State of Minnesota
Department of Public Safety

Bureau of Criminal Apprehension
MNJIS Section

License Plate Recognition (LPR)
User Guide

Version 2.1

Revision History

Rev. Num.	Rev. Date	Reason	Prepared by
1.0	08/2009		BCA MNJIS
1.1	09/2009	Clarifications and minor updates	BCA MNJIS
2.0	09/2009	Major update due to addition of DVS withdrawal records	BCA MNJIS
2.1	10/2009	Updates to correct miscellaneous, minor errors. No data record layout updates made.	BCA MNJIS

Table of Contents

1.   License Plate Recognition Technology - Overview

LPR is a technology that allows vehicle license plates to be captured, typically using infrared light so that plates can be read even in the dark.   The technology allows cameras and associated servers and databases to be used to check hundreds of license plates an hour without an officer or trooper typing in individual plate numbers, only alerting the law enforcement user when the system encounters a license plate number in its database.

Both fixed and mobile implementations exist; on a squad car, cameras can typically monitor vehicles to the front or rear of the squad, parked on the side of the street, or in a parking lot.

LPR technology may also be known as Automated License Plate Reader / Recognition (ALPR), Automatic Vehicle Identification (AVI), Car Plate Reader / Recognition (CPR), Automatic Number Plate Recognition (ANPR), and Optical Character Recognition (OCR) for Cars.

  ➢ For a non-vendor specific primer on this technology, see:
     http://en.wikipedia.org/wiki/License_plate_recognition
  ➢ For a video on LPR technology: **http://www.youtube.com/watch?v=1j_On_1zRig**

According to the Federal Bureau of Investigation, the value of stolen motor vehicles in 2007 was $7.4 billion. Among other uses, LPR is used to combat this problem.

2.   BCA MN License Plate (LP) Data File - Overview

The BCA provides an FTP site where a single "license plate" data file is made available to authorized Minnesota law enforcement agencies. This file, the MN LP Data File is updated twice daily and available for access at 4:00 a.m. and at 4:00 p.m., 7 days a week. The MN LP Data File contains specific data from select FBI NCIC Hot File records from all 50 states including the District of Columbia and Canada, specific data from select MN Hot File records and MN Driver and Vehicle Services (DVS) data on "withdrawals" (registered vehicles of revoked, suspended, canceled and disqualified licensed operators).

On average, the file consists of 400,000 records; the source and data categories are summarized in the table below.

Source	Data Category
FBI Hot Files	Stolen Vehicle
"	Stolen License Plate
"	Wanted Person
"	CPIC (Canadian Police Information Center) Data
"	Protection Order
"	Missing Person
"	Violent Gang and Terrorist Organization
"	Supervised Release
"	Convicted Sexual Offender Registry

"	Immigration Violator Files
MN BCA Hot Files	KOPS
"	MN Warrants
DVS Files	Suspended Licenses
"	Revoked Licenses
"	Cancelled Licenses
"	Disqualified Licenses

It is important to note the following regarding MN DVS withdrawal data on the MN LP Data File:

> ➢ The MN DVS provides withdrawal data to the BCA only once daily, prior to 4:00 am, Tuesday through Saturday excluding holidays.
> ➢ The MN DVS withdrawal data received is from the previous day's activities at the MN DVS.
> ➢ The MN DVS withdrawal file contents are written out to both the 4:00 a.m. and 4:00 p.m. MN LP Data Files.
> ➢ The day following a holiday, the last DVS withdrawal file received is used to update both the 4:00 a.m. and 4:00 p.m. MN LP Data Files.
> ➢ On Sunday and Monday, the DVS withdrawal file received on Saturday is used to update the 4:00 a.m. and the 4:00 p.m. MN LP Data Files.

More details regarding the download details, format(s), data types, and sample data can be found in Appendix A – MN LP Data File – Details.

3.   The BCA's Role in Implementing LPR

The BCA's role in implementing LPR for a given law enforcement agency is limited but crucial. The BCA currently provides download access to the MN LP Data File (described above).   As well, the BCA Service Desk provides support between 7:00 a.m. and 4:30 p.m. Monday through Friday for questions and issues relating to access to or contents of the download file. The BCA does not give advice or approve the selection of technologies and/or vendors.

In addition, the BCA does not provide:

> ➢ Vendor implementation assistance for software or hardware.
> ➢ Conversion utilities to transform downloaded data into vendor format.
> ➢ Reimbursement for any development or implementation costs associated with installation, testing, or ongoing support at the local agency.
> ➢ Access to the data file the BCA receives from the FBI containing NCIC Hot File data.
> ➢ Access to the data file the BCA receives from the MN DVS containing DVS Withdrawal data.

4.   Restrictions on Use of the Download File

The agency and BCA will be governed by the Interagency Agreement for the License Plate Recognition Data Service. We stress the following from the agreement to help you understand the key issues.

> ➢ The data from the BCA's MN LP Data File is strictly for the use of the participating agency, not the agency's technology vendor.
> ➢ The data in the file will only be used for "extract hits"; to match to data collected only via License Plate Recognition software and hardware.
> ➢ The data in the file will be used to verify extract hits in accordance with the FBI Hit Confirmation Policy (NCIC 2000 Operating Manual, Section 1.2).   Put another way, an "extract hit" is not a "hit" until hit confirmation processes on the "extract hit" data have been performed in accordance with the FBI Hit Confirmation Policy.
> ➢ The agency will only use "extract hits" for the purposes of investigative and other law enforcement duties.
> ➢ It is the responsibility of the agency to update its files regularly and without delay as the MN LP Data File becomes available at the BCA, currently twice daily.
> ➢ The agency will comply with all requirements of the Minnesota Government Data Practices Act (MGDPA) and FBI Guidelines governing the use of the data.
> ➢ The agency agrees to address data practice and data privacy concerns regarding the use of the License Plate Reader data within their jurisdiction including how long the data will be retained and who will have access for what purpose.

5.   Verification of Hits

Because the data file is compiled from records entered nationwide, it is possible for the same license number (LIC) to appear in the file from different states. Most times, the LPR hardware is only able to recognize the license number on a plate, not the state of issue.

> **If the hit is on DVS DISQUALIFIED, CANCELLED, REVOKED, or SUSPENDED records, you need to verify the current Minnesota DL status as this file is downloaded after business hours Monday through Friday.**

> **If you are notified by your LPR system of a hit, verify that the license plate number and state on the vehicle's license plate match the license plate number and state in the LPR hit information.**

> **In cases where a person is associated with a license (Warrants or DVS disqualified, cancelled, revoked or suspended), it is important that before contact with the vehicle and occupants is made, the officer must confirm the alert by matching both vehicle and driver/occupant information with the hotlist description and verifying information through appropriate means such as dispatch, MDC, CJIS, originating agency, etc.**

As the data file is compiled twice daily (not updated real-time on your LPR system), it is probable that some vehicles indicated as wanted in the data file are no longer wanted later in the day. In accordance with FBI Hit Confirmation Policy, you must first confirm the data from any extract HIT by re-querying the data from the originating source database. If the record/data from the query is "active," you must additionally confirm the data by contacting the originating agency to determine if the record is still active.

> **Do not make stop or arrest decisions based solely on LPR data.**

6.   How Do We Get Started?

If you have not already completed one or more of the activities outlined below, the BCA expects your agency will follow a workflow similar to the following:

Step	Activity
1	Review this LPR User Guide.
2	Research the technology and vendors
3	Complete a feasibility study including associated benefits, drawbacks, and approximate costs
4	Receive approval and issue a Request for Proposals
5	Select a vendor and complete a contract agreement
6	Have equipment installed
7	Contact the BCA to obtain forms and agreements to acquire the MN LP Data File

Forms and agreements are located on the secure CJDN website https://www.dps.state.mn.us/cjdn/ . To request access, complete the Request for BCA LPR Account form and two signed copies of the BCA Interagency Agreement for LPR Data Service. Fax all forms to 651-793-2501 or mail to: **BCA – MNJIS Service Desk, 1430 Maryland Ave. E., St. Paul, MN 55106.**

> **The BCA needs 5 working days to create the accounts necessary for your agency to download the LP Data file.**

For additional questions, contact the BCA Service Desk via email at **bca.servicedesk@state.mn.us** or call 651-793-2500 (metro) / 1-888-234-1119 (toll free).

Appendix A – MN LP Data File – Details

a.   FBI NCIC Hot Files Record Types Table

Category	First Character in NIC Code
NCIC Stolen Vehicle	V
NCIC Stolen License Plate	P
NCIC Wanted Person	W
NCIC CPIC (Canadian Police Information Center) Data	R
NCIC Protection Order	H
NCIC Missing Person	M
NCIC Violent Gang and Terrorist Org.	T
NCIC Supervised Release	C
NCIC Convicted Sexual Offender Registry	X
NCIC Immigration Violator Files	N

b.   BCA MN Hot Files Record Types Table

Category	First Character in MIN Unique ID
BCA KOPS (ATL)	K
BCA MN Warrants	W

c.   MN Driver and Vehicle Services Withdrawal Record Types Table

Category	First Character in DVS ID	Remaining Characters in DVS ID
DVS Suspended	*	SUSPENDED
DVS Revoked	*	REVOKED
DVS Cancelled	*	CANCELLED
DVS Disqualified	*	DISQUALIFIED

d. MN LP Data File Header Record Format

The MN LP Data File Header Record is always the first record on the file and occurs only once.

Field Name	Format	R/O	Notes
File Date and Time	AN24	Req.	DVSLPR-CCYYMMDD-HH:MM:SS CCYYMMDD indicates the date the file was written. HH:MM:SS indicates the time the file was written.

e. MN LP Data File Record Formats

All records contained in the MN LP Data File are variable in length. Note ** delimiter values are "," (commas) between fields; missing fields are left null and result in multiple commas as shown in the Sample Data (below). The end of the record is marked with a carriage return (not shown).

MN LP Data File Record Format – FBI NCIC Hot Files Records

Field Name	Field Order	Format	R/O	Notes
NIC Number (NIC)	1	AN1-10	Req.	See NCIC Hot Files Record Types Table above for record type code.
(delimiter)		A1 ","	Req.	The comma (,) delimiter is used after each field (except the last) in every record
Owning Agency Identifier (ORI)	2	AN9	Req.	ORI
Date of Incident, Entry, Warrant, etc. (DOE)	3	AN8 CCYYMMDD	Req.	Date of entry, warrant, theft, etc.
License Plate Number (LIC)	4	AN1-10	Req.	
License Plate State (LIS)	5	AN0-2	Opt.	
License Plate Year (LIY)	6	AN0-4	Opt.	
License Plate Type (LIT)	7	AN0-2	Opt.	
Vehicle Year (VYR)	8	AN0-4	Opt.	
Vehicle Make (VMA)	9	AN0-4	Opt.	
Vehicle Model (VMO)	10	AN0-3	Opt.	
Vehicle Style (VST)	11	AN0-2	Opt.	
Vehicle Color (VCO)	12	AN0-7	Opt.	

MN LP Data File Record Format – MN BCA Hot Files Records

Field Name	Field Order	Format	R/O	Notes
MIN Unique ID (MIN)	1	AN1-8	Req.	See MN BCA Hot Files Record Types Table above for record type code.
(delimiter)		A1 ","	Req.	The comma (,) delimiter is used after each field (except the last) in every record
Owning Agency Identifier	2	AN9	Req.	ORI
Date of KOPS Entry, Warrant (DOE)	3	AN8 CCYYMMDD	Req.	Date of entry, warrant, theft, etc.
License Plate Number (LIC)	4	AN1-10	Req.	
License Plate State (LIS)	5	AN0-2	Opt.	
License Plate Year (LIY)	6	AN0-4	Opt.	
License Plate Type (LIT)	7	AN0-2	Opt.	
Vehicle Year (VYR)	8	AN0-4	Opt.	
Vehicle Make (VMA)	9	AN0-4	Opt.	
Vehicle Model (VMO)	10	AN0-3	Opt.	
Vehicle Style (VST)	11	AN0-2	Opt.	
Vehicle Color (VCO)	12	AN0-7	Opt.	

MN LP Data File Record Format – DVS Withdrawal Records

Field Name	Field Order	Format	R/O	Notes
DVS ID	1	AN8-13	Req.	See MN DVS Withdrawal Record Types Table above for record type code.
(delimiter)		A1 ","	Req.	The comma (,) delimiter is used after each field (except the last) in every record
Operator's License Number	2	AN13	Req.	ORI
Withdrawal Date	3	AN8 CCYYMMDD	Req.	Date of withdrawal.
License Plate Number	4	AN8	Req.	
License Plate State	5	AN2	Req.	
License Plate Year – Plate Expiration	6	AN4 MMYY	Req.	
License Plate Class Code	7	AN2	Opt.	See DVS Withdrawal Record Plate Class Code Table
Field Marker 1	8	AN0-4	N/A	Null
Field Marker 2	9	AN0-4	N/A	Null
Field Marker 3	10	AN0-3	N/A	Null
Field Marker 4	11	AN0-2	N/A	Null
Field Marker 5	12	AN0-7	N/A	Null

DVS Withdrawal Records Plate Class Code Table

DVS License Plate Code	DVS Vehicle Description
PC	Passenger Car
PU	Pickup
BU	Bus
TL	Trailer
MC	Motorcycle
TK	Truck
SV	School Vehicle
FM	Farm Vehicle
EX	Exempt
AQ	Antique
ZZ	Others

f.   Sample Data

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DVSLPR-20080122-03:25:00
V123456789,GG0380001,20070912,111AAA,GG,2006,TK,1981,CHEV,C10,PK,RED/WHI
R123456789,0M3045000,20070913,A1234A,0M,2007,ZZ,2004,TRAI,,,
P123456789,CC0010500,20071013,123AAA,CC,2008,TK,,,,,
W123456789,PP0463800,20071127,AAA1234,PP,2008,PC,1993,P0NT,B0N,SD,GRN
V123456789,LL0490200,20071004,A1AAA,LL,2008,TK,1997,F0RD,,PK,GRN
R123456789,BB1010200,20070907,A12345,BB,2008,ZZ,2006,H0ND,,,
P123456789,WW0570200,20070906,AA1234,WW,9999,TM,,,,,
W1234567,MWMDD0700,20070314,AAA1234,MW,2008,TK,,,,,
K12345,MW0191000,20080121,AAA123,MW,,,,,,,
*DISQUALIFIED,Z123456789012,20090801,111ZZZ,M9,1208,PC,,,,
*REVOKED,Z234567890123,20080903,A1B2C3,M9,0909,PC,,,,,
*CANCELLED,Z345678901234,20080115,111ZZZ,M9,0610,PU,,,,,
*DISQUALIFIED,Z456789012345,20070615,ABCD987,M9,,TL,,,,,
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**Note: In the Sample Data, the License Plate State values and the leading two characters of the ORIs have been deliberately changed to non-US state values in this sample.

g.   Retrieving Previous Versions of MN LP Data Files

The BCA maintains one month of backup files at two files per day. Please contact the BCA Service Desk should your agency require a copy of an individual LP record that appeared in a previous file within that timeframe. For each request, please provide the date and time of the MN LP Data File, the license number, license state and record type.

Appendix B – Definitions and Glossary of Terms

Term	Description
LPR	License Plate Recognition technology. Also known as Automated License Plate Reader / Recognition (ALPR), Automatic Vehicle Identification (AVI), Car Plate Reader / Recognition (CPR), Automatic Number Plate Recognition (ANPR), and Optical Character Recognition (OCR) for Cars.
FBI Hot Files Records (on the MN LP Data File)	The MN LP Data File contains specific data from select FBI NCIC Hot File records from all 50 states including the District of Columbia and Canada. Categories of data provided can be found in Appendix A.
MN Hot Files Records (on the MN LP Data File)	The MN LP Data File contains specific data from select MN Hot File records. Categories of data can be found in Appendix A.
DVS Withdrawal Records (on the MN LP Data File)	The MN LP Data File contains withdrawal data from select MN DVS records. Categories of data can be found in Appendix A.
Data Availability	The BCA provides an FTP site where a single file is made available to authorized MN law enforcement agencies twice daily, currently at 4:00 a.m. and at 4:00 p.m., 7 days a week. On average, the file consists of 400,000 records.
Data Archive	The BCA maintains one month's backup files at two files per day. Contact the BCA Service Desk if you need help retrieving a record that was on the LP file but has since been removed.
Extract Hit	An extract hit is a match made by the LPR technology to a record in the MN LP Data File; aka "Match" or "Hit".
Confirmation	Each and every extract hit requires confirmation by the officer / trooper in accordance with the FBI Hit Confirmation Policy (NCIC 2000 Operating Manual, Section 1.2).
Data Privacy	In order to participate in this service, an agency will comply with all requirements of the MN Government Data Practices Act (MGDPA) and FBI guidelines including retention and access.