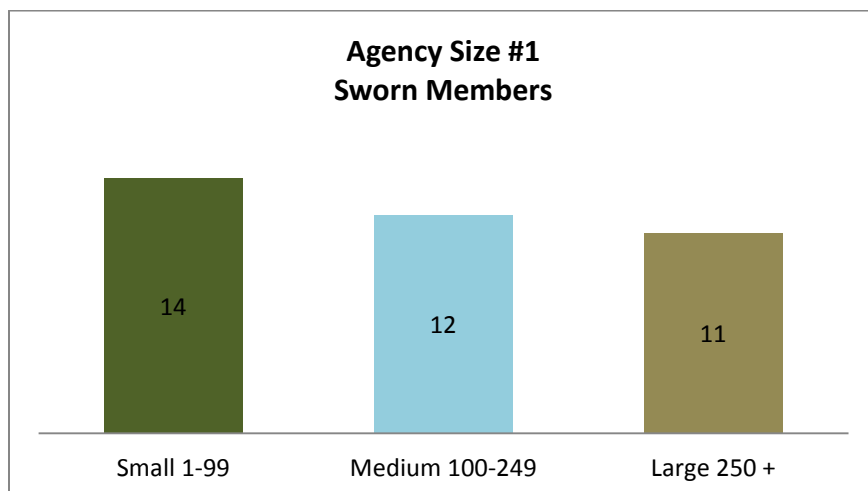
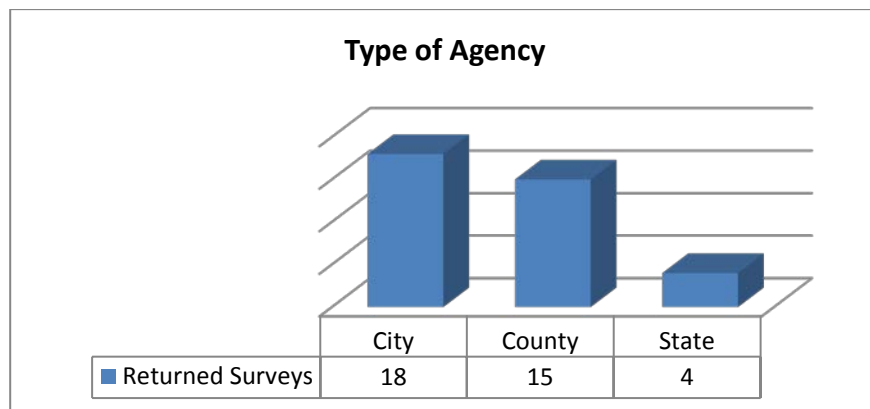
When officers receive a warning signal for a license match, they can approach the suspect vehicle with knowledge of any prior criminal activities. In the words of the old adage, forewarned is forearmed.

Method

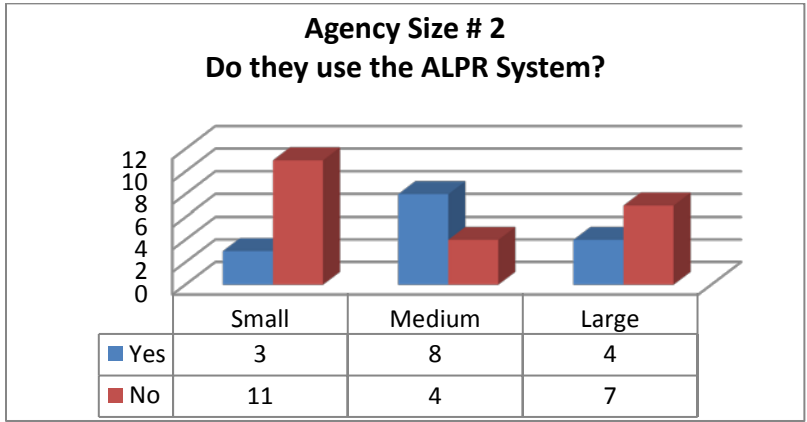
The objective of this research is to determine the manner in which Automatic License Plate Recognition (ALPR) is being utilized by Law Enforcement Agencies and to determine the number of agencies that do not use this system. The data was gathered through surveys that were sent out to one hundred city, county and in state Agencies throughout the State of Florida. The 17-question survey, which asked for the respondents name, title and agency, was to obtain information in order to analyze the costs, benefits and issues of the use of an ALPR System.

Results

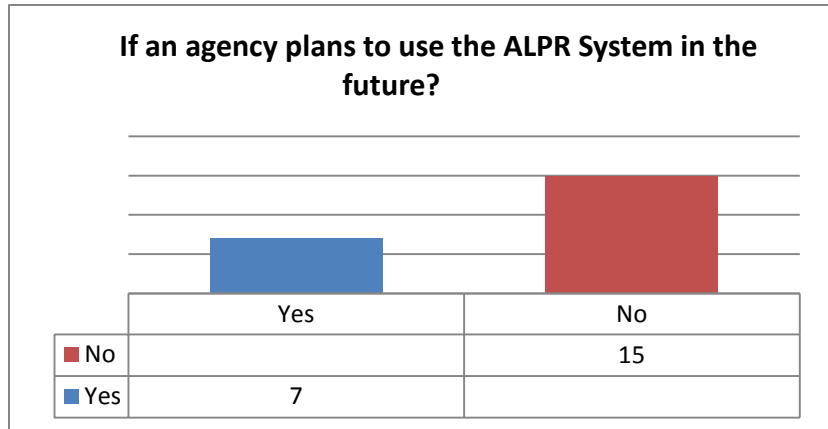
The survey created was sent out to one hundred law enforcement agencies in the State of Florida. Thirty-seven responses were completed and returned with the majority of the questions answered. This translates into thirty-seven percent response rate and this will be the data analyzed for this project.



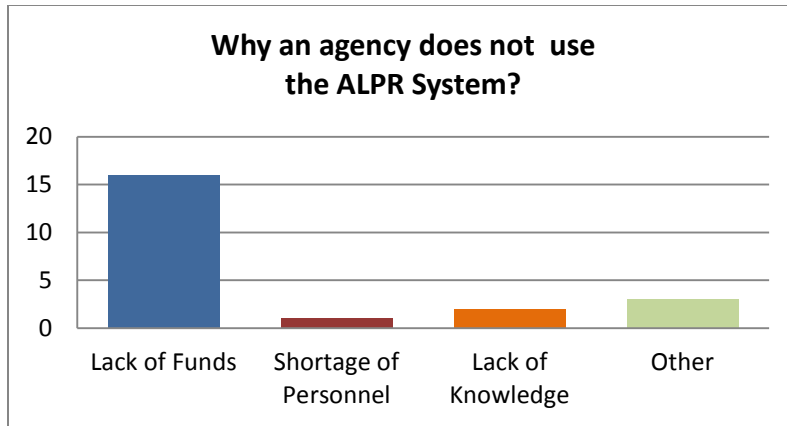
I requested the agency size and if they utilize an ALPR System. The total responses were 15 “Yes” and 22 “No”.



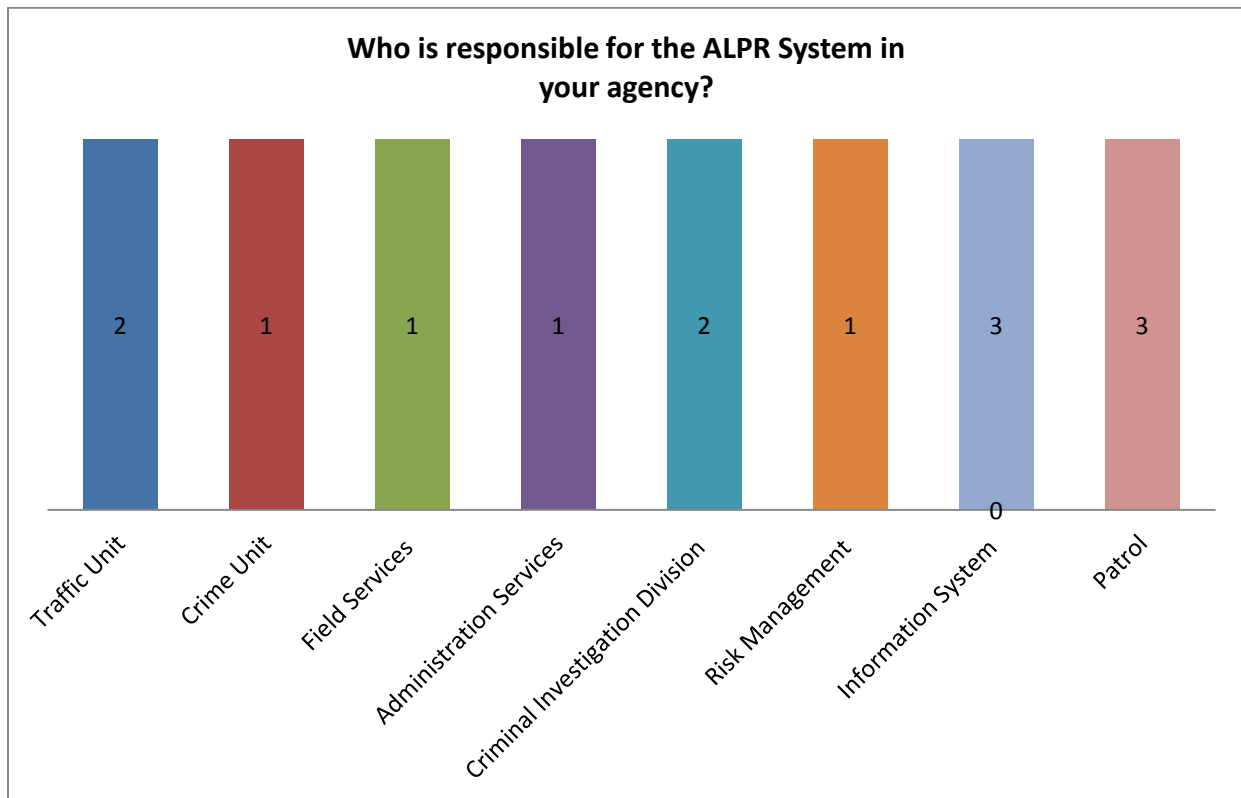
Medium agencies were the biggest users of ALPR System as opposed to the small and larger agencies.

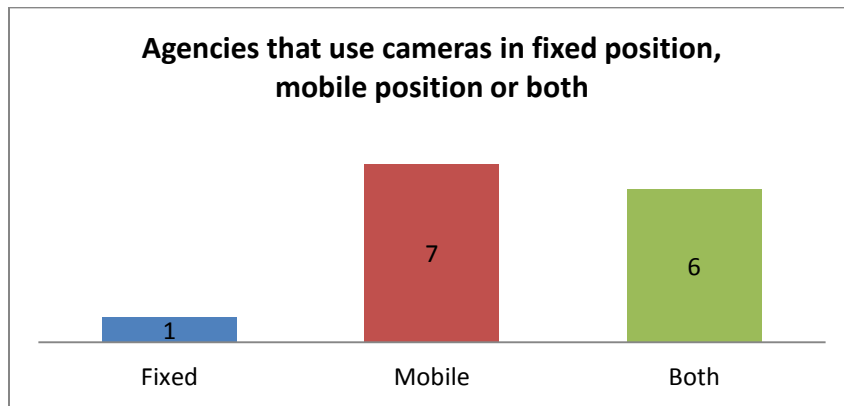
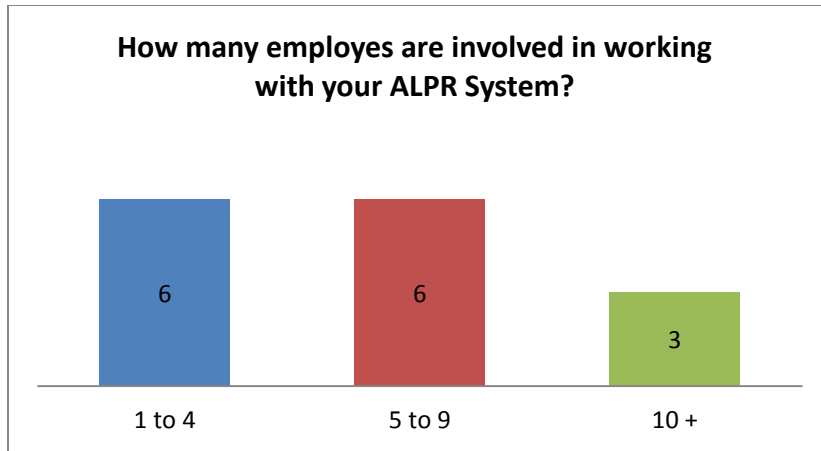


Agencies who are not using an ALPR system advised that they have no plans of using the system in the future.

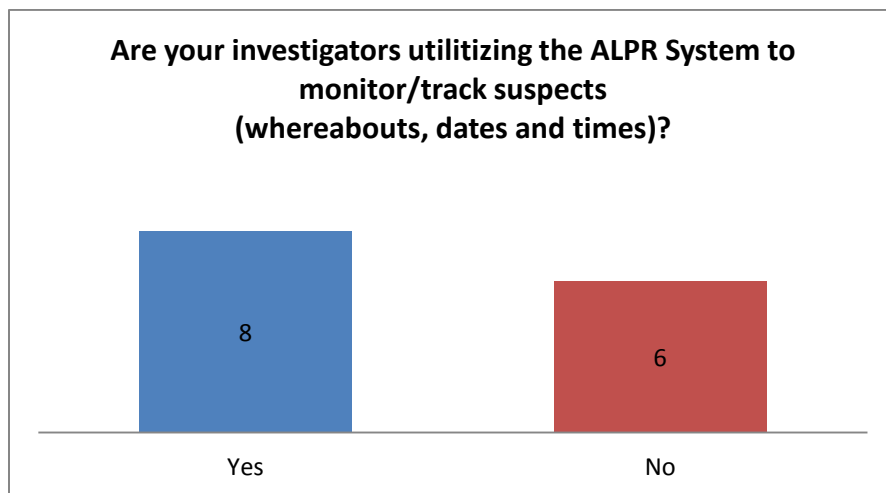


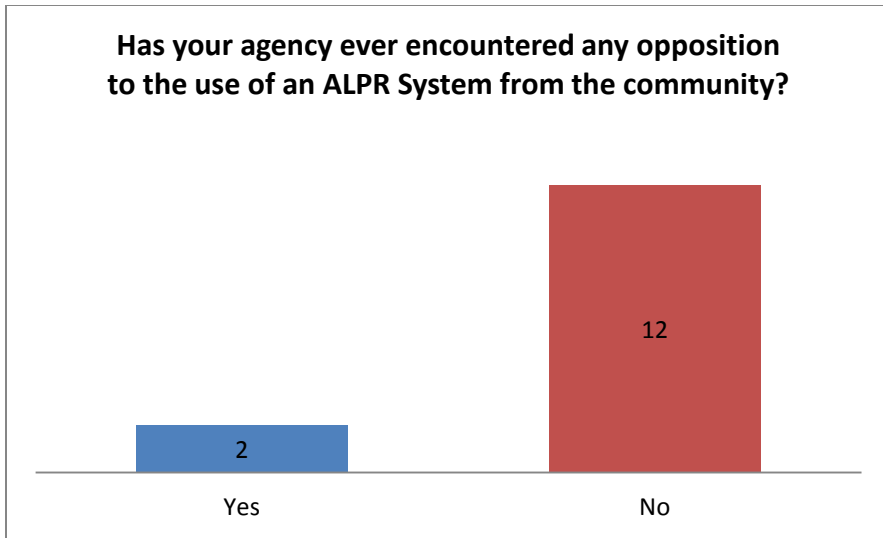
Lack of Funds was the major factor for agencies not utilizing the ALPR System.



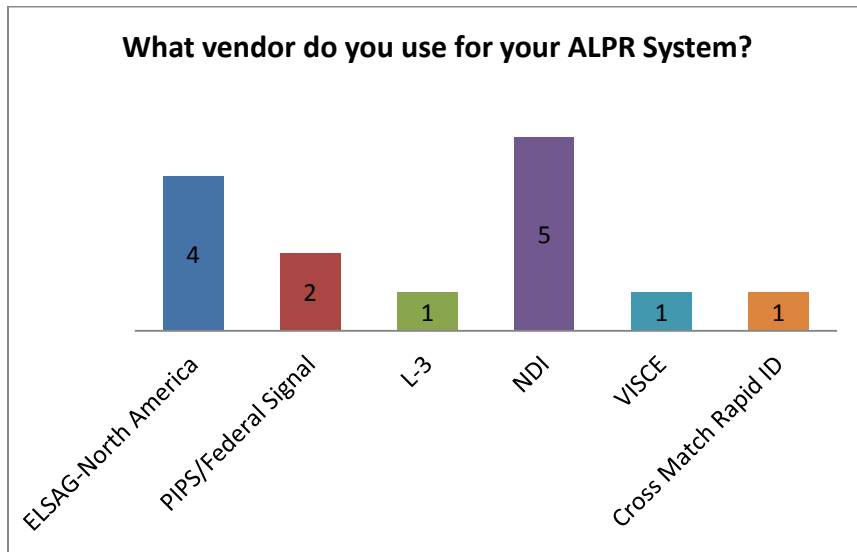


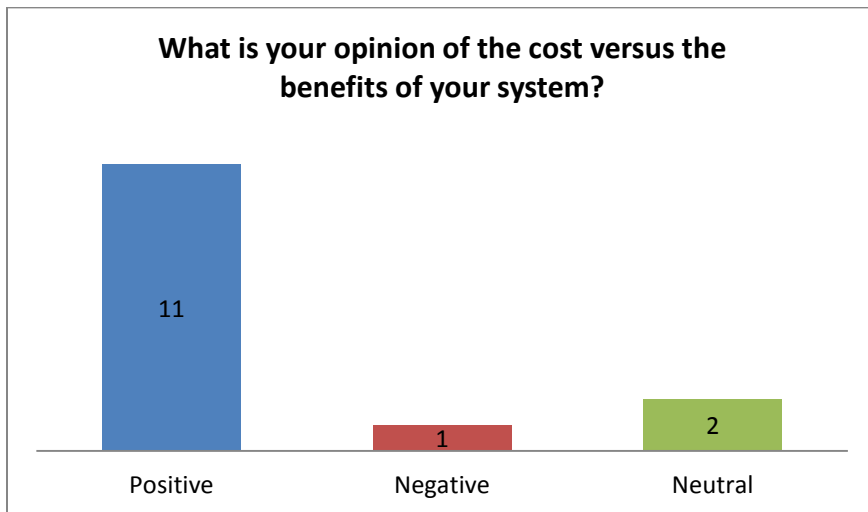
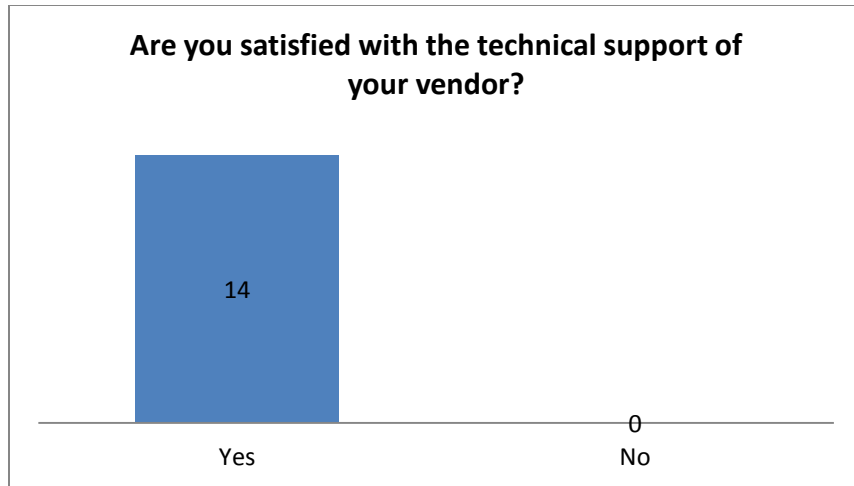
The mobile position and the system that was both mobile and fixed were overwhelmingly chosen to be used by agencies.





Although the majority of the respondents selected no, when asked about community opposition, there have been some questions as to how the system is used and the information it gathers is disseminated.





Discussion

Progressive agencies are considering ways to better serve the community and to be cost efficient during budget cuts. How many times have we heard the phrase, “More bang for your bucks?” This survey shows that agencies who utilize the ALPR system believe that the benefits of the system outweigh the cost.

The ALPR is a work force multiplier because it improves officer safety and agency efficiency. The system will not only benefit traffic safety, but expand in the area of Criminal investigation (i.e. stolen vehicle recovery, missing persons, wanted fugitives and suspect surveillance).

What are the downsides of this system? First, organizations such as the American Civil Liberties Union (ACLU) worry that too much “Big Brother” is keeping tabs on law abiding citizens. The data collected from this system has no shelf life; therefore, a

compromised of 60-day data retention is recommended. Next, there are many vendors for ALPR products. These systems are not integrated so you must contact each agency individually to retrieve the wanted information. Finally, the data collected such as the vehicle description, the tag information, the date, the time and the location is public information upon their request. It is unclear at this time how to handle such request or what challenges it will cause. Technology of Law Enforcement will change and evolve, as will policies and procedures. We should always strive to strengthen our agencies and the community.

Recommendation

In recognizing that each agency has a challenged budget, the ideal of the ALPR System being utilized is worth researching. The start-up costs of approximately \$30,000.00 (Pole Mount), \$20,000.00 - \$25,000.00 (Mobile Unit), \$75,000.00 (Server/Hardware/Software) and \$3,000.00 (Processor/BOSS).

Another possibility to countering the cost of the ALPR System is to apply for grants. There are different types of grants:

- Block Grants
- Discretionary Grants
- Federal Grant Money
- Department of Homeland Security
- Corporations or Foundation

Almost all funding opportunities today can be found online at the following websites:

www.grants.gov

www.cops.usdoj.gov

www.policeone.com/grants

www.dhs.gov/xopnbiz/grants

www.ojp.usdoj.gov/funding/solicitations.htm

www.ojp.usdoj.gov/BJA/funding/index.aspl

Lieutenant Carl Jones began serving with the Escambia County Sheriff's Office in 1991. He is currently assigned to the Criminal Investigations Division as the Assistant Officer in Charge of Major Crimes.

Resources

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