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CCTV use by local government: Findings from a national survey

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There has been considerable growth in the use of closed circuit television (CCTV) in public spaces as a crime prevention measure and, increasingly, as a tool to detect and identify offenders. In Australia, CCTV systems have become an increasingly common fixture in urban centres, in shopping centres and malls, individual shops and banks, on public transport and in car parks. There has been significant investment in CCTV systems as part of state, territory and Commonwealth government crime prevention programs, with CCTV accounting for a growing proportion of overall grant funding available to community-based organisations, particularly local councils (Attorney General's Department 2015; Homel et. al. 2007).

More than a decade ago, Wilson and Sutton (2003) explored the operation and management of 33 open-street CCTV systems in Australia. They found that, while open street CCTV systems were initially primarily located in central business districts of major metropolitan centres, there was a growing trend towards their installation in smaller regional and rural centres and in suburban locations (Wilson & Sutton 2003). Around the same time, Iris Research (2005) conducted a survey of all local councils in Australia to assess the use of CCTV and characteristics of the systems in operation, finding that around one in ten councils had a CCTV system in operation.

More recently, Carr (2014) examined the use of CCTV by 18 local councils funded by the Australian Government, finding that police were increasingly reliant on local government CCTV and that the ensuing additional cost to council was significant. Similarly, Edmonds (2014) found that nearly half of all councils in NSW (46%; n=70) had installed CCTV in public spaces, with urban councils more than twice as likely than rural councils to have a system in place.

Given the continued investment in CCTV at all levels of government plus the significant advances in technology over the past ten years, it is timely to reassess the use of CCTV by local councils in Australia. This paper presents the findings from a national survey of local government. The overall aim of this research was to develop a national picture of the prevalence and characteristics of open-street CCTV systems in Australia managed by local councils.

Methodology

This research involved a national online survey of local councils in Australia, conducted in mid-2014. An invitation to participate in the survey was sent to all 561 councils in each state and territory (with the exception of the ACT) via a letter to the CEO and an email to the front desk or generic council email address. Several reminder emails were sent encouraging councils to participate in the research, and incentives were offered to participants. The survey was open for approximately six weeks between May and June 2014.

A total of 221 councils completed the survey by the end of the data collection period, a response rate of 39 percent. Data were weighted using ABS population data for local government areas to ensure responses were representative of all councils. Population data

were used because the number of residents influences council revenue (via rates), and councils with higher revenue may be more able to afford the installation of CCTV (or larger CCTV systems). Larger councils (in terms of population) may also be more likely to have CCTV because crime is typically more common in densely populated areas. Preliminary analysis of the data indicated that the achieved sample had disproportionate number of larger councils.

A formula was applied to weight the data provided by each council to make each response proportionate to the broader population from which the sample was derived. For example, councils with more than 100,000 residents accounted for 20 percent of respondents to the survey, but account for 13 percent of all Australian councils (ABS 2014). A ratio of 0.65 ($20 \div 13$) was therefore applied to the responses for this cohort. This ensured that the results of the survey were generalisable to the wider population. All results refer to weighted data, unless otherwise specified.

Limitations

Important limitations with this survey must be acknowledged and taken into consideration when interpreting the results. First, this survey provides valuable information on the use of CCTV by local government. It does not, however, provide a national picture on the use of CCTV more broadly. CCTV systems are owned and operated by a range of other government and private sector organisations, as well as by private residents. Related to this point, the research is focused on open-street CCTV in public spaces, and does not include those systems that are operated in private spaces (eg within commercial premises).

Second, the Iris survey is used as a baseline against which to measure the change in CCTV use by local councils since 2005. However, limitations associated with the Iris survey data (which was only available from the final publicly released report) means that comparisons have been limited to selected questions. Further, there were some concerns regarding the overall sampling methodology used by Iris Research—they reported a 100 percent response rate and completed the survey on behalf of councils that indicated that they did not have CCTV—with the main concern being that the 2005 survey potentially underrepresented the true level of CCTV use.

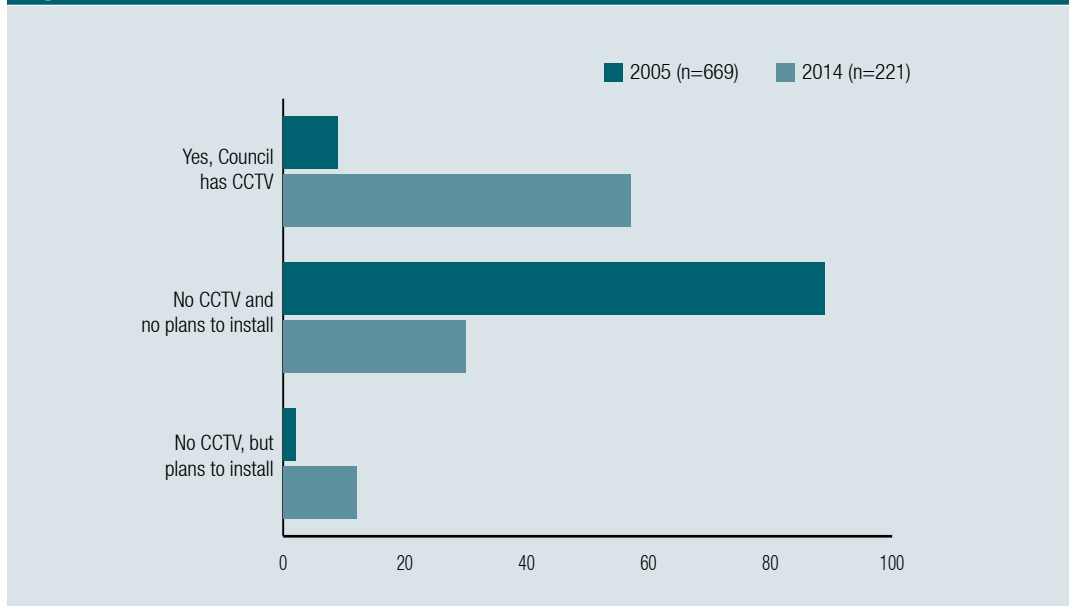
Finally, this survey relied on a representative from each council responding on behalf of their entire council. Councils were encouraged to nominate the staff member with the most extensive knowledge of open-street CCTV systems in their council to complete the survey. In some cases, respondents acknowledged that they had conferred with other members of their council to obtain the necessary information. In others, respondents acknowledged that they were responding based on the best available information. Further, some questions required respondents to report their perceptions of the CCTV systems operated by their council. These responses should not be assumed to represent either the view of all staff working within each council, or the organisation's overall position on the use of CCTV.

Prevalence of CCTV

Responses to the survey confirmed that a high proportion of local councils now operate at least one CCTV system. Overall, 57 percent ($n=127$) of all councils reported having a CCTV system in operation as at 2014, while a further 12 percent ($n=28$) did not currently have a CCTV system in operation but planned to install one in the future. Thirty percent ($n=67$) of councils did not have a CCTV system and had no plans to install one.

There was some variation between the different states and territories in terms of the proportion of councils with a CCTV system (Figure 1). The NT had the lowest proportion of councils report that they currently had a CCTV system in operation (41%, $n=6$), while only NT and SA (45%, $n=32$) fell below the national average. Two thirds of all councils in Queensland reported having CCTV (67%, $n=28$).

Figure 1 Prevalence of CCTV in Australia, 2005 and 2014 (%)



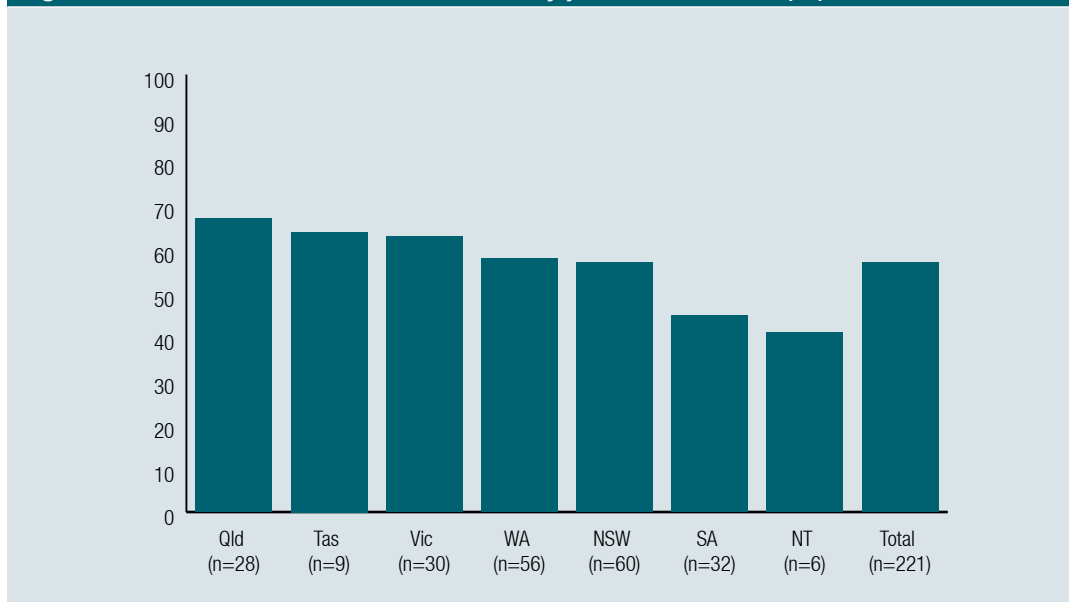
Totals may not equal 100 due to weighted data and rounding

Data were weighted according to ABS population data to reflect local government population

Source: AIC Survey of Local Government, 2014 [data file]

Comparing these results with the earlier Iris Research survey reveals that there has been significant growth in the use of CCTV by local councils. The proportion of councils that reported having a CCTV system has increased from nine percent in 2005 to 57 percent in 2014 (Figure 2). Putting aside the limitations of the Iris sampling method and changes to council boundaries, both the number and proportion of councils that operate a CCTV system in a public space have increased significantly. The proportion of councils that planned to install CCTV in the future also increased from two percent in 2005 to 12 percent in 2014. This means that the overall proportion of councils with CCTV or planning to install CCTV has increased from one in ten (11%) to more than two thirds (69%) in the past ten years.

Figure 2 Prevalence of CCTV in Australia, by jurisdiction, 2014 (%)



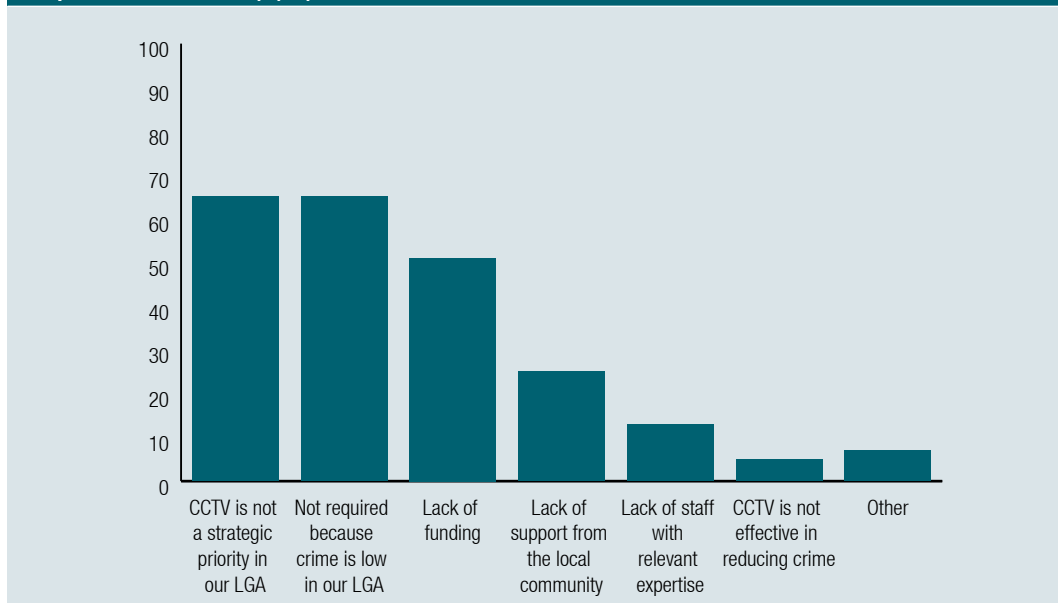
Data were weighted according to ABS population data to reflect local government population

Source: AIC Survey of Local Government, 2014 [data file]

While the majority of councils that responded to the survey did have a CCTV system in operation, around one third (30%) did not have CCTV and did not have any plans to install it in the future. Reasons for not having installed CCTV are varied and include the perception that CCTV is not required because crime is low in the local area (65%), the view that CCTV

was not a strategic priority for council (65%) and a lack of funding available to cover the costs of CCTV systems (51%; Figure 3). Other less common reasons included lack of support from the local community (25%), lacking expertise within council (13%) and the perception that CCTV is ineffective in reducing crime (5%).

Figure 3 Reasons for not installing CCTV systems (councils without CCTV and with no plans to install it) (%)



Data were weighted according to ABS population data to reflect local government population
Source: AIC Survey of Local Government, 2014 [data file]

CCTV funding and expenditure

In recent years a large increase in the amount of funding available to local government to install CCTV has been offered as part of competitive grant programs managed by both national and state and territory governments. For example, at the Commonwealth level, since 2007 funding for local government CCTV (along with other initiatives) has been offered as part of the National Community Crime Prevention Programme (NCCPP), Proceeds of Crime Act (POCA) funding program, Safer Suburbs, Secure Schools and, most recently, Safer Streets. A number of state and territory crime prevention agencies have also established CCTV funding streams within their grants programs, such as the Public Safety Infrastructure Fund in Victoria and the Community Crime Prevention Fund in WA. Other government agencies also offer funding for CCTV without the explicit goal of preventing and detecting crime (eg the Regional and Local Community Infrastructure Program), while a number of private corporations (eg insurance bodies) have also provided funding for local government CCTV.

As shown in Table 1, the survey found that councils receive and spend a significant amount of funding on CCTV, a finding that is consistent with recent research by Carr (2014) and Edmonds (2014). One third (35%) of councils received funding for CCTV in the 2012-13 financial year, with councils receiving an average \$85,090 each (in 2013 dollars). More than half (58%) had received funding in the five-year period up to and including 2012-13, with an average \$198,214 received by each council. Qualitative responses provided by councils suggest that most of this funding was provided for capital infrastructure and installation costs, rather than for the ongoing maintenance of CCTV systems.

Information was also supplied by respondents on the total expenditure on CCTV by councils. Among the 127 councils that had a CCTV system in operation, 110 reported spending any money on the system in 2012-13. The remaining 17 either did not record any expenditure in the financial year or were unable to provide an estimate of the total amount spent. Those councils that reported having CCTV-related expenditure in 2012-13 spent, on average, \$84,309.

Table 1 Local government CCTV funding and expenditure

	2012-13	Past five years
Funding for local government CCTV ^a		
Received funding (n)	45	74
Received funding (%)	35	58
Average funding received (\$)	\$85,090	\$198,214
Expenditure on CCTV by local government ^b		
Spent money on CCTV system (n)	110	-
Average expenditure (\$)	\$84,309	-

a: Councils with CCTV systems only

b: Limited to councils with a CCTV system and that spent money in 2012-13

Data were weighted according to ABS population data to reflect local government population

Source: AIC Survey of Local Government, 2014 [data file]

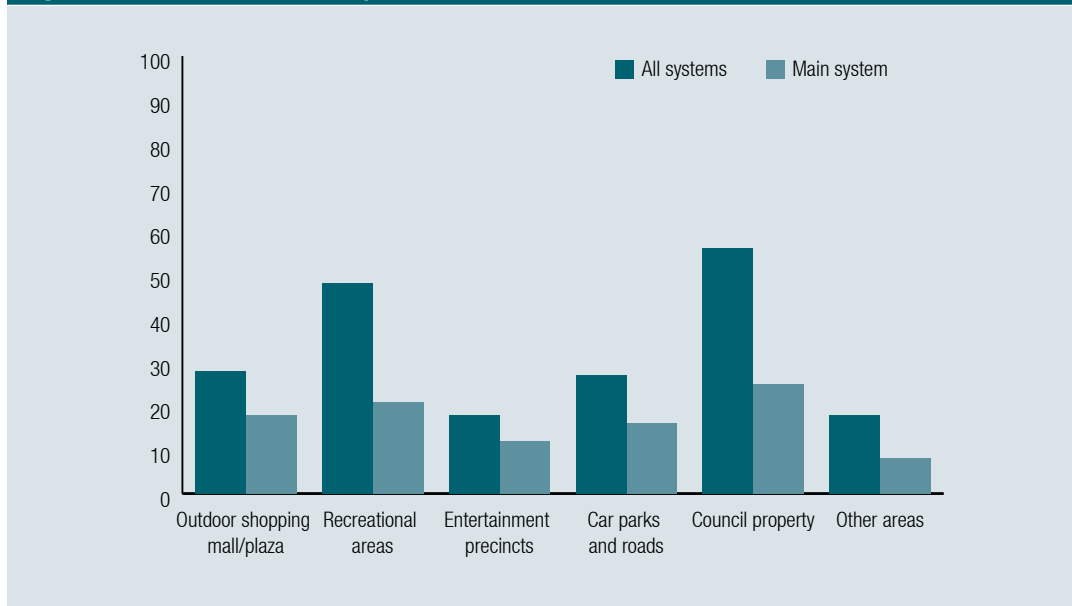
Characteristics of CCTV systems

Given the local nature of their application, CCTV systems vary considerably across locations in administration, operational practice and technology (Wilson & Sutton 2003). CCTV systems may involve cameras that are static (fixed) or have the capacity to pan, tilt and zoom (either independently according to a fixed pattern or via the control of operators) (Clancey 2009; Gill & Spriggs 2005). CCTV can be fixed, redeployable or mobile, can transmit digital or analogue images either via cable or wireless links, and the subsequent images can be recorded in different ways. These factors can have important implications in terms of the quality of the images and the type and speed of monitoring that is available (Gill & Spriggs 2005). Technical specifications have the potential to impact upon the effectiveness of the system as both a crime prevention and detection measure (Gill & Spriggs 2005).

Overall, the mean number of open street CCTV systems reported by councils was 5.0 (14% RSE, 95% CI 3.6–6.4), while the mean number of cameras operated by local councils was 43.2 (15% RSE, 95% CI 30.5–55.9). Around half of all councils (53%) reported operating 20 cameras or fewer, while one in four (27%) had ten cameras or fewer at the time of responding to the survey. One in nine councils (12%) reported having more than 100 CCTV cameras in operation at the time of the survey. In other words, a relatively small number of councils account for a significant proportion of all cameras currently being operated by local government.

The survey results also showed that cameras have been installed by local councils in a range of different locations (Figure 5). Among those councils that had CCTV in operation at the time of completing the survey, 56 percent had cameras installed on local council owned property (eg libraries, cultural centres, waste transfer stations, swimming pools), 48 percent had cameras in recreational areas, 28 percent had cameras in outdoor shopping malls and 27 percent had cameras installed in car parks. While around one in five councils (18%) reported having cameras installed in an entertainment precinct, the actual prevalence is likely to be much higher given that cameras installed in entertainment precincts may have been reported as other location types (ie because they serve different purposes during the day). The most common location for the main CCTV system (the system with the largest number of cameras) was council owned property (25% of councils with CCTV), followed by recreational areas (21%).

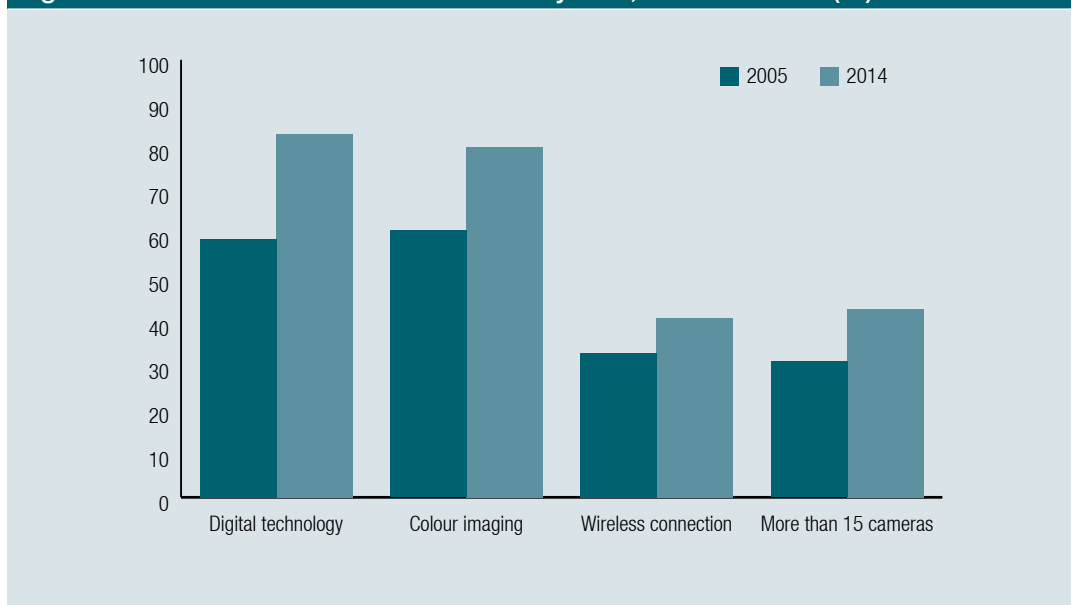
Figure 4 Location of CCTV systems, 2014 (%; n=127)



Data were weighted according to ABS population data to reflect local government population
 Source: AIC Survey of Local Government, 2014 [data file]

Information was also sought on the characteristics of the main system in operation in each council, to better understand the type of CCTV technology that is currently being used by councils. This information was comparable to data collected in the earlier Iris Research survey. Results for selected characteristics of CCTV systems in both 2005 and 2014 are presented in Figure 5. This shows that in addition to there having been an increase in the proportion of councils with more than 15 cameras in operation between 2005 and 2014 (31% *cf* 43%), there have been increases in the use of digital technology (59% *cf* 83%), colour imaging (61% *cf* 80%) and the use of wireless connections (33% *cf* 41%). In other words, both the size and sophistication of camera systems (or at least the main camera system) appears to have increased significantly in the past decade. It is worth noting that, because they are the largest system in operation, the main system may also be more likely to be upgraded, therefore the extent to which these results can be generalised more broadly to council CCTV systems is unclear.

Figure 5 Characteristics of the main CCTV system, 2005 and 2014 (%)



Data were weighted according to ABS population data to reflect local government population
 Source: AIC Survey of Local Government, 2014 [data file]

CCTV systems also vary in terms of control room operations. Monitoring and control room operations are arguably the most crucial element of a CCTV system, particularly where the aim of a scheme is to improve the response of police or private security to incidents as they occur (Wilson & Sutton 2003). The monitoring of CCTV can be classified into three broad categories:

- active monitoring, whereby a person sits and monitors camera footage in real time;
- passive monitoring, monitors are in view and are casually monitored by operators who react when an incident is observed in progress; or
- no monitoring, where recording devices record images that can be accessed and replayed if a crime is reported (Wilson & Sutton 2003; Ratcliffe 2006).

Responses to the survey indicate that the majority of main systems operated by councils are not monitored (61%), while a further 15 percent were occasionally monitored by an operator during business hours (passive monitoring). Only ten percent of systems were actively monitored, either during business hours or 24 hours a day.

Table 2 Monitoring arrangements for the main CCTV system, 2005 and 2014

	2005		2014	
	n	%	n	%
Recorded only, no monitoring	16	31	77	61
Occasionally by an operator during business hours	11	22	19	15
24 hours a day by an operator	8	16	10	8
During business hours by an operator	4	8	3	2
Other	12	24	17	14
Total	51		126	

Totals may not equal 100 due to weighted data and rounding

Data were weighted according to ABS population data to reflect local government population

Source: AIC Survey of Local Government, 2014 [data file]

The growth in the use of CCTV systems by local councils has not been accompanied by an increase in the number of monitored systems. Based on a comparison with the results from the Iris Research survey, the proportion of main systems operated by councils that are actively monitored has fallen from around one in four to one in ten systems, while the proportion of main CCTV systems that are passively monitored has also fallen (22% *cf* 15%). The proportion of main systems that are not monitored has doubled from 31 percent to 61 percent of councils with a CCTV system.

This finding is not particularly surprising, given the resources that are required to monitor CCTV and the focus of major grant programs on covering installation and infrastructure costs. A number of councils expressed concern about the cost of monitoring CCTV and the need for additional funding to cover the operational costs associated with CCTV systems:

Monitoring is the greatest cost and the greatest benefit to ensuring an effective CCTV system. There is no grant funding available, only for capital costs (Respondent 133).

Monitoring of cameras is a luxury a small council cannot afford (Respondent 74).

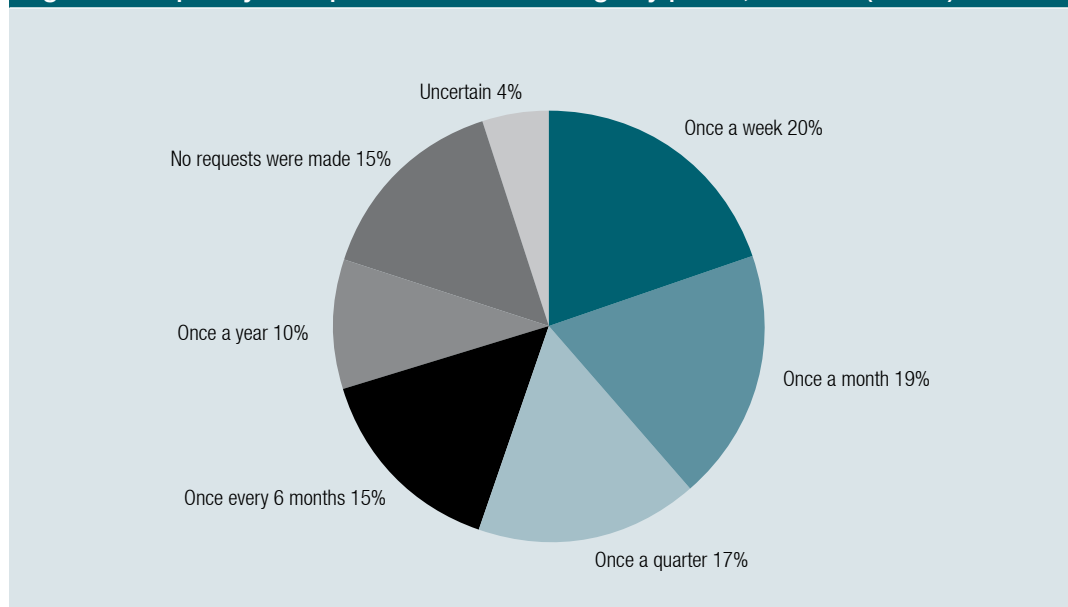
Monitoring of CCTV is an expensive exercise (Respondent 120).

Further, there are important differences between councils and jurisdictions in terms of the relationship between local government and police and the extent to which police are willing and able to monitor local government operated CCTV. The actual benefit of monitoring CCTV systems will ultimately depend on its intended use. Specifically, monitoring offers the greatest benefit where it is used to support the rapid deployment of police or security personnel (or both). While this requires the resources to support monitoring activity, it also requires an effective working relationship between camera operators and local police or security providers.

Use of CCTV footage by police

There has been little Australian research that has examined the extent to which CCTV footage is used by police as part of criminal investigations. The survey therefore included a number of questions about the frequency with which CCTV footage was requested by police (where police were not responsible for monitoring the footage themselves). This is important, given that there appears to have been a recent shift towards placing greater importance on the value of CCTV footage in criminal investigations, rather than focusing primarily on the crime prevention benefits of camera systems.

Figure 6 Frequency of requests for CCTV footage by police, 2012-13 (n=103)



Totals may not equal 100 due to weighted data and rounding

Data were weighted according to ABS population data to reflect local government population

Source: AIC Survey of Local Government, 2014 [data file]

The results are shown in Figure 6. Overall, four out of five councils (81%) had received at least one request in 2012-13 from police for camera footage from a system they owned or operated. One in five councils (20%) reported having received requests for footage from police approximately once a week on average, while a further 19 percent of councils received requests on a monthly basis. Fifteen percent of councils had not received a request for camera footage in that financial year.

Councils were also asked to indicate the extent to which police had used this footage for different purposes (to the best of their knowledge). As shown in Table 3, more than two-thirds of councils (69%) who had received a request for footage from police reported that it had been used to successfully identify an offender 'sometimes' or 'often', and 55 percent of councils reported that the footage had been used to prosecute an offender 'sometimes' or 'often'. CCTV footage provided by local councils was used less frequently to seek information from the public or in a community safety message.

Table 3 Use of footage recorded on main CCTV system, 2012-13 (n=103)

	'Sometimes' or 'often' (n)	'Sometimes' or 'often' (%)
Used to successfully identify an offender	73	69
Used in the prosecution of an offender	58	55
Used to seek information from the public about a crime	33	32
Used in a community safety message	16	15

Data were weighted according to ABS population data to reflect local government population

Source: AIC Survey of Local Government, 2014 [data file]

These responses appear to provide some evidence that police use local government CCTV footage in criminal investigations. However, these responses are largely based on anecdotal evidence. There is limited data available to councils on the impact of footage supplied to police for law enforcement purposes, and this was an area of concern raised by a number of respondents: [There is a need for] better communication from the Police on results of prosecutions as a result of CCTV footage provided. (Participant 15)

We need to be better informed as to the admissibility of the footage as evidence for court. (Participant 52)

When we have supplied footage to the Police (at their request), we usually don't hear back from them to let us know whether or not it was helpful in identifying/prosecuting an offender. (Participant 118)

A consistent theme throughout the survey, reflected in qualitative responses to key questions, was the need for local government and police to work more collaboratively in designing, managing and monitoring CCTV systems.

Conclusions and implications

Limitations aside, the findings from the AIC's national survey of local government on the use of CCTV provides further evidence of the significant growth in the use of CCTV by councils in public spaces. Further, improvements in the size and sophistication of these systems are noted. Councils invest significant financial resources in CCTV, and many have received external funding for the installation of CCTV. However, there remains a significant number of councils that have chosen not to install CCTV, most often because it is not viewed a strategic priority, because crime is low, or because funding was not available.

Councils have in place a range of different approaches to the collection, storage and monitoring of CCTV footage. There was evidence that CCTV footage from council operated systems is frequently requested by police agencies and that councils believed this had a positive impact in terms of identifying and apprehending offenders. More research is required in order to better understand the impact of CCTV footage on criminal investigations and the capacity of police to identify and apprehend offenders.

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