



**Operation of License Plate Readers for
Law Enforcement Agencies Accessing the
Vermont Justice Information Sharing System (VJISS)**

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Introduction

In 2008, there were over 550 stolen vehicles and over 2400 registered sex offenders that at any given time may have operated motor vehicles on our public highways. There were over 1,400 persons ticketed for operating motor vehicles without a driver's license and more than 2,400 tickets issued for persons operating unregistered vehicles on our public highways in Vermont. It is well known that motor vehicles are the major mode of conveyance in the state and that at any given time persons involved in criminal conduct operate motor vehicles on our public highways putting the traveling public at risk. These vehicles and drivers only encounter law enforcement when observed violating a traffic law or are involved in a traffic crash. The lives of unsuspecting, law abiding drivers are continually at risk when these criminals get behind the wheel.

In order to remove unregistered vehicles, unlicensed drivers, wanted persons and vehicles from our roadways, the Vermont Department of Public Safety (DPS) and the Vermont Justice Information Sharing System (VJISS) is partnering with its local, county, state and federal counterparts to deploy a first in the nation statewide License Plate Reader (LPR) data sharing system.

A LPR can recognize over 1,000 license plates an hour on vehicles as they pass either a portable or stationary unit at vehicle speeds up to 70 miles per hour. The information downloaded into the plate reader from servers at Vermont Division of Criminal Justice Services (CJS) allows a law enforcement officer performing a special detail or routine patrol to detect a motor vehicle driven by an unlicensed and/or revoked operator or wanted person, stolen or wanted vehicles. This occurs even if the driver of the vehicle has not committed a traffic offense or been involved in a traffic accident. Based on a CJS hit, a police officer can intervene before this driver is involved in a traffic crash or commits another violation that could result in serious injury of an innocent victim.

Not only will license plate readers be utilized for traffic enforcement, they will also be an essential tool when an AMBER Alert is issued. Plate information related to the AMBER Alert is sent statewide and entered into the license plate readers.

Instantaneously, the officer will be alerted if the license plate reader has detected the plate. The license plate reader will then provide date, time and location of the vehicle to the officer. If not detected, the license plate reader provides that extra set of eyes when observing traffic during the AMBER Alert.

The LPR system also has the capability for the Vermont Criminal Information Center (VCIC) to build in geo-fences around specific geographic areas per court orders. Geo fences can be electronically built around day cares, schools or other geographical areas that the courts have persons on the Sex Offender Registry (SOR) or other persons so ordered by the courts from being within a certain distance of specific place. A vehicle utilizing a LPR system would have to be in the area of the geo-fence when the offender's vehicle drove through the protected area.

Initially, the St. Albans Police Department and the St. Albans office of the Vermont State Police received license plate readers. The second phase of this project involves the deployment of and access to the VJISS – LPR system for other state, local and county law enforcement partners. Additional phases may include allowing LPRs purchased by the Vermont Department of Probation and Parole access to the VJISS- LPR system. This technology could be used to effectively monitor their probation population.

CJS and or the Vermont FUSION Center will monitor the usage of the plate readers by working with the agencies that receive the plate readers. CJS and the Vermont FUSION Center envisions a monthly or quarterly reporting protocol developed by CJS staff that the law enforcement agency completes and submits to CJS or the Vermont FUSION Center. The success of this project will be measured by the increased detection of unlicensed and/or revoked registrations or licenses and other motor vehicle related crimes that impact the safety of Vermont's citizens on the State roadways.

Introduction to License Plate Reader Technology

The concept of using cameras as a method to record a vehicle passing a specific location and then identifying the owner/operator has been in development since the 1970's. Early technology could capture a picture of the license plate and vehicle with the date and time. Upon retrieving the plate information after searching hours

of captured images it could then be manually searched against a database. This technology was time consuming, expensive and limited by lighting and weather conditions.¹

License plate reader technology developed along with the use of videotape and camcorders. The analog videotape had to be converted from analog images to digital images and stored on a computer hard disk. The resulting digital images were further processed to locate and extract the license plate and time stamp information through specialized software that utilized character recognition techniques. This technology while better than earlier methods still had many drawbacks including high costs that limited its general use by state and local governments.²

The latest license plate reader technology has incorporated digital photography, which eliminates the conversion steps and reduces the amount of computer file storage needed to support an effective system. Digital photography also decreased the size of the camera hardware required and utilizes infrared lighting to address lighting and weather conditions. This has also reduced the overall costs for an effective system thus making the technology obtainable at the local, county and state levels of government.

A license plate number does not identify a specific person; rather it simply identifies a specific vehicle. Although a license plate number may be linked or otherwise associated with an identifiable person, this potential is only realized through a distinct, separate step (e.g., an inquiry to a Secretary of State or Department of Motor Vehicles data system). Absent this extra step, the license plate number and the date, time, and location data attached to it are not personally identifying. Thus, even though LPR systems automate the collection of license plate numbers, it is the investigative process that identifies individuals.

¹ Transportation Research Board, 2002. "Effects of Ambient Light, Camcorders, and Automated License Plate Reader Settings on Plate Transcription Rates".

² Transportation Research Board, 2002. "Reduction of Video License Plate Data".

Law enforcement agencies are charged with protecting the public as well as investigating crimes and criminal conduct. LPR systems serve four specific public safety goals. Specifically, LPR data can be used:

- (a) in various forms of crime analysis;
- (b) to alert law enforcement officials that a license plate number on a hot list is in proximity to a LPR camera;
- (c) to monitor the movements of vehicles operated by individuals subject to preexisting geographical limitations on their travel; and
- (d) to identify instances of civil, regulatory or criminal conduct that might have previously gone undetected without the aid of the LPR system.

Hot lists may be compiled by the local law enforcement agency utilizing the LPR system or by other state or federal government agencies. The purpose of these lists is to signal a law enforcement official that a vehicle displaying a license plate number that is included on a hot list is near a LPR camera.

Active LPR data is that information which is provided to an officer in real-time. It takes the form of alerts that a license plate number contained on a hot list is near a LPR unit, whether fixed or mobile. Historical LPR data is essentially a database containing the dates, times, and locations of individually identifiable motor vehicles; it is considered passive as it is essentially LPR data that is stored for future investigative or analytical use.³

A. Definitions

License Plate Reading (LPR) Technology uses specialized digital cameras and computers to quickly capture large numbers of photographs of license plates, convert them to text and compare them quickly to a large list of plates of interest. LPR systems can identify a target plate within seconds of contact with it, allowing law enforcement to identify target vehicles that might otherwise be overlooked. The technology is available in mobile systems mounted on police

³ International Association of Chiefs of Police, 2009 "Privacy Impact assessment report for the utilization of license plate readers"

cars and fixed camera systems that can be mounted on poles or on the roadside. A range of camera systems are available, most capable of reading license plates day and night and in a variety of weather conditions. The systems operate fast enough to capture all of the license plates they come in contact with so that the number of license plates that can be read is limited only by the number of vehicles passing the cameras. LPR systems typically include infrared strobe and camera systems that can take high speed, high contrast images that allow the plate to be read at closing speeds of 150 miles per hour.

Mobile license plate reading systems are designed to allow officers to patrol at normal speeds while the system reads every license plate they come in contact with and alerts them if there is a match to a "hot list." Because of the speed of the reader systems, the volumes of plates being read and the fact that an alarm must occur within seconds to be useful, LPR systems use a large list of target plates stored locally in a "hot list" rather than relying on real-time communications with State or Federal data sources. The list is typically transferred daily and can be updated by the operator or by a central station if wireless communications are not available in the vehicle. The hot list can contain any set of plate data, from terrorist watch lists, to stolen vehicles, to parking scofflaws.

When a target plate is located, the officer in the vehicle is notified with a message that is specific to the plate, that is, every plate in the database can have a unique, detailed alert message.

Lists can be updated automatically or manually, meaning that the officer can enter a plate into the system and be alerted when the plate is located. The system can also alert the driver if the new addition was recently seen. Integrated GPS technology allows the operator to locate the last contact with the vehicle.

The use of LPR technology in law enforcement has included a variety of applications; homeland security, electronic surveillance, suspect interdiction, stolen property recovery, facility management and a number of other policing requirements. The identification of stolen vehicles, stolen license plates, and

wanted and missing persons has been the primary focus of most early implementations.

LPR systems also record every license plate they come in contact with. Some systems record the location, date and time of each license plate read. This intelligence resource is available as a law enforcement tool, allowing the officer to identify the last known contact with a vehicle and also to report the list of vehicles located in a specific area at a given time range.

B. Hardware

Most LPR systems include a set of cameras, most infrared illuminated. Some include "progressive" cameras that capture images at a variety of computer controlled lighting conditions by actively managing infrared strobes integrated into the cameras. These cameras are typically mounted outside of the vehicle as auto glass can interfere with their operation. The cameras are mounted either permanently on the rooftop, magnetically in a transportable configuration, integrated into the light bar on a marked vehicle, or within a covert housing.

Some implementations of LPR use a dedicated computer for the high-intensity camera and image management; others use the in-car PC. In either case, the cameras connect to a computer and a display that can be the same mobile data terminal or in-car PC that the operator is using for computer aided dispatch or other functions. LPR systems typically only require the operator to have one computer display in the vehicle. The processor in an LPR system can include a specialized computer that manages the cameras and allows the system to run at very high speeds regardless of the speed or power of the existing in-car PC/Laptop.

C. Software

LPR software typically has three components – the character translation component, the hot list management component and the user interface. Other additional software components manage GPS information, plate read, alarm history, and reporting features. The component of primary interest is the user interface, which must manage the activity and allow the user to quickly identify

an alarm and the target vehicle. In most cases, most of the screen space on the user interface is reserved for the target vehicle/plate photo, as that is the primary means for alarm vehicle identification. The interface also allows the user to enter additional target plates, check on the information in the hot list and deal with visual and audible alarm queues.

Vermont Justice Information Sharing System (VJISS) Guidelines

Access to the Dissemination of Data

A. Active and Historical LPR Data

Definition

Active LPR data is that information which is provided to an officer in real-time. It takes the form of alerts that a license plate number contained on a hot list is near a LPR unit, whether fixed or mobile. The LPR data recorded during an officer's shift and accessible from within the squad car can also be considered active data as it has not been downloaded into a historic database of LPR data.

Historical LPR data is essentially a database containing the dates, times, and locations of individually identifiable motor vehicles; it is considered passive as it is essentially LPR data that is stored for future use.⁴

VJISS Policy

Criminal Justice Services (CJS) will maintain a "BOSS" server (Back Office System Server) accessible to Vermont Justice Partners (VJP) for the purpose of uploading to, and retaining of LPR data for the period of four (4) years. Any agency wishing to upload and store its data on the CJS-LPR, BOSS will sign a user's agreement with the Director of Criminal Justice Services. This agreement shall include the following: information about access to upload LPR data to the BOSS, access to hot lists including but not limited to Vermont Department of Motor Vehicles, NCIC, VCIC, a method for access to historical

⁴ International Association of Chiefs of Police, 2009 "Privacy Impact assessment report for the utilization of license plate readers"

LPR data, costs associated with the state wide LPR system and privacy concerns.

B. Access to LPR Data

Definition

Police officials have a duty to investigate crimes and criminal conduct. To fulfill this responsibility, police officials collect various types of information in order to identify potential suspects. Active LPR data helps bring a law enforcement officer's attention to certain violations as they occur, such as the operation of a stolen car or a vehicle displaying license plates associated with a violent felony or child abduction. Historical LPR data can play an important role in the investigation of crimes and can be utilized to help create investigative leads and ultimately prosecute offenders. Historical LPR data is also utilized in traditional forms of crime analysis.

Appropriate access to active and historical LPR data is guided significantly by the purposes for which it collected. Thus, LPR data may appropriately be accessed by law enforcement officials; (a) to support crime analysis efforts; (b) to alert law enforcement officials that a license plate included on a hot list is or has been near a LPR camera location; and (c) to help law enforcement officials detect instances of criminal conduct.⁵

C. Dissemination of LPR Data

Definition

LPR data is most likely to be utilized by law enforcement officers; nevertheless, there may be additional, foreseeable users of LPR data. Each type of authorized user's access permissions will be clearly articulated.⁶

⁵ International Association of Chiefs of Police, 2009 "Privacy Impact assessment report for the utilization of license plate readers"

⁶ International Association of Chiefs of Police, 2009 "Privacy Impact assessment report for the utilization of license plate readers"

VJISS Policy

Retention of Data

Data will be retained at CJS on the LPR – BOSS for a period not to exceed four (4) years.

Access to LPR data

Access to LPR data shall be role based and access may not be granted to all Criminal Justice partners.

Suggested License Plate Reader Protocols for Patrol and Investigations

Patrol

The following protocols are suggested for usage of the license plate reader and technology. The proactive entry of any data, except as stipulated in this directive, or the access to LPR records **MUST** be approved by a Supervisor and the request **MUST** have a specific criminal investigative or patrol purpose. Deployment of LPR equipment is intended to provide access to stolen and wanted files, and for the furtherance of criminal investigations. Use is restricted to these purposes. No officer may use, or authorize the use of, the equipment or database records for any other reason. A request for LPR use or data access beyond the cited reason(s) herein must be made to the Vermont FUSION Center.

Administration

A Supervisor should administer and oversee the LPR program whose responsibilities include the following:

- Maintain an adequate number of trainers;
- Select and train approved members to operate the LPR system (All training must be documented);
- Arrange for additional training when and as deemed necessary; and

- Maintain records identifying approved LPR details and their results and ensure appropriate documentation of significant incidents and arrests that are related to LPR usage. This can be achieved by utilizing the LPR circumstance codes, in the Spillman CAD/RMS system.

LPR Operator Selection

Consider the following qualifications when approving members for LPR training:

- Members driving record;
- Past demonstration of good judgment regarding vehicle pursuits; and
- Excellent Motor Vehicle and Criminal enforcement activity.

Training

Officers should be prohibited from using the LPR system until they have been properly trained in its use, and have been instructed as to operational protocols.

Patrol Operations

A supervisor should be notified of all appropriate matters (i.e. pursuits, significant arrests, etc.). LPR activity can be tracked by utilizing the LPR circumstance codes, in the Spillman CAD/RMS system. It is recommended that every stop during which the LPR was used to alert an officer to the vehicle, the LPR circumstance code in the CAD / RMS system should be used.

LPR Data Query Log

Requests to review stored data shall be recorded and maintained in the same manner as criminal history logs. LPR data is stored for a short time frame on the LPR hard drive (up to thirty days). Access shall be limited to designated personnel in each Department, who have been provided account access to conduct authorized LPR stored data queries. Queries can also be made by contacting the Vermont FUSION Center.

Special Details

- An Agency Head or designee should approve LPR use during non-traditional Motor Vehicle details (i.e. in high crime areas during DDACTS details, at checkpoints or during directed criminal investigations).
- Careful consideration should be given to appropriate staffing. It is recommended details focused in high crime areas be comprised of no less than four Officers / Investigators and one supervisor.
- LPR equipment may be used to further criminal investigations by providing access to stored records and/or by assigning LPR equipment in a designated manner and area.
- Use of the LPR system in a roving capacity on details should require a driver and a system operator (if manpower exists) in the LPR equipped vehicle. The LPR operator is responsible for confirming any hot list hits via NCIC/VCIC, and to identify target vehicles for the support vehicles. Support vehicles may be one or two person units as directed by the detail supervisor.
- Stationary mode usage requires only one member to operate the system, verify hits and identify target vehicles for the support cars.

*** Note:** *Patrol Commanders may issue further restrictions, taking into account knowledge of the area to be patrolled and the particular assignment.*

Vehicles

LPR equipped vehicles should be used as often as possible. When not in use, every effort is to be made to ensure that the LPR vehicle is garaged.

- A copy of the Car System User Guide shall be maintained in a folder in each LPR equipped vehicle.

LPR Maintenance

- The LPR camera lenses shall be cleaned with a glass cleaner sprayed on a soft cloth as needed. *Or as directed by the manufactures recommendations.*
- Any damage shall be reported immediately through channels to the Patrol Commander in charge. Technical questions concerning the LPR shall be directed to the Office of Technology Services (OTS) or in the case of a non VSP department your local technology representative.
- Officers should not directly contact the vendor(s). All vendor contact will occur through OTS or in the case of a non VSP department, your local technology representative.

Hit Verification

- The information received from license plates that are recognized as wanted hits are dated; typically this may up to 24 hours old. Officers must verify all "hits" through their local dispatch, and follow all departmental policies and procedures. At this time the LPR does not interface with real time NCIC or VCIC data, the LPR is ONLY to be used as an investigative tool. Confirmation of the hit as well as developing reasonable suspicion is essential prior to a stop.
- **Verified Hits** on an unoccupied vehicle – maintain visual observation while supervisory contact is initiated to determine if Immediate recovery action will be taken or whether surveillance will be continued.

Updating/Using LPR Wanted Files

Hot lists should, if connectivity allows, be uploaded automatically as the hot lists on the LPR computer become outdated and a new list is available from the BOSS server.

User Added Hit Files (Plates):

- After the initial upload to the LPR, if it becomes necessary to add specific information, the database can be "customized" by manually entering the information. This option is provided on the computer desktop screen under the "Operation" icon and should be utilized in cases where crimes are reported after the LPR has been deployed (e.g., Stolen Vehicles, Amber Alerts, radio item broadcasts, etc.) or when a manual plate check needs to be performed. A Patrol Commander must approve any additional data entry (i.e. entering local police department gang information, patrol awareness for data driven assignments, etc.).

Investigations

The License Plate Reader has been used for many purposes by investigative units throughout the country. Initially, it was used to address the stolen vehicle issue and was quickly determined that limiting the use of the LPR to locating stolen vehicles was not an effective use of the personnel assigned to these details. Throughout the country, few stolen cars are recovered parked on the street with their original license plates attached. If a valid license plate is attached to a stolen car, the LPR will not know the car is stolen. Numerous details conducted have yielded the following effective strategies when using the

LPR is for investigative purposes. Specialized units use the LPR with uniform patrol support in an effort to saturate a specific geographical area. The chance of identifying a crime in progress is directly related to the amount of vehicles stopped for violating the law. This requires that all vehicles whose registration plate returns any "hit" from the hot list be stopped. The greatest number of vehicles which return a hit by the LPR are in the suspended and revoked registration category.

These vehicles should be impounded and therefore require an inventory search or warrant to safeguard the contents of the vehicle. *Please follow your specific department guidelines. You should also consult your local State's Attorney.* This application works well, especially when specialized personnel from narcotics, auto theft, fraudulent documents, gun and gang units are present to examine any issues that arise. Be advised, addressing all suspended and revoked registrations can

quickly exhaust the resources of a detail. Consideration must be given to having the appropriate number of personnel available and, subsequently scaling back which "hits" will be addressed or ending the detail when the support vehicles are no longer available. The combining of forces within an agency as well as with state, county and local police has been very effective when conducting these saturation details.

The LPR can be used to locate vehicles of interest for a specific investigation. An example would be locating one or more recently stolen vehicles in close proximity to each other or located near a suspected chop shop. The stolen vehicle(s) can then be surveilled and/or have a GPS placed on them, which will afford investigators the ability to follow them to their ultimate destination.

Specific vehicle files can be loaded into the LPR that may relate to a situation of concern to a certain geographical area. Some examples would be gang members or associates, prior sex offenders, burglary, robbery, auto theft, larceny and criminal mischief targets. The data collected may enable investigators to take immediate action or provide solid leads should a crime occur in the vicinity of the captured plate.

Mutual Aid Situations

Agencies utilizing LPR technology are encouraged to respond to mutual aid situations. Due to the costs of the LPR technology not all Criminal Justice partners have access to this technology, or have access to it on a limited basis.

Emergency Based Operations

During the course of normal law enforcement duties, incidents may occur that require immediate assistance from other local, county or state law enforcement agencies. The License Plate Reader can be a valuable tool in these situations, such as an AMBER Alert Missing / Endangered Persons Alert, bank robbery or other violent crime, and can help bring the incident to a safe and successful conclusion.

CJS, as part of the letter of agreement to receive a plate reader, suggests the deployment of available license plate readers in the event an AMBER or Missing / Endangered persons is announced. A coordinated plan should be developed as more

LPR units are deployed so that local, county and state law enforcement agencies can maximize the coverage area to search for any vehicle involved in the abduction. The Vermont FUSION Center should be notified immediately so pertinent license plate data can be entered into the hot list.

Vermont AMBER and Missing / Endangered Persons Alert Activations

Communications

Upon receiving notification (via fax, FUSION alert, email or other notification system) that VT AMBER Alert or Missing / Endangered Persons activation has occurred, communications staff must immediately review details and notify supervisors. Unless directed to take alternate action, communications staff must immediately broadcast Alert details to all available patrols and must specifically advise patrols using LPR equipment to manually place involved vehicle plate number(s) into respective vehicle LPR databases.

Upon receipt of updated information, communications staff should immediately provide this information to supervision and patrols. If an involved vehicle plate number changes, patrols using LPR equipment should be directed to update database entries. All actions taken by communications staff should be documented in accordance with agency policies and procedures.

Upon Notification of an Alert

All patrols using LPR equipment must manually place involved vehicle plate number(s) into the vehicle database unless notified that the vehicle plate information has been entered by the Vermont FUSION Center (Confirm this with your local Patrol Commander). Officers should proceed to patrol areas that are likely to increase the chance of encountering the vehicle. Upon receipt of updated information (i.e., involved vehicle plate number changes), patrols must immediately update database entries.

Look Back

Officers and the state FUSION Center will promptly search the vehicle LPR databases to determine if a record of past encounters exists. If so, information should immediately be provided to supervisors for investigative action. Also, supervisors should review the agency records database, if one exists, to determine if patrols had previously encountered the target plate. Logs should be updated according to the previously cited general procedures.

Recovery

If the vehicle is encountered, the actions taken should ensure the safe recovery of the missing child or person(s). Officer experience and judgment, as well as agency specific policies and procedures (i.e., critical incident management), will dictate the best course of action to take. All actions should be documented in accordance with agency policies and procedures.

Additionally, registration plates can be added to the LPR database during a detail at the discretion of a Patrol Commander. These plates are then brought to the attention of law enforcement after the existing data has been downloaded into the LPR. Examples would be vehicles reported stolen after the hot list was downloaded on that day, AMBER or Missing / Endangered Persons Alert or any other vehicle involved in an incident or crime that is being sought by law enforcement. LPR units can be deployed to collect all registration plates in an area surrounding a major crime scene or incident. LPR units can also be placed at "pinch points" or major routes of escape/travel immediately after such an event.

Coordinated Scheduled Operations

When other violent crimes occur (bank robberies, murder, kidnapping) local agencies should contact adjacent law enforcement agencies with LPRs and determine the proper level of assistance needed. They should work together to determine a perimeter and deploy the license plate readers accordingly.

The development of a mutual aid plan follows an outline that, at a minimum, addresses the following issues:

1. Definitions and Concepts
2. Levels of Mutual Aid
3. Mutual Aid Procedures
4. Practical Issues
5. Law Enforcement Agency Roles and Responsibilities