

**Agency: Commerce, Community and Economic Development****Grants to Municipalities (AS 37.05.315)****Grant Recipient: Anchorage****Federal Tax ID: 92-0059987****Project Title:****Project Type: Information Systems and Technology**

# Anchorage - License Plate Scanners purchase and installation

**State Funding Requested: \$6,300****House District: Anchorage Areawide (16-32)**

One-Time Need

**Brief Project Description:**

Purchase and install license plate scanning technology on department vehicles. Train staff and purchase incidentals for proper operation of scanners and in car video display technology.

**Funding Plan:**

Total Project Cost:	\$6,300
Funding Already Secured:	(\$0)
FY2012 State Funding Request:	(\$6,300)
Project Deficit:	\$0

*Funding Details:**FY2012 Capital Budget request***Detailed Project Description and Justification:**

Purchase two license plate scanners for department vehicles. These scanners automatically scan passing vehicles alerting officers to stolen vehicles or vehicles of interest related to criminal activity.

License Plate Capture Cameras used with PlateScan++

PlateScan PlateScan++ LPR Software works best with True License Plate Capture Cameras, but unlike other systems it can perform in many applications using even a Color CCTV Camera. Platescan even develops their own License Plate capture camera providing superior Resolution, dual zoom Camera operation (high contrast camera and overview camera) and are ideal for Mobile applications thanks to their compact Design. Check out the PlateScan PSC-R7 Dual License Plate Capture Camera.

LPR License Plate Recognition Analytic Video Engine of PlateScan

PlateScan++ is a Highly developed License Plate Recognition, ALPR or LPR Software based on Neural Network Technology as opposed to the common Fuzzy Logic technology used by most LPR System producers. Neural network Technology delivers a superior Analysis of Data, actually learns and can provide functionality greater than fuzzy logic based LPR systems. One example is that Fuzzy logic typically lacks the ability to deliver a single result and often provides multiple varying results which make some LPR applications impossible. PlateScan LPR Systems do not suffer from this drawback and utilizes this strength to deliver additional evidence like state of origin for a plate or specialized characters. Platescan states "ALPR is only the beginning!"

**Easy Operation and Data Management**

Platescan++ offers in addition to its feature rich GUI interface for operating the LPR License Plate Recognition System (aka Numeric Plate Recognition System or NPR System) delivers PlateScan Connect Back Office providing complete GPS-based data analysis, including mapping, pattern analysis, geofencing, as well as partial plate searching, common plate analysis (with plate context or without), multi-date and day-of week parsing. In fact, there is little that it cannot do.

Read more: <http://www.a1securitycameras.com/platescan.html#ixzz1Eol2bGE8>

Estimated Cost for 2 systems: 6,300.00

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**Project Timeline:**

Project will be completed within 12 months of funding recieved in FY2012.

**Entity Responsible for the Ongoing Operation and Maintenance of this Project:**

Anchorage Police Department

**Grant Recipient Contact Information:**

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Has this project been through a public review process at the local level and is it a community priority?  Yes  No



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## Automatic license plate reader helps Jersey police fight crime

Published 22 March 2011

**The Evesham, New Jersey police department recently installed a high tech automatic license plate reader on one of its squad cars; the license plate reader, attached to the outside of a police car, relies on an infrared camera to photograph license plates and automatically runs it through several databases; the searches are designed to alert officers if the plates are linked to criminals, unregistered vehicles, or unpaid fines; in one month, Evesham police scanned 69,000 plates, returning 1,400 alerts of interest including several unregistered vehicles that led to large narcotics busts; officers see this technology as way to increase efficiency and do more with less given budget constraints**

Within hours of installing a high tech automatic license plate reader in a squad car, Evesham, New Jersey police officers made a major arrest thanks to the new technology.

Early on the morning of 23 February, a police officer pulled over an armed man accused of breaking into six houses. Without the aid of the automatic license plate reader, the officer approaching the car would not have known that the suspect was marked in a national criminal database as a wanted, armed, and possibly suicidal man.

According to Lieutenant Walt Miller, "There was a loaded gun sitting on the passenger seat, very accessible to the driver. If that was just a regular traffic stop, maybe the officer wouldn't have seen the gun. Maybe (the driver) goes through with (suicide) having more time to think about it."

The license plate reader, attached to the outside of a police car, relies on an infrared camera to photograph license plates and automatically runs it through several databases. The searches are designed to alert officers if the plates are linked to criminals, unregistered vehicles, or unpaid fines.

Depending on the severity of the crime or violation, the system will issue a low, medium, or high risk alert if it finds a match. Low risk alerts include unpaid traffic fines or improper vehicle registration, while high risk alerts include suspects wanted for murder or stolen cars.

In the month that the Evesham police have used the system, it has scanned 69,000 plates returning 1,400 alerts of interest including several unregistered vehicles that eventually led to large narcotics busts.

To ease concerns over privacy, Lieutenant Miller says that the technology has established protocols to guarantee privacy.

The device must be used on a public road while the car is in plain sight, and when the system finds a match an officer must manually verify the search on a laptop or call it in to a dispatcher.

Sergeant Kevin Shoppas, of the Burlington Township police which have also installed the license plate readers, says, "It's not Big Brother watching you. It's no different than an officer riding through town and running license plates. It's just faster."

Lieutenant Miller echoed this statement adding, "License plates are there for public viewing. They're not protected and they're required to be affixed to all vehicles."

So far Evesham has only installed one of the devices as it costs \$20,000 per license plate reader. But, as local governments and states continue to struggle with tight budgets, many officers see this new technology as a way to increase capabilities, despite its cost.

"In a time when officers are being laid off, technology is being implemented in ways law enforcement never envisioned in the past," Sergeant Shoppas said. "It does have a significant upfront cost associated with it, but in the long run it's a tremendous tool that really increases productivity."

"We have to get more done with less, with the economic climate being what it is. The technology allows us to accomplish that," Miller added.

In the past, without the system, officers would manually run license plates against national databases by entering them into remotely connected laptops or calling a dispatcher.

But, the new system "can run thousands of license plates in a short amount of time, even if you're driving 60 mph and the other car is going 60 mph," Miller said.

"It exceeds human capabilities (to manually run each plate) by quite a bit, even if you had multiple officers working in the car."

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Topics: Law Enforcement

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## **In-car Digital Video and License Plate Recognition System for patrol vehicles**

With all the technological advances of today, few have impacted law enforcement as significantly as the use of in-car cameras. The single greatest value of the in-car camera is the positive impact that it has on officer safety. The Supreme Court has referred to cameras as “the Silent Witness.”

In-car camera systems are a vital tool for gathering intelligence and documenting events. With recent advances in wireless video technology, images and video files are transmitted electronically to a central location where they can be compared with state records, suspect files, or terrorist watch lists.

Automated license plate recognition systems, or License Plate Readers (LPR) systems as they are commonly known, play an increasingly important role in public safety by enhancing productivity, effectiveness, and officer safety. LPR systems are able to recognize, read, and compare motor vehicle license plates against various "hot lists" much more efficiently than officers manually scanning and making comparisons while on patrol.

LPR systems can observe and record thousands of plates an hour in various lighting and weather conditions. LPR systems consist of high-speed cameras and sophisticated computer algorithms capable of converting the images of license plates into computer-readable data. The technology automatically compares license plates against key databases (e.g., stolen and wanted vehicles), and records the date, time, and location at which the image was captured. The technology has proven particularly effective for law enforcement in a variety of operational settings.

The in-car camera coupled with the License Plate Reader has become another valued tool in an officer's arsenal that confirms and assures the high degree of professionalism they demonstrate daily in the performance of their duties.

The Anchorage Police Department (APD) is looking at providing in-car digital video cameras with License Plate Reader integration for all Patrol, Traffic and Warrant Officers. APD has a vehicle fleet of approximately of 343 patrol vehicles capable of these systems.

The project includes:

- Purchase and Installation of in-car digital video cameras with LPR integration
- Purchase and Installation of wireless network and work station/server in patrol vehicles
- Training on the in-car video cameras and LPR systems
- Installation/verification of wireless “Hot Spots”
- Testing of units in patrol vehicles
- Testing of wireless network for automatic upload of video files to a secure network and storage system

- Installation/Implementation of a Digital Storage System capable of holding videos according to APD's retention policy.
- Implementation of a secure wireless network for automatic upload of video:
  - Automatic upload begins when the car is within range of the hotspot. It continues until all files are transferred or the car drives out of range.

## **System Description**

The in-car digital video system with integrated LPR consists of a digital video recorder, windshield mounted miniature color cameras with zoom capability, a rear facing camera, color LCD monitor with audio, a bi-directional digital spread spectrum wireless microphone system, and a microphone mounted within the law enforcement vehicle capable of providing a clear audio and video record of traffic stops, pursuits, sobriety tests, server to house the database and video files and wireless network for upload to station.

**DVR:** The digital video recorder (DVR) shall use digital media that can withstand up to 50 Gs while recording for maximum reliability. All operator controls shall be mounted on the front panel. The DVR shall allow the simultaneous recording of two video sources and three audio sources plus multiple sources of metadata. The DVR shall include a programmable pre-event recording in MPEG-4 mode allowing it to capture images up to 90 seconds prior to the activation of the RECORD mode.

**Cameras:** The windshield mounted miniature color cameras shall utilize a full color CCD for maximum night-time performance. It shall be fitted with an automatic zoom lens. The camera shall be extremely compact so as not to obstruct driver's view through windshield.

**Monitor:** A compact color LCD monitor console shall be provided with a minimum screen size of 3.5 inches. The monitor console shall include a built-in speaker and shall have backlit operational controls which mimic those on the DVR so it can be secured in remote locations.

**Microphone:** The officer worn wireless microphone must be capable of being automatically activated whenever the DVR is triggered into the RECORD mode, and deactivated whenever the DVR is put into the STOP mode. The automatic wireless microphone system shall use a rechargeable battery and shall be capable of being recharged within the vehicle or with a separate charger located at the post or precinct.

**Network:** Digital video files shall be transferred from the DVR by any of the following methods:

- a. Removal of the digital media
- b. Through the DVR's Ethernet connection
- c. Automatically via the DVR's internal 802.11 (a, b/g) wireless LAN card.

**Server:** The Digital Video Server must be able to automatically and wirelessly send software updates to vehicles/DVRs without human intervention.

### **Digital Evidence Management**

**The Digital Evidence Management solution:** shall consist of a video transfer system, a management, storage and distribution server and a backup and output system. It shall be capable of automatically or manually uploading video from the in-car systems and managing access and distribution through a stand alone workstation.

**Chain of Custody:** The Digital Evidence Management solution shall be capable of automatically organizing and managing files based on evidence state and category and managing their lifecycle accordingly. The Digital Evidence Management solution shall maintain video evidence integrity and security in all operations. Video evidence is secure and is stored redundantly using a dual media architecture with at least one media being a write once media such as DVD. Original video files are immutable (they are never changed) and are maintained securely. The system shall track video throughout its lifetime. All activity is logged (viewing, outputting, commenting, etc.) and the system can output a simple Chain of Custody report documenting the files history.

**Uploading:** The Digital Evidence Management solution shall support the automatic uploading of video and metadata utilizing wireless 802.11 (a/g/n) and uses an intelligent, load balanced data transfer system. The wireless transfer of the data shall be automatic and not require manual intervention. It commences as the car enters a designated access zone (hot spot) and automatically transfers, confirms receipt of, and clears the DVR's memory appropriately.

**System Video Storage Management:** The Digital Evidence Management solution architecture shall utilize RAID 5, on-line storage (for instant access) and "write once" DVD media for redundancy, security, long-term archiving and disaster recovery.

**Tape Backup system:** The Tape Backup system capable of backing up 60 TB in a single backup process for off site storage and retrieval of files.

All activity must be tracked and logged. A **Chain of Custody** document (not a computer log file) containing the agency logo and an easy-to-follow categorized history of activity shall be automatically generated. This document is outputted as an unalterable, encrypted PDF file.

The Digital Evidence Management solution shall be available with an optional automated archiving/DVD backup system. Disk writing and labeling occurs without manual intervention. The system requires only the periodic loading a stack of DVDs into a robot.

The solution shall support a definable review period (e.g. 1 year) wherein all video is maintained on-line and available for potential evidence review. Video is easily output to DVD for longer term retention.

All video files shall be searchable and traceable even if not designated as evidence and/or has rolled from the RAID system. The metadata shall remain on the server after the video has rolled off. Thus providing an easily searchable database of the archived files facilitating their restoration and utilization.

All archived video shall be capable of being reloaded back into the system through a simple automated process. The system automatically identifies the appropriate archived DVD and notifies the administrator for video restoration.

**User Interactions & Capabilities:** All user interactions shall utilize a simple web-based interface at the stand alone, Windows based PC. The application requires no special skills other than basic web-like navigation. The solution provides simple key data based search capabilities for easy location of video files. Data includes: officer's name, car Identifier, date/time, and incident classification.

**Project Budget:**

Qty	Item	Price	Total
343	in-car digital video cameras with LPR integration	6,500.00	2,229,500.00
343	additional installation components	800.00	274,400.00
1	Digital Storage System (Software) chain of custody	120,000.00	120,000.00
2	Video Evidence Server's	12,000.00	24,000.00
1	Video Evidence Server Storage (60 TB SAN) Real-time	225,000.00	225,000.00
1	Video Evidence Server Storage (60 TB SAN) Near Real-time	100,000.00	100,000.00
1	Tape Backup system w/ software	25,000.00	25,000.00
1	Network infrastructure (wireless)	65,000.00	65,000.00
			<b>3,062,900.00</b>