Annual Usage Report for Automated License Plate Readers
City of San José
January – December 2023

Owning department(s): San José Police Department
Department owner: Deputy Chief, Executive Officer

Context for Annual Usage Reports

The City annually reports on the usage and accuracy of its priority technologies that collect personal information. This document is prepared in coordination with the owning department and the Digital Privacy Officer, and satisfies the required reporting detailed in the relevant Data Usage Protocol.[1]

1) Program Summary

Automated License Plate Readers (ALPRs) use high speed cameras to photograph vehicle license plates, which are used to identify if the vehicle is stolen or part of an ongoing investigation. The purpose of ALPR cameras is to improve criminal investigations and deter crime in the surrounding area.

2) Updates to Data Usage Protocol and Plans for Future Years

No updates to the Data Usage Protocol were made during the reporting period. As of the end of December 2023, 149 ALPR cameras were installed across the City. Next year, the estimated number of ALPR cameras intends to increase to over 400. Continued use of the cameras is dependent on pending funding.

[1] See all published Data Usage Protocols at: https://www.sanjoseca.gov/digitalprivacy

3) Reporting Metrics on Usage and Accuracy

a. Reads by location

This metric shows the number of plates read (i.e., number of photographs taken) by location by the ALPR system. Overall, 263,771,079 total reads occurred during 2023.

Zip code	Reads
95008	4364554
95110	12015995
95111	4349817
95112	6445296
95116	31151284
95117	17684938
95120	8119
95122	85019491
95123	6652493
95125	9390590
95127	38806721
95128	9156933
95129	3232388
95130	5011322
95131	5248189
95134	2217649
95136	8447424
95138	21483
95148	1339860

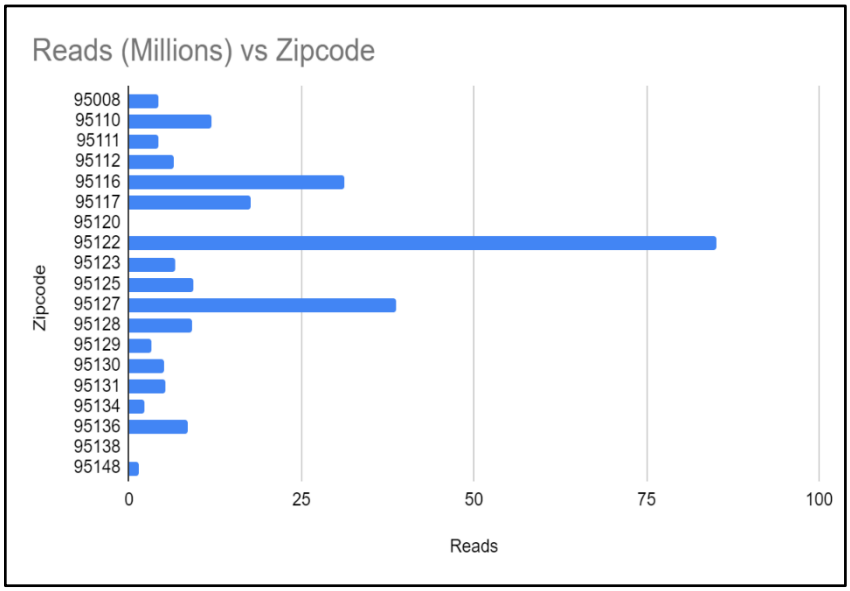

Figure 1: Number of reads by zip code, measured on March 1, 2024.

b. Hits by location

This metric shows the number of "hits" by location. A "hit" is when the San José Police Department (SJPD) is alerted that a vehicle involved in an active investigation (i.e., on a "hotlist") has been identified by an ALPR camera. Overall, 167,014 total hits occurred during 2023.

Zip code	Hits
95008	2416
95110	16674
95111	6174
95112	13108
95116	56960
95117	16782
95120	4
95122	99752
95123	7272
95125	4330
95127	62872
95128	9146
95129	2872
95130	5336
95131	6232
95134	2556
95136	10152
95138	8
95148	1828

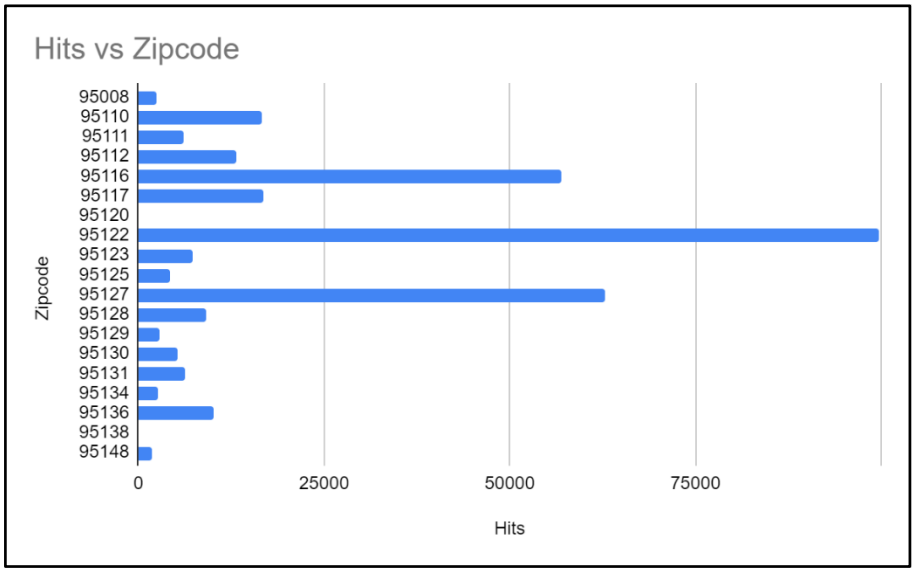

Figure 2: Number of hits by zip code, measured on March 1, 2024.

c. Records Accessed by SJPD

SJPD accessed 93,291 records (e.g., photos) during 2023. This includes records from partner agencies, which are other law enforcement agencies in California.[2]

d. Accuracy of system

A study conducted by the Digital Privacy Office identified an accuracy rate of at least 80% under any weather conditions. The table below details accuracy of the system as of the study date on March 1, 2024. These accuracy levels are comparable to other research.[3] An 80-90% accuracy rate is a reasonable level when combined with human verification, which is required for ALPR usage. The accuracy rate was lower

[2] A full list of partner agencies can be found on San José Police Department's ALPR portal: https://transparency.flocksafety.com/san-jose-ca-pd

[3] While the space is limited in research, European agencies and companies have conducted some ALPR accuracy tests: https://sensorable.io/articles/anpr-accuracy-test/index.html, https://www.nedapidentification.com/insights/the-wide-range-of-anpr-solutions-calls-for-guidance-in-making-the-right-choice/, and https://www.researchgate.net/publication/261503938_Accuracy_of_automatic_number_plate_recognition_ANPR_and_real_world_UK_number_plate_problems

at night and in unclear conditions (rainy or cloudy) when compared to the accuracy during the day in clear conditions. Increasing ALPR's accuracy rate at night is an area for future improvement.

Circumstances	# of Reads	# Correctly Read
At night when it is cloudy and/or raining	26	21 (81%)
At night with clear skies	177	154 (87%)
During the day when it is cloudy and/or raining	52	48 (92%)
During the day with clear skies	103	94 (91%)

Figure 3: Accuracy of ALPR reads in the field, measured on March 1, 2024.

4) Compliance reporting

After reviewing all access logs, system accuracy, and summary of the program, the Digital Privacy Officer finds SJPD in compliance with its Data Usage Protocol. The DPO was particularly concerned about which entities have accessed San José's cameras to ensure that only approved CA agencies accessed the data. In reviewing the audit logs of SJPD, the Digital Privacy Officer confirmed that all active users that accessed SJPD ALPR data were California law enforcement agencies.

Access logs also include a justification for each access. While most access logs included a case number, some instead provided a descriptive justification for access, such as "Stolen Vehicle".

5) Conclusion

The ALPR system has been used in compliance with the Data Usage Protocol. The access controls and audit logs provide the City with comprehensive controls over who, how, and when people can access the data.

6) Recommendations

SJPD should continue education for officers on accurate data reporting when accessing the ALPR system. Additionally, the Digital Privacy Officer recommends future research into the potential preventative effects of the ALPR system. In other words, study if areas with ALPR systems show a decrease in reported incidents relative to similar areas with no ALPR system. SJPD should also make efforts to increase ALPR's accuracy rate at night, and provide further education for officers to ensure they enter the relevant incident number when accessing the database.