

Assurance Group

Follow-up audit of Police staff use of Automatic Number Plate Recognition (ANPR) platforms

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PURPOSE

Following a baseline-setting audit in 2022, this report summarises findings from a follow-up audit in 2024 to identify trends in the way authorised New Zealand Police staff are accessing externally-provided ANPR data.

CONTEXT

For several years, New Zealand Police has been able to source vehicle number plate data which are made available using ANPR technology; either through its own small number of ANPR-capable cameras, or by requesting such information from third parties. The predominant mode of access is through two vendor systems, operated by the companies SaferCities and Auror. Individual system audits have been conducted by these partner companies on a semi-regular basis, using transaction log auditing capability to build confidence they are being used as expected. Registered Police users of the external platforms sign up to terms and conditions of use, and they are warned the purposes of any ANPR inquiries must be aligned to Police's policies and *Code of Conduct*.

While the operational benefits of police accessing and using ANPR data are significant, to guard against any potential for misuse an audit and assurance framework was designed to cover Police staff interactions with ANPR-capable platforms, and a baseline-setting ANPR audit was completed in October 2022. That earlier audit interrogated logs spanning 350,000+ transactions over a three-and-a-half year period, cross-checked against relevant Police datasets. The audit gave general reassurance that vendor systems are being used as intended by those in Police entrusted to do so.

At the time of the baseline-setting audit in 2022, a commitment was made to include repeat audits of Police staff use of the SaferCities and Auror platforms as part of Police's rolling annual *Audit and Assurance Work Plan*. In line with that commitment, a follow-up audit of Police staff use of third party ANPR platforms was included in Police's *Audit and Assurance Work Plan 2024/25*.

APPROACH

Using similar data mining and analytical techniques to those used in the baseline-setting audit, the follow-up audit reviewed usage data provided by SaferCities and Auror for the financial years from 2018/19 through to 2023/24. This enabled insights into staff use of after-the-event searches as well as automated alerting (which effectively allows vehicles of interest to be 'tracked' in real time).

MAIN FINDINGS

At the time of the re-audit, there were more than 8,600 registered Police users of the vehicle search functions available on the two ANPR systems. This reflects a broadening of the user base of Police staff – well up on the 6,150 authorised Police users there were back in 2022.

In line with a larger number of authorised users, requests submitted to the platforms by Police staff has continued to grow; averaging around 55-60,000 searches per month across both ANPR platforms in 2023/24. This represents a more than doubling of the equivalent monthly number of historical vehicle search requests identified in the baseline-setting 2022 audit (where after-the-event searches averaged in the range of 20-25,000 per month).

Use of automated alerting is far less frequent, averaging around 20-30 'tracking' requests a month in 2023/24. This is a significantly lower volume than was recorded in the baseline-setting 2022 audit, which found activity levels averaged some 200 'tracking' requests per month.

Investigating high-volume crimes continues to be listed as the most common reason Police staff are seeking vehicle number plate information through the systems; albeit differences in how reasons for requests are coded complicates the ability to interpret some results. The roles held in Police of the most prolific users of the two platforms do, however, make intuitive sense; and reflects a focus on higher-volume or serious offending.

Key conclusions

This follow-up audit has helped to:

- add to understandings of what, why and how often New Zealand Police staff access ANPR data from the two ANPR platforms operated by SaferCities and Auror
- confirm the value of continuing to monitor Police employees' interactions with the platforms – both as a deterrent to any potentially improper use, and to contribute to a more complete picture of the place of ANPR data in contemporary policing work.

Introduction and background

As in other jurisdictions, ANPR has long been used in New Zealand to support crime prevention and resolution activities, as well as to contribute to staff safety. ANPR is a critical tool which can help achieve Police's outcomes, and Police uses two externally-provided platforms with ANPR capability, operated by the companies SaferCities and Auror. Both vendors' systems have in-built controls and auditing capability, but until an October 2022 audit the efficacy of these controls had not been put to the test by Police. The 2022 baseline-setting audit was designed to help develop a deeper understanding of how Police staff were interacting with ANPR data, as well as to check that the audit and assurance framework covering employees' interactions with ANPR platforms would allow any potentially inappropriate access to be flagged up. While a small number of anomalies were detected (yielding a rate of apparent potential misuse in the order of 1 in every 1000 users), the baseline audit gave general reassurance that the two systems are being used as intended by those in Police entrusted to do so.

Off the back of the 2022 audit, further work was progressed with both SaferCities and Auror to design out, as far as possible, the risk of any inappropriate use of the ANPR systems by Police staff. Acting on several opportunities to 'hard wire' strengthened system controls offered even greater confidence that any improper use of ANPR data might be prevented before it occurred; and would be swiftly detected and corrected if it ever did happen. As a deterrent to any to any potential Police misuse, however, and to contribute to a more complete picture of the place of ANPR data in contemporary policing work, a commitment was made to undertake repeat audits of the SaferCities and Auror platforms, as part of Police's rolling programme of internal audit and assurance work. It was further noted that the results from such re-auditing could be shared with scrutiny and governance groups, such as Police's independent Assurance and Risk Committee; made available on request to oversight and regulatory bodies, such as the Office of the Privacy Commissioner; and summaries of usage statistics and re-audit findings might also be able to be proactively published, in the wider interests of openness and transparency.

In line with these commitments, a follow-up audit of Police staff use of third party ANPR platforms was included in Police's *Audit and Assurance Work Plan 2024/25*. This report summarises findings from the follow-up audit.

Brief note on methodology

The audit was led by a specialist data scientist, supported by various other senior Assurance Group personnel. Using vehicle registration plates as the basic unit of analysis, various data mining and analytical techniques were applied, including dip sampling and other checks to validate Police staff use of automated alerting capabilities. (Subject to stringent controls, Police use of this active detection capability effectively allows for a vehicle of interest to be tracked in real time, with notifications sent to the requesting Police staff member whenever there are ANPR 'hits' on the listed vehicle.)

Informed by detailed spreadsheets and audit workings, this report summarises key insights from analysing data from the period 2019-2024 made available by SaferCities and Auror.

Police use of Auror's platform: Key audit findings

Use of vehicle search function

Consistent with growth in the number of Police users registered to search for vehicles using ANPR – rising from low hundreds of authorised users in 2019, to 6,150 registered users in 2022, to more than 8,600 users in 2024 – Police use of Auror's ANPR vehicle search function has continued to increase.

Whereas by mid-2022 vehicle search requests by Police staff were averaging in the range of 10-15,000 searches a month, the average number of individual searches on the Auror platform by Police staff in 2023/24 was around 20,000 searches per month.

Table 1: Use of Auror 'Search-a-vehicle' function by Police users, 2019/20 to 2023/24

	Number of individual searches		Average number of individual users per month	Average number of vehicles searched for multiple times per month	
<i>Financial year</i>	<i>Volume</i>	<i>Percentage change year-on-year</i>	<i>Volume</i>	<i>Volume</i>	<i>Percentage of all searches</i>
2019/20	17240	-	266	329	23%
2020/21	63874	270%	664	918	13%
2021/22	114025	79%	1203	1478	16%
2022/23	195747	72%	1907	2444	15%
2023/24	247162	26%	2287	2784	14%

Of note from an assurance viewpoint, the percentage of multiple searched vehicles, which could be expected to correlate with any repeat searching of the same vehicle for 'pseudo-tracking' purposes, has not increased.

The roles held in Police of the most prolific users of the Auror ANPR platform in 2024 also make intuitive sense; reflecting a focus on higher-volume or serious offending.

Table 2: Top 10 Police users of Auror 'Search-a-vehicle' function in 2023/24 by work function in Police

	Role within Police	Location	Number of searches
1	Intelligence Support Officer	Central North Island District	1916
2	Intelligence Analyst	PNHQ (Road Policing)	1372
3	Field Intelligence Officer	Tāmaki Makaurau District	1250
4	Field Intelligence Officer	Tāmaki Makaurau District	1215
5	Surveillance Squad Constable	Tāmaki Makaurau District	1196
6	Intelligence Analyst	Lower North Island District	995
7	Strategic Traffic Unit Constable	South Island District	964
8	Tactical Operations Constable	South Island District	887
9	National Organised Crime Group Detective	Tāmaki Makaurau District	860
10	Organised Crime Detective	Tāmaki Makaurau District	853

Investigating high-volume crimes continues to be listed as the most common reason Police staff are seeking vehicle number plate information through the 'Search-a-vehicle' function on Auror's ANPR platform [Table 3].

Follow-up audit of Police use of ANPR platforms

Table 3: Number of times, by month, Police users have sought number plate information via Auror 'Search-a-vehicle', by stated reason/justification for access

Month by Year	Drugs	Firearms	Gangs, organised crime, or drugs	Homicide	Intelligence gathering	Other	Robbery or assault	Sexual Offense	Violent Crime	Volume Crime	Wanted or missing persons	Grand Total
10	2302		2	482	1	2642		260	2164	5903		13756
11	192	664	2677	512	1813	1809	898	106	115	5268	1267	15321
12	37	833	2552	327	1619	1565	1017	28	7	4435	1332	13752
2022	2531	1497	5231	1321	3433	6016	1915	394	2286	15606	2599	42829
1	75	902	2482	187	2076	1616	1080	11	22	5121	1785	15357
2	53	580	2810	143	2213	1278	1006	11	18	4551	1822	14485
3	57	796	3586	285	3457	1593	952	30	14	5305	2018	18093
4	46	689	3122	644	3475	1395	838	18	11	4759	1640	16637
5	42	918	4471	212	4162	1676	1020	20	7	5570	2301	20399
6	38	595	3717	557	4099	1645	850	40	17	5615	2298	19471
7	45	544	3860	292	3583	1537	1154	18	16	5157	2266	18472
8	22	626	3990	872	3953	1488	974	21	10	5240	2001	19197
9	32	470	4007	726	4059	1514	892	29	16	4720	2332	18797
10	60	692	4508	630	4454	1519	936	33	21	4929	2299	20081
11	33	703	3936	682	4986	1567	975	22	18	4797	2122	19841
12	42	502	2982	617	4726	1398	1017	30	14	4887	2388	18603
2023	545	8017	43471	5847	45243	18226	11694	283	184	60651	25272	219433
1	32	461	2460	542	5269	1740	1034	75	26	5311	2569	19519
2	19	486	3771	249	5249	1774	1001	29	18	5517	2530	20643
3	23	473	3678	237	4929	1937	1154	62	17	5600	2319	20429
4	13	522	4176	279	5322	1928	981	214	32	4973	2285	20725
5	18	550	4442	320	5892	3475	1198	19	8	5619	3164	24660
6	5	378	3273	195	5723	2876	1200	5	5	4744	2457	20846
2024	105	2104	15100	1409	22197	7949	4419	399	101	22714	10505	87002
Grand Total	3181	11618	63802	8577	70873	32191	18028	1076	2571	98971	38376	349264

Calander
YTD
All Time

Notes:

- The data received required conversion from UTC to NZDT.
- Search records with the same details of plate, user, reason, and timestamped at the same time (within the same minute) are regarded as a single search.
- The raw number of 'search reasons/justifications' exceeds 7500 due to the field allowing 'Other, Specify'. Reasons with less than 4000 values for the period of the data record are collapsed into the category 'Other'.
- The 'reason' 'Drugs' overlaps with the opportunity to record the search as 'Gangs, organised crime, or drugs' and there is a change in the series in Nov 2022 indicating a change in the interface and options available to users.
- Data combined into category 'Other' due to low frequencies.

Use of vehicle 'tracking' function

The re-audit found automated alerting is being used less frequently than in the recent past. The baseline-setting audit identified that the 'Track a vehicle' function on the Auror platform was being used an average of around 190 times per month in the second half of 2022. Results from the follow-up audit indicates there has been a significant decrease in the use of the 'track-vehicle' function, coinciding with new internal Police Instructions on when to use this functionality [Table 4].

Table 4: Use of Auror 'Track-a-vehicle' function by Police users, 2018/19 to 2023/24

	Number of individual searches	
<i>Financial year</i>	<i>Volume</i>	<i>Percentage change year-on-year</i>
2018/19	97	
2019/20	312	321%
2020/21	1338	428%
2021/22	2056	153%
2022/23	1206	-41%
2023/24	406	-66%

Police use of Safer Cities' platform: Key audit findings

Broadly similar patterns for Police staff use of SaferCities' VGRID system were identified in the follow-up audit.

Use of vehicle search function

Whereas by mid-2022 vehicle search requests by Police staff were averaging around 10,000 searches a month using SaferCities' VGRID system, the average number of individual searches on the platform by Police staff in 2023/24 had increased significantly to an average of between 35-40,000 searches per month.

Table 5: Use of Safer Cities (VGRID) search function by Police users, 2022/23 and 2023/24

	Number of individual searches		Average number of individual users per month	Average number of vehicles searched for multiple times per month	
<i>Financial year</i>	<i>Volume</i>	<i>Percentage change year-on-year</i>	<i>Volume</i>	<i>Volume</i>	<i>Percentage of all searches</i>
2022/23	249610	-	1087	4907	24%
2023/24	441460	+77%	1778	7463	20%

As with use of the Auror platform, the re-audit work also confirmed that investigating high-volume crimes continues to be cited as the most common reason Police staff are seeking vehicle number plate information through VGRID. That said, differences in how reasons for requests are coded in VGRID complicates the ability to interpret some results [Table 6]. Nonetheless, the roles held in Police of the most prolific users of VGRID make intuitive sense; and reflects a focus on higher-volume or serious offending [Table 7].

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Table 6: Number of times, by month, Police users have sought number plate information via SaferCities VGRID platform, by stated reason/justification for access

Row Labels	1300 - Robbery	1C - Car/Person Acting Suspiciously	1U - Traffic Offending	2W - Arrest Warrant (other)	3100 - Drugs (not Cannabis)	4100 - Burglary	4200 - Car Conversion	4210 - Unlawful Taking/ Conversion	4Q - Enquiry/ Investigation	Other	Grand Total
1	70	562	104	101	92	382	297	721	284	914	3527
2	76	507	95	73	134	427	296	518	450	923	3499
3	90	413	83	101	132	515	250	614	1571	1130	4899
4	175	577	150	163	129	637	256	583	789	1552	5011
5	221	1161	182	163	250	605	443	818	745	2001	6589
6	120	1160	213	223	418	390	432	884	675	2253	6768
7	595	1563	383	325	749	501	573	1223	1289	2493	9694
8	481	1560	431	719	456	853	413	1185	1201	3438	10737
9	498	1651	490	697	726	941	354	1143	1045	3397	10942
10	552	1716	620	748	931	1025	456	1361	1236	3013	11658
11	449	1632	562	1184	567	1162	613	1367	1011	3800	12347
12	800	1879	714	826	461	1084	513	1417	1445	3589	12728
2022	4127	14381	4027	5323	5045	8522	4896	11834	11741	28503	98399
1	387	2200	695	893	539	1095	534	1863	1211	3337	12754
2	565	2171	664	1026	582	1110	656	1333	1064	3275	12446
3	650	2588	746	1227	826	801	623	1207	1802	3614	14084
4	538	2557	694	1114	449	720	620	1477	1622	3292	13083
5	513	3093	708	1117	733	913	710	1272	2292	4355	15706
6	459	2813	573	862	812	1201	783	1286	1875	4368	15032
7	2869	5492	1204	1698	989	1778	1719	3040	4485	8013	31287
8	2494	7330	1333	2185	1569	2614	1672	3116	5436	10283	38032
9	1844	7453	1365	2690	1303	2552	1598	2924	5963	9514	37206
10	1135	9321	1585	2958	1624	2269	2021	3339	5498	10871	40621
11	1363	8186	2299	2058	1911	1621	1517	3147	6328	12298	40728
12	1171	8623	2534	2439	533	2122	1620	3776	4838	10226	37882
2023	13988	61827	14400	20267	11870	18796	14073	27780	42414	83446	308861
1	1619	13331	3096	3852	924	2638	2327	5021	6294	11489	50591
2	1547	12861	2916	3700	1541	2709	2123	3960	7330	12026	50713
3	1032	10149	2512	2647	1693	2249	1682	3211	6261	10267	41703
4	636	5530	1567	1226	902	988	851	1777	3297	5920	22694
5	643	5574	1596	1597	1095	1234	815	1964	3827	6303	24648
6	724	6125	2007	1492	591	933	1002	1957	4523	6001	25355
2024	6201	53570	13694	14514	6746	10751	8800	17890	31532	52006	215704
Grand Total	24316	129778	32121	40104	23661	38069	27769	57504	85687	163955	622964

1. Search records with the same details of plate, user, reason, and timestamped at the same time (within the same minute) are regarded as a single search.
2. The raw number of 'search reasons/justifications' exceeds 7500 due to the field allowing 'Other, Specify'. Reasons with low frequencies (less than 20,000) values for the period of the data recorded are collapsed into the category 'Other'.

Table 7: Top 10 Police users of SaferCities VGRID vehicle search function in 2023/24 by work function in Police

	Role within Police	Location	Number of searches
1	Surveillance Squad Constable	Tāmaki Makaurau District	2482
2	District Shift Commander	Tāmaki Makaurau District	1744
3	CCTV Operator	Tāmaki Makaurau District	1736
4	Offender Prevention Team Constable	Tāmaki Makaurau District	1517
5	Air Support Unit Constable	Tāmaki Makaurau District	1435
6	Public Safety Team Constable	Tāmaki Makaurau District	1405
7	Tactical Safety Constable	Central North Island District	1356
8	District Shift Commander	Tāmaki Makaurau District	1355
9	Public Safety Team Constable	Central North Island District	1328
10	Offender Prevention Team Constable	Tāmaki Makaurau District	1317

Use of vehicle ‘tracking’ function

Automated alerting, using SaferCities ‘Plates of interest’ function, was only a then-recently-introduced option when the baseline-setting audit was conducted in 2022 – with fewer than 150 uses of the functionality over a five month period. The re-audit found automated alerting continues to be a relatively infrequently used option on the VGRID system, with a year-on-year drop in the frequency of use in the 2023/24 financial year [Table 8].

Table 8: Police users of SaferCities VGRID vehicle tracking function in 2022/23 and 2023/24

	Number of individual searches	
Financial year	Volume	Percentage change year-on-year
2022/23	243	
2023/24	145	-40%

Conclusions

This follow-up audit confirms continued growth in use of externally-managed ANPR platforms by Police staff; averaging around 55-60,000 searches a month across both the SaferCities and Auror systems in 2023/24. This represents a more than doubling of the equivalent monthly number of vehicle search requests identified in the baseline setting 2022 audit (where historical vehicle searches averaged around 20-25,000 searches a month).

The re-audit found use of automated alerting is far less frequent, averaging around 20-30 ‘tracking’ requests a month in 2023/24. This is a markedly lower volume than was recorded in 2022, which found activity levels averaging some 200 ‘tracking’ requests per month.

Investigating high-volume or serious crimes continue to be listed as the most common reasons Police staff are seeking vehicle number plate information through the SaferCities and Auror systems; a finding which chimes with the roles held within Police of the most prolific users of the two platforms.