OAKLAND POLICE DEPARTMENT

Surveillance Impact Use Report for the Automated License Plate Reader

A. **Description:** *Information Describing the Automated License Plate Reader (ALPR) and How It Works including product descriptions and manuals from manufacturers*.*

ALPR technology consists of cameras that can automatically scan license plates on vehicles that are publicly visible (in the public right of way and/or on public streets). The Oakland Police Department (OPD) prior usage of ALPR 3M (BOSS) were only ALPR cameras mounted to patrol vehicles so that license plates can be photographed during routine police patrol operations. Through the course of the use policy authorization, it was determined the old and outdated 3M (BOSS) ALPR cameras could not conform to the surveillance ordinance policy and produce the sought-out efficacy reports the PAC requested and the City of Oakland deserved. Based on the following, it was agreed upon that a new manufacturer would be required in order to produce the efficacy and conduct the necessary audits. The OPD placed their current ALPR system offline until it could abide by its efficacy reporting.

After reaching out to several departments within the Bay Area and discussing with them their ALPR usage and their auditing process it was discovered FLOCK was a vendor that could also be utilized within the City of Oakland. OPD is pursuing FLOCK ALPR technology which will assist the OPD to help identify vehicle(s) which may have been used in criminal activity. The OPD will conduct queries where criminal activity has occurred that relates to violent crimes, burglaries, grand theft, stolen vehicles. The OPD goal will be to reduce the timeline in identifying vehicles associated to these types of criminal activity and potentially reducing criminal activity through the utilization of FLOCK ALPR.

ALPR technology consists of cameras that can automatically scan license plates on vehicles that are in the public right of way and/or in view of the police vehicle. Each camera consists of a regular color photograph camera as well as an infrared camera (for better photography during darkness). ALPR captures an image (parked or moving vehicle plates) and processes the image with an optical character recognition (OCR) algorithm that can extract license plate characters from the image.

The ALPR system in a patrol vehicle is activated when the user logs into the software from their vehicle-based computer and starts the system. Once initiated, the system runs continuously and is alerted if a vehicle from the Hot List is captured, or a Hit Alert is activated from one of the mounted FLOCK cameras. Officers then respond to the location in an effort to locate the vehicle(s). Investigators can also conduct queries of areas where criminal activity occurred, such as violent crime, burglaries, or grand theft in effort to locate vehicle(s) suspected of involvement in

said criminal activity. ALPR cameras typically record hundreds of license plates each hour but exact recording rates depend on how many vehicles drive past the mounted ALPR cameras. The system compares license plate characters against specific databases, and stores the characters along with the date, time, and location of the license plate in a database. OPD's ALPR system updates daily with three California Department of Justice (CA DOJ) hotlists: felony wants, stolen plates, and stolen vehicles. OPD can also add vehicle plates to internal OPD-created hotlists. There is no OPD ALPR connection to any federal database.

Authorized personnel within OPD can also enter specific license plate numbers into the system so that active vehicle ALPR systems will alert the officer in the vehicle if there is a real-time match between the entered license plate and the photographed license plate.

OPD personnel will contact OPD Communications Division (dispatch), or verify via their vehicle computers, anytime the ALPR system signals that a license plate on a database has been seen and OPD personnel always personally check with Communications before stopping a vehicle based on an ALPR license plate match.

The platform software allows authorized personnel to query the system to see if a certain license plate (and associated vehicle) have been photographed. The system will show the geographic location within Oakland for license plates that have been photographed, as well as time and date. Authorized personnel can see the actual photographs that match a particular license plate query – the OCR system can incorrectly match alpha-numeric characters, so the actual photographs are vital for ensuring the accuracy of the license plate query.

OPD has to request access from all agencies within California and they have to give approval before OPD can conduct any searches for license plates. Agencies can approve or deny access. The same applies for outside agencies requesting access to OPD's FLOCK cameras. They have to request access for which OPD can give access or deny approval. OPD can deny approval if it determines an outside agency is not abiding by its policies. OPD can also request access from Oakland community groups' FLOCK cameras. Even if OPD has access to community groups' cameras, those community groups cannot see OPD's "hot list" hits. The community group can also deny or approve OPD access.

3M (BOSS) Has Been Placed Offline and FLOCK ALPR Will Be Utilized
OPD seeks to upgrade its current ALPR version of 3M BOSS to FLOCK ALPR, which is recommended for the improved audit capabilities of the system. If OPD upgrades to FLOCK, the following features will become available:

- The ability to search by vehicle color (e.g., Red, Black, Blue)
- The ability to search by vehicle make (e.g., Chevrolet, Ford, Mazda)
- The ability to search by vehicle type (e.g., Sedan, Truck, Van)

The ability to search by vehicle specifics (e.g., Roof Racks, Logos, Spare Tires) is also currently available through FLOCK. OPD acknowledges that this feature may implicate additional privacy concerns, but due to the efficacy and auditing process capabilities in FLOCK, the OPD believes the accountability of why vehicles are queried can be tracked. FLOCK provides auditing and tracking from a click of a button and the OPD can conduct random monthly audits to determine if users are adhering to the use policy.

Anticipated Hotlists in FLOCK
Authorized personnel within OPD will be able to add specific license plate numbers into the system as either an alert hotlist or a covert hotlist. Alert hotlists will alert officers in their ALPR equipped vehicles if the plate that was added to the hotlist has been located. Additionally, the officers receive further instructions including who to contact regarding the alert. Covert hotlists will not alert officers via the ALPR system. Instead, the alert will be sent to the appropriate investigator for further follow up. This ensures any real-time information necessary to further an investigation is provided to the appropriate individual.

Internal OPD specific hotlists are to be added to the system only upon the approval of the BOS Deputy Director or their designee. The designated approver must be documented in writing with a specific name or departmental position authorized to act as designee.

In addition, the following criteria/information must be provided for each request to add a license plate to any OPD hotlist:

- Vehicle must be part of an existing OPD investigation
- License Plate Number and State of Issuance
- OPD report number
- Vehicle Description
- Explanation for the request
- Which hotlist to add the plate to: Alert or Covert
- Requester's Name and Serial Number

Disapproved lists will be kept on file. Approved requests are to be added to the specific hotlist requested with a maximum run time of 30 days. License plates will be deleted automatically from the system after that time. The requester must resubmit a new request to extend the time an additional 30 days. Should the requester desire to remove the plate from the hotlist before the 30th day, the requester must contact OPD IT by emailing opditu@oaklandca.gov to request early removal.

B. Purpose: *How OPD intends to Use ALPR Technology*

OPD uses ALPR for two purposes:

1. The immediate (real time) comparison of the license plate characters against specific databases such as those provided by the California Department of Justice listing vehicles that are stolen or sought in connection with a crime or missing persons; and
2. Storage of the license plate characters – along with the date, time, and location of the license plate – in a database that is accessible by law enforcement agencies (LEA) for investigative purposes.

ALPR technology helps OPD personnel to leverage their public presence and to more effectively use their limited time for more critical activity. The technology can alert officers to vehicles that are stolen, connected to a serious felony crime (e.g., aggravated assault, homicide, robbery, sexual assault), or connected to burglaries and grand thefts immediately (by being automatically connected to criminal databases). Officers can then use the information to notify OPD personnel and/or

stop the vehicle as justified by the information. The automatic process decreases the need for laborious data entry processes; therefore, officers have more time for observing public activity and speaking with members of the public. As mentioned earlier, moving to the new ALPR FLOCK system, cameras will not be mounted on patrol vehicles as FLOCK does not affix cameras to patrol vehicles. ALPR's will be placed strategically throughout the city as it relates to hot spots regarding criminal activity.

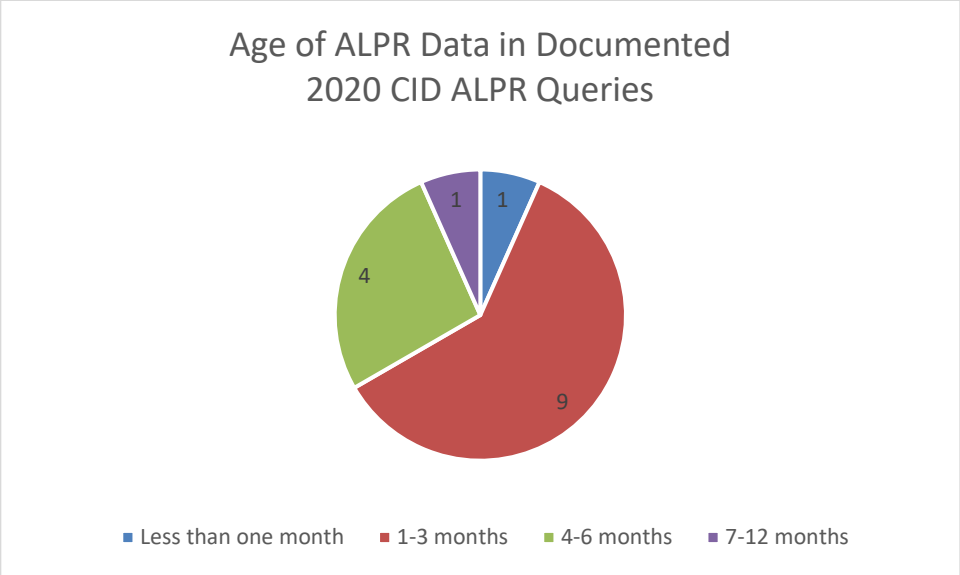
ALPR also provides an important tool for criminal investigations. The information collected by analysts and investigators can determine where a plate has been in the past, which can help to confirm whether or not a vehicle has been at the scene of a crime. Additionally, accurate photos of vehicles from the ALPR system make searching for vehicles much easier – how the vehicle differs from every other vehicle of the same make and model. The photos frequently show distinctive vehicle aspects (e.g., dents, scratches, stickers). Investigators can also confirm that the vehicle matches the license plate and whether the license plate has been switched from a different vehicle. Such information may help personnel to find new leads in a felony crime investigation.

OPD has not historically quantified ALPR usage for vehicle stops, nor for later criminal investigations[1] in a way that easily allows for impact analysis. However, OPD is developing more automated processes for tracking ALPR usage in connection with investigations – OPD and the City's IT Department are currently engaged in a multi-year new CAD/RMS implementation which will greatly improve this type of data tracking. More immediately, the utilization of FLOCK (see ***Section E*** below) will also allow for better use tracking.

OPD's Criminal Investigations Division (CID), in preparation for this report, has found several cases where ALPR license plate locational data was instrumental in the ultimate arrest and arraignment of at least two homicide suspects, and with the conviction of at least one of them; ***Appendix B*** attached to this report, highlights specific felony cases from the year 2020 where ALPR played a pivotal role in supporting CID investigations.

In the 15 felony cases identified (in ***Appendix B***), where the age of the data was substantiated, the pie-chart below shows that the age of data (at the time it was queried by OPD CID investigators) varied from "1-30 days" to "7-12 months."

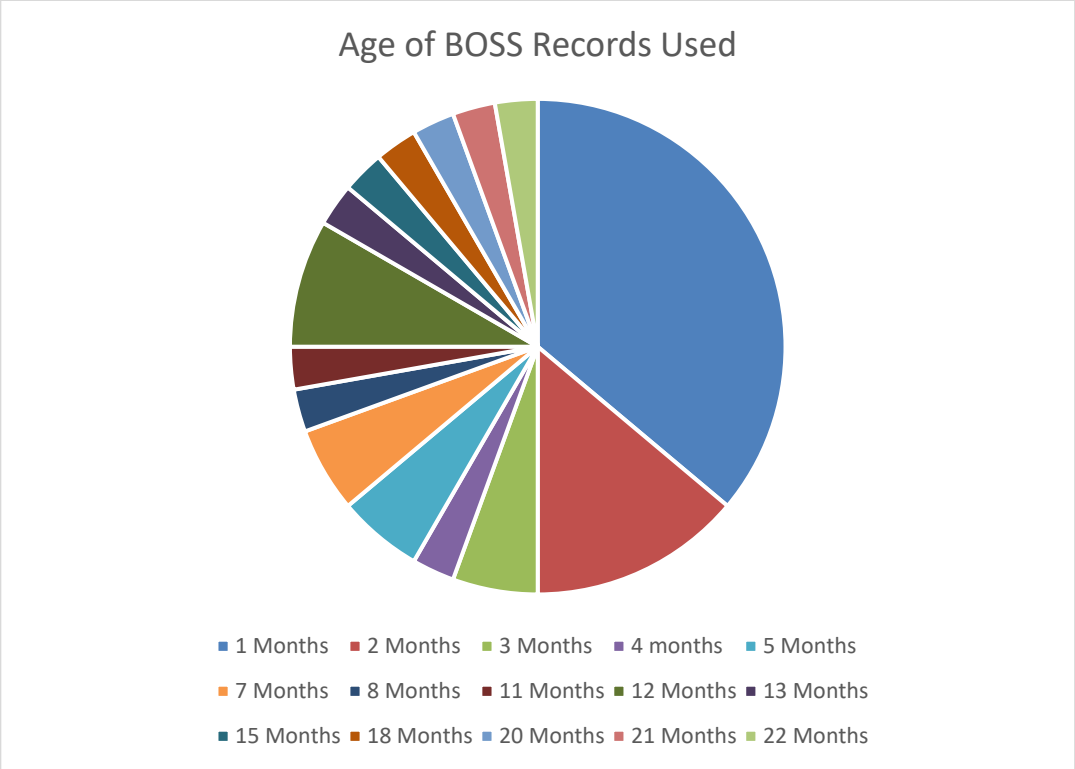
[1] Current policies mandate documenting reasons for vehicle stops and reported race and gender of persons stopped. OPD is reviewing how to ensure that investigators note when ALPR was instrumental in criminal investigations for documenting ALPR impact.



The types of crimes from the ALPR data age break-down above are as follows:

Armed Assault	3
Physical Assault	1
Burglary	1
Armed Robbery	6
Carjacking	2
Stolen Vehicle with firearms recovery	1
Vehicle Assault on Officer with a vehicle	1

A separate recent analysis of ALPR queries shows that most revealed data that was less than one month old (13 cases), and the number of cases using older data diminishes. However, there are still valuable cases using data even 18-24 months old. The chart below illustrates the recent age of this query data.



C. Location: *The Locations and situations in which ALPR Camera Technology may be deployed or utilized.*
Currently, OPD owns 35 sets (left and right) of ALPR vehicle-mounted cameras. Authorized personnel (as described in the Mitigations Section below) may operate ALPR camera technology on public streets in the City of Oakland, while engaged in the course of their duties. However, moving to FLOCK will remove the ALPR's from being mounted onto OPD vehicles and instead FLOCK ALPR will be mounted throughout the City of Oakland. Working in conjunction with the OPD, FLOCK analyzed heat maps as it relates to violent crime and property crime (stolen vehicles, burglaries and grand theft) and identified the main egress and ingress locations to these hot spots. These 300 locations were identified through maps and meetings with OPD and FLOCK.

D. Privacy Impact: *How is the OPD ALPR Use Policy Adequate in Protecting Civil Rights and Liberties and whether ALPR was used or deployed, intentionally or inadvertently, in a manner that is discriminatory, viewpoint-based, or biased via algorithm.*
OPD recognizes that the use of ALPR technology raises significant privacy concerns. There is concern that the use of ALPR technology can be utilized to ascertain vehicle travel patterns over periods of time. People are generally creatures of habit and often drive in their vehicles the same way to work, to visit friends and associates, to houses of worship, and neighborhood grocery stores. Research shows that "metadata", such as individual data points such as phone numbers called, and time of day or vehicle locations, can be combined to create patterns that identify individuals. Using a simple algorithm, Stanford University lawyer

and computer scientist Jonathan Mayer was able to accurately identify 80 percent of the volunteers in his study, using only open-source databases such as Yelp, Facebook, and Google[2].

OPD can use the ALPR technology to see if a particular license plate (and thus the associated vehicle) was photographed in particular places during particular times; however, OPD can only use the system to make such determinations by manually querying the system based upon a right to know (see Mitigation section below). OPD also recognizes that ALPR cameras may photograph extraneous data such as images of the vehicle, the vehicle driver and/or bumper stickers or other details that affiliate the vehicle or driver with particular groups. As explained in the Description Section (A) above and the Mitigation (E) section below, authorized personnel can only manually query the ALPR system for particular license plates (or all plates within a defined area) and only for particular reasons as outlined in OPD policy. In addition, current technology cannot be used to query data based upon vehicle drivers. Additionally, OPD has instituted many protocols (see Mitigation section below) to safeguard against the unauthorized access to any ALPR data.

The 2013 American Civil Liberties Union (ACLU) report titled, "YOU ARE BEING TRACKED[3]" cites that privacy concerns about ALPR data tracking increase the longer the data is retained. The report states, "While holding onto "hit" data while an investigation or case is ongoing is legitimate, law enforcement agencies should not be storing data about people who have done nothing wrong" (page 16). OPD shares the concerns of the ACLU that the misuse of retained data (e.g., datamining) could lead to the abuse of privacy of people who have committed no crime. OPD is committed to restricted use policies to impede the use of ALPR data for any use outside of authorized uses (e.g., criminal investigations.).

There is concern that ALPR camera use may cause disparate impacts if used more intensely in certain areas such as areas with higher crime and greater clusters of less-advantaged communities. OPD will affix ALPR cameras to fixed infrastructure, or place infrastructure(s) in place where needed. Again, as previously discussed, these locations were identified as the major arteries and channels to hot spots as it relates to crime analyst data and maps. Additionally, ALPR usage does not lead to greater levels of discretionary police stops; ALPR use leads to vehicle stops only where a real-time photographed license plate matches a stop warrant for a stolen vehicle or serious crime in a criminal database.

Databases such from the State of California Department of Justice (DOJ) can contain some outdated or inaccurate data. ALPR systems, just as in the case of a manual query in a police vehicle computer, will provide the license plate data from the related database. ALPR systems simply make the query faster. In such cases personnel will follow standard policies and procedures for stopping a motorist and requesting personal identification (explained on page 1 above in connecting to CA DOJ felony wants, stolen plates, stolen vehicles hotlists).

OMC 9.64.010 "Definitions" now requires that the Annual Surveillance Report, Section E

[2] Today, data scientists can accurately identify over 95% of individuals based solely on four geospatial (time, location) data points.
[3] https://www.aclu.org/files/assets/071613-aclu-alprreport-opt-v05.pdf

"A summary of community complaints…" incorporates the following:

"The analysis shall also identify the race of each person that was subject to the technology's use. The Privacy Advisory Commission may waive this requirement upon making a determination that the probative value in gathering this information to evaluate the technology's impact on privacy interests is outweighed by the City's administrative burden in collecting or verifying this information and the potential greater invasiveness in capturing such data. If the Privacy Advisory Commission makes such a determination, written findings in support of the determination shall be included in the annual report submitted for City Council review."

E. Mitigations: *Specific, affirmative technical and procedural measures that will be implemented to safeguard the public.*

Oakland residents and visitors have a reasonable expectation of privacy under the Fourth Amendment of the United States Constitution and the California Constitution. OPD may, however, photograph state-issued license plates when those plates are in public view. Because surveillance technology like ALPR allows OPD to use electronic, automatic tools that allow OPD to collect and compare publicly appearing license plate images beyond the capability of an individual officer to quickly collect and compare license plates, OPD recognizes that there may exist concerns about the accuracy, use, and storage of such information. Therefore, OPD's ALPR policy attempts to mitigate potential invasiveness by limiting the use and storage of real-time and aggregated ALPR data.

OPD's ALPR system, (as mentioned in Section 1 above), uses OCR to capture license plate data. ALPR cameras are designed to focus on license plates cameras, and the OCR only records the license plate characters. The Use Policy does allow that newer versions of ALPR systems may also capture vehicle attributes such as vehicle make, model and color and allow for querying of this type of data. Extraneous data (e.g. human faces) may be captured in an ALPR image capture as well. However, OPD's FLOCK ALPR database can only query license plate numbers.

FLOCK ALPR system is maintained off premises. FLOCK and OPD personnel assigned as administrators maintains and controls its ALPR data. FLOCK is considered 3rd party ALPR system and its ALPR data is shared with other ALPR clients. Due to FLOCK's auditing software, there is a still a requirement for a right to know and need to know threshold has been achieved.

ALPR can only be used for authorized purposes consisting only of queries related to criminal investigations and other authorized law enforcement functions, as explained in DGO I-12. Section 3 Restriction on Use:

1. Invasion of Privacy: Except when done pursuant to a court order such as a search warrant, it is a violation of this Policy to utilize the ALPR to record license plates except those of vehicles that are exposed to public view (e.g., vehicles on a public road or street, or that are on private property but whose license plate(s) are visible from a public road, street, or a place to which members of the public have access, such as the parking lot of a shop or other business establishment). OPD shall make reasonable efforts to restrict the usage of the ALPR technology to the public right of way and other public property in alignment with this restriction.
2. Harassment or Intimidation: It is a violation of this Policy to use the ALPR system to harass and/or intimidate any individual or group.
3. Use Based on a Protected Characteristic. It is a violation of this policy to use the ALPR

system or associated scan files or hot lists solely because of a person's, or group's race, gender, religion, political affiliation, nationality, ethnicity, sexual orientation, disability, or other classification protected by law.

4. Personal Use: It is a violation of this Policy to use the ALPR system or associated scan files or hot lists for any personal purpose.
5. First Amendment Rights. It is a violation of this policy to use the ALPR system or associated scan files or hot lists for the purpose or known effect of infringing upon First Amendment rights.

No data from ALPR shall be used or shared with other agencies for the purpose of pursuing criminal charges or civil enforcement against individuals for obtaining, providing, or supporting reproductive health care services, to ensure that medical rights of residents of and visitors to Oakland, a Sanctuary City, remain intact.
In addition:

a. No member of this department shall operate ALPR equipment or access ALPR data without first completing department-approved training.

b. No ALPR operator may access department, state or federal data unless otherwise authorized to do so pursuant to Section E "Data Access".

c. Accessing data collected by ALPR requires a right to know and a need to know. A right to know is the legal authority to receive information pursuant to a state or federal statute, applicable case law, or a court order. A need to know is a compelling reason to request information such as involvement in an active investigation.

F. **Data Types and Sources***: A list of all types and sources of data to be collected, analyzed, or processed by the surveillance technology, including "open source" data, scores, reports, logic or algorithm used, and any additional information derived therefrom.*

ALPR data is composed of photographs of license plates which can be linked through OCR software to identify license plate alpha-numeric characters. License plate photographs, as detailed in Section One above, may contain images of the vehicle with particular visual details of the vehicle (such as vehicle make or model or bumper stickers). Photographs may also contain images of the vehicle driver. However, the ALPR system only annotates photographs based on license plate characters and the utilization of FLOCK allows more advanced functionality where users can query for vehicle type and color and vehicle details (such as bumper stickers).

All ALPR data downloaded to the server shall be purged from the server at the point of 30 days in alignment with DGO I-12. Data may be retained outside the database for the following purposes:

1. Criminal Investigations
2. Missing Persons Investigations
3. Investigations from other law enforcement or prosecutorial agencies where there is a legal obligation to provide information

Any situation outside of these categories requires approval from a commander at the rank of Deputy Chief, Deputy Director, or higher.

California law does not mandate a specific retention period for ALPR data. California Civil Code Title 1.81 .23 governs "Collection of License Plate Information."
Although the Civil Code requires ALPR operators to adopt a "usage and privacy policy" that specifies the "length of time ALPR information will be retained", it does not mandate a specific retention period. However, when the legislature has not prescribed a retention period for a particular type of document, the two-year "catch-all" retention period in California Government Code section 34090 applies. However, after further consideration and discussion with the PAC, the OPD and the PAC agreed to a 1-month (30 day) retention period for ALPR data.

Section 34090.6 specifically addresses "routine video monitoring" and the destruction of video "recordings," and stipulates that the head of a department of a city may destroy recordings of routine video monitoring after one year. However, there is no legislative history or case law interpreting or suggesting that this is the appropriate retention period for ALPR data.

G. Data Security: *information about the steps that will be taken to ensure that adequate security measures are used to safeguard the data collected or generated by the technology from unauthorized access or disclosure.*
OPD takes data security seriously and safeguards ALPR data by both procedural and technological means. OPD will observe the following safeguards regarding access to and use of stored data (Civil Code § 1798.90.51; Civil Code § 1798.90.53):

1. FLOCK Safety is a cloud-based system, and all ALPR data is encrypted with AES-256 encryption, both at rest and in transit. Additionally, there is no public-facing IP address on the ALPR hardware, so it is not possible to remotely access the ALPR system through the hardware.
2. FLOCK Safety **-** All ALPR data shall be accessible only by OPD through a login/password-protected system capable of documenting all access of information by username, license number or other data elements used in the search, name, date, time and purpose (Civil Code § 1798.90.52), and all searches are available for audit.
3. Members approved to access ALPR data under these guidelines are permitted to access the data for legitimate LEA purposes only, such as when the data relate to a specific criminal investigation or department-related civil or administrative action. All searches done in Flock Safety are available for audit.
4. FLOCK Safety – OPD owns the data and our vendor cannot share without our explicit permission and they can never sell it.
5. FLOCK Safety - All ALPR data shall be retained for 30 days in the cloud, and then permanently deleted. The only data that will be stored beyond 30 days are the exceptions outlined in DGO I-12, Section G – Data Retention

OPD's BOSS3 ALPR's system is connected to the City's virtual private network (VPN) gateway and is encrypted through the transport. The encrypted data ends at the VPN gateway and the ALPR data goes into the internal SQL database where records can be search using the OPD internal BOSS3 server. Both the BOSS3 server and ALPR SQL database are internal services that can only be accessible within the OPDnet network.

The current OPD BOSS3 ALPR system is not-cloud based, but FLOCK is; ALPR-camera equipped vehicle computers can download (not upload) State DOJ databases as described above. However, OPD will look to upgrade this outdated system should the City Council approve DGO I-12.
Only authorized OPD personnel have access to the OPD ALPR system. The ALPR coordinator is responsible for providing training on the ALPR system use to authorized personnel.

H. **Fiscal Cost:** *The fiscal costs for the surveillance technology, including initial purchase, personnel and other ongoing costs, and any current or potential sources of funding.*

The first year of costs include $1,077,500 which includes the FLOCK operating system, 300 FLOCK license plate reader systems, and implementation fees. The second and third years of costs ($900,000 per year) are recurring professional services fees.

Table 1: FLOCK Safety System Contract Costs

FLOCK contract dates	Costs
November 1, 2023-October 31, 2024	$1,077,500
November 1, 2024-October 31, 2025	$900,000
November 1, 2025-October 31, 2026	$900,000
TOTAL	$2,877,500

Table 2: FLOCK Funding Breakdown (based on a November 2023 contract start)

Fiscal Year	Funding
November 1, 2023-June 30, 2024	$718,333 from state funds
July 1, 2024-June 30, 2025	$359,167 from state funds; remainder TBD
July 1, 2025-June 30, 2026	TBD
July 1, 2026-October 31, 2026	TBD
TOTAL	

I. **Third Party Dependence:** *Whether use or maintenance of ALPR technology will require data gathered by the technology to be handled or stored by a third-party vendor on an ongoing basis*

OPD relies upon third party technology vendors to install and provide maintenance for the BOSS3 ALPR system. Vendors contracted with the City for vehicle ALPR installation and maintenance of the systems do not handle or store the ALPR data. Data gathered from each ALPR camera is uploaded from the ALPR to the server for secure storage. Maintenance of the server may require the vendor supplying OPD with the server software to handle data stored in it; this access will be controlled by

the City's IT Department.
If OPD moves to FLOCK Safety, data gathered from each ALPR camera is uploaded from the device to Amazon Web Services cloud-based data servers for secure storage. Flock Safety operates as the custodian of the ALPR data; however, all ALPR data is owned by OPD. There is no maintenance required of the cloud-based server.

J. **Alternatives Considered:** *A summary of all alternative methods considered in-lieu of ALPR, including the costs and benefits associated with each alternative and an explanation of the reasons why each alternative is inadequate*

OPD officers and investigators rely primarily on traditional policing techniques to gather evidence related to criminal investigations such as speaking to witnesses and suspects, gathering information from observations, and using standard data aggregation systems. These methods will continue to be employed as primary investigative tools that will be supplemented by use of BWCs to document police activity.

ALPR technology provides LEA personnel with a fast and efficient way to connect vehicles to violent and felonious criminal activity. This tool helps OPD's authorized personnel increase their ability to find wanted suspects and help solve crimes in a way that is unique – by creating a time map of vehicle locational activity. OPD recognizes the privacy concerns inherent in such a technology but has in place the numerous mitigations and data security protocols described in sections five and seven above respectively. However, OPD believes that the alternative to ALPR usage would be to forgo its observational and investigatory benefits. OPD personnel, without access to ALPR data, would rely on patrol officer observations and other basic investigatory processes. For example, OPD would forgo information regarding real-time stolen vehicle information without access to the ALPR system that provides real-time notifications from ALPR hits against CA DOJ databases; OPD would ultimately rely on more manual processes for writing down stolen vehicle plates – an extremely manual and less accurate process. OPD data suggest that some future violent felonies would also remain unsolved as well if there were no access to these ALPR investigatory leads.

K. Track Record of Other Entities

Numerous local and state government entities have researched and evaluated the use of ALPR cameras. The International Association of Chiefs of Police (IACP) documents many recent reports[4]. The AICP report, "News Stories about Law Enforcement ALPR Successes September 2017 - September 2018"[5] presents scores of cases from different national LEA jurisdictions where ALPR data helped lead to the capture of violent criminals. A July 2014 study[6] from the Rand Corporation research organization found that ALPR cameras have proven useful for crime investigations in numerous cities and states, and that systems with the most database access and longest retention policies provide the greatest use in terms of providing real-time information as well as useful investigation data. The findings in this report also indicate that privacy mitigations are critical to ensuring legal use of ALPR and public privacy protections.

Personnel have reached out to local agencies to assess their experience using ALPR.

[4] https://www.theiacp.org/projects/automated-license-plate-recognition
[5] https://www.theiacp.org/sites/default/files/ALPR%20Success%20News%20Stories%202018.pdf
[6] https://www.rand.org/pubs/research_reports/RR467.html

Fremont Police Department personnel stated that they use their ALPR system daily. Moreover, they stated that the system has been of great benefit to their investigations over the years, However, they also stated that they do not specifically track its use in investigations and cannot easily provide quantitative data. They stated that there have not been any unexpected costs or technical system problems. The Livermore Police Department (LPD) replied that they believe their ALPR system is worthwhile to them, but they do not have any quantitative information about the efficacy. LPD personnel stated that they have quantitative data regarding the number of hits as well as search queries, but not regarding usage of the system and the effectiveness. LPD staff also stated that there have not been any unanticipated costs nor system failures. They also stated that they conduct regular audits and have not identified any civil rights or civil liberties abuses. OPD personnel are still waiting to hear back from other agencies.

Appendix B:

Automated License Plate Use Cases

20-042436
On August 26, 2020 a residential burglary occurred. The suspect vehicle description and license plate number were obtained and the ALPR system was queried. The system showed a recent location where the vehicle had been parked. The vehicle information along with the location where the vehicle was seen parked were disseminated to officers for extra patrols in the area to search for the vehicle. (Data age 3 months)

20-042543
On August 27, 2020 an armed robbery occurred. A suspect vehicle license plate was obtained, and an ALPR query was conducted. A picture showing distinctive things about the vehicle was obtained from the system and it was disseminated to officers. (Data age 3 months)

20-054741
On November 5, 2020 a patrol unit received an alert on their vehicle computer that their ALPR system had just identified a stolen vehicle. The officers confirmed that the vehicle was stolen and conducted a high-risk vehicle stop on the vehicle. The driver was arrested for the stolen vehicle and a search of the vehicle was conducted. Officers found explosives, two firearms, ammunition, counterfeit money, and marijuana for sales. (Real Time Usage)

20-054097
On November 2, 2020 an accident occurred in the city of Oakland, The driver of one of the vehicles refused to exchange information with the other driver and instead retrieved a firearm from his vehicle and proceeded to rob the other driver at gunpoint. When officers arrived on scene the victim of the robbery provided them with the license plate of the suspect vehicle. Officers queried the ALPR system which revealed a match to the suspect vehicle. Officers were able to locate the vehicle which resulted in additional evidence. (Data Age 3 months)

20-057415
On November 22, 2020 an armed carjacking occurred. An armed suspect approached a vehicle and ordered the victim out of the vehicle at gunpoint. The suspect then fled with the vehicle. The investigator used the ALPR system to locate a photograph of the vehicle which was disseminated to officers. The vehicle was later located. (Data age 6 months)

20-032901
On July 5, 2020 a suspect physically assaulted a victim by punching her in the head ten to twelve times and then stole her property. The victim was able to give the suspects license plate to officers. An ALPR query was conducted which revealed a picture of the vehicle which was disseminated to officers. (Data age 2 months)

20-038069
On August 2, 2020 a strong-armed carjacking occurred. The victim was being followed by two vehicles which boxed him in preventing his escape. The suspects pulled the victim from the vehicle and proceeded to punch and kick him. The suspects then fled with the victim's vehicle. The Investigator ran a query of the victim vehicle license plate in the ALPR system which revealed a photo of vehicle. The photograph was disseminated to officers. (Data age 1 month)

20-058470
On November 28, 2020 an armed carjacking occurred. Two suspects approached the victim who had just parked his car. The suspects proceeded to rob him at gunpoint and took his vehicle. The investigator ran a query in the ALPR system and obtained a photo of the victim's vehicle which he disseminated to officers. (Data age 1 month)

20-042319
On August 26, 2020 an attempted robbery occurred. A suspect approached the victim who was sitting in his car and pointed a firearm at him while trying to enter the vehicle. The victim was able to flee the scene and observed the suspect getting into a vehicle. The victim was able to see a partial plate on the suspect vehicle. The investigator was able to conduct an ALPR query on the partial plate and was able to identify a possible suspect vehicle and full license plate. The photograph of the vehicle was disseminated to officers. (Data age 3 months)

20-063066
On December 26, 2020 a residential burglary and assault with a deadly weapon occurred. The suspect entered the victim's basement and then left. Another victim followed the suspect who then shot at the victim and fled the area in a vehicle. Officers were able to obtain a partial license plate of the suspect vehicle. The investigator was able to conduct a partial plate query on the suspect vehicle which revealed a possible license plate and vehicle photo. The photograph was disseminated to officers. (Data age 1 month)

20-003497
On January 19, 2020 an assault on a police officer occurred. An Oakland Police officer in full uniform and in a fully marked patrol vehicle observed several motorcycles and ATVs driving recklessly. The officer attempted to conduct a vehicle stop for the reckless driving. One of the ATVs rammed the officer's driver door as he got out causing injury to the officer. An ALPR query on a Pickup truck license plate which had been transporting the Suspects and their ATVs was conducted which revealed a photograph of the suspect vehicle and common areas where the vehicle had been in the past. The photograph of the suspect vehicle was disseminated to officers. (Data age 4 months)

20-004940
On January 26, 2020 an assault with a deadly weapon occurred. The victim was assaulted by two suspects while in his vehicle. One of the suspects shot the victim in the neck and then both suspects fled the scene in another vehicle. The license plate of the suspect vehicle was obtained, and an ALPR system query revealed a photograph of the vehicle. The photograph of the vehicle was disseminated to officers who were able to locate it. The vehicle was processed

for evidence and the suspects were taken into custody. (Data age 6 months)

21-002381
On January 15, 2021 an armed robbery occurred. Two suspects approached two victims as they walked out of a sandwich shop and robbed them at gunpoint, physically ripping their purses out of their possession. The suspects fled in a vehicle and a partial license plate was obtained. Officers were able to conduct an ALPR system query which revealed a possible suspect vehicle with full license plate as well as matching damage as described by the victims. Officers disseminated the photograph of the vehicle along with the locations where the vehicle had been in the past. (Data age 1 year)

21-002808
On January 18, 2021 an armed robbery occurred. A suspect armed with a firearm approached victims who were exchanging groceries. The suspect pointed a firearm at the victims and robbed them. The suspect fled in a vehicle. A partial license plate was obtained for the suspect vehicle. Officers conducted an ALPR system query which revealed an entire license plate for the suspect vehicle. (Data age 1 month)

21-04318
On January 28, 2021 an assault with a deadly weapon occurred. A suspect vehicle was seen chasing and shooting at another vehicle. The suspect missed the intended vehicle and struck a passing vehicle with three people as well as a business. A license plate was obtained for the suspect vehicle and the Watch commander conducted an ALPR system query which revealed a photograph of the suspect vehicle. The photograph added additional details for officers to be able to locate the vehicle. (Data age 6 months)

RD# 20-016214
Missing Person + Homicide Case – A female was reported missing. During the CID investigation, a positive hit was recorded by an ALPR system (based on the vehicle license plate registered to the missing person). Officers responded, and her deceased remains were found in the truck of the vehicle. There is an ongoing homicide investigation. (Data age TBD)

RD# 20-017986
Human Trafficking Case – A juvenile was a victim of human trafficking. The CID investigator utilized ALPR to identify the suspect. The victim was safely relocated. A Ramey warrant[7] was authorized for the suspect's arrest. (Data age TBD)

RD# 20-017986
Human Trafficking Case – A DOE was kidnapped and the victim was able to provide investigators with a license plate. Investigators inputted the license number into the OPD ALPR

[7] A Ramey Warrant is an arrest warrant that is obtained by a police agency directly from a judge and bypassing the district attorney (DA) (who otherwise issues arrest warrants). In the interest of faster processing due to the nature of the crime and/or DA availability, a police agency may skip the district attorney and go directly to a judge. The police agency must submit a declaration, along with a report, to the judge setting out their reasons for requesting that the judge issue the warrant; the judge must believe that there is probable cause, and sufficient evidence that the suspect has committed a crime.

system so officers could identify a suspect if there was an ALPR hit. (Data age TBD)

RD# 20-043740
Human Trafficking Case – undercover OPD officers were working a sting operation when they were approached by a subject who attempted to kidnap them. The suspect was arrested and taken into custody, but his accomplice fled the scene. Body-worn camera (BWC) footage and officer observation captured the suspect vehicle. A Ramey warrant is now pending for the outstanding suspect. (Data age TBD)

RD# 20-000543
Sexual Assault – A person was sexually assaulted. ALPR was used to locate and arrest the suspect. This case has been charged by the DA's Office. (Data age TBD)

Additional OPD Criminal Investigation Cases Aided by ALPR Data (2017-2021)

17-028994 / 4 Jun 17
Victim's vehicle was stolen and hit off on LPR in Vallejo after homicide. Able to get video from bridge that captured vehicle and assisted in the identification of suspect.
Age of LPR data at time of query: one day

17-067734 / 30 Dec 17
Confirmed suspect vehicle matched surveillance video
Age of LPR data at time of query: one day

18-006777 / 7 Feb 18
LPR was used to identify the suspect vehicle which was captured at the scene prior. The vehicle was entered as a felony want vehicle and when it hit on a LPR in Pittsburg local police stopped the vehicle and identified the suspect which led to the case being solved.
Age of LPR data at time of query: one day

18-043416/ 27 Aug 18
Victim was murdered in the 7100 Blk of International Blvd. A neighborhood store's video surveillance captured the license plate of the suspect vehicle. The suspect's vehicle was located via LPR due to the fact the current reg. owner no longer possessed the vehicle.
Age of LPR data at time of query: one day

19-017673 & 19-021729 / 10 Apr & 1 May 19
LPR was used to match suspect vehicle which resulted in the recovery of multiple firearms and the arrest of three suspects for 19-021729
Age of LPR data at time of query: three months

19-037231 / 22 Jul 19
Identified suspect vehicle and linked to suspect with assistance of LPR.
Age of data unknown

20-021443 / 28 Apr 20
LPR was used to locate and recover suspect vehicle.
Age of LPR data at time of query: eight days

21-024105 / 26 May 21
Victim was killed in a drive by shooting at 35/Suter. The investigation revealed a license plate of the suspect vehicle as well as a retaliation motive from a shooting that occurred about a week earlier in the same area. Over a month after the murder the suspect vehicle was located, abandoned in a parking lot in Tracy California. A search of the vehicle revealed a potential suspect through DNA evidence. However, there were no witnesses to identify the shooter. After some time, phone records were obtained for several of the people considered as suspects in the case. Investigators used license plate reader data and cross reference the activity of phone records for the suspects. This information allowed proof of exculpatory evidence for some of the suspects. Additionally, the LPR and phone data allowed investigators to identify the shooter: the cell phone was at the same location as the license plate scan, which also corresponds with the homicide time and location. This case has been charged by the District Attorney; the ALPR data was crucial in solving the case.
Age of LPR data at time of query: one week.

21-034274 / 24 Jul 21
Video surveillance of suspect vehicle was matched to actual suspect vehicle with LPR. Used phone records of suspect and LPR captures throughout area to link suspect to vehicle showing phone was in area of LPR captures. Case still pending but suspect identified.
Age of LPR data at time of query: one day

21-040329 / 9 Sep 21
Vallejo used Flock cameras in their city to obtain a plate from the suspect vehicle during a homicide connected to the same vehicle on September 16, 2021. The plate was a switched plate that was from a stolen license plate from Oakland. The real plate was obtained through other investigative steps but the Flock ALPR cameras provided the initial lead.
Age of LPR data at time of query: one day

20-016214 / 28 Mar 2020
A woman was killed by her boyfriend. The boyfriend initially reported the woman as a missing person. On March 31st, 2020 a search of an outside agency LPR database revealed the suspect's vehicle had been parked on a street in a neighboring city. Deputies responded and located the vehicle based on LPR data. The woman was subsequently found deceased, suffering from blunt trauma in the trunk of her car. The LPR data allowed investigators to find the boyfriend's vehicle and subsequently recover physical evidence linking the boyfriend to the murder.

Age of LPR data at time of query: eight days

18-043265 / 26Aug18
A person was murdered during an attempted carjacking in the 1300 block of 72nd Avenue. After review of video surveillance that took several days, the investigator was able to determine a suspect vehicle description and partial license plate. The investigator searched through thousands of LPR photos with a similar plate and was able to use the images captured by LPR photos to eliminate several thousand vehicles. Fortunately, amongst the thousands of saved images, the investigator was able to find a photo matching the description of the suspect vehicle with the partial license plate characters. The investigator then searched for additional images of the vehicle in multiple LPR systems and found more evidence in the case. Evidence showed that a suspect had reported the license plates as a stolen on the night following the murder. Suspects were later identified; one suspect is currently in custody pending a jury trial.

Age of LPR data at time of query: three months