



**Seattle** Office of  
Inspector General

# Surveillance Technology Usage Review Automatic License Plate Readers (ALPR) Patrol 2023

*As Required by Seattle Municipal Code 14.18.060*

December, 2024

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## Technology Description

**SPD Policy 16.170:** governs use of ALPRs.

Automatic License Plate Readers (ALPRs) are high-definition, infrared digital camera systems that detect and read characters from license plates. In 2023, eleven SPD patrol vehicles had ALPRs. **SPD Policy 16.170** addresses the purposes and guidelines for use of ALPRs and data generated by them. It states that ALPR-equipped vehicles are used to locate and recover stolen vehicles and license plates, to identify vehicles wanted in conjunction with felonies, to enforce protective orders, and to canvass the area around a crime scene.

**Reads:** scans of license plates.

Each SPD vehicle equipped with an ALPR system has three mounted cameras, which scan strings of letters and numbers on license plates as they come into view – these are known as **reads**. Reads that initially appear to match with an item on a hotlist - which sources license plate information from the Washington Crime Information Center, the FBI's National Crime Information Center, Washington Department of Licensing, and SPD investigations – are known as **unverified hits**. This is because hits must be verified by officers and/or dispatch as true matches. Not all hits are true matches and require the officer to confirm. In some cases, the ALPR system may **misread** a digit (e.g., mistaking a "1" for an "l" or an "8" for a "B"). In other cases, the license plate contains the same digits as a known stolen vehicle but is from a different state. The officer, therefore, must visually confirm each hit by comparing the read and potential match to ensure that the digits and the issuing state match perfectly with the record from the hotlist. Images of reads, hits, and misreads are automatically stored in the ALPR database, where SPD retains them for 90 days before purging.

**Unverified hits:** a read that appears to match a criminal record.

**Misreads:** a read that appeared to match a criminal record but is actually a false positive.

In addition to the real-time use of ALPR-equipped patrol vehicles, SPD uses the resulting ALPR database as a resource for investigations. Whenever a user initiated a search in 2023, they had the option to provide a case number, justification, and a note explaining the nature/purpose of their search. Database users can specify a date range and/or a scan radius when searching reads, hits, or a specific license plate. The **ALPR database** records these various search parameters and retains them for 90 days.

**ALPR database:** a searchable database of reads, unverified hits, and misreads that are retained for 90 days.

### The ALPR System Has Been Replaced

During report writing, Seattle City Council approved the Surveillance Impact Report (SIR) for an expansion of ALPRs. The approved expansion will replace the current ALPR system by enabling the license plate reader capability in Axon In-Car Video systems that are already present in SPD vehicles. This report reviews the use of the prior system for the year 2023. Future OIG reviews of this surveillance technology will address the specifications and functioning of the new system.

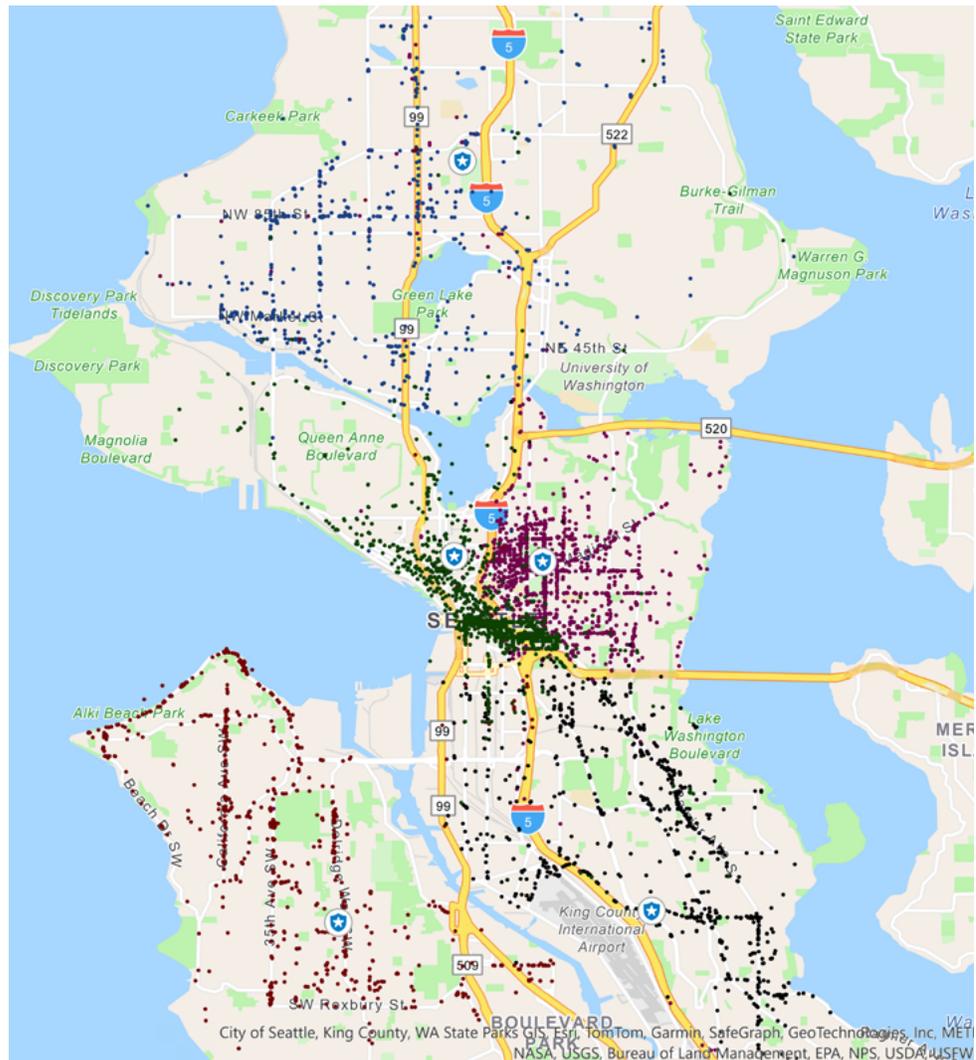
## SECTION A Frequency and Patterns of Use

### ALPR Hits Geography

In 2023, the greatest concentration of unverified hits occurred in the downtown core and adjacent neighborhoods. Unverified hits also clustered along streets where officers were most likely to drive along during a deployment. For example, unverified hits more often occurred on major traffic thoroughfares – such as Aurora Avenue North, North 85th Street, 12th Avenue, East Madison Street, East Yesler Way, South King Street, Rainier Avenue South, California Avenue Southwest, Alki Avenue Southwest, and Delridge Way Southwest – compared to less-travelled neighborhood streets. Similarly, hits clustered around West and East Precincts.

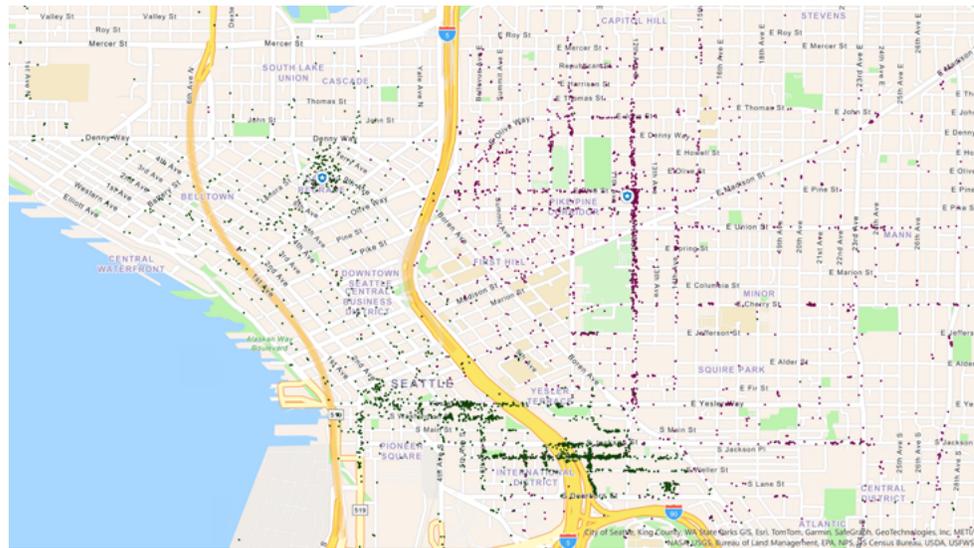
**Figure 1**

Each dot signifies the location of a recorded hit. Dots are color coded according to their assigned precinct, North, West, Southwest, South, or East. Precinct buildings are marked with a blue badge.



**Figure 2**

Shows a close-up of the downtown core and adjacent neighborhoods. Each dot signifies the location of a recorded hit. Dots are color coded according to their assigned precinct, North, West, Southwest, South, or East. Precinct buildings are marked with a blue badge.

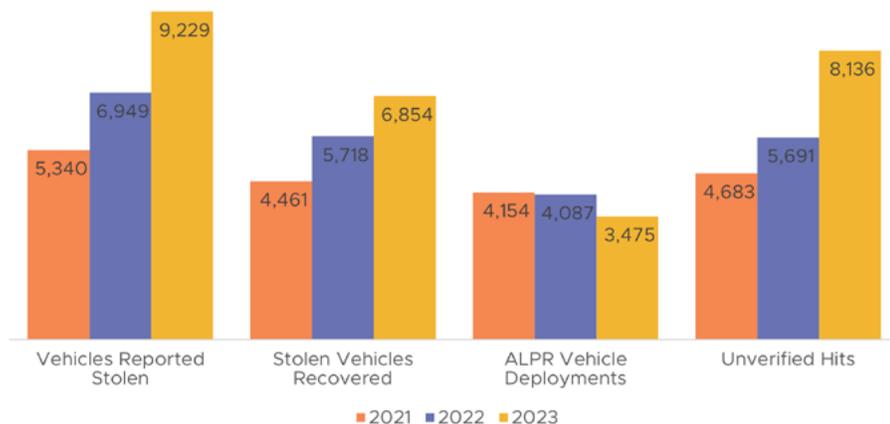


Every day in 2022 and 2021 had at least one ALPR-equipped vehicle deployed; however, in 2023, 1-in-4 days had no ALPR deployments. Additionally, there were 612 fewer deployments of ALPR-equipped vehicles in 2023 compared to 2022. Despite fewer days with deployments and fewer deployments, SPD recorded 2,445 more unverified hits in 2023 than in 2022. The exact cause(s) of this condition are not immediately apparent, but two plausible factors include the escalating number of stolen vehicles and/or the data recording process for hits/misreads (see Figure 1 below). The first possible factor is that nearly 2,000 more vehicles were reported stolen in 2023 compared to 2022, which may have increased the likelihood of encountering stolen vehicles during ALPR deployments. Another factor could be the data recording process: because officers must manually verify hits or mark them as misreads, SPD personnel explained that the number of hits may be an overcount while the number of misreads may be an undercount. OIG will continue to monitor and measure the relationship between the numbers of deployments, hits, and vehicles reported stolen.

**Figure 3**

visualizes stolen vehicle and ALPR deployment trends.

ALPR Statistics, 2021 - 2023



## SECTION B

### Data Sharing with External Partners and Other Entities

As outlined in Section 6.1 of the SIR, SPD may share data with various external agencies and entities within legal guidelines or as required by law.<sup>1</sup> During the inaugural review of this technology, SPD reported it does not have a centralized method for sharing ALPR records with external entities. As a result, it was not possible to assess how often SPD shared ALPR records with other government entities in 2023. However, SPD revised their ALPR policy as of October 2024. Policy 7 of Title 16.170 states:

Requests for ALPR data by non-law enforcement or non-prosecutorial agencies will be processed by the Legal Unit pursuant to the applicable Rules of Civil or Criminal Discovery or the Washington Public Records Act (RCW 42.56). The Legal Unit will maintain requests for ALPR data by non-law enforcement or non-prosecutorial agencies.

Consequently, OIG will not issue a recommendation in this area.

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<sup>1</sup> Such as prosecuting attorney's offices, insurance companies, courts, federal and state law enforcement agencies, and members of the public can access their own information pursuant to a public records request.

### Data Security

SPD secures the current ALPR database through multiple access controls, both digital and physical. SPD controls digital access to the ALPR database by permitting access to only a limited number of users. Most users are SPD employees, and a small number are with the Seattle Information Technology Department (SITD) and OIG for administrative and auditing purposes. Logins to the database are recorded and protected by multiple security measures including multifactor authentication. SPD also controls physical access by having the ALPR database as an on-premises system located in the Seattle Justice Center, where physical access is limited and logged. SITD personnel back up the system – but not the reads or hits data stored therein – and manage the vendor relationship for system configurations.

### Data Retention Inconsistencies

As stated in the Technology Description, the ALPR database retains license plate scans for 90 days, after which point those data are automatically purged. OIG performed periodic checks on the ALPR database and confirmed that license plate scans were purged according to SPD Policy 16.170.

In 2023, the ALPR database was set also to retain audit logs recording officers' searches of the ALPR database for 90 days. Though Neology BOSS purged license plate scans at 90 days, the vendor inconsistently purged audit logs of the ALPR database: some audit logs older than 90 days had not been purged on time while other records not yet at the 90-day retention had been purged. Throughout the report writing period OIG, SPD, and SITD worked together to monitor the issue and contacted the vendor for explanation. The vendor could not determine the cause of their inconsistent purging.

Though SPD Policy 16.170 states that license plate scans will only be retained for 90 days, it does not identify a retention period for ALPR database audit logs. Section 3.2 of the SIR states that "records of these requests [to access ALPR data] are purged after 90 days" but this does not clarify whether this retention schedule is based on policy. Logs of who accessed the database and for what purpose are important for accountability purposes, as well as a potential tool for assessing effectiveness of the database as an investigative resource. A retention period of only 90 days means that OIG or any other entity assessing use of the database must proactively retrieve, combine, and retain records. At this time, however, OIG will not issue a recommendation to alter the retention period for user activity logs, because SPD management reported that doing so would require significant and costly software changes to their digital evidence and records management systems.

## SECTION D

### Impact on Civil Liberties and Disproportionate Effects on Disadvantaged Populations

The greatest civil liberties risk associated with the use of ALPRs is the mass accumulation of license plate images into a searchable database. Whenever an authorized user accesses the ALPR database, their search parameters are recorded and retained for 90 days. Because the vendor inconsistently purged audit logs from 2023, OIG’s analysis of the database is based on the remaining audit logs.<sup>2</sup> In total, there were 235 searches of the ALPR database preserved from 2023, and they related to at least 67 cases.<sup>3</sup>

#### ALPR Database Searching Requires Documentation

A provision in SPD Policy 16.170 states that “employees conducting searches in the ALPR system will provide a case number and justification for the search. If a case number does not exist, the employee will provide thorough justification for the legitimacy and lawful purpose of the search.” However, about 37% of searches did not comply with that policy requiring database users to either A) provide a case number and select a justification or B) provide a thorough justification note for the search. In 2023, the ALPR database system did not require users to enter a valid case number, justification, or to provide an additional note to initiate a search. Consequently, OIG could not verify that all database searches from 2023 were conducted in connection with an investigation. However, during the report writing period SPD updated the ALPR system to require all users to provide a case number, select a pre-determined justification for the search, and add a note on the search. As a result, OIG is not issuing a recommendation in this area.

#### Justifications and Purposes of ALPR Database Searches

A memo introducing the SIR explained that ALPR database searches would be used for investigations such as “homicides, rapes, robberies, kidnappings, and Silver and Amber alerts.” Officers’ searches of the ALPR database generally corresponded with these purposes of use. To assess this, OIG compared database searches to initial dispatch call types and/or the investigation type listed in the records management system. The ALPR database contains 13 pre-defined justifications: three are administrative justifications (audit, test, and trend analysis) and ten are crime types or investigation purposes (BOLO Post Scan Query, Crime Scene Query, Violent Crime, Robbery, Domestic Violence, Burglary, Rape, Bulletin Reference, Narcotics, and Auto Theft). Of the 235 searches from 2023, 99 cited SPD case numbers, 23 cited non-SPD case numbers, and 113 searches did not cite a case number.<sup>4</sup> Though dispatch

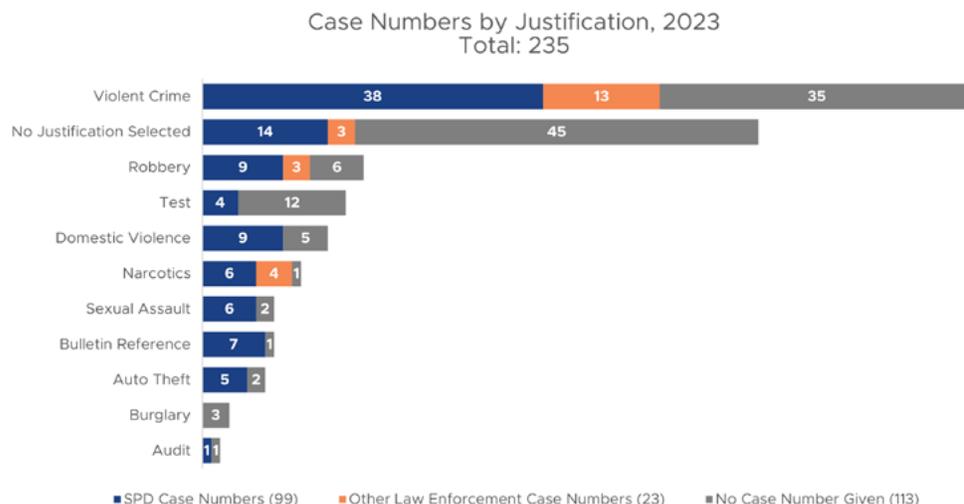
2 OIG has taken steps to capture ALPR database audit logs pertaining to user activity in 2024.

3 “At least 67 cases” means there were 67 different case numbers provided for the 235 searches; however, some of the case numbers used multiple times were clear stand-in numbers, such as “0000-0000” or “2023-XXX.”

4 PD Policy 16.170 does not specify that ALPR database searches must have an SPD case number; case numbers from other jurisdictions appear to satisfy that policy requirement.

and case file records have many more types than the 13 defined in the ALPR database, a review of the 99 database searches that included an SPD case number showed that officers selected a reasonably applicable justification. However, in the remaining 136 searches could not be verified either because they either contained no case number or a case number to another law enforcement agency.

**Figure 4** illustrates the distribution of search justifications provided by users at the onset of a search of ALPR records. SPD Policy 16.170 provides guidance for searches without case numbers, thus the absence of a case number does not necessarily mean the search did not comply with policy.



### Searches' Date Ranges

The SIR documents community members' concerns about whether a 90-day retention period is necessary. In 2023 the ALPR database did not record whether a search for a specific license plate returned responsive records (i.e., reads and/or hits). Without a log of responsive records returned per search, it is not possible to determine the effectiveness of the 90-day retention period. However, audit logs record the date range of each search and provide insight into database use.

**Figure 5** illustrates the distribution of average search windows by justification type.

### Distribution of Search Windows of ALPR Database Searches, 2023

Search Window	Percentage of Searches
Same day or 1 day	21.7%
Between 2 and 89 days	38.3%
90 days	40.0%

On average, searches had a date range of about 52 days, and the average date range for each justification is illustrated in Figure 3 above. Date ranges differ according to the investigation type, with some – such as Rape or Narcotics investigations – tending to query longer date ranges of reads/hits than others – such as Auto Thefts and Domestic Violence investigations.

## SECTION E

### Complaints, Concerns and Other Assessments

#### Office of Police Accountability Complaints

No relevant complaints pertaining to this surveillance technology were cited in OPA complaints filed in 2023.

#### Customer Service Board Comments

No relevant comments pertaining to this surveillance technology were cited in Customer Service Board comments posted in 2023.

#### Internal Audits/Assessments

No internal audits or assessments of this surveillance technology were conducted in 2023.

## SECTION F

### Total Annual Costs

SPD reported \$5,413.28 in licensing costs for use of the ALPR system in 2023. It was not feasible to calculate personnel costs for this technology because of the high number of officers trained to operate ALPR-equipped vehicles as well as the high number deployments.

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## APPENDIX A: Management Response

SPD provided that it has no substantive response to this review as no matters requiring a response are raised, but SPD appreciates the opportunity to review.

**Non-Audit Statement** This review was not conducted under Generally Accepted Government Auditing Standards (GAGAS); however, OIG has followed GAGAS standards regarding the sufficiency and appropriateness of evidence.