Western Australian Auditor General's Report

# Use of CCTV Equipment and Information

Report 9 – October 2011

**THE PRESIDENT**
**LEGISLATIVE COUNCIL**

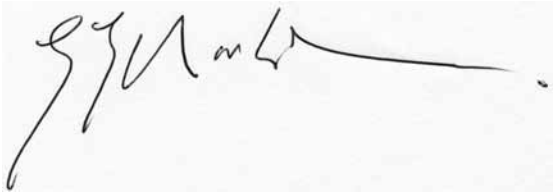
**THE SPEAKER**
**LEGISLATIVE ASSEMBLY**

## USE OF CCTV EQUIPMENT AND INFORMATION

This report has been prepared for submission to Parliament under the provisions of section 25 of the *Auditor General Act 2006*.

Performance audits are an integral part of the overall audit program. They seek to provide Parliament with assessments of the effectiveness and efficiency of public sector programs and activities, and identify opportunities for improved performance.

The information provided through this approach will, I am sure, assist Parliament in better evaluating agency performance and enhance parliamentary decision-making to the benefit of all Western Australians.



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ACTING AUDITOR GENERAL

19 October 2011

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# Auditor General's Overview

The use of Closed Circuit Television (CCTV) has become common place in the last few decades. If you fill up your car at a petrol station or walk through a railway station or entertainment precinct, there is a good chance your image will be captured on CCTV.

CCTV can act as a visual deterrent to crime or antisocial behaviour as well as a means to assist in prosecution if an offence does occur. When actively monitored, CCTV can also be used to direct Police intervention before situations become volatile. However the use of CCTV does raise concerns about privacy for people going about their normal daily business.

Government agencies in considering the use of CCTV need to balance the cost of installing, managing and monitoring CCTV against the likely benefits. This audit assessed the use of CCTV by state agencies and three local governments that were recipients of state funding for their CCTV programs.

Some evidence was found of the effective use of CCTV and all the entities we examined were managing CCTV imagery appropriately to protect the privacy of individuals. However, the Police's Blue Iris project has not been effective. This project is designed to register CCTV locations and thereby enable police to promptly access camera footage that might assist in police investigations and responses.

CCTV is not a solution to crime or antisocial behaviour. However, it can assist when used in conjunction with other activities. This report provides some examples of good practice for agencies and local authorities that may be considering or already have CCTV installations.

# Executive Summary

## Overview

The popularity and use of Closed Circuit Television (CCTV) has grown rapidly since the technology was first introduced. However, research findings have been mixed on whether CCTV reduces crime and other unwanted behaviour.

CCTV can enhance public perceptions of safety but in reality it is more likely to be of benefit if it is part of a broader crime reduction strategy; is actively monitored; and if police can respond quickly to a developing incident. At the same time, CCTV can be expensive to implement, manage and maintain. Poorly designed systems or systems installed for the wrong purposes may be ineffective and expensive to correct.

Recorded CCTV images can help to identify or eliminate suspects and provide evidence for a criminal prosecution. Use of images and information collected from CCTV needs to be tightly controlled to protect privacy as citizens expect to be able to engage in lawful activities without being unduly monitored.

Some Western Australian government agencies and local governments have installed CCTV in public areas to create safer environments for members of the public and staff, and as an anti-terrorism measure.

Western Australian Police (Police) have sought to improve their information about, and access to, CCTV footage from systems owned by government and the private sector. Their Blue Iris Register, captures information about individual CCTV installations so police can readily access footage after an incident. Registration is voluntary except for cameras owned by state government agencies.

The focus of this audit was to assess whether decisions to install or access CCTV or to fund local government installations were adequately based and whether the facilities are properly managed and anticipated benefits realised. Five entities in total including three local governments were included in the audit. Follow-the-dollar powers contained in the *Auditor General Act 2006* provided the authority for auditing the local governments.

We expected that:

- decisions to install CCTV were part of a planned and coordinated security strategy
- CCTV facilities were managed and monitored to ensure CCTV information is used effectively
- appropriate controls were in place to properly store CCTV information and to protect the privacy of people whose images are captured on CCTV
- benefits from installing CCTV could be demonstrated
- Police had formal agreements for access and use of CCTV information and had effectively implemented their Blue Iris Register.

## Conclusion

Installations and decisions to fund were based on the integration of CCTV into broader security strategies and most facilities we examined are well managed. The public can be reasonably assured that CCTV imagery is secured to protect the privacy of people going about normal lawful business.

The Public Transport Authority (PTA) and the City of Bunbury could demonstrate clear benefits from use of CCTV. However there is a potential to realise greater benefits through better sharing and more strategic use of CCTV information by Police and local governments.

The significant potential of the Blue Iris system is not being realised. Better management, administration and commitment are needed from Police if it is to deliver coordinated and effective use of CCTV information.

## Key Findings

- Although initial installations at the entities we examined were piecemeal and experimental, more recent expansions to their CCTV systems have been integrated into broader security strategies. This increases the likelihood that their CCTV will assist crime prevention.
- All the entities had good controls in place to protect the privacy of individuals. We found no evidence of inappropriate use of CCTV.
- Most facilities we examined were well managed. Elements of good practice included:
    - the implementation of CCTV was an outcome of the entity's assessed security needs and involved integration with broader security strategies
    - training courses and manuals to ensure CCTV systems operate as intended and staff have the skills to perform the tasks
    - policies and procedures for staff on appropriate operation of CCTV equipment and privacy procedures
    - controls in place to restrict access and properly store CCTV information and to protect the privacy of people whose images are captured on CCTV
    - regular reviews of the effectiveness of the CCTV equipment including its location and operation and of the capability of the operational staff supporting the equipment.
- PTA and City of Bunbury had Memorandum of Understanding (MoU's) with Police and were using information gathered from CCTV surveillance to guide policing strategies. As a result they could demonstrate positive impacts from Police responses to CCTV intelligence including a 50 per cent reduction in assaults on trains and a similar reduction in disorderly conduct in targeted areas of Bunbury.
- Cities of Perth and Stirling did not have MoU's with Police and CCTV intelligence was not being used to guide or assess the impact of policing strategies.

- Police use of CCTV images could be improved by a functional, coordinated and integrated approach. The Blue Iris project was an attempt to fill this gap but its present form has proved unusable which means that there is still a risk that relevant images may not be available for investigations and court. The system is not functional because:
  - the completeness, accuracy and utility of data are not reliable. For instance the Police are yet to register 7 000 cameras because they lack the GPS coordinates
  - the data is not readily accessible to front-line Police; there has been no training in use of the Register offered and investigating staff continue door-knocking for possible CCTV imagery
  - it cannot be used for management reporting due to very limited reporting capabilities.

## What should be done?

Agencies and local governments:

- need to ensure decisions to install and maintain CCTV are carefully planned, costed and considered as part of a broader security strategy
- should use information gathered from CCTV to monitor effectiveness and enhance crime prevention strategies. This includes closer cooperation with Police through sharing information
- should have appropriate policies, procedures and practice for CCTV equipment and information to ensure the protection of individual privacy

Police should:

- establish formal agreements with agencies and local governments that define:
  - appropriate access and use of CCTV equipment and information
  - feedback of policing outcomes
- consider and clarify their ongoing commitment to the Blue Iris project.

## Agency responses

### Western Australia Police

The Western Australia Police accepts the findings of the Office of the Auditor General relating to what should be done to better support the management, administration and coordination of the CCTV Blue Iris project. The project re-development phase of Blue Iris recently concluded with a full systems rollout supporting GPS coordinates and public and private registrations. Any further development of the Blue Iris project will be considered in conjunction with the means to address the issues raised in the report.

### City of Perth

The City concurs with the conclusion and key findings of the report especially in relation to the potential to realise greater benefits through better information sharing and strategic use of CCTV information by Police and the City.

# Background

CCTV cameras have been promoted as an important tool to reduce criminal and antisocial behaviour and to help catch offenders. There has been a rapid expansion of CCTV systems installed in Western Australia in recent years, though the actual number installed is unknown. These systems are owned by government agencies, local governments and privately.

Crime research indicates that the retrospective use of CCTV images has helped identify or eliminate suspects, solve crimes, and obtain criminal convictions.

> CCTV is having an effect on the outcome of trials. It is a real asset for the Court in any kind of disputed fact. It is a central point from which, as a fact finder, you can say "I have seen that, there is no dispute that that happened". It has certainly increased the number of pleas of guilty.
>
> Source: Chief Magistrate of Western Australia

CCTV has been shown to have significant benefits in reducing burglary and petty theft within premises and car-parks and has also been used successfully to reduce graffiti in targeted areas. However, the value of CCTV in reducing the overall incidence of crime and antisocial behaviour in public spaces remains equivocal.

> I think there is a tendency to overstate its deterrent effect, just as there is a tendency to overstate the deterrent effect of punishment, and perhaps for the same reasons…Most offenders are not behaving rationally at the time they commit offences. The fact that we [the Courts] see such a lot of CCTV providing evidence of crime suggests that its presence does not stop people from offending.
>
> Source: Chief Justice of Western Australia

International and local studies have found:

- CCTV can have a strong deterrent effect on a wide range of crimes when it is first installed within an area but this effect can fade
- in the longer-term, crime rates often remain unchanged or criminal activity is displaced to other times and/or locations
- CCTV might not significantly improve overall crime clearance rates
- public perceptions of improved safety can lead to increased risk-taking.

Public space CCTV is more likely to be of benefit if:

- it is part of a broader crime reduction strategy
- police can respond quickly to a developing incident
- is actively monitored
- the operator can intervene remotely.

Establishing an effective CCTV system requires sound planning based on crime and risk analysis, consultation with Police and the community, and consideration of equipment type, location, monitoring regime and availability of resources.

## Purpose

- Security
- Crime and vandalism prevention
- Aiding police investigations
- Prevent theft from designated areas (tills, cash counters etc)
- Graffiti prevention/investigation
- Monitor traffic flow
- Court room virtual or secure witness

## Camera types

- Fixed or mobile
- Overt (visible) or covert (hidden)
- Local storage or connected to a remote station via cable, microwave, radio or internet link
- Fixed field of view or pan, tilt and zoom (PTZ) controlled remotely
- Infra-red auxiliary lighting for night use
- Equipped with microphone and speaker functions

## Location

- Public spaces: railway stations, hotspots, city centres
- Semi-public spaces: schools, hospitals and universities
- Private spaces: private residential or commercial premises

## Monitoring

- Active: live monitoring with ability to intervene
- Passive: live or non-live monitoring without ability to intervene
- Recording: camera footage is recorded but accessed only if an incident happens

**Figure 1: Factors to be considered when planning a CCTV system**

*Owners installing a CCTV system should consider the purpose for which it is installed, the types of camera required, where they will be installed and how regularly they will be monitored.*

In addition, significant privacy and legal issues must be considered. These are particularly important when installing and using public space CCTV.

- The *Surveillance Devices Act 1998* prohibits (with some specific exceptions) the recording, publication and communication of a 'private activity'. This can include private activities that take place in public spaces where people might reasonably expect not to be observed.
- The *Security and Related Activities (Control) Act 1996* requires persons installing or monitoring CCTV equipment to be licensed security agents. However the Act exempts police officers and public officers from this requirement.

The Western Australia Police (Police) through the then Office of Crime Prevention (OCP)[1] has published guidelines setting out relevant planning and technical factors so CCTV systems are implemented and used effectively and responsibly.

Police have been using CCTV imagery to assist in the resolution of crimes since the technology first became popular in the 1990s. However in 2009 they attempted to develop a more coordinated approach to its use through the Blue Iris project.

Blue Iris registers CCTV locations and owners so police officers can readily access CCTV footage during criminal investigations. The system also aims to provide up-to-date information about the extent and nature of CCTV use.

## What did we do?

The objective of the audit was to assess whether entities' decisions to install or access CCTV or to fund local government installations were adequately based and whether the facilities are properly managed and anticipated benefits realised.

We audited against five lines of inquiry:

- Were agency and local government decisions to install CCTV part of a planned and coordinated security strategy?
- Are agencies' and local governments' CCTV facilities managed and monitored to ensure CCTV information is used effectively?
- Are appropriate controls in place to properly store CCTV information and to protect the privacy of people whose images are captured on CCTV?
- Are anticipated benefits of installing or accessing CCTV being realised?
- Does WA Police have a coordinated approach to the use of CCTV including access to footage from, or links to, CCTV equipment owned by government agencies and others?

We tested CCTV systems and information use at the Public Transport Authority (PTA), with a focus on its Urban Rail Network. PTA spent in excess of $37 million over the last decade on CCTV.

1 As a result of a recent review of the WA Police Strategy and Performance Directorate, the Office of Crime Prevention ceased on 1 July 2011. Its functions have been reallocated to the Community Engagement Division and a new Strategic Crime Prevention Division within the Judicial Services portfolio of WA Police.

Some local governments have extensive open space CCTV installations and have recently received state government funding to expand their CCTV operations. We selected three for review:

- City of Perth – spends over $2.4 million annually on CCTV
- City of Stirling – has a CCTV system valued at over $700 000 and spends approximately $33 000 per year supporting it
- City of Bunbury – spent approximately $300 000 upgrading CCTV and is currently spending $120 000 on a two year monitoring trial.

We examined the process used by the then Office of Crime Prevention, (OCP) when providing CCTV grant funding to a sample of local governments.

We visited CCTV facilities and central monitoring rooms of all the selected entities including the Police Communications Centre Major Incident Room.

These field visits gave us insight into application of controls over access to premises and information, operation of CCTV, image and live broadcast quality, information security, monitoring regimes, procedures for downloading, copying and releasing requested images and controls over the evidence trail.

We examined Police use of CCTV information and its Blue Iris Register of CCTV installations. Interviews with Police operations managers, detectives and Computer Crime Squad were also important to assess police use of CCTV footage and to corroborate information gathered from other agencies.

Courts are an important user of CCTV information. Therefore, we also sought the views of senior members of the WA judiciary on its usefulness as evidence.

The audit was conducted in accordance with Australian Auditing and Assurance Standards.

# What did we find?

## The Office of Crime Prevention's process for releasing CCTV funds allocated to local governments was adequate

In 2009 Cabinet approved a $6 million Community Crime Prevention Program, including specific commitments of $2.84 million for selected local governments to rollout CCTV.

Out of $2.84 million, $568 000 was allocated to coordination, planning and standards development. As a result the Office of Crime Prevention (OCP) developed and published guidance material:

- *Western Australia Closed Circuit Television (CCTV) Guidelines*
- *Western Australia Closed Circuit Television (CCTV) Technical Advice*
- *Closed Circuit Television (CCTV) Management and Operations Manual*

The OCP appointed a consultant to review local government plans for CCTV projects. The consultant identified weaknesses and gaps in some of these plans, such as lack of lighting or crime assessments. The OCP ensured these were addressed in the grant specifications before releasing the funds to local governments.

However OCP did not always require grant recipients to develop key performance indicators which would allow the effectiveness of their CCTV systems to be monitored. CCTV systems can be expensive to acquire and maintain and hence their effectiveness should be a consideration of any funding.

## All entities appropriately planned and implemented recent expansions of their CCTV systems

The entities we examined acknowledged that early CCTV systems were piecemeal and reactive, typically introduced in response to an event or community concerns. However they have now integrated CCTV into broader security strategies. The CCTV systems at the PTA and Cities of Perth, Stirling and Bunbury have been implemented as part of security plans developed through risk and crime assessments, stakeholder involvement and community consultations.

All entities have developed policies, procedures and training courses and manuals to ensure CCTV systems operate as intended and staff have the skills to perform the tasks. These materials are regularly updated. Each entity also has standard operating procedures for monitoring and surveillance activities.

### Entities' CCTV systems and strategies differ considerably. They have based their decisions to monitor CCTV on cost, and technological and geographical constraints

Expectations of what CCTV systems can achieve are often very high but not all systems are capable of delivering to these expectations. Greater benefits are achieved from CCTV systems when active monitoring is combined with intervention strategies. However, actively monitored systems are expensive to run and agencies considering this type of system should weigh up expected benefits against the costs involved.

We found that each entity has adopted different strategies based on their assessed security needs and resources available. The PTA, and the Cities of Perth and Bunbury actively monitor their CCTV system. These entities can then proactively identify, report and respond to incidents. The City of Stirling only actively monitors its cameras when carrying out joint operations with Police on major beach events. Otherwise the City's system passively records.

Since 2001, the PTA has spent over $30 million on security measures to enhance public security for rail passengers. A significant proportion of these funds were spent on extending the CCTV camera system and the length of time images can be stored. A further $7.4 million has been spent building the recently completed 'state of the art' CCTV monitoring room.

## Public Transport Authority Urban Rail Network CCTV

Concerns about passenger safety on the urban rail network led to the introduction of CCTV more than a decade ago. In the mid-2000s, centrally monitored CCTV was expanded and coordinated with other strategies under the Urban Security Initiatives Project (USIP) and its successor project USIP 2. As well as supporting security of patrons at stations and during travel, USIP seeks to address customer service and public liability issues, protect PTA staff and PTA assets. The overall cost of these initiatives is in excess of $37 million.

The PTA now has almost 1 400 open space CCTV cameras at stations and substations which are actively monitored 24 hours a day seven days a week. The system is also linked to the Police Major Incident Room under a formal Memorandum of Understanding which enables Police to access the PTA cameras by arrangement. In addition, the PTA has more than 800 passively recording CCTV cameras in rail cars and is currently experimenting with wireless communication to enable active monitoring of railcar cameras.

Fourteen full time security officers are engaged in monitoring CCTV and a further six are involved in downloading and processing requested imagery. PTA's Central Monitoring Room (CMR) was recently upgraded at a cost of over $7.4 million. The CMR detects incidents and offences and also receives information from other sources including customer call buttons and intruder and vandal alarms.

Monitoring staff can actively intervene during an incident, either via the long line public address system or by dispatching security staff. The PTA has a low tolerance policy on antisocial and criminal behaviour and has deployed significant numbers of transit guards with a rapid response capability in support of Police.

Source: PTA

**Figure 2: PTA's Urban Rail CCTV System**

The City of Perth spends about $2 million a year to operate and maintain its CCTV system and over $400 000 for system expansion and equipment replacement. Its open space CCTV cameras are concentrated in the central business district and the Northbridge entertainment precinct. Its monitoring centre operates continuously and is the only monitoring facility which also houses a sworn police officer continuously to coordinate any police response to observed incidents.

## City of Perth


The City of Perth's CCTV system was introduced in response to concerns raised by the local business community. The first CCTV cameras commenced operation in July 1991 and the system has evolved progressively since then and the City now spends $2.4 million annually on its CCTV system.

The City's SafeCity Community Safety and Crime Prevention Plan 2010-13 aims to continue the extension and enhancement of the CCTV network to support intelligence-led policing. It also aims to increase public awareness through media, signage and promotional activities, of CCTV and how to access assistance.

The City's 183 open space CCTV cameras are mostly in the central business district and Northbridge entertainment precinct. These are actively monitored 24 hours a day seven days a week. A number of Emergency Poles equipped with two-way audio communication are strategically located around the City.

The Monitoring and Control Centre has direct communication with Police and a police officer is located within the Monitoring Centre 24 hours a day seven days a week. Senior Police conduct some operations from within the Centre during which they are able to monitor crowd behaviour and rapidly deploy their ground force to areas or incidents of concern. In addition, a link has been established to the Police Major Incident Room.

Source: City of Perth

**Figure 3: City of Perth's CCTV System**

The City of Bunbury has spent more than $300 000 on upgrading and expanding its CCTV installations in the last five years with support from Commonwealth and state governments. Its open space CCTV cameras are concentrated in its central business district and entertainment precinct. The City is currently engaged in a two-year trial of active monitoring of CCTV during peak risk evenings and public holidays supported by a $120 000 grant from the state government.

## City of Bunbury

The City of Bunbury's Community Safety and Crime Prevention Plan 2008-13 aims to reduce the environmental conditions that facilitate crime in Bunbury and to manage the environment in ways that prevent and reduce crime and ensure that crime and antisocial behaviours are responded to in the most effective ways possible. Its Law-Enforcement CCTV Policy aims to use CCTV to deter offences, to facilitate a rapid response and to improve public safety. A Memorandum of Understanding formalises the City's close relationship with local police.

The City has 21 CCTV cameras connected via a digital network to monitoring and recording facilities in the City's premises. The cameras can also be controlled from an additional monitoring station in the Bunbury Police Complex. A state government grant of $120 000 has enabled the City to undertake a two-year trial of actively monitoring its open-street CCTV three nights a week in close collaboration with Police.

Source: City of Bunbury

**Figure 4: City of Bunbury's CCTV System**

The City of Stirling's CCTV installations have been largely funded by Commonwealth grants, but in 2009 the state government provided a grant of $257 000 to extend the Scarborough foreshore CCTV installation. Its open space CCTV cameras are dispersed around 16 geographic locations. All cameras record continuously but most are not actively monitored because of current limits on communication bandwidth. However, the City, together with local police, uses its foreshore CCTV system to actively monitor crowds at major events to detect antisocial behaviour.

## City of Stirling

CCTV forms an integral part of the City of Stirling's Community Safety Business Plan which aims to develop a safe and secure environment for the community. CCTV surveillance is intended: to deter antisocial behaviour, vandalism and crime; to assist police in responding to antisocial and crime incidents; investigating and prosecuting offenders; and to improve the sense of safety of the general public.

The City's 114 passively recording public space CCTV cameras are located in 16 geographically dispersed locations. Although they are linked to a central monitoring facility, inadequate communication bandwidth prevents active monitoring of most CCTV installations.

However, the Scarborough Beach cameras are actively monitored using a local monitoring station during major foreshore events. Police report that, despite a lack of coverage of some key hotspot areas and inadequate design of the monitoring facility, CCTV surveillance enabled the operation commander to pre-empt antisocial problems, direct staff to any incidents and identify offenders.

Source: City of Stirling

**Figure 5: City of Stirling's CCTV System**

# All entities had controls to protect privacy and assure proper use of CCTV images

All the entities examined had adequate controls in place to restrict access to monitoring facilities, to properly store CCTV information and to protect the privacy of people whose images are captured on CCTV.

There are a number of key controls that should be in place to protect privacy and assure proper use of CCTV images. These include:

- the location and direction of CCTV to ensure privacy is protected
- controlled access to monitoring facilities
- securing stored CCTV images and maintaining records of access
- controls to restrict release of CCTV
- policies, procedures and codes of conduct for staff operating CCTV.

Securing CCTV information is important to ensure its integrity is maintained for use as evidence in court. Access to and disclosure of CCTV information should be controlled to ensure people's privacy is protected at all stages. Breach of privacy not only exposes the entity to possible legal action but also risks losing trust and cooperation from the community.

## All entities take appropriate measures to protect people's privacy when installing cameras and managing CCTV information

To protect privacy, members of the public going about their lawful business should not be subjected to undue or illegal surveillance. Surveillance of an individual or group should therefore only occur if the monitoring officer reasonably believes an offence is either taking place or is likely to take place.

The *Surveillance Devices Act 1998* prohibits the use of an 'optical surveillance device' to record a private activity, except in some situations. It does not distinguish between indoor and outdoor activities, or between activities undertaken in public or private spaces.

We found all entities:

- consider privacy issues when choosing the location and position of cameras to avoid surveillance of private spaces such as homes
- have policies that require staff to refrain from focusing surveillance on individuals or groups going about their normal lawful business.

We noted the PTA was the only entity that provides specific guidance to its staff on appropriate response to any private activities they might inadvertently observe in the areas it has under surveillance. We consider this good practice.

## Most entities strictly controlled access to monitoring and storage facilities and release of CCTV information

The entrances to the central monitoring rooms of all the entities have physical access controls and a visitors' log book. At the PTA and City of Perth the doorway to the monitoring facility is itself CCTV monitored.

There were some opportunities for improvement at one of the City of Stirling's monitoring and storage sites. The facility is located in a general purpose room which doubles as a tea room for their inspectors. Although not open to the public, the City of Stirling still faces the risk of having limited control over who can view the CCTV monitor. We also found they were using generic logons and passwords to access and control the CCTV recording and monitoring equipment.

All entities had additional security in the areas used for storing CCTV information downloaded onto Tape, CD or DVD. These included locked cabinets in separately locked rooms.

In addition, we found all entities:

- maintain an audit trail of CCTV information to ensure authenticity of evidence
- limited access to recorded information to those with a genuine need (eg for criminal proceedings). Access was controlled by management
- controlled the release of CCTV information to authorised persons and required those persons to sign a release form before receiving recorded information
- forbid the release of images to the media except in specifically approved circumstances. For example where images are required for the apprehension of an offender.

## All entities were ensuring compliance with policies and procedures for CCTV

It is important that the public have confidence in the appropriate use of CCTV by government entities. We found no evidence of inappropriate use of CCTV.

The PTA and City of Perth formally review their CCTV operations to ensure policies are adhered to. The City of Bunbury periodically reviews its staff for compliance with policies and procedures by observing them in action. This may occur once or twice a year. The City of Stirling conducts management reviews of compliance with CCTV guidelines.

In addition to the above we found entities that were actively monitoring CCTV had varying levels of review to ensure the probity and integrity of their surveillance. For example, the PTA conducts regular, independent audits and reviews of camera views and actions. Any action by surveillance staff that is contrary to policies and approved procedures requires an explanation and may result in disciplinary action.

The supervisors of the City of Perth's central monitoring room review CCTV operations to ensure surveillance is carried out according to their policies and procedures.

The City of Stirling does not usually actively monitor its CCTV and does not have a process for review or audit of its occasional foreshore active monitoring.

## Public Transport Authority and City of Bunbury worked closely with the Police and as a result had achieved clear benefits from CCTV

We found that PTA and City of Bunbury were working closely with Police and were using information gathered from CCTV surveillance to guide policing strategies. As a result they could demonstrate positive impacts from Police responses to CCTV intelligence.

Police have formal information sharing arrangements with PTA and the City of Bunbury, but not with the two other entities we examined. Arrangements such as MoU's can help clarify roles and responsibilities and assist better outcomes.

The following case studies at PTA and City of Bunbury demonstrate the benefits of integrating CCTV and Police information to guide policing strategies.

| CASE STUDY 1 | **Rail passenger safety has increased after PTA integrated CCTV into their security strategy** |
|---|---|

Rail passengers have felt safer since PTA implemented CCTV systems supported by intervention and response strategies in mid-2000. In the past five years assaults per million passenger boardings have reduced by more than 50 per cent. The frequency of disorderly conduct has also declined by 40 per cent from more than 60 to approximately 37 per million passenger boardings.

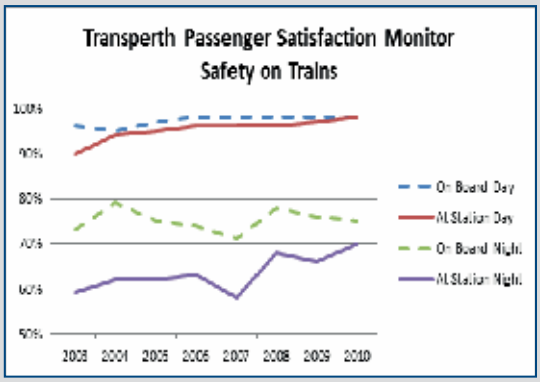
PTA surveys show that satisfaction levels for safety have become consistently high for day travellers. Night time passengers feel safer on board trains than at stations. The safety perception for travellers on board at night is relatively constant, while perception of safety at stations is improving. While PTA has CCTV inside its rail carriages and uses them for investigation it does not yet actively monitor them.

## PTA's Integrated CCTV security strategy for rail passengers

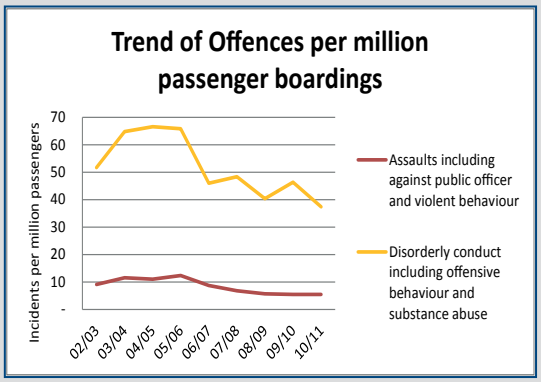
PTA implemented the Urban Security Initiatives Project in mid 2000.

The project aimed to integrate CCTV into a coordinated security strategy. The strategy included:

- greatly expanded CCTV coverage, migration to digital systems and the introduction of high-speed communication networks
- single entry and exit points to railway stations to facilitate CCTV surveillance
- upgraded lighting to 'white light' Australian Standards along with other design improvements




Decreases in disorderly conduct and assaults are reflected in improvements in public perceptions of safety.




- upgraded emergency telephones and hotline telephones
- long-line public address system to enable surveillance officers to communicate directly with patrons at railway stations
- low tolerance policy on antisocial behaviour
- prominent signage and advertising campaigns to promote awareness of surveillance and response capabilities
- deployment of significant numbers of transit officers with a rapid response capability in support of the Police Rail Unit.

**Figure 6: Train passenger safety and perceptions**

Source: OAG and PTA

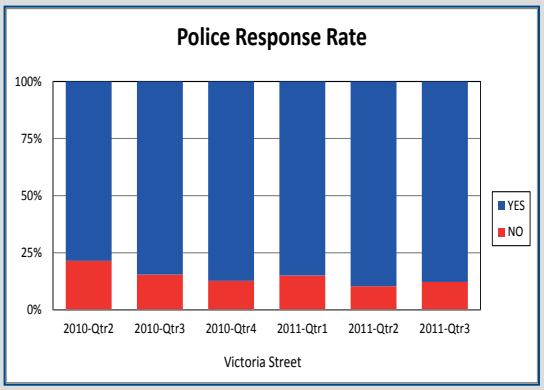
| CASE STUDY 2 | **Undesirable behaviour in the Bunbury CBD was significantly reduced after the City introduced active monitoring together with a coordinated Police response** |
|---|---|

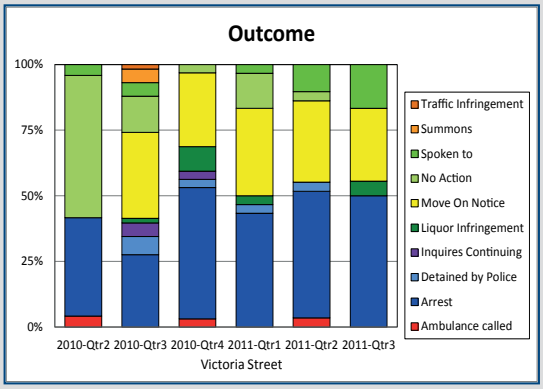
The City of Bunbury and local police developed a range of strategies to address crime and antisocial behaviour in the City. This included the introduction of low tolerance high visibility policing, deployment of additional police resources into the CBD, reviewing camera locations with regard to changing needs and advising on aspects of crime prevention through environmental design including audits of street lighting. The frequency of incidents has declined significantly since monitoring and new policing strategies were introduced. Incidents have halved in the City's entertainment precinct. CCTV is seen as an important adjunct to these strategies.

## City of Bunbury

Bunbury Police have adopted a high profile, low tolerance approach which includes the extensive use of Move on Orders for incidents of antisocial behaviour. Police reported that actively monitored CCTV enables them to intervene by deploying staff before a situation escalates.

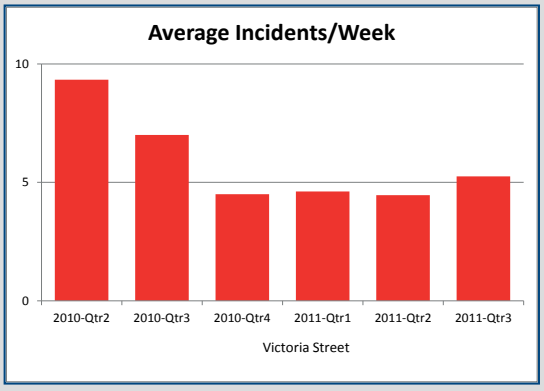
Police responded to more than 80 per cent of all incidents reported by the City and to more than 90 per cent of more serious incidents. The response rate improved after monitoring began and the improvement has been generally sustained over time.




The City maintains detailed records about location and types of incidents, Police response rates and (where known) outcome of Police intervention. Key performance indicators are generated from this data but these would be improved if more systematic outcome feedback was provided by Police.

Although the trial of active monitoring has yet to be formally evaluated, preliminary indications are that the frequency of incidents in the City's entertainment precinct declined significantly after monitoring and new policing strategies were introduced and that lower levels of incidents are being maintained.




Source: City of Bunbury and OAG analysis of City of Bunbury

**Figure 7: CCTV trial in the City of Bunbury**

*CCTV has proved useful to deter crime when active monitoring is combined with a coordinated Police response. Police responded to more than 80 per cent of total and 90 per cent of serious incidents reported by the City of Bunbury since monitoring was introduced.*

Source: OAG and City of Bunbury

## Benefits from CCTV at the Cities of Perth and Stirling could be better demonstrated if the cities and Police used information more strategically

The City of Perth maintains its CCTV system to help:

- reduce crime levels by deterring potential offenders
- reduce the fear of crime
- ensure a fast, effective police response in emergency situations
- in the detection and prosecution of offenders
- secure a safe environment for those people who live in, work in and visit Perth's Central Business District.

The City aims to continue the extension and enhancement of the CCTV network, including 24-hour monitoring, to support policing. Police reported significant benefits from having direct access to live monitoring of the city via the CCTV system. Because a serving police officer is located within the Monitoring and Control Centre, there is very close coordination with Police in observing and/or responding to incidents both City-initiated and Police-initiated. In addition, senior Police conduct some operations from within the Centre during which they are able to use the CCTV system to:

- scan for criminal activity and safety issues
- monitor crowd behaviour and to intervene early when signs of disorderly or antisocial behaviour are observed that may lead to more serious offences
- rapidly deploy their ground force to areas or incidents of concern
- relay additional insights from camera views to police officers involved in dealing with incidents
- monitor compliance with Move on Orders
- monitor the activities of police officers on the ground.

The City does keep information on the frequency and nature of incidents detected and also location and time of incidents and reports monthly to the chief executive officer on various CCTV surveillance. However, neither the Police or the City could provide information to show the extent to which the CCTV system was supporting intelligence-led policing. For instance, information about:

- the frequency or nature of incidents detected by CCTV
- the location and time of incidents and trends in incident 'hotspots' identified by CCTV compared with other means
- the timeliness of police or other response to incidents observed by CCTV
- the outcomes of police action detected through the use of CCTV
- the usefulness of CCTV imagery evidence in prosecution of offenders
- the effectiveness of police intervention.

At the City of Stirling, Police claimed a marked reduction in antisocial behaviour and offences against the person resulted from the use of active CCTV monitoring at foreshore events. Police have also used the City's recorded CCTV imagery to apprehend and prosecute a number of offenders.

However, Police outcome data is not systematically fed back to the City, and the City does not collate and analyse ongoing key performance indicators for the outcomes achieved by its CCTV system.

Regular analysis and reporting of this type of information would assist Police to devise and assess the effectiveness of deployment and other strategies. It would also allow the Cities to identify areas for expansion, upgrading or modification of its CCTV monitoring system.

## Proactive use of recorded CCTV has proved valuable in supporting investigations and deterring some types of crimes

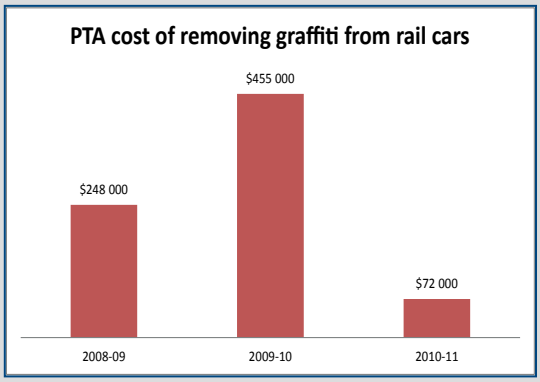
Research has shown passively recorded CCTV systems are generally less beneficial than actively monitored systems, although cheaper to run. However we found that when passively recorded CCTV images were used proactively, as the PTA and Police did during Operation Cleanskin, they provide valuable evidence to support investigations which significantly decreased the rate of graffiti vandalism on rail cars.

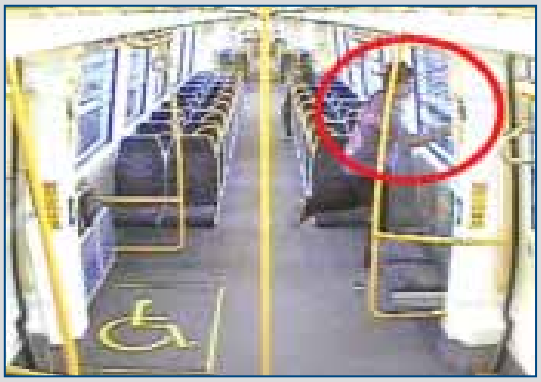
## Operation Cleanskin

Graffiti is a significant problem for the PTA. In addition to its unsightly nature, there is evidence that the disorderly environment graffiti creates may invite other criminal behaviour.

The PTA puts a substantial effort into prompt graffiti removal and strives to ensure that both its built environment and its rolling stock are kept as clean as possible. However, cleaning costs and removing graffiti from rolling stock escalated significantly during 2009-10, almost doubling from the previous year.

The PTA and the Police Transport Division jointly developed and implemented Operation Cleanskin to address the problem.



Recorded rail car CCTV was systematically reviewed to identify graffiti perpetrators. Their movements are tracked using other rail / bus station CCTV recordings. Comprehensive information about each offence was forwarded to Police for further investigation. Media publicity enlisted public assistance to identify some of the offenders.

Since March 2010, the operation has resulted in 195 apprehensions and 330 charges. The marked reduction of graffiti is reflected in substantially reduced cleaning costs. The railcars are in service longer before they require cleaning.

**Figure 8: Proactive use of CCTV helped to combat an upsurge in graffiti on the urban rail network**

*CCTV was used proactively to identify and prosecute graffiti vandals. The deterrent effect of the operation is reflected in reduced graffiti removal costs.*

Source: PTA

## Police do not have a signed agreement to access CCTV from some entities

We found that Police are relying on informal arrangements with some entities for access to and use of their CCTV systems. This raises uncertainties about the way CCTV can be used. We found:

- a formal MoU between Police and PTA addresses a wide range of security and information exchange matters. It also specifies the conditions under which Police are given access to PTA's CCTV. This includes the provision of a remote control capability for the Major Incident Response unit and access to data for evidential purposes. The MoU also addresses conditions under which imagery can be released to the media.
- a formal MoU between Police and the City of Bunbury establishes protocols in relation to consultation, liaison and exchange of information between Police and the City; the operation, monitoring and maintenance of the City's CCTV network; and the provision of a response by Police to matters reported by the City's monitoring staff. The MoU obliges both parties to adhere to the City's CCTV Policy and CCTV Monitoring Standard Operating Procedures. However, this MoU was not recorded in the central Police MoU register.
- there is no MoU between Police and the City of Perth, although the City of Perth's operating procedures provide for the Police Major Incident Room to access the City's CCTV system when authorised to do so by the City. Police can view both live and pre-recorded images through this link but usually cannot control the movement or coverage of the cameras.
- there is no MoU between Police and the City of Stirling to address either Police use of the City's CCTV equipment or exchange of information between Police and the City.

MoUs assist in establishing roles, responsibilities, expected response time, and authority for remote access and joint operations. Lack of MoUs or other formal agreements can limit frontline staff's ability in determining the level of information and access available to them in handling incidents and investigations.

## Blue Iris Project

In 2009, Police and the Office of Crime Prevention developed the Blue Iris project in an attempt to improve Police access to CCTV in Western Australia. The project was formally launched on 3 April 2009.

Through Blue Iris Police aimed to:

- facilitate access to CCTV evidence for Police investigations
- gain live access to CCTV to support operational work
- obtain up-to-date information about the extent and nature of CCTV use in WA.

A key component of the project was the establishment of the Blue Iris Register of CCTV Installations. Owners of CCTV were asked to use an online registration system to record: the locations at which CCTV is installed (including Global Positioning System [GPS] coordinates); the number of cameras and types of recording systems; the all-important imagery retention period; and the names, telephone numbers, email and addresses of key contact personnel.

In October 2009, state government agencies were directed to record their CCTV installations in the Register, but registration is voluntary for other owners of CCTV.

The primary purpose of the Register is to enable Police to quickly identify, and make contact with the owners of CCTV imagery which might be potentially useful to an investigation.

A further potential use was raised with us by members of the WA judiciary:

> Under court rules of disclosure, prosecutors are required to disclose to defence counsel the evidence that they have and also where there might be evidence. This could include CCTV imagery. Providing defence counsel with some form of access to a central register of what CCTV exists, even if it was restricted access, could be quite significant to defence.
>
> Source: Chief Magistrate of Western Australia

The Blue Iris project also anticipated that the Register would allow government to monitor the expansion of CCTV in Western Australia, to gain an understanding of the extent and nature of the CCTV systems being deployed and to respond to issues of quality, standards and useability of CCTV imagery.

In addition, it was anticipated that knowledge of the extent and nature of major CCTV installations would enable Police to negotiate communications links with the owners. Police could then access live feeds from a wide range of CCTV infrastructure in their Major Incident Room. This could significantly improve their ability to track offenders and respond to major incidents or emergencies.

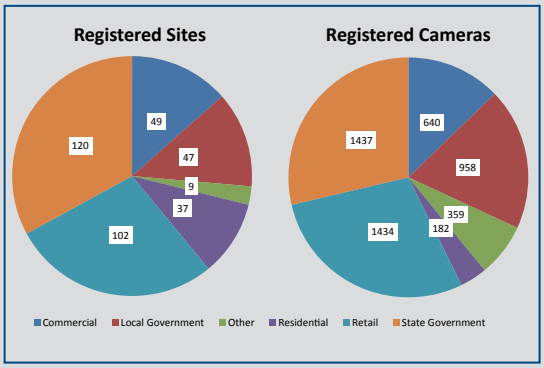
# Blue Iris Register has failed to deliver most of the benefits envisaged

Our analysis of the Blue Iris Register demonstrated that it has the potential to provide many of the benefits Police anticipated. However, for a range of reasons, it has failed to do so.

## Blue Iris Register of CCTV Installations

The Blue Iris Register of CCTV installations was publicly launched in April 2009. It is intended to facilitate Police access to CCTV evidence for criminal investigations and to provide up-to-date information about the extent and nature of CCTV use in Western Australia.

Each registration includes details of the site address and latitude and longitude, the number of internal and external cameras installed, camera types, software used to control the cameras and image retention time. It also stores key contact information. Interactive maps can be produced from the data showing the location of CCTV installations. However, the Register lacks useful reporting features. Details for individual sites can only be retrieved by clicking on the map.




Blue Iris now has data for about 370 sites at which CCTV cameras have been installed representing more than 5 000 cameras in total. State government agencies and retail entities dominate the registrations with each registering approximately 1 400 cameras, followed by local government and commercial enterprises, but many known CCTV installations, including those of the PTA, are not yet included in the Register.

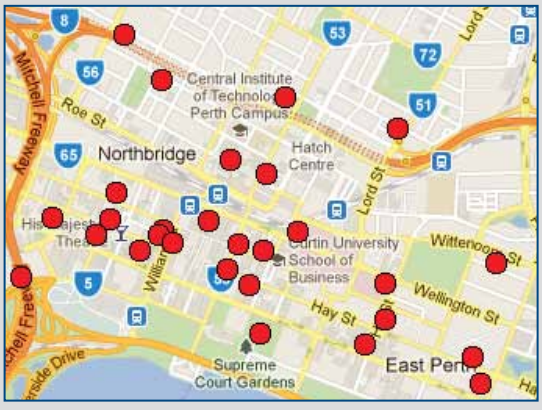



**Figure 9: The Blue Iris Register of CCTV Installations**

*Although a large number of cameras are registered, over 7 000 cameras are awaiting registration, while other known CCTV sites and cameras are not yet registered.*

## The completeness, accuracy, and utility of Blue Iris are questionable

We found that in its present state, the Register is not functional as the data is not accurate, complete, accessible or useful to investigators. Considerable further development and a commitment to adequate administration is needed before the system can reach its full potential.

Examination of Blue Iris documents and the Register database revealed that:

- about 370 registrations were received online but further online registrations are not possible because the current web interface has not been functioning for some time
- 7 302 entries have not been added to the database because they lack GPS coordinates
- a design flaw means that the Register is unable to deal with registration of sites such as marinas which lack a precise street address
- registrants cannot modify, update or withdraw their camera registrations
- no administrative functionality is available for the Register and no database administration is carried out. As a result the Register contains numerous inconsistencies, and some entries that appear to be spurious or even mischievous
- no reporting functions currently exist, and it is not possible to retrieve aggregate contact information from areas of interest to Police investigators
- no performance indicators are generated about the Register and no formal evaluation or cost benefit analysis has been undertaken
- only one level of access to the Register is currently available to Police via an internal interactive map layer. A user guide exists for this but the map component requires a specialised Blue Iris Arcreader Data Overlay which is not routinely installed on Police computers
- the Blue Iris Arcreader Data Overlay map of the Perth CBD provided to Audit did not match the City of Perth's map of camera locations
- the Register has the potential to provide information to monitor CCTV development within the state as was originally planned but no facility exists to extract such information and no system is in place to provide regular reports on current trends.

Police advised us they are aware of the shortcomings of the present Register and have recently commenced designing and implementing 'Blue Iris Phase II' which should address many of the Register's technical issues.

However, if the Register is to fulfil its purpose, it will be important for any technical improvements to be supported by more vigorous recruitment of registrations, adequate administrative resources, effective deployment strategies and training for end users.

## Police are not proactively seeking Blue Iris registrations and not all agencies cameras are registered

Although some Police officers we interviewed had been asked to encourage CCTV owners to register with Blue Iris, there has been no systematic follow-up of initial publicity campaigns and no systematic pursuit of state government agencies to ensure that they had met their obligation to register their CCTV installations with Blue Iris. We found:

- the PTA, the largest CCTV owner in Western Australia, had not registered its CCTV cameras on Blue Iris
- many other known government CCTV installations are not yet included in the Register
- the City of Bunbury's cameras were not registered on Blue Iris (the City has advised that it is currently in the process of doing so)
- although the City of Perth was registered as a CCTV owner, individual sites were not separately registered and all cameras are recorded in a single location. This would be of little value to an investigation
- There is minimal registration of CCTV in the Perth CBD, yet CCTV installations are known to be in widespread use in this area.

## Blue Iris Register is not used by Police frontline staff

We spoke with frontline police officers including detectives and the Computer Crime Squad to assess when and how they use the Blue Iris Register:

- although several had heard of Blue Iris, most thought that it related only to the live links provided to the Police Major Incident Room
- none had used the Register to locate CCTV cameras during investigations although all thought such a tool would be both useful and timesaving
- there has been no training in use of the Register offered to frontline Police instead, investigating staff continue door-knocking for possible CCTV imagery.

# Auditor General's Reports

| REPORT NUMBER | 2011 REPORTS | DATE TABLED |
|---|---|---|
| 8 | Ensuring Compliance with Conditions on Mining | 28 September 2011 |
| 7 | Second Public Sector Performance Report 2011<br>– Use of ICT contractors in government<br>– Acceptance of gifts and benefits by public officers in the Department of Health | 7 September 2011 |
| 6 | Right Teacher, Right Place, Right Time: Teacher Placement in Public Schools | 31 August 2011 |
| 5 | Public Sector Performance Report 2011<br>– Agency Compliance with Procurement Requirements<br>– Managing the Priority Start – Building Policy | 29 June 2011 |
| 4 | Information Systems Audit Report | 15 June 2011 |
| 3 | Audit Results – Annual Assurance Audits completed since 1 November 2010, including universities and state training providers; and Opinion on a Ministerial Notification | 25 May 2011 |
| 2 | Opinion on Ministerial Notification: Ministerial decision to not provide information to Parliament in relation to the theatre production of *The Graduate* | 23 March 2011 |
| 1 | Raising the Bar: Implementing key provisions of the *Liquor Control Act* in licensed premises | 23 March 2011 |

The above reports can be accessed on the Office of the Auditor General's website at www.audit.wa.gov.au

On request these reports may be made available in an alternative format for those with visual impairment.