Crime and CCTV in Australia: Understanding the Relationship

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Crime and CCTV in Australia:
Understanding the Relationship

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For the Australian Research Council (ARC)
December 2006

Crime and CCTV in Australia: Understanding the Relationship

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Acknowledgements

A note on funding

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Executive Summary

This report explores the use and effectiveness of Closed-Circuit Television (CCTV) as a crime prevention tool in Gold Coast public spaces and on the Queensland Rail (QR) Citytrain network.

Aims of the research

The three major aims associated with this research were to:

i)   identify important factors relating to implementation and operation of CCTV surveillance,

ii)   evaluate whether increased implementation and use of CCTV has influenced public perceptions relating to privacy and civil liberties and

iii)   examine whether CCTV makes a significant and effective contribution to reducing crime and detecting offenders in both public spaces and on public rail transport.

Methodology

The first aim was explored by assessing the operation and management of the Gold Coast Safety Camera Network (GCSCN) and QR Citytrain network. This involved obtaining records and conducting site visits and interviews. An overview of the applicable geographic areas was presented as were the different CCTV system designs and operational options that had been adopted by GCSCN and QR Citytrain network. Findings from interviews with key users of the GCSCN and QR Citytrain network were presented to examine adequacy of training, how suspicious behaviours are identified and the monitoring strategies employed, the quality of working relationships with external agencies and the evidentiary value of CCTV surveillance.

The second aim explored a range of issues associated with camera surveillance through a 100 hour observational study of the GCSCN control room and surveys of the general public, business traders and rail commuters. The observational study of the GCSCN investigated the general control room operational practices, the monitoring strategies adopted, why monitoring was initiated, the types of incidents surveilled and the targets of CCTV surveillance. The survey research was undertaken to ascertain the impact that CCTV has on the wider public and to gain information regarding peoples' experiences with CCTV and their perceptions relating to privacy.

The final aim of the research was explored via the impact of CCTV on recorded crime data. Time-series analyses were used to evaluate reported offending in Surfers Paradise and

Broadbeach (areas with public space CCTV) and nine train stations with CCTV surveillance (Beenleigh, Bethania, Brunswick Street, Indooroopilly, Ipswich, Morayfield, Nundah, Southbank/Vulture St and Strathpine Stations).

Findings

Observational study

From the 100 hour observational study of the GCSCN control room, 181 incidents were surveilled by camera operators leading to 51 arrests. Just over 15% of the observational period was dedicated to the active monitoring and active searching of incidents with crime and good order (i.e. alcohol-related violence) accounting for over three quarters of all incidents surveilled. Males, people in their twenties and Caucasians were most often the target of camera surveillance with police present at just over half of all targeted incidents.

Findings from the observational study indicated that the effectiveness of CCTV may be very much dependent on a whole range of issues but in particular the monitoring strategies adopted by camera operators. It was determined that most incidents captured by CCTV were highly visible behavioural incidents such as assaults rather than less visible incidents such as drug deals. Although it was anticipated that most surveilled incidents would be initiated by the camera operators themselves, it was determined that approximately half resulted from the police requesting specific surveillance of a person or incident. The observational study also suggests 7 of the 51 arrests were the direct result of the camera network with remaining arrests attributable to police communication and simultaneous detection.

Survey research

Three groups were selected for survey distribution: i) residents of Burleigh Heads (suburb without public space CCTV) and Surfers Paradise (suburb with public space CCTV), ii) business traders of Broadbeach and Surfers Paradise (suburbs with public space CCTV) and iii) Queensland Rail Citytrain commuters. In total, 896 people were surveyed (28.72% response rate).

From the survey research, the majority of respondents strongly supported the use of CCTV cameras. Although CCTV surveillance was generally not considered to be an invasion of privacy, respondents did question the effectiveness of surveillance in terms of deployment of police to an incident and whether cameras were being actively monitored. The general premise that CCTV cameras should be used to prevent crime and terrorism in Australia was

supported, but again, the ability to prevent crimes from occurring, especially spontaneous, violent or alcohol/drug fuelled crime was questioned.

Impact studies: Gold Coast

The impact of CCTV on recorded crime in two Gold Coast suburbs, Surfers Paradise and Broadbeach utilised police crime statistics in order to undertake time-series analysis. Areas were divided into locations 'under' and 'away' from surveillance and involved analysing data from December 1995 – December 2002. From the impact studies, it appears that CCTV is effective at *detecting* violent offending but does not *prevent* any type of offending. The introduction of CCTV in Surfers Paradise resulted in significant increases in the extent of *total offences against the person* (including assault, robbery, other offences against the person and sexual assault) and Weapons Act offences. CCTV was found to have no significant impact on *total offences, total offences against property* (including other theft (excluding unlawful entry), unlawful entry, other property damage, unlawful use of a motor vehicle and handling stolen goods) and *total other offences* (including drug offences, liquor (excluding drunkenness)) occurring in Surfers Paradise. Findings from Broadbeach indicated that CCTV had no impact on *total offences* or *total offences against property* (including other theft (excluding unlawful entry) and other property damage).

Impact studies: QR Citytrain network

QR Citytrain stations were selected for time-series analysis in order to evaluate the impact of CCTV on reported crime. Stations were selected if they had significant camera coverage and an implementation date that permitted a three year pre- and post- intervention comparison. The time-series analysis of selected QR Citytrain stations suggests there were between one and five additional offences occurring during the post- CCTV period at five stations (Beenleigh, Bethania, Brunswick Street, Indooroopilly and Ipswich Stations). There was no change in the number of offences pre- and post- CCTV at four stations (Morayfield, Nundah, Southbank/Vulture St and Strathpine Stations).

Conclusions

The effectiveness of CCTV as a crime prevention tool is questionable. From this research it appears CCTV is effective at *detecting* violent crime and/or may result in increased reporting as opposed to *preventing* any type of crime.

1. Introduction

Over the past two decades, there has been a proliferation of Closed-Circuit Television (CCTV) schemes in most states throughout Australia (Wilson and Sutton, 2003). Unfortunately, CCTV has frequently been implemented without a clear understanding of the goals that may be accomplished through its use or indeed the circumstances under which CCTV is most effective. The issue of security in public places and on public transport raises wide-ranging concerns within a broad spectrum of organisations responsible for crime prevention strategies. The enormous growth in the use of CCTV both nationally and internationally reflects these concerns. These are compounded by the fact that risks associated with assault, sexual assault and property crime in all Australian States and Territories remains considerable (Weatherburn, 2004), despite significant investment in crime deterrent technologies such as CCTV.

The literature suggests that five purposes are generally associated with the use of CCTV surveillance (Allard, Wortley and Stewart, 2006; Barnard, 1988; Chatterton and Frenz, 1994; Dolahenty, 1999; Horne, 1996; Kruegle, 1997; Kyle and Aldridge, 1992; Phillips, 1999). Firstly, it is often presumed that CCTV will prevent crime and disorder by acting as an effective psychological deterrent to potential offenders. Secondly, it is proposed that CCTV aids the detection of crime and disorder and enables a greater proportion of crime to come to the attention of police or security personnel. Early detection facilitates the co-ordination of responses to incidents as they are occurring and the implementation of strategies to reduce the level of harm. Thirdly, CCTV may enhance the apprehension and successful prosecution of offenders by enabling the effective deployment of officers and the gathering of evidence. Fourthly, the presence of CCTV could reassure the public and thus increase feelings of safety or reduce fear of crime. Finally, it is proposed that CCTV acts as a general site management tool that assists police or security personnel to effectively manage locations.

CCTV and the prevention of crime

Perhaps the most frequently presumed benefit of CCTV is that its introduction will result in reductions in crime and disorder. Two environmental criminological approaches may be used to explain how CCTV theoretically reduces crime. From a situational crime prevention viewpoint, it is proposed that CCTV increases the perceived risks associated with offending in locations under camera surveillance as it increases the likelihood of detection (Clarke, 1997; Clarke and Felson, 1993). The increased risk associated with offending is viewed as impacting on the decision to offend. From a routine activities viewpoint, it is proposed that camera

1

surveillance acts as a capable guardian. Given the presence of a capable guardian, offending behaviour will not occur even if a likely offender and suitable target converge in space and time (Cohen and Felson, 1979; Felson, 1987; Felson, 1994).

There is an abundance of international research that has assessed the impact of camera surveillance by comparing crime rates pre- and post- CCTV installation (Ratcliffe, 2006; Welsh and Farrington, 2006). These findings suggest that CCTV is either largely ineffective at reducing crime or that CCTV has different effects depending on the type of crime under consideration (Welsh and Farrington, 2002). Generally, findings support the contention that CCTV may result in reductions in some *offences against property* such as vehicle crime and vandalism or criminal damage (Armitage, Smyth and Pease, 1999; Brown, 1995; Chatterton and Frenz, 1994; Mahalingham, 1996; Minnaar, 2006; Poyner, 1992; Sarno, 1996; Skinns, 1998; Squires, 1998a, 1998b, 1998c, 1998d; Tilley, 1993; Welsh and Farrington, 2002). There is mixed evidence of the effect that CCTV has on burglary and evidence suggests that CCTV has no impact on shoplifting (Armitage, Smyth and Pease, 1999; Brown, 1995; Chatterton and Frenz, 1994; Mahalingham, 1996; Sarno, 1996; Skinns, 1998; Squires, 1998a, 1998b, 1998c, 1998d).

The effect of CCTV on offences against the person and public order offences is less clear. Some findings suggest that CCTV may reduce *offences against the person* such as assault and robbery (Armitage, Smyth and Pease, 1999; Burrows, 1978; Mahalingham, 1996; Sarno, 1996; Squires, 1998a; Webb and Laycock, 1991). Others report that CCTV has no impact on violent offences or is associated with an increase in assault and robbery (Brown, 1995; Mahalingham, 1996; Sarno, 1996; Skinns, 1998; Squires, 1998a, 1998b, 1998c, 1998d; Welsh and Farrington, 2002). Likewise, the effect of CCTV on *public order offences* such as drug offences remains a matter of contention (Armitage, Smyth and Pease, 1999; Brown, 1995; Gill, Rose, Collins and Hemming, 2006; Mahalingham, 1996; Sarno, 1996; Squires, 1998a). It has been suggested that these mixed findings may reflect increased rates of detection and the inability of CCTV to affect spontaneous offences (Allard, Wortley and Stewart, 2006; Brown, 1995; Gill and Spriggs, 2005; Phillips, 1999; Wilson, 2003).

Despite these inconsistent findings and the considerable financial investments in CCTV technology in Australia, there is an absence of publicly available Australian research exploring whether CCTV prevents crime and disorder (Wilson and Sutton, 2003). Since the first Australian public space CCTV program was introduced in Perth in July 1991 due to concerns regarding violent crime and public disorder (Wilson and Sutton, 2003), public space and public transport CCTV implementation has expanded and developed throughout over thirty mainland Australian cities and some rural and regional areas. Whilst this developing

technology has been seen as a panacea for the control of crime and public disorder, the uptake of CCTV as a 'formal surveillance' technology has occurred in Australia with little evaluation as to its effectiveness or consideration of the negative consequences that may accompany its introduction (Clarke and Homel, 1997).

Concerns with the use of CCTV

The following three aspects have been identified as areas of paramount importance when assessing how CCTV can be managed more effectively by agencies concerned with crime, public disorder and terrorism:

i) **Bias** - One inherent problem is 'bias', and the main concern is that there will be an increased and disproportionate amount of attention placed upon certain sections of the community with CCTV camera operators unnecessarily focusing on particular social groups (Spooner, 2001; Wilson, 2003). Norris and Armstrong's (1999) observational study of a control room found that women, ethnic minorities and working-class youth were more likely to be the 'targets' of CCTV because of operator bias.

ii) **Civil liberties issues** - The intensification of surveillance in an age of heightened awareness of crime and terrorism is a concern that many have investigated. Generally, findings indicate that there is general support for camera surveillance and few people express concerns about CCTV negatively impacting on personal privacy or raising other civil liberty concerns (Bennett and Gelsthorpe, 1996; Flaherty, 1998; French, 1995; Graham, Brooks and Heery, 1996; Honess and Charman, 1992; Painter and Tilley, 1999; Phillips, 1999).

iii) **Displacement of crime to other areas or to other points in time** – Another concern of camera surveillance is that it may cause i) 'spatial displacement' which describes the shift in crime from locations that are under surveillance to adjacent areas not under surveillance (Reppetto, 1976) or ii) 'temporal displacement' which describes the shift in crime over time, that is, offending shifts to other hours or days (Clarke and Eck, 2005). Implementation and use of CCTV may therefore not eliminate or even reduce crime, but simply move the same activities into different time periods or to areas without such surveillance methods and a perceived diminished chance of apprehension (Flight, van Heerwaarden and van Soomeren, 2003). While there is mixed evidence surrounding the issue of whether CCTV surveillance is associated with spatial and temporal displacement (see for example, Armitage, Smyth and Pease, 1999; Barr and Pease, 1999; Brown, 1995; Clarke and

Eck, 2005; Gill and Spriggs, 2005; Short and Ditton, 1996, 1998; Skinns, 1998; Squires, 1998a, 1998c; Webb and Laycock, 1991), it is a potential concern worthy of investigation.

The intention of this report is to not recite or provide a detailed overview of past CCTV evaluations as excellent discussions can be accessed via the following resources:

- *Assessing the Impact of CCTV* (Gill and Spriggs, 2005). Available from the Home Office website http://www.homeoffice.gov.uk
- *CCTV in Europe: Final Report* (Hempel and Töpfer, 2004). Available from the Urban Eye project website http://www.urbaneye.net
- *Video Surveillance of Public Spaces* (Ratcliffe, 2006). Available from the Center for Problem Orientated Policing website http://www.popcenter.org
- *Closed Circuit Television Surveillance* (Welsh and Farrington, 2002, 2006). Available from the Home Office website http://www.homeoffice.gov.uk
- *Open-Street CCTV in Australia: A Comparative Study of Establishment and Operation* (Wilson and Sutton, 2003). Available from the AIC website http://www.aic.gov.au

It is recommended that readers of this report familiarise themselves with the above resources, especially Gill and Spriggs' (2005) evaluation of 14 CCTV projects (13 schemes) in the United Kingdom.

The increased use of CCTV has raised a series of associated socio-legal concerns. These include the overall financial burden of CCTV, whether CCTV assists with crime detection, the impact of CCTV on marginalised sections of the community, whether CCTV invades the privacy of individuals in public spaces and on public transport and its effectiveness as a crime prevention deterrent. The perceived success of CCTV in relation to controlling crime in Australia is almost totally anecdotal (Goodwin, 2002; Sutherland Shire Council, 2001, 2003; Welsh and Farrington, 2002). While further CCTV implementation continues to occur and state and federal agencies consider additional crime detection and minimisation strategies (Wilson, 2003), there is a critical need to undertake a comprehensive review and research the impact of CCTV on security of public spaces and public transport.

Aims of the current research

Given that minimal research has examined CCTV within an Australian context (Wilson, 2003; Wilson and Sutton, 2003) the current research will explore the use and effectiveness of CCTV as a crime prevention tool on the Gold Coast (Queensland) and the Queensland Rail (QR) Citytrain network. In assessing use and effectiveness, focus will be placed on the primary

concerns that have been raised about CCTV surveillance: bias, civil liberty issues and displacement (spatial and temporal). There are three major aims associated with the research:

i) To identify important factors relating to implementation and operation of CCTV surveillance. This includes an exploration of the CCTV system design and operational options adopted. This phase of the research is essential to the next two research aims outlined below.

ii) To evaluate whether increased implementation and use of CCTV has influenced public perceptions relating to privacy and civil liberties.

iii) To examine whether CCTV makes a significant and effective contribution to reducing crime and detecting offenders in both public spaces and on public rail transport.

Three research phases were used to address these aims. The first phase (detailed in Chapter Two) involved obtaining records, site visits and interviews to assess the operation and management of the GCSCN and QR Citytrain network. The second phase explored a range of issues associated with camera surveillance through an observational study of the GCSCN control room (Chapter Three) and surveys of the general public, business traders and rail commuters (Chapter Four). The third phase of the research explored the impact of CCTV on reported offending in two Gold Coast suburbs (Chapter Five) and on nine selected stations on the Citytrain network (Chapter Six).

Overview of the report

Given the lack of research in an Australian context, this report provides a systematic and objective analysis of the use and effectiveness of CCTV in Gold Coast public spaces and on the QR Citytrain network.

Chapter Two provides the context for the research by describing the GCSCN and QR Citytrain network CCTV systems. This section aims to emphasise the context in which these systems were introduced, the area characteristics and types of systems utilised by these distinct networks. This chapter details the control room management, the applicable standards and guidelines for each network, the working relationship with external agencies and the technical characteristics of both the GCSCN and QR Citytrain network.

Chapter Three explores how active monitoring is undertaken on the GCSCN and whether there is any bias in the way the CCTV system is utilised.

Chapter Four presents an overview of the public's attitudes towards CCTV as a crime prevention tool and explores whether there are civil liberty concerns. Specifically, the findings

from Gold Coast residential and business trader surveys and Queensland Rail commuter surveys are presented.

Chapter Five assesses the impact of CCTV on crime in two Gold Coast suburbs, Surfers Paradise and Broadbeach, based on time-series analyses of offences reported to police.

Chapter Six explores whether CCTV has an impact on reported crimes occurring at nine stations along the QR Citytrain network.

Chapter Seven summarises the findings of the current research. These findings can be considered by other users of CCTV when installing and evaluating CCTV networks.

2. Research Context: Nature of CCTV Surveillance

This chapter describes the Gold Coast City Council (GCCC) and Queensland Rail (QR) Citytrain CCTV systems selected for assessment and analysis. An overview of the applicable geographic areas will firstly be presented to provide a suitable context for international readers. Secondly, the different CCTV system design and operational options that have been adopted will be explored. Thirdly, the findings from interviews that were conducted with key users of the GCSCN and QR Citytrain network will be reported to address several additional issues that are pivotal to the successful operation of CCTV systems. These include consideration of the adequacy of training, how suspicious behaviours are identified, what monitoring strategies are employed, the quality of working relationships with external agencies and the evidentiary value of CCTV surveillance. Fourthly, internal data provided by the GCCC and QR will be presented to demonstrate the types of incidents monitored, recorded or 'back searched'. This data was obtained during the preliminary stages of the project prior to examination of police recorded crime data. It is important to note internal data provided by GCCC and QR (i.e. SIMS data) is not necessarily in alignment with official crime statistics recorded by the Queensland Police Service.

Geographic context of surveilled areas

The geographic regions of the Gold Coast and the QR Citytrain network are described in depth in this section to give readers some context about the locations under discussion throughout this report.

Gold Coast, Australia

Located between Brisbane and the New South Wales border, the Gold Coast is Australia's sixth largest city. Gold Coast has a population of approximately five hundred thousand and spans over 1400 square kilometres (540 square miles). Its temperate climate, 70 kilometre coastline and backdrop of subtropical rainforests makes the Gold Coast a popular tourist destination, hosting an average of 80,000 interstate and international visitors daily (over 10 million annually) (Gold Coast City Council, 2005). A map of the Gold Coast region is provided in Appendix 2.1. There are four suburbs pertinent to this research project which will be briefly described: Surfers Paradise, Southport, Broadbeach and Coolangatta.

Surfers Paradise is a major Queensland tourist destination that is situated along three kilometres of beachfront and has numerous cafes, hotels, restaurants, fast food outlets, retail stores, markets and other businesses. The majority of the Gold Coast's nightclubs, discos and

bars are situated in Surfers Paradise, particularly along Orchid Avenue and Cavill Mall. Southport is located just north of Surfers Paradise and is regarded as the city's Central Business District (CBD) and includes Council offices, law courts, businesses and numerous retail stores. This suburb has fewer bars and restaurants in comparison to Surfers Paradise and the suburb of Broadbeach. While Broadbeach is somewhat similar to Surfers Paradise as it is also situated along the beach front, it has a greater selection of cafes, restaurants and alfresco dining areas, with only a few nightclubs and a large shopping mall. It is home to Conrad Jupiter's Casino and the newly built Convention Centre. Coolangatta is also situated on the beach front and is located at the southern end of the Gold Coast on the Queensland and New South Wales border. It has a number of nightclubs, pubs, restaurants, cafes and retail outlets.

Two large scale events that attract a large number of interstate and international tourists, Lexmark Indy 300 Week (Indy Week) and Schoolies Week, occur annually in Surfers Paradise and are worthy of discussion. The large crowd numbers that these events attract influence the management of the CCTV network and are therefore relevant to this research project. Indy Week is an international motor racing event that occurs each October in Surfers Paradise. Suburban streets are transformed into a 4.47 kilometre race track attracting over 300,000 spectators over the four day program. Off-track entertainment in the form of free street bands and performers, night markets, extended business trading hours and an increase in nightclub patronage also contributes to greater than average crowd numbers gathering in the surveilled area of Surfers Paradise. For more information on Indy Week see http://www.indy.com.au.

Schoolies Week is an annual celebration for senior (high school) Australian school leavers with one official week of free outdoor entertainment and music provided to Queensland students. Up to 50,000 newly graduated students enjoy the festivities during the Schoolies celebrations with celebrations tending to creep into the following weeks, as Victorian and New South Wales 'schoolies' migrate north to Surfers Paradise until the second week of December. Logistically, Schoolies Week in Surfers Paradise is a somewhat difficult event to control and regulate, considering many of the schoolies are under the legal age to drink alcohol or enter nightclubs. Hence, large crowds of 16 and 17 year olds gather in Cavill Mall and along the Esplanade (near the beach) with 18+ year olds visiting nightclubs and bars. For more information relating to Schoolies Week see http://www.surfersparadise.com.

Queensland Rail Citytrain network

Queensland Rail has been operational for over 140 years and incorporates rail networks both in South-East Queensland and rural Queensland. The focus of this research, however, relates specifically to Queensland Rail's Citytrain network. A schematic representation of the Citytrain network is provided in Appendix 2.2. This network predominately services 140 intercity and suburban train stations, connecting Queensland's capital city, Brisbane to surrounding areas such as Ipswich, the Gold Coast and the Sunshine Coast.

Rationale for the introduction of CCTV

The rationale for introducing CCTV cameras on the Gold Coast is multifold, however the underlying theme relates to the public safety issue of alcohol-related violence and anti-social behaviour. It was considered that the introduction of CCTV cameras would lead to a general reduction in alcohol-related crime and general property crime in surveilled areas (Interview with GCSCN Coordinator, 2005). The implementation of CCTV cameras on the Gold Coast resulted from pressure of "local businesses concerned that the image of Surfers Paradise as a family friendly tourist resort was being undermined by alcohol-related violence" (Wilson and Sutton, 2003, p. 31). As with many public space CCTV systems in Australia, the GCSCN ultimately was introduced in response to additional pressures from the community, local government and police. According to the control room's *Policy and Procedures Manual* the network is "integral to maintaining the high standard of public safety that is expected of the Gold Coast as Australia's tourism capital" (2004, p. 2). Thus, it can be said that the GCSCN's original objective was to reduce crime by addressing alcohol-related violence and anti-social behaviour to improve public safety.

CCTV cameras were initially introduced on the QR Citytrain network in 1995 and since that date have been 'rolled-out' to be located at over 130 stations on the network. The rationale for introducing CCTV cameras on the QR Citytrain network relates to the general premise that camera surveillance improves public safety and reduces crime, particularly property crime, thus assisting police investigations.

Description of the CCTV systems – design and operation

An overview of the system design and operational options of the GCSCN and Citytrain CCTV network is provided in Table 2.1. This is followed by an in-depth examination of the system design and operational options that have been adopted for each CCTV system. System design options include consideration of: (i) the number and type of cameras and the method used to

transmit images to the control room, (ii) signage alerting the public of the presence of CCTV surveillance and (iii) control room options such as the location of the room and the type of monitoring screens/recording equipment. Operational options include consideration of: (i) how the control room operates (such as who undertakes monitoring and the monitoring strategy that is employed) and (ii) any existing policy and procedure relating to CCTV surveillance.

Table 2.1: Overview of the GCSCN and QR Citytrain network

	GCSCN	QR Citytrain network
Number of cameras *QR: Total approx 5,500 when rolling stock (train carriage) figures taken into consideration	74	3,398* 2,083: train stations 1,315: car parks
Type of cameras	Overt and semi-overt cameras PTZ Colour / Fixed Colour	Overt, fixed – colour Overt, PTZ – colour
Signage	40+ signs	Signs on all platforms and on all trains fitted with CCTV
Location of control room	Near Police Beat and CBD	Centralised area of Brisbane at a QR Citytrain station
Number of monitors	9	Monitors at numerous train stations
Recording technology utilised	Digital (as at September 2006), Previously analogue and digital	Currently analogue and digital In the process of system upgrade to all digital recording
Operators employed by	Private security company (sub-contracted by local council)	Queensland Rail (Passenger Services)
Monitoring strategy	Active (operator in control room 24 hours a day)	Passive monitoring of requested footage as required
Operator/s per shift	1 on "regular" shifts, 2 on "busy" shifts	
Number of cameras per operator	38 cameras for "local" operator (Surfers Paradise) 36 cameras for "remote" operator (Southport, Broadbeach, Coolangatta)	
Total operational hours per day	24 (24 hour recording and 24 hour operator presence in control room)	24 (24 hour recording)
Ownership	Local council	Queensland Rail (Passenger Services)
Areas monitored	Surfers Paradise, Southport, Broadbeach, Coolangatta (CBD/ Town Centres)	Train station platforms (Core Safety Zones[1]), train carriages, train station car parks, main entry/exit points, station offices, ticket vending machines
Communication with police	Police radio (one-way), telephone, entering control room	Telephone, QPS Railway Squad Officers
Funding	Council via local business levy	Internal (Queensland Rail) as well as State Government

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[1] The majority of Citytrain stations have Core Safety Zones, clearly marked areas with additional lighting, emergency telephone and coverage by surveillance cameras.

The GCSCN system design and operational options

Cameras and transmission of images to the control room

Schematic representations of the GCSCN indicate that the first 16 cameras were installed in Surfers Paradise in December 1998 and became fully operational ('live') in March 1999. The expansion of the camera network soon followed with the introduction of cameras in Broadbeach and Coolangatta (May 2000) and Southport (November 2004). To date, a total of 74 cameras are now utilised in Southport (n=11), Surfers Paradise (n=38), Broadbeach (n=18) and Coolangatta (n=7). Appendix 2.3 provides additional information about when cameras were installed on the network up until September 2006.

Cameras are located within the central business district of each suburb (i.e. the 'town centre') with cameras in the vicinity of pubs, nightclubs, hotels, restaurants, cafes, parks, retail outlets and car parks. Overt and semi-overt cameras are either installed on existing light poles, camera poles or to the awnings/sides of buildings. Semi-overt refers to dome mounted cameras, that is, a passer-by is aware of the camera's presence, but not the direction of its gaze (see Photo 2.3 for an example of a semi-overt camera). The cameras are all colour and apart from two static cameras, all are pan, tilt and zoom (PTZ). Fibre optic cable and coaxial cabling is used to connect both the 'local' (Surfers Paradise) and 'remote' (Southport, Broadbeach and Coolangatta) sites.

GCSCN signage

The Gold Coast City Council erected CCTV signage in early 2003 in Southport, Surfers Paradise, Broadbeach and Coolangatta. Two separate audits of the four sites by the Senior Research Officer (SRO) as well as aerial photographs provided by GCSCN suggests there are approximately 40 CCTV signs in surveilled Gold Coast public spaces (as at January 2006). As per discussions with the Coordinator, a further 25 signs are to be installed towards the end of 2006 (replacing damaged signs and additional signs). The locations of the current installed signs include taxi ranks, areas outside nightclubs/bars, in the vicinity of automatic-teller machines (cash points) and council car parks. The majority of the signs read "This area is regularly monitored by safety cameras. Making a safer city" (Photo 2.1) with several declaring "This area is under 24 hour camera and security surveillance" (Photo 2.2). Signs are attached to light poles or to camera-mounted poles, as well as walls in close proximity to the cameras (Photo 2.3).

The signage design (font, layout and colour) is purposefully distinct from other council signage in the area, according to the Coordinator of the GCSCN. Compared to council signs declaring prohibited behaviour, rules and regulations (see Photo 2.4 and Photo 2.5), the CCTV

signs were designed to "stand out" and be more "welcoming and friendly" to users of surveilled public spaces on the Gold Coast. The actual wording of the sign was modelled on the Brisbane City Council CCTV signage erected in the main CBD area of Brisbane, the capital city of Queensland. All signs are prominently located within Gold Coast surveilled areas and satisfactorily inform the public of CCTV operation, in keeping with the Queensland *CCTV Guidelines* (Department of Communities, 1999). See also Photographs 2.6 and 2.7 for examples of aerial photographs provided by the GCSCN (signage location in Southport and Broadbeach).

Photo 2.1: Typical CCTV signage throughout surveilled Gold Coast public areas

Photo 2.2: Typical CCTV signage, Surfers Paradise

Photo 2.3: Signage in close proximity to CCTV cameras, Surfers Paradise

Photos 2.4 & 2.5: Examples of other council signs erected in surveilled public areas

Photos 2.6 and 6.7: Examples of aerial photographs (Broadbeach and Southport) of CCTV signage (kindly provided by the Gold Coast City Council)

GCSCN control room options

The entrance to the GCSCN control room is discrete with little signage indicating the purpose of the building which itself is under 24 hour camera surveillance. It is in close proximity to a local Police Beat in the Central Business District of Surfers Paradise. The exact location of the control room is not revealed to the general public as a security precaution. The control room accommodates nine monitors, situated against one wall. The nine monitors situated in the control room are used to view the four separate geographic areas on the Gold Coast – Surfers Paradise, Southport, Broadbeach and Coolangatta. Monitors 1 – 4 are used exclusively for Surfers Paradise, monitor 5 for Coolangatta, monitor 6 for Southport and monitor 7 displays images of Broadbeach. Monitors 8 and 9 interchangeably monitor the entrance to the control room (refer to Appendix 2.4 and 2.5 for a schematic overview of the control room layout).

There is a noticeboard in the control room that displays monthly statistical reports of incidents, schematic maps of the camera locations, as well as an aerial photograph of Surfers Paradise. Business cards of police officers, internal memos and photographs of suspects and/or missing persons are also displayed prominently on the noticeboard. The layout of the control room does facilitate the active monitoring of each camera during a camera operator's regular 12 hour shift. During 'busy' periods such as Friday and Saturday nights, the monitors are subdivided so that one operator is responsible for Surfers Paradise and other operator is responsible for the 'remote' locations (Broadbeach, Southport and Coolangatta).

Originally the system utilised both analogue and digital recording systems, of which all cameras record images 24 hours a day in 'real time'. The system is now upgraded so that all recording is in digital (as opposed to analogue) format. Images are ordinarily stored for a period of 30 days but may be stored for longer periods of time if required by police or if they contain an incident or 'matter of note' (term used by camera operators). Images are stored both as a hard copy (VHS tape; DVD/CD more so) and as an electronic file via the network's hard drive. Auto-tours can be programmed within the current system (i.e. 5 seconds per programmed camera angle).

Operation of the GCSCN control room

The ownership of the control room rests with the Gold Coast City Council, specifically the GCSCN. A private security company subcontracted by the Council has been operationally responsible for the control room since the inception of public space CCTV cameras on the Gold Coast. The company employs one full-time manager, one second-in-charge manager (2IC), two full-time operators and one casual operator. The manager of the control room reports to the Coordinator of the GCSCN and to senior management of the security company. Not only does

the manager actively monitor the cameras, the manager also completes administrative tasks (such as staff rosters/rotas), compiles monthly reports for the Council (i.e. incidents and requests), attends meetings and authorises the release of CCTV footage to police. A second-in-charge manager (2IC) is also employed to undertake administrative tasks as well as to conduct monitoring as a camera operator.

The comparative study undertaken by Wilson and Sutton (2003; 2004) suggests that there are four monitoring models of public space CCTV systems operational in Australia (as at October 2002): council staff, private security personnel, police and volunteers. The GCSCN control room is not actively operated or controlled by local police officers, except during large scale events or specific police investigations. Even then, police have a secondary role in the control room (i.e. utilising the police radio) with operators still responsible for the surveillance and recording of footage. The control room can therefore be described as council-owned yet monitored by private security personnel, which is the most common Australian model (Wilson and Sutton, 2003).

GCSCN policy and procedure

The GCSCN has a *Policy and Procedures Manual*, in essence, a Code of Practice. A copy of the Manual was made available to the research team for the purpose of analysis. Small sections have been reproduced with the kind permission of the Gold Coast City Council in order to evaluate and analyse its contents (refer to Appendix 2.6 for a list of selected Monitoring Standards with examples). All operators have access to the Manual and it is kept in close proximity to the monitors. This Manual has been updated since the inception of CCTV with the most recent version being produced in 2004. As stated in the Manual:

> *Gold Coast City Council (the Council) is committed to providing a safe environment in which residents, businesses and visitors may enjoy the amenity of the Gold Coast without disruption or fear of harm. The Gold Coast Safety Camera Network (the Network) is integral to maintaining the high standard of public safety that is expected of the Gold Coast as Australia's tourism capital (p. 2).*

The GCSCN *Policy and Procedures Manual* (2004) gives considerable guidance about the recording, storage and processing of CCTV footage for external agencies. The manual states "all cameras shall be recorded at all times" (p. 5). The rationale for recording footage is so that local police can detect and apprehend offenders and, if required, use the footage as evidence in legal proceedings. The recording of footage utilises digital video recorders (DVRs) and 'spot tapes' (i.e. VHS tapes). Recorded footage is kept for a minimum period of 30 days

however specific footage may be kept for lengthier periods of time and is stored using other mediums (i.e. saved to the computer hard drive, CD/DVD, VHS tape).

Spot tapes are "compilations of matters of note recorded in real time and witnessed by the monitoring operator" (*Policy and Procedures Manual*, 2004, p. 5). Camera operators are to use VHS tapes to record real time occurrences so that the footage can be reviewed promptly if requested by police. It is important to note that this system also allows for the footage to be recorded using a DVR, thus there are two records of an incident (VHS tape and DVR file). Spot tapes have a recording capacity of six hours and may have several recorded incidents from an operator's shift (i.e. assaults, vehicle theft, vandalism). Changing of spot tapes is completed manually by each operator on a regular basis.

Footage of a serious nature is transferred to a 'file tape' and can be compiled from DVR or spot tapes. These file tapes are usually kept indefinitely as they may be required by law enforcement at a later time, regardless of whether police actually request the footage. File tapes are stored in a lockable cabinet in the control room. The shelves can accommodate approximately 100 file tapes and are variously labelled, for example, "file tapes of Surfers Paradise, Coolangatta, Broadbeach and Southport", "spare police evidence tapes", "Surfers 24 hour tapes", "liquor licensing" and "GCCC and CMC evidence tapes". Above the lockable cabinet are shelves containing spot tapes of the four regions under CCTV surveillance. These VHS tapes are numbered in chronological order and are used to record CCTV footage. As at September 2006, all GCSCN footage from 74 public space cameras is recorded digitally, stored for a minimum period of 30 days and if necessitated, supplied to authorised police for investigative and evidentiary purposes.

QR Citytrain network design and operational options

Cameras and transmission of images to the control room

CCTV cameras are currently installed at over 130 stations with imminent plans to roll out surveillance cameras to all Citytrain train stations. Data provided by Queensland Rail indicates the CCTV system began operation in 1995 and since that time the number of cameras on the network has substantially increased (see Table 2.2). By the end of October 2006, there were 2,083 cameras located at train stations and 1,315 cameras located at QR Citytrain car parks (n = 3,398 cameras). The total figure (when taking into account rolling stock/ train carriages) equates to approximately 5,500 cameras. Cameras are overt and located on train station platforms (main entry/exit points, Core Safety Zones, stairways, station offices, ticket vending machines), train station car parks (main entry/exit points) and on train carriages (entry/exit points, covered and seated areas within the

carriages). The CCTV cameras are static ('fixed') with many overlapping to ensure full coverage of particular areas, especially entry/exit points.

Table 2.2: Number of Cameras on the QR Citytrain network (1995-2003)

Year	Station Cameras	Car Park Cameras	Total Cameras	Cameras Installed	Percentage Increase
1995	143	140	283		
1996	315	324	639	356	125.8
1997	536	405	941	302	47.3
1998	766	460	1,226	285	30.3
1999	834	578	1,412	186	15.2
2000	1,101	828	1,929	517	36.6
2001	1,791	1,160	2,951	1,022	53.0
2002	2,042	1,270	3,312	361	12.2
2003	2,072	1,297	3,369	57	1.7

QR Citytrain signage

As with the GCSCN, signage is intermittently visible and proximal to QR cameras throughout the entire CCTV Citytrain network. Intermittent implementation of CCTV signage has occurred on Queensland Rail property during various time periods with the introduction of new cameras to train platforms, station car parks and carriages. Given the number of train stations, platforms, car parks and train carriages it would have been a futile exercise to document every single CCTV sign on Queensland Rail Citytrain network (due to time and budgetary constraints). Instead, the SRO audited various train stations, train carriages and car parks and held discussions with senior security personnel and train station managers to assess the use of CCTV signage on the Queensland Rail Citytrain network.

Each train carriage fitted with CCTV cameras has signage reading "Video surveillance cameras in use. Plain clothes and uniformed police patrol this train" (see Photo 2.8). These signs are distinct from the 'usual' grey, white and maroon-coloured QR signage as they are on a white background with red and black font. As observed by the SRO, a 'typical' carriage under surveillance has signs in at least four locations; one at either end of the carriage (usually on the left side of the sliding doors connecting the carriages) and at least one sign in close proximity at each of the two sliding doors used by passengers to enter and exit the train via a platform (signs normally above limited mobility seating).

Each train station fitted with CCTV cameras has signs placed at main entry/exit points, platforms (Core Safety Zones), waiting shelters and stairwells and in close proximity to ticket vending machines, toilets and station offices. There are various signs which read:

- "Attention. This station has video camera surveillance with 24hr recording. No loitering" (Photo 2.9 and Photo 2.10)

- "Attention. This station is equipped with 24 hour electronic surveillance and recording" (Photo 2.11)
- "Video security cameras in use" (normally in close proximity to station lifts (Photo 2.12))

The number of signs varies between stations however there is at least one sign per area (i.e. at least one sign on a station platform, near a ticket vending machine and at the main entry/exit to the station). These signs can be seen while commuting along the train network as they face on to the train tracks in some instances.

Each <u>train station car park</u> with CCTV indicates the presence of surveillance usually worded: "This area is under continual video camera surveillance with 24hr recording" (Photo 2.13). These signs are usually located at the entrance of the car park. A small proportion of the train station car parks on the Cleveland line (see Appendix 2.2) have Restricted Access Car Parks (RAC) which is intended to discourage general public access, apart from QR patrons. Signs displayed in Restricted Access Car Parks read: "RAC. Restricted Access Car Park. No entry accept for railway related parking or lawful access to a vehicle. Car park is patrolled by police and monitored by security cameras. A joint initiative of QR and Queensland Police Service" (Photo 2.14).

At no time does the signage make 'promises or guarantees' as discouraged by the Queensland *CCTV Guidelines* (1999); QR signage publicises the presence of cameras and that footage is recorded 24 hours a day, not necessarily monitored in 'real time' by operators. Signage is continuously being updated throughout the Citytrain network with new designs (depicted in Photo 2.9) replacing older versions that may be vandalised or damaged.

Photo 2.8: Example of CCTV signage on Queensland Rail train carriages

Photo 2.9: Example of CCTV signage at Park Road Station (at an entrance to the station)

Photo 2.10 Example of CCTV signage at Robina Station (near ticket vending machine)

Photo 2.11: Example of CCTV signage at Buranda Station

Photo 2.12: Example of signage located near station lifts at Robina Station

Photo 2.13: Example of signage in selected QR car parks

Photo 2.14: Example of Restricted Access Car Park signage at Park Road Station

QR Citytrain control room options

A CCTV Analysis Unit (the control room) is situated in a centralised area of Brisbane at a QR Citytrain station. The entrance to the control room is discrete and not publicly accessible. As with the GCSCN, the exact location of the control room is not revealed to the general public as a security precaution. Control room operators enter and leave the building through swipe card access. To gain access to the control room, it is necessary to be accompanied by an authorised staff member. This room is designed so that each CCTV analyst is seated at a workstation with several monitors, digital video recorder (and/or analogue recorders) and control panels. There are noticeboards in the QR control room that outline statistical reports of incidents, internal memos and photographs of suspects and/or missing persons. CCTV footage is stored securely in this area (via VHS or CD/DVD) and this is where footage awaiting collection from police (or another external agency) is held.

In addition to the actual CCTV Analysis Unit, central monitoring of all suburban stations is possible from the Mayne Control Centre. Mayne Control is the centralised area dealing with train control, network issues and passenger safety and service issues. Passenger Service Officers are stationed at this control room 24 hours a day, seven days a week to receive calls from the public, either via phone or the emergency telephones located at trains stations. If a passenger requires assistance, a Passenger Service Officer is able to view CCTV footage from the area and determine a suitable solution (i.e. contact police, contact train station officers, etc). Footage from CCTV cameras is rarely monitored actively (i.e. 'live') in the Mayne control room due to the extensive nature of the camera network, although during peak commuter periods, busy stations are sometimes actively monitored to observe crowd movement and numbers. In addition, train station staff can contact Mayne Control staff for assistance or to report an incident. A member of the QPS Railway Squad is also present after hours at Mayne Control.

Furthermore, monitors have been installed in the ticket office or station manager's office at the majority of train stations so that QR employees can monitor CCTV footage of the car park area and train station platform if needed. This footage is usually on a preset 'auto tour' with quad screens of numerous camera angles. It is not a requirement of QR employees to actively monitor these screens as their roles are more customer service oriented (i.e. selling tickets, providing timetable information and assisting disabled passengers). However these monitors are useful for staff to assess a situation and contact Mayne Control or police if required.

All footage is recorded 24 hours and stored for at least 14 days (train car park cameras and stations) with footage from train carriages currently being stored for 24 hours. Both

analogue and digital recording systems are used by QR. Cameras and hard drives that are in need of replacement are ordinarily updated with digital systems. If footage is required from a specific train station, it is necessary to physically collect the hard drive or VHS tape from the station for analysis. The recording and storage capability of the CCTV network is soon to be increased via the introduction of a digital upgrade.

Operation of the QR Citytrain control room

The ownership and management of the CCTV network is within the Passenger Services Group of the Queensland Rail corporate structure. Although QR has a central control room known as Mayne Control, train scheduling and network issues are the operational priorities of this control room. The CCTV Analysis Unit employs analysts to 'back search' footage when necessitated, usually at the request of police. Ordinarily, analysts receive a request to search for footage of a particular incident which has been specified a priority rating of 1, 2 or 3. A rating of 1 is of an urgent matter (i.e. sexual assault, murder) with a rating of 3 being less pressing (i.e. graffiti at a train station). Analysts usually 'back search' during normal business hours (Monday – Friday).

All processing of requests for CCTV footage for investigative and/or evidentiary purposes is handled by the QR Citytrain CCTV Analysis Unit who log requests for tapes and keep records of visitors to the control room. Under the terms of the Memorandum of Understanding with the QPS, QR retrieves, enhances and compiles footage for QPS upon receipt of a formal request. It is QR that is responsible for the operation and management of the CCTV system. Footage is prepared in a format that can be used by police and ultimately, if required, used in court as evidence. Footage is presented to the police either on VHS tape or CD/DVD, dependent on the original recording technology.

The process of requesting CCTV footage follows a strict chain of evidence and can only be accessed by relevant authorities, usually the police. Members of the QPS Railway Squad often request footage for evidentiary and investigative purposes. The QPS Railway Squad consists of 54 uniformed and plain clothes police officers who patrol the QR Citytrain network. Their role is to ensure passenger safety and the QPS Railway Squad often receives CCTV footage from QR as part of investigations into security incidents. They can also view CCTV live or watch footage as it is played back (e.g. in emergency situations). Sometimes this footage is presented to the media in an effort to illicit information from the general public (i.e. to identify a suspect).

QR policy and procedure

The QR Citytrain network has adopted standardised procedures and policies in relation to monitoring, recording and storage of CCTV footage. Queensland Rail is currently updating their policies and procedures relating to CCTV surveillance and was involved in the recent development of the *National Code of Practice for CCTV Transport Systems for the Mass Passenger Transport Sector for Counter-Terrorism*. This *National Approach to Closed Circuit Television* was established by the Council of Australian Governments (COAG) on the 14th of July 2006 as a counter-terrorism initiative. The national code can be accessed via the following site: http://www.coag.gov.au/meetings/140706/docs/cctv_code_practice.pdf.

Additional operational issues

After identifying the system design and operational options that had been adopted, interviews were conducted with key users of the GCSCN and QR Citytrain network to explore several additional issues that are pivotal to the successful operation of CCTV. These interviews focused on exploring several issues including the adequacy of training, how suspicious behaviours were identified and what monitoring strategies were adopted, the quality of working relationships with external agencies, and the evidentiary value of CCTV.

The GCSCN interview participants were seven operators, the Coordinator of the network and a senior police officer from the Gold Coast district (n=9). The QR interview participants included three train station managers, one Coordinator of the CCTV Analysis Unit, two CCTV analysts, one Passenger Security Officer, and three senior security managers within the Passenger Services Group (n=10). No interviews were conducted with the QPS Railway Squad as the request was reviewed and the survey questions were not considered relevant to the duties undertaken by QPS Railway Squad members.

Procedure

GCSCN camera operators and the camera supervisor were interviewed in the control room during a scheduled shift (September – December 2005). Interviews with camera operators took place in the last week of observations, with most taking place before 8 o'clock in the morning (the rationale being to minimise disruption to monitoring activity). Interviews with camera operators lasted approximately 30 minutes and required participants to provide verbal answers. The Coordinator of the GCSCN was interviewed for approximately one and a half hours in early December 2005 at the local council office. The police officer was interviewed in early November 2005 for one hour at the local police station. All responses were coded,

recorded verbatim, either directly into a computer database or hand transcribed and later transferred. Refer to Appendix 2.7 – 2.10 for the interview question template of camera operators, control room supervisor, the Coordinator of the camera network and the police officer.

QR employees were interviewed during scheduled shifts, predominately in May-June 2005. Interviews with train station managers took place during a convenient period at the designated station. Interviews were conducted in the manager's office lasting approximately one hour and also whilst undertaking a 'walk through' of the station facilities. Interviews with the Coordinator of the CCTV Analysis Unit and CCTV analysts took place in the control room during May 2005 (one hour each). The remaining interviews took place intermittently throughout 2005 and early 2006. Refer to Appendix 2.11 and 2.12 for an overview of the interview question templates utilised.

Results

Several key themes emerged from the interviews undertaken with GCSCN and QR Citytrain employees, focusing on the adequacy of training, how suspicious behaviours were identified and what monitoring strategies were adopted, the quality of working relationships with external agencies and the evidentiary value of CCTV. Each will be discussed and exemplified via excerpts from the interviews.

Adequacy of training

Overall, the operators and analysts described the training as on-going, hands-on and adequate.

- *You are learning all the time. There is something always getting updated. My experience in the security industry helped a lot. You are 10 steps ahead with life experience. You don't necessarily need to be a technical wiz – just to have a security industry background.*
- *It was pretty much from the word go. Someone watching over your shoulder in case you did the wrong thing. I had someone with me for the first few shifts. The training was helpful.*
- *Basically four times 12 hour shifts to begin with. You are working with a supervisor on those shifts, supervised at all times. This is vital because it is easy to get lost in the system in the first couple of shifts. For example, if the police ask for the camera to be put on Shooters* [nightclub]*, you start to think "where's Shooters? What camera is it?" After the second shift, it all becomes second nature. 90% of it is hands on.*

- *For training you usually pair up with someone with experience. I mean, they* [supervisors] *can tell how you are doing by checking the hard drive and how you are monitoring the cameras.*

Determining suspicious behaviours and monitoring strategies

Experience as a camera operator and as a security guard 'on the ground' were reasons given by interviewees as to how they develop knowledge of determining suspicious behaviour. The concept of 'a sixth sense' and a 'gut feeling' was also discussed.

- *Everyone here who has worked one or two years has the gut feeling.*
- *I rely on my sixth sense, my gut feeling.*
- *Early hours of the morning – people hanging around the car park and looking suspicious. You know, hanging around areas that are usually quiet. During the day, you get the local vagrants and street kids. Although we haven't had much of a problem with them in the past few years because they have cottoned on to the cameras. I don't know how to explain, you just know. If they are sussing out a shop, if they've just stolen something, you know.*
- *If people are looking agitated. After awhile you do start to develop it* [a gut feeling]. *How people walk. Like if the police are walking down the mall, there's a difference between walking at a normal pace and walking briskly. You move the camera into the direction they are walking and try to get in front of the situation.*
- *I believe in your gut feeling. First thing we look at is people's behaviour, people's demeanour. The animated side of things. We check "where that ambulance is going", "what's that fire truck doing there".*
- *Individuals acting suspiciously on their own can easily be picked up during the day. You have everyone full of alcohol in the Mall at night time, so if one person is clowning around, it isn't out of the ordinary. But during the day it grabs your attention.*

Sudden movements such as running were behaviours that captured the attention of operators and analysts and were also discussed.

- *Sudden movement, people running. Actually you tend to pick it up in your peripheral vision, out of the corner of your eye. You might be watching the main screen and see on the quad screen some movement.*
- *If someone is running, you get to learn the difference between someone running in panic, someone running because they're late or stolen something, or if they are frightened. It all comes from experience.*

- *Running catches your attention. Someone hanging around the area. Just being "suspicious". You pick it up; you get to know what looks right in the setting.*

CCTV analysts also suggested that as they were usually provided with a time period to search and a description of the alleged offender/s, a lot of the *'guess work'* was *'taken out of the equation'* (i.e. determining if an individual was acting suspiciously).

CCTV analysts and operators acknowledged that they each had their own unique method of monitoring CCTV footage. Some 'toured' through each camera in a numerical sequence searching for an incident while others would vary between camera angles and locations.

- *Everyone has a different method. It creates more coverage of the system and it is more effective.*
- *People here have their own variations. I like to have one monitor set with a quad screen (with four images), usually arranged with the nightclubs on the screen. On the spot monitor I'll have locations from recent trouble spots. I cover mostly the nightclubs at night when I'm looking at Surfers Paradise. And I have one screen flicking through all cameras.*
- *It's all about having local knowledge, that's how you get know the movement and activity.*
- *A lot of the time I pick things up with pure luck, I guess from random monitoring.*

In a similar vein to determining suspicious behaviours, operators also discussed their ability to 'read' or 'predict' the escalation of situations, especially when fuelled by alcohol. Operators often had the cameras positioned on these 'hot spots' for violence (outside nightclubs) and suggest that this comes from experience and local knowledge of the area.

- *Males removing shirts, displaying bare torsos in an aggressive manner.*
- *Males taking offence at being evicted from nightclubs.*

The quality of working relationships with external agencies

GCSCN camera operators were generally very pleased with their working relationship with local police officers and with the council who owned the control room.

- *We get loads of pats on the backs from the police.*
- *QPS love it. They love the evidence and footage. We are their extra set of eyes. Council take us seriously. I've been in the industry for awhile, and that is a real change in the security industry.*
- *We are providing a backup tool in relation to the police.*

Camera operators discussed the process of contacting police when an incident appeared to warrant police attention or deployment[2]. Operators expressed the relativity of time when police respond to incidents, especially knowing they may be attending to other incidents, short on staff, or an officer is unable to answer the telephone/view the monitor due to a more pressing situation. In addition, operators knew to also prioritise incidents in relation to the workload of police, yet would store footage for future use if requested or necessitated.

- *A four or five minute delay for us can feel like ages but for the police, it is nothing, especially when they've got more serious incidents that they are dealing with. It is all relative I think.*

- *I wouldn't say significant* [delay]. *Maybe the phone would ring for 20 seconds. But then they'd have a lot of people in the post. Always respond though.*

- *We are not going to tell Broadbeach Communication about minor drinking offences if they are busy.*

QR employees discussed the process of contacting the police and this usually occurred after Mayne Control had being informed. This was a *'standard practice'* as Mayne Control would either contact police directly or inform the train station employee to contact the police. All agreed their working relationship with police (and QPS Railway Squad) was satisfactory however with '*more requests than staffing levels can handle* [hence the back log]', producing footage in a timely manner was of considerable importance to maintaining a good working relationship. Although an informal system of feedback exists between QPS Railway Squad and the CCTV analysts, the QR Coordinator of the CCTV Analysis Unit suggested that the lack of feedback from police regarding footage (i.e. '*did they catch the crook? Was he punished?*') was difficult, as the analysts '*never hear the results of their work*'. A new system of communication is currently being developed between QPS Railway Squad and QR CCTV analysts to ensure open communication.

Evidentiary value of CCTV

All interviewees understood the importance of recording footage in a manner that could be used by police officers for investigative purposes, or for use in a court room.

- *There was a situation where a bloke had been kicked out of nightclub and was sitting in the gutter covered in blood. I mean, absolutely covered. I told the police and they came along. He started mouthing off and they arrested him and took him back to the Beat. Well in a few days time I get a request from the police for footage*

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[2] The term 'deployment' is used by the researchers to describe the presence of plain clothes or uniformed police attending to an incident.

because the man was suggesting the police caused his injuries on the way to the Police Beat. Obviously we had evidence to the contrary, so the system works well in that sense.

Operators and CCTV analysts also discussed how they prioritised the downloading of images onto a CD or DVD for police due to their own workload. Given that the 'back searching' of incidents takes the GCSCN camera operators away from 'real time' monitoring, operators suggested they undertake this task during 'quieter' periods.

- *For example, in one night you might have heaps of punch ups. This takes up heaps of time. Rather than downloading all the images that night, I'll wait til my next day shift to do it. Because it can take up to two hours.*

QR CCTV analysts prioritise incidents according to their '1-2-3' system whereby incidents of a serious nature (1) are given priority over less pressing matters (i.e. vandalism). The QR Coordinator of the CCTV Analysis Unit indicated that *'footage was frequently used in court'* by police during their investigations and that in terms of evidentiary value *'we can produce nice, clear pictures of someone being assaulted'* if required.

Types of incidents monitored, recorded or 'back searched'

Data obtained during the preliminary stages of the project prior to examination of police recorded crime data was used to gain insights into the types of incidents that were actively monitored using the GCSCN or recorded on QR internal incident management system and 'back searched' by QR CCTV analysts.

GCSCN

'Matters of note' is a term used by GCSCN camera operators to describe particular incidents, whether it be a criminal activity, anti-social behaviour or a local law issue. As can be seen in Table 2.3, the matters of note range from serious assaults and rape to theft, graffiti and vandalism. These categories are separate from the categories used by the Queensland Police Service and were adopted as an internal system that was easy to record manually via a log book. Although the GCSCN has documented matters of note since the inception of CCTV cameras, data from 2001 onwards was deemed most appropriate for analysis (as records from 1999 and 2000 were incomplete due to system implementation at different suburbs). Over a five year period (2001-2005), the top four matters of note for all areas (Surfers Paradise, Southport, Broadbeach and Coolangatta) in order of ranking were assaults/fights, disorderly conduct, drunk and disorderly and alcohol related matters. The top four categories accounted

for 73.83% of all surveillance undertaken by camera operators during 2001-2005. This brief overview indicates that the original public safety issue (which first fuelled the debate to introduce cameras) of alcohol-related violence and anti-social behaviour remain evident in publicly surveilled areas on the Gold Coast.

Table 2.3: 'Matters of Note' GCSCN by year for all four surveilled suburbs

MATTERS OF NOTE	2001	2002	2003	2004	2005	Total
Ambo / Fire	0	0	0	106	21	**127**
Fire	0	3	3	0	0	**6**
Persons of Interest	0	0	72	24	0	**96**
Serious Assault	57	58	29	15	14	**173**
Assault / Fights	465	638	635	518	465	**2721**
Disorderly Conduct	341	420	462	505	409	**2137**
Drunk and Disorderly	168	159	204	264	232	**1027**
Lost Persons	58	49	31	20	16	**174**
Traffic Incident	180	139	153	96	37	**605**
Theft	72	42	25	28	8	**175**
Theft from Beach	34	19	6	3	1	**63**
Vandalism	60	37	38	47	27	**209**
Alcohol Related Matter	164	166	278	367	250	**1225**
Drug Related Matter	53	65	50	44	29	**241**
Robberies	21	7	1	2	2	**33**
Graffiti	5	8	5	5	2	**25**
Vehicle Related Incident	21	78	57	97	74	**327**
Vehicle Hooning	0	0	0	68	25	**93**
Rape	0	2	0	0	0	**2**
Miscellaneous	0	0	0	71	99	**170**
TOTAL	**1699**	**1890**	**2049**	**2280**	**1711**	**9629**

QR Citytrain network

To preliminarily explore the types of crimes and incidents surveilled on the QR Citytrain network, data from QR's electronic database named Security Information Management System (SIMS) was analysed. SIMS records specific information about each incident including incident classification, incident sub-classification, who reported the incident, time, date and location. There are eight main incident classifications (assault, drug and alcohol, fare evasion, good order, graffiti, motor vehicle, property damage, and stealing) and 82 sub-classifications. Each incident is assigned one main classification and then assigned, if applicable, one or more sub-classifications. Given the possible transient nature of incidents on the rail network, SIMS makes provision for incidents to be reported either 'at' or 'between' particular times or dates, and either 'at station', 'between stations', or 'on train'. For example, if an assault occurred between the Robina and Nerang train stations, this would be recorded as 'between stations.'

The data supplied by QR related to 56,728 incident classifications involving 64,570 sub-classifications (Appendix 2.13) that occurred between 2001 and 2004. The highest category recorded during the period was graffiti, followed by good order, property offences, and drug and alcohol incidents (Table 2.4). This preliminary analysis of SIMS data provides an overview of the types of incidents occurring on the QR Citytrain network. SIMS data is an indicative tool only and it is recognised that it does not necessarily align with QPS statistics.

Table 2.4: Incidents occurring on QR Citytrain, 2001-2004 (SIMS data)

Category	Frequency	Percent
Graffiti	26,257	46.3
Good Order	12,761	22.5
Property Damage	12,200	21.5
Drug & Alcohol	1,699	3.0
Assault	1,138	2.0
Stealing	1,070	1.9
Motor Vehicle	961	1.7
Fare Evasion	642	1.1
Total	56,728	100.0

To explore the QR Citytrain network's processing of footage, an analysis of SIMS data relating to recently requested CCTV footage (July 2004 – June 2005) was undertaken. There were 1,872 requests for tapes during the 2004/2005 financial year. Most tape requests related to offences that occurred at stations (n=1,609) rather than on trains (n=242) or at other locations (n=21). Most tape requests were assigned a priority three level (n=1057, 56.5%) rather than priority two (n=284, 15.2%) or priority one (n=531, 28.4%). The number of tapes requested throughout the year from each station ranged from 1 to 76. Footage requests may not necessary relate to offences actually occurring on QR property. Police may have requested footage to aid an investigation (i.e. tracking an offender's last movements).

Month and day of tape requests

The number of tapes requested ranged from 100 to 150 in most months, with the notable exception of January when over 300 tapes were requested (Figure 2.1). When the day that tapes were requested was examined, it was apparent that few tapes were requested on weekends and it was likely that some of these requests were held over until Monday (Figure 2.2).

Figure 2.1: Number of tapes requested each month, 2004/05 (QR data)
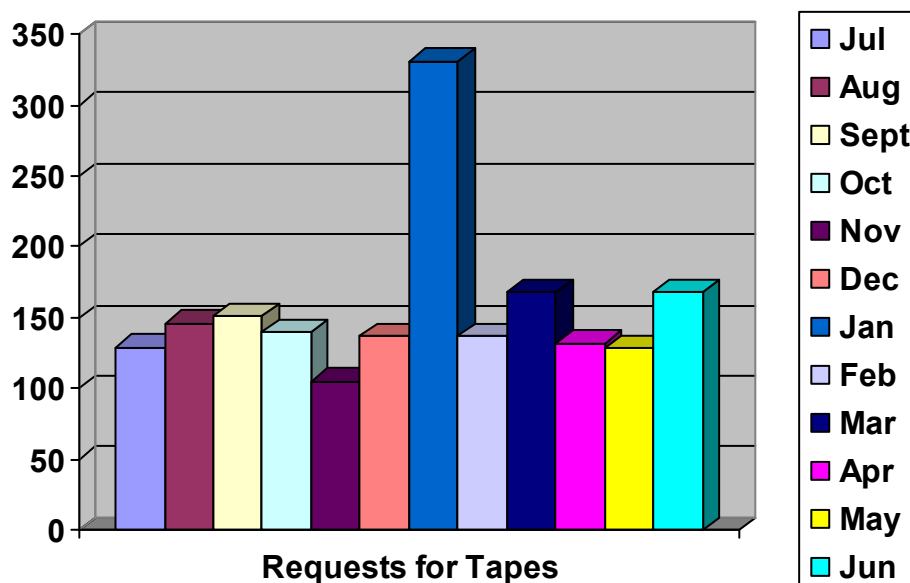
Figure 2.2: Number of tapes requested each day, 2004/05 (QR data)
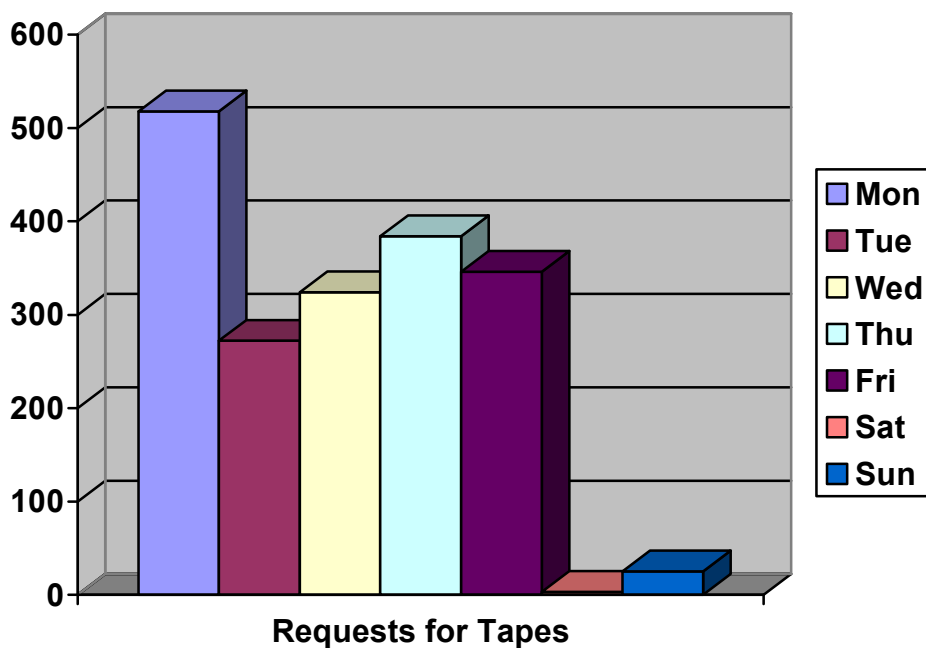
Particulars of tape requests

Tapes were requested to determine whether they contained evidence of offences that had allegedly occurred. Tapes were usually requested to provide evidence of relatively minor offences such as theft and related offences, property damage, assault and public order offences

(Figure 2.3). An examination of the offences associated with tape requests on a monthly basis indicated that there were fewer than 50 requests for tapes each month for most offence types and that the increase in requests for tapes in January was due to theft and related offences.

Nearly a quarter (24.1%) of requests for tapes were flagged that they had been requested by police. When cases that had a Crime Reporting Information System for Police (CRISP) number were included, it was deduced that about half (42.8%) of tape requests came from police. The offences associated with tape requests that had a SIMS or CRISP number recorded are displayed in Table 2.5.

Figure 2.3: Offences associated with tape requests (QR data)
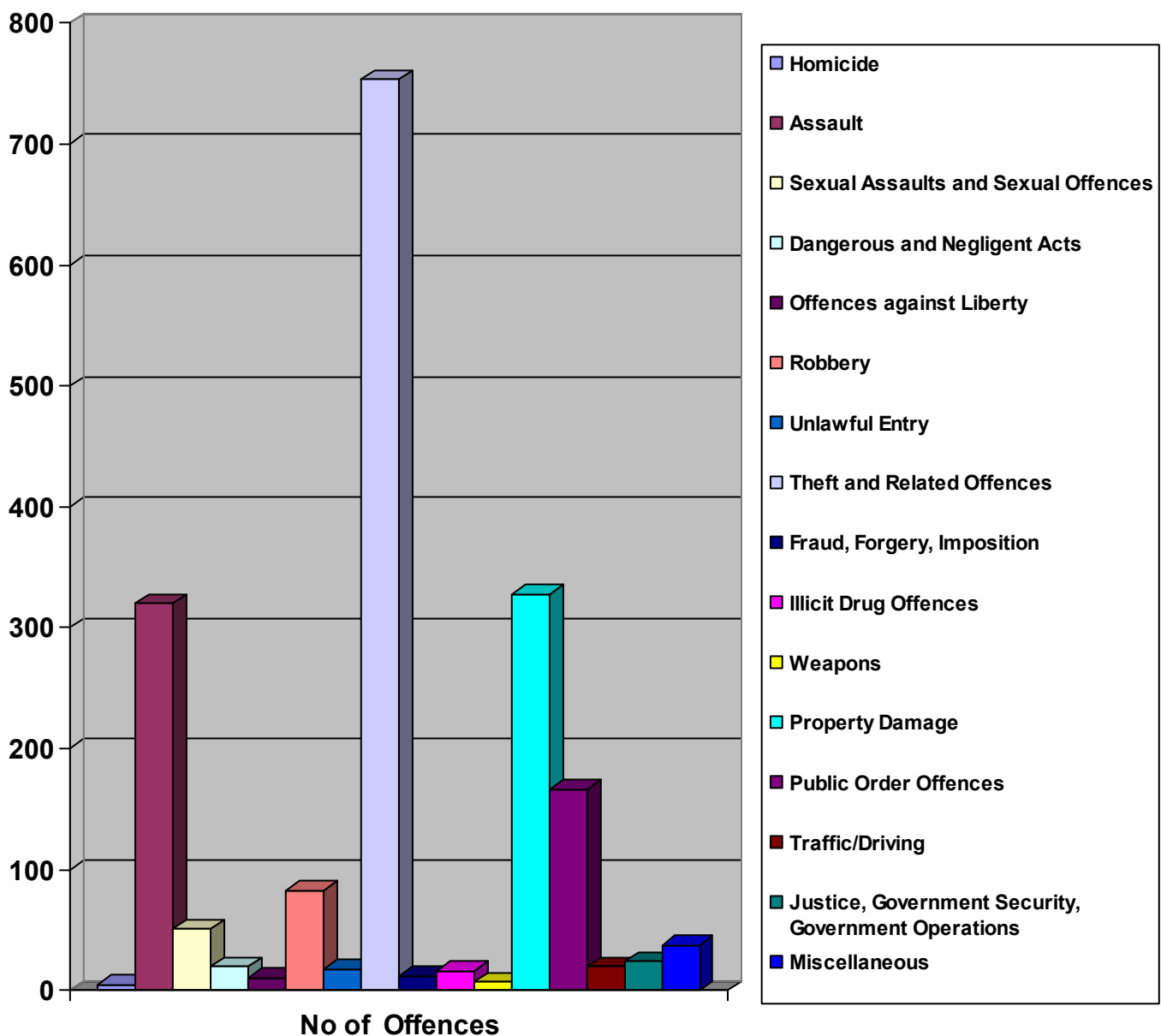
Table 2.5: Incidents with CRISP or SIMS identifier (SIMS data)

	Frequency	Percent
Homicide*	2	.3
Assault	132	17.6
Sexual Assaults and Sexual Offences	19	2.5
Dangerous and Negligent Acts	8	1.1
Offences against Liberty	3	.4
Robbery	45	6.0
Unlawful Entry	10	1.3
Theft and Related Offences	362	48.1
Fraud, Forgery, Imposition	3	.4
Illicit Drug Offences	5	.7
Weapons	3	.4
Property Damage	84	11.2
Public Order Offences	47	6.3
Traffic/Driving	5	.7
Justice, Government Security, Government Operations	10	1.3
Miscellaneous	14	1.9
Total	752	100.0

*This does not necessarily indicate a homicide took place on QR property

The majority of tape requests (n=1157, 61.8%) had completed reviews. Just under half of the tape requests resulted in the incident being identified (n=836, 44.7%) or a suspect being identified (n=809, 43.2%). About a third of tape requests (n=713, 38.1%) resulted in footage of the offence being produced.

Summary of findings

Presented in this chapter was an overview of the two very distinct CCTV systems operated by GCSCN and QR Citytrain network. One operates in a public space environment over four suburban CBD areas, frequented by tourists and nightclub patrons. Its control room employs operators who actively monitor footage from 74 cameras 24 hours a day. The other operates on a vast public transport system with thousands of surveillance cameras over 130 stations. Given the expansive nature of the system, CCTV analysts are employed to 'back search' footage rather than actively monitor footage in real time. Given these differences, the next chapter presents the findings of an observational study that was undertaken to explore the operation of the GCSCN in greater detail.

3. Observational Study of the GCSCN Control Room

This chapter describes the method and findings of the observational analysis undertaken in the Gold Coast Safety Camera Network (GCSCN) control room. As discussed in some depth in the previous chapter, the GCSCN is actively monitored 24 hours a day while the Queensland Rail (QR) Citytrain network is a passive system involving 'back searching' for reported incidents. Given these differences, a comprehensive (100 hour) observational study was undertaken of the GCSCN control room to gain a better understanding of how the actively monitored control room operates and to explore the issue of 'operator bias'.

The cost of operating CCTV is considerable and concerns about its cost-effectiveness as a crime control measure have been raised (Welsh and Farrington, 2002). Often, the majority of the annual expenditure associated with public space surveillance can be attributed to the remuneration of the operators themselves. This raises the issue of how effective such personnel are at managing and operating CCTV systems (Wilson and Sutton, 2003). To fully explore this issue, an in-depth examination of the GCSCN control room was undertaken. The research questions addressed were:

- What general control room operational practices were observed?
- What monitoring strategies were adopted?
- Why was monitoring initiated?
- What types of incidents were surveilled by camera surveillance?
- Who were the targets of CCTV surveillance?
- How many incidents resulted in deployment of police officers and arrest?

Observational methodology

The observations were carried out at one site, the GCSCN control room between September 2005 and December 2005. In total, 100 hours of monitoring were observed by one female researcher (SRO) on 23 separate occasions (Appendix 3.1 provides an outline of the observer's shifts). This entailed both weekday and weekend shifts as the control room is monitored 24 hours a day, seven days a week. The time of observation depended on various factors, namely: i) the control room manager's discretion, ii) the observer's ordinary work schedule, iii) large scale events in the area attracting higher than usual crowds, iv) time of day/night and v) greater than usual work load of operators (i.e. collating evidence for police and/or council).

A computer laptop was used predominately during the observational period with minimal use of paper field notes (proving too cumbersome to complete within a limited

working space). Entering data directly into an Excel spreadsheet was deemed an appropriate method for data collection in this particular setting. Benefits included the reduction in time spent transcribing hand written field notes at a later date and the ability to record data verbatim and accurately (i.e. speed of typing versus handwriting). The manager and operators of the control room consented to the use of a laptop and expressed no reservation about the taking of notes during the observational period.

Four types of data were recorded during the observational period and these categories are very much related to Norris and Armstrong's (1999) study of 592 hours of observation. The quantitative observational period included **shift data** – number of operators per shift, types of people entering the control room and length of monitoring; **targeted incident data** – how and why the surveillance was initiated and by whom; **characteristic data** – the age, sex and appearance of individuals from targeted incidents; and **deployment data** – whether deployment was necessitated and the outcome of deployment.

For each incident, the following information was recorded by the observer: date of incident, start and end time of incident, total surveillance time in minutes, camera or cameras used, camera operator, location, description of incident (i.e. assault, intoxicated in public), description of individual/s if applicable (i.e. male, approximate age), police deployment and whether arrest/s were made. Each incident was double checked against the control room's log book to ensure: i) time of surveillance was correct, ii) whether the incident resulted in an arrest and iii) whether footage was requested by police, etc.

After this information was collected, it was manipulated in several ways. The monitoring strategies that were employed were categorised as active searching, active monitoring or routine monitoring. Active searching is considered the 'real time' surveillance of footage for more than 60 seconds in order to specifically *locate* an incident. Usually the decision to start actively searching is the result of external communication (i.e. police or security personnel) about a potential or actual incident. For example, police may request an operator to search for live footage of a suspected shop-lifter. Once the operator has located the shop-lifter (as an example) and begins to target the individual, this then becomes active monitoring.

Active monitoring refers to *targeted surveillance* of a 'real time' incident for a period of more than 60 seconds. This can include, as an example, an operator actively observing an assault between two intoxicated nightclub patrons. Determining what constituted a targeted incident led to the initial decision of 30 seconds (see Goold, 2004; Norris and Armstrong, 1999). However, all 30 second targeted incidents during the observational period were

ultimately surveilled by operators for more than a minute, thus the 60 second 'benchmark' was selected.

Routine monitoring refers to an operator deliberately observing camera footage without necessarily locating or targeting an incident. To clarify, an operator may purposefully switch between various cameras (i.e. camera 1, camera 4, back to camera 1) and observe footage of an area such as a street or car park to ensure 'all is in order'. The operators from the GCSCN control room label this a 'manual tour'. If footage is automatically changing or 'cycling' through a preset surveillance pattern (i.e. an 'auto tour'), an operator must still be viewing the monitors in real time in order for it to be described as routine monitoring. Routine monitoring differs from active searching as the operator is not specifically attempting to locate a known incident. Again, if an operator happens to locate and target an incident for more than 60 seconds (i.e. comes across footage of an individual breaking into a vehicle) during the course of routine monitoring, this then constitutes active monitoring.

Incidents detected or surveilled for more than one minute were categorised to determine why surveillance was initiated based on the eight categories identified by Norris and Armstrong (1999) and Goold (2004):

i.   Categorical: suspicion based merely on personal characteristics such as dress, race, membership of subcultural group.

ii. Transmitted: surveillance initiated by someone else e.g. police, store detective or member of the public.

iii. Behavioural: suspicion based on behaviour, i.e. fighting, public display of drunkenness.

iv. Locational: suspicion based on person's location, e.g. walking through a car park with a high rate of theft late at night.

v.   Personalised: suspicion based on personal knowledge of the person surveilled.

vi. Protectional: suspicion based on fear for person's safety, e.g. woman late at night at a cash machine.

vii. Voyeuristic: monitoring based on prurient interest.

viii. Routine: Monitoring carried out as part of a set surveillance routine, such as watching security personnel pick up money from a high street bank on a weekly basis (Goold, 2004).

The incidents that were detected or surveilled for more than one minute were then categorised based on the type of incident. Incident types included crime, good order, safety issues (i.e. burst water hydrants, police directing traffic), local law issues (i.e. ticket touters and prohibited buskers), no obvious reason and other. The 'crime' category does not

necessarily insinuate that an individual was actually involved in a criminal activity, rather, it is based on what the operators believed the incident was indicative of at the time of surveillance (i.e. suspected thief, male assaulting patron).

Incidents were also categorised based on whether they were highly visible or less visible. Highly visible incidents include such behaviours as assault (i.e. punching, pushing people to the ground, kicking), running and crowds of people running, flashing lights of emergency vehicles and throwing of objects. Any behaviour that is easily recognisable or involves noticeable movement can be deemed 'highly visible'. 'Less visible' incidents include, but are not limited to, discrete drug deals (i.e. slight hand movements/hand shakes), a parked vehicle or the surveillance of individuals walking at a normal pace.

Results

Control room operational practices

At all times, an operator was present in the control room with a second operator working during 'busier periods' such as Friday and Saturday nights, as well as events that attracted higher than usual crowd numbers in areas under surveillance. Of the 23 shifts observed, 11 had two operators monitoring the camera network with the remainder having only one operator in the control room. Of the 11 shifts with two operators, all bar one were during a 'busy' shift (i.e. Friday or Saturday night), the exception being one experienced operator training a new employee on a week night.

In addition to the presence of two operators on 11 occasions, a local police officer was also present for six of these shifts. This was due to large scale events occurring in the Surfers Paradise region (Indy Week and Schoolies Week) which attracted large volumes of people to the nightclub precinct and surrounding areas. The main purpose for police to be stationed in the control room was to use the police radio to direct deployment of officers to particular areas where incidents were occurring (as camera operators are not permitted to directly communicate via the police radio). Only one police officer attempted to use the system by switching between cameras to locate a possible incident, however, this surveillance lasted less than 30 seconds and did not result in the deployment of police (nor was it recorded as an incident during the observational period).

It was typical for police officers, local law officers (council employees), technicians and police from liquor licensing to enter the control room. Police officers, especially during the day, would enter the control room to collect previously requested surveillance footage. Police would tend to enter the control room on Friday or Saturday nights to review footage or request a

digital copy of the surveillance footage shortly after an incident had occurred in Surfers Paradise. On two occasions, several police officers entered the control room and were shown the capacity and limitations of the system, and the areas under surveillance. Once the police officers vacated the control room, it was explained to the observer that police from areas other than the Gold Coast were often shown the control room if they were to be stationed in Surfers Paradise during special events (i.e. Indy Week).

Monitoring strategies

Of the 100 hours (6000 minutes) observed in the control room, 986 minutes were spent actively searching for or actively monitoring footage of 'real time' incidents (Table 3.1). Considerably more time was spent actively monitoring an incident (869 minutes) than searching for incidents (117 minutes). The active searching of footage (four in total) was initiated by external communication with the police. As an example, the alleged presence of two males thought to be carrying concealed handguns constituted 102 minutes of active searching. That is, the operator spent 102 minutes trying to locate the individuals in question by viewing footage of main streets, alleyways, car parks and the beach.

Table 3.1: Total time spent actively searching and monitoring incidents

	Minutes	%
Total time spent actively searching and actively monitoring incidents	986	16.43%
Active searching	*117*	*(1.95%)*
Active monitoring	*869*	*(14.48%)*
Total time spent engaging in 'other' activities	5014	83.57%
Total observational period	6000	100.00%

Overall, 16.43% of the observational period was dedicated to the active monitoring and active searching of incidents with the remaining 83.57% of the time spent performing 'other' activities. Other activities included administrative tasks (log book entry, visitor log book, completing paper work), communication (via telephone, email, facsimile) to police, local law officers and the security company's head office, 'back' searching for surveillance footage, creating digital and hard copies for external agencies (usually the police), speaking with police and local law officers entering the control room (and sometimes demonstrating the camera network's capabilities) and work breaks (i.e. lunch breaks, toilet breaks, making cups of coffee, getting changed out of uniform, cigarette breaks, etc). Of particular importance and one activity that must not be overlooked is the routine monitoring or 'manual tours' of the camera network.

Routine monitoring was performed by all observed camera operators and lasted anywhere between 20-30 minutes. This incorporated the surveillance of all four suburbs from 66[3] different cameras. The routine monitoring varied between camera operators, that is, each operator had their own method of surveillance. As an example, one camera operator would start to 'check' the Surfers Paradise area before moving on to the 'remote' areas (Southport, Coolangatta and Broadbeach) whereas another operator would 'begin at Coolangatta and work my way up the coastline'. Others would check the main CBD area of each suburb before moving on to peripheral areas such as car parks. Operators would manually monitor the camera footage in number sequence (i.e. camera 1, 2, 3, so on) or observe on an area basis (i.e. camera 12, 19 and 36). These manual tours were recorded in a log book and were often completed on the hour during 'quiet' periods (i.e. 10am, 11am, 12pm and so forth on a weekday). Although routine monitoring occurred during 'busier' periods, this was often sporadic as the camera operators were ultimately required to actively search and actively monitor incidents, either observed via routine monitoring or by way of external communication (police, security or local law officers).

Reasons for initiating surveillance

From the 986 minutes spent actively monitoring or actively searching for an incident, 181 incidents were detected and surveilled for more than one minute and nearly all of these incidents (93%) occurred at Surfers Paradise. Table 3.2 highlights the initial reasons for surveillance of incidents. Of the 181 incidents, transmitted surveillance is the single largest type of suspicion with 99 incidents monitored due to an external source. This external source was primarily local police, with the exception of three transmitted requests from security and local law officers (i.e. council employees).

Table 3.2: Types of suspicion and initial reason for surveillance of incidents

Type of Suspicion	No. of incidents	% of incidents
Behavioural	42	23.20%
Categorical	6	3.31%
Locational	6	3.31%
Personalised	5	2.76%
Protectional	4	2.21%
Routine	16	8.84%
Transmitted	99	54.70%
Voyeuristic	3	1.66%
Total	**181**	**99.99%***

*Due to rounding, percentages may not add up to 100.00%

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[3] As at September 2006, there are 74 installed GCSCN cameras. It is important to note that 66 cameras were in operation during the observational period (September-December 2005) with an additional eight cameras installed mid 2006 (post-observation).

Types of incidents surveilled

The types of incidents surveilled for more than one minute by camera surveillance are outlined in Table 3.3. It is apparent that the crime and good order category accounted for over three quarters (78%) of all incidents surveilled. Additionally, about three quarters (76%) of these incidents were highly visible (i.e. running) rather than being less visible (i.e. drug deal).

Table 3.3: Reason for initial and continual surveillance of incidents

Reason for Surveillance	Incidents	%	Minutes	%
Crime Surfers n=105; S'Port n =3; BB n =1; Cool n=1	110	60.77%	673	68.25%
Good order Surfers n=28; S'Port n =2; BB n =1; Cool n=0	31	17.13%	146	14.81%
Safety issue Surfers n=11; S'Port n =0; BB n =0; Cool n=1	12	6.63%	87	8.82%
Local law issue Surfers n=3; S'Port n =0; BB n =0; Cool n=0	3	1.66%	13	1.32%
No obvious reason Surfers n=105; S'Port n =3; BB n =1; Cool n=1	9	4.97%	20	2.03%
Other Surfers n=7; S'Port n =2; BB n =0; Cool n=0	16	8.84%	47	4.77%
Total Surfers n=169; S'Port n =7; BB n =3; Cool n=2	181	100%	986	100%

The targets of CCTV surveillance

Over 90% of incidents involved either one or more individuals (n=167) with the remaining 14 incidents involving objects (i.e. vehicles, unattended bags). While the characteristic data collected by the observer is incomplete as the camera footage did not permit an estimate of an individual's age or race/ethnicity for some incidents, findings suggest that males, people in their twenties and Caucasians were most often the targets of camera surveillance (Table 3.4).

Table 3.4: Age and sex of targeted individuals (n=167)

Sex		
Male	157	94%
Female	10	6%
Total	167	100%
Age		
Teenagers	33	19.76%
In their twenties	90	53.90%
In their thirties or older	31	18.56%
Undeterminable	13	7.78%
Total	167	100%
Race		
Caucasian	118	70.66%
Other	22	13.17%
Undeterminable	27	16.17%
Total	167	100%

Police presence at incidents and arrests

From the 181 targeted incidents surveilled, police presence was noted at just over half (54%) (Table 3.5). External agencies (primarily the police) transmitted information in relation to 99 incidents surveilled by the camera operators, with police presence noted at over 60% of these situations.

Table 3.5: Police presence at initial and continuing surveillance

Reason for Initial and Continuing Surveillance	Police presence	No police presence	Total
Crime	75	35	110
Good order	11	20	31
Safety issue	3	9	12
Local law issue	0	3	3
No obvious reason	2	7	9
Other	7	9	16
Total	98	83	181

Of the 181 incidents, 42 incidents led to the arrest of 51 individuals, all in Surfers Paradise. The research team deduces that 44 of these arrests would have occurred *regardless* of the camera network (i.e. 86% of arrests). That suggests seven arrests were the result of the detection of an incident by a camera operator (14% of arrests during observational period). Therefore, it can be concluded that arrests were attributable to external communication (i.e. police transmitting information) rather than initial monitoring and detection by camera operators. The seven arrests initiated and surveilled by camera operators are as follows:

- Incident A: naked male running along through the mall and beach
- Incident B: heavily intoxicated male lying outside a nightclub
- Incident C: youths drinking and urinating in a park
- Incident D: male exposing himself to onlookers, additional male videotaping
- Incident E: Serious assault (ambulance required) – local law officer called control room (camera operator simultaneously monitoring footage)
- Incident F: male insulting/abusing police officer while entering Police Beat
- Incident G: Suspected shoplifter trying to hide in alleyway, located via camera network and security guards simultaneously

Summary of findings

Presented in this chapter were the findings of the observational study that was conducted of the GCSCN control room. Findings call into question the effectiveness of the control room in detecting incidents with operators spending less than one-fifth of their time actively searching

for and monitoring incidents and most incidents (55%) being initiated by police communication. Only seven arrests were found to result directly from the operation of CCTV. Typically, incidents targeted by camera surveillance were crime and good order incidents (78%) and the targets of surveillance were Caucasian males aged in their twenties. While this may indicate operator bias, no study was undertaken to assess the characteristics of the public who utilise the locations covered by the GCSCN. The next chapter will explore civil liberty issues in greater depth by examining the attitudes of the general public, business traders and rail commuters to camera surveillance.

4. Public Attitudes of CCTV

This chapter describes the methodology and findings of the public attitudinal surveys that were distributed to selected Gold Coast residents, Gold Coast businesses and Queensland Rail Citytrain commuters. The aim of this research was to ascertain the impact that CCTV has on the wider public and to gain an understanding of peoples' experiences with CCTV. This relates to the main aim of evaluating whether increased implementation and use of CCTV has influenced public perceptions relating to privacy and civil liberties.

Methodology

Three groups were selected for survey distribution: i) residents of Burleigh Heads (suburb without public space CCTV) and Surfers Paradise (suburb with public space CCTV), ii) business traders of Broadbeach and Surfers Paradise (suburbs with public space CCTV) and iii) Queensland Rail Citytrain commuters. The research team, with permission, modelled sections of the survey instruments used by Gill and Spriggs (see *Technical Annex: Methods used in assessing the impact of CCTV*, 2005). Table 4.1 provides an overview of the total number of surveys distributed and the overall response rate (28.72%).

Table 4.1: Overview of survey distribution

Surveys		Total Distributed	Total Response Rate
Residential Surveys	Surfers Paradise	928	248 (26.72%)
	Burleigh Heads	891	307 (34.45%)
Business Trader Surveys	Broadbeach	232	51 (22.07%)
	Surfers Paradise	725	133 (18.34%)
QR Commuter Surveys	Citytrain commuters	343	157 (45.77%)
Total		**3119**	**896 (28.72%)**

Residential surveys

Two Gold Coast suburbs were selected for survey distribution – one with public space CCTV (Surfers Paradise) and the other without public space CCTV (Burleigh Heads). In order to survey Surfers Paradise and Burleigh Heads residents, it was necessary to access the most recent electoral rolls. Under section 90A of the *Commonwealth Electoral Act (1918)* inspection of an electronic electoral roll is restricted. Paper copies of the 19th January 2004 electoral roll for Surfers Paradise and Burleigh Heads divisions were acquired and addresses manually extracted.

A probability, systematic sampling method was used to select every tenth Surfers Paradise residential address and every fifth Burleigh Heads residential address. The number of potential respondents totalled 1819 (n=928 Surfers Paradise addresses and n=891 Burleigh Heads addresses). A letter was sent to these potential respondents in early February 2006, advising that a survey would be arriving within one week for voluntary completion. In total, 1803 surveys were distributed with 1777 reminder letters mailed one week later (26 potential respondents requested no further correspondence from the research team). Although there was no specific cut off date for returning completed surveys, it was assumed after two months that all residents who intended to reply would have done so by then. Over a quarter of Surfers Paradise residents (26.72%) and a third of Burleigh Heads residents (34.45%) responded to the mail out survey. A summary of the correspondence sent to potential residential respondents and outcomes are presented in Table 4.2.

**Table 4.2: Correspondence and overall response rate of
Surfers Paradise and Burleigh Heads residents**

Correspondence to Residents	Surfers Paradise	Burleigh Heads	Total
First letter of introduction	928	891	1819
Surveys and Explanatory Statement	917	886	1803
Reminder and thank you letter	902	875	1777
Overall returned surveys (completed and non-completed)	351	392	743
Returned, non-completed surveys	104	85	189
Returned, completed surveys	248	307	555

The residential survey comprised 'yes/no', 'true/false', likert responses as well as open-ended questions (Appendix 4.1 and 4.2). The questions sought to determine respondents' knowledge of the GCSCN and camera locations, the level of support for CCTV surveillance, how effective camera surveillance was perceived to be and whether respondents had any privacy concerns associated with the use of CCTV.

Business trader surveys

Two suburbs were selected for the distribution of trader surveys: Surfers Paradise and Broadbeach. Both business areas have public space CCTV operational in the CBD areas. In order to survey business traders, it was necessary to contact Surfers Paradise Management and Broadbeach Marketing to access the most up to date list of businesses in the area. At no time did the research team have direct access to any database due to privacy laws. Rather, a member of Surfers Paradise Management hand delivered 725 surveys throughout Surfers Paradise and a Research Assistant hand delivered 232 surveys to businesses at the discretion

of Broadbeach Marketing (Appendix 4.3). Just under a quarter of the sample (22.07% of Broadbeach and 18.34% of Surfers Paradise businesses) responded to the survey.

The business trader surveys comprised 'yes/no', 'true/false', likert responses as well as open-ended questions (Appendix 4.4 and 4.5). The questions sought to determine knowledge of CCTV cameras, whether they supported camera surveillance, how effective they believed CCTV was at preventing or detecting crime and whether they had any privacy concerns.

QR Citytrain commuter surveys

A structured interview of 37 questions was developed and included 'yes/no' and likert-type responses, as well as open-ended questions (see Appendix 4.6). Survey administration was conducted by nine Bond University criminology students from 2-6th March 2006 (Thursday-Monday). This selected time period allowed for the interviewing of weekday and weekend commuters, as well as passengers travelling both during daylight and after dark. A convenient sampling procedure was used to select commuters who were approached at train station platforms and on carriages from Robina to Brisbane Central station (the 'Gold Coast' line). Only commuters who were over the age of 18 were approached to voluntarily participate. A total of 343 commuters were approached, of which 157 (45.77%) participated. The aim of conducting surveys with Queensland Rail commuters was to ascertain their knowledge about closed-circuit television cameras operating on the QR Citytrain network, as well as whether they supported the presence of camera surveillance, how effective they believed CCTV was at preventing and detecting crime and whether they expressed any concerns about privacy.

Results

Knowledge of the camera networks and camera locations

The majority of *residential respondents* (75.97% Surfers Paradise and 76.87% Burleigh Heads) were aware of the operation of CCTV cameras on the Gold Coast, however, of those who were aware of the cameras just over half were unable to recall exact camera locations (51.19% Surfers Paradise and 52.01% Burleigh Heads). Respondents reported that local television was the most common method of becoming aware of the presence of CCTV cameras (24.08% Surfers Paradise and 28.60% Burleigh Heads), followed closely by local newspapers (19.90% Surfers Paradise and 17.49% Burleigh Heads). Residents made several comments about their knowledge of the GCSCN and how it could be improved:

- *Perhaps GCCC would consider including an article in our rates notice mail out so that we are all better informed.*
- *Generally, the more publicity they get* [CCTV cameras]*, the better.*

- *I think more awareness is needed as to the presence of cameras, as this would be a strong deterrent.*
- *I live and work in Surfers and haven't noticed any cameras. Perhaps if CCTV existence was advertised there would be more of a deterrent to everyday crime.*

Most Surfers Paradise (41.67%) and Broadbeach (60%) *business respondents* reported that their business was not under public space CCTV surveillance, although many were unsure of their status (26.52% in Surfers Paradise and 18% in Broadbeach). Respondents indicated that greater awareness of the public space surveillance was required, with 35% of Surfers Paradise businesses and 18% of Broadbeach businesses unsure of camera location or whether their business is in a surveilled area:

- *Truthfully, I am unsure of the number of cameras presently around.*
- *Don't know how many* [cameras] *are in existence.*
- *I am unaware as to how many cameras presently exist nor do I know their* [sic] *whereabouts.*

Over 82% of *rail commuter respondents* had an awareness of the CCTV network with 70% being able to specify camera location. 'On this carriage' (35%), 'near ticket machines' (18%), at 'station platforms' (32%) and at 'car parks' (15%) were given as the known camera locations. Commuters participating in the survey also suggested CCTV cameras '*should be advertised more'* with '*more signs on the carriages'* so that the public is aware of the cameras. Of the 35% of respondents who park vehicles at train station car parks, 20% suggested the presence of the car park CCTV cameras influence where they park.

Support for CCTV surveillance

An overwhelming majority of *residential respondents* in both Surfers Paradise and Burleigh Heads supported the use of CCTV cameras to prevent both crime (97.17% and 94.72%) and terrorism in Australia (93.50% and 90.70%), and were 'very happy' (72.76% and 57.24%) about having public space cameras on the Gold Coast. Similarly, the majority of *business respondents* in Surfers Paradise and Broadbeach clearly supported the use of CCTV cameras in Australia to prevent crime (93.88% and 95.45%) and terrorism (89.58% and 95.45%) and agreed that more cameras should be installed in their respective CBDs (65.31% and 77.69%).

The presence of CCTV cameras in the respective CBDs was supported by *business respondents* with 57.14% of Surfers Paradise businesses and 44% of Broadbeach traders feeling 'very happy' about the public space surveillance. Approximately half the respondents

believed that CCTV cameras in their respective CBDs prevent violent crime (51.52% in Surfers Paradise and 47.06% in Broadbeach) and property crime (52.27% in Surfers Paradise and 45.1% in Broadbeach).

The majority of *rail commuter respondents* supported the use of QR Citytrain CCTV surveillance in an effort to prevent crime (88.5%) and terrorism (86.6%) in Australia. This support is highlighted via the following commuter comments:

- *More cameras on trains to make people feel safer.*
- *Makes me feel safe whilst travelling on the train.*
- *Anything that prevents crime is good.*

The perceived effectiveness of CCTV surveillance

Although the majority of *residential respondents* supported the presence of cameras, doubts were raised regarding the effectiveness of such systems to prevent crime and terrorism:

- *You cannot prevent crimes just with CCTV.*
- *I think that CCTV cameras may only prevent pre-meditated crime. I don't feel that it will prevent spontaneous violent crime that is alcohol or drug related.*
- *I am sceptical about whether or not CCTV cameras prevent crime – however if they assist in the apprehension of criminals, I accept them.*
- *If the cameras are in fact a deterrent to crime and we may be assumed the camera footage is used responsibly to apprehend criminal involved in serious crimes, then I may support their use.*
- *Cameras only provide evidence after the fact.*

Residential respondents also believed that the effectiveness of CCTV at preventing crime or reducing the escalation of violence relied heavily on the deployment of police to an incident:

- *The cameras can only prove their worth when monitored at all times during the hours of darkness…It would be necessary when an offence is observed that a fast back up police is available.*
- *CCTV could … be used in conjunction with other methods like swift response when an emergency is seen on CCTV. If police responded quickly, even graffiti and vandalism could be reduced.*
- *CCTV will only prevent crimes if monitored frequently, immediate action taken, arrests and charging and convictions need to follow expeditiously.*

- *CCTV images often appear in the media but worryingly no authorities seem to responds to events after they happen. What's the use of CCTV if someone in a remote control room just looks at something?*

A large number of *business traders* reported being fearful of their business falling victim to a crime in the 12 month period prior to the survey, with the proportion higher for Surfers Paradise traders (69.92%) as compared to Broadbeach traders (52%). Over 80% of Surfers Paradise traders and 68% of Broadbeach traders reported experiencing actual victimisation during the previous 12 months. The propensity for the types of crime varied by suburb, with 'vandalism' (29.44%) and 'assault outside the premises' (21.65%) the two most common reported in Surfers Paradise, whereas Broadbeach traders reported higher occurrences of 'shoplifting' (32.69%) and 'robbery' (28.85%). Respondents indicated they contacted the police most of the time when an incident had occurred (70% Surfers Paradise and 90% Broadbeach). The deployment of police and the use of CCTV surveillance footage to identify offenders were noted and typical comments included:

- *CCTV is a great tool to record crime and assaults but it does not prevent it.*
- *The value of the equipment is only as good as the systems and people in place to monitor them.*
- *Cameras are good but nothing beats a strong police presence.*
- *If the perpetrators are intoxicated, they have little or no regard to cameras being present. Police response times are often poor due to under manning therefore increasing CCTV camera numbers does not necessarily decrease crime.*

Rail commuter respondents indicated that the presence of cameras needed to be supplemented with increased patrolling of train stations and carriages and questioned its ability to prevent or detect crime:

- *CCTV deters slightly, but sceptical on effectiveness.*
- *Spend more money on security rather than cameras, they do help get people but only after they commit a crime.*
- *Good to have cameras there, but generally not something people think about all the time.*
- *They are put up for something but are they helping?*
- *I'm an elderly person and I get harassed all the time, but the cameras don't seem to stop them or help me.*

However, commuters tended to acknowledge the potential evidentiary value of the CCTV surveillance footage:

- *Good to know if something does happen there is a record of the persons involved.*
- *If they can't watch while crime happens, they'll catch them later.*
- *May help identify crims. But don't stop crime.*

Privacy concerns

The majority of *residential respondents* did not feel CCTV cameras in public spaces were an invasion of privacy (87.70% of Surfers Paradise and 73.84% of Burleigh Heads residents). Most respondents were not concerned about being filmed or recorded while in public areas (95.95% Surfers Paradise and 92.46% Burleigh Heads). Typical comments provided by respondents included:

- *Why would people complain about privacy invasion if they have nothing to hide?*
- *I have nothing to hide so CCTV doesn't bother me.*
- *Anyone not happy has something to hide.*
- *CCTV protects everyone and only someone with something to hide would think they invaded their privacy.*

However, some residential respondents did believe CCTV to be an invasion of privacy (7.79% Surfers Paradise and 16.23% Burleigh Heads). Their comments included:

- *While the cameras are an invasion of privacy, I strongly believe that to be safer in the community…we need to trade a part of our freedom for our security.*
- *Privacy issues are of the utmost importance…I have concerns about privacy, I don't know what the rules are to prevent for example, someone selling footage for a TV show.*
- *Although I acknowledge that they* [CCTV cameras] *are an invasion of privacy, I feel that in the world we live in today they may be a necessary evil.*
- *The concern is that we don't really know who is watching us in front of the screens and for what purposes?*
- *Support its use as long as they are respectfully used, not a threat to own civil rights and managed and monitored strongly.*

Most *business respondents* were not concerned with issues of privacy, as 95.2% of Surfers Paradise traders and 91.84% of Broadbeach traders were 'not worried at all' about being filmed while in public areas. Respondents also dismissed the idea of CCTV cameras

being an invasion of people's privacy (81.89% in Surfers Paradise and 77.55% in Broadbeach). Typical responses included:

- *People who do the right thing have nothing to fear. People who commit crimes must be made to fear being caught.*
- *If you are not doing anything wrong you shouldn't worry about being filmed.*
- *I feel that some people would think the cameras are an invasion of privacy but they actually help I think they would come around.*
- *I believe that surveillance, when used only for appropriate reasons is definitely beneficial to the community. When abused, surveillance cameras could definitely be invasive to people's privacy but I don't believe that this would happen very often.*

Almost 80% of *rail commuter respondents* disagreed that CCTV surveillance was an invasion of privacy with those believing it did invade privacy describing it as a '*necessary evil*'. Over 87% of the respondents indicated that they did not worry about being filmed or recorded whilst using the QR Citytrain network. Only a small number of respondents indicated that they were 'fairly worried' about being filmed or recorded with the remaining undecided. Comments mirror those provided in the residential surveys:

- *If you go about your lawful business, they are not a problem.*
- *As long as they are used for correct reasons, not abused as entertainment by railway staff.*

Summary of findings

Overall, survey respondents tended to support the presence of CCTV cameras in their respective areas. Although CCTV surveillance was not considered to be an invasion of privacy, respondents did question the effectiveness of surveillance in terms of deployment of police to an incident and whether cameras were being actively monitored. Respondents suggested greater publicity of CCTV systems was necessary, such as increased signage. The general premise that CCTV cameras should be used to prevent crime and terrorism in Australia was supported, but again, the ability to prevent crimes from occurring, especially spontaneous, violent or alcohol/drug fuelled crime was questioned. An overview of the survey response is provided in Table 4.3. The impact of CCTV on reported offending in Gold Coast public spaces and on the QR Citytrain network is examined in Chapter Five and Chapter Six.

Table 4.3: Overview of selected responses (n=896)

Survey Questions	Yes		No		Don't Know		*		Overall	
	n	%	N	%	n	%	n	%	n	%
By yourself, are there places you avoid?	378	42.2	419	46.7	69	7.7	30	3.3	896	99.99
Are CCTV cameras an invasion of people's privacy?	112	12.5	701	78.2	57	6.4	26	2.9	896	100
Do you think CCTV cameras (in specified area) prevent violent crime?	416	46.4	238	26.6	223	24.9	19	2.1	896	100
Do you think CCTV cameras (in specified area) prevent property crime?	419	46.7	229	25.6	230	25.7	18	2.0	896	100
Support the use of cameras to prevent crime in Australia?	838	93.5	13	1.45	32	3.6	13	1.45	896	100
Support the use of cameras to prevent terrorism in Australia?	808	90.2	34	3.8	36	4.0	18	2.0	896	100

* Unable to decipher

5. Impact of CCTV in Public Spaces

This chapter will examine the impact of CCTV on recorded crime in two Gold Coast suburbs, Surfers Paradise and Broadbeach. Police recorded crime statistics relating to offences that occurred before and after the introduction of camera surveillance were used to undertake time-series analyses on offences occurring in the two areas selected for evaluation. Additionally, chi-square analyses were conducted to determine whether the temporal patterns of crime changed after the introduction of CCTV.

Research context and design

Schematic diagrams of CCTV camera locations in Surfers Paradise, Broadbeach, Southport and Coolangatta are provided in Appendix 5.1-5.4. These diagrams have been provided by the GCSCN and should be viewed as an approximate representation of the camera locations. Although the location of CCTV cameras is not secreted from the public (they are, after all, overt and semi-overt cameras), the actual labels/numbering of the cameras are removed from the diagrams (i.e. camera 1, camera 2). Removing camera labels as well as captions referring to unrelated council matters is as much for confidentiality as it is for the sake of clarity. As can be seen in Appendix 5.1 – 5.4, Surfers Paradise and Broadbeach have the highest number of cameras, followed by Southport and Coolangatta.

Due to data access and time limitations, only two suburbs were selected for in-depth analysis: Surfers Paradise and Broadbeach. The criteria used to select the two suburbs most suitable for analysis were: (i) suburbs had to have a high number of incidents as determined via preliminary evaluation of GCSCN monthly statistical records and via QPS crime data, (ii) there was significant camera coverage in each suburb and (iii) an implementation date could be chosen that allowed for at least a three year pre-and post- intervention comparison. Table 5.1 provides an overview of the top four 'matters of note' recorded by the control room operators (2001-2005) per area. Surfers Paradise had the highest level of incidents for this period. Although Broadbeach initially appeared to have the least 'matters of note' compared to the other surveilled areas (n=132), the data provided by the Queensland Police Service permitted a time-series analysis with the required three year pre-and post- intervention period, as compared to Coolangatta and Southport.

Table 5.1: Top four 'matters of note' for four surveilled suburbs (2001-2005)

	MATTERS OF NOTE	2001	2002	2003	2004	2005	Total
Surfers Paradise	Assaults/ Fights	423	576	587	460	413	**2459**
	Disorderly Conduct	298	371	399	389	322	**1779**
	Alcohol Related Matter	149	148	253	321	217	**1088**
	Drunk and Disorderly	164	135	186	217	215	**917**
	TOTAL	**1034**	**1230**	**1425**	**1387**	**1167**	**6243**
Broadbeach	Disorderly Conduct	29	14	21	22	19	**105**
	Assaults/ Fights	19	18	12	15	15	**79**
	Alcohol Related Matter	5	1	4	11	10	**31**
	Drunk and Disorderly	1	6	3	10	2	**22**
	TOTAL	**25**	**25**	**19**	**36**	**27**	**132**
Southport	Disorderly Conduct	1	13	28	42	22	**106**
	Vehicle Related Incident	0	31	16	4	3	**54**
	Alcohol Related Matter	0	14	12	17	9	**52**
	Drunk and Disorderly	1	9	6	19	3	**38**
	TOTAL	**2**	**67**	**62**	**82**	**37**	**250**
Coolangatta	Assaults/ Fights	23	39	29	36	32	**159**
	Disorderly Conduct	13	22	14	52	46	**147**
	Alcohol Related Matter	10	3	9	18	14	**54**
	Drunk and Disorderly	2	9	9	18	12	**50**
	TOTAL	**48**	**73**	**61**	**124**	**104**	**410**

Methodology

The research team provided the Queensland Police Service (QPS) with a list of streets considered 'Under' surveillance, 'Near' surveillance and 'Away' from surveillance for each suburb (this list is provided in Appendix 5.5). Areas 'Under' surveillance included streets which were under direct surveillance by CCTV cameras, that is, the whole street could be surveilled by the camera operators. Areas 'Near' surveillance included streets in close proximity to CCTV cameras that were not surveilled (i.e. camera footage did not extend to surrounding streets). 'Away' from surveillance was defined as the rest of the suburb. Two maps are provided in Appendix 5.6 and 5.7 of Surfers Paradise and Broadbeach that highlight the 'Under' and 'Near' areas of surveillance. The original intention of this research was to acquire street level data in order to evaluate issues of displacement. However, due to privacy laws, this request could not be met. Thus, QPS data was provided to the research team in an aggregate form (i.e. data were aggregated based on whether offences occurred in Surfers Paradise streets that were 'Under' surveillance, 'Near' surveillance or 'Away' from surveillance).

The QPS provided reported offence data in a file that contained the following requested fields: suburb (Broadbeach and Surfers Paradise), CCTV area (Under CCTV, Near CCTV, or

Away from CCTV), offence type (15 offence categories), time of offence (Midnight to 5:59am, 6am to 11:59am, Midday to 5:59pm or 6pm to 11:59pm), day of offence (Monday to Sunday), month of offence (January to December), year of offence (1995 to 2002) and offence count. The fifteen offence categories are provided in Appendix 5.8 and are standard Regina and Non-Regina offence categories used by the QPS. Fifty reports in the data file had an offence count equal to zero and were excluded from the data file. Most reports related to one offence (55.5%) although the number of offences per report ranged between one and 160 (*M*=2.08, *SD*=2.18).

The data file was restructured into a format suitable for analysis which necessitated the establishment of four data sets. While it was initially planned to examine offences based on whether they occurred Under CCTV, Near CCTV, or Away from CCTV, low offence counts in locations Near CCTV and the inability to meaningfully assess displacement resulted in offences that occurred Near and Away from CCTV being aggregated and viewed as occurring Away from CCTV surveillance. Therefore, each data set had monthly offence counts for a suburb (Broadbeach or Surfers Paradise) based on whether the location was Under or Away from camera surveillance. In total, there were 85 observation points from December 1995 to December 2002.

An additional variable was created that represented the date chosen as the point of interruption for analysis and this was when most cameras were introduced. For Surfers Paradise where CCTV was introduced in December 1998, March 1999 was chosen because this was when the system became more operational ('live') and this includes 39 pre- and 46 post-CCTV observation points. For Broadbeach where CCTV was introduced in May 2000, this includes 53 pre- and 32 post- CCTV observation points. Offence categories and types in the data sets included total offences, total offences against the person (assault, robbery, other offences against the person, sexual offences and homicide), total offences against property (other theft (excluding unlawful entry), unlawful entry, other property damage, unlawful use of a motor vehicle and handling stolen goods), and total other offences (drug offences, liquor (excluding drunkenness), Weapons Act offences, prostitution offences and trespassing and vagrancy).

SPSS ARIMA was used to determine the impact of CCTV on crime and investigate whether factors other than CCTV could be responsible for changes. This approach is superior to other methods as it controls for the serial dependence that can occur in time-series data and removes the effects of crime patterns such as linear or seasonal trends (Cook and Campbell, 1979). Interrupted time-series models were created for each offence category and then for each offence type that occurred in locations where CCTV was introduced. If CCTV was found to be significantly related to a change in the extent of reported offending, then whether there was a

difference pre-and post- CCTV in surrounding areas was examined to determine whether factors other than CCTV could be responsible for changing crime patterns.

Each model was built in accordance with the three stages involved in building a time-series model identified by McDowall, McClearly, Meidinger and Hay (1980). The first stage involves *identifying a model* based on the series of monthly pre-intervention observations. The model requires the specification of three non-seasonal [autoregressive (p), differencing (d), and moving average (q)] and three seasonal [autoregressive (P), differencing (D) and moving average (Q)] parameters. The observations may need non-seasonal differencing (d) or seasonal differencing (D) to ensure stationarity (indicated by a constant mean, variance and autocorrelation over time). The sequence chart displaying reported offences over time is examined to determine whether the data series is strongly tended whereby the mean changes over time. Linear trends usually require first order non-seasonal differencing while changes in the direction of slope require second order non-seasonal differencing. Significant changes in the number of offences at 12, 24 or 36 months indicate that the series requires seasonal differencing. The processes in the data are identified by comparing autocorrelation functions (ACFs) and partial autocorrelations (PACFs) to patterns known to correspond to autoregressive, moving average and integrated processes.

The second stage involves *specifying an appropriate model*. This involves specifying the model parameters, ensuring that these are statistically significant and that the model does not violate assumptions. Coefficients for autoregressive and moving average processes must be constrained to the interval of -1 to +1. The residuals of the model are examined to ensure that they are normally distributed and within their standard error limits (thereby approximating "white noise"). Inspection of the ACF/PACF pattern of residuals is undertaken to ensure they are not statistically different from zero and they are plotted against time to ensure that there is no structure. Where residuals in the model have structure, a transformation is normally required. The presence of outliers may have a substantial impact on the model, and where identified, may be replaced with the average number of offences reported for the proceeding and subsequent months (Tabachnick and Fidell, 2001).

The third stage of interrupted time-series analysis involves *assessing the impact of the intervention* by including the monthly pre- and post- intervention observations and using the model developed during the first stage to account for the "white noise" in the data. The model developed during the first stage may require 'fine tuning' via the removal of non-significant components or if the residuals do not approximate "white noise" (indicating the inadequacy of the model).

Results

Location of reported offences and appropriateness of time-series design

The number of offences that occurred in locations under and away from camera surveillance in Surfers Paradise and Broadbeach are presented in Table 5.2 and Table 5.3. It is apparent that offences against property accounted for a greater proportion of crime occurring in Broadbeach while offences against the person and other offences accounted for a greater proportion of crime occurring in Surfers Paradise. There were insufficient data to perform time-series analyses on three offence categories in Surfers Paradise: homicide, prostitution offences and trespassing and vagrancy. Similarly, it was not possible to perform time-series on many offence categories in Broadbeach because of a lack of data points or because the ACF/PACF indicated neither the presence of an autoregressive or moving average component.

Table 5.2: Reported Offences, Surfers Paradise (December 1995 – December 2002)

Offence Type	Under		Away		Total	
	N	%	n	%	n	%
Assault	1,773	9.6	859	3.09	2,632	5.7
Robbery	196	1.1	280	1.01	476	1
Other offences against the person	102	0.5	197	0.71	299	0.6
Sexual offences	75	0.4	214	0.77	289	0.6
Homicide	1	0	14	0.05	15	0
Total offences against the person	**2,147**	**11.6**	**1,564**	**5.63**	**3,711**	**7.9**
Other theft (excl. unlawful entry)	10,135	54.6	10,574	38.00	20,709	44.6
Unlawful entry	1,271	6.9	6,161	22.14	7,432	16.0
Other property damage	1,968	10.6	4,077	14.65	6,045	13.0
Unlawful use of motor vehicle	869	4.7	2,273	8.17	3,142	6.8
Handling stolen goods	256	1.4	589	2.12	845	1.8
Total offences against property	**14,499**	**78.2**	**23,674**	**85.08**	**38,173**	**82.2**
Drug offences	1,221	6.6	2,214	7.96	3,435	7.4
Liquor (excl. drunkenness)	417	2.2	47	0.17	464	1.0
Weapons Act offences	179	1.0	158	0.57	337	0.7
Trespassing and vagrancy	53	0.3	89	0.32	142	0.3
Prostitution offences	38	0.2	82	0.29	120	0.3
Total other offences	**1,908**	**10.3**	**2,590**	**9.31**	**4,498**	**9.7**
Total offences	**18,554**	**100.0**	**27,828**	**100.0**	**46,382**	**100.0**

Table 5.3: Reported Offences, Broadbeach (December 1995 – December 2002)

Offence Type	Under		Away		Total	
	N	%	n	%	n	%
Assault	102	4.9	629	3.00	731	3.2
Robbery	21	1.0	159	0.76	180	0.8
Other offences against the person	10	0.5	121	0.58	131	0.6
Sexual offences	6	0.3	90	0.43	96	0.4
Homicide	0	0.0	7	0.03	7	0.0
Total offences against the person	**139**	**6.7**	**1,006**	**4.8**	**1,145**	**5**
Other theft (excl. unlawful entry)	1,121	54.2	10,838	51.67	11,959	51.9
Unlawful entry	201	9.7	2,522	12.02	2,723	11.8
Other property damage	312	15.1	2,753	13.13	3,065	13.3
Unlawful use of motor vehicle	227	11.0	2,246	10.71	2,473	10.7
Handling stolen goods	19	0.9	506	2.41	525	2.3
Total offences against property	**1,880**	**90.9**	**18,865**	**89.94**	**20,745**	**90**
Drug offences	37	1.8	934	4.45	971	4.2
Liquor (excl. drunkenness)	7	0.3	37	0.18	44	0.2
Weapons Act offences	4	0.2	99	0.47	103	0.4
Trespassing and vagrancy	3	0.1	27	0.13	30	0.1
Prostitution offences	0	0.0	7	0.03	7	0.0
Total other offences	**51**	**2.4**	**1,104**	**5.26**	**1,155**	**4.9**
Total offences	**2,070**	**100.0**	**20,975**	**100.0**	**23,045**	**100.0**

The impact of CCTV on offences in Surfers Paradise

To explore the effect of CCTV on reported offences in Surfers Paradise, interrupted time-series analyses were performed for *total offences* (comprising all offence types), *total offences against the person* (assault, robbery, sexual offences and other offences against the person), *total offences against property* (unlawful entry, handling stolen goods, other theft, property damage and unlawful use of a motor vehicle), and *total other offences* (drug offences, liquor licensing offences and Weapons Act offences). CCTV was found to have no impact on the extent of *total offences* occurring in Surfers Paradise. However, the introduction of camera surveillance increased *total offences against the person* by 13 during the post-intervention period. The time-series analyses of the specific offences against the person found significant increases in assault, sexual offences, robbery and other offences against the person. CCTV was found to have no impact on *total offences against property* (including the specific offence types unlawful entry, handling stolen goods, other theft, property damage and unlawful use of a motor vehicle). Similarly, CCTV had no impact on *total other offences* (including the specific offence types drug offences, liquor (excluding drunkenness)) but was found to increase Weapons Act offences by two during the post-intervention period.

Total offences

An autoregressive model was appropriate for 'total offences' as the ACF plot of the pre-intervention observations followed the pattern of a damped sine wave. The PACF had spikes at lag (1) and (6) indicative of an autoregressive component. Inspection of the sequence graph indicated the presence of a seasonal component. An ARIMA (1,0,0) (1,0,0)$_{12}$ model was specified for the pre-CCTV period and all components of this model were significant. The ACF/PACF plot of the residuals of this model approximated "white noise" as although two lags exceeded the standard error limits, none of the residuals were significant. The residuals were plotted against time and revealed a possible outlier (December 1995, error value = 273). The model was re-run replacing the raw December 1995 value with the January 1996 value. As this made little difference to results, the original December value was retained for impact assessment. The intervention component was then added to the model and while the components in the pre-CCTV model retained significance, CCTV was not found to have an effect on reported offending (Table 5.4). The residuals of the intervention model approximated "white noise" as all fell within two standard error limits and were non-significant.

Table 5.4: Parameter Estimates for Total Reported Offences

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.92	.05	18.28	.00
SAR1	.57	.13	4.23	.00
Post-intervention				
AR1	.78	.07	11.98	.00
SAR1	.85	.07	12.90	.00
CCTV	35.33	29.69	1.19	.24
Model-fitting information				
Akaike's information criterion			894.62	
Schwarz's Bayesian criterion			901.95	
Likelihood ratio test			-444.31	
Residual variance			1721.97	
Standard error			41.50	

Total offences against the person

Inspection of the ACF/PACF plots for 'total offences against the person' during the pre-intervention period indicated the presence of both regular and seasonal autoregressive components (spikes at lag 1 and 12). An ARIMA (1,0,0) (1,0,0)$_{12}$ model was specified and was significant. Most of the residuals were non-significant and within error bounds. Inspection of the residuals against time showed the presence of two possible outliers (November 1997, error value = 21.28; November 1998, error value = 17.02). A model was firstly run without changing these outliers. The intervention component was added to the model and CCTV was found to

have a significant impact on offences against the person (Table 5.5). Another model was also run after replacing the two outliers with the average of the previous and consecutive months and this model also found CCTV was significantly associated with an increase in reported 'offences against the person'.

Table 5.5: Parameter Estimates for Offences Against the Person

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.87	.07	12.57	.00
SAR1	.46	.19	2.39	.02
Post-intervention				
AR1	.66	.08	7.85	.00
SAR1	.62	.10	6.50	.00
CCTV	13.44	5.35	2.51	.01
Model-fitting information				
Akaike's information criterion			625.74	
Schwarz's Bayesian criterion			633.07	
Likelihood ratio test			-309.87	
Residual variance			82.45	
Standard error			9.08	

Assault

The ACF/PACF for 'assault' during the pre-observation period showed the presence of regular and seasonal autoregressive components (spikes at lag 1, 12, and 24). An ARIMA (1,0,0) (1,0,0)$_{12}$ pre-intervention model was specified and although the seasonal component was non-significant, it was retained as the PACF indicated the presence of a seasonal component. The residuals of the model approximated "white noise" as all were within appropriate error bounds and non-significant. All components of the intervention model were significant and CCTV was found to be related to a significant increase in assaults (Table 5.6). The residuals of the model all fell approximately within two standard error limits and were non-significant.

Robbery

The pre-CCTV ACF/PACF plots for 'robbery' did not show the presence of either an autoregressive or moving average component. Examination of the pre- and post- CCTV time series observations showed the presence of an autoregressive seasonal component as there was a spike at lag (12). An ARIMA (1,0,0) (1,0,0)$_{12}$ model was specified and all components of the model were significant (Table 5.7). The introduction of CCTV was related to an increase in the number of robberies. The residuals from the model were all within two standard error limits and were all non-significant.

Table 5.6: Parameter Estimates for Assaults

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.89	.06	13.92	.00
SAR1	.35	.20	1.77	.08
Post-intervention				
AR1	.77	.07	11.46	.00
SAR1	.48	.11	4.55	.00
CCTV	11.95	5.42	2.20	.03
Model-fitting information				
Akaike's information criterion				598.67
Schwarz's Bayesian criterion				606.00
Likelihood ratio test				-296.34
Residual variance				61.70
Standard error				7.86

Table 5.7: Parameter Estimates for Robbery

Parameter	Estimate	SEB	T-ratio	P-value
Post-intervention				
AR1	.41	.11	3.70	.00
SAR1	.43	.11	3.86	.00
CCTV	.81	.22	3.68	.00
Model-fitting information				
Akaike's information criterion				137.90
Schwarz's Bayesian criterion				144.56
Likelihood ratio test				-65.95
Residual variance				.39
Standard error				.63

Other offences against the person

Inspection of the pre-CCTV time-series observations for 'offences against the person' indicated neither the presence of an autoregressive or moving average component. When the post-CCTV observations were added, the ACF/PACF indicated the presence of an autoregressive component as there was a spike at lag (12). An ARIMA (0,0,0) (1,0,0)12 was specified and all components of the model were significant (Table 5.8). CCTV was found to be associated with an increase in 'other offences against the person'. The residuals were all within two standard error units and non-significant.

Table 5.8: Parameter Estimates for Other Offences Against the Person

Parameter	Estimate	SEB	T-ratio	P-value
Post-intervention				
SAR1	.46	.11	4.38	.00
CCTV	.81	.28	2.88	.01
Model-fitting information				
Akaike's information criterion				292.48
Schwarz's Bayesian criterion				297.37
Likelihood ratio test				-144.24
Residual variance				1.73
Standard error				1.31

Sexual offences

The pre-CCTV ACF/PACF plots for 'sexual offences' did not indicate the presence of an autoregressive or moving average component as all lags were within two standard error units and non-significant. When the post-CCTV observation points were added, the pattern suggested the presence of a regular autoregressive component and the spike at lag (12) was indicative of the presence of a seasonal autoregressive component. An ARIMA $(1,0,0)$ $(1,0,0)_{12}$ model was run and all components were significant (Table 5.9). CCTV was associated with an increase in sexual offences. Inspection of the residuals from the model were all within two standard error units and non-significant.

Table 5.9: Parameter Estimates for Sexual Offences

Parameter	Estimate	SEB	T-ratio	P-value
Post-intervention				
AR1	.23	.11	2.10	.04
SAR1	.40	.11	3.63	.00
CCTV	.68	.28	2.39	.02
Model-fitting information				
Akaike's information criterion				259.83
Schwarz's Bayesian criterion				267.16
Likelihood ratio test				-126.92
Residual variance				1.17
Standard error				1.08

Total offences against property

Inspection of the pre-CCTV time series observations for 'total offences against property' indicated a negative linear trend and a seasonal trend with peaks between November and January of each year. After regular and seasonal differencing, examination of the ACF/PACF plots indicated the presence of a regular moving average component. An ARIMA $(0,1,1)$

$(0,1,0)_{12}$ model was specified and found to be significant. Examination of the residuals from this model approximated "white noise" as all but one lag were within standard errors and all were non-significant. The intervention model was added to the model and CCTV was found to have no effect on property offences (Table 5.10). The residuals from this model were examined and approximated "white noise".

Table 5.10: Parameter Estimates for Total Offences Against Property

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
MA1	.77	.15	5.10	.00
Post-intervention				
MA1	.65	.10	6.83	.00
CCTV	-1.26	19.35	-.07	.95
Model-fitting information				
Akaike's information criterion			722.59	
Schwarz's Bayesian criterion			727.14	
Likelihood ratio test			-359.29	
Residual variance			1290.54	
Standard error			35.92	

Other theft (excluding unlawful entry)

Inspection of the ACF/PACF plot for 'other theft' during the pre-CCTV period indicated the presence of an autoregressive component and there was a spike at lag (1). An ARIMA (1,0,0) model was specified and found to be significant. The residuals of the model were all within two standard errors and all were non-significant. The autoregressive component remained significant in the intervention model and CCTV was not found to have an effect on the extent of 'other theft' (Table 5.11). The residuals from the model approximated "white noise".

Table 5.11: Parameter Estimates for Other Theft (excl. Unlawful Entry)

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.97	.03	35.99	.00
Post-intervention				
AR1	.95	.03	27.66	.00
CCTV	51.99	33.24	1.56	.12
Model-fitting information				
Akaike's information criterion			851.71	
Schwarz's Bayesian criterion			856.59	
Likelihood ratio test			-423.86	
Residual variance			1252.06	
Standard error			35.38	

Unlawful entry

The pre-CCTV time series observations for 'unlawful entry' had a decreasing linear trend. Inspection of the ACF/PACF pattern after regular differencing showed the presence of an autoregressive component and there were spikes at lags (1) and (8). An ARIMA (1,1,0) model was specified and found to be significant. The residuals from the model approximated "white noise" as all were within two standard errors and non-significant. The residuals against time were randomly distributed. The intervention model found that CCTV had no effect on the extent of 'unlawful entry' (Table 5.12). The residuals from the model were all approximately within two standard errors and were all non-significant. The residuals against time were all randomly distributed.

Table 5.12: Parameter Estimates for Unlawful Entry

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	-.43	.15	-2.90	.01
Post-intervention				
AR1	-.45	.10	-4.68	.00
CCTV	-1.99	6.71	-.30	.77
Model-fitting information				
Akaike's information criterion				576.08
Schwarz's Bayesian criterion				580.94
Likelihood ratio test				-286.04
Residual variance				54.26
Standard error				7.37

Other property damage

Inspection of the pre-CCTV time series observations for 'property damage' revealed the presence of a negative linear trend. The ACF/PACF plots after regular differencing indicated the presence of a higher order autoregressive component due to the largest spike occurring at lag (2). An ARIMA (2,1,0) model was specified and significant. Examination of the residuals from the model were all approximately within two standard error units and all were non-significant. The introduction of post-CCTV observations required re-specification of the model. An ARIMA (1,1,0) was performed and CCTV was found to have no impact on 'property damage' (Table 5.13).

Table 5.13: Parameter Estimates for Other Property Damage

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	-.57	.15	-3.74	.00
AR2	-.46	.16	-2.83	.01
Post-intervention				
AR1	-3.86	.11	-3.65	.00
CCTV	.10	.28	.35	.73
Model-fitting information				
Akaike's information criterion				38.96
Schwarz's Bayesian criterion				43.82
Likelihood ratio test				-17.48
Residual variance				.09
Standard error				.30

Unlawful use of a motor vehicle

Inspection of the ACF plot for 'unlawful use of a motor vehicle' during the pre-CCTV period indicated the presence of an autoregressive component and the largest spike in the PACF was at lag (1). An ARIMA (1,0,0) model was specified and was significant. Inspection of the residuals from this model revealed a spike at lag (2) which was also significant. The other residuals were within two standard error limits and were non-significant. The intervention model was run and there were spikes at lag (1) and (7) and many lags were significant. The model was respecified as an ARIMA (3,0,0) and results indicated that CCTV did not have an effect on the extent of 'unlawful use of a motor vehicle' (Table 5.14).

Table 5.14: Parameter Estimates for UUMV

Parameter	Estimate	SEB	T-ratio	P-value
Intervention				
AR1	.93	.05	17.50	.00
Post-intervention				
AR1	.36	.10	3.46	.00
AR2	.28	.11	2.62	.01
AR3	.30	.11	2.82	.01
CCTV	4.30	3.54	1.21	.23
Model-fitting information				
Akaike's information criterion				506.15
Schwarz's Bayesian criterion				515.92
Likelihood ratio test				-249.08
Residual variance				21.05
Standard error				4.59

Handling stolen goods

Inspection of the ACF/PACF plots for 'handling stolen goods' during the pre-CCTV period indicated neither the presence of an autoregressive or moving average component. Examination of the intervention model indicated a positive spike at lag (1) and a negative spike at lag (2). An ARIMA (2,0,0) model was specified and while the autoregressive components were significant, CCTV was found to have no impact on 'handling stolen goods' (Table 5.15). All of the residuals were non-significant and within their standard error limits. The residuals approximated "white noise" when plotted against time.

Table 5.15: Parameter Estimates for Handling Stolen Goods

Parameter	Estimate	SEB	T-ratio	P-value
Post-intervention				
AR1	.37	.11	3.47	.00
AR2	-.34	.11	-3.02	.00
CCTV	-.02	.32	9.21	.97
Model-fitting information				
Akaike's information criterion				358.87
Schwarz's Bayesian criterion				368.64
Likelihood ratio test				-175.43
Residual variance				3.79
Standard error				1.95

Total other offences

Examination of the ACF/PACF pattern for 'total other offences' during the pre-intervention period indicated the presence of an autoregressive component. The PACF plot had a positive spike at lag (12) indicative of a higher-order seasonal autoregressive component (SP=2). An ARIMA (1,0,0) (2,0,0)12 model was specified and all components were significant. The residuals from this model approximated "white noise" as all were within two standard errors and non-significant. Inspection of the residuals against time revealed the presence of three possible outliers (November 1996, error value = 43.31; April 1997, error value = 38.44; November 1997, error value = 42.86). The model was run using the raw scores and then by replacing the raw offence counts for the three outliers with the average of the proceeding and consecutive months (November 1996, 18 replaced 53; April 1997, 13 replaces 44; November 1997, 16.5 replaces 80). The model that retained the original raw values was used as mean replacement had no impact on results. All components retained significance and CCTV was found to have no effect on 'other offences' (Table 5.16).

Table 5.16: Parameter Estimates for Other Offences

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.45	.12	3.62	.00
SAR1	.41	.16	2.58	.01
SAR2	.47	.21	2.26	.03
Post-intervention				
AR1	.21	.11	1.98	.05
SAR1	.59	.11	5.50	.00
SAR2	.32	.11	2.79	.00
CCTV	2.16	3.70	.58	.56
Model-fitting information				
Akaike's information criterion				676.33
Schwarz's Bayesian criterion				686.09
Likelihood ratio test				-334.16
Residual variance				125.16
Standard error				11.19

Drug offences

The ACF/PACF for 'drug offences' during the pre-CCTV period indicated the presence of regular and seasonal autoregressive components as there were spikes at lag (1) and (12). An ARIMA $(1,0,0)$ $(1,0,0)_{12}$ model was specified and significant (Table 5.17). The intervention model was specified and CCTV was found to have no impact on 'drug offences'. The residuals from the model were approximately within two standard error units and while many were significant this could not be improved. When the residuals were plotted against time, they approximated "white noise".

Table 5.17: Parameter Estimates for Drug Offences

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.57	.14	4.12	.00
SAR1	.59	.18	3.28	.00
Post-intervention				
AR1	.29	.12	2.52	.01
SAR1	.75	.09	8.33	.00
CCTV	5.08	3.07	1.65	.10
Model-fitting information				
Akaike's information criterion				617.66
Schwarz's Bayesian criterion				624.99
Likelihood ratio test				-305.83
Residual variance				71.73
Standard error				8.47

Liquor (excluding drunkenness)

Inspection of the pre-CCTV time series observations for 'liquor offences' revealed a spike at lag (12). An ARIMA (0,0,0) (1,0,0)$_{12}$ model was specified and significant. Examination of the residuals revealed that they were all within two standard error units and non-significant. The intervention model retained significance but CCTV was found to have no effect on 'liquor offences' (Table 5.18). The residuals from the model were all within error limits and non-significant. Further, the residuals approximated "white noise" when plotted against time.

Table 5.18: Parameter Estimates for Liquor (excl. Drunkenness)

Parameter	Estimate	SEB	T-ratio	P-value
Intervention				
SAR1	.87	.06	14.62	.00
Post-intervention				
SAR1	.85	.05	19.03	.00
CCTV	-.77	1.35	-.56	.57
Model-fitting information				
Akaike's information criterion				527.67
Schwarz's Bayesian criterion				532.55
Likelihood ratio test				-261.83
Residual variance				23.41
Standard error				4.84

Weapons Act offences

Inspection of the pre-CCTV ACF/PACF for 'Weapons Act offences' revealed neither the presence of an autoregressive or moving average component and all lags were within two standard error units and non-significant. Examination of the pre- and post- CCTV ACF/PACF revealed a spike at lag (12) although all lags were non-significant. An ARIMA (0,0,0) (1,0,0)$_{12}$ was specified and all components of the model were significant. CCTV was found to be associated with an increase in 'Weapons Act offences' (Table 5.19). The residuals were all within two standard error units and non-significant.

Table 5.19: Parameter Estimates for Weapons Act Offences

Parameter	Estimate	SEB	T-ratio	P-value
Post-intervention				
SAR1	.46	.12	3.92	.00
CCTV	2.14	.43	4.97	.00
Model-fitting information				
Akaike's information criterion				365.33
Schwarz's Bayesian criterion				370.22
Likelihood ratio test				-180.67
Residual variance				4.07
Standard error				2.02

The impact of CCTV on offences in Broadbeach

Small offence counts or the inability to identify autoregressive or moving average components on the ACF/PACF plots meant that it was not possible to perform time-series analyses on *offences against the person* and many of the offence types for Broadbeach. Nevertheless, findings indicated that CCTV had no impact on *total offences* or *total offences against property* (including the specific offence types other theft (excluding unlawful entry) and other property damage).

Total offences

Inspection of the pre-CCTV ACF/PACF for 'total offences' revealed negative spikes at lags (4) and (12). An ARIMA (2,0,0) (1,0,0)₁₂ was specified and all components were significant. Examination of the residuals showed a negative spike at lag (4) that could not be addressed and the residuals approximated "white noise" when plotted against time. The intervention model was respecified as an ARIMA (3,0,0) as the seasonal component was non-significant and many of the residuals were outside their standard error limits. CCTV was found to have no impact on 'total offences' (Table 5.20). The residuals from this model revealed a spike at lag (4) which could not be fixed. The residuals were plotted against time and approximated "white noise".

Table 5.20: *Parameter Estimates for Total Offences*

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.59	.13	4.64	.00
AR2	.40	.13	3.12	.00
SAR1	-.36	.15	-2.45	.02
Post-intervention				
AR1	.37	.10	3.59	.00
AR2	.28	.11	2.55	.01
AR3	.31	.11	2.94	.00
CCTV	-.04	6.64	-.01	.99
Model-fitting information				
Akaike's information criterion			606.11	
Schwarz's Bayesian criterion			615.88	
Likelihood ratio test			-299.05	
Residual variance			67.75	
Standard error			8.23	

Total offences against property

Inspection of the pre-CCTV ACF for 'total offences against property' revealed negative spikes at lag (4) and (12) and the largest spike on the PACF was lag (4). An ARIMA (2,0,0) (1,0,0)12 was specified and all components were found to be significant. When the post-intervention observations were added, the seasonal component came out non-significant and there was a large spike at lag (4). The intervention model was respecified as an ARIMA (3,0,0) as this was found to be the best fit but the residuals from the model retained a spike at lag (4) that could not be resolved. CCTV was found to have no impact on 'total offences against property' (Table 5.21). The residuals approximated "white noise" when viewed against time.

Table 5.21: Parameter Estimates for Total Offences Against Property

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.58	.13	4.58	.00
AR2	.40	.13	3.08	.00
SAR1	-.34	.15	-2.23	.03
Post-intervention				
AR1	.39	.11	3.71	.00
AR2	.29	.12	2.48	.02
AR3	.28	.11	2.56	.01
CCTV	2.30	6.63	.35	.73
Model-fitting information				
Akaike's information criterion			604.72	
Schwarz's Bayesian criterion			614.49	
Likelihood ratio test			-298.36	
Residual variance			66.90	
Standard error			8.18	

Other theft (excluding unlawful entry)

Inspection of the ACF/PACF plots for 'other theft (excluding unlawful entry)' indicated the presence of an auto-regressive component and the possibility of a seasonal autoregressive component due to a spike at lag (12). Several models were run including an ARIMA (1,0,0) (1,0,0)12, (2,0,0) (1,0,0)12, and (2,0,0). Inspection of the residuals from each of these models suggested that an ARIMA (2,0,0) was the best model as all residuals were approximately within two standard error units and approximated "white noise" when plotted against time. The intervention model was run and CCTV was found to have no impact on the extent of 'other theft (excluding unlawful entry)' (Table 5.22). The residuals from the model were within two standard errors and approximated "white noise" when plotted against time.

<div align="center">**Table 5.22: Parameter Estimates for Other Theft (excl. unlawful entry)**</div>

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.54	.13	4.28	.00
AR2	.42	.13	3.33	.00
Post-intervention				
AR1	.48	.10	4.93	.00
AR2	.48	.10	4.90	.00
CCTV	-1.63	4.56	-.36	.72
Model-fitting information				
Akaike's information criterion			528.96	
Schwarz's Bayesian criterion			536.29	
Likelihood ratio test			-261.48	
Residual variance			27.75	
Standard error			5.27	

Other property damage

Inspection of the pre-CCTV ACF/PACF for 'other property damage' revealed the presence of a mixed model. An ARIMA (1,0,1) was specified and found to be significant. The residuals from the model were all within two standard error limits and when plotted against time approximated "white noise". These components retained significance in the post-CCTV model, however CCTV was found to have no impact on 'other property damage' (Table 5.23). The residuals were all approximately within two standard error units and approximated "white noise" when plotted against time.

<div align="center">**Table 5.23: Parameter Estimates for Other Property Damage**</div>

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.96	.04	24.04	.00
MA1	.63	.18	3.49	.00
Post-intervention				
AR1	.99	.01	122.20	.00
MA1	.85	.07	12.63	.00
CCTV	.40	1.13	.35	.73
Model-fitting information				
Akaike's information criterion			381.44	
Schwarz's Bayesian criterion			388.77	
Likelihood ratio test			-187.72	
Residual variance			4.91	
Standard error			2.22	

Increased detection of some offences in Surfers Paradise or an increasing trend?

While CCTV appeared to have no impact on offences in Broadbeach and had no impact on *offences against property* and most *other offences* in Surfers Paradise, it did result in slight but significant increases in *total offences against the person* (including assault, robbery, other offences against the person and sexual offences) and Weapons Act offences. To explore whether increases in these offences represented a general trend in Surfers Paradise, time-series analyses were performed for these offence types occurring in locations 'away' from camera surveillance. While one model could not be specified (sexual offences), findings indicated that there was no significant change in total offences against the person (including assault, robbery and other offences against the person) or Weapons Act offences after the introduction of CCTV in locations away from camera surveillance in Surfers Paradise.

Total offences against the person

The ACF for 'total offences against the person' during the pre-intervention period showed the presence of autoregressive and moving average components. An ARIMA (1,0,1) was specified and both components were significant (Table 5.24). The residuals approximated "white noise" as all were within standard error limits and non-significant. Further, there was no structure apparent in the residuals when plotted over time. The residuals were all non-significant and approximated "white noise" and no structure was apparent when the residuals were plotted against time. The autoregressive and moving average components retained significance in the intervention model, although CCTV was found to have a non-significant impact on total offences against the person.

Table 5.24: Parameter Estimates for Total Offences Against the Person

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.99	.01	98.20	.00
MA1	.42	.18	2.40	.02
Post-intervention				
AR1	.99	.00	854.97	.00
MA1	.76	.09	8.69	.00
CCTV	-.11	.24	-.47	.64
Model-fitting information				
Akaike's information criterion			81.16	
Schwarz's Bayesian criterion			88.49	
Likelihood ratio test			-37.58	
Residual variance			.14	
Standard error			.37	

Assault

The sequence chart for 'assault' during the pre-CCTV time period indicated that seasonal differencing was required as assaults peaked during summer. After seasonal differencing, the ACF plot indicated neither the presence of an autoregressive or moving average component. An ARIMA $(0,0,0)$ $(0,1,0)_{12}$ model was specified for the pre-intervention series and while the residuals were within standard error limits, some structure was apparent when the residuals were plotted against time and a log transformation did not reduce the structure. The post-intervention model indicated that CCTV did not have a significant impact on the number of assaults (Table 5.25). The residuals from the model were all within standard error limits and had no structure when plotted against time.

Table 5.25: Parameter Estimates for Assault

Parameter	Estimate	SEB	T-ratio	P-value
Post-intervention				
CCTV	1.67	1.49	1.12	.27
Model-fitting information				
Akaike's information criterion				448.26
Schwarz's Bayesian criterion				450.55
Likelihood ratio test				-223.13
Residual variance				26.81
Standard error				5.18

Robbery

The ACF plot for 'robbery' during the pre-intervention time-period indicated a spike at lag (1) and an ARIMA $(1,0,1)$ model was run. The residuals from this model had a significant spike at lag (1) so the model was re-run on transformed data and both components were significant (Table 5.26). The residuals from the model were all non-significant and when plotted against time had no structure. The autoregressive and moving average components remained significant in the intervention model, and CCTV was found to have no impact on 'robbery'. The residuals from the intervention model were all within standard error limits and non-significant and when plotted against time resembled "white noise".

<div align="center">

Table 5.26: Parameter Estimates for Robbery

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Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.99	.00	106.97	.00
MA1	.90	.16	5.61	.00
Post-intervention				
AR1	.99	.01	185.08	.00
MA1	.91	.09	10.48	.00
CCTV	-.12	.30	-.41	.69
Model-fitting information				
Akaike's information criterion			172.93	
Schwarz's Bayesian criterion			180.04	
Likelihood ratio test			-83.47	
Residual variance			.49	
Standard error			.70	

Other offences against the person

Examination of the ACF plot for 'other offences against the person' during the pre-intervention time-period indicated the presence of an autoregressive and moving average component. An ARIMA (1,0,1) model was specified and examination of the residuals against time indicated the presence of an outlier during December 1997 (10 replaced with 3). The model was re-run and both components were significant (Table 5.27). The residuals from this model approximated "white noise" as they were all within standard error limits and non-significant and when plotted against time did not have any structure. When the intervention model was run, the autoregressive and moving average components remained significant and CCTV was not found to have a significant impact on other offences against the person. The residuals from the model were all non-significant and within standard error limits and had no structure when plotted over time.

<div align="center">

Table 5.27: Parameter Estimates for Other Offences Against the Person

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Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.99	0.2	54.70	.00
MA1	.92	.18	5.22	.00
Post-intervention				
AR1	.99	.01	95.23	.00
MA1	.86	.07	12.31	.00
CCTV	-.28	.88	-.32	.75
Model-fitting information				
Akaike's information criterion			346.17	
Schwarz's Bayesian criterion			353.50	
Likelihood ratio test			-170.09	
Residual variance			3.25	
Standard error			1.80	

Weapons Act offences

The sequence chart for 'Weapons Act offences' during the pre-intervention period showed an increasing trend and the ACF plot showed spikes at lags (1) and (3). An ARIMA (2,1,0) was specified and because some structure was apparent in the residuals when plotted against time, a natural log transformation was performed. Both autoregressive components were significant (Table 5.28) and the residuals from this model were non-significant and within standard error limits and did not appear to have any structure. The autoregressive components remained significant in the intervention model, and CCTV was found to have no impact on the number of Weapons Act offences. The residuals from the model approximated "white noise" as all were within appropriate error bounds and did not have structure when plotted against time.

Table 5.28: Parameter Estimates for Weapons Act Offences

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	-.64	.15	-4.37	.00
AR2	0.56	.15	-3.77	.00
Post-intervention				
AR1	-.67	.13	-5.26	.00
AR2	-.50	.13	-3.99	.00
CCTV	-.18	.52	-.35	.73
Model-fitting information				
Akaike's information criterion			112.38	
Schwarz's Bayesian criterion			118.51	
Likelihood ratio test			-53.19	
Residual variance			.36	
Standard error			.60	

The temporal impact of CCTV

To investigate whether the temporal patterns of reported offences changed following the introduction of CCTV, a series of chi-square analyses were performed that explored whether the timing of the broad offence categories (and offence types) was different pre- and post-CCTV installation. This was done firstly for Surfers Paradise and then for Broadbeach.

Surfers Paradise

In Surfers Paradise, CCTV was not associated with a change in the timing of *total offences against the person* ($\chi2$ (3, N=2,147) = 3.59, p=.31). However, CCTV was associated with a change in the temporal patterns of *total offences against property* ($\chi2$ (3, N=14,499) = 142.48,

$p<.001$) and *total other offences* ($\chi2$ (3, N=1,908) = 8.25, $p<.05$). The introduction of CCTV was associated with a reduction of total offences against property occurring during daylight hours (6am to 5:59pm) and an increase during night time, particularly Midnight to 5:59am (Table 5.29). *Total other offences* followed the contrary pattern, increasing during the day time and decreasing at night after the introduction of camera surveillance (Table 5.29).

Table 5.29: Temporal Pattern of Total Offences Against Property and Total Other Offences, Surfers Paradise

Time	Total offences against property			Total other offences		
	CCTV		Total	CCTV		Total
	Pre-CCTV	Post-CCTV		Pre-CCTV	Post-CCTV	
Midnight to 5:59am	1041	2002	3043	376	469	845
	17.0%	23.9%	21.0%	46.2%	42.8%	44.3%
6am to 11:59am	997	1177	2174	57	98	155
	16.3%	14.1%	15.0%	7.0%	8.9%	8.1%
Midday to 5:59pm	2325	2621	4946	59	112	171
	37.9%	31.3%	34.1%	7.3%	10.2%	9.0%
6pm to 11:59pm	1764	2572	4336	321	416	737
	28.8%	30.7%	29.9%	39.5%	38.0%	38.6%
Total	6127	8372	14499	813	1095	1908
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

When the specific offence types were examined, CCTV was found to be related to when 'other property damage' ($\chi2$ (3, N=1,968) = 32.37, $p<.001$) and 'other theft (excluding unlawful entry)' offences ($\chi2$ (3, N=10,135) = 205.25, $p<.001$) occurred. The introduction of CCTV appeared to be associated with 'other property damage' offences decreasing during the afternoon (Midday to 5:59pm) and increasing during the early morning (Midnight to 5:59am) (Table 5.30). Similarly, the extent of 'other theft (excluding unlawful entry)' offences decreased during daylight hours (6am to 5:59pm) after the introduction of CCTV but increased during night hours (6pm to 5:59am) (Table 5.30).

Time	Other property damage			Other theft (excl. unlawful entry)		
	CCTV		Total	CCTV		Total
	Pre-CCTV	Post-CCTV		Pre-CCTV	Post-CCTV	
Midnight to 5:59am	226	308	534	549	1425	1974
	22.7%	31.7%	27.1%	14.0%	22.9%	19.5%
6am to 11:59am	112	109	221	693	887	1580
	11.3%	11.2%	11.2%	17.7%	14.3%	15.6%
Midday to 5:59pm	279	183	462	1759	2145	3904
	28.0%	18.8%	23.5%	44.9%	34.5%	38.5%
6pm to 11:59pm	378	373	751	917	1760	2677
	38.0%	38.3%	38.2%	23.4%	28.3%	26.4%
Total	995	973	1968	3918	6217	10135
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

CCTV was not found to be associated with the temporal pattern of assault ($\chi2$ (3, N=1,773) = 3.92, p=.27), drug offences ($\chi2$ (3, N=1,221) = .53, p=.91), handling stolen goods ($\chi2$ (3, N=256) = 2.53, p=.47), robbery, ($\chi2$ (3, N=196) = 1.24, p=.74), unlawful entry ($\chi2$ (3, N=1271) = 1.24, p=.74), or unlawful use of a motor vehicle ($\chi2$ (3, N=869) = 1.93, p=.59). Problems with power prevented chi-square analyses being conducted for several offence types, including liquor offences (excluding drunkenness), other offences against the person, prostitution offences, sexual offences, homicide, trespassing and vagrancy, and Weapons Act offences.

Broadbeach

While problems with power prevented chi-square analyses being conducted for *total offences against the person* and *total other offences,* the introduction of CCTV surveillance was associated with a change in temporal pattern of *total offences against property* ($\chi2$ (3, N=1,880) = 24.82, p<.001). CCTV was associated with an increase in total offences against property during the daylight hours (6am to 5:59pm) and a decrease during night hours (6pm to 5.59am) (Table 5.31).

Table 5.31: Temporal Pattern of Total Offences Against Property, Broadbeach

| Time | CCTV | | Total |
	Pre-CCTV	Post-CCTV	
Midnight to 5:59am	137	44	181
	11.8%	6.1%	9.6%
6am to 11:59am	232	173	405
	20.0%	24.0%	21.5%
Midday to 5:59pm	391	286	677
	33.8%	39.6%	36.0%
6pm to 11:59pm	398	219	617
	34.4%	30.3%	32.8%
Total	1158	722	1880
	100.0%	100.0%	100.0%

When the specific offence types were examined, CCTV was related to a change in the temporal pattern of 'other theft' ($\chi2$ (3, N=1,121) = 19.37, p<.001), 'other property damage' ($\chi2$ (3, N=312) = 11.05, p<.05), and 'unlawful use of a motor vehicle' (UUMV) ($\chi2$ (3, N=227) = 10.21, p<.05). For 'other theft' and 'other property damage', CCTV was associated with an increase in the proportion of offences during the day and a decrease during the night (Table 5.32). For UUMV, CCTV was associated with an increase during the afternoon (Midday to 5:59pm) and a decrease at all other times (Table 5.32). There was no significant change in the timing when unlawful entry offences occurred ($\chi2$ (3, N=201) = 3.55, p=.32). Problems with power prevented examination of whether CCTV was related to changing temporal patterns for all other offence types in Broadbeach.

Table 5.32: Temporal Pattern of Specific Crime Types, Broadbeach

| | Other theft (excl. unlawful entry) | | | Other property damage | | | Unlawful use of motor vehicle | | |
| | CCTV | | Total | CCTV | | Total | CCTV | | Total |
	Pre-CCTV	Post-CCTV		Pre-CCTV	Post-CCTV		Pre-CCTV	Post-CCTV	
Midnight to 5:59am	81	23	104	31	6	37	9	3	12
	11.9%	5.2%	9.3%	15.2%	5.6%	11.9%	6.8%	3.2%	5.3%
6am to 11:59am	136	115	251	31	29	60	32	18	50
	20.0%	26.1%	22.4%	15.2%	26.9%	19.2%	24.2%	18.9%	22.0%
Midday to 5:59pm	254	181	435	61	35	96	36	45	81
	37.3%	41.1%	38.8%	29.9%	32.4%	30.8%	27.3%	47.4%	35.7%
6pm to 11:59pm	210	121	331	81	38	119	55	29	84
	30.8%	27.5%	29.5%	39.7%	35.2%	38.1%	41.7%	30.5%	37.0%
Total	681	440	1121	204	108	312	132	95	227
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Summary of findings

This chapter examined the impact of CCTV on recorded crime in two Gold Coast suburbs, Surfers Paradise and Broadbeach. Findings indicated that the introduction of CCTV in Surfers Paradise resulted in significant increases in the extent of *total offences against the person* (including assault, robbery, other offences against the person and sexual assault) and Weapons Act offences. CCTV was found to have no significant impact on *total offences, total offences against property* (including other theft (excluding unlawful entry), unlawful entry, other property damage, unlawful use of a motor vehicle and handling stolen goods) and *total other offences* (including drug offences, liquor (excluding drunkenness)) occurring in Surfers Paradise. While many time-series models could not be specified for offence categories or types occurring in Broadbeach, findings indicated that CCTV had no impact on *total offences* or *total offences against property* (including other theft (excluding unlawful entry) and other property damage). Examination of crime patterns in surrounding areas pre- and post- CCTV suggested that the significant increases found in Surfers Paradise were not general crime trends. Temporal patterns were also examined and findings indicated that in Surfers Paradise total offences against property, other theft (excluding unlawful entry), and other property damage decreased during daylight hours while total other offences increased during daylight hours. In Broadbeach, total offences against property decreased during daylight hours while other theft (excluding unlawful entry), other property damage and unlawful use of a motor vehicle increased during daylight hours.

6. Impact of CCTV on Public Transport

This section of the report describes and analyses the impact of CCTV on reported offending on the Queensland Rail Citytrain network. Because of a number of methodological issues, 13 train stations were selected for in-depth analysis. Data relating to reported offences to police that occurred before and after the introduction of cameras at nine (out of these 13) stations were used to assess the impact of CCTV surveillance.

Research context and design

The original intention of the research was to assess patterns of offending at all Queensland Rail Citytrain stations along a selected train line, the 'Gold Coast line' (i.e. Robina/Ferny Grove Line – refer to Appendix 2.2). This would have included 45 inner city and suburban train stations. The advantage of this original methodology was to provide a more general view of offending, including potential displacement to other geographical locations. However, there were methodological issues which prevented the research team completing this analysis: i) low offence counts at train stations (via preliminary SIMS analysis), ii) non-existent pre-intervention period (i.e. train stations constructed with CCTV cameras), iii) varying intervention dates (as well as multiple roll-out of CCTV cameras) at each station, iv) lack of data collected in relation to surrounding geographical locations and v) difficulty 'keyword' searching large amounts of raw data on two separate police systems[4].

Citytrain stations were selected based on preliminary analysis of QR's Security and Information Management System (SIMS) which is a database that was implemented after CCTV was introduced and records a range of security incidents occurring on the network (assault, drug and alcohol, fare evasion, good order, graffiti, motor vehicle, property damage and stealing). Appendix 6.1 provides an overview of the categories and subcategories of the SIMS database. It is important to note that SIMS data provided by QR is not necessarily an accurate representation of offences in comparison to police recorded data.

Three criteria were used to select stations that would be most suitable for analysis: (i) stations had to have a high number of incidents occurring post-CCTV (since the SIMS database became operational in 2001), (ii) there was significant camera coverage at the station and (iii) an implementation date could be chosen that allowed for a three year pre- and post-intervention comparison. Thirteen stations were selected including Indooroopilly, Morayfield, Southbank/Vulture Street, Central, Caboolture, Beenleigh, Bethania, Brunswick Street,

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[4] Police data prior to January 1995 was recorded on a system known as MCODET. It would not have been possible to accurately keyword search MCODET using the same keywords for the CRISP database.

Petrie, Ipswich, Roma Street, Nundah and Strathpine. An explanation of this selection process is provided.

Between 2001 and 2004, there were 33,737 incidents occurring at QR stations. To determine the stations that should be selected for analysis using police CRISP data (which contains records of offences occurring prior to the introduction of CCTV), the types of incidents occurring at the 12 stations with the largest number of incidents were explored using SIMS data. It was apparent that Brunswick Street, Beenleigh, Central and Morayfield stations were worth exploring further (Table 6.1). Other stations that were considered to be of interest include Loganlea, Bethania, Caboolture, Kingston, Northgate and Indooroopilly.

Table 6.1: Number of Incident Types Occurring at Top 12 Stations, 2001-2004 (SIMS data)

	Assault	Drug & Alcohol	Fare Evasion	Good Order	Graffiti	Motor Vehicle	Property Damage	Stealing	Total
Indooroopilly	5	7	0	70	**343**	0	17	8	450
Morayfield	14	8	1	186	101	**33**	**78**	**39**	460
Bray Park	25	25	0	177	203	12	72	10	524
Southbank/Vulture St	35	43	0	189	209	1	45	9	531
Northgate	25	37	10	189	**224**	16	29	13	543
Central	**65**	**55**	**25**	324	42	6	46	**43**	606
Kingston	20	51	1	286	139	23	**80**	26	626
Caboolture	25	52	9	602	87	**46**	52	17	890
Beenleigh	**40**	**83**	**18**	675	**229**	43	**112**	58	1258
Bethania	9	0	1	**1062**	130	10	73	18	1303
Loganlea	13	23	0	**1144**	171	16	49	16	1432
Brunswick Street	**45**	**66**	**330**	**1014**	121	13	35	7	1631
Total	321	450	395	5918	1999	219	688	264	10254

The dates associated with the installation of cameras at these 12 stations were then examined to determine the stations that would allow for a three year pre- and post-CCTV time-frame (Table 6.2). Dates highlighted in bold indicate the date that would be chosen as the date of intervention. While some cameras were installed before and after these dates, these dates were chosen as most cameras were introduced at this time. Stations that are shaded allow for a three year pre- and post- CCTV comparison without too much influence from other cameras. Therefore, stations considered worthy of exploring in more depth include Indooroopilly, Morayfield, Southbank/Vulture Street, Central, Caboolture, Beenleigh, Bethania and Brunswick Street.

Table 6.2: Number of Cameras at Stations where Most Incidents Occurred, 2001-2004 (SIMS)

Station	Date	Station Cameras	Car park Cameras	Total Installation	
Indooroopilly	5/06/1997	4	0	4	4
	28/08/1997	4	0	4	8
	17/07/2001	**14**	**0**	**14**	**22**
	24/10/2002	0	0	0	22
	24/10/2002	0	0	0	22
Morayfield	29/05/1996	0	14	14	14
	14/10/1996	4	0	4	18
	28/08/2001	**10**	**6**	**16**	**34**
Bray Park	22/09/1995	3	0	3	3
	1/01/2001	-1	0	-1	2
	31/07/2001	2	0	2	4
	31/07/2001	**12**	**12**	**24**	**28**
	1/09/2002	2	0	2	30
Southbank / Vulture St	11/04/1997	4	0	4	4
	15/12/1999	1	0	1	5
	1/11/2002	0	0	0	5
	1/11/2002	**27**	**0**	**27**	**32**
Northgate	29/05/1996	0	28	28	28
	17/10/1996	5	0	5	33
	1/07/1999	-1	-28	-29	4
	13/06/2000	5	0	5	9
	12/11/2000	**20**	**27**	**47**	**56**
	15/08/2002	0	0	0	56
Central	**31/10/1996**	**40**	**0**	**40**	**40**
	28/08/1997	4	0	4	44
	2/06/1999	1	0	1	45
	15/12/1999	1	0	1	46
	30/06/2000	1	0	1	47
	1/01/2001	-4	0	-4	43
	5/11/2001	21	0	21	64
	1/09/2002	6	0	6	70
Kingston	23/06/1995	6	0	6	6
	22/05/1997	0	21	21	27
	22/05/1997	-3	0	-3	24
	28/08/2001	3	0	3	27
	1/09/2002	9	0	9	36
Caboolture	**14/10/1996**	**11**	**32**	**43**	**43**
	2/03/2000	2	0	2	45
	1/01/2001	-2	0	-2	43
	18/07/2001	7	0	7	50
	1/09/2002	3	0	3	53
	1/09/2002	3	0	3	56
Beenleigh	**22/09/1995**	**7**	**0**	**7**	**7**
	10/11/1999	**0**	**27**	**27**	**34**
	1/01/2001	1	0	1	35
	15/03/2001	3	9	12	47
	18/07/2002	0	0	0	47
	1/11/2002	2	0	2	49
Bethania	30/09/1997	4	0	4	4
	28/08/2001	**12**	**10**	**22**	**26**

Loganlea	20/02/1998	5	0	5	5
	11/01/2000	2	16	18	23
Brunswick St	**2/05/1997**	**27**	**0**	**27**	**27**
	13/09/2001	4	0	4	31

Given that Table 6.1 and 6.2 relate to stations where most incidents occurred during the post camera period (2001-2004), it was worth exploring the stations that had the most camera surveillance as these stations might be expected to have a lower number of incidents post-CCTV (Table 6.3). Several of these stations were not appropriate for the longitudinal design because they were built with CCTV (*italicised*) or did not need to be considered further as they had already been selected on the basis of having a large number of incidents and appropriate installation date (**bold**).

Table 6.3: Stations with High Levels of Camera Surveillance

Station	Date last Installed	Station Cameras	Carpark Cameras	Total Cameras
Strathpine	13/06/2001	16	28	44
Coomera *	14/11/1995	17	28	45
Nundah	1/02/2003	25	20	45
Roma St	1/07/2003	42	3	45
Nambour	1/07/2003	23	24	47
Beenleigh	**1/11/2002**	**13**	**36**	**49**
Albion	28/08/2001	23	27	50
Ipswich	3/06/2001	39	11	50
Bald Hills	14/06/2001	22	29	51
Caboolture	**1/09/2002**	**24**	**32**	**56**
Northgate	**15/08/2002**	**29**	**27**	**56**
Helensvale *	13/11/1995	18	39	57
Petrie	13/06/2001	27	31	58
Nerang *	1/07/2001	23	41	64
Central	**1/09/2002**	**70**	**0**	**70**
Robina *	*1/07/2001*	*32*	*43*	*75*

    * *Italics* indicates one-off installation
    Bold indicates that the station has already been explored above

The stations that had the largest number of cameras (excluding stations that had no pre-CCTV period and those already selected) were further explored to determine whether an appropriate intervention date could be chosen (Table 6.4, highlighted in **bold**). While some cameras were installed before or after these dates, they were selected because most cameras were introduced at this time. Stations that are shaded will allow for a three year pre- and post-CCTV comparison without too much influence from other cameras. Therefore, stations with high levels of camera coverage that have an appropriate intervention date include Petrie, Ipswich, Roma Street, Nundah and Strathpine.

Table 6.4: Stations with High Levels of Camera Surveillance – Intervention Dates

Station	Date	Station Cameras	Car park Cameras	Total Installation	
Petrie	**15/08/1995**	**4**	**22**	**26**	**26**
	1/01/2001	6	0	6	32
	13/06/2001	17	9	26	58
Bald Hills	**29/05/1996**	**0**	**24**	**24**	**24**
	16/10/1996	4	0	4	28
	17/02/1999	0	2	2	30
	21/10/1999	5	0	5	35
	2/01/2001	0	-20	-20	15
	14/06/2001	13	23	36	51
Ipswich	21/09/1995	7	0	7	7
	20/05/1998	4	0	4	11
	3/06/2001	**28**	**11**	**39**	**50**
Albion	**26/09/1996**	**4**	**22**	**26**	**26**
	25/09/1997	3	0	3	29
	28/08/2001	**16**	**5**	**21**	**50**
Nambour	**28/08/1998**	**22**	**12**	**34**	**34**
	18/05/2000	1	12	13	47
	30/08/2002	0	0	0	47
	1/07/2003	0	0	0	47
Roma St	**28/01/1996**	**24**	**0**	**24**	**24**
	15/12/1999	0	2	2	26
	1/01/2001	3	0	3	29
	21/08/2001	11	0	11	40
	1/09/2002	4	1	5	45
	1/07/2003	0	0	0	45
	1/07/2003	0	0	0	45
Nundah	**7/10/1996**	**6**	**7**	**13**	**13**
	1/02/2003	-1	0	-1	12
	1/02/2003	**20**	**13**	**33**	**45**
Strathpine	8/10/1996	4	0	4	4
	2/03/2000	2	0	2	6
	1/01/2001	-1	0	-1	5
	13/06/2001	**11**	**28**	**39**	**44**

The approach that has been adopted to select stations was based on three criteria: (i) stations had to have a statistically large number of incidents occurring during the post-CCTV period (in order to conduct analysis), and/or (ii) there was extensive camera coverage at the station and (iii) an appropriate intervention date could be chosen. Table 6.5 displays the 13 stations that have intervention dates that allowed further analysis using CRISP data along with the required time-frames. Eight of the stations have high incident levels (2001-2004) and eight have high levels of camera surveillance. Three stations (Central, Caboolture and Beenleigh) have large numbers of incidents and high levels of camera surveillance.

Table 6.5: Stations of Interest and Date Range (based on SIMS data)

Station (Intervention Date)	Reason for Inclusion	CRISP data required from	CRISP data required to
Indooroopilly (17/07/2001)	Large # incidents (2001-2004) Appropriate intervention date	1/07/1998	31/07/2004
Morayfield (28/08/2001)	Large # incidents (2001-2004) Appropriate intervention date	1/08/1998	31/08/2004
Southbank / Vulture St (1/11/2002)	Large # incidents (2001-2004) Appropriate intervention date	1/11/1999	(Most Recent)
Central (31/10/1996)	Large # incidents (2001-2004) Appropriate intervention date High level camera surveillance	1/10/1993	31/10/1999
Caboolture (14/10/1996)	Large # incidents (2001-2004) Appropriate intervention date High level camera surveillance	1/10/1993	31/10/1999
Beenleigh (22/9/1995) (10/11/1999)	Large # incidents (2001-2004) Appropriate intervention date High level camera surveillance	1/09/1992 1/11/1996	30/09/1998 30/11/2002
Bethania (28/08/2001)	Large # incidents (2001-2004) Appropriate intervention date	1/08/1998	31/08/2004
Brunswick St (02/05/1997)	Large # incidents (2001-2004) Appropriate intervention date	1/05/1994	31/05/2000
Petrie (15/08/1995)	Appropriate intervention date High level camera surveillance	1/08/1992	31/08/1998
Ipswich (3/06/2001)	Appropriate intervention date High level camera surveillance	1/06/1998	30/06/2004
Roma St (28/01/1996)	Appropriate intervention date High level camera surveillance	1/01/1993	31/01/1999
Nundah (7/10/1996) (1/02/2003)	Appropriate intervention date High level camera surveillance	1/10/1993 1/02/2000	31/10/1999 (Most Recent)
Strathpine (13/06/2001)	Appropriate intervention date High level camera surveillance	1/06/1998	30/06/2004

Methodology

Data were provided by the Queensland Police Service (QPS) in relation to offences that occurred at 13 Queensland Rail Citytrain stations. This was presented in the form of an Excel spreadsheet with the following categories: Station, Offence, Time of Day Offence Occurred, Day of the Week Offence Occurred, Month of the Year Offence Occurred, Year Offence Occurred and Count of Offences. The original data file contained information relating to 6,611 reported offences. However, 307 of these offences were removed as they occurred at stations that were not requested. These offences occurred at Bray Park Station (89 offences), East Ipswich Station (20 offences), Exhibition Station (2 offences), Holmview Station (24 offences) and Toombul Station (172 offences).

The QPS data file was restructured into several data sets (one for each station) that gave monthly offence counts. The intervention dates when CCTV was installed were different for each station, and the number of observation points was also different (Table 6.6).

Table 6.6: Summary of intervention date and data provided by Queensland Police

Station	Intervention Date	CRISP data provided from	CRISP data provided to	Number of Months	Total Offences
Indooroopilly	Aug 2001	Jan 1995	Jun 2005	126	536
Morayfield	Sep 2001	Jan 1995	Jun 2005	126	474
Southbank / Vulture St	Nov 2002	Apr 1995	Jun 2005	123	556
Central[5]	Nov 1996	Dec 1995	Jun 2005	115	278
Caboolture[6]	Oct 1996	Jan 1995	Jun 2005	126	709
Beenleigh	Nov 1999	Apr 1995	Jun 2005	123	943
Bethania	Sep 2001	Mar 1995	Jun 2005	124	351
Brunswick St	May 1997	Dec 1995	Jun 2005	115	355
Petrie[7]	Aug 1995	Jul 1995	Jun 2005	120	588
Ipswich	Jun 2001	Jun 1995	Jun 2005	121	422
Roma St[8]	Feb 1996	Jan 2002	Jun 2005	42	177
Nundah	Feb 2003	Jan 1995	Jun 2005	126	468
Strathpine	Jun 2001	Jan 1996	Jun 2005	114	447

While it was originally decided to perform time-series analyses on the different offence types at each of the 13 stations, this was not possible because of small offence counts (Table 6.7). Therefore, analyses were limited to exploring the impact of CCTV on the total number of offences occurring at each station. The impact of CCTV at four out of the 13 stations that were selected for in-depth analysis could not be examined because of non-existent or lack of pre-intervention observations. Central Station and Roma Street Station did not have any pre-intervention observations, Caboolture Station only had 12 (months) pre-intervention observations and Petrie Station only had one pre-intervention observation. SPSS ARIMA was used to determine the impact of CCTV on the total number of reported offences at the nine remaining stations. Time-series models were built based on the three steps outlined by McDowall, McClearly, Meidinger and Hay (1980).

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[5] Missing data or zero monthly counts from Jan 1996 to Jul 2001.
[6] Zero counts from February 1995 to September 1995 inclusive.
[7] Only one month pre-CCTV data.
[8] No pre-CCTV data included.

Table 6.7: Offences Occurring at Nine Queensland Rail Stations

Station	Offences Against the Person						Offences Against Property						Other Offences					Total
	Homicide[9]	Assault	Sexual Offences	Robbery	Other Offences Against the Person	Total Offences Against Person	Unlawful Entry	Handling Stolen Goods	Other Theft (excl. Unlawful Entry)	Other Property Damage	Unlawful Use of Motor Vehicle	Total Offences Against Property	Drug Offences	Liquor (excl. Drunkenness)	Trespassing and Vagrancy	Weapons Act Offences	Total Other Offences	Total offences
Beenleigh Station	0	41	2	13	4	**60**	0	13	279	308	151	**751**	76	15	16	25	**132**	**943**
Bethania Station	0	6	1	5	3	**15**	2	3	68	124	45	**242**	5	1	86	2	**94**	**351**
Brunswick St Station	0	54	5	2	9	**70**	3	11	92	76	1	**183**	55	5	27	15	**102**	**355**
Indooroopilly Station	0	20	4	11	3	**38**	4	11	62	366	5	**448**	24	2	22	2	**50**	**536**
Ipswich Station	0	35	1	8	3	**47**	3	4	115	152	19	**293**	47	5	28	2	**82**	**422**
Morayfield Station	0	20	0	10	4	**34**	3	6	149	176	82	**416**	18	2	3	1	**24**	**474**
Nundah Station	1	32	2	17	1	**53**	4	4	76	247	19	**350**	21	4	35	5	**65**	**468**
Southbank/Vulture St Station	1	95	13	14	11	**134**	1	6	123	198	13	**341**	28	14	25	14	**81**	**556**
Strathpine Station	0	27	1	5	5	**38**	1	13	128	139	73	**354**	28	4	14	9	**55**	**447**
Total									133	195			34					
	2	378	40	94	49	**563**	21	77	6	6	549	**3939**	5	69	263	82	**759**	**5261**

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[9] This does not necessarily indicate a homicide took place on QR property as the offence may have occurred in close proximity to a train station.

<p style="text-align:center">The impact of CCTV on total offences</p>

Nine time-series analyses were performed to determine the impact of CCTV on the total number of offences that occurred at the stations and were reported to police. CCTV was associated with a significant increase in total offences at five of the stations. Between one and five additional offences occurred at these stations after the introduction of CCTV. However, CCTV was found to have no significant impact of total offences at four of the stations (Morayfield, Nundah, Southbank/Vulture St and Strathpine Stations).

Beenleigh Station

The ACF plot for *total offences at Beenleigh Station* during the pre-intervention phase showed the pattern of a damped sine-wave and had spikes at lags (1) (2) and (3), indicating the presence of a higher order autoregressive component. An ARIMA (2,0,0) was specified and both parameters were significant (Table 6.8). The residuals were all within standard error limits and non-significant and there was no apparent structure when the residuals were plotted over time. The post-intervention observations were added to the model and it was significant. CCTV was associated with a slight increase in the number of reported offences. The residuals of the model were all non-significant and within standard error limits and the sequence chart showed an absence of structure.

<p style="text-align:center">Table 6.8: Parameter Estimates for Total Offences at Beenleigh Station</p>

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.34	.11	2.93	.01
AR2	.53	.12	4.61	.00
Post-intervention				
AR1	.37	.08	4.49	.00
AR2	.40	.08	4.72	.00
CCTV	5.29	2.43	2.18	.03
Model-fitting information				
Akaike's information criterion	765.86			
Schwarz's Bayesian criterion	774.29			
Likelihood ratio test	-379.93			
Residual variance	28.72			
Standard error	5.36			

Bethania Station

The ACF pattern for *total offences at Bethania Station* during the pre-intervention time period indicated the presence of an autoregressive parameter and there was a spike at lag (1). An ARIMA (1,0,0) model was specified and while the autoregressive component was significant,

its residuals had a significant spike at lag (1). The model was respecified as an ARIMA (2,0,0) and both autoregressive components were significant (Table 6.9). The intervention model was run and while the residuals were within standard error limits and non-significant, two outliers were apparent (February 2003, 12 replaced by 6; May 2004, 19 replaced by 8). Both autoregressive components remained significant in the model and CCTV was found to increase total offences. The residuals from this model were all within standard error limits and non-significant and when plotted across time had no apparent structure.

Table 6.9: Parameter Estimates for Total Offences at Bethania Station

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.48	.11	4.36	.00
AR2	.26	.11	2.31	.02
Post-intervention				
AR1	.42	.09	4.77	.00
AR2	.26	.09	2.93	.00
CCTV	3.41	.89	3.84	.00
Model-fitting information				
Akaike's information criterion	541.83			
Schwarz's Bayesian criterion	550.30			
Likelihood ratio test	-267.92			
Residual variance	4.50			
Standard error	2.12			

Brunswick Street Station

The ACF pattern for *total offences at Brunswick Street Station* during the pre-intervention time-frame indicated the presence of a low order autoregressive component so an ARIMA (1,0,0) was specified. Examination of the residuals indicated the presence of an outlier, so after mean replacement (March 1997, 8 replaced with 3) the model was re-run and found to be significant (Table 6.10). The residuals from the model were within acceptable error limits and non-significant and had no structure when plotted across time. The post-intervention observations were added to the model and CCTV was found to increase the number of offences. The residuals from the model were all within standard error limits and non-significant and approximated "white noise" when plotted over time.

Table 6.10: Parameter Estimates for Total Offences at Brunswick Street Station

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.88	.14	6.49	.00
Post-intervention				
AR1	.36	.09	4.09	.00
CCTV	3.21	.33	9.80	.00
Model-fitting information				
Akaike's information criterion	498.58			
Schwarz's Bayesian criterion	504.07			
Likelihood ratio test	-247.29			
Residual variance	4.39			
Standard error	2.10			

Indooroopilly Station

The ACF plot for *total offences at Indooroopilly Station* during the pre-intervention time-period indicated the presence of a higher order autoregressive structure and there were spikes at lags (1) and (2). An ARIMA (2,0,0) was specified and while significant, the residuals had some structure when examined over time. The model was re-run using transformed data and both parameters were significant (Table 6.11). The residuals from this model were all non-significant and lacked any identifiable pattern or structure. The intervention model was run and both autoregressive components and CCTV were significant. CCTV was associated with a slight increase in total offences. The residuals of the model were all non-significant and did not have structure when plotted over time.

Table 6.11: Parameter Estimates for Total Offences at Indooroopilly Station

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.53	.12	4.31	.00
AR2	.34	.13	2.71	.01
Post-intervention				
AR1	.52	.09	5.44	.00
AR2	.29	.09	3.04	.00
CCTV	.96	.47	2.05	.04
Model-fitting information				
Akaike's information criterion	276.65			
Schwarz's Bayesian criterion	284.80			
Likelihood ratio test	-135.32			
Residual variance	.65			
Standard error	.80			

Ipswich Station

The sequence chart examining *total offences at Ipswich Station* during the pre-intervention time-period indicated that there was an extreme outlier in March 1997 so this value was substituted with the mean of the previous and following months (19 replaced with 6). The ACF plot of the pre-intervention observations indicated the presence of a higher order autoregressive component (spike at lags 2 and 6). An ARIMA (2,0,0) model was specified and both components were significant (Table 6.12). While lag (5) was outside its standard error limits, all residuals were non-significant and they did not have structure when plotted against time. The post-intervention observations were added and CCTV was found to be associated with an increase in reported offences. The residuals of the model were all within standard error limits and non-significant and did not have structure when examined over time.

Table 6.12: Parameter Estimates for Total Offences at Ipswich Station

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.40	.10	3.79	.00
AR2	.47	.11	4.46	.00
Post-intervention				
AR1	.44	.09	5.07	.00
AR2	.33	.09	3.86	.00
CCTV	3.65	1.23	3.00	.00
Model-fitting information				
Akaike's information criterion	558.33			
Schwarz's Bayesian criterion	566.71			
Likelihood ratio test	-276.16			
Residual variance	5.73			
Standard error	2.39			

Morayfield Station

The ACF pattern for *total offences at Morayfield Station* during the pre-intervention time-period suggested that an ARIMA (1,0,0) was appropriate given its shape and the spike at lag (1). The residuals of this model had a significant spike at lag (1). The model was respecified and an ARIMA (1,0,1) was found to be the best fit for the data (Table 6.13). All residuals except lag (8) were non-significant and the residuals approximated "white noise" when plotted over time. The post-CCTV observations were added and while the autoregressive and moving average parameters remained significant, CCTV was found to have no impact on total offences. All residuals of the model were non-significant and the residuals had no structure when plotted over time.

Table 6.13: Parameter Estimates for Total Offences at Morayfield Station

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.96	.04	22.41	.00
MA1	.60	.11	5.31	.00
Post-intervention				
AR1	.99	.01	79.99	.00
MA1	.82	.06	12.97	.00
CCTV	-1.88	1.74	-1.09	.28
Model-fitting information				
Akaike's information criterion	650.27			
Schwarz's Bayesian criterion	658.78			
Likelihood ratio test	-322.14			
Residual variance	9.79			
Standard error	3.13			

Nundah Station

Examination of *total offences at Nundah Station* during the pre-intervention time-period indicated the presence of two extreme outliers and these were replaced with the mean from the previous and following months (August 2001, 34 replaced with 6; January 2002, 19 replaced with 1). An ARIMA (1,0,1) was the best fit for the data and the residuals from this model were all within standard errors, non-significant and lacked structure when plotted over time (Table 6.14). When the post-intervention observations were added to the model, the components controlling for serial dependence remained significant and CCTV was found to have no impact on reported offences. The residuals from the model were all within standard error bounds, non-significant and were randomly distributed over time.

Table 6.14: Parameter Estimates for Total Offences at Nundah Station

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.98	.02	50.05	.00
MA1	.79	.09	9.07	.00
Post-intervention				
AR1	.99	.01	136.54	.00
MA1	.88	.05	17.26	.00
CCTV	.21	1.17	.18	.86
Model-fitting information				
Akaike's information criterion	596.14			
Schwarz's Bayesian criterion	604.65			
Likelihood ratio test	-295.07			
Residual variance	6.38			
Standard error	2.53			

Southbank/Vulture Street Station

Examination of the sequence chart for *total offences at Southbank/Vulture Street Station* during the pre-intervention period showed a slight increasing trend indicating that the data needed non-seasonal differencing. The ACF had spikes at lags (1) (3) (4) (5) and (9) and the most appropriate model was an ARIMA (2,1,0). The components in this model were significant (Table 6.15) and the residuals approximated "white noise". When the post-intervention observations were added, the model needed to be respecified as several residuals were outside standard error limits or were significant. An ARIMA (3,1,0) was specified and while the higher order autoregressive components were significant, CCTV was found to have no impact on reported offences. The residuals from the respecified model were all non-significant and did not have structure when plotted over time.

Table 6.15: Parameter Estimates for Total Offences at Southbank/Vulture St Station

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	-.47	.09	-4.98	.00
AR2	-.45	.10	-4.70	.00
Post-intervention				
AR1	-.55	.09	-6.23	.00
AR2	-.49	.09	-5.37	.00
AR3	-.27	.09	-3.07	.00
CCTV	-.57	2.25	-.25	.80
Model-fitting information				
Akaike's information criterion	607.41			
Schwarz's Bayesian criterion	618.62			
Likelihood ratio test	-299.70			
Residual variance	8.19			
Standard error	2.86			

Strathpine Station

The pattern of the ACF for *total offences at Strathpine Station* during the pre-intervention period indicated the presence of an autoregressive component and there was a spike at lag (1) and (23). An ARIMA (1,0,1) was the most appropriate model as the residuals were all non-significant and lacked structure when plotted over time (Table 6.16). When the post-CCTV observations were added to the model, both components remained significant and CCTV was found to have no impact on the extent of reported offences. The residuals from the model were all non-significant and no structure was apparent when plotted over time.

Table 6.16: Parameter Estimates for Total Offences at Strathpine Station

Parameter	Estimate	SEB	T-ratio	P-value
Pre-intervention				
AR1	.99	.02	55.10	.00
MA1	.82	.09	8.87	.00
Post-intervention				
AR1	.99	.01	134.56	.00
MA1	.89	.06	16.39	.00
CCTV	.53	1.37	.39	.70
Model-fitting information				
Akaike's information criterion	592.16			
Schwarz's Bayesian criterion	600.37			
Likelihood ratio test	-293.08			
Residual variance	10.12			
Standard error	3.18			

Summary of findings

This chapter presented the findings of research that assessed the impact of introducing CCTV on the total number of offences that were reported to police occurring at nine stations. Results of time-series analyses indicated that there were between one and five additional offences occurring during the post CCTV period at five stations (Beenleigh, Bethania, Brunswick Street, Indooroopilly and Ipswich Stations). There was no change in the number of offences pre- and post- CCTV at four stations (Morayfield, Nundah, Southbank/Vulture St and Strathpine Stations). Although it appears that CCTV increases the number of offences detected, it appears to vary according to the location of train stations.

7. Discussion and Overall Conclusions

Purpose and aims of this research

The purpose of this research was to explore the use and effectiveness of CCTV as a crime prevention tool on the Gold Coast (Queensland) and the Queensland Rail (QR) Citytrain network. The three aims associated with this research were:

i)   To identify important factors relating to implementation and operation of CCTV surveillance.

ii) To evaluate whether increased implementation and use of CCTV has influenced public perceptions of privacy and civil liberties.

iii) To examine whether CCTV makes a significant and effective contribution to reducing crime and detecting offenders in both public spaces and on public rail transport.

Summary of research approach

The first aim was explored via the assessment of the operation and management of the GCSCN and QR Citytrain network (Chapter Two). This involved obtaining records and conducting site visits and interviews. An overview of the applicable geographic areas was presented as were the different CCTV system designs and operational options that had been adopted by GCSCN and QR Citytrain network. Findings from interviews with key users of the GCSCN and QR Citytrain network were undertaken to discuss adequacy of training, how suspicious behaviours are identified and the monitoring strategies employed, the quality of working relationships with external agencies and the evidentiary value of CCTV surveillance. Internal GCSCN and QR data was presented to demonstrate the types of incidents monitored, recorded or 'back searched'.

The second aim explored a range of issues associated with camera surveillance through an observational study of the GCSCN control room (Chapter Three) and surveys of the general public, business traders and rail commuters (Chapter Four). The observational study of the GCSCN investigated the general control room operational practices, the monitoring strategies adopted, why monitoring was initiated, the types of incidents surveilled and the targets of CCTV surveillance. The survey research was undertaken to ascertain the impact that CCTV has on the wider public and to gain information regarding peoples' experiences with CCTV and their perceptions relating to privacy.

The final aim of the research was explored via the impact of CCTV on recorded crime data (Chapter Five and Chapter Six). Time-series analyses were used to evaluate reported offending in Surfers Paradise and Broadbeach (areas with public space CCTV) and nine train stations with CCTV surveillance (Beenleigh, Bethania, Brunswick Street, Indooroopilly, Ipswich, Morayfield, Nundah, Southbank/Vulture St and Strathpine Stations).

Summary of findings

Findings from the observational study indicated that the effectiveness of CCTV may be very much dependent on a whole range of issues but in particular the monitoring strategies adopted by camera operators. In this regard, it is interesting to note that the majority of the GCSCN operator's shift was spent on activities other than the active searching and monitoring of surveillance targets and geographic areas. Perhaps this is inevitable given the numerous requests from police for footage material, the amount of time spent on routine surveillance that operators were required to perform and other clerical duties that were crucial to their job. However, it does raise issues regarding the difficulty of coordinating users of CCTV in multi-usage networks (i.e. the Council and the police) and whether the amount of time that operators spend actively monitoring can be increased substantially by more innovative arrangements between the camera network users.

In the observational study it was determined that most incidents captured by CCTV were highly visible behavioural incidents such as assaults rather than less visible incidents such as drug deals. This is understandable and goes some way in explaining why many of the studies of CCTV effectiveness often show only modest gains. Camera operators generally cannot see discrete behaviour (Gill and Hemming, 2004) but they can – and do, according to this research – detect highly visible anti-social or criminal behaviour. Although it was expected that most of these incidents would be initiated by the camera operators themselves, it was determined that approximately half resulted from the police requesting specific surveillance of a person or incident. The observational study also raised the issue of whether the CCTV surveillance leads to more arrests than if CCTV cameras were not present. It was calculated that 7 arrests or 14% of all arrests during the observational period resulted from the CCTV network. This may not be a large gain for an expensive CCTV system (equates to about 613 additional arrests each year) however this does not take into account the different monitoring times or any displacement that may have resulted from the camera network.

From the survey research, the majority of respondents strongly supported the use of CCTV cameras. Although CCTV surveillance was generally not considered to be an invasion of privacy, respondents did question the effectiveness of surveillance in terms of deployment of

police to an incident and whether cameras were being actively monitored. The general premise that CCTV cameras should be used to prevent crime and terrorism in Australia was supported, but again, the ability to prevent crimes from occurring, especially spontaneous, violent or alcohol/drug fuelled crime was questioned.

The introduction of CCTV in Surfers Paradise resulted in significant increases in the extent of *total offences against the person* (including assault, robbery, other offences against the person and sexual assault) and Weapons Act offences. CCTV was found to have no significant impact on *total offences, total offences against property* (including other theft (excluding unlawful entry), unlawful entry, other property damage, unlawful use of a motor vehicle and handling stolen goods) and *total other offences* (including drug offences, liquor (excluding drunkenness)) occurring in Surfers Paradise. Findings from Broadbeach indicated that CCTV had no impact on *total offences* or *total offences against property* (including other theft (excluding unlawful entry) and other property damage).

The time-series analysis of selected QR Citytrain stations suggests there were between one and five additional offences occurring during the post CCTV period at five stations (Beenleigh, Bethania, Brunswick Street, Indooroopilly and Ipswich Stations). There was no change in the number of offences pre- and post- CCTV at four stations (Morayfield, Nundah, Southbank/Vulture St and Strathpine Stations). The experienced increases in total reported offending at the five stations with the presence of camera surveillance appears to increase the proportion of victims or witnesses who report crime.

From the impact studies, it appears that CCTV is effective at *detecting* violent offending and/or may result in increased reporting but does not *prevent* any type of offending. Given the role that actively monitored CCTV was found to have in detecting incidents, one potential noteworthy area of investigation is whether the early detection of incidents via CCTV results in harm reduction. Paradoxically, CCTV was found to increase reported offending at five train stations with passive or reactive camera surveillance.

Significance of the research

The research presented in this report is noteworthy for several reasons. The research adds to what is already known internationally about the effectiveness of CCTV in specific contexts and goes some way to address the dearth of rigorous evidence-based Australian research (Wilson and Sutton, 2003). It is the first published Australian research statistically examining how CCTV is used and its impact on reported offending in public spaces and on public transport. This is particularly surprising given the large financial investments in CCTV technology. The findings of the current research will aid those that have already implemented

CCTV and those considering implementation to more clearly articulate realistic objectives that may be accomplished through the use of CCTV surveillance.

Limitations

Despite the important findings of the research, the results must be interpreted within the context of certain research and methodological limitations, limitations that are inevitable to many studies of CCTV (Welsh and Farrington, 2006). These limitations include issues relating to sampling and data collection as well as data quality and analysis.

In relation to the observational study, the observer was female in an all-male environment. Whether this influenced the control room operators' behaviours or the manner in which the observer recorded data is open to conjecture. The observer visited the control room numerous times prior to the commencement of the observational period in an effort to familiarise herself with the control room and its operations and build rapport with the operators. External consistency of the observer's notes was improved by cross-checking the control room's log book of monitored incidents (Goldbart and Hustler, 2005; Neuman, 1997). However, such limitations remain including social desirability bias with the mere presence of an observer potentially influencing the behaviour of the observed (Goold, 2004; Norris and Armstrong, 1999).

Survey sampling is also problematic (Rawnsley and Fairbairn, 2005). Gold Coast residents were selected using a probability sampling technique via a somewhat outdated electoral roll. A loss of generalisability is one consequence of imposing a systematic sampling pattern that selects every fifth or tenth name (Fink, 2006). For example, Burleigh Heads residents with last names beginning with the letter 'I' may be unrepresented in a systematic sample (n = 6) as compared to last names beginning with 'S' (n= 88). The selection of business traders to include in the research was somewhat haphazard given that the research team had no direct access to the database of businesses trading in Surfers Paradise and Broadbeach. QR commuters were also selected using a haphazard, convenience sampling procedure which can be misrepresentative of a population (Neuman, 1997). Therefore, the representativeness of the attitudes and perceptions of participants who were included in this study is not known. However given the strong and consistent themes emerging there are no apparent reasons why they would be different from their respective populations. All surveys were conducted post-intervention with the exception being Burleigh Heads residents (area without public space CCTV).

The impact studies used official police data to measure offending. The data may only represent a fraction of actual offending occurring in a particular area. Previous international

research suggests police departments may manage some incidents informally without necessarily recording the offence (Vold, Bernard and Snipes, 2001). Meticulous, or at the extreme, lackadaisical recording of offences can influence official crime rates. Relying on police data has been questioned previously with researchers suggesting the need to access various other types of data to measure the effectiveness of CCTV, such as emergency department or hospital data (see Sivarajasingam, Shepherd and Matthews, 2003). Of most concern statistically was the inability to acquire street level data and the lack of control areas for both GCSCN and QR. Due to privacy laws, this data could not be accessed. Nevertheless, it should be pointed out, especially for Surfers Paradise, that selecting a comparable control area for the public space analysis was unlikely given the uniqueness of the area and lack of variables that could be matched (i.e. number of nightclubs per area, patronage and crowd numbers, large numbers of tourists, etc). For the QR Citytrain analysis, non-existent pre-intervention periods (i.e. train stations constructed with CCTV cameras) combined with the fact that most stations had CCTV installed did not permit the inclusion of control train stations (i.e. stations without CCTV).

Implications

Privacy concerns

The threat posed by overt CCTV surveillance is debatable (Gallagher, 2004; Gras, 2004; Groombridge, 2002). There is an expectation of anonymity when frequenting public spaces and public transport (von Hirsch, 2000) with the potential for CCTV surveillance to infringe upon one's intimacy. As highlighted by Waters (1996, p.1), the "civil liberties concerns are closely related to prized community values, including freedom of assembly and movement". However, survey respondents (see Spriggs, Argomaniz, Gill and Byran, 2005) often indicate very little cause for concern when questioned about the potential for CCTV to invade one's privacy. This holds true for our research. Recent inquiries and publications relating to privacy in Australia have yet to address in any considerable detail the impact CCTV has on civil liberties (Australian Law Reform Commission, 2006; Legal and Constitutional References Committee, 2005). The attitude of "if you have nothing to hide, then you have nothing to fear from CCTV" (Sætnam, Dahl and Lomell, 2003, p. 38) seems commonplace yet cause for concern. Is the public truly informed of a CCTV system's capabilities, its limitations or the legal boundaries associated with the distribution of footage? Given the lack of dedicated legislation pertaining to the use of public space and public transport CCTV surveillance in Australia, the legal ramifications are open to conjecture. The increasing tendency to rely upon CCTV technology

"requires careful evaluation in order to offer accountability both in terms of cost efficiency and civil rights" (Norris and Wilson, 2005, p. 418).

Harm minimisation benefits of CCTV surveillance

Although the primary objective of CCTV surveillance is thought to be the prevention of personal and property crime (Welsh and Farrington, 2006), our research points more to the evidentiary value of CCTV and the possible harm minimisation associated with expeditious deployment of police to diffuse a situation. Perhaps the value of public space and public transport CCTV surveillance is reliant upon the rapid deployment of police or emergency personnel. This has previously being studied with an increase in detection of violence through the use of CCTV being associated with reduction in numbers of people treated at emergency departments (Sivarajasingam, Shepherd and Matthews, 2003). From this research it appears CCTV detects violent offending, thus the harm minimisation benefits of CCTV should not be dismissed. Early detection may facilitate the coordination of responses and such early intervention may result in a reduction of harm. Police response to incidents can be effectively directed if an open channel of communication remains with the GCSCN and QR Citytrain network as this "enhances the efficiency of the CCTV system" (Wilson, 2005, p. 48). The potential benefit of CCTV is having a "quick and effective police response" (Ratcliffe, 2006, p.27).

Benefits of collaborating with Queensland crime prevention agencies

This research attempted to present an innovative and new approach to decision-making on the implementation of crime prevention strategies by state agencies and other organisations responsible for maintaining and monitoring crime prevention. The benefits of the outcomes of this research to these agencies and end-users are significant, given the present lack of rigorous evidence-based Australian research. This research has provided an improved fundamental understanding of CCTV in public spaces and on public transport. It is also significant as it achieved two important milestones, namely, the bringing together of state and local government agencies responsible for ensuring the security of public spaces and public transport networks and the granted access to specialised Queensland Police Service crime statistics (CRISP data). The organisations represented in this collaboration have significant responsibilities in Queensland for crime prevention.

Throughout the research project, the collaborators recognised the benefits to be derived from cooperation and consultation, given the strategic commitments to security of public

spaces and public transport as well as the crime reduction and detection strategies of each organisation. Ultimately, this research:

- closely identified with the major strategic directions outlined in the Strategic Plans and Mission Statements for each collaborating industry partner,

- it strengthened and extended existing synergies and crime prevention initiatives and

- resulted in the development of expertise and knowledge of crime prevention and deterrence technologies in order to enhance capacities to secure public spaces and public transport networks for individuals and communities.

Conclusions

Rigorous process and impact evaluations are continually required in Australia regarding the installation and impact of CCTV (Welsh and Farrington, 2005). Previous research has endeavoured to explore such issues (see Goodwin, 2002; Sutherland Shire Council, 2003; Wilson and Sutton, 2003). The decision-making processes determining where and why cameras are to be installed and whether political pressure is a motivating factor should also be routinely examined. A real effort is needed by government agencies to identify and measure crime problems in specified areas prior to CCTV installation.

There is anecdotal evidence of the value of CCTV in prosecuting offenders. According to Gill and Hemming (2006, p. 36) "offenders are not put off by the presence of cameras. They argue that they can manage the risk by wearing disguises, by not looking directly at cameras, by risking that the images will not be good enough to detect them". However there is still a need to establish empirically how often this evidence is used and how successful it is. Future research is warranted and the QR footage request process discussed in Chapter Two is one possible area to explore. The effectiveness of CCTV in reducing crime is one matter. The cost effectiveness in comparison to alternative crime prevention methods (i.e. street lighting, additional police patrol or security) should also be considered.

There is potential to provide specified training in monitoring strategies to CCTV operators in certain contexts. For example, interpersonal evaluation of physical clues (i.e. deceptive facial expressions) shows promise in access-controlled facilities (i.e. airports, government buildings, etc) (see Frank, Yarbrough and Ekman, 2005). This research suggests that monitoring 'people of interest' can be improved with minimal training. An evaluation of behaviour can be problematic when viewed via CCTV footage (i.e. inability to establish a baseline), thus the utility of such training programs within the public space or public transport environment should be investigated further.

The popularity of biometrically enhanced surveillance systems is increasing (Yesil, 2006) in various contexts, including airports (Wheeler, 2005). Perhaps advances in computer-enhanced CCTV surveillance (as opposed to human visual surveillance) will identify a greater number of potential suspicious incidents (Surette, 2005). Regardless of whether an incident is detected via the human gaze or through complex algorithms computing pre-specified pixel combinations, one thing remains certain. It is what happens once an incident is detected that determines the effectiveness of CCTV. Were police or security personnel contacted? Did they respond? Did rapid deployment occur? Were offenders apprehended if required? Were injured parties treated speedily if necessitated? It is these questions that one must ask when considering the effectiveness of CCTV and whether 'new generation' surveillance is worthy of installation. Installing more cameras, 'better' cameras, in wider areas, with less active monitoring is counterproductive if expeditious deployment of police, security or emergency personnel cannot be facilitated. Thus, the working relationship between control rooms and law enforcement must always remain a priority.

This research questions the general assumption "that surveillance cameras are not only controlled and monitored constantly, but also operated effectively and efficiently" (Smith, 2004, p. 376). It is unrealistic to suggest the installation of cameras will have a major impact on crime rates unless "used as part of a strategy to tackle specific offences" (Gill and Hemming, 2006, p. 36). From our research it appears CCTV is effective at *detecting* violent crime and/or may result in increased reporting as opposed to *preventing* any type of crime.

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Appendices

Appendix 1.1: List of acronyms and abbreviations used throughout the report

ARC   Australian Research Council

CCTV   Closed Circuit Television

CMC   Crime and Misconduct Commission

CRISP   Crime Reporting Information System for Police

GCCC   Gold Coast City Council

GCSCN   Gold Coast Safety Camera Network

QPS   Queensland Police Service

QR   Queensland Rail

SIMS   Security Information Management System

SRO   Senior Research Officer

Appendix 2.1: Map of the Gold Coast, Queensland

Available from: The Gold Coast City Council website
http://www.goldcoast.qld.gov.au/t_standard.aspx?pid=615 (accessed September 30th 2006)

Appendix 2.2: Queensland Rail Citytrain network map

Available from the Citytrain website:
http://www.citytrain.com.au/stations/citytrain_maps/citytrain_maps.asp (accessed September 30th, 2006).

Appendix 2.3: GCSCN Installation Dates and Camera Coverage

Suburb	Month and Year	Cameras
Surfers Paradise	March 1999	16
	December 2000	1
	November 2002	3
	September 2003	4
	June 2004	2
	May 2004	1
	April 2004	1
	July 2004	4
	April 2005	4
	May 2005	1
	June 2005	1
	TOTAL	**38**
Southport	November 2001	8
	October 2004	1
	June 2006	2
	TOTAL	**11**
Broadbeach	May 2000	10
	July 2003	1
	February 2004	1
	July 2004	1
	June 2006	5
	TOTAL	**18**
Coolangatta	May 2000	5
	November 2005	1
	June 2006	1
	TOTAL	**7**
Gold Coast area	**OVERALL TOTAL**	**74**

Appendix 2.4: Basic floor plan of the GCSCN control room

STORAGE AREA
(OLD FILES)

MONITORS AND RECORDERS

CAMERA OPERATOR/S

CABINET

LOCKERS

FILING CABINETS

← Toilets and kitchen

Entrance to control room →

NOTICEBOARD
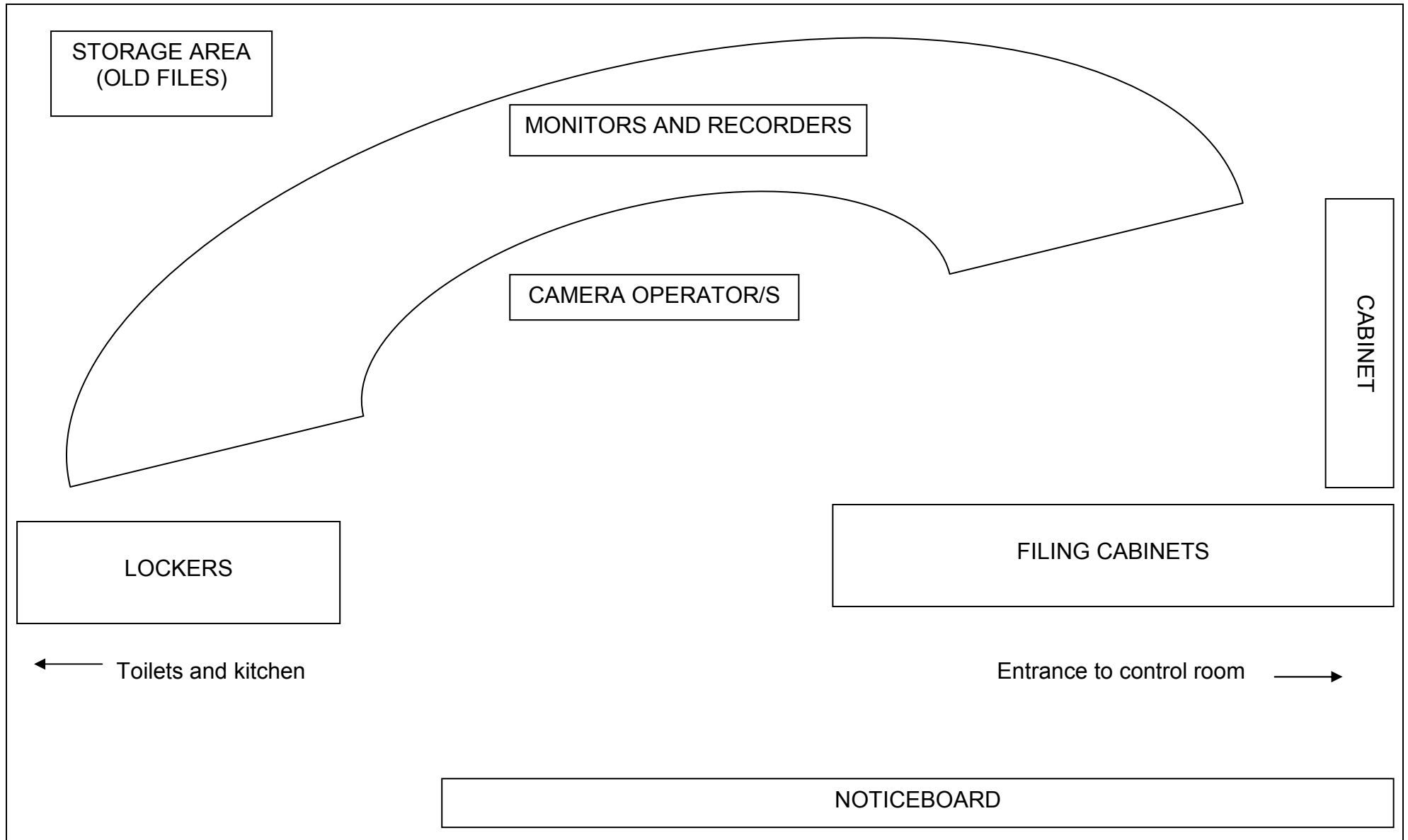
Appendix 2.5: Layout of CCTV monitors in GCSCN control room

9	

4

E

C

A

D

H

B

1

5

F

G

2

3

6

7

8
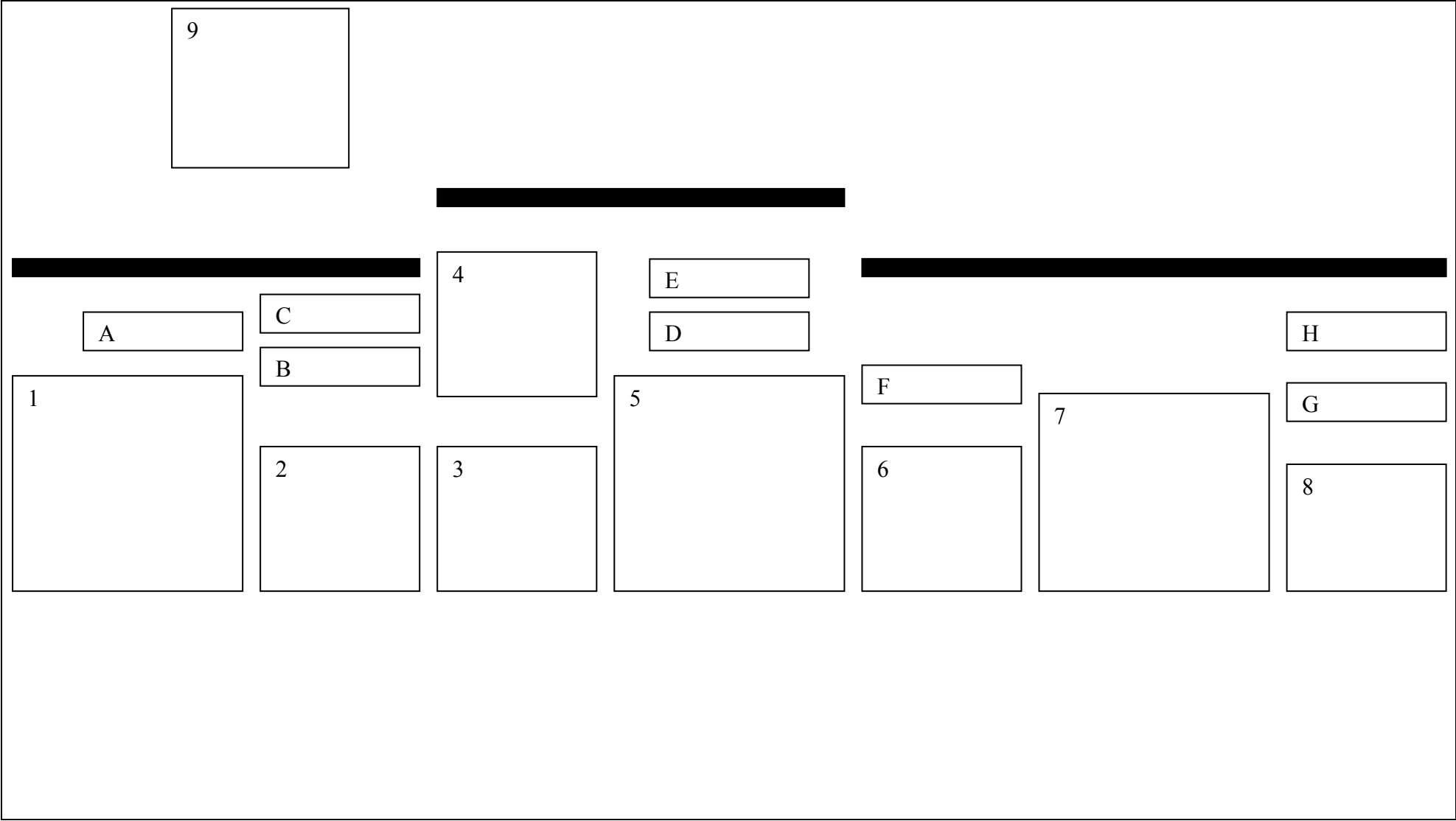
A-G: Digital Video Recorders (DVRS and VHS recorders (spot tapes)); 1-9: Monitors/screens

Appendix 2.6: Examples of Monitoring Standards of GCSCN control room

Monitoring Standard A
Surfers Paradise Beach shall not be subject to routine surveillance during daylight hours. Surveillance may occur when there is knowledge of activity that is of a criminal nature or a public safety risk, or, is supporting police activity/operations on the beach area. The vegetated areas adjacent to the beachfront will be monitored on a routine basis.

One incident was recorded that necessitated the daylight monitoring of a Surfers Paradise beach during the observational period. A lifeguard telephoned the control room to inform the operator that a male was approaching young females in a sexually inappropriate manner. Once receiving a description from the Lifeguard, the camera operator immediately notified the local police via telephone and located the male on the beach. Two police officers arrived, spoke with the male and gave him a direction to leave. The male was monitored to his vehicle to verify that he had left the area. The camera operator monitored this incident for 22 minutes using 3 separate cameras. Surveillance is deemed necessary in this particular instance as it was considered a public safety risk (i.e. Lifeguard reporting sexually inappropriate advances of a male on a public beach) and it supported the police operation to give the male a direction to leave. At no other time during the observational period was the Surfers Paradise beach routinely monitored during daylight. The Surfers Paradise beach was, however, routinely monitored at night where underage youth were known to frequently consume alcohol.

Monitoring Standard B
No person shall be targeted for surveillance unless that person;
i) has been involved in an activity or act that compromises public safety or is of a criminal nature, ii) is known to have previously and regularly committed an act that compromises public safety and is considered likely to undertake similar acts, iii) is the subject of statutory interest e.g.: appears on a police wanted list or iv) is the subject of a police operation: e.g.: surveillance for drug dealing.

On one occasion, the control room was contacted by local police to maintain vigilance as there was intelligence suggesting two males were in the area who reportedly had carried hand guns previously in public. These males were known to the control room operators and local police visited the control room and provided photographs and brief descriptive reports of the two men. Another incident involved the surveillance of the arrest of a man suspected of carrying drugs. The camera network was used to search for footage to determine whether the man in question had disposed of drugs prior to police arresting him.

Monitoring Standard C
No dwelling place such as home units or holiday lettings shall be monitored unless;
There is a specific request to do so from police personnel investigating reports of criminal or unsafe behaviour. It is during the Schoolies Festival whereby some effort will be made to detect dangerous activity such as balcony jumping/skylarking etc.

Only on one occasion was surveillance undertaken of a holiday high-rise apartment when police transmitted intelligence to the control room regarding a male threatening to jump off a balcony. Although the camera operator was using the zoom function, the incident in question could not be located due to the distance from the general surveilled areas, as well as foliage and other apartments obstructing the view.

Monitoring Standard D

Full zoom capability will not be utilised except when monitoring matters of a criminal nature or public safety risk and is required to maximise the evidentiary value of recorded video e.g.: identifying a person involved in such acts or confirming the possession of a weapon.

Full zoom capacity was used on several occasions including the identification of potential weapons (thought to be a knife in a youth's back pocket), vehicle registration at the request of police, entrance to a nightclub and the identification of a police officer as per a transmitted police radio request. On one occasion an individual was targeted and the camera was zoomed onto his face as he was making strange facial and hand gestures while walking through a mall on his own. This use of full zoom capacity was discontinued once the operator was satisfied he was not posing a risk to public safety (i.e. not on drugs, or intoxicated).

Monitoring Standard E

Continuous surveillance of a particular place shall not occur unless the need is driven by operational or police intelligence and may include the following;
Surveillance of ATMs [automatic teller machines – 'cash points']
Surveillance of the area adjacent to the entrance of a licensed venue.
An area identified by the police as a place where a criminal act is likely to occur.
Road intersections, pedestrian crossings and major pedestrian thoroughfares.

Continuous surveillance did take place during the observational period as per the control room's Manual. This included the monitoring of automatic teller machines (cash points), the monitoring of a nightclub entrance when police were evicting an intoxicated female patron, the monitoring of a street that had fire trucks outside of an apartment and surveillance of individuals thought to be involved in a previous sexual assault, as per police request.

Appendix 2.7: Interview Schedule with Coordinator of GCSCN

General
Describe your role as Coordinator of the Gold Coast Camera Safety Network.
Who is involved in the operation of CCTV (i.e. police, Council, Security Company, traders etc).
Is the control room 'owned' by the Council? Is the control room 'managed' by the Council?
How often do you renew [private security company] contracts?

The purpose and installation of cameras on the Gold Coast
What is the main purpose of CCTV on the Gold Coast?
When were cameras installed on the Gold Coast?
What type of threat assessment / risk assessment was conducted before the CCTV installation?
Were police involved in the initial discussion of introducing CCTV to the Gold Coast?

Cost and initial set up of the CCTV system
What is the total cost per annum (approx) for the control room (i.e. salaries of staff?)
What is the total cost per annum (approx) for the maintenance of camera equipment?
What is the total cost (approx) for each new camera to be installed?
What is the total cost (approx) of all equipment currently installed on the Gold Coast?
Are local businesses required to provide funding/levy to pay for the cost of CCTV? If so, explain.
The building housing the control room – was this purpose built or an existing building?
Has the level of staff remained the same or increased with the expansion of the network?

Working relationship with police
How was access to the police radio negotiated?
When was it negotiated?
Does the [manager] report to you or to [private security company]?
How often do you have meetings with the police?
Does the control room provide any paperwork/reports to the police re: CCTV?

Working conditions of operators
How long have the 12 hours shifts been in operation?
Turn over rate of control room operators?
Pay rate of operators?
Lunch break and holidays of the operators?
Expectations relating to operators constantly monitoring the cameras i.e. perform other administrative duties, have a break etc.

Recording and storage of footage
What are the rules and procedures for storing tapes in the control room?
Are they stored outside of the control room (apart from being entered as court evidence or police evidence)?
How long are tapes kept for?
How often are VHS tapes taped over (i.e. used again)?
What are the review methods used by the control room? (I.e. is it incident-only reviewing?)
Is there a separate play back system to review tapes?
Is there a certain time when tapes are reviewed or does it depend on the workload of the operators?
Do all operators have the authority to review tapes?
Analogue v digital setup – explain the process.
Is continuous recording utilised or alarm/event triggered recording?
How are video tapes archived and labelled?
With digital recording, are the files stored in JPEG format or MPEG format (hard-drive)?

Technical aspects, maintenance and camera specification
Who is responsible for the maintenance of the cameras, equipment, recording of footage etc?
Are all cameras pole mounted cameras as opposed to wall mounted?

Are existing light poles used i.e. cost-saving with the installation process plus provides lighting at night? Or are camera poles installed into the ground?

Are cameras overt or covert?

Would covert camera ever be installed?

Is it necessary for the operators to have access to the equipment? Or only for the technicians?

When considering new equipment, who do you consult for the most accurate and cost-effective advice?

How does the Gold Coast temperature and humidity effect the camera network?

Are environmentally sealed and pressured camera assemblies used?

How often is maintenance carried out?

Do the cameras or cabling need to be changed often because of environmental factors?

What is the rationale for choosing colour and/or monochrome cameras – expense, inferiority, and better description of targets/incidents?

Does the camera network use pan-tilt, zoom cameras (PTZs)? What was the reason for choosing these cameras?

Describe the picture resolution, video output, minimum illumination required, temperature and humidity and operating voltage.

Have you anticipated component failure (i.e. cabling, cameras etc) and factored this into the design of the camera network?

Lighting
What type of artificial lighting is used?

Does the system use halogen infrared illuminators?

Does the system use light-emitting diodes (LEDs)?

Is this based on cost effectiveness?

Aesthetic considerations?

Does the lighting inhibit the functioning of the cameras?

Does lighting effect the quality of the footage, digital prints of suspects/targets?

Were light meters used to analyse light levels in existing public spaces before the cameras were installed?

Day/night cameras (that switch to black and white for clearer images) – were these considered by the Council?

Security of the CCTV control room
Who is permitted into the control room?

Are all police supposed to sign into the visitor's log book?

When was the CCTV camera outside the entrance to the building introduced?

What is the reason for not revealing to the public the location of the control room?

Code of Practice and legislative issues
Does the control room have a code of practice?

Are you currently in the process of creating a new code of practice?

Will you take into account the new national code of practice that the COAG is developing?

Are you required by law to have CCTV signs?

Explain legislative/policy issues.

Appendix 2.8: Gold Coast Safety Camera Network – camera operator interviews

Interviewer: _____   Date: _____
Operator (Code): _____   Start time: _____
Location: _____   End time: _____

_____

EXPERIENCE AND TRAINING

How long have you worked at the GCCC control room?
Start date: _____   ☐ Full time   ☐ Part time
Regular shifts:_____ (i.e. night/day, weekday/weekend)

Was it a prerequisite of this job to have had experience with CCTV?
☐ Yes   ☐ No   ☐ Don't know

Have you worked with CCTV before?   ☐ Yes   ☐ No
When, how long for, similar to GCCC control room, easy to adjust to new setting

Explain your employment/education background prior to commencing at GCCC control room

Is there a CODE OF PRACTICE you must follow? ☐ Yes   ☐ No   ☐ Don't know

Does the control room have a copy?   ☐ Yes   ☐ No   ☐ Don't know

Have you received any training for your job?   ☐ Yes   ☐ No

Explain the training have you received
Is it ongoing, duration, who carried it out, regard it as useful, etc

OPERATIONAL BEHAVIOUR

How many cameras are monitored by you on a regular shift?   _____

What tasks do you carry out during a regular shift?
Monitor screens, log incidents, make/receive phone calls, etc

How long do you feel you can monitor a screen effectively before you need to take a break from viewing the images?
Type of break (i.e. coffee break, or perform other task)

How do you feel about the equipment used in the control room?
Easy/hard to use, advantages/disadvantages with the system, new/old, etc

When you are viewing a monitor/s, what are you looking for?
Have you been trained to look for certain things, particular events, a "gut feeling" etc

Is there predetermined criteria (established by GCCC) to monitor the cameras?
Explain   ☐ Yes   ☐ No
Certain clothes, behaving in a certain manner, carrying particular objects, groups of people etc

Are there any guidelines/criteria established from external agencies or the police?
Explain   ☐ Yes   ☐ No   ☐ Don't know

What attracts your attention when you are monitoring the screens?
Sudden movement, people running etc

Do you have your own "method/routine" of surveillance or criteria for monitoring?
"Gut feeling", past experiences, past training, "random" monitoring, "hot spots", certain streets

Does surveillance depend on different times of the day (i.e. day/night)? Why?
Certain cameras, certain areas

Does surveillance depend on different periods of the year? Why?
I.e. Schoolies, New Years Eve, Surf Carnivals, Indy, other "big events", etc

Depending on the time of day, are certain behaviours viewed as suspicious? Give examples

Are the CCTV cameras used to monitor activity besides criminal incidents? Explain
I.e. Armaguard at ATM   ☐ Yes   ☐ No   ☐ Don't know

Do you ever need to prioritise incidents due to "busy" periods (i.e. large amount of people) or lack
of staff? Explain and give examples   ☐ Yes   ☐ No   ☐ Don't know

Explain the response time from you viewing an incident to action being taken by you

Would you describe this particular control room as "reactive" surveillance, "proactive"
surveillance, or a combination of the two?

ATTITUDES TO CCTV AND WORK PLACE

What do you believe is the purpose of CCTV on the Gold Coast?

Do you think it achieves this purpose?   ☐ Yes   ☐ No   ☐ Don't know
How so?

What would you consider to be a "good" day at your job? And a "bad" day at your job?

Is there anything that would improve/enhance your working conditions? If so, what?

EXTERNAL AGENCIES AND WORKING RELATIONSHIPS

Explain the contact you have with police
Police radio, telephone, visiting control room (how often, why) etc

Do you receive direct requests from police to monitor specific incidents?
                                                ☐ Yes   ☐ No   ☐ Don't know

Explain the process involved in this request
Is it logged, require supervisor's authority, etc

Explain the process of reporting an incident to police
Ie. Contact by telephone, guiding them to scene etc

Do you usually get an immediate response from the police when you make contact with them regarding a possible incident?
Explain and give examples

Have there been situations when the police were contacted but did not respond, or there was a significant delay?
Explore fully, examples, what happened as a result of this delay/lack of response etc

Overall, how would you describe the working relationship between GCCC Control Room and Police? *Explain selection*
☐ Very satisfied   _____
☐ Satisfied   _____
☐ Neutral   _____
☐ Dissatisfied   _____
☐ Very dissatisfied   _____

Do you come into contact with external agencies?   ☐ Yes   ☐ No   ☐ Don't know

What external agencies and what is the nature of this contact?

How would you view your working relationship with these agencies?
Specify each, whether good/poor, feel respected/valued

Are there any schemes/programs that you are aware of that involve cooperation between GCCC control room operators and external agencies?   ☐ Yes   ☐ No   ☐ Don't know
Explain these schemes/programs if applicable

To your knowledge, has CCTV footage ever been used in a court as evidence (i.e. not only requested by police but actually used)   ☐ Yes   ☐ No   ☐ Don't know

OTHER COMMENTS

_____
_____
_____
_____
_____
_____

INTERVIEWER - SIGN AND DATE: _____

Appendix 2.9: Gold Coast Safety Camera Network – control room supervisor

Interviewer: _____ Date: _____
Manager/s (Code): _____ Start time: _____
Location: _____ End time: _____

_____

EXPERIENCE AND TRAINING

How long have you worked at the GCCC control room?
Start date: _____ ☐ Full time ☐ Part time
As a manager: _____
Regular shifts:_____ (i.e. night/day, weekday/weekend)

Was it a prerequisite of this job to have had experience with CCTV?
☐ Yes ☐ No ☐ Don't know

Have you worked with CCTV before? ☐ Yes ☐ No
When, how long for, similar to GCCC control room, easy to adjust to new setting

Explain your employment/education background prior to commencing at GCCC control room

Is there a CODE OF PRACTICE you must follow? ☐ Yes ☐ No ☐ Don't know

Does the control room have a copy? ☐ Yes ☐ No ☐ Don't know

Have you received any training for your job? ☐ Yes ☐ No

Explain the training you have received
Is it ongoing, duration, who carried it out, regard it as useful, etc

Explain the training the operators have received
Is it ongoing, duration, is management in charge of determining type of training, etc

What feedback, if any, have you received from the operators regarding the training?
Too much, not enough, too infrequent, proactive / reactive, beneficial, etc

OPERATIONAL BEHAVIOUR

How many cameras are monitored by operators on a regular shift? _____

What tasks do you carry out during a regular shift?
Rosters, log incidents, write up reports, meetings, etc

What tasks do operators carry out during a regular shift?
Monitor screens, log incidents, make/receive phone calls, etc

How long do you feel you can monitor a screen effectively before you need to take a break from viewing the images?
Type of break (i.e. coffee break, or perform other task – i.e. log incidents)

How long do you feel operators can monitor a screen effectively before they need to take a break from viewing the images?
Type of break (i.e. coffee break, or perform other task – i.e. log incidents)

How do you feel about the equipment used in the control room?
Easy/hard to use, advantages/disadvantages with the system, new/old, etc

When operators (including you) are viewing a monitor/s, what are you/they looking for?
I.e. trained to look for certain things, particular events, a "gut feeling" etc

Is there predetermined criteria (established by GCCC) to monitor the cameras?
Explain   ☐ Yes   ☐ No
Certain clothes, behaving in a certain manner, carrying particular objects, groups of people etc

Are there any guidelines/criteria established from external agencies or the police?
Explain   ☐ Yes   ☐ No   ☐ Don't know

What attracts your attention when you are monitoring the screens?
Sudden movement, people running etc

Do you have your own "method/routine" of surveillance or criteria for monitoring?
"Gut feeling", past experiences, past training, "random" monitoring, "hot spots", certain streets

Does each of the operators have their own "method/routine" of surveillance or criteria for monitoring?
"Gut feeling", past experiences, past training, "random" monitoring, "hot spots", certain streets

Does surveillance depend on different times of the day (i.e. day/night)? Why?
Certain cameras, certain areas

Does surveillance depend on different periods of the year? Why?
I.e. Schoolies, New Years Eve, Surf Carnivals, Indy, other "big events", etc

Depending on the time of day, are certain behaviours viewed as suspicious? Give examples

Are the CCTV cameras used to monitor activity besides criminal incidents? Explain
I.e. Armaguard at ATM   ☐ Yes   ☐ No   ☐ Don't know

Do you ever need to prioritise incidents due to "busy" periods (i.e. large amount of people) or lack of staff? Explain and give examples   ☐ Yes   ☐ No   ☐ Don't know

Explain the response time from an operator (or you) viewing an incident to action being taken by operators (or you)

What type of record/paper work is kept in relation to correspondence between the police and control room? (i.e. request for tape forms, logging of conversations etc)

ATTITUDES TO CCTV AND WORK PLACE

What do you believe is the purpose of CCTV on the Gold Coast?

Do you think it achieves this purpose?   ☐ Yes   ☐ No   ☐ Don't know

How so?

What would you consider to be a "good" day at your job? And a "bad" day at your job?

Is there anything that would improve/enhance your working conditions? If so, what?

Would you describe this particular control room as "reactive" surveillance, "proactive" surveillance, or a combination of the two?

EXTERNAL AGENCIES AND WORKING RELATIONSHIPS

Explain the contact you and your operators have with police
Police radio, telephone, visiting control room (how often, why) etc

Do you receive direct requests from police to monitor specific incidents?
☐ Yes ☐ No ☐ Don't know

Explain the process involved in this request
Is it logged, requires management authority, etc

Explain the process of reporting an incident to police
I.e. Contact by telephone, guiding them to scene etc

Do you and your operators usually get an immediate response from the police when you make contact with them regarding a possible incident?
Explain and give examples

Have there been situations when the police were contacted but did not respond, or there was a significant delay?
Explore fully, examples, what happened as a result of this delay/lack of response etc

Overall, how would you describe the working relationship between GCCC Control Room and Police? *Explain selection*
☐ Very satisfied _____
☐ Satisfied _____
☐ Neutral _____
☐ Dissatisfied _____
☐ Very dissatisfied _____

Do you come into contact with external agencies? ☐ Yes ☐ No ☐ Don't know

What external agencies and what is the nature of this contact?

How would you view your working relationship with these agencies?
Specify each, whether good/poor, feel respected/valued

Are there any schemes/programs that you are aware of that involve cooperation between GCCC control room operators and external agencies? ☐ Yes ☐ No ☐ Don't know
Explain these schemes/programs if applicable

To your knowledge, has CCTV footage ever been used in a court as evidence (i.e. not only requested by police but actually used)　　　□ Yes　　　□ No　　　□ Don't know

TECHNICAL SPECIFICATIONS

QUALITY
Explain the quality of the CCTV footage in the control room
What resolution, what compression, how many pictures per second, etc?

STORAGE
Explain what footage is kept and how it is kept?
Are the pictures/footage stored appropriately (i.e. to prevent unauthorised tampering, as per legal codes/Acts etc)
I.e. are recorded pictures retained in a secure environment, any electronic access required (i.e. passwords), how many days are they stored electronically/digitally or in "hardcopy" format?

EXPORT
How much video can the system export and in what format?
Replay and exportation of recordings, manual available to help operators, exported in a format of the same quality, etc

PLAYBACK
Can the pictures be easily viewed?
Explain the process and any difficulties associated with this, can it be easily viewed by third parties

OTHER COMMENTS

_____
_____
_____
_____
_____
_____
_____

INTERVIEWER - SIGN AND DATE:　　　_____

Appendix 2.10: Interview schedule with Officer-in-Charge (QPS)

- Does the Surfers Paradise Police Beat have CCTV monitor/s that can be viewed by police officers?
- How many monitors/screens are in the Surfers Paradise Police Beat?
- Can police officers manually change the monitors?
- What location/s in Surfers Paradise is usually being monitored by CCTV?
- What reason/s is there for Surfers Paradise police officers to be viewing CCTV footage from the Police Beat?
- What reason/s is there for Surfers Paradise police officers to be viewing CCTV footage from the GCCC Control Room?
- How often would you/staff view CCTV footage (if at all) at Surfers Paradise Police Beat or at the GCCC Control Room?
- Depending on the time of day, are certain behaviours viewed as suspicious?
- Do you make GCCC control room operators aware of these "behaviours", i.e. have you/staff asked them to keep this in mind when they are monitoring?
- Does CCTV surveillance depend on different times of the day (i.e. day/night)?
- Are there any guidelines/criteria established by the Surfers Paradise Police Beat that GCCC control room adheres to or keeps in mind when monitoring?
- Do GCCC control room operators have predetermined guidelines or protocols for CCTV monitoring that you are aware of?
- Does the Surfers Paradise Police Beat need to prioritise calls from GCCC control room operators due to "busy" periods?
- Explain the response process from you/staff viewing an incident or being informed of an incident (by GCCC control room), to action being taken by you/staff
- Explain the process from you/staff becoming aware of an incident (that needs to be monitored and/or recorded) to informing the GCCC control room operators
- Are the CCTV cameras used to monitor activity besides criminal incidents?
- To your knowledge, has CCTV footage ever been used in a court as evidence (i.e. not only requested by police from Surfers Paradise but actually used)
- What type of incidents (without given specific case examples)?
- Have you/staff ever had to make a request for CCTV footage? Explain this request process
- Depending upon the type of incident/request, what is the time frame between requesting footage and receiving the hardcopy?
- What is the purpose of CCTV in Surfers Paradise?
- What is your overall perception of CCTV in relation to your work as a police officer in Surfers Paradise?
- How does CCTV benefit your/staff job? How does CCTV hinder your/staff job?
- Explain the contact you/staff have with GCCC control room and the operators
- How often would you/staff visit the GCCC control room and for what reason/s?
- Do you/staff receive direct requests from GCCC control room operators to respond to specific incidents?
- What type of incidents are these usually?
- Do you ever need to request the GCCC control room to monitor a particular incident?
- What is the process of informing GCCC control room to monitor a particular incident?
- Do you/staff give GCCC control room operators a reason as to why they need to monitor a particular incident?
- Do you usually get an immediate response from the GCCC control room when you/staff make contact with them regarding a possible incident to monitor?
- Have there been situations when the GCCC control room operators were contacted but did not respond, or there was a significant delay?
- Overall, how would you describe the working relationship between GCCC control room and the Surfers Paradise Police Beat?
- How long have you worked at the Police Beat? What are your regular shift patterns?

- Is this on a full-time or part-time basis?
- How long have you worked in the Queensland Police Service?
- Have you had any experiences with CCTV prior to working at the Surfers Paradise Police Beat?
- Was this as a CCTV operator? As a police officer in an area under local CCTV surveillance?
- Please explain your previous experience with CCTV, if applicable.
- What are your experiences with CCTV as a police officer at the Surfers Paradise Police Beat?
- Does your role require you to have any knowledge of how CCTV operates (i.e. how footage is recorded and stored, how to change between cameras, how to zoom in and out, etc)?

Appendix 2.11: Queensland Rail Station Staff Interview

Interviewer: _____   Date: _____
Station Staff (Code): _____   Start time: _____
Location: _____   End time: _____

_____

EXPERIENCE AND TRAINING

How long have you worked at this station?
Start date: _____   ☐ Full time   ☐ Part time
Regular shifts:_____ (i.e. night/day, weekday/weekend)

Was it a prerequisite of this job to have had experience with CCTV?
☐ Yes   ☐ No   ☐ Don't know

Have you worked with CCTV before?   ☐ Yes   ☐ No
When, how long for, easy to adjust to new setting

Explain your employment/education background prior to commencing at Queensland Rail

Have you received any training for your job?   ☐ Yes   ☐ No   ☐ Don't know

Explain the training have you received
Is it ongoing, duration, who carried it out, regard it as useful, etc

OPERATIONAL BEHAVIOUR

How many cameras are at this station? (Including the station car park if applicable)

Does the train station have access to these images? ☐ Yes   ☐ No   ☐ Don't know

Are you required to monitor the CCTV footage?   ☐ Yes   ☐ No   ☐ Don't know

If so, how many cameras are monitored by you on a regular shift?   _____

Can you manually change the images of the CCTV monitor? Or is this controlled by Mayne control room?   ☐ Yes   ☐ No   ☐ Don't know

Does this train station communicate regularly with Mayne control room?
☐ Yes   ☐ No   ☐ Don't know

Does Mayne control room ever inform you of incidents that have occurred at this train station?
I.e. CCTV camera vandalised, graffiti, etc   ☐ Yes   ☐ No   ☐ Don't know

What tasks do you carry out during a regular shift?
Ticket sales, make/receive phone calls, customer queries etc

If you do view a monitor/s, what are you looking for?
Have you been trained to look for certain things, particular events, a "gut feeling" etc

Is there predetermined criteria (established by QR) to monitor the cameras?
Explain   ☐ Yes   ☐ No
Certain clothes, behaving in a certain manner, carrying particular objects, groups of people etc

What attracts your attention when you are monitoring the screens?
Sudden movement, people running etc

Depending on the time of day, are certain behaviours viewed as suspicious? Give examples

ATTITUDES TO CCTV AND WORK PLACE

What is the purpose of CCTV on Queensland Rail?

Do you think it achieves this purpose?   ☐ Yes   ☐ No   ☐ Don't know
How so?

What would you consider to be a "good" day at your job? And a "bad" day at your job?

Is there anything that would improve/enhance your working conditions? If so, what?

Does CCTV make a difference to how you work as a Queensland Rail employee?
Explain – i.e. feel safe knowing images are recorded when walking to car, if threatened by a customer, etc)   ☐ Yes   ☐ No   ☐ Don't know

EXTERNAL AGENCIES AND WORKING RELATIONSHIPS

Do you receive direct communication from police about specific incidents? *(i.e. they call the station to inform you of a suspected thief in the area etc)*
                                                     ☐ Yes   ☐ No   ☐ Don't know

Explain the contact (if any) you have with police
do you monitor the station platforms using CCTV, do you immediately contact police if you locate target, do you inform your relevant supervisor etc

Explain the process of reporting an incident *(i.e. a person vandalising a train station, assaulting a station officer etc)*
Do you contact police, Mayne Control or both? Expand

Do you usually get an immediate response from Mayne Control Room when you make contact with them regarding a possible incident?
Explain and give examples

Do you usually get an immediate response from the police when you make contact with them regarding a possible incident?
Explain and give examples

Have there been situations when the police were contacted but did not respond, or there was a significant delay?
Explore fully, examples, what happened as a result of this delay/lack of response etc

To your knowledge, has CCTV footage from this station ever been used in a court as evidence (i.e. not only requested by police but actually used)   ☐ Yes   ☐ No   ☐ Don't know

Appendix 2.12: Queensland Rail CCTV Analysts/ Coordinator Interview

Interviewer: _____ Date: _____
Analysts (Code): _____ Start time: _____
Location: _____ End time: _____

EXPERIENCE AND TRAINING

How long have you worked at QR as a CCTV analyst?
Start date: _____ ☐ Full time ☐ Part time
Regular shifts:_____ (i.e. night/day, weekday/weekend)

Have you worked in any other section of QR previous to this CCTV analyst position?
☐ Yes ☐ No ☐ Don't know
Was it a prerequisite of this job to have had experience with CCTV?
☐ Yes ☐ No ☐ Don't know

Have you worked with CCTV before? ☐ Yes ☐ No
When, how long for, similar to QR, easy to adjust to new setting

Explain your employment/education background prior to commencing your current job

Is there a CODE OF PRACTICE you must follow? ☐ Yes ☐ No ☐ Don't know

Do you have access to a copy? ☐ Yes ☐ No ☐ Don't know

Have you received any training for your job? ☐ Yes ☐ No

Explain the training have you received
Is it ongoing, duration, who carried it out, regard it as useful, etc

EXTERNAL AGENCIES AND WORKING RELATIONSHIPS

Explain the contact you have with police
Police requests for footage etc (how often, why) etc

Do you receive direct requests from police to monitor specific incidents?
☐ Yes ☐ No ☐ Don't know

How often would you receive a direct request from police to view CCTV footage?
☐ once a day ☐ 2 – 6 times per week ☐ once a week ☐ once a fortnight
☐ once a month ☐ never ☐ other (please specify)

Explain the process involved in this request
Is it logged, require supervisor's authority, etc

Explain the process of reporting an incident/individual to police (i.e. once located)
I.e. Contact by telephone, paperwork, fax, email etc

What type of paper work/forms do you need to fill in (i.e. chain of evidence?)

Overall, how would you describe the working relationship between CCTV analysts and Police?
Explain selection
☐ Very satisfied   _____
☐ Satisfied   _____
☐ Neutral   _____
☐ Dissatisfied   _____
☐ Very dissatisfied   _____

Do you come into contact with external agencies?   ☐ Yes   ☐ No   ☐ Don't know

What external agencies and what is the nature of this contact?

How would you view your working relationship with these agencies?
Specify each, whether good/poor, feel respected/valued

To your knowledge, has CCTV footage ever been used in a court as evidence (i.e. not only requested by police but actually used)   ☐ Yes   ☐ No   ☐ Don't know

OPERATIONAL BEHAVIOUR

What tasks do you carry out during a regular shift?
View CCTV footage, receive requests from police, make/receive phone calls, etc

In your role as a CCTV Analyst would you describe your monitoring of the footage as reactive or proactive? *Expand*   ☐ Yes   ☐ No   ☐ Both

How many hours per day/shift would you be viewing CCTV footage?
Explore – real time, fast forwarding, changing between cameras/tapes etc

How long do you feel you can monitor a screen effectively before you need to take a break from viewing the images?
Type of break (i.e. coffee break, or perform other task)

How do you feel about the equipment used to record, monitor and store CCTV footage?
Easy/hard to use, advantages/disadvantages with the system, new/old, etc

When you are viewing a monitor/s, what are you looking for?
Looking for a particular individual as per police description, particular events etc

Are there any guidelines/criteria established from external agencies or the police?
*Explain – look for particular individual, certain time period, only camera * and *, etc*
                                   ☐ Yes   ☐ No   ☐ Don't know
What attracts your attention when you are monitoring the screens?
The individual/event you are trying to locate (i.e. symbol on a shirt, bag left unattended) etc

Does each of the CCTV analysts have their own "method/routine" of surveillance or criteria for monitoring?
Past experiences, past training, "random" monitoring, what police have requested, certain stations

Depending on the time of day, are certain behaviours viewed as suspicious? Give examples

Do you receive requests to monitor/view footage of activity besides criminal incidents?

Explain   ☐ Yes   ☐ No   ☐ Don't know

Do you ever have a "backlog" of requests to monitor footage?
Explain and give examples   ☐ Yes   ☐ No   ☐ Don't know

Are requests processed on a "date received" basis or "priority basis"?
I.e. recent sexual assault, graffiti etc

ATTITUDES TO CCTV AND WORK PLACE

What is the purpose of CCTV on Queensland Rail?

Do you think it achieves this purpose?   ☐ Yes   ☐ No   ☐ Don't know
How so?

What would you consider to be a "good" day at your job? And a "bad" day at your job?

Is there anything that would improve/enhance your working conditions? If so, what?

Appendix 2.13: Incident Categories and Sub-Categories, QR Citytrain (2001-2004)*

Category	Sub-Category	Frequency	Percent	Valid Percent
Assault	Armed causing fear/alarm	18	1.3	1.4
N=1,138	Assault Common	232	17.4	17.4
	Assault Occasioning Bodily Harm	16	1.2	1.2
	Assault Passenger	565	42.3	42.4
	Assault Police	6	.4	.5
	Assault QR Employee	425	31.8	31.9
	Assault Serious	12	.9	.9
	Deprivation of Liberty	2	.1	.2
	Grievous Bodily Harm	6	.4	.5
	Ill-Treatment of Children	2	.1	.2
	Indecent Assault on Adult	12	.9	.9
	Indecent Treatment of Child	3	.2	.2
	Rape	2	.1	.2
	Stalking	17	1.3	1.3
	Wounding	15	1.1	1.1
	Total	1333	99.9	100.0
	Missing	2	.1	
	Total	**1335**	**100.0**	
Drug & Alcohol	Drugs Offence	85	4.7	4.7
N=1,699	Drugs Possession and/or use	156	8.6	8.6
	Drunk and Disorderly	269	14.9	14.9
	Liquor Consumed Public Place	326	18.1	18.1
	Liquor Offences by Minor	24	1.3	1.3
	Needle Stick	21	1.2	1.2
	Needles Found	195	10.8	10.8
	Possession Drug Use Instrument	17	.9	.9
	Substance Abuse	711	39.4	39.4
	Total	**1804**	**100.0**	100.0
Fare Evasion	Fare Evasion	658	100.0	100.0
N=642	**Total**	**658**	**100.0**	
Good Order	Bomb Threat	28	.2	.2
N=12,761	Consume Food/Drink on Train	31	.2	.2
	Cracked Window	1	.0	.0
	Crossing Tracks	2728	15.0	15.0
	Disobey move on Direction	122	.7	.7
	Disorderly Conduct	2937	16.2	16.2
	Endanger Life on Railway	197	1.1	1.1
	Fatality	12	.1	.1
	Feet on Seats	15	.1	.1
	Improper entry/exit	179	1.0	1.0
	Indecent Behaviour	398	2.2	2.2
	Language Obscene	580	3.2	3.2
	Laser Light	48	.3	.3
	Nuisance	29	.2	.2
	Object in Path	1271	7.0	7.0
	Objects Thrown	447	2.5	2.5
	Other Offence	2068	11.4	11.4
	Outriding	252	1.4	1.4
	Person Nearly Struck	116	.6	.6
	Person Struck	25	.1	.1
	Possess Dangerous Article	79	.4	.4
	Resist Arrest	1	.0	.0
	Smoking on Enclosed Platform	103	.6	.6
	Smoking on Train	86	.5	.5

	Suicide	21	.1	.1
	Suicide Tendency	439	2.4	2.4
	Suspect Activity	461	2.5	2.5
	Trespass/Unlawfully on Premises	5396	29.7	29.8
	Willful Obscene Exposure	60	.3	.3
	Total	18130	99.9	100.0
	Missing	11	.1	
	Total	**18141**	**100.0**	
Graffiti N=26,257	Graffiti	9692	35.9	94.1
	Materials Other	43	.2	.4
	Obscene	203	.8	2.0
	Possession Graffiti Instrument	43	.2	.4
	Shoe Polish	1	.0	.0
	Spray Paint	195	.7	1.9
	Texter Pen	126	.5	1.2
	Total	10303	38.2	100.0
	Missing	16699	61.8	
	Total	**27002**	**100.0**	
Motor Vehicle N=961	Arson Vehicle	10	1.0	1.0
	Motor Vehicle - Steal, unlawfully use	257	25.4	25.4
	Motor Vehicle, B&E with Intent	395	39.1	39.1
	Other Offence - Motor Vehicle	184	18.2	18.2
	Steal from Motor Vehicle	164	16.2	16.2
	Total	1010	99.9	100.0
	Missing	1	.1	
	Total	**1011**	**100.0**	
Property Damage N=12,200	Arson - Building/Structure	20	.1	.4
	Cracked Window	711	5.3	15.0
	Lights Out	54	.4	1.1
	Objects Thrown	1101	8.2	23.3
	QR Residence	10	.1	.2
	Willful Damage	2725	20.3	57.7
	Willful Damage by Fire	104	.8	2.2
	Total	4725	35.2	100.0
	Missing	8713	64.8	
	Total	**13438**	**100.0**	
Stealing N=1,070	B&E TVM	66	5.6	5.8
	Bicycle - Steal, unlawfully use	251	21.3	22.0
	Burglary with Breaking	19	1.6	1.7
	Damage Property Intent Steal	13	1.1	1.1
	Dwelling House	5	.4	.4
	Other Premises, B&E	29	2.5	2.5
	Possession Property Susp. Stolen	19	1.6	1.7
	Robbery Unarmed in Comp.	7	.6	.6
	Robbery, Armed	13	1.1	1.1
	Robbery, Unarmed	20	1.7	1.8
	Shop, B&E	3	.3	.3
	Stealing - Other	366	31.0	32.1
	Stealing from the Person	329	27.9	28.9
	Total	1140	96.5	100.0
	Missing	41	3.5	
	Total	**1181**	**100.0**	

*SIMS is an internal QR database and was used as an indicative tool in addition to police recorded crime data

Appendix 3.1: Observational schedule of the GCSCN control room

Date (2005)	Day	Time	Day/Night	Hours
27th September	Tuesday	10:00-11:30	Day	1.5
29th September	Thursday	19:00-22:00	Night	3.0
6th October	Thursday	22:00-23:59	Night	2.0
7th October	Friday	24:00-04:00	Night	4.0
7th October	Friday	22:00-23:59	Night	2.0
8th October	Saturday	24:00-03:00	Night	3.0
18th October	Tuesday	09:30-15:30	Day	6.0
19th October	Wednesday	14:30-18:00	Day	3.5
20th October	Thursday	18:30-23:30	Night	5.0
21st October	Friday	22:30-23:59	Night	1.5
22nd October	Saturday	24:00-06:00	Night	6.0
22nd October	Saturday	19:30-23:59	Night	4.5
23rd October	Sunday	16:30-23:30	Night	7.0
3rd November	Thursday	18:00-22:00	Night	4.0
18th November	Friday	20:00-23:59	Night	4.0
19th November	Saturday	22:00-23:59	Night	2.0
24th November	Thursday	21:00-23:30	Night	2.5
25th November	Friday	18:30-22:30	Night	4.0
26th November	Saturday	22:15-23:59	Night	1.75
27th November	Sunday	24:00-00:45	Night	0.75
12th December	Monday	07:00-11:30	Day	4.5
14th December	Wednesday	06:45-13:15	Day	6.5
15th December	Thursday	07:00-12:00	Day	5.0
16th December	Friday	17:10-19:10	Night	2.0
19th December	Monday	16:30-20:30	Night	4.0
20th December	Tuesday	10:00-16:00	Day	6.0
22nd December	Thursday	13:15-17:15	Day	4.0
TOTAL OBSERVATIONAL PERIOD **37 hours (day), 63 hours (night)**				**100**

Bond University (along with the Gold Coast City Council) is carrying out an anonymous survey of people living in the Burleigh Heads area, about their experiences of crime and opinions of Closed Circuit Television (CCTV). We would appreciate if one member of the household could fill in this survey. The survey will take approximately 15 minutes. All the information collected is anonymous and the results will <u>not</u> identify individuals. Only people over the age of 18 should complete this survey.

Prior to this survey, were you aware CCTV cameras are operating on the Gold Coast?

Yes, I was aware ☐

No, I was not aware ☐

Can you specify where these cameras are located? (i.e. street names or places of interest)?

I didn't know about the cameras until this survey ☐

I know about the cameras but can't remember where they are ☐

Yes, I know where the cameras are located (tick and write in) ☐

_____

_____

How did you get to know about these cameras? (Tick all that apply)

I wasn't aware of the cameras	☐	Saw the signs	☐
Local newspaper	☐	Local television	☐
Local newsletter	☐	Saw the camera poles	☐
Saw the cameras	☐	Word of mouth	☐
Other (tick and write in)	☐	_____	

Now that you are aware of CCTV cameras operating on the Gold Coast, we'd like you to tell us whether you think each of these statements is <u>true</u> (T) or <u>false</u> (F). If you do not know, or are unsure, please indicate by ticking the <u>don't know</u> (DK) box.

	T	F	DK
▪ The cameras can zoom to extreme close-up	☐	☐	☐
▪ The cameras can take colour pictures	☐	☐	☐
▪ The cameras can be hidden	☐	☐	☐
▪ The cameras can take pictures in the dark	☐	☐	☐
▪ The cameras can take very clear, good quality pictures	☐	☐	☐
▪ Cameras can be activated to track somebody moving in front of them	☐	☐	☐
▪ The cameras are monitored <u>all</u> the time	☐	☐	☐
▪ The cameras are <u>only</u> monitored on the weekends	☐	☐	☐
▪ The cameras can send an alarm signal when they are vandalised or the picture is interrupted	☐	☐	☐
▪ The cameras can see through windows with curtains/blinds if the lights are on inside	☐	☐	☐

When you are in the CBD of Burleigh Heads, what are the usual reasons for you being there? (Tick as many as apply).

I don't go out there	☐	Shopping	☐
Working	☐	Attending school or college	☐
Travelling to or from home	☐	Going to the beach	☐
Visiting friends/relatives	☐	Visiting a cinema	☐

Visiting a restaurant/cafe	☐	Visiting a pub	☐
Visiting a night club	☐	Other (tick and write in)	☐ _____

How often do you go out into the CBD of Burleigh Heads?

Everyday/7days a week	☐	2-6 times a week	☐
Once a week	☐	Once or twice a month	☐
Once or twice a year	☐	Never	☐

In general, how safe do you feel in the CBD of Burleigh Heads?

	Daylight	After Dark
Very safe	☐	☐
Fairly safe	☐	☐
Neither safe nor <u>un</u>safe	☐	☐
Fairly <u>un</u>safe	☐	☐
Very <u>un</u>safe	☐	☐
Don't know	☐	☐

In general, how well or badly lit is the CBD of Burleigh Heads <u>after dark</u>?

Very well lit	☐
Quite well lit	☐
Neither well lit or badly lit	☐
Quite badly lit	☐
Very badly lit	☐
Don't know	☐

When you are in the CBD of Burleigh Heads, how much, if at all, do you worry that you will be the victim of a crime?

Worry all the time	☐
Often worry	☐
Sometimes worry	☐
Hardly ever worry	☐
Never worry	☐
Don't know	☐

How much, if at all, do you worry that Burleigh Heads will be a terrorist target?

Worry all the time	☐
Often worry	☐
Sometimes worry	☐
Hardly ever worry	☐
Never worry	☐
Don't know	☐

By yourself, are there certain places in Burleigh Heads you avoid?

Yes	☐
No	☐
Don't know	☐

If there are places you avoid in Burleigh Heads, please indicate
I avoid the following places in <u>DAYLIGHT</u>

_____
_____
_____
_____

I avoid the following places __AFTER DARK__

_____
_____
_____

Have you owned or had use of a vehicle for any part of the last twelve months?
    Yes   ☐
    No   ☐

If YES, was this vehicle vandalised or stolen in the past 12 months?
    Yes, at my place of residence   ☐
    Yes, in the CBD of Burleigh Heads ☐
    Yes, but in another area   ☐
    No   ☐
    Don't know   ☐

How often do you park a vehicle in the CBD of Burleigh Heads during __DAYLIGHT__ and __AFTER DARK__? (N.B. can be as a passenger)

	Daylight	After dark
Everyday/7days a week	☐	☐
2-6 times a week	☐	☐
Once a week	☐	☐
Once or twice a month	☐	☐
Once or twice a year	☐	☐
Never	☐	☐
I don't have access to a vehicle	☐	☐
Don't know	☐	☐

In general, do you support the use of CCTV cameras to prevent __crime__ in Australia?
    Yes   ☐
    No   ☐
    Don't know   ☐

In general, do you support the use of CCTV cameras to prevent __terrorism__ in Australia?
    Yes   ☐
    No   ☐
    Don't know   ☐

In general, how do you feel about having CCTV cameras on the Gold Coast?
    Very <u>un</u>happy   ☐
    Fairly <u>un</u>happy   ☐
    Neither happy nor unhappy   ☐
    Fairly happy   ☐
    Very happy   ☐

Why do you say that? Please explain as fully as possible

_____
_____
_____
_____

In general, are CCTV cameras an invasion of people's privacy?

Yes ☐
No ☐
Don't know ☐

Are you worried about being filmed or recorded on camera while in public areas of the Gold Coast?

Extremely worried ☐
Very worried ☐
Fairly worried ☐
Not worried at all ☐
Don't know ☐

Do the CCTV cameras operating on the Gold Coast prevent crime?

Yes ☐
No ☐
Don't know ☐

Do you think CCTV cameras in the CBD of <u>SURFERS PARADISE</u> prevent <u>violent</u> crime?

Yes ☐
No ☐
Don't know ☐

Do you think CCTV cameras in the CBD of <u>SURFERS PARADISE</u> prevent <u>property</u> crime?

Yes ☐
No ☐
Don't know ☐

In the past year, have you ever felt fearful about the possibility of becoming a victim of crime while in the CBD of <u>Burleigh Heads</u>?

Yes ☐
No ☐
Can't remember ☐

If YES, how frequently have you felt like this in the last year? (Write in the number of times)

_____

On the last occasion, how fearful did you feel?

Not very fearful ☐
A little bit fearful ☐
Quite fearful ☐
Very fearful ☐
Can't remember ☐

Should funds be spent to install cameras in the CBD of <u>Burleigh Heads</u>?
  Yes   ☐
  No   ☐
  Don't know   ☐

What is your reason? (Please explain as fully as possible)

_____
_____
_____
_____
_____
_____

In general, how would you feel if CCTV cameras were installed in the CBD of <u>Burleigh Heads</u>?
  Very <u>un</u>happy   ☐
  Fairly <u>un</u>happy   ☐
  Neither happy nor unhappy   ☐
  Fairly happy   ☐
  Very happy   ☐

Why do you say that? Please explain as fully as possible

_____
_____
_____
_____

Would CCTV camera prevent crime in <u>Burleigh Heads</u> if they were installed?
  Yes   ☐
  No   ☐
  Don't know   ☐

Could we just get some extra information about you to help with our research? This demographic information will <u>not</u> be used to identify you.

How long have you lived in <u>Burleigh Heads</u>? (Tick one only)

Less than 1 year	☐	1 – (less than) 2 years	☐
2 – (less than) 5 years	☐	5 – (less than) 10 years	☐
10 years or more	☐		

Which of these best describes your current situation? (Tick as many as apply)

Full time employee	☐	Part-time employee	☐	
Self employed	☐	Unemployed	☐	
Full-time student	☐	Part-time student	☐	
Fully retired	☐	Full-time housework	☐	
Long-term sick/disabled	☐	Other (WRITE IN)	☐	_____

Please indicate your age

18 - 29 years	☐	30 - 39 years	☐
40 - 49 years	☐	50 - 59 years	☐

60 - 69 years	☐	70 - 79 years	☐
80 - 89 years	☐	90 years or more	☐
I do not want to give my age	☐		

Are you

| Male | ☐ | Female | ☐ |

You may feel like making extra comments about the content of this survey or your perceptions of CCTV in general. We value your comments so please make use of the additional space to share your opinion on these important issues.

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DATE SURVEY FILLED IN: _____

PLEASE INITIAL TO ACKNOWLEDGE (DO <u>NOT</u> WRITE YOUR FULL NAME):
a) You are over the age of 18 years
b) You are a resident of Burleigh Heads
c) You understand that the information provided will remain anonymous at all times

INITIAL: _____

Thank you for participating in this survey. We appreciate your time and value your opinion about crime prevention in our local community. Please return this survey to Bond University using the reply paid envelope provided.

Bond University (along with the Gold Coast City Council) is carrying out an anonymous survey of people living in the Surfers Paradise area, about their experiences of crime and opinions of Closed Circuit Television (CCTV). We would appreciate if one member of the household could fill in this survey. The survey will take approximately 15 minutes. All the information collected is anonymous and the results will <u>not</u> identify individuals. Only people over the age of 18 should complete this survey.

Prior to this survey, were you aware CCTV cameras are operating on the Gold Coast?

Yes, I was aware   □
No, I was not aware   □

Can you specify where these cameras are located? (i.e. street names or places of interest)?

I didn't know about the cameras until this survey   □
I know about the cameras but can't remember where they are   □
Yes, I know where the cameras are located (tick and write in)   □

_____

How did you get to know about these cameras? (Tick all that apply)

I wasn't aware of the cameras	□	Saw the signs	□
Local newspaper	□	Local television	□
Local newsletter	□	Saw the camera poles	□
Saw the cameras	□	Word of mouth	□
Other (tick and write in)	□	_____	

Now that you are aware of CCTV cameras operating on the Gold Coast, we'd like you to tell us whether you think each of these statements is <u>true</u> (T) or <u>false</u> (F). If you do not know, or are unsure, please indicate by ticking the <u>don't know</u> (DK) box.

	T	F	DK
▪ The cameras can zoom to extreme close-up	□	□	□
▪ The cameras can take colour pictures	□	□	□
▪ The cameras can be hidden	□	□	□
▪ The cameras can take pictures in the dark	□	□	□
▪ The cameras can take very clear, good quality pictures	□	□	□
▪ Cameras can be activated to track somebody moving in front of them	□	□	□
▪ The cameras are monitored <u>all</u> the time	□	□	□
▪ The cameras are <u>only</u> monitored on the weekends	□	□	□
▪ The cameras can send an alarm signal when they are vandalised or the picture is interrupted	□	□	□
▪ The cameras can see through windows with curtains/blinds if the lights are on inside	□	□	□

When you are in the CBD of Surfers Paradise, what are the usual reasons for you being there? (Tick as many as apply).

I don't go out there	□	Shopping	□
Working	□	Attending school or college	□
Travelling to or from home	□	Going to the beach	□
Visiting friends/relatives	□	Visiting a cinema	□
Visiting a restaurant/cafe	□	Visiting a pub	□
Visiting a night club	□	Other (tick and write in)	□ _____

How often do you go out into the CBD of Surfers Paradise?

Everyday/7days a week	☐	2-6 times a week	☐
Once a week	☐	Once or twice a month	☐
Once or twice a year	☐	Never	☐

In general, how safe do you feel in the CBD of Surfers Paradise?

	Daylight	After Dark
Very safe	☐	☐
Fairly safe	☐	☐
Neither safe nor <u>un</u>safe	☐	☐
Fairly <u>un</u>safe	☐	☐
Very <u>un</u>safe	☐	☐
Don't know	☐	☐

In general, how well or badly lit is the CBD of Surfers Paradise <u>after dark</u>?

Very well lit	☐
Quite well lit	☐
Neither well lit or badly lit	☐
Quite badly lit	☐
Very badly lit	☐
Don't know	☐

When you are in the CBD of Surfers Paradise, how much, if at all, do you worry that you will be the victim of a crime?

Worry all the time	☐
Often worry	☐
Sometimes worry	☐
Hardly ever worry	☐
Never worry	☐
Don't know	☐

How much, if at all, do you worry that Surfers Paradise will be a terrorist target?

Worry all the time	☐
Often worry	☐
Sometimes worry	☐
Hardly ever worry	☐
Never worry	☐
Don't know	☐

By yourself, are there certain places in Surfers Paradise you avoid?

Yes	☐
No	☐
Don't know	☐

If there are places you avoid in Surfers Paradise, please indicate
I avoid the following places in <u>DAYLIGHT</u> because

_____
_____
_____
_____

I avoid the following places __AFTER DARK__ because

_____
_____
_____
_____
_____
_____

Have you owned or had use of a vehicle for any part of the last twelve months?

Yes ☐

No ☐

If YES, was this vehicle vandalised or stolen in the past 12 months?

Yes, at my place of residence ☐

Yes, in the CBD of Surfers Paradise ☐

Yes, but in another area ☐

No ☐

Don't know ☐

How often do you park a vehicle in the CBD of Surfers Paradise during __DAYLIGHT__ and __AFTER DARK__? (N.B. can be as a passenger)

	Daylight	After dark
Everyday/7days a week	☐	☐
2-6 times a week	☐	☐
Once a week	☐	☐
Once or twice a month	☐	☐
Once or twice a year	☐	☐
Never	☐	☐
I don't have access to a vehicle	☐	☐
Don't know	☐	☐

In general, do you support the use of CCTV cameras to prevent __crime__ in Australia?

Yes ☐

No ☐

Don't know ☐

In general, do you support the use of CCTV cameras to prevent __terrorism__ in Australia?

Yes ☐

No ☐

Don't know ☐

In general, how do you feel about having CCTV cameras on the Gold Coast?

Very __un__happy ☐

Fairly __un__happy ☐

Neither happy nor unhappy ☐

Fairly happy ☐

Very happy ☐

Why do you say that? Please explain as fully as possible

_____
_____

In general, are CCTV cameras an invasion of people's privacy?

Yes	☐
No	☐
Don't know	☐

Are you worried about being filmed or recorded on camera while in public areas of the Gold Coast?

Extremely worried	☐
Very worried	☐
Fairly worried	☐
Not worried at all	☐
Don't know	☐

Do you think CCTV cameras in the CBD of <u>SURFERS PARADISE</u> prevent <u>violent</u> crime?

Yes	☐
No	☐
Don't know	☐

Do you think CCTV cameras in the CBD of <u>SURFERS PARADISE</u> prevent <u>property</u> crime?

Yes	☐
No	☐
Don't know	☐

In the past year, have you ever felt fearful about the possibility of becoming a victim of crime while in the CBD of <u>Surfers Paradise</u>?

Yes	☐
No	☐
Can't remember	☐

If YES, how frequently have you felt like this in the last year? (Write in the number of times)

_____

On the last occasion, how fearful did you feel?

Not very fearful	☐
A little bit fearful	☐
Quite fearful	☐
Very fearful	☐
Can't remember	☐

Should funds be spent to install more cameras in the CBD of <u>Surfers Paradise</u>?

Yes	☐
No	☐
Don't know	☐

Could we just get some extra information about you to help with our research? This demographic information will <u>not</u> be used to identify you.

How long have you lived in Surfers Paradise? (Tick one only)

Less than 1 year	☐	1 – (less than) 2 years	☐
2 – (less than) 5 years	☐	5 – (less than) 10 years	☐
10 years or more	☐		

Which of these best describes your current situation? (Tick as many as apply)

Full time employee	☐	Part-time employee	☐
Self employed	☐	Unemployed	☐
Full-time student	☐	Part-time student	☐
Fully retired	☐	Full-time housework	☐
Long-term sick/disabled	☐	Other (WRITE IN)	☐ _____

Please indicate your age

18 - 29 years	☐	30 - 39 years	☐
40 - 49 years	☐	50 - 59 years	☐
60 - 69 years	☐	70 - 79 years	☐
80 - 89 years	☐	90 years or more	☐
I do not want to give my age	☐		

Are you

Male	☐	Female	☐

You may feel like making extra comments about the content of this survey or your perceptions of CCTV in general. We value your comments so please make use of the additional space to share your opinion on these important issues.

_____
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_____
_____
_____
_____
_____
_____

DATE SURVEY FILLED IN: _____

PLEASE INITIAL TO ACKNOWLEDGE (DO <u>NOT</u> WRITE YOUR FULL NAME):
a) You are over the age of 18 years
b) You are a resident of Surfers Paradise
c) You understand that the information provided will remain anonymous at all times

INITIAL: _____

Thank you for participating in this survey. We appreciate your time and value your opinion about crime prevention in our local community. Please return this survey to Bond University using the reply paid envelope provided.

Appendix 4.3: Distribution of business trader surveys by area and date

Surfers Paradise Businesses	Details	Date Delivered	Amount
Centro	All levels	11-Mar	75
Chevron Renaissance	All levels	9-Mar	45
Raptis Arcade	All levels	9-Mar	45
Piazza on the Blvd	All levels	18-Mar	20
Centre Arcade	All traders	9-Mar	15
Cosmopolitan Arcade	All traders	9-Mar	5
Trocaderro Arcade	All traders	18-Mar	10
Centrepointe Arcade (SPB)	All traders + Offices	18-Mar	5
RSL Building + Arcade	All traders + Offices	9-Mar	10
46 Cavill Building	All Offices	9-Mar	20
The Hotels	4 and 5 star hotels	18-Mar	5
The Forum	All traders + Offices	18-Mar	10
The Mark Arcade	All traders	18-Mar	15
Lido Arcade	All traders	18-Mar	5
Dolphin Arcade	All levels	18-Mar	20
Cavill Mall	All traders	9-Mar	30
Cavill Avenue	All traders	9-Mar	35
The Esplanade	Hanlan to View Street	12-Mar	10
The Esplanade	View Street to Higman Ave.	12-Mar	20
The Banks	All banks in precinct	18-Mar	5
Beach Road	All traders	9-Mar	15
Hanlan Street	All traders	18-Mar	10
Orchid Avenue	All traders + St. Tropez Offices	18-Mar	35
17 Orchid Avenue Building	All traders	18-Mar	5
Promenade Bldg + Arcade	All traders	18-Mar	5
Elkhorn Ave. - east	All traders	18-Mar	20
Elkhorn Ave. - west	All traders	18-Mar	20
S.P. B. - north east	Hanlan to Elkhorn	9-Mar	40
S.P. B. - north west	Hanlan to Elkhorn	9-Mar	35
S.P. B. - north east	Elkhorn to Palm Ave.	12-Mar	10
S.P. B. - north west	Elkhorn to Palm Ave.	12-Mar	5
S.P. B. - north east	Palm Ave. to Higman Ave.	12-Mar	10
View Ave. + Staghorn Ave.		12-Mar	10
Pandanus + Ocean Ave.		12-Mar	5
S.P. B. - south east	Hanlan to Fern Street	18-Mar	20

S.P. B. - south west	Hanlan to Fern Street	18-Mar	10
Remembrance Drive	Thornton Street to Beach Road	12-Mar	5
Enderley Ave.	Traders + Accommodation	12-Mar	5
Clifford Street + Laycock St.	Traders + Accommodation	12-Mar	10
Markwell Ave. + Hamilton Ave.	Traders + Accommodation	12-Mar	10
Northcliffe Tce.	Traders + Accommodation	12-Mar	5
Vista & Thornton Street	Traders + Accommodation	12-Mar	10
Trickett Street	Traders + Accommodation	12-Mar	10
Garfield Tce. + Fern St.	Traders + Accommodation	12-Mar	10
Total Surfers Paradise Distributed*: *By SPM representative*			*725*
Broadbeach Businesses	**Details**	**Date Delivered**	**Amount**
Block of Victoria Ave, Main Pl & West side of Surf Pde	All traders + Offices	29-Mar	66
Oasis Shopping Centre	Level 2	30-Mar	12
Oasis Shopping Centre	Level 1	30-Mar	39
Oasis Shopping Centre	Ground Level	3-Apr	39
Niecon Plaza	All traders + Offices	7-Apr	27
Albert Ave + East side of Surf Pde	All traders + Offices + Hotels/Accommodation	7-Apr	32
Promenade North side	All traders + Offices	7-Apr	17
Total Broadbeach Distributed:			*232*
TOTAL DISTRIBUTED			**957**

Bond University is carrying out an anonymous survey of business traders in the Broadbeach area, about their experiences of crime and opinions of Closed Circuit Television (CCTV). Broadbeach Marketing has kindly distributed the surveys on our behalf. We would appreciate if the <u>manager</u> or <u>owner</u> of your business could fill in this survey. The survey will take approximately 10 minutes. All the information collected is anonymous and the results will <u>not</u> identify individuals or businesses. Only people over the age of 18 should complete this survey.

1. Is your business under public-space CCTV surveillance (that is, cameras operating under the Gold Coast Safety Camera Network)?

Yes ☐
No ☐
Don't know ☐
I wasn't aware of the cameras until this survey ☐

2. Can you specify where these cameras are located (i.e. street names or places of interest)?

I didn't know about the cameras until this survey ☐
I know about the cameras but I <u>can't remember</u> where they are ☐
I know about the cameras but I <u>don't know</u> where they are ☐
Yes, I know where the cameras are located (tick and write in) ☐

_____

_____

3. Does your business operate its own internal CCTV-surveillance system?

Yes ☐
No ☐
Don't know ☐

4. a) In the past twelve months, have you ever <u>felt fearful</u> about the <u>possibility</u> of your business becoming a victim of crime?

Yes ☐
No ☐ Go to question 5
Can't remember ☐ Go to question 5

b) If YES, how frequently have you felt like this in the last twelve months? (Please write in number of times).

_____

c) If YES, on the last occasion, how fearful did you feel?

Not very fearful ☐
A little bit fearful ☐
Quite fearful ☐
Very fearful ☐
Can't remember ☐

5. a) In the past twelve months, has a crime ever occurred on or in close proximity to your business premises?

Yes ☐
No ☐ Go to question 6
Can't remember ☐ Go to question 6

b) If YES, how many times in the last twelve months did a crime/s occur? (Please write in number of times).

_____

c) If YES, what type of crime/s occurred on or in close proximity to your business premises? Please tick as many that apply (you can elect not to answer this question).

I do not wish to provide an answer	☐
Vandalism	☐
Shop lifting (of goods)	☐
Assault (outside premise)	☐
Assault (inside premise)	☐
Internal theft	☐
Robbery (i.e. theft of money)	☐
Other	☐ _____

6. In general, if your business is involved in a crime, do you contact the police?

Yes	☐
No	☐
It depends on the situation	☐
Don't know	☐

7. Do you think CCTV cameras in the CBD of <u>BROADBEACH</u> prevent <u>violent</u> crime?

Yes	☐
No	☐
Don't know	☐

8. Do you think CCTV cameras in the CBD of <u>BROADBEACH</u> prevent <u>property</u> crime?

Yes	☐
No	☐
Don't know	☐

9. a) In general, how do you feel about having CCTV cameras in the CBD of Broadbeach?

Very <u>un</u>happy	☐
Fairly <u>un</u>happy	☐
Neither happy nor unhappy	☐
Fairly happy	☐
Very happy	☐

b) Why do you say that? Please explain as fully as possible

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

10. In general, how well or badly lit is the CBD of Broadbeach <u>after dark</u>?

Very well lit	☐
Quite well lit	☐
Neither well lit or badly lit	☐
Quite badly lit	☐
Very badly lit	☐
Don't know	☐

11. How much, if at all, do you worry that Broadbeach will be a terrorist target?

Worry all the time	☐
Often worry	☐
Sometimes worry	☐
Hardly ever worry	☐
Never worry	☐
Don't know	☐

12. In general, do you support the use of CCTV cameras to prevent <u>crime</u> in Australia?

Yes	☐
No	☐
Don't know	☐

13. In general, do you support the use of CCTV cameras to prevent <u>terrorism</u> in Australia?

Yes	☐
No	☐
Don't know	☐

14. a) Should more cameras be installed in the CBD of <u>Broadbeach</u>?

Yes	☐
No	☐
Don't know	☐

b) What is your reason? Please explain why or why not additional cameras should (or should not) be installed. Please feel free to mention specific locations if applicable.

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_____

15. In general, are CCTV cameras an invasion of people's privacy?

Yes	☐
No	☐
Don't know	☐

16. Are you worried about being filmed or recorded on camera while in public areas of Broadbeach?

Extremely worried	☐
Very worried	☐
Fairly worried	☐
Not worried at all	☐
Don't know	☐

17. We'd like you to tell us whether you think each of these statements is <u>true</u> (T) or <u>false</u> (F). If you do not know, or are unsure, please indicate by ticking the <u>don't know</u> (DK) box.

	T	F	DK
▪ The cameras can zoom to extreme close-up	☐	☐	☐
▪ The cameras can take colour pictures	☐	☐	☐
▪ The cameras can be hidden	☐	☐	☐
▪ The cameras can take pictures in the dark	☐	☐	☐
▪ The cameras can take very clear, good quality pictures	☐	☐	☐
▪ Cameras can be activated to track somebody moving in front of them	☐	☐	☐
▪ The cameras are monitored <u>all</u> the time	☐	☐	☐
▪ The cameras are <u>only</u> monitored on the weekends	☐	☐	☐
▪ The cameras can send an alarm signal when they are vandalised or the picture is interrupted	☐	☐	☐
▪ The cameras can see through windows with curtains/blinds if the lights are on inside	☐	☐	☐

18. In general, how safe is the CBD of Broadbeach?

	Daylight	After Dark
Very safe	☐	☐
Fairly safe	☐	☐
Neither safe nor <u>un</u>safe	☐	☐
Fairly <u>un</u>safe	☐	☐
Very <u>un</u>safe	☐	☐
Don't know	☐	☐

19. Does the presence of CCTV cameras create a feeling of safety for you in the CBD of Broadbeach?

Yes	☐
No	☐
Don't know	☐
Had never thought of it before	☐

20. By yourself, are there certain places in Broadbeach you avoid?

Yes	☐
No	☐
Don't know	☐

If there are places you avoid in Broadbeach, please indicate
I avoid the following places in <u>DAYLIGHT</u> (and WHY)

_____

_____

_____

I avoid the following places __AFTER DARK__ (and WHY)

_____
_____
_____
_____
_____
_____

Could we just get some extra information about you and your business to help with our research? This demographic information will __not__ be used to identify you.

Is your business located in the __CBD of Broadbeach__? (By that we mean the main area in close proximity to Victoria Mall).

Yes	☐
No	☐
Don't know	☐
I do not wish to provide an answer	☐

Please tick one or more of the following that best describes your business. (You __DO NOT__ need to provide your business name).

Cafe	☐
Restaurant	☐
Retail outlet	☐
Bar	☐
Night Club	☐
Other (write in)	☐ _____

How long has your Broadbeach business been in operation? (Tick one only)

Less than 1 year	☐	1 – (less than) 2 years	☐
2 – (less than) 5 years	☐	5 – (less than) 10 years	☐
10 years or more	☐	I can't remember	☐

How long have you managed and/or owned your current business in Broadbeach? (Tick one only)

Less than 1 year	☐	1 – (less than) 2 years	☐
2 – (less than) 5 years	☐	5 – (less than) 10 years	☐
10 years or more	☐	I can't remember	☐

Please indicate your age

18 - 29 years	☐	30 - 39 years	☐
40 - 49 years	☐	50 - 59 years	☐
60 - 69 years	☐	70 - 79 years	☐
80 - 89 years	☐	90 years or more	☐
I do not want to give my age	☐		

Are you

Male	☐	Female	☐

Do you live in Broadbeach?

       Yes   ☐   No   ☐

You may feel like making extra comments about the content of this survey or your perceptions of CCTV in general. We value your comments so please make use of the additional space to share your opinion on these important issues.

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DATE SURVEY FILLED IN: _____

PLEASE INITIAL TO ACKNOWLEDGE (DO <u>NOT</u> WRITE YOUR FULL NAME):
a) You are over the age of 18 years
b) You are a business trader of Broadbeach
c) You understand that the information provided will remain anonymous at all times

INITIAL: _____

Thank you for participating in this survey. We appreciate your time and value your opinion about crime prevention in our local community. Please return this survey to Bond University using the reply paid envelope provided.
Alternatively, you can fax the completed copy to ***** – Attention: Helene Wells.**

Appendix 4.5: CCTV Survey: Business Traders of Surfers Paradise

Bond University is carrying out an anonymous survey of business traders in the Surfers Paradise area, about their experiences of crime and opinions of Closed Circuit Television (CCTV). Surfers Paradise Marketing has kindly distributed the surveys on our behalf. We would appreciate if the <u>manager</u> or <u>owner</u> of your business could fill in this survey. The survey will take approximately 10 minutes. All the information collected is anonymous and the results will <u>not</u> identify individuals or businesses. Only people over the age of 18 should complete this survey.

1. Is your business under public-space CCTV surveillance (that is, cameras operating under the Gold Coast Safety Camera Network)?
>Yes   ☐
>No   ☐
>Don't know   ☐
>I wasn't aware of the cameras until this survey   ☐

2. Can you specify where these cameras are located (i.e. street names or places of interest)?
>I didn't know about the cameras until this survey   ☐
>I know about the cameras but I <u>can't remember</u> where they are   ☐
>I know about the cameras but I <u>don't know</u> where they are   ☐
>Yes, I know where the cameras are located (tick and write in)   ☐

_____

_____

3. Does your business operate its own internal CCTV-surveillance system?
>Yes   ☐
>No   ☐
>Don't know   ☐

4. a) In the past twelve months, have you ever <u>felt fearful</u> about the <u>possibility</u> of your business becoming a victim of crime?
>Yes   ☐
>No   ☐ Go to question 5
>Can't remember   ☐ Go to question 5

b) If YES, how frequently have you felt like this in the last twelve months? (Please write in number of times).

>_____

c) If YES, on the last occasion, how fearful did you feel?
>Not very fearful   ☐
>A little bit fearful   ☐
>Quite fearful   ☐
>Very fearful   ☐
>Can't remember   ☐

5. a) In the past twelve months, has a crime ever occurred on or in close proximity to your business premises?
>Yes   ☐
>No   ☐ Go to question 6
>Can't remember   ☐ Go to question 6

b) If YES, how many times in the last twelve months did a crime/s occur? (Please write in number of times).

_____

c) If YES, what type of crime/s occurred on or in close proximity to your business premises? Please tick as many that apply (you can elect not to answer this question).

I do not wish to provide an answer	☐
Vandalism	☐
Shop lifting (of goods)	☐
Assault (outside premise)	☐
Assault (inside premise)	☐
Internal theft	☐
Robbery (i.e. theft of money)	☐
Other	☐ _____

6. In general, if your business is involved in a crime, do you contact the police?

Yes	☐
No	☐
It depends on the situation	☐
Don't know	☐

7. Do you think CCTV cameras in the CBD of <u>SURFERS PARADISE</u> prevent <u>violent</u> crime?

Yes	☐
No	☐
Don't know	☐

8. Do you think CCTV cameras in the CBD of <u>SURFERS PARADISE</u> prevent <u>property</u> crime?

Yes	☐
No	☐
Don't know	☐

9. a) In general, how do you feel about having CCTV cameras in the CBD of Surfers Paradise?

Very <u>un</u>happy	☐
Fairly <u>un</u>happy	☐
Neither happy nor unhappy	☐
Fairly happy	☐
Very happy	☐

b) Why do you say that? Please explain as fully as possible

_____
_____
_____
_____
_____
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_____

10. In general, how well or badly lit is the CBD of Surfers Paradise <u>after dark</u>?

Very well lit	☐
Quite well lit	☐
Neither well lit or badly lit	☐
Quite badly lit	☐
Very badly lit	☐
Don't know	☐

11. How much, if at all, do you worry that Surfers Paradise will be a terrorist target?

Worry all the time	☐
Often worry	☐
Sometimes worry	☐
Hardly ever worry	☐
Never worry	☐
Don't know	☐

12. In general, do you support the use of CCTV cameras to prevent <u>crime</u> in Australia?

Yes	☐
No	☐
Don't know	☐

13. In general, do you support the use of CCTV cameras to prevent <u>terrorism</u> in Australia?

Yes	☐
No	☐
Don't know	☐

14. a) Should more cameras be installed in the CBD of <u>Surfers Paradise</u>?

Yes	☐
No	☐
Don't know	☐

b) What is your reason? Please explain why or why not additional cameras should (or should not be) installed. Please feel free to mention specific locations if applicable.

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_____

15. In general, are CCTV cameras an invasion of people's privacy?

Yes	☐
No	☐
Don't know	☐

16. Are you worried about being filmed or recorded on camera while in public areas of Surfers Paradise?

Extremely worried ☐

Very worried ☐

Fairly worried ☐

Not worried at all ☐

Don't know ☐

17. We'd like you to tell us whether you think each of these statements is <u>true</u> (T) or <u>false</u> (F). If you do not know, or are unsure, please indicate by ticking the <u>don't know</u> (DK) box.

	T	F	DK
▪ The cameras can zoom to extreme close-up	☐	☐	☐
▪ The cameras can take colour pictures	☐	☐	☐
▪ The cameras can be hidden	☐	☐	☐
▪ The cameras can take pictures in the dark	☐	☐	☐
▪ The cameras can take very clear, good quality pictures	☐	☐	☐
▪ Cameras can be activated to track somebody moving in front of them	☐	☐	☐
▪ The cameras are monitored <u>all</u> the time	☐	☐	☐
▪ The cameras are <u>only</u> monitored on the weekends	☐	☐	☐
▪ The cameras can send an alarm signal when they are vandalised or the picture is interrupted	☐	☐	☐
▪ The cameras can see through windows with curtains/blinds if the lights are on inside	☐	☐	☐

18. In general, how safe is the CBD of Surfers Paradise?

	Daylight	After Dark
Very safe	☐	☐
Fairly safe	☐	☐
Neither safe nor <u>un</u>safe	☐	☐
Fairly <u>un</u>safe	☐	☐
Very <u>un</u>safe	☐	☐
Don't know	☐	☐

19. Does the presence of CCTV cameras create a feeling of safety for you in the CBD of Surfers Paradise?

Yes ☐

No ☐

Don't know ☐

Had never thought of it before ☐

20. By yourself, are there certain places in Surfers Paradise you avoid?

Yes ☐

No ☐

Don't know ☐

a) If there are places you avoid in Surfers Paradise, please indicate
I avoid the following places in <u>DAYLIGHT</u>

_____

_____

_____

*I avoid the following places **AFTER DARK***

_____
_____ 159
_____
_____
_____
_____

Could we just get some extra information about you and your business to help with our research? This demographic information will <u>not</u> be used to identify you.

Is your business located in the CBD of Surfers Paradise? (By that we mean the main area in close proximity to Cavill Avenue/Mall).

Yes ☐
No ☐
Don't know ☐
I do not wish to provide an answer ☐

Please tick one or more of the following that best describes your business. (You DO NOT need to provide your business name).

Cafe ☐
Restaurant ☐
Retail outlet ☐
Bar ☐
Night Club ☐
Other (write in) ☐ _____

How long has your Surfers Paradise business been in operation? (Tick one only)

Less than 1 year ☐ 1 – (less than) 2 years ☐
2 – (less than) 5 years ☐ 5 – (less than) 10 years ☐
10 years or more ☐ I can't remember ☐

How long have you managed and/or owned your current business in Surfers Paradise? (Tick one only)

Less than 1 year ☐ 1 – (less than) 2 years ☐
2 – (less than) 5 years ☐ 5 – (less than) 10 years ☐
10 years or more ☐ I can't remember ☐

Please indicate your age

18 - 29 years ☐ 30 - 39 years ☐
40 - 49 years ☐ 50 - 59 years ☐
60 - 69 years ☐ 70 - 79 years ☐
80 - 89 years ☐ 90 years or more ☐
I do not want to give my age ☐

Are you

Male ☐ Female ☐

Do you live in Surfers Paradise?

       Yes   ☐   No   ☐

You may feel like making extra comments about the content of this survey or your perceptions of CCTV in general. We value your comments so please make use of the additional space to share your opinion on these important issues.

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DATE SURVEY FILLED IN: _____

PLEASE INITIAL TO ACKNOWLEDGE (DO <u>NOT</u> WRITE YOUR FULL NAME):
a) You are over the age of 18 years
b) You are a business trader of Surfers Paradise
c) You understand that the information provided will remain anonymous at all times

INITIAL: _____

Thank you for participating in this survey. We appreciate your time and value your opinion about crime prevention in our local community. Please return this survey to Bond University using the reply paid envelope provided.
Alternatively, you can fax the completed copy to ******* – Attention: Helene Wells.

Appendix 4.6: Queensland Rail Commuter Surveys

STUDENT NUMBER: _____   LAST NAME: _____
START TIME: _____   END TIME: _____
SURVEY NUMBER: _____   DATE: _____
TRAIN STATION: _____   BETWEEN: _____

Good morning/afternoon/evening. My name is _____ and I am a student at Bond University. Bond University is carrying out an anonymous survey of people using the Queensland Rail Network about their experiences of crime and opinions of Closed-Circuit Television cameras. The survey will take approximately 15 minutes. All the information collected is anonymous and the results will <u>not</u> identify individuals. Only people <u>over</u> the age of 18 should complete this survey.

---

1. a) Would you like to participate in this survey? It is not necessary to answer all of the questions.
     Yes   ☐ 01
     No   ☐ 02 **TERMINATE**
1. b) Are you over the age of 18?
     Yes   ☐ 01
     No   ☐ 02 **TERMINATE**
2. Do you have enough time to complete the survey?
     Yes   ☐ 01
     No   ☐ 02 **TERMINATE**

3. Prior to this survey, were you aware cameras operated on the Queensland Rail Network?
     Yes…………………………………………………………………. ☐ 01
     No…………………………………………………………………. ☐ 02
     Other _____ ☐ 99 **(write in)**

4. a) Can you specify where these cameras are located?
     Yes…………………………………………………………………. ☐ 01
     No…………………………………………………………………. ☐ 02

     b) If YES, TICK ALL THAT ARE MENTIONED (DO NOT PROMPT)
     On this carriage……………………………………………… ☐ 03
     Near the ticket machines…………………………… …… ☐ 04
     On the railway station platforms …………………………… ☐ 05
     In the train station car parks……………………………… ☐ 06
     Other _____ ………… ☐ 99 **(write in)**

5. How did you get to know about these cameras?
     DO NOT READ OUT, MULTIPLE ANSWERS ALLOWED
     I wasn't aware of the cameras……………………………… ☐ 01
     Local newspaper…………………………………………… ☐ 02
     Local newsletter…………………………………………… ☐ 03
     Saw the cameras…………………………………………… ☐ 04
     Saw the signs……………………………………………… ☐ 05
     Local television……………………………………………… ☐ 06
     Saw the camera poles…………………………………….. ☐ 07
     Word of mouth……………………………………………… ☐ 08
     Other _____ ☐ 99 **(write in)**

6. Now that you are aware of the cameras operating on Queensland Rail Network, I'd like you to tell me whether you think each of the statements is **true (T)** or **false (F)**. If you do not know, or are unsure, please indicate by saying **"don't know" (DK)**.

READ OUT EACH	T	F	DK
a) The cameras can zoom to extreme close-up…………………………….	☐ 01	☐ 02	☐ 88
b) The cameras can take colour pictures…………………………………….	☐ 01	☐ 02	☐ 88
c) The cameras can be hidden……………………………………………….	☐ 01	☐ 02	☐ 88
d) The cameras can take pictures in the dark……………………………….	☐ 01	☐ 02	☐ 88
e) The cameras can take very clear, good quality pictures……………….	☐ 01	☐ 02	☐ 88
f) Cameras can be activated to track somebody moving in front of them…	☐ 01	☐ 02	☐ 88
g) The cameras are monitored <u>all</u> the time…………………………….	☐ 01	☐ 02	☐ 88
h) The cameras are <u>only</u> monitored on the weekends………………..	☐ 01	☐ 02	☐ 88
i) The cameras can send an alarm signal when they are vandalised or if the picture is interrupted………………………………………………..	☐ 01	☐ 02	☐ 88

7. How often do you travel on the Queensland Rail Network?
READ OUT
Everyday………………………………………………………… ☐ 01
2-3 times a week…………………………………………………… ☐ 02
Once a week or so…………………………………………………. ☐ 03
2-3 times per month………………………………………………. ☐ 04
About once a month……………………………………………….. ☐ 05
Less often than once a month…………………………………….. ☐ 06
Never/not all……………………………………………………… ☐ 07
Other _____ ☐ 99 **(write in)**

8. What are the <u>usual</u> reasons for travelling?
ASK FOR VERBAL ANSWERS, AND THEN READ OUT. TICK ALL THAT APPLY
I don't normally use Queensland Rail Network…………………….. ☐ 01
Shopping……………………………………………………………. ☐ 02
Working……………………………………………………………… ☐ 03
Attending school or college………………………………………… ☐ 04
Travelling to or from home………………………………………….. ☐ 05
Going to the beach…………………………………………………. ☐ 06
Visiting friends/relatives……………………………………………. ☐ 07
Visiting a cinema…………………………………………………….. ☐ 08
Visiting a restaurant/café…………………………………………… ☐ 09
Visiting a pub………………………………………………………… ☐ 10
Visiting a night club…………………………………………………. ☐ 11
Other _____ ☐ 99 **(write in)**

9. What is your usual route? (i.e. what train station do you usually depart and usually arrive at?)
TO BE CLEARLY WRITTEN, IF NECESSARY, ASK RESPONDENT TO SPELL OUT
Depart: _____ ☐ 01
Arrive: _____ ☐ 02

10. In regards to your personal safety and security, how safe do you feel when using the Queensland Rail Network during <u>daylight hours</u> and <u>after dark</u>?

READ OUT FOR DAYLIGHT AND AFTER DARK	a) Daylight	b) After Dark
Very safe…………………………………………………….	☐ 01	☐ 01
Fairly safe…………………………………………………....	☐ 02	☐ 02
Neither safe nor <u>un</u>safe………………………………………	☐ 03	☐ 03
Fairly <u>un</u>safe………………………………………………….	☐ 04	☐ 04
Very <u>un</u>safe…………………………………………………….	☐ 05	☐ 05
Don't know……………………………………………………..	☐ 88	☐ 88

11. In general, how well or badly lit are the <u>train carriages</u> **after dark**?
    READ OUT
    Very well lit……………………………………………………… ☐ 01
    Quite well lit……………………………………………………….. ☐ 02
    Neither well lit or badly lit……………………………………….. ☐ 03
    Quite badly lit…………………………………………………….. ☐ 04
    Very badly lit……………………………………………………... ☐ 05
    Don't know………………………………………………….…… ☐ 88

12. In general, how well or badly lit are the <u>train car parks</u> **after dark**?
    READ OUT
    Very well lit……………………………………………………… ☐ 01
    Quite well lit……………………………………………………….. ☐ 02
    Neither well lit or badly lit……………………………………….. ☐ 03
    Quite badly lit…………………………………………………….. ☐ 04
    Very badly lit……………………………………………………... ☐ 05
    Don't know………………………………………………….…… ☐ 88

13. In general, how well or badly lit are the <u>railway stations</u> **after dark**?
    READ OUT
    Very well lit……………………………………………………… ☐ 01
    Quite well lit……………………………………………………….. ☐ 02
    Neither well lit or badly lit……………………………………….. ☐ 03
    Quite badly lit…………………………………………………….. ☐ 04
    Very badly lit……………………………………………………... ☐ 05
    Don't know………………………………………………….…… ☐ 88

14. When you are using the Queensland Rail Network, how much, if at all, do you worry that you will be the victim of a crime?
    READ OUT
    Worry all the time……………………………………………….. ☐ 01
    Often worry……………………………………………………..... ☐ 02
    Sometimes worry………………………………………………… ☐ 03
    Hardly ever worry………………………………………………... ☐ 04
    Never worry…………………………………………………….... ☐ 05
    Don't know………………………………………………….…… ☐ 88

15. When you are using the Queensland Rail Network, how much, if at all, do you worry that Queensland Rail will be a terrorist target?
    READ OUT
    Worry all the time……………………………………………….. ☐ 01
    Often worry……………………………………………………..... ☐ 02
    Sometimes worry………………………………………………… ☐ 03
    Hardly ever worry………………………………………………... ☐ 04
    Never worry…………………………………………………….... ☐ 05
    Don't know………………………………………………….…… ☐ 88

16. By yourself, are there certain train lines, car parks or platforms you avoid?
    Yes……………………………………………………………….. ☐ 01
    No………………………………………………………………... ☐ 02
    Don't know…………………………………………………….…☐ 88

    If YES, probe what specific areas are avoided

_____

_____

17. **IF YES,** Do you avoid these places because there is a lack of cameras?
    READ OUT – "You can answer <u>yes</u>, <u>no</u>, <u>never thought of it before</u>, or <u>I don't know</u>
    Yes……………………………………………………………….. ☐ 01
    No………………………………………………………………. ☐ 02
    I had never thought of it before………………………………….. ☐ 03
    Don't know…………………………………………………… ☐ 88

18. a) Do you park a vehicle at a train station car park?
    Yes…………………………………………………………….. ☐ 01
    No………………………………………………………………. ☐ 02

    b) If **YES**, what train station do you usually park a vehicle at?
    Specify: _____

19. How often do you park a vehicle at a train station car park?
    READ OUT (N.B. can be as a passenger)
    Everyday…………………………………………………….. ☐ 01
    2-3 times a week…………………………………………… ☐ 02
    Once a week or so………………………………………….. ☐ 03
    2-3 times per month……………………………………… ☐ 04
    About once a month………………………………………. ☐ 05
    Less often than once a month……………………………... ☐ 06
    Never/not all………………………………………………. ☐ 07
    Other _____ ☐ 99 **(write in)**

20. a) Does the presence of cameras influence your decision about where you park your vehicle in train station car parks?
    Yes…………………………………………………………….. ☐ 01
    No………………………………………………………………. ☐ 02
    Don't know…………………………………………………… ☐ 88
    Prior to this survey, I wasn't aware of the cameras……………... ☐ 03

    b) If YES, probe for a reason
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Survey continues next page (please continue on to Question 21)

21. I am going to read out a few statements that I would like you to answer "Yes" or "No" to. If you do answer "Yes" to any of the statements, I would also like to know whether this occurred during daylight or after dark.

ITEMS TO READ OUT **(CIRCLE EACH ANSWER)**	Q22A **DID IT HAPPEN?**		Q22B **WHEN DID THIS/THESE INCIDENTS HAPPEN – DURING DAYLIGHT OR AFTER DARK. CODE <u>ONE</u> ONLY**			
	Yes	No	Daylight	After dark	Both	Can't Remember
a) In the last 12 months have you been pestered, insulted or harassed by anyone while using the Queensland Rail network?	01	02	01	02	03	77
b) In the last 12 months have you been harassed by groups or young people while using the QR network?	01	02	01	02	03	77
c) In the last 12 months have you been harassed by drunken disorderly people while using the QR network?	01	02	01	02	03	77
d) In the last 12 months have you been harassed by people using or dealing in illegal drugs while using the QR network?	01	02	01	02	03	77
e) In the last 12 months have you been assaulted while using the QR network?	01	02	01	02	03	77
f) In the last 12 months have you been robbed – this means having your property stolen under threat of violence while using the QR network?	01	02	01	02	03	77
g) In the last 12 months have you been attacked or harassed because of your skin colour, ethnic origin or religion while using the QR network?	01	02	01	02	03	77

22. In general, do you support the use of CCTV cameras to prevent crime in Australia?
    Yes……………………………………………………………………. ☐ 01
    No…………………………………………………………………… ☐ 02
    Don't know…………………………………………………………… ☐ 88
    Other _____ ☐ 99 **(write in)**

23. In general, do you support the use of cameras to prevent terrorism in Australia?
    Yes……………………………………………………………………. ☐ 01
    No…………………………………………………………………… ☐ 02
    Don't know…………………………………………………………… ☐ 88
    Other _____ ☐ 99 **(write in)**

24. In general, how do you feel about having cameras on the Queensland Rail Network?
    Very <u>un</u>happy……………………………………………………... ☐ 01
    Fairly <u>un</u>happy……………………………………………………... ☐ 02
    Neither happy nor unhappy…………………………………………… ☐ 03
    Fairly happy…………………………………………………………... ☐ 04
    Very happy…………………………………………………………... ☐ 05

    Why do you say that? **Please explain as fully as possible**

    _____
    _____
    _____

25. In general, are CCTV cameras an invasion of people's privacy?
        Yes……………………………………………………………… ☐ 01
        No………………………………………………………………. ☐ 02
        Don't know…………………………………………………… ☐ 88

26. Are you worried about being filmed or recorded on camera while using the Queensland Rail network?
        READ OUT
        Extremely worried…………………………………………… ☐ 01
        Very worried………………………………………………….. ☐ 02
        Fairly worried………………………………………………… ☐ 03
        Not worried at all…………………………………………… ☐ 04
        Don't know…………………………………………………… ☐ 88

27. Should additional funds be spent to install more cameras on the Queensland Rail network?
        Yes……………………………………………………………. ☐ 01
        No………………………………………………………………. ☐ 02
        Don't know…………………………………………………… ☐ 88

28. Do you think the CCTV cameras on the Queensland Rail Network prevent violent crime?
        Yes……………………………………………………………. ☐ 01
        No………………………………………………………………. ☐ 02
        Don't know…………………………………………………… ☐ 88

29. Do you think cameras on the Queensland Rail Network prevent property crime?
        Yes……………………………………………………………. ☐ 01
        No………………………………………………………………. ☐ 02
        Don't know…………………………………………………… ☐ 88

30. Do you think cameras on the Queensland Rail Network prevent motor vehicle crime (in the train station car parks)?
        Yes……………………………………………………………. ☐ 01
        No……………………………………………………………… ☐ 02
        Don't know…………………………………………………… ☐ 88

31. In the past year, have you ever felt fearful about the possibility of becoming a victim of crime while using the Queensland Rail Network?
        Yes……………………………………………………………. ☐ 01
        No………………………………………………………………. ☐ 02
        Can't remember…………………………………………….. ☐ 77

        If YES, how frequently have you felt like this in the last year? (Write in the number of times)
        _____

32. On the last occasion, how fearful did you feel?
        READ OUT
        Not very fearful……………………………………………… ☐ 01
        A little bit fearful…………………………………………….. ☐ 02
        Quite fearful…………………………………………………. ☐ 03
        Very fearful………………………………………………….. ☐ 04
        Can't remember…………………………………………… ☐ 77

33. Does the presence of cameras make a difference to your journey?

    Yes…………………………………………………………………… ☐ 01

    No……………………………………………………………………. ☐ 02

    Don't know………………………………………………………… ☐ 88

    If YES, How so?

_____

_____

_____

_____

Could we just get some extra information about you to help with our research? This demographic information will <u>not</u> be used to identify you.

---

34.   a) What is your postcode? (4 digit number)   _____

        b) Tourist (Interstate) (4 digit number)   _____

        c) Overseas (country)   _____

35. Which of these best describes your current situation? **(Tick as many as apply)**

    READ OUT

Full-time employee…………. ☐ 01	Part-time employee…☐ 06	
Self employed……………….. ☐ 02	Unemployed………… ☐ 07	
Full-time student……………. ☐ 03	Part-time student…… ☐ 08	
Fully retired…………………. ☐ 04	Full-time housework... ☐ 09	
Long-term sick/disabled……. ☐ 05	Other **(write in)**…..... ☐ 99	_____

36. Please indicate your age

    READ OUT

18 - 24 years………………….☐ 01	60 - 69 years……… ☐ 06
25 - 29 years………………… ☐ 02	70 - 79 years……… ☐ 07
30 - 39 years……………….. ☐ 03	80 - 89 years……….. ☐ 08
40 - 49 years………………. ☐ 04	90 years or more….. ☐ 09
50 - 59 years………………… ☐ 05	Refused to give age.. ☐ 10

37.   **(TICK)**

    Male…………………………………………………………….. ☐ 01

    Female……………………………………………………………☐ 02

38. Do you feel like making any extra comments about the content of this survey or your perceptions of CCTV in general? We value your comments so please let me know if you'd like to add anything.

    Yes……………………………………………………………….. ☐ 01

    No…………………………………………………………………☐ 02

_____

_____

_____

_____

_____

_____

_____

Thank you for taking part in this survey. I appreciate your participation.
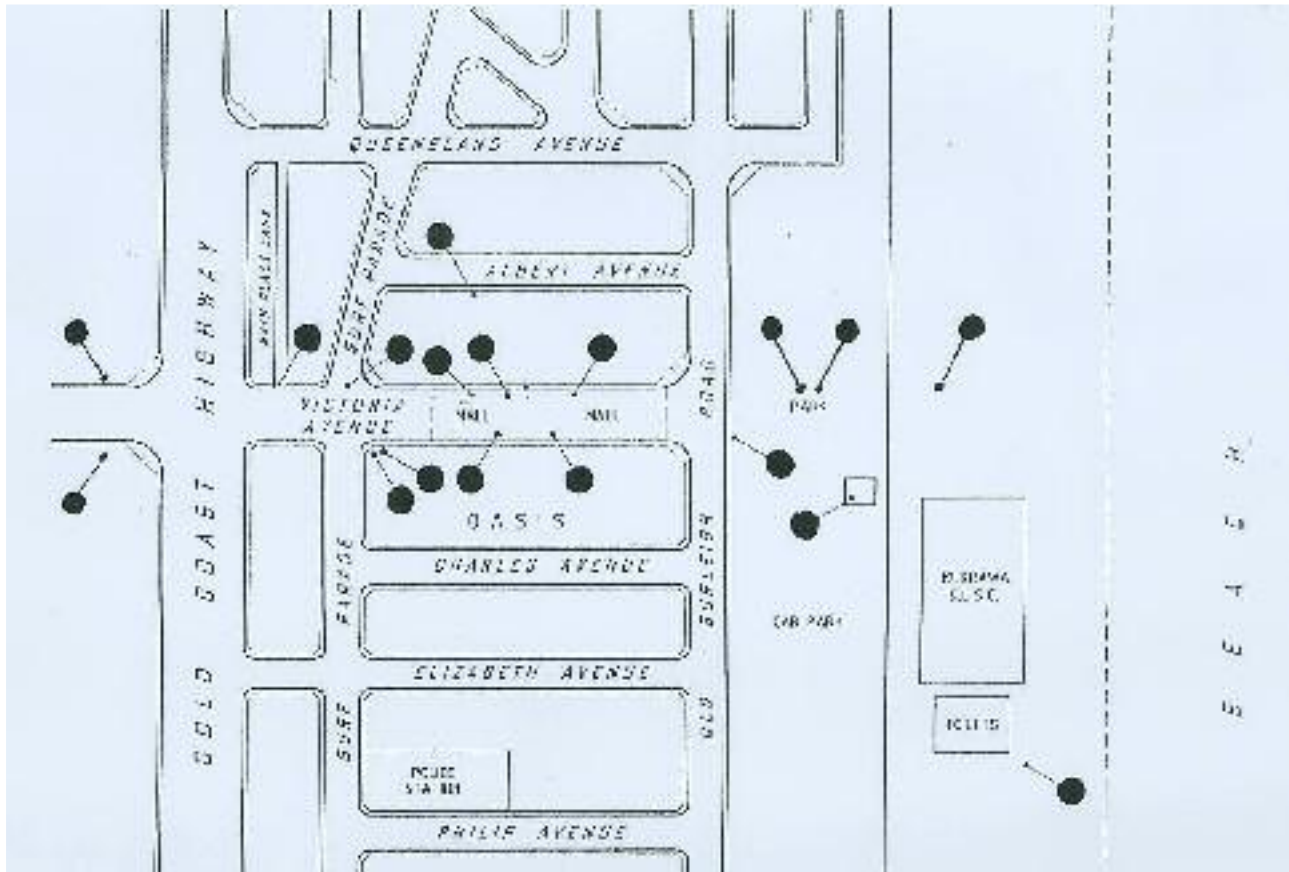
Appendix 5.1: Surfers Paradise map of CCTV cameras

(Diagram provided by GCSCN – Black dots denote approximate camera location)
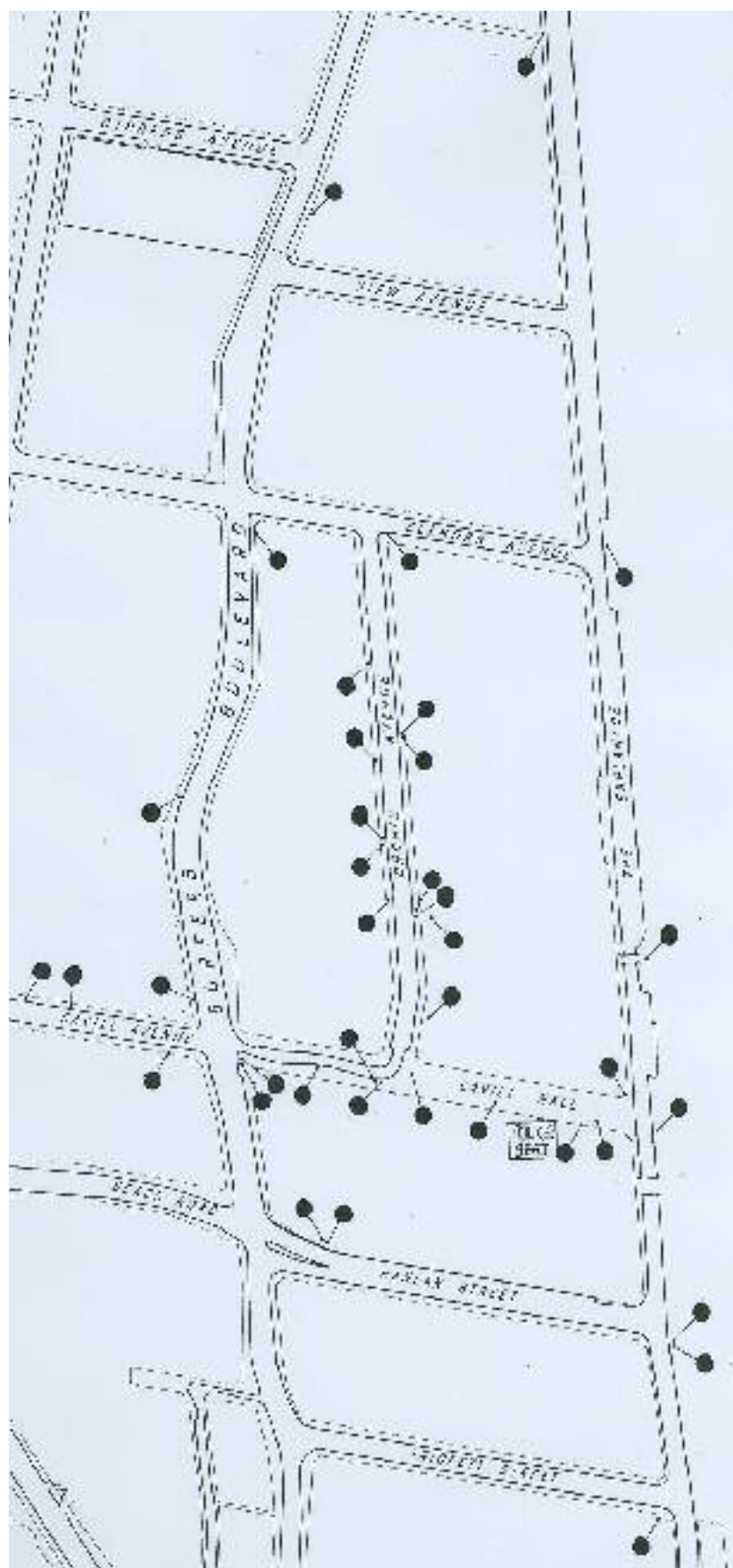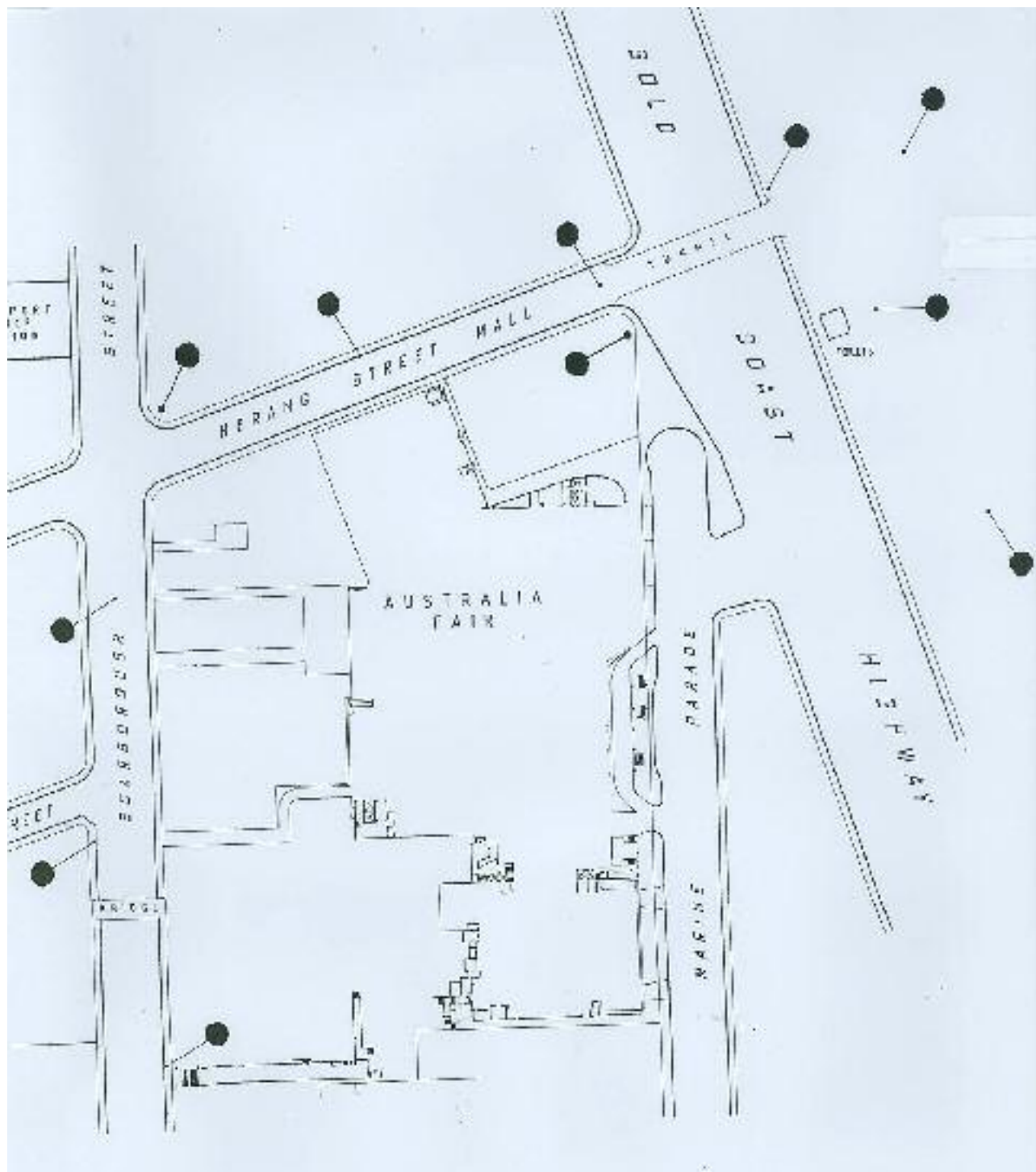
Appendix 5.2: Broadbeach map of CCTV cameras

(Diagram provided by GCSCN - Black dots denote approximate camera location)
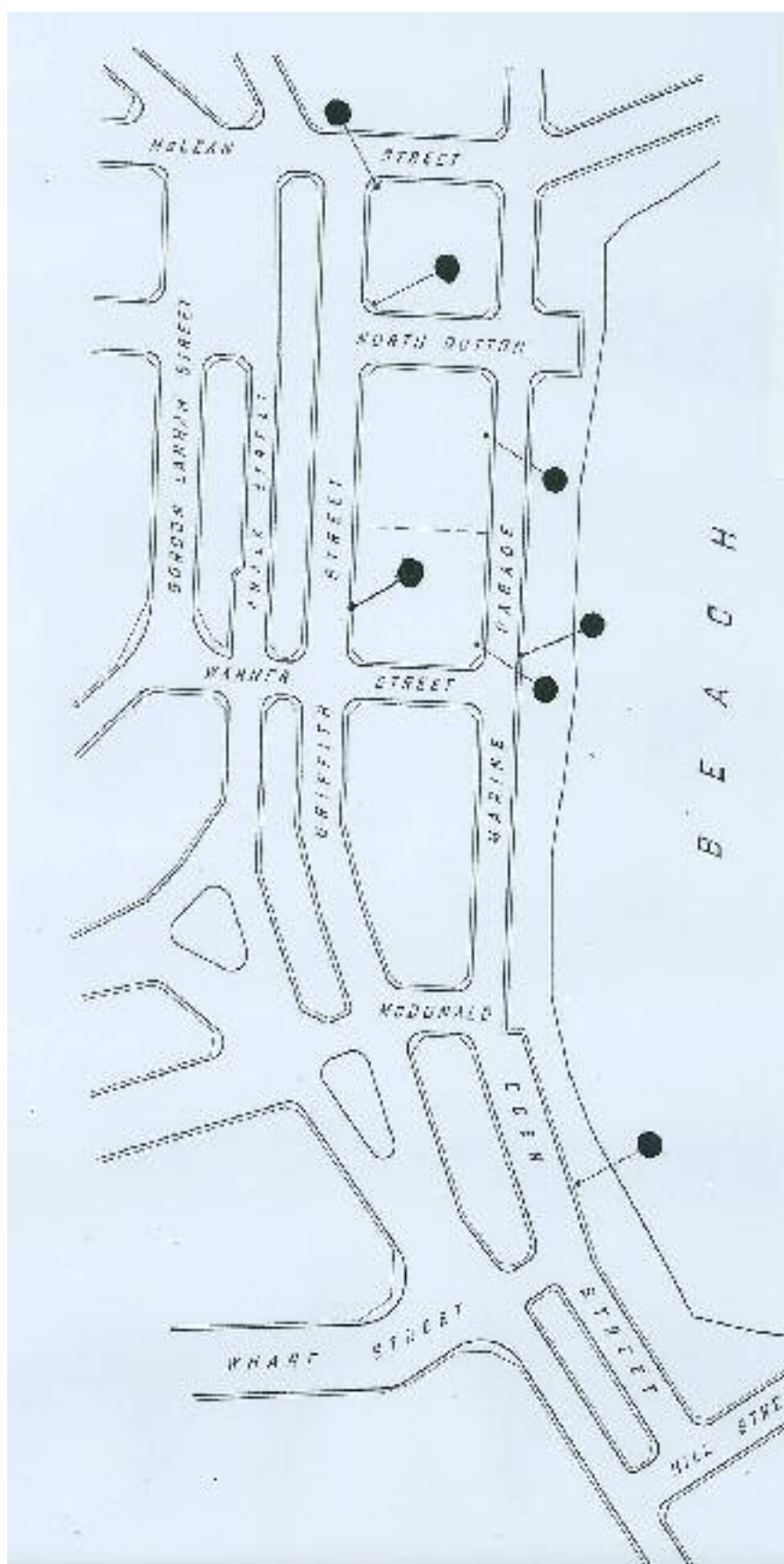
Appendix 5.3: Southport map of CCTV cameras
(Diagram provided by GCSCN - Black dots denote approximate camera location)

Appendix 5.4: Coolangatta map of CCTV cameras

(Diagram provided by GCSCN - Black dots denote approximate camera location)

Appendix 5.5: Areas 'under', 'near' and 'away' from public space CCTV

List of streets (including avenues, highways etc) provided to QPS for data extraction and analysis.

1. Under CCTV	2. Near CCTV	3. Away from CCTV
Surfers Paradise (postcode 4217), Gold Coast QLD		
Esplanade Cavill Mall (The Mall) Cavill Avenue Orchid Avenue Surfers Boulevard Hanlan Street Elkhorn Street Staghorn Avenue View Avenue Trickett Street	Remembrance Drive Ferry Avenue Thornton Street Vista Street River Terrace Northcliffe Terrace Enderley Avenue Markwell Avenue Hamilton Avenue Clifford Avenue Laycock Street Alison Street Apple Street Beach Road Higman Avenue Ocean Avenue Cyprus Avenue Palm Avenue Pandanus Avenue Gold Coast Highway (between Ferry Avenue and Remembrance Drive)	Rest of suburb
Broadbeach (postcode 4218), Gold Coast QLD		
Victoria Avenue (The Mall) Albert Avenue Main Place Kurrawa Park* Pratten Park* *not streets, park areas under surveillance	Gold Coast Highway (from Chelsea Avenue to Margaret Avenue) Chelsea Avenue Britannia Avenue Australia Avenue Queensland Avenue Charles Avenue Elizabeth Avenue Philip Avenue Anne Avenue George Avenue Margaret Avenue Old Burleigh Road Surf Parade Jubilee Avenue Federation Avenue Amrick Boulevard	Rest of suburb

Appendix 5.6: Map of Surfers Paradise

(highlighted section indicates 'under' and 'near' surveillance areas)

[*Steve Parish Gold Coast and Region Map*: Steve Parish Publishing]

Appendix 5.7: Map of Broadbeach

(highlighted section indicates 'under' and 'near' surveillance areas)
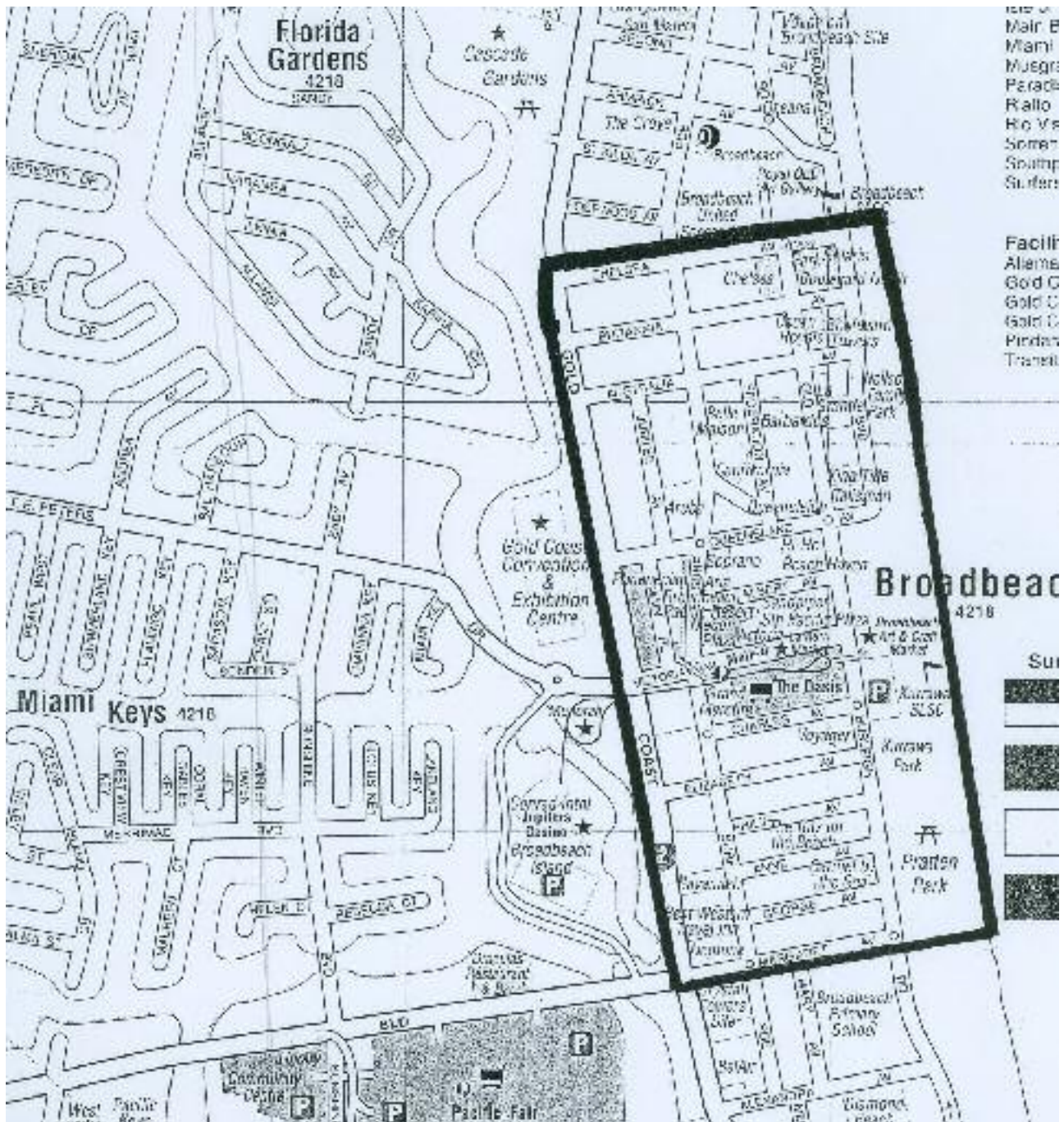
[*Steve Parish Gold Coast and Region Map*: Steve Parish Publishing]

Appendix 5.8: QPS Offence categories (Regina and Non-Regina)

The categories and codes were made available by Queensland Police Service (QPS).

Non-Regina Offences

HOMICIDE
- **1111** Murder
- **1121** Attempted murder
- **1131** Conspiracy to murder
- **1141** Manslaughter (excluding driving causing death)
- **1151** Driving causing death

SEXUAL OFFENCES - OTHER
- **1371** Unlawful carnal knowledge
- **1372** Incest
- **1373** Sexual offences - consent prescribed (other)
- **1391** Bestiality (Regina)
- **1392** Indecent practices between males/gross indecency
- **1393** Wilful obscene exposure
- **1394** Sexual offences (other)
- **1395** Sexual offences (other) on a child

ROBBERY
- **2111** Robbery, armed
- **2121** Robbery, unarmed
- **2122** Robbery, unarmed, in company
- **2123** Assault with intent to steal
- **2124** Demand property with menaces with intent to steal

ASSAULT (Non- Sexual)
- **1211** Assault occasioning grievous bodily harm
- **1212** Driving causing grievous bodily harm
- **1221** Wounding
- **1222** Assault occasioning bodily harm
- **1223** Assault, serious (other)
- **1292** Assault, common
- **1293** Assault police (PPRA)
- **1294** Assault, Minor (other)

UNLAWFUL ENTRY
- **3111** Burglary, with breaking
- **3112** Burglary
- **3113** Burglary, with violence or threats, with breaking
- **3114** Burglary, with violence or threats
- **3121** Enter with intent, shop, with breaking
- **3122** Enter with intent, shop
- **3181** Enter with intent, other premises, with breaking
- **3182** Enter with intent, other premises
- **3192** Possession of things for unlawful entry (Regina)

SEXUAL ASSAULT
- **1361** Rape
- **1362** Attempted rape
- **1363** Indecent assaults on adults
- **1364** Indecent treatment of children
- **1365** Assault with intent to commit rape
- **1366** Sexual assaults (other)

OTHER OFFENCES AGAINST LIBERTY
1911 Kidnapping
1912 Deprivation of liberty
1913 Kidnapping for ransom or gain
1914 Offences against liberty (other)

THEFT OF UNLAWFUL USE OF A VEHICLE
3511 Motor vehicle - steal, unlawfully use, possess
3512 Motor vehicle - attempted steal, unlawfully use, possess
3521 Bicycle - steal, unlawfully use
3531 Vessel - steal, unlawfully use, remove from mooring
3541 Aircraft - steal, unlawfully use
3581 Vehicles - other, steal, unlawfully use

PROPERTY DAMAGE
4111 Arson - building or structure
4112 Arson - aircraft or motor vehicle
4113 Set fire to crops, growing plants
4114 Arson - other
4191 Wilfully kill, maim, wound animals (excluding stock steal)
4192 Wilful damage by fire (excluding arson)
4193 Graffiti
4194 Wilful damage (not elsewhere classified)

OTHER THEFT
3911 Steal from the person
3921 Stock - kill with intent to steal
3922 Stock - steal, unlawfully use, suspicion of stealing
3931 Shopstealing, unlawfully take goods away
3991 Stealing from dwelling houses
3992 Stealing from other specified buildings
3994 Vehicles - Stealing from/enter with intent
3995 Fare evasion, refuse to pay
3996 Stealing things sent by post
3997 Stealing goods in transit
3998 Stealing by conversion or by a trick
3999 Stealing (other)

Regina Offences

HANDLING STOLEN GOODS ETC.
3311 Receiving Stolen Property
3321 Possession of property suspected stolen
3322 Possession of skin or carcass suspected stolen
3323 Possess, receive, dispose of tainted property
3391 Bring Stolen Goods into Queensland

LIQUOR LICENSING OFFENCES
5911 Consume liquor in a public place
5912 Offences by licensed victuallers
5913 Illegally deal in or sell liquor
5914 Underage persons found on licensed premises, possess and/or consume liquor on licensed premises
5915 Liquor act offences/other liquor offences

PROSTITUTION OFFENCES
5951 Have interest in premises used for prostitution
5952 Knowingly participate in provision of prostitution

5953 Public soliciting for purposes of prostitution

5954 Found in places used for purpose of prostitution

5955 Procuring prostitution

5956 Permit minor to be at a place used for prostitution

5957 Advertising prostitution

5958 Other prostitution offences under Criminal Code

5959 Other prostitution offences under Prostitution Act

TRESPASSING AND VAGRANCY OFFENCES

5931 Begging alms

5932 Insufficient or no visible means of support

5933 Unlawfully on premises/trespassing

5934 Vagrancy offences (other)

5941 Habitual Consorting

DRUG OFFENCES

6191 Possess and/or use dangerous drugs

6491 Import/Export dangerous drugs

6591 Supply dangerous drugs

6592 Trafficking in dangerous drugs

6691 Produce dangerous drugs

6991 Permit premises to be used

6992 Possess things for use with a dangerous drug

6993 Receive or possess property obtained from trafficking or supplying dangerous drugs

6994 Drug offences (other)

WEAPONS ACT OFFENCES

5511 Unlawful possession of concealable firearm

5512 Unlawful possession of firearm (other)

5521 Bomb (possess or use)

5581 Possession/use of dangerous article, other weapon

5591 Weapons Act offences (other)

OFFENCES AGAINST GOOD ORDER

5991 Armed with intent

5992 Disorderly Conduct

5993 Indecent Behaviour

5994 Obscene, insulting, offensive etc. language

5995 Offences against good order (other)

5996 Possession of a graffiti instrument

5997 Public Nuisance Offences (VG&OOA)

Appendix 6.1: Overview of Security Information Management System (SIMS), QR

The Security Information Management System (SIMS) is a database utilised by Queensland Rail (QR) to capture information relating to antisocial behaviour, criminal activity and security issues on the Citytrain network. As of March 2005, there are 8 main incident categories in the SIMS database. Each category branches off into subcategories, as detailed below. The SIMS database is regulated and can only be accessed by the Operations Call Centre, Facilities (Sunshine and Coopers Plains), Rollingstock Maintenance, Protective Services, Rail Squad, Crime Prevention, GSMs and various other stations which have access to the QR LAN.

1. Assault
1. Armed causing fear/alarm
2. Assault – Common
3. Assault occasioning bodily harm
4. Assault – Passenger
5. Assault – Police
6. Assault – QR employee
7. Assault – Serious
8. Deprivation of liberty
9. Grievous bodily harm
10. Ill-treatment of child
11. Indecent assault – On adult
12. Indecent treatment of child
13. Kidnapping
14. Murder
15. Rape
16. Stalking
17. Wounding

2. Drug & Alcohol
1. Drug offence
2. Drug possession and/or use
3. Drunk & Disorderly
4. Liquor consumed public place
5. Liquor offences by minor
6. Needle stick
7. Needles found
8. Possession drug use instrument
9. Substance Abuse

3. Fare Evasion
1. Fare Evasion

4. Good Order
1. Bomb threat
2. Consume food/drink on train
3. Crossing tracks
4. Disobey move on direction
5. Disorderly conduct
6. Endanger life on railway
7. Fatality
8. Feet on seats
9. Improper entry/exit
10. Indecent behaviour
11. Language obscene
12. Laser light
13. Object in path
14. Other offence
15. Outriding
16. Person nearly struck
17. Person struck
18. Possess dangerous article
19. Smoking on enclosed platform
20. Smoking on train
21. Suicide
22. Suicide tendency
23. Suspect activity
24. Trespass/unlawfully on premises
25. Willful obscene exposure

5. Graffiti
1. Graffiti
2. Materials, other
3. Obscene
4. Possession graffiti instrument

6. Motor Vehicle
1. Arson vehicle
2. Motor vehicle – steal, unlawfully use
3. Motor vehicle – B&E with intent
4. Other offences – motor vehicle
5. Steal from motor vehicle

7. Property Damage
1. Arson, Building/Structure
2. Cracked window
3. Lights out
4. Objects thrown
5. QR Residence
6. Willful damage
7. Willful damage by fire

8. Stealing
1. As a clerk/servant
2. B&E TVM
3. Bicycle – steal, unlawfully use
4. Burglary with breaking
5. Demand property, intent to steal
6. Dwelling, house
7. Other premises B&E
8. Possession property suspected stolen
9. Robbery, unarmed in company
10. Robbery, armed
11. Robbery, unarmed
12. Shop, B&E
13. Stealing, other
14. Stealing from the person

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