

**URBAN PARK SETTINGS AND CRIME:
INFLUENCING COMMUNITY
PERCEPTIONS OF SAFETY
AND PARK USE**

Chris Boulton

Submitted in partial fulfilment of the requirements of the degree of
Master of Criminology and Criminal Justice (Honours)
School of Criminology and Criminal Justice
Griffith University

June, 2008

ABSTRACT

The aim of the research was to explore whether criminal events and the physical arrangement of park settings influence the community's perception of safety, and ultimately their usage of urban parks. Community perceptions of personal safety and park use were examined in urban park settings within a regional city of South East Queensland, using a 2 x 2 (reported crime incidents: high or low levels x park setting: inviting or uninviting) Factorial Design. Park settings were evaluated using Kaplan, Kaplan and Ryan's (1998) eight patterns of fear and preference. A Pearson Product-moment correlation revealed that participant scores for perception of safety were independent to scores for park use. ANOVA revealed that there was a significant difference in participant scores for personal safety, between settings classified as either inviting or uninviting. The difference in participant scores for personal safety, between settings classified as experiencing either high or low levels of crime incidents, was not significant, with no interaction effect. ANOVA also revealed that while there was no significant difference in participant scores for park use between settings classified as inviting versus uninviting, or between settings classified as experiencing high levels versus low levels of reported crime incidents, there was however a significant interaction effect. When parks experience high levels of crime, reported park use was greater when the setting was inviting than uninviting. No gender or age differences were detected for any of the dependent variables. The research findings support previous research that found perceptions of personal safety are related to the physical characteristics of park settings, and also that park use and perceptions of safety are independent to crime incidents. The research demonstrates that while crime incidents may not have a significant influence, the physical characteristics of park settings play a very important role in promoting positive perceptions of safety within the community. The implications are that future design and management of park settings should consider Kaplan, Kaplan and Ryan's (1998) eight patterns of fear and preference to promote positive perceptions of personal safety within the community.

ACKNOWLEDGEMENTS

I would like to like to thank my supervisors, Dr. Susan Dennison and Assoc. Professor Lorraine Mazerolle, for their continued support, encouragement and confidence that I would deliver some unique and valuable research.

In-kind support for the research was generously provided by the relevant local government authority and the Queensland Police Service. I would therefore like to thank Craig Maudsley, Rob Sewell, Robert Latter, Peter Aitken and Trevor Hazenberg for assisting me with accessing data and other information important to this research.

I wish to thank the questionnaire participants who voluntarily contributed to the research as community representatives.

I would also like to thank: Heather Lindsay for preparing the park plans contained in the appendix; as well as Spiros Manolakis and Candy Rosmarin for assisting with editing and review of draft versions. Thank you to my family and friends (Mum, Dad, Zoe Smith, Leigh and Greg Owen), for their valued assistance in distributing questionnaires as well as ongoing moral support.

Finally, my deepest gratitude to Keith for his enduring levels of tolerance and support.

DISCLAIMER

While as the researcher, I was also employed by the relevant local authority as the *Parks and Reserves Planning Officer*, for the duration of the research design and data collection phases of the study. The data collection was executed independent to the role and responsibility of Council, and as such there is no perceived conflict of interest.

It should be understood that the research findings do not reflect the views of *Griffith University*, the *Queensland Police Service* or the relevant local government authority.

STATEMENT OF ORIGINALITY

This is an original piece of work undertaken for the purpose of fulfilling the requirements of the degree of Master of Criminology and Criminal Justice (Honours). This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the dissertation contains no material previously published or written by any other person except where due reference is made in the dissertation itself.

.....
Chris Boulton

TABLE OF CONTENTS

ABSTRACT	II
ACKNOWLEDGEMENTS	III
DISCLAIMER	III
STATEMENT OF ORIGINALITY	IV
CHAPTER 1 INTRODUCTION	1
1.1 AIM AND OBJECTIVES OF THE RESEARCH	2
1.2 IMPORTANCE OF THE PRESENT RESEARCH	3
1.3 UNDERSTANDING ‘FEAR OF CRIME’ AND ‘PERCEPTIONS OF SAFETY’	4
CHAPTER 2 LITERATURE REVIEW	7
2.1 CRIMINOLOGICAL APPROACHES TO UNDERSTANDING CRIMINAL EVENTS	7
2.1.1 Defensible Space, CPTED and Situational Crime Prevention	7
2.1.2 Rational Choice and Routine Activities	9
2.2 APPROACHES TO PARK PLANNING AND DESIGN	11
2.3 PREVIOUS RESEARCH: PARKS AND PERCEPTIONS OF SAFETY	12
2.4 LIMITATIONS OF PREVIOUS RESEARCH	15
2.5 DETERMINING PARK SETTINGS, CRIME EVENTS AND PERCEPTIONS OF SAFETY	17
2.5.1 Determining Criminal Events	17
2.5.2 Determining Physical Characteristics of Urban Park Settings	17
2.5.3 Determining Community Perceptions of Safety	18
2.5.4 Determining Community Park Use	18
2.6 THE RESEARCH HYPOTHESES	19
CHAPTER 3 METHOD	21
3.1 RESEARCH DESIGN	21
3.2 RESEARCH SITE AND PARTICIPANTS	21
3.2.1 Research Site	21
3.2.2 Participants	22
3.3 PART ONE: CRIME INCIDENTS	25
3.3.1 Overview	25
3.3.2 Materials and Procedure	26
3.4 PART TWO: PARK SETTINGS	30
3.4.1 Overview	30
3.4.2 Materials and Procedure	31
3.5 SUMMARY OF FINDINGS: PARTS ONE AND TWO	33
3.6 PART THREE: COMMUNITY PERCEPTIONS	34
3.6.1 Overview	34
3.6.2 Materials and Procedure	34
CHAPTER 4 RESULTS	38
4.1 DATA PREPARATION	38
4.2 DESCRIPTIVE CHARACTERISTICS	38
4.3 CORRELATIONS	41
4.4 TESTING THE HYPOTHESES	43
CHAPTER 5 DISCUSSION	45
5.1 OVERVIEW	45
5.1.1 Hypothesis One: Perceptions of Safety and Park Use	45
5.1.2 Hypothesis Two: Perceptions of Safety and Park Settings	46
5.1.3 Hypothesis Three: Park Settings and Park Use	46
5.1.4 Hypothesis Four: Crime Incidents and Park Use	47
5.1.5 Summary	47
5.2 APPLYING CRIME PREVENTION THEORETICAL FRAMEWORKS	48
5.3 CONSIDERATIONS FOR PLANNING AND DESIGN OF URBAN PARKS	49
5.4 LIMITATIONS OF THE RESEARCH METHODOLOGY	50

5.4.1 Part One: Crime Incidents..... 50
5.4.2 Part Two: Park Settings..... 51
5.4.3 Part Three: Community Perceptions..... 53
5.5 STRENGTHS OF THE RESEARCH METHODOLOGY..... 54
5.6 FUTURE CONSIDERATIONS..... 57
5.7 CONCLUSIONS..... 58
REFERENCES..... 60

LIST OF TABLES

TABLE 3.1: 2 x 2 FACTORIAL DESIGN	21
TABLE 3.2: PARTICIPANT DEMOGRAPHIC CHARACTERISTICS BY PARK	24
TABLE 3.3: PARKS WITH REPORTED CRIMINAL EVENTS	27
TABLE 3.4: PARK RANKING - CRIME INCIDENTS	30
TABLE 3.5: PARK RANKING - INVITING PARK SETTING	33
TABLE 3.6: FINAL 2 x 2 FACTORIAL DESIGN WITH PARK SELECTIONS	34
TABLE 4.1: DESCRIPTIVE STATISTICS – PARK USE AND PERCEPTIONS OF THE PARK ENVIRONMENT.....	39
TABLE 4.2: ACTIVITIES MOST LIKELY TO BE UNDERTAKEN WHILE VISITING THE PARK.....	39
TABLE 4.3: INCIDENTS IDENTIFIED BY COMMUNITY PARTICIPANTS.....	40
TABLE 4.4: DESCRIPTIVE STATISTICS – PARTICIPANT CRIME KNOWLEDGE/EXPERIENCE	41
TABLE 4.6: CORRELATION BETWEEN DEPENDANT VARIABLES	42

APPENDICES

APPENDIX A	DWELLING STRUCTURE DISTRIBUTION	70
APPENDIX B	PARK INVENTORY	71
APPENDIX C	PARK SETTING EVALUATION MATRIX	72
APPENDIX D	PARK SITE PLANS	80
APPENDIX E	PARK DESCRIPTIONS	87
APPENDIX F	COMMUNITY QUESTIONNAIRE	89
APPENDIX G	DEPENDENT VARIABLE: PARK USE	95
APPENDIX H	DEPENDENT VARIABLE: PERCEPTION OF PARK SETTING	96
APPENDIX I	DEPENDENT VARIABLE: PERCEPTION OF PARK MAINTENANCE	97
APPENDIX J	DEPENDENT VARIABLE: PERCEPTION OF PERSONAL SAFETY	98
APPENDIX K	DEPENDENT VARIABLE: EXPERIENCE/KNOWLEDGE OF CRIME	99
APPENDIX L	QUESTIONNAIRE PACK: COVER LETTER	100
APPENDIX M	QUESTIONNAIRE PACK: INFORMATION SHEET	102
APPENDIX N	REMINDER POSTCARD	105
APPENDIX O	RESEARCH DATA SET CD	107

CHAPTER 1 INTRODUCTION

Parks are places that enable humans to interact with nature and with each other. While parks are often provided in urban areas for the community to undertake a diverse range of activities such as leisure, sport and recreation, they also provide a place for meeting others and social interaction (Cooper Marcus and Francis, 1998; Phillips, 1995). Parks in urban areas also provide settings where people can experience nature and natural systems within the built environment, and can appreciate the value of flora and fauna (Morgan, 1991; Phillips, 1995; Welch, 1995). Indeed, it has been found that through the provision of parks, there are many economic, environmental and social benefits for individuals and for communities as a whole (Parks and Leisure Australia and SGL Consulting, 2003). Urban parks are also often viewed as a place to escape or retreat from the urban environment, pollution and harshness of the city (Burgess, Harrison and Limb, 1988; Chiesura, 2004; Morgan, 1991).

As parks offer many benefits to the urban population, it is important to understand the extent to which parks are valued by the community. One of the strongest indicators of a park's success is a high level of visitation or use (Hines, 2005; Phillips, 1995; Veal and Lynch, 2001). Other indicators include levels of community pride and involvement (Phillips, 1995) as well as user experience and satisfaction (Crilley, 2005; Molnar and Rutledge, 1986; NSW National Parks and Wildlife Service, 1991; Welch, 1995).

Variations in levels of park user satisfaction can be attributed to a range of factors, including the park setting design, management and the level of maintenance (Melbourne and Metropolitan Board of Works, 1983; Morgan, 1991; Phillips, 1995; Wekerle and Whitzman, 1995), as well as the presence of other park users (Hayward, 1989 in Cooper Marcus and Francis, 1998; Wekerle and Whitzman, 1995; Whyte, 1980). Further, low levels of park use have been attributed to a range of interrelated factors associated with the physical park setting including poor or inappropriate facilities (Molnar and Rutledge, 1986; Phillips, 1995; Morgan, 1991; Wekerle and Whitzman, 1995; Westover, 1988; Whyte, 1980) and poor levels of maintenance (Cooper Marcus and Francis, 1998; Morgan, 1991; Phillips, 1995).

There are also social factors that influence park use and user satisfaction including the management of activities, crime/law and order, and the presence and characteristics of

other park users within the park (Cooper Marcus and Francis, 1998; Westover, 1988; Wekerle and Whitzman, 1995; Whyte, 1980). Above all, fear of crime (Burgess, Harrison and Limb, 1988; Mowen, Payne and Scott, 2005;) and feelings of safety and security (Cooper Marcus and Francis, 1998; Schroeder and Anderson, 1984;) emerge as key factors reported to influence levels of park use.

Importantly, the groups within our community that are most likely to be concerned about their personal safety are those who do not undertake adequate levels of physical activity. These groups are namely women, middle-aged and older adults, parents of young children, non-English speaking groups, and those who have attained lower levels of education (Parks and Leisure Australia and SGL Consulting, 2003). These groups may also exhibit a greater awareness and concern for their personal safety. It has been suggested that public spaces (including parks) that are supportive of women and older people, will generally be supportive for everyone (Bell, 1998; Cooper Marcus, and Francis, 1998). A perceived lack of personal safety amongst women in particular, can lead to avoidance behaviours and limited use during specific times of the day and evening (Burgess, 1988; City of Toronto, 2001; Westover, 1982).

Public concerns relating to perceptions of safety are of significant interest to managers of urban parks as areas of public open space for the community. Perceptions of personal safety and fear of crime have been identified as key issues that can be a significant barrier to park use through avoidance of these places (Parks and Leisure Australia and SGL Consulting, 2003; Warr, 2000; Westover, 1982). As a means of understanding the related concepts of ‘perception of safety’ as well as ‘fear of crime’, it is appropriate to define each of these terms and discuss their interrelationship. Similarly, it is also of value to identify those factors which influence perceptions of safety relative to public open space.

As the introduction to this research, this chapter addresses the current status of urban parks as key areas of public open space within the built environment, as well as the phenomenon of fear of crime and perceptions of safety within the community.

1.1 Aim and Objectives of the Research

The aim of this research is to explore whether criminal events and the physical arrangement of park settings influence the community’s perception of safety, and

ultimately their usage of urban parks. In order to meet this aim and to frame the research, the following related objectives were developed:

- 1) To identify the concentration and characteristics of crime in urban parks;
- 2) To identify or develop a methodology for evaluating the physical characteristics of urban park settings that may contribute to positive perceptions of safety;
- 3) To examine the extent and the nature of community perceptions of safety relative to an urban park in the neighbourhood;
- 4) To examine the extent of community use of an urban park in the neighbourhood;
- 5) To apply crime prevention theoretical frameworks to interpret and examine the interaction between crime, park settings and community perceptions of personal safety;
- 6) To identify key factors for consideration in the planning and design of urban parks in order to facilitate high levels of community use of these public open space areas.

In exploring these objectives, this research includes a review of the current literature pertaining to the issues of park visitation, crime prevention, and perceptions of safety and fear of crime. The research will identify and test a number of hypotheses through applied field research activities, and proposes a range of key considerations for future park management practices.

1.2 Importance of the Present Research

Environmental factors are consistently represented within the literature as the strongest influences of community perceptions of safety. This would indicate that in the context of urban parks, good visual and physical access, high levels of surveillance, few signs of disorder, and the presence of people, may be the strongest influence in fostering a

positive perception of personal safety. Good planning and design of urban parks therefore should be informed by the social, recreational and aesthetic requirements of the community. It is anticipated that the research findings will be of interest to public and private organisations concerned with the provision of public open space, including planning, management and operational activities.

It is important to explore and determine if environmental factors can positively influence perceptions of safety. Further, it is important to understand how to apply the research findings in shaping the future growth and development of our urban environment.

“Increasing urbanisation and growing pressures on natural systems reflect a complex set of social, physical, economic, aesthetic and cultural forces. Achieving effective and sustainable outcomes for the totality of the built and natural environment requires an integrated response.

The public domain...plays an increasingly important role as a venue for social interaction, celebration and human endeavour. Consequently, it is essential that the public domain incorporate places that are meaningful, enjoyable, and equitable for the people who use them.” (Australian Institute of Landscape Architects, 2006b: 1)

While the validity of environmental factors as a positive influence on perceptions of safety has been supported by a diverse quantity of foreign examples, there are relatively few local applications. In order to determine whether these ideas for improving the planning and design of open space are relevant today in the Australian context, they need to be validated through local research. At a time where the rate of population growth is anticipated to achieve unprecedented levels for South East Queensland (Office of Urban Management, 2005), it is critical to understand the value of public open space to the community and those influences that determine the maximum levels of community use.

1.3 Understanding ‘Fear of Crime’ and ‘Perceptions of Safety’

For the purposes of the present research, it is important to differentiate between ‘fear of crime’ and ‘perception of safety’. While there are many references that address the issue of ‘perception of safety’ and ‘fear of crime’, there are few that offer an actual

definition of the concept of 'perception of safety'. Frequent misunderstanding of the critical differences between these terms is a sentiment strongly expressed within the literature (Farrall, 2003; Warr, 2001). Despite the absence of concise definitions, there are a number of terms frequently incorporated within the various explanations of these terms.

References to 'perception of safety' commonly use descriptive terms relating to obtaining an interpretation, understanding or awareness of the environment through the senses (Warr, 2000; Westover, 1982). Attempts to define 'fear of crime' include: reaction to the environment (Warr, 2000); emotional response (Alvi, Schwartz, DeKeseredy and Maume, 2001); and emotional and physical response (Pain, Williams and Hudson, 2000). Warr (2001: 453) proposes that "fear is not a perception of the environment - it is a reaction to the perceived environment." In the context of urban parks, the application of these definitions is that the environment may hold a number of sensory cues (visual, audible, tactile), which a person may interpret as signs/indications of danger or risk. However, it is only if that person feels vulnerable or a lack of control that the perception is likely to induce the emotion of fear (Brantingham and Brantingham, 1995). For the purposes of the present research, 'perception of safety' is adapted from Warr (2001) and defined as 'a reaction to the perceived environment based on indications of risk to personal safety'.

In the context of urban parks, there are a range of physical and social factors proposed to have an influence on perceptions of safety within the community. This includes a range of factors relating to experiences as a park visitor such as incidents of crime (Jeffrey, 1971; Morgan, 1991); the presence of undesirables (Mollnar and Rutledge, 1986; Whyte, 1980); vandalism (Kaplan, Kaplan and Ryan, 1998; Morgan, 1991; Phillips, 1995); anti-social behaviours such as consumption of alcohol, drug and solvent abuse, and noisy behaviour (Welch, 1995; Wing Yu, Galanakis, Hamilton-Smith, Hodgetts and McIntosh, 1988); drug-dealing and prostitution (Morgan, 1991); as well as sexual harassment and assault (Banks, Chee-Hung Chan, Graham, Hamilton-Smith, Hodges, Stampton and Wissenden, 1989; Wing Yu et. al., 1988).

Independent to actual experience/s as a park visitor, another factor proposed to influence perceptions of safety is the perceived amount of crime (Carcach, Frampton, Thomas and Cranich, 1995). These proposals seem to indicate that physical, social and

managerial factors of parks may collectively influence perceptions of personal safety. Understanding community perceptions of personal safety is therefore, a critical step in developing solutions to promote high levels of park use. It would also appear that there is a need to further explore the relationship between perceptions of safety, the physical characteristics of park settings and park use within the community.

The content of the document is presented in five chapters. Chapter Two presents a literature review of both the theoretical frameworks relating to perceptions of safety, environmental criminology and park design, as well as an evaluation of previous related research in these areas. This provides an indication of how the research can address some of the identified gaps to date, and further, how these findings could be used to propose a range of hypotheses. Chapter Three outlines the methodology used to undertake the research, including the study area, the specific research questions, the research procedure, data analysis, and the limitations encountered while executing the study. Chapter Four presents the results of the analysis specific to each of the hypotheses. Finally, Chapter Five provides a discussion of the findings including whether the hypotheses were supported, the implications of the findings and proposed considerations for ongoing and further research.

CHAPTER 2 LITERATURE REVIEW

This chapter provides an analysis of the existing literature in terms of criminological approaches to interpreting criminal events, and approaches to park planning and design. This also includes a review of a selection of previous research concerning the use, design and perceptions of safety relative to urban and natural areas. Through the identification of the current gaps, a rationale for the present research is presented, along with descriptions of how crime, park settings and perceptions of safety are assessed. The chapter is concluded with the development of the research hypotheses that support the aim and objectives of this research.

2.1 Criminological Approaches to Understanding Criminal Events

Brantingham and Brantingham (1993) have suggested that criminal events are the product of the convergence of offender motivation, law, and target characteristics within an environmental setting in space and time. It is this philosophy that draws together theories of crime prevention relative to public open space areas. The various models of crime prevention provide a useful approach to explain and understand crime incidents, criminal events, unlawful activities and disorder (Jeffrey and Zahm, 1993). These models include the approaches of crime prevention through environmental design (CPTED) (Jeffrey, 1971), defensible space (Newman, 1972) and situational crime prevention (Clarke 1980), which have contributed to the foundation of related criminological theories. These theories include rational choice theory (Clarke and Cornish, 1985) and routine activities theory (Cohen and Felson, 1979).

2.1.1 Defensible Space, CPTED and Situational Crime Prevention

There are three similar approaches to crime prevention that address the design of the built environment: defensible space; CPTED; and situational crime prevention (SCP). These approaches are similar in that they depart from the main field of criminology to emphasise the significance of the environmental settings that facilitate criminal acts rather than the person undertaking a criminal act (Clarke, 1997).

The concept of defensible space (Newman, 1972) was proposed as an approach to reduce and prevent crime in the context of publicly-owned multi-level residential complexes (Clarke, 1997). The intent of this approach was to provide an uncomfortable environment for potential offenders through architectural design that reduced opportunities for criminal events (Zahm, 2004). The concept attempted to prevent crime within the built environment through means of “reducing anonymity, increasing surveillance and reducing escape routes for offenders” (Clarke, 1997: 8).

Another approach to crime prevention was CPTED, which was developed by the sociologist C. Ray Jeffery (Zahm, 2004), at a time when planners were challenged to reconsider the value of older urban areas, their streets, and the way in which they accommodated the social functions of the community (Jacobs, 1961). As a result, CPTED was developed in the context of considering the social elements in broader urban design, through the manipulation of the physical setting.

“Urban environments can influence [criminal] behaviour in two ways - physically by providing the physical surroundings to which people respond; and socially, by providing the social relationships to which individuals respond” (Jeffrey, 1971: 215).

The concept of situational crime prevention (Clarke, 1980) emerged as a further extension of these initial approaches to crime prevention. This approach attempts to address “settings for crime, rather than upon those committing criminal acts” (Clarke, 1997: 2). Situational crime prevention consists of sixteen opportunity-reducing techniques grouped under the terms: increasing perceived effort; increasing perceived risks; reducing anticipated rewards; removing excuses (Clarke, 1997: 18). Situational crime prevention is particularly relevant to parks. It was prescribed with public authorities as managers of parks in mind (amongst others), in providing a means to reduce opportunities for crime in such places (Clarke, 1997).

Collectively, these approaches offer a relevant application to the management and design of parks. In order to provide a park that is a defensible space, Newman’s (1971) theory may suggest that with regular use of their park, residents are likely to be familiar with other users, as well as their neighbours. Good visual access of the setting should facilitate effective surveillance by neighbours, pedestrian and vehicular traffic from adjoining properties, streets and pathways. Through the application of CPTED, it can be

suggested that community involvement in decision making processes, park improvements and activities as strategies of promoting a sense of community ownership would also prevent the extent of crime. Provision of minimal escape routes and controlling access may however increase a sense of fear, as escape may be desirable from the perspective of a potential victim.

Surveillance and access control are key principles of situational crime prevention that are shared with CPTED and defensible space. In terms of understanding the relationships between crime, park settings and community perceptions of safety, this model implies that a reduction in opportunities for crime through management and manipulation of the park environment can result in fewer incidents of crime. Situational crime prevention “measures are most effective when they target specific offences” (Clarke, 1997:4). In this context, the appropriate opportunity-reducing techniques included target hardening, surveillance (natural, formal through security patrols, as well as by employees/other park users), reducing temptation, denying benefits, and facilitating compliance (Clarke, 1997). One interpretation of this theory is that with the implementation of both management and site design that engages these techniques, it could be expected that crime incidents can be reduced. Another similar interpretation is that crime prevention through opportunity-reduction may result in positive perceptions of personal safety amongst the community.

2.1.2 Rational Choice and Routine Activities

There are two key theories of crime prevention that address criminal events relative to public open space. These are rational choice (Cornish and Clarke, 1986) and routine activities (Cohen and Felson, 1979) theory. The rational choice model attempts “to explain why individuals behave as criminals in some situations and not in others” (Jeffrey and Zahm, 1993:337). The relevance of this theory is that it indicates that the environmental setting may have an influence in preventing crime, depending on the efforts, risks and benefits in committing a criminal act (Vold, Bernard and Snipes, 2002). The founding principle of routine activities theory is that crime is facilitated through a convergence in space and time of a suitable target, a motivated offender, and the absent capable guardian (Clarke, 1997). These theories “share a common assumption that behaviour is a rational means to maximise gain and minimise cost” (Jeffrey and Zahm, 1993: 336). In explaining criminal events in parks, these theories

offer a framework for interpreting the interaction of human behaviour and the physical environment.

Rational choice theory operates around three assumptions: that all crime has a purpose; that criminals have limited rationality; and that the decision-making sequence of an offender differs with each situation (Vold et. al, 2002). Rational choice theory “focuses on the individual offender’s perception of the opportunity structure of each environment and his decision to maximise loss from the environment” (Jeffrey and Zahm, 1993: 337). The application of this approach as well as the situational crime prevention model (Clarke, 1997) to crime prevention in explaining perceptions of safety, crime and park settings, suggests that modifying the park environment can prevent crime by limiting choices and therefore, limiting opportunities for a criminal act, as perceived by a likely offender.

Routine activity theory (Cohen and Felson, 1979), “looks at the interaction of targets, potential offenders, and control agents as producing the crime event” (Jeffrey and Zahm, 1993: 336). While similar to rational choice theory, routine activities theory does not address the source of motivation of the offender (Clarke, 1997). The theory is more concerned with the development of an opportunity for an offender to partake in a criminal event by way of a deviation from regular, day-to-day activities, including work and leisure (Clarke, 1997). The relevance of this theory to explaining crime, perceptions of safety and park settings occurs in understanding the development of an opportunity for criminal events through the presence of “a likely offender, absent guardians and a suitable target” (Cohen and Felson, 1979 in Clarke, 1997: 11).

In the context of the present study, it is an absence of park users, security personnel, employees, caretakers, passing traffic, or neighbours that provide guardianship to the park setting and its facilities. In relation to the expected types of crime in urban parks, the suitable targets consist primarily of park facilities and park users themselves. It is possible that park users potentially fulfil the role of a capable guardian and a suitable target. From the perspective of routine activities, the theory provides a firm foundation for the research problem in understanding the relationships between the setting, its users and crime. In applying this theory to parks, it could be expected that with a high frequency and duration of park use, and design of the park setting that is robust and compatible with the needs of park users, would limit opportunity for unlawful activities.

These theories provide varying perspectives in order to understand the relationships between crime, urban park settings and perceptions of personal safety. With a shared focus on the environmental factors, the point of difference lies in the nature of human activity and consequently, interaction with the setting and the associated effect on crime incidents. The relevance of these theories to the current study, is that both human activity and the arrangement of the park setting and design of the park facilities may all contribute to the occurrence of unlawful activities and an individual's perception of personal safety.

In terms of the current research, the application of the crime prevention theories to urban park settings provides a number of questions. Are perceptions of safety influenced by levels of park use, levels of crime or the physical arrangement of park settings themselves? Approaches to park planning and design were sought in order to further explore the influence of park setting and their arrangement. The following section shifts the focus from criminological approaches to park planning and design, in terms of the models and guidelines for modifying open space areas as environmental settings to accommodate people, their recreation and social activities.

2.2 Approaches to Park Planning and Design

Approaches to park planning and design have been driven by two primary considerations: the incorporation of nature and the natural environment; and accommodating people (Cooper Marcus and Francis, 1998; Hendry, 1997; Lynch, 1960; McHarg, 1969; Simmonds, 1983). In the late sixties, designers looked to embrace the fundamental elements of natural settings and transpose the meanings through open space design. "People...look to nature for meaning and order, peace and tranquillity, introspection and stimulus... many look to nature and activity in the outdoors as the road to restoration and health" (McHarg 1969:5). We are reminded that these places should be democratic, responsive and also meaningful (Carr, Francis, Rivlin and Stone, 1992). "Public spaces are environments that should be designed and modified to support the needs and requirements of people" (Kaplan, Kaplan and Ryan, 1998: 7).

The value of incorporating natural elements within the landscape is evident throughout the literature with an emphasis on desire for parks that are passive retreats, visually refreshing, socially-satisfying and mentally stimulating (Molnar and Rutledge, 1986).

These terms focus on the social and aesthetic functions of urban parks as public spaces. In some regard, planners and landscape architects are presented with a challenge to replicate nature while also provide a democratic space for human activities and interaction. As a result, the profession has witnessed a number of shifts in the approach to open space design, from a philosophy focussed on nature, to one of the needs of people and their activities (Hendry, 1997). The review of criminological approaches and park design approaches would strongly suggest that in terms of understanding perceptions of safety, the answer lies in exploring the interrelationship between people and park settings.

2.3 Previous Research: Parks and Perceptions of Safety

There is only a discrete collection of studies that have explored the relationship between perceptions of safety and factors of urban park settings (Herzog and Kropscott (2004); Pfisterer (2002); Schroeder and Anderson (1984); Westover (1982)). Pfisterer (2002) explored the relationships between crime and perceptions of safety in six urban parks within Providence, Rhode Island. Using a series of case studies, park user perceptions of park quality and safety were compared with crime hot spots to determine if concentrations of crime incidents were consistent with areas identified as having negative perceptions of safety. The study revealed that there was no correlation between park users' perceptions of safety and concentrated areas of crime within the city. This meant that park user perceptions of safety for those urban park sites were not influenced by the presence of crime hot spots.

Westover (1982) compared park user perceptions of safety with avoidance behaviours relative to three district parks in the central mid-west of the United States. This research revealed that there was generally a positive perception of safety for district level parks during the day. The study also found that there was a significant gender difference in perceptions of safety and avoidance behaviour. Specifically, "male park users reported feeling safer in the park than female users" (Westover, 1982: 106). Similarly, "male park users were less likely to report avoiding some park areas than were female park users" (Westover, 1982: 108). In terms of perceptions of safety and the influence of criminal events, "park visitors regarded the parks as safe...in spite of their reports of experiencing or knowing about criminal behaviours in these settings" Westover (1982: 109). Further, the study found that there was a significant difference in park users

perceptions of safety and reported avoidance behaviour. "People who do not feel safe alone in the park also tend to avoid visiting the park or areas within the park" (Westover, 1982: 116).

The research undertaken by both Pfisterer (2002) and Westover (1982) found that visitors to urban park sites felt safe irrespective of their knowledge of criminal events at, or within, the areas of these sites. In further exploration of this finding, Westover (1982) identified a significant gender difference in that male park visitors were more likely to report feeling safe than female park visitors. The outcomes of the research by Pfisterer (2002) and Westover (1982) were consistent with the proposal that crime levels do not always correlate with perceptions of safety (Brantingham and Brantingham, 1995), and that a negative perception of safety is more likely to be experienced amongst women (Bell, 1998; Cooper Marcus and Francis, 1998; Harnik and Kimball, 2005). Further, Westover's (1982) findings support the proposal that negative perceptions of safety can result in avoidance behaviours (Burgess, 1988; City of Toronto, 2001). In contrast, these findings do not support the opposing theory that crime events negatively influence perceptions of safety (Carach et. al., 1995; Jeffrey, 1971; Morgan, 1991). Similarly, these findings did not support the concept that signs of criminal events such as vandalism (Kaplan, Kaplan and Ryan, 1998; Morgan, 1991; Phillips, 1995) and anti-social behaviours (Welch, 1995; Wing Yu et. al., 1988), result in negative perceptions of safety.

Drawing on the Kaplan's Preference-Matrix Model (Kaplan, Kaplan and Ryan, 1998), Herzog and Kropscott (2004) undertook an evaluation of legibility, mystery and visual access as predictors of preference and danger in forest settings. Participants involved in the study were required to rate images of forest settings without visible pathways in terms of nine factors including visual access, danger, coherence, complexity, legibility, mystery, landmarks, movement ease and preference. This research revealed that visual access was positively correlated with preference and negatively correlated with danger (Herzog and Kropscott, 2004: 672). Participants preferred forest settings with good visual access, and where visual access was poor, participants indicated a sense of danger.

In an earlier study, Schroeder and Anderson (1984) involved an analysis of college student perceptions of security and scenic quality in relation to urban park settings in

Chicago, Illinois and Atlanta, Georgia. The methodology involved participants examining a series of photographs of urban recreation sites. A high level of visibility, the presence of developed park features, and the proximity of populated areas, were found to be important factors contributing to positive perceptions of security within these settings. Further, attributes of visibility included the presence of open areas and long viewing distances.

These studies have examined the influence of park setting factors on people's perceptions of safety relative to park and forest settings. The importance of visual access as a specific factor of park settings supports the idea that visibility is an important factor for enhancing an individual's perception of safety (Einwater, 2001; Wekerle and Whitzman, 1995). The arrangement of the built environment has been proposed extensively throughout the body of criminological literature concerned with explaining criminal events. Yet, the physical arrangement of a park setting has not been previously identified by many as a factor that may contribute to negative perceptions of safety.

The body of research that has specifically explored the relationships between crime, park setting factors and perceptions of personal safety is limited (Herzog and Kropscott (2004); Pfisterer (2002); Schroeder and Anderson (1984); Westover (1982)). In terms of exploring the criminal events of park settings and environmental factors as influences on perceptions of personal safety and park use, the previous research provided a range of qualitative and quantitative research methods, settings, variables and results to consider in the development of a new research design. These studies exposed a number of inconsistencies in explaining the influence of criminal events and environmental factors on perceptions of safety relative to urban park settings. While these studies have been completed within the United States, Britain and Canada, no Australian examples could be sourced. Similarly, with even fewer studies identified that have been undertaken during the last twenty years (Herzog and Kropscott (2004); Pfisterer (2002)), there is a modest opportunity to explore the contemporary status of the interrelationship between perceptions of safety, crime and park settings.

2.4 Limitations of Previous Research

The literature provides a foundation of theory and proposals pertaining to the influences of perceptions of safety, in respect to urban parks. However, there are a number of gaps and as a result, an inconclusive explanation of these influences. This together with a number of recommendations for further studies by earlier researchers, provides the rationale for this research.

As far as limitations and gaps, the research to date concentrates on either park users (Pfisterer, 2002; Westover, 1982) or individuals with no direct association to the research site (Herzog and Kropscott, 2004; Schroeder and Anderson, 1984), rather than the population of stakeholders that includes both actual and potential park users and non-users. Westover (1982) and Hamilton-Smith (1991) identified the need for further research that extends beyond the users of parks in order to understand why parks are not used by a greater proportion of the community. That is, there is a need to identify the perceptions of potential park users, rather than just those who already use parks.

The findings of Pfisterer (2002) and Westover (1982) indicated that the perceptions of safety are independent to criminal events, which supports the idea that measuring perceptions is more valuable than measuring the amount of crime (City of Toronto, 2001; Cybriwsky, 1999; Hamilton-Smith, 1991; Mowen, Payne and Scott, 2005). However, where there is a need to draw comparisons with actual crime events, Pfisterer (2002) has suggested that a range of sources are considered, rather than relying solely on police records. The value of further exploring the impact of site characteristics on perceptions of safety has been demonstrated by the findings of Herzog and Kropscott (2004), as well as Schroeder and Anderson (1984).

A number of researchers have suggested that the physical arrangement of a site, including the character of spaces and pedestrian and vehicular circulation routes, influence perceptions of safety (Bell, 1995; Cooper Marcus and Francis, 1998; Hamilton-Smith, 1991; Wekerle and Whitzman, 1995; Westover, 1982). Further, the role of visual access as an influence on perceptions of safety is possibly a key factor, based on the findings of Herzog and Kropscott (2004) and Schroeder and Anderson (1984). This concept is further supported by Einwater (2001) and Wekerle and Whitzman (1995).

Finally, as the majority of these studies have been undertaken within the United States, a difficulty lies in ascertaining the validity of the findings in an Australian context. Australian health agencies and government organisations have strongly promoted the value of undertaking an active lifestyle (Maller, Townsend, Brown and St Ledger, 2002; National Heart Foundation, 2001a; National Heart Foundation 2001b; Office of Urban Management, 2005; Parks and Leisure Australia and SGL Consulting Group, 2003). Walking has been identified as one of the current and most popular recreational activities undertaken by the community at a national and regional level (Stimson, Western and McCrae, 2003; Stratcorp Consulting Group, 2005). With a local climate that supports this activity year-round, understanding community perceptions of safety relative to urban parks is therefore very important, given that urban parks are intended to be accessible public open spaces for recreation (Clouston, 1996) as well as many other uses.

In summary, there appeared to be limited recent local research that specifically evaluated the collective relationship between crime events, characteristics of urban park settings and community perceptions of safety. The aim of the current study was to explore whether crime events and park setting characteristics influence the community's perception of safety and ultimately use of parks. Based on the findings of previous studies, theory and approaches to park planning, design and preventing criminal events, a research question was proposed as follows:

How do variations in the physical attributes of park settings and the presence of criminal events effect local community perceptions of safety and park use?

It is anticipated that this question can be addressed through a new research design undertaken in the local context which looks at a collection of urban parks in residential areas of similar density. The proposed research needs to identify the perceptions of the community living in close proximity of urban parks as the most likely park users and potential users. Most importantly, a research design is required that collectively addresses the physical environmental factors, criminal events, and the community in relation to park use, and perceptions of personal safety.

2.5 Determining Park Settings, Crime Events and Perceptions of Safety

The independent variables relevant to the research question include: crime events; and physical factors of urban park settings. The dependent variables are: community perceptions of safety; and community park use. In order to respond to the research question, these variables are defined in terms of how they are operationalised based on previous research and approaches identified within the literature.

2.5.1 Determining Criminal Events

While there are several methods appropriate for measuring crime, the present research was concerned with crime incidents. As a means of determining the level of crime in public open spaces, previous studies have used police records (Pfisterer, 2002), victimisation surveys and signs of physical and social disorder (Sampson and Raudenbush, 2001). Police records provide an extensive coverage of crime incidents that have occurred locally (Maxfield and Babbie, 2001). These include reported offences as well as requests for attendance, which are also linked to specific properties. In order to maintain a degree of consistency with previous research, the adopted operationalisation of crime events was 'incidents of crime recorded by either the Queensland Police Service and/or the Council'.

2.5.2 Determining Physical Characteristics of Urban Park Settings

There are a variety of attributes that contribute to the physical character of a park as a setting. While there are individual components such as trees, seats, playgrounds and pavements, it is the arrangement of these and other components which provide information about the setting. In other words "an environment is defined by its contents and their organisation" (Kaplan, Kaplan and Ryan, 1998: 10). With a focus on the ability of urban park settings to accommodate people and their activities, physical factors of park settings were operationalised as those patterns that are likely to contribute to environmental 'fears and preferences' (Kaplan, Kaplan and Ryan, 1998).

Factors equated with generating fear for users of parks as natural settings refer to elements that invoke insecurity or vulnerability, and include visual access, familiarity, and human signs (Kaplan, Kaplan and Ryan, 1998). Preferences consist of those factors that facilitate a park visitor's comprehension and orientation of the landscape, and include coherent areas, smooth ground, mystery, sense of depth and openings (Kaplan, Kaplan and Ryan, 1998). Employment of this concept is consistent with previous

studies including Herzog and Kropscott (2004) and Herzog and Kirk (2005). For the purpose of this study, this concept was simply described as ‘inviting’ or ‘uninviting’. In this context the adopted definition of inviting was: *the presence of environmental patterns that negate fear and enhance preference*. Park settings that exhibit characteristics consistent with patterns that negate fear and enhance visitor preference were described as ‘inviting’, whereas those that did not are described as ‘uninviting’.

2.5.3 Determining Community Perceptions of Safety

Perceptions of safety have been measured in previous studies through surveys and interviews of households (Burgess, 1988; Ditton, Farrall, Bannister and Gilchrist, 2000; Nasar, 1999; Pain, Williams and Hudson, 1999), park visitors (Pfisterer, 2002; Westover, 1982), and through facilitated classroom activities where participants were required to rate photographs of settings (Schroeder and Anderson, 1984; Herzog and Kropscott, 2004). A popular method is the use of questionnaires that incorporate a selection of statements that indicate a person’s perception of safety, as well as an indication of the level of interpretation and understanding of a park setting (City of Toronto, 2001; Pfisterer, 2002; Westover, 1982; Wekerle and Whitzman, 1995). For the purpose of the present research, responses to a selection of statements about a person’s knowledge and/or awareness of indicators of danger or risk to their physical well-being was the adopted approach used to determine perception of safety.

2.5.4 Determining Community Park Use

There are varying levels to which a person may visit or use a park. In order to determine whether the level of park use is high or low, there needed to be a definitive rate of visitation. Low levels of park use have previously been determined as infrequent (visit less than once per month) and non-use (Mowen, Payne and Scott, 2005). In order to gauge levels of park use, previous methods have included observations of people undertaking activities within parks (Boyle, 1983; Chiesura, 2004; Sullivan, Kuo, and Depooter, 2004), telephone surveys and interviews with household representatives (Mowen, Payne and Scott, 2005), interviews with park visitors (Pfisterer, 2002), and surveys of park visitors (Crilley, 2006; Westover, 1982). In terms of the present research, high and low levels of park use described the frequency of visits to a specific park undertaken by a person from the community.

2.6 The Research Hypotheses

Four research hypotheses were developed in order to respond to the research question, which was ‘How do variations in the physical attributes of park settings, and the presence of criminal events impact on local community perceptions of safety and park use?’ Using the two independent and two dependent variables, hypotheses were developed based on the findings of previous research and approaches to park planning and design and also crime prevention. The first hypothesis was developed to test the founding proposal that perceptions of safety influence levels of park use (Cooper Marcus and Francis, 1998; Schroeder and Anderson, 1984), or in other words, “feeling safe is a pre-requisite to the use of urban open space” (Kaplan, Kaplan and Ryan, 1998:32).

Hypothesis One: When community perceptions of safety are positive, community use of parks is greater than when perceptions of safety are negative.

As an extension of this primary hypothesis, further hypotheses were developed to predict community perceptions of safety and park use by the influence of crime events and the physical characteristics of park setting.

Urban parks with inviting settings (that is, arranged to achieve environmental patterns to negate fear and enhance preference according to Kaplan, Kaplan and Ryan (1998)), should promote positive perceptions of safety. Similarly, the findings of Herzog and Kropscott (2004) and Schroeder and Anderson (1984) has demonstrated that visual access, open areas and distant views as patterns that reduce fear are important in promoting positive perceptions of safety. The literature provided contrasting perspectives regarding the impact of criminal events on perceptions of safety. A number of authors have suggested that experience, knowledge or perceptions of criminal events do affect community perceptions of safety (Jeffery, 1971; Morgan, 1991; Phillips, 1995). Alternatively, others have found that perceptions of safety are not associated with criminal events (Brantingham and Brantingham, 1995; Pfisterer, 2002; Westover, 1982). Given that the present research was similar to that of Pfisterer (2002) and Westover (1982), in that the research was concerned with levels of crime

and perceptions of safety in the context of parks, the second hypothesis was based on Pfisterer (2002) and Westover's (1982) findings.

Hypothesis Two: When park settings are inviting, even if there is a high level of reported crime, community representatives will report higher levels of perceived safety than when park settings are uninviting.

The third hypothesis extends this rationale and addresses the inviting character of park settings relative to community levels of park use. This is based on proposals that people are more likely to use a place they prefer (Kaplan, Kaplan and Ryan, 1998) and that levels of park use are associated with physical factors of the park setting (Cooper Marcus and Francis, 1998; Molnar and Rutledge, 1986; Morgan, 1991; Phillips, 1995; Wekerle and Whitzman, 1995; Westover, 1982; Whyte, 1980).

Hypothesis Three: When park settings are inviting, community use of parks is greater than when park settings are uninviting.

The final hypothesis provides an extension of the theory that perceptions of safety are not associated with criminal events, and tentatively predicts the influence of the level of criminal events on the community levels of park use. While there were few sources of empirical research that can demonstrate that criminal events in parks result in low levels of park use, this idea is proposed by a number of sources (Hines, 2005; Jacobs, 1969; Robertson and Friedman, 2005), which provides the basis of the final hypothesis:

Hypothesis Four: There will be no difference in reported levels of park use according to whether reported crime incidents are high or low.

In summary, the four hypotheses were prepared based on the relevant literature in order to respond to the research question. The following chapter presents the methodology developed to test these hypotheses.

CHAPTER 3 METHOD

3.1 Research Design

The aim of the research was to identify how variations in environmental characteristics of park settings and crime incidents impact on local community perceptions of safety and park use. The context of the study required a number of settings with comparable physical characteristics as well as records of crime incidents, adjacent land use and population density. This enabled testing of the findings from international research in a local context.

The study employed a 2 x 2 factorial design comprising two independent variables each with two levels. This research design facilitated a degree of control over the independent variables while observing the behaviour of the two dependent variables. The first independent variable was ‘crime incidents’ which was assigned two levels: ‘high crime’ and ‘low crime’. Based on each park’s total number of reported crime incidents, the two levels were defined as high and low levels of reported crime incidents. The second independent variable was ‘park setting’ which was assigned the two levels of ‘inviting’ or ‘uninviting’. The 2 x 2 Factorial Design provided the final selection of four parks as shown in Table 3.1.

Table 3.1: 2 x 2 Factorial Design

	High Crime	Low Crime
Inviting Park Setting	Park # 1	Park # 2
Uninviting Park Setting	Park # 3	Park # 4

The five dependant variables were: ‘park use’; ‘perception of personal safety’; ‘perception of park setting’; ‘perception of park maintenance’; and ‘knowledge of crime incidents’.

3.2 Research Site and Participants

3.2.1 Research Site

For the purposes of this research, the research site has not been identified to prevent any negative impacts on the community associated with the research findings. The physical

context selected for the research was the urban parks of a regional city within south east Queensland. This area included an open space network that consisted of approximately 500 parks and reserves, which incorporated local play and picnic parks, waterside parks, conservation estates, bushland reserves, and formal parks. Urban parks within the local government area were predominantly surrounded by mixed land uses, consisting mostly of low density residential zones. The final research site comprised of four geographical areas (Parks #1 to #4) selected within a concentric zone that was determined by a 500 metre radius from a centroid point (being the approximate geographical centre) of each urban park.

Based on the most recent Census data collected (Australian Bureau of Statistics, 2006), the four residential areas comprised a mix of dwelling structures, including attached (flats, units and apartments), semi-detached (such as townhouses) and detached (single houses) dwellings (Appendix A). While detached houses were the dominant dwelling type in all areas, there was some variation in the concentration of semi-detached and attached dwellings. The area associated with Park #4 had a greater concentration of attached dwellings, and the area associated with Park #1 had a greater concentration of semi-detached dwellings.

3.2.2 Participants

The research participants comprised a stratified population sample of 500 residential properties associated with the four selected urban parks. With a potential participant sample providing a selection of up to 2000 community representatives as potential park users, this distance was established with an assumed minimum return rate of questionnaires of five percent to be achieved to ensure a minimum participant group size of one hundred residents. The final group of participants ($n = 298$, per park: $M = 74.5$, $SD = 14.1$) represented those residents that voluntarily completed and returned the questionnaire, with an overall return rate of 14.9%. The majority of questionnaires were returned by participants from the communities associated with Park #1 with 32.2% ($n = 96$) and Park #4 with 26.2% ($n = 78$). The least number of questionnaires were returned by participants from the community associated with Park #3 with 21.5% ($n = 64$) and Park #2 with 20.1% ($n = 60$). The demographic characteristics obtained included gender, age, household tenure, household occupancy, and employment status.

Table 3.2 represents these demographic characteristics of the areas associated with each park.

Table 3.2: Participant Demographic Characteristics by Park

Characteristic	Park #1 % (n) *SLA %	Park #2 % (n) *SLA %	Park #3 % (n) *SLA %	Park #4 % (n) *SLA %	Total % (n) *SLA %
Gender					
Male	34.7 (33) 47.4	28.6 (16) 49.4	42.6 (26) 50.5	32.4 (24) 48.2	34.6 (99) 48.9
Female	63.2 (60) 52.6	71.4 (40) 50.6	57.4 (35) 49.5	67.6 (50) 51.8	64.7 (185) 51.1
Age Group (years)					
15 - 24	7.3 (7) 19.3	1.8 (1) 21.5	8.1 (5) 17.5	7.8 (6) 17.9	6.5 (19) 19.1
25 - 34	7.3 (7) 18.1	19.3 (11) 18.5	6.5 (4) 19.8	19.5 (15) 16.2	12.7 (37) 18.2
35 - 44	7.3 (7) 18.5	22.8 (13) 17.8	21.0 (13) 19.1	19.5 (15) 16.6	16.4 (48) 18.0
45 - 54	30.2 (29) 17.2	19.3 (11) 18.2	32.3 (20) 14.8	11.7 (9) 15.4	23.6 (69) 16.4
55 <	47.9 (46) 27.0	36.8 (21) 24.1	32.3 (20) 28.8	41.6 (32) 33.8	40.8 (119) 28.4
Household Tenure					
Owner-occupier	90.4 (85) 71.6	50.0 (28) 50.3	72.6 (45) 70.7	79.2 (61) 69.9	75.8 (219) 65.6
Tenant / Renting	8.5 (8) 28.4	48.2 (27) 49.7	25.8 (16) 29.3	18.2 (14) 30.4	22.5 (65) 34.5
Household Occupancy					
Single Occupant	12.9 (12) 21.0	12.7 (7) 18.7	29.0 (18) 25.6	22.1 (17) 28.6	18.8 (54) 23.5
Family / Group Occupancy	87.1 (81) 79.1	87.3 (48) 81.3	71.0 (44) 74.4	77.9 (60) 71.4	81.2 (233) 76.6
Employment Status					
Full Time	34.7 (33) 36.5	38.6 (22) 28.8	39.3 (24) 34.1	32.5 (25) 32.2	35.9 (104) 32.9
Part Time / Casual	21.1 (20) 19.4	19.3 (11) 15.2	16.4 (10) 16.7	22.1 (17) 16.4	20.0 (58) 17.0
Unemployed	1.1 (1) 4.0	5.3 (3) 8.1	3.3 (2) 7.3	3.9 (3) 5.4	3.1 (9) 6.2
Other	43.2 (41) 40.1	36.8 (21) 47.9	41.0 (25) 41.9	41.6 (32) 46.0	41 (119) 44.0

* Total for the relevant Statistical Local Area/s (SLA) as collected during the 2001 Census.

The gender of the participant group consisted primarily of females across each of the four residential communities, despite a relatively even distribution of gender within the extended community area (Australian Bureau of Statistics, 2006). The Census findings previous to this study (Australian Bureau of Statistics, 2006), indicated the participant group was generally over-represented by residents older than those residents that typically constitute those areas associated with each park, and that young people were very under-represented.

The proportion of owner-occupants to tenants (of rented dwellings) within the participant group was consistent with the findings of the Census (Australian Bureau of Statistics, 2006), in that the participant group was heavily represented by owner-occupants. In terms of household occupancy, all four communities were characterised by an expected sole occupancy of more than one quarter of dwelling units, with the exception of the community associated with Park #3 where the participant group was over-represented by sole-occupants. The employment status of the participant group was under-represented by those who were unemployed, and over-represented by those that were employed part-time or casually. While residents employed full-time were accurately represented, those that were not part of the labour force (other than unemployed) were under-represented, with the exception of Park #1 providing an over-representation.

3.3 Part One: Crime Incidents

3.3.1 Overview

Part One of the research methodology comprised an archival analysis of existing databases of information relating to crime incidents and the range of parks within the City. These databases included inventories of parks, crime reports (property offences), needle and syringe reports, and requests for attendance by Police. Analysis of these archival records ultimately enabled preparation of a short-list of urban parks that had experienced a number of criminal events, varying in type and quantity. The short-list of urban parks was to form the foundation to Part Two of the research methodology, which was to investigate the presence of patterns of fear and preference within each park setting.

Analysis of the archival records of parks and crime incidents involved a procedure comprising of four steps. The first step was to sort through the Council's database of records of Crime Reports and Needle and Syringe Reports, to determine the concentration of incidents relative to each park category. Step Two was to short-list the parks with the highest proportion of incidents relative to the overall quantity of the park types, and then identify a group of parks that shared as many characteristics as practical. Step Three was to obtain archival records from the Police Service for the same group of parks over the same period to identify other criminal events. The final step was to collate all records to determine the overall number of incidents for the group of parks and to identify which of the parks experienced high or low levels of crime.

3.3.2 Materials and Procedure

In terms of reported crime incidents, the Council as the Local Government Authority (LGA) had developed databases of criminal events reported on property owned and/or managed by Council since January 2001. These databases included Crime Reports, and Needle and Syringe Reports. These databases were compiled using information recorded and submitted by maintenance staff using a specific form for the appropriate type of incident. Details pertaining to each event included the date, site address, incident type and description, and a Police Service Crime Report reference number. These reports identified property-based crime events only.

These reports were completed where evidence was discovered of unlawful activities in the Council's parks, reserves or streetscape areas. Information was recorded only where the incident required maintenance, repair or replacement of damaged facilities, primarily as a means of tracking the associated costs. The incidents were reported to the relevant Park Supervisor undertaking maintenance, construction or horticultural activities, at the site. Once completed, the report was submitted to the Police Service via the nearest Police Station. The database consisted of incidents reported over the period between 1 January 2001 and 1 January 2004, which included arson, wilful destruction of property, theft, vandalism and graffiti. Similarly, the Needle and Syringe Database was a record of incidents where hypodermic needles, syringes and/or needle containers were discovered in parks. Reports from these databases (Pathway Registers) were extracted as Microsoft Word (2002) documents.

A preliminary analysis of the reports was undertaken to identify the concentration of reported incidents relative to the three classifications of parks and reserves. The analysis indicated parks within the LGA experienced different levels of crime, different types of incidents, and many parks had no reported incidents of crime. The reports were also inspected for inaccuracies, and to ensure property names and addresses were consistent with the park sites selected for analysis. Using a modified version of the Council's Parks and Reserves database, a total for Crime Reports and Syringe Reports respectively was entered in spreadsheet corresponding to the relevant park details.

In order to achieve a selection of parks that had as many physical similarities as possible, parks with crime incidents were sorted in terms of the Council's open space classification as: Strategic; District; or Local Parks (Clouston, 1996). These results are illustrated in Table 3.3.

Table 3.3: Parks with Reported Criminal Events

	Strategic Parks % (<i>n</i>)	District Parks % (<i>n</i>)	Local Parks % (<i>n</i>)	Total % (<i>n</i>)
Park Types	4.5 (22)	6.6 (32)	88.9 (432)	100 (486)
Parks without Reports	63.6 (14)	62.5 (20)	96.8 (418)	93 (452)
Parks with Crime Reports	54.5 (12)	68.8 (22)	16.4 (71)	21.6 (105)
Parks with Needle & Syringe Reports	36.4 (8)	37.5 (12)	5.6 (24)	9.1 (44)
Parks with Crime Reports as well as Needle & Syringe Reports	36.4 (8)	37.5 (12)	3.2 (14)	7.0 (34)

This approach ensured a number of similarities between park classifications, such as maintenance, facility improvements and capital works as comparable programs are applied to parks of each classification. The percentage of reported crime incidents was compared between each open space classification for all parks. Within each park classification, District Parks were found to have the highest concentration of reported incidents compared to either Local or Strategic parks. The function of District Parks is

to provide a range of formal and informal facilities to meet recreational needs of the immediate (within 500 metres) and extended community (up to five kilometres) (Clouston, 1996). Facilities in District Parks typically include: pathways; playground; picnic tables and shelters; public toilets; lights; barbecues; shade trees; garden areas; and open space areas for informal recreation and sport. In terms of site and location, District Parks should have approximately fifty percent road frontage, and be within approximately ten minutes walking distance from public transport and major roads. The optimum size of a District Park was generally accepted as a range is an area of one to ten hectares, providing that the range of facilities can be accommodated (Clouston, 1996).

The schedule of District Parks was sorted using Council's Parks and Reserves Database which provided details of each park including the name, location, property address, park type, function, and geographical area. District Parks in urban areas were selected utilising a number of criteria including size, function and access. Selected parks included only those that had been completely developed for informal recreational use, and that were of an optimum size. All parks selected for consideration as research sites had been developed to facilitate activities such as play, picnicking, walking, jogging, cycling and informal games. A further criteria was that the urban park had to be accessible at all times, as some fenced parks in remote or sensitive locations were locked between the hours of 6pm and 6am. Based on the basic criteria of form, function and access, a final group of six district parks were selected for detailed analyses with common elements to form a Park Inventory (Appendix B). This list was compiled as a simple spreadsheet using Microsoft Excel (2002), containing data from Council and the Police Service sources. These parks were initially identified as Parks A through F to ensure anonymity of the sites.

To obtain data relating to request for attendance from the Police Service, a template was provided to the co-ordinating officer. The template identified the basic fields of information required for analysis, which included: an incident identification number; date of request; property address/park description; and an incident description/type. Details were requested for the period that corresponded with Council's records. Records of 'Requests for Attendance' were provided by the Police Service in a spreadsheet format. A total for each Request for Attendance was tallied for each site and entered in the Park Inventory adjacent the relevant park name together with the Crime Report and

Needle and Syringe Report totals. The sum of incidents for each site was calculated to provide an overall score for crime incidents. Parks were ranked from high to low levels of crime as illustrated in Table 3.4.

Table 3.4: Park Ranking - Crime Incidents

Park	Council % (<i>n</i>)	Police Service % (<i>n</i>)	Total % (<i>n</i>)
Park A	77.0 (127)	41.3 (128)	53.7 (255)
Park F	7.9 (13)	21.9 (68)	17.1 (81)
Park B	4.2 (7)	14.8 (46)	11.2 (53)
Park C	4.8 (8)	11.3 (35)	9.1 (43)
Park D	5.5 (9)	8.1 (25)	7.2 (34)
Park E	0.6 (1)	2.6 (8)	1.9 (9)
Total	100 (165)	100 (310)	100 (475)

The total reported crime incidents for the six parks amounted to 475 incidents ($M = 79.2$, $SD = 80.88$), meaning that Park A ($n = 255$) and Park F ($n = 81$) were just above, and the remaining four below, the mean number of incidents. With the conclusion of the procedure of classifying parks according to reported incidents of crime, Park A and Park F were categorised as high crime sites, while Park B, Park C, Park D and Park E were all categorised as low crime sites.

3.4 Part Two: Park Settings

3.4.1 Overview

Part Two of the research methodology consisted of a series of field observations in order to classify the six sites relative to how each park was inviting to the potential park visitor. The field observations involved traversing each park and recording the observed setting using a collection of performance criteria. Each park was then ranked according to assessment of how inviting the setting was according to physical characteristics and environmental factors. The ranked list of parks was then used in conjunction with the list of the same six parks ranked by quantity of crime incidents. This enabled completion of the 2 x 2 factorial design of the research, in preparation for Part Three of the study which measured community perceptions of safety and use of urban parks.

Assessment of the physical characteristics of the park settings involved a process comprising three steps. The first step was to develop a set of performance criteria for evaluating how inviting a park setting was based on Kaplan, Kaplan and Ryan's (1998) definition and description of each pattern of fear and preference. The second step was

to conduct the field observations and evaluate each park setting using the matrix of performance criteria with scores determined for each site. The final step was to collate the scores to formulate a list of parks. The list of parks was ranked based on the scores to determine their order ranging from inviting to uninviting.

3.4.2 Materials and Procedure

As a means of attempting to ensure the evaluation procedure achieved an objective outcome with a clear intent in rating how inviting a park setting was, a matrix of performance criteria was prepared (Appendix C). The matrix incorporated three criteria to evaluate patterns inducing fear, and five criteria to evaluate patterns supporting preference, providing eight criteria in total. The physical arrangement of the site to reduce fear is proposed to incorporate patterns that: provide visual access; enhance familiarity (legible); and indicate the presence of others (human signs). To provide a 'preferred' setting, the physical arrangement of the environment should incorporate patterns that provide: coherent areas (easily understood); smooth ground (to facilitate physical access and mobility); a sense of mystery; a sense of depth; and open areas (Kaplan, Kaplan and Ryan, 1998). The performance indicators consisted of a series of site descriptions and definitions for each pattern ranging in scale from poor, satisfactory, good and excellent.

Attainment of each level resulted in points allocated as follows: poor (zero); satisfactory (one); good (two); excellent (three). This meant that a park setting that was allocated the highest possible score (24) and would demonstrate the presence of all patterns that reduce fear and promote preference to a very high level. Conversely, a park setting that scored the lowest possible score (zero) would demonstrate an absence of these patterns. The Park Setting Evaluation Matrix was prepared using Microsoft Excel (2002).

An Evaluation Matrix was completed in the field at each of the six parks. The evaluation process was undertaken during mid-morning and mid-afternoon on weekdays during May 2005. The field observations were completed by two observers, which included the researcher (female aged 30-35) and the assistant (male aged 50-55). The field observation and evaluation procedure commenced with arriving at the site and identifying the primary pathway through the park that would expose the observers to the major park areas and facilities. Both observers walked together along the length of the

main constructed pathway across the park to the opposing side and returned to the point of origin. This procedure reflected previous studies where field observations of environmental setting were evaluated (Schroeder and Anderson, 1984; Sullivan, Kuo, and Depooter, 2004).

The Evaluation Matrix was reviewed at the end of the pathway, prior to undertaking the return journey. The first assessment criterion was read aloud by the researcher, followed by each of the performance indicators successively from a poor to excellent. The level of evaluation was discussed and tentatively agreed between the two observers as a preliminary evaluation. The observers retraced their route to the point of origin, taking photos of aspects of the site from the pathway for future reference should the need arise. At the completion of the journey the evaluation process described was repeated to agree on the final evaluation at the completion of the journey and prior to departing the site. A site plan for each park (Appendix D) identified the pathway as the route traversed and park descriptions outline general park features noted during the evaluation process (Appendix E).

Upon the completion of the field observations and Evaluation Matrix, a new version of the Evaluation Matrix was completed electronically with scores allocated for each criterion. The scores for fears and patterns were each tallied to determine an overall score for each park setting. This score was finally entered in the Park Inventory adjacent the relevant park. Once each park was scored, the parks were ranked according to how inviting each park setting was, as illustrated in Table 3.5.

Table 3.5: Park Ranking - Inviting Park Setting

Park	Environmental Patterns		Total
	Fears	Preferences	
Park E	9	11	20
Park F	7	11	18
Park C	6	12	18
Park D	7	10	17
Park B	4	11	15
Park A	4	5	9
Total	37	60	97

The total scores for the six parks amounted to 97 ($M = 16.2$, $SD = 3.53$), meaning that Park A ($n = 9$) and Park B ($n = 15$) were just below the mean, leaving four parks above the mean score. The procedure was concluded by classifying parks according to the whether they were inviting or not, using the presence of patterns of fear and preference. Park A and Park B were categorised as uninviting park settings (with patterns absent), while Park D, Park C, Park F and Park E were all categorised as inviting park settings (with patterns of fear and preference present).

3.5 Summary of Findings: Parts One and Two

With the ratings of the six parks in terms of crime incidents and park setting completed, each park was classified according to each of the four categories of the 2 x 2 factorial design. One park occurred within each of three categories. However, three parks (Park C, Park D, and Park E) occurred within the 'low crime/inviting park setting' category. The 'crime incident' score varied most between Park E ($n = 9$) and Park F ($n = 81$) as the opposing high crime site. The 'park setting' score varied most between Park E ($n = 20$) and Park B ($n = 15$). As Park E varied most in each score it was selected as the representative site in the 'low crime/inviting park setting' category. The final Factorial Design with the selected parks is illustrated by Table 3.6.

Table 3.6: Final 2 x 2 Factorial Design with Park Selections

	High Crime	Low Crime
Inviting	Park F (Park #1)	Park E (Park #2)
Uninviting	Park A (Park #3)	Park B (Park #4)

3.6 Part Three: Community Perceptions

3.6.1 Overview

As the final component of the research methodology, Part Three involved the distribution of a community questionnaire to identify levels of community perceptions of safety and park use. The community areas selected for distribution of the questionnaire were determined as a result of the outcomes of Parts One and Two of the study. Assessing community perceptions of safety and use of urban parks was measured through a self-administered resident questionnaire. Responses were coded and prepared as a data set for statistical analysis to respond specifically to each of the four research hypotheses.

3.6.2 Materials and Procedure

The procedure undertaken to conduct the community survey involved four steps. The first step was to prepare a self-administered questionnaire to quantitatively measure resident's perceptions of safety, as community representatives. The second step was to distribute the questionnaires to residential dwellings within the identified zone associated with each park. The third step was to develop and distribute a reminder postcard to encourage as many potential participants as possible to complete and return their questionnaire. The final step was to collate and analyse the data extracted from the questionnaires that were completed and returned for analysis.

A questionnaire was used as the survey instrument which was modelled on the City of Toronto's '*Safety Audit Checklist for Parks*' (2001), adapted from the Metro Action Committee on Public Violence Against Women and Children (METRAC) '*Women's Safety Audit Kit Guidebook*' (1989) designed to "evaluate perceived risk in the urban

environment” (City of Toronto, 2001:7). The content and questionnaire structure of these instruments was considered to be highly appropriate for this research. The instrument was customised to ensure responses could be quantified and could also be completed by residents within 20 to 30 minutes. This meant that the open-ended questions were modified so that responses were indicated within a range of categories or on a Likert-type scale.

Scales were developed by calculating total scores on a number of similar variables including: Visitor Experience; Perception of Park Setting; Perception of Park Maintenance; Perception of Personal Safety; and Crime Experience. Participants were requested to indicate their response using an eleven point scale, based on their experience or opinion relative to each statement. To determine the reliability of each scale, Cronbach’s alpha coefficient was used to check the internal consistency (Pallant, 2001), with some items removed to improve the reliability of the scale.

The questionnaire consisted of five A4 pages with a small map of the park site on the covering page (Appendix F). The purpose of providing the map was to ensure that participants were clear about which park the questionnaire was referring, and so enabled participants to identifying the park and adjoining streets. The map adopted for this purpose was indicative of a street directory as a relatively familiar map to the general public. A map for each park location was downloaded from the “Whereis” website: <http://www.whereis.com.au>. As some items to the questionnaire requested identification of facilities, the street directory-like image provided minimal clues to those participants that may have been uncertain or unfamiliar with the park.

The structure of the questionnaire comprised four parts (A to D), each with a range of questions and statements with structured responses. The questionnaire items were ordered to ensure that non-invasive items requiring simple responses appeared first, followed by items exploring perceptions of personal safety, prior to any items referring to crime and unlawful activities. The final part of the questionnaire related to demographic characteristics, including: gender; age; household tenure; household occupancy; and employment status.

Part A of the questionnaire was titled ‘The Park Facilities and Environment’, and consisted of twenty-eight items including five items that related to the dependent

variable 'Park Use' (*Cronbach alpha coefficient* = .73) (Appendix G). Ten items were also included that attempted to explore the participant's perception of the 'Park Setting' (*Cronbach alpha coefficient* = .84) to provide a second dependant variable (Appendix H), as well as six items to measure a third dependent variable 'Park Maintenance' (*Cronbach alpha coefficient* = .91) (Appendix I). The final item of Part A was an open-ended question that sought the participant's own short description of the park.

Part B was titled 'The Park and Your Personal Safety', and included the twelve items that attempted to measure a dependent variable 'Personal Safety' (*Cronbach alpha coefficient* = .82) (Appendix J). In Part C of the questionnaire (titled 'Incidents of Crime') six items were included to measure a final dependent variable 'Knowledge of Crime Incidents' (*Cronbach alpha coefficient* = .80) such as drunkenness, graffiti and drug use/dealing (Appendix K).

The final section of the questionnaire, Part D titled 'Respondent Details' sought information relating to the participant's demographic characteristics. Categories for gender, age group, household tenure, household occupancy and employment status were provided for participant responses. The final item of the questionnaire provided the participant with an opportunity to express any comments in relation to the park.

The questionnaire was distributed as part of a package which also contained a covering letter on university letterhead (Appendix L), an Information Sheet also on university letterhead (Appendix M), and a reply-paid envelope. The cover letter provided an invitation to the resident from the researcher to participate in the study. A summary of the research activities was provided by the Information Sheet, which also highlighted that participation was voluntary. The Information Sheet provided the resident with instructions on completing and returning the questionnaire in the reply-paid envelope, which was addressed to a Griffith University post office box to ensure anonymity and security of returned questionnaires. Participant consent was assumed with the completion and return of the questionnaire.

Questionnaire packs were distributed to five hundred residential dwellings within the defined community area associated with each park. One questionnaire pack was deposited in the mailbox of each residential dwelling, with a total distribution of 2000 questionnaire packs. This activity was undertaken by the researcher with the assistance

of five additional volunteers over one weekend (20-21 August 2005). In order to promote an adequate level of participant response, a reminder postcard (Appendix N) was designed, printed and then distributed by the researcher during the weekend consecutive to the questionnaire pack (27-28 August 2005) to the same 2000 residential dwellings. As the participants were key stakeholders of the selected parks, the reward offered for participating in the research was promoted as the opportunity to contribute to the study which may further contribute to improving parks as social infrastructure for the community.

Prior to undertaking the research activities, ethics approval for the proposed research was provided by the Griffith University Human Research Ethics Committee (HREC) in accordance with the guidelines of the National Health and Medical Research Council (NHMRC).

CHAPTER 4 RESULTS

4.1 Data Preparation

Preparation of the data involved a process of creating a data file (Appendix O), entering the data, screening and cleaning the data of errors, manipulating variables and creating scales. The software used to analyse the data was SPSS Graduate Pack (Version 13.0). The data file contained a total of 298 cases, with frequencies performed for each of the categorical variables with minimum and maximum values displayed, to identify outliers as possible errors (Pallant, 2001). This process revealed six cases with large amounts of missing data, and were consequently were deleted from the data file.

4.2 Descriptive Characteristics

In terms of participant's knowledge of regular activities in the park by other users, 53.7% ($n = 160$) of the participants indicated that they were aware of activities regularly undertaken by sporting clubs or groups within their nominated park. It was also found that 81.9% ($n = 244$) of the participants reported being aware of other people that regularly visit or use the park. Most participants (73.5% ($n = 219$)) agreed that predominant gender of park users was balanced (males and females) and 90.3% ($n = 269$) of participants indicated that they had visited their relative park.

The questionnaire item exploring participant's knowledge of park facilities provided a range of likely park facilities, including lights, public toilets, playground and pathways as key attributes of an urban park. Participants demonstrated the greatest level of accuracy in recalling the presence of a playground and pathways, with 86.9% ($n = 259$) and 82.2% ($n = 245$) reporting these facilities respectively within their park. The provision of lights within the park was characteristic least accurately reported, with just 51.0% ($n = 152$) of participants correctly recalling that lights were provided in the park.

The participant scores on the four dependant variables Park Use; Perception of Park Setting; Perception of Park Maintenance and Perception of Personal Safety are represented in Table 4.1.

Table 4.1: Descriptive Statistics – Park Use and Perceptions of the Park Environment

Dependant Variable	Park Setting				
	Park #1	Park #2	Park #3	Park #4	Total
	<i>M (SD)</i> <i>n</i>				
Park Use	13.07 (2.65) 92	11.45 (3.62) 56	11.85(3.22) 60	12.61 (2.55) 72	12.36 (3.02) 280
Park Setting	81.15 (12.51) 86	70.60 (15.07) 50	71.92(13.61) 51	74.68 (14.13) 66	75.52 (14.27) 253
Park Maintenance	40.58 (.86) 83	34.17 (6.84) 47	43.29 (10.25) 52	38.09 (10.18) 64	39.28 (10.57) 246
Personal Safety	58.19 (16.12) 77	52.64 (14.90) 45	52.26 (20.12) 54	50.54 (17.60) 61	53.82 (17.45) 237

Participant scores for the dependent variables Park Use ($n = 280$; 18 missing) (Appendix G), Park Setting ($n = 253$; 45 missing) (Appendix H), Park Maintenance ($n = 246$; 52 missing) (Appendix I), and Personal Safety ($n = 237$; 61 missing) (Appendix J) were all normally distributed across the sample as well as for each specific park.

The activities participants were most likely to undertake while visiting the park were walking and/or jogging or use of the playground. The range and popularity of activities is illustrated by Table 4.2.

Table 4.2: Activities Most Likely to be Undertaken While Visiting the Park

Activity	%	<i>n</i>
Walk / jog	58.1	173
Playground	24.8	74
Picnic / Barbecue	13.8	41
Leisure	8.4	25
Sport / Recreation	7.7	23
Relax / Meditate	5.0	15
Cycle	4.4	13
Nature Study	1.0	3
BMX / Skate	1.0	3

Table 4.3 provides a summary of the type of incidents having occurred in the parks that were identified by participants for the study.

Table 4.3: Incidents Identified by Community Participants

Unlawful Activity	%	<i>n</i>
Drunkenness	40.3	120
Littering	39.6	118
Vandalism	38.9	116
Other Minor Offences	34.9	104
Drug Use / Dealing	33.6	100
Graffiti	32.9	98
Wilful Destruction	30.5	91
Physical Assault	28.5	85
Substance Abuse	23.8	71
Other Small Offence	12.8	38
Arson	9.4	28
Theft	7.4	22
Trail Bikes	6.0	18
Robbery	6.0	18
Sexual Assault / Rape	5.4	16
Other Serious Offence	5.4	16
Unlawful Access	3.7	11
Murder / Homicide	2.7	8
Prostitution	1.0	3

Property offences (littering, vandalism, graffiti and wilful destruction), social disorders (drunkenness and drug use/dealing) and other minor offences were identified to be the most experienced crime incidents.

While the data revealed that 37.2% ($n = 111$) of the participants indicated that they were aware that there had been incidents of crime at their respective park during the past twelve months, 44.0% ($n = 131$) of the participants were not sure, and 15.0% ($n = 45$) of the participants believed there had not been any incidents. Participant scores on the Crime Experience scale also reflected the level of uncertainty of how prevalent crime incidents were in parks (Appendix K). Table 4.4 provides a summary of the

characteristics of participant knowledge/experience of crime incidents overall, as well as specifically for each park.

Table 4.4: Descriptive Statistics – Participant Crime Knowledge/Experience

Park Setting	<i>n</i> (missing)	Descriptive Statistics		
		<i>M</i> (<i>SD</i>)	Skewness Coefficient	Kurtosis Coefficient
Park #1	56 (40)	40.80 (6.45)	1.22	.36
Park #2	28 (32)	39.32 (6.84)	2.33	5.51
Park #3	23 (41)	42.00 (7.77)	1.43	1.53
Park #4	50 (28)	39.54 (5.57)	1.98	4.13
Total	157 (141)	40.31 (6.47)	1.64	2.15

It was found that not only was a large quantity of data was missing for this scale, but the participant scores were positively skewed, tending to cluster toward lower values, as well as being very peaked. The quantity of missing data and distribution of participant scores support the earlier findings that 59.0% ($n = 176$) of the participant group were either not sure or were unaware of crime incidents at their respective park setting.

The data was also analysed extensively to determine if there were any gender or age differences in the participants' scores for perception of safety. This included differences either within the sample or between groups of participants from each park area. No gender or age differences for perceptions of safety were revealed.

4.3 Correlations

A bi-variate correlation was performed to determine whether there were any relationships between community perceptions of park setting, park maintenance, personal safety, knowledge of crime incidents and park use in participant responses. Results are presented in Table 4.6.

Table 4.6: Correlation Between Dependant Variables

Pearson Product-moment Correlation Coefficients					
Dependant Variables	Park Use (<i>n</i>)	Park Setting (<i>n</i>)	Park Maintenance (<i>n</i>)	Personal Safety (<i>n</i>)	Knowledge of Crime Incidents (<i>n</i>)
Park Use	1.00	.18** (243)	-.00 (235)	.10 (229)	.28** (150)
Park Setting		1.00	.58*** (230)	.41*** (217)	.15 (143)
Park Maintenance			1.00	.51*** (213)	.30*** (135)
Personal Safety				1.00	.29** (137)
Knowledge of Crime Incidents					1.00

* $p < .05$; ** $p < .01$; *** $p < .001$

The results showed that the strongest positive relationship was between Park Maintenance and Park Setting, meaning that as perceptions of the arrangement of park settings increase, perception of park maintenance also increases. Similarly, there was also a strong positive relationship between Park Maintenance and Personal Safety, which indicates that as perceptions of park maintenance increase, perceptions of safety also increase.

Moderate positive relationships were revealed between perceptions of 'personal safety' and 'park setting' and between 'park maintenance' and 'knowledge of crime'. As 'perception of park settings' increase, 'perception of personal safety' increases. Likewise, an increase in the 'perception of park maintenance' was reflected by an increase in reported 'knowledge of crime'.

Finally, there were weak positive relationships between 'personal safety' and 'knowledge of crime incidents', as well as between 'park use' and 'knowledge of crime incidents'. These results indicate that as an increase in 'park use' was reported, there were likewise increases in reported 'knowledge of crime incidents' and increases in reported 'perceptions of safety'.

4.4 Testing the Hypotheses

Statistical tests were performed to evaluate and determine whether the four research hypotheses were supported. Unless otherwise reported, an alpha level of 0.05 was used to determine significance.

Hypothesis One: When community perceptions of safety are positive, community use of parks is greater than when perceptions of safety are negative.

A bi-variate correlation was undertaken to determine if there was a relationship between the mean participants scores for perception of safety and park use ($n = 229$). A Pearson correlation of $r = .10$ was revealed, which did not reach a level of statistical significance ($p = .117$). This meant that there was no linear relationship between park use (visitor experience) and perceptions of safety as reported by the participant sample. Therefore hypothesis one was not supported.

Hypothesis Two: When park settings are inviting, even if there is a high level of reported crime, community representatives will report higher levels of perceived safety than when park settings are uninviting.

A two-way between groups analysis of variance (ANOVA) was conducted to determine if there were differences in participant's scores for perception of personal safety accordingly to whether or not park setting was inviting, and whether levels of reported crime incidents were high or low. There was no significant main effect for reported crime incidents ($F(1, 226) = 1.11, p = .293$) or interaction effect ($F(1, 226) = 1.43, p = .233$). There was however a significant main effect for park setting ($F(1, 226) = 4.56, p = .034$). When parks were inviting, participants reported perceptions of safety were higher ($M = 55.82, SD = 15.90$) than when park settings were uninviting ($M = 50.37, SD = 17.93$). The hypothesis was therefore supported.

Hypothesis Three: When park settings are inviting, community use of parks is greater than when park settings are uninviting.

Hypothesis Four: There will be no difference in reported levels of park use according to whether reported crime incidents are high or low.

A two-way between groups Analysis of Variance (ANOVA) was conducted to determine if there were differences in participant's scores for reported park use accordingly to whether or not park setting was inviting, and whether levels of reported crime incidents were high or low. There was no significant main effect for park setting ($F(1, 270) = .026, p = .871$) or for reported crime incidents ($F(1, 270) = 1.00, p = .318$) for community use of parks. However, there was a significant interaction between park setting and crime incidents ($F(1, 270) = 10.98, p = .001$).

Post hoc comparisons revealed that there was an effect of park setting on reported park use according to when crime incidents were high ($t(145) = -2.60, p = .005$) and when crime incidents were low ($t(95.55) = 2.03, p = .023$). That is, when crime incidents were high, reported park use was higher in inviting parks ($M = 13.03, SD = 2.67$) compared to uninviting park settings ($M = 11.75, SD = 3.26$). The eta squared statistic (.04) was small to moderate, meaning that only 4.4% of the variance in park use could be explained by park setting. Conversely, it was also found that when crime incidents were low, reported park use was actually lower in inviting parks ($M = 11.45, SD = 3.62$) compared to uninviting park settings ($M = 12.61, SD = 2.57$). In this case, only 3.2% of the variance in park use could be explained by park setting, meaning that the effect size was again small (eta squared statistic = .03). The results provide partial support for Hypotheses Three.

The results also revealed that when the park setting was inviting, reported park use was greater in parks with high levels of crime ($M = 13.03, SD = 2.67$) compared to parks with low crime ($M = 11.45, SD = 3.62$). The eta squared statistic (.05) was small to moderate, meaning that only 5.3% of the variance in park use could be explained by crime levels. When park settings were uninviting, there was no significant difference in reported park use between parks with high levels of crime incidents ($M = 11.75, SD = 3.26$) and park settings experiencing low levels of crime ($M = 12.61, SD = 2.57$). In this case, only 2.0% of the variance in park use could be explained by park setting, meaning that the effect size was again small (eta squared statistic = .02). The results provide partial support for Hypotheses Four.

CHAPTER 5 DISCUSSION

5.1 Overview

The current research aimed to explore whether criminal events and the physical arrangement of park settings influence community perceptions of safety, and ultimately, their use of urban parks. The research activities and findings revealed that criminal events did not influence the community perceptions of safety. The research also demonstrated that the physical arrangement of park settings does influence community perceptions of safety. In terms of criminal events, the research revealed that while perceptions of safety are not influenced by the levels of reported crime incidents, the influence on reported park use does vary according to whether the park setting is inviting or not.

5.1.1 Hypothesis One: Perceptions of Safety and Park Use

Hypothesis One: When community perceptions of safety are positive, community use of parks is greater than when perceptions of safety are negative.

The first hypothesis was developed to test the founding proposal that perceptions of safety influence levels of park use (Cooper Marcus and Francis, 1998; Schroeder and Anderson, 1984), or in other words, “feeling safe is a pre-requisite to the use of urban open space” (Kaplan, Kaplan and Ryan, 1998:32). The research findings revealed that participant scores for perception of safety were independent (not related) to scores for park use, because no positive linear relationship was revealed between these two (normally distributed) dependent variables.

The research findings suggest that factors other than perception of personal safety influence park use. These factors may include the park setting and knowledge of crime incidents, as these were other dependent variables, which were weakly correlated with participant scores for park use. The results of the research therefore, did not support the hypothesis that when community perceptions of safety are positive, community use of parks is greater than when perceptions of safety are negative. This also meant that the research findings could not support the proposal that perceptions of safety influence levels of park use (Cooper Marcus and Francis, 1998; Schroeder and Anderson, 1984).

5.1.2 Hypothesis Two: Perceptions of Safety and Park Settings

Hypothesis Two: When park settings are inviting, even if there is a high level of reported crime, community representatives will report higher levels of perceived safety than when park settings are uninviting.

The second hypothesis was an extension of Hypothesis One in order to predict perceptions of safety and park use by the influence of crime events and the physical characteristics of park settings. The research findings revealed that there was a statistically significant difference between scores for perception of safety between participants from areas associated with parks classified as inviting settings, and those participants from areas associated with parks classified as uninviting settings. There was no statistical difference revealed between scores for perception of safety between participants from areas associated with parks with a high level of crime incidents, and those participants from areas associated with parks with a low level of crime incidents. This meant that participant scores for perception of safety were significantly different (greater) for parks classified as being inviting settings than those which were uninviting, regardless of the park's level of crime incidents. The research findings therefore supported this hypothesis.

5.1.3 Hypothesis Three: Park Settings and Park Use

Hypothesis Three: When park settings are inviting, community use of parks is greater than when park settings are uninviting.

The third hypothesis aimed to test whether the inviting character of park settings positively influenced community levels of park use, based on proposals that people are more likely to use a place they prefer (Kaplan, Kaplan and Ryan, 1998) and that levels of park use are associated with physical factors of the park setting (Cooper Marcus and Francis, 1998; Molnar and Rutledge, 1986; Morgan, 1991; Phillips, 1995; Wekerle and Whitzman, 1995; Westover, 1982; Whyte, 1980). The research findings concluded that there was a statistically significant difference in participant scores for park use, when parks were classified as either inviting or uninviting settings, depending further or whether the parks experienced high or low levels of crime.

Unfortunately as the results were contradictory, they are not very helpful in understanding the influence of park setting on park use. The research findings therefore suggested that park use is influenced by factors other than whether a park setting is inviting or not, as the results of the research only partially supported the hypothesis. This also meant that the research findings could partially support that proposal that people are more likely to use a place they prefer (Kaplan, Kaplan and Ryan, 1998) or that levels of park use are associated with physical factors of the park setting (Cooper Marcus and Francis, 1998; Molnar and Rutledge, 1986; Morgan, 1991; Phillips, 1995; Wekerle and Whitzman, 1995; Westover, 1982; Whyte, 1980).

5.1.4 Hypothesis Four: Crime Incidents and Park Use

Hypothesis Four: There will be no difference in reported levels of park use according to whether reported crime incidents are high or low.

The final hypothesis aimed to test an idea that park use by the community is not influenced by the level of criminal events, as an extension of another theory that perceptions of safety are not associated with criminal events (Hines, 2005; Jacobs, 1969; Robertson and Friedman, 2005). The research findings concluded that there was a statistically significant difference in participants' scores for park use, according to whether reported incidents of crime were high or low, only when park settings were inviting. This suggested that park use is influenced by factors other than the level of reported crime incidents. The results of the research therefore only partially supported the hypothesis that there will be no difference in reported levels of park use according to whether reported crime events are high or low. This also meant that the research findings could only partially support that proposal that perception of safety is not associated with criminal events (Hines, 2005; Jacobs, 1969; Robertson and Friedman, 2005).

5.1.5 Summary

The extent and nature of community perceptions of safety relative to an urban park were examined solely by the community questionnaire. The research findings revealed that local community perceptions of safety were greater for parks with settings that were classified as inviting, than those that were uninviting. Participant scores for perception of safety were also found to be strongly correlated (positive) with scores for their perception of the physical characteristics of the urban park setting. This meant that as

participant scores for personal safety improved, there was also an improvement in the score for the perception of the physical characteristics of the park setting. A further outcome of the research findings was that local community perceptions of safety are strongly correlated (positive) with participant scores for their perception of park maintenance. As perception of park setting and perception of park maintenance are also strongly correlated (again positively) it is therefore clear that these three dependent variables are all related.

The extent of community use of the urban parks included in the research was examined by the community questionnaire. Of the community sample, 95% of participants indicated that they had visited their respective park, with the participants' scores for park use normally distributed. The research findings also revealed that 52% collectively indicated that they used the park rarely, never or less than 3-6 times per year. This meant that the majority of participants were occasional visitors to their respective urban park.

The research findings revealed that community use of an urban park was weakly correlated (positive) with participant scores representing their perception of the physical arrangement of the park setting. This could be interpreted to mean that the more the community use a park, the more familiar they are with the park setting. Similarly, community use of an urban park was also weakly correlated (positive) with participant scores representing their knowledge of crime incidents. This meant that the more the participant has used a park, the more familiar they were with the extent of crime incidents that have occurred.

The data was analysed extensively to determine if there were gender or age differences in the participant scores for park use and personal safety. This included differences either within the sample or between groups of participants from each park area. No gender or age differences for park use or personal safety were revealed.

5.2 Applying Crime Prevention Theoretical Frameworks

The research method was developed and implemented based on a framework of crime prevention theory to interpret and examine the interaction of crime, park settings and community perceptions of personal safety. A framework of crime prevention theory

was selected that addressed the arrangement of the built environment as well as criminal behaviour. Defensible Space (Newman, 1972), CPTED, and Situational Crime Prevention (Clarke, 1980), were the theories selected and applied to the research to interpret and examine crime incidents and park settings. There was therefore, an expectation that with a reduction in opportunities for crime (through management and manipulation of the park setting), there would be fewer crime incidents and positive perceptions of safety. Routine Activities (Cohen and Felson, 1979) and Rationale Choice (Cornish and Clarke, 1986) were the crime prevention theoretical models selected to interpret and examine park use and perceptions of safety.

The research findings supported the concept that park settings, park maintenance and perception of safety are related. These results indirectly supported the theoretical framework, in that if an urban park appears to be well arranged, managed and maintained, there was a demonstration of positive perceptions of safety within the community. However, the research findings were unable to demonstrate that variations in the presence of criminal events affect local community perceptions of safety, and further, that variations in the physical arrangement of park settings had any effect on use of the park by the local community.

The implications of the research findings are that there is value in applying the theoretical models of crime prevention to the design of park settings to promote positive perception of safety. Achieving park settings that are inviting, through their management and arrangement, are likely to promote positive perceptions of safety and further, reduce opportunities for crime.

5.3 Considerations for Planning and Design of Urban Parks

The research findings provide a solid foundation for important considerations for urban park management, planning and design. This should aid the development and maintenance of urban parks that promote positive perceptions of personal safety. Based on the literature and the findings of this research, the following recommendations are proposed to guide park managers, open space planners, landscape architects and design professionals generally:

- Consider patterns of fear and preference (Kaplan, Kaplan and Ryan, 1998) in the planning, design and maintenance of urban parks.

- Identify community demographic characteristics to ensure that park facilities are provided that are relevant and support the recreational and social needs of the local community.
- Provide urban park facilities that are highly visible, accessible and legible to park users and potential visitors.
- Design robust urban park settings to prevent incidents of social disorder such as drunkenness, drug dealing/use and assault, through good levels of casual surveillance and visual access, and physical disorder, such as graffiti, vandalism, wilful destruction through selection of appropriate materials and structure design, as well as good levels of casual surveillance and visual access.
- Consult with community representatives, stakeholder groups and local police to determine the likely extent and nature of existing and anticipated crime incidents in the community and the park.
- Undertake maintenance and monitoring activities to minimise incidents of physical disorder such as graffiti, vandalism, and wilful destruction in urban parks.
- Liaise with local police to monitor activities to minimise incidents of social disorder such as drunkenness, drug dealing/use, and assault in urban parks.

5.4 Limitations of the Research Methodology

There were a number of limitations to the research methodology, which provided potential threats to the validity of the research findings. An explanation of the various strategies and counter-measures that were adopted to ensure the research findings were valid, are presented relative to each part of the research method.

5.4.1 Part One: Crime Incidents

The integrity and accessibility of the Council and Police Service data sets provided a limitation to the archival analysis. Reporting of Crime Incidents and Needle and Syringe Incidents was at the discretion of the maintenance staff, with limited monitoring of the accuracy of data recorded. It was expected that some staff may have been less inclined to complete paperwork, as well as their primary responsibilities to clean up and organise repairs to damaged property. The impact of this situation was that a small portion of data entries were found to be inaccurate and/or incomplete, and in such cases, these entries were excluded from the analysis.

The Police Service also maintained a number of databases that contained details of crime incidents in the community. This meant that a range of details pertaining to unlawful activities, disturbances, complaints that had been reported through the police communications room were recorded. It was understood that the volume of information contained in the databases was extensive and highly sensitive. While achieving access to even limited information was at first difficult, it provided a measure of crime incidents that extended beyond the range of incidents recorded by the Council. It was also found that the quantity of incidents recorded by the Police was generally proportional to those recorded by the Council for the six parks. This could be interpreted that most reported incidents were recorded by Council at the discretion of maintenance staff.

As crime incidents reported to the Police Service were combined with crime incidents recorded by the Council, it is likely that the reported incidents in some instances were duplicated. The reported incidents recorded by the Police Service could not be effectively cross-referenced with the same for the Council to determine they represented an identical incident, as Council's records could not identify the date the incidents occurred, only the date it was recorded by a staff member. Upon receipt of the crime incidents data set from the Police Service, it was observed that the proportion of incidents between the parks was generally consistent with the data received from the Council. This limitation was therefore considered acceptable to the research method.

5.4.2 Part Two: Park Settings

Selecting a group of urban parks with as many similar characteristics as possible was a challenging part to the research method. The group of parks chosen shared many similarities, including: area; classification; access; regularity of shape; and function. There were however also significant differences such as: topography; presence of sporting facilities; socio-demographic characteristics of the surrounding community. The limitation was that no two parks were identical. A research method was adopted that attempted to match parks using as many characteristics as possible.

A significant challenge for the field observations as the second of the research methodology was in identifying an appropriate quantitative approach to evaluate the

qualitative characteristics of environmental settings. Previous research had approached the issue by using colour slides or photographs of environmental settings. Participants were required to rate the image according to the characteristics being examined (Herzog and Kropscott, 2004; Nasar, 1999; Schroeder and Anderson, 1984). As a two dimensional experience of an environmental setting, the method was considered by the researcher to be appropriate in a situation where the sites could not be readily accessed.

An alternative approach was required to facilitate a true experience of the setting. The adopted method was based on an approach to post-occupancy evaluation (POE) evaluating design characteristics of the built environment through the use of performance criteria (Presier, 1999). The purpose of a POE is to “research the effects (of buildings) on their occupants” (Preiser, 1999: 81), which provided another approach to evaluating existing urban parks. A framework of performance criteria developed by Glenn Thomas (Fellow - Australian Institute of Landscape Architects) which had been used to assess design submissions of students enrolled in Landscape Architecture, was used to model a new instrument for the purposes of the current research.

A set of performance criteria to evaluate urban park settings were developed in accordance with the definitions and descriptions of the patterns of fear and preference (Kaplan, Kaplan and Ryan, 1998). As a result, a new instrument for measuring the physical characteristics of environmental settings which had not been fully tested in the application of an in-field context potentially limited the research. During its implementation, the tool was re-assessed to confirm that the tool had value and was effective for the intended purpose.

A further limitation was undertaking the evaluation using the opinion of only two observers: one professional Landscape Architect; and one observer without any formal qualification or professional experience in a built environment discipline. The involvement of observers with contrasting professional backgrounds and experience aimed to eliminate any potential bias of the design professional in evaluating the settings.

5.4.3 Part Three: Community Perceptions

The final part of the research methodology also comprised some limitations, including low return rates of questionnaires, the distribution of advertising materials/direct mail on the same day as the questionnaire materials, and some confusion on the part of potential research participants in terms of their perceived value of their contribution as non-park users.

At least two possible threats to the validity of the data were known to the researcher that may have influenced the behaviour of the dependent variable 'perception of safety'. A selection bias may have occurred where public toilets were present within only three of the four final park sites. Based on the researcher's personal experience, public toilets in urban parks can often be a target for vandalism and other unlawful activities. Participant perceptions of the park that did not have public amenities may have therefore been biased toward positive perceptions of safety. The responses for 'perception of safety' of the participant sample from that specific community were normally distributed, and therefore consistent with the other three sites.

Between the evaluation of the park settings and the distribution of questionnaires to the community, an incident involving a serious assault occurred within Park #3 as the high crime / uninviting site. As a consequence of the assault, Council in consultation with the Police removed significant quantities of vegetation to one side of the park. The threat to the validity of the research findings was that participant opinions of the park may have been influenced by the Council's clearing activities and/or the coverage of the assault by the local media.

As an anticipated limitation to the research, a low rate of return was experienced given the adopted population sampling technique. The mean response rate of 14.9% provided a further potential limitation to the research, being well below the preferred level of 50% as an adequate level of response for mail-out surveys (Maxfield and Babbie, 2001). The approach targeted the entire community within a geographical area, rather than specifically those potential participants with a likely interest in the study area and related topics. As a result, the distribution area was calculated to ensure that a minimum return rate of 5% could be achieved so as to ensure a minimum 100 participants for statistical confidence. Further, strategies were adopted to promote the interest of potential participants and thus maximise return rates. The volume of

advertising materials distributed simultaneously with both the questionnaire pack and the reminder postcard was an unforeseen limitation. This meant that the questionnaire pack and reminder postcard may have been unintentionally discarded with the collection of advertising material where these may have been perceived as “junk mail”. Distribution of the research materials mid-week or by post may have reduced the chance of this perceived risk.

During the distribution of the research materials, a small quantity of potential participants (older residents) expressed an opinion that participation was more appropriate for those who visit the park. Similarly, some elderly residents returned questionnaires incomplete with short notes expressing an apology that they could not participate citing age or non-use of the respective park as an explanation.

The volume of missing data that related to participant knowledge of crime incidents was a further limitation to the research method. This issue may have been over-represented by the questionnaire instrument resulting in instruments returned with no responses to a number of items. With an unknown impact on the rate of participation, these issues were accepted as a limitation with the adopted method of community survey and questionnaire distribution.

Finally, the research method relied on the opportunity to contribute to an activity that may influence park development as future facilities for the local community as an incentive to participate. The descriptive characteristics of the participant sample suggests that this may also have been a limitation, with greater consideration required for an alternative or additional incentive for younger age cohorts to participate. Needless to say that while the impact of some limitations was managed as part of the research design, others were unforeseen and were managed while the research was in progress.

5.5 Strengths of the Research Methodology

The physical characteristics of urban park settings that may contribute to positive perceptions of safety were evaluated using two methods: field observations using an evaluation matrix of performance criteria; and a community questionnaire which measured participants’ perception of their respective park setting. The field

observations provided the key method of evaluating and classifying the physical characteristics of urban parks, while the community questionnaire provided an indication of the characteristics of the park setting observed by the community.

The field observations incorporated an adaptation of the patterns of fear and preference developed by Kaplan, Kaplan and Ryan (1998) as performance criteria. This was in the form of the evaluation matrix that provided a quantitative tool to assess qualitative environmental factors. The physical characteristics targeted by the performance criteria incorporated eight patterns or factors – three which were expected to mitigate visitor's fear within the setting; and five which were expected to enhance visitor's preference for the setting. Urban parks with an arrangement that exhibited good visual access, enhanced the visitor's familiarity, and provided human signs were proposed to prevent a visitor's fear of the setting. The presence of coherent areas; smooth ground; mystery; a sense of depth; and openings were expected to enhance visitor's preference for the park setting. Collaboratively, these eight factors were expected to contribute to a park's classification of an inviting setting. While both methods facilitate evaluation the physical characteristics of urban park settings, field observations enabled a complete experience of the park settings insitu, while the questionnaire relied on participants' recollection of their experience (assuming they did not visit the park for the purpose of completing the questionnaire).

The research provided some support for the limited volume of previous research which explored relationships between park use, park settings, perceptions of safety and crime in parks. Specifically, this included the research undertaken by Pfisterer (2002), Westover (1982) and Schroeder and Anderson (1984).

In terms of perceptions of safety, the research findings were able to support some of the previous research. The differences between groups of participants from parks classified as either inviting or uninviting settings on scores for perceptions of safety, meant that the research supported the proposal that urban parks with inviting settings promote positive perceptions of safety (Brantingham and Brantingham, 1995; Pfisterer, 2002; Westover, 1982). Similarly, no statistically significant differences between groups of participants from parks classified with either high levels of crime incidents or low levels of crime incidents on scores for perceptions of safety, and meant that the research also

supported the proposal that perceptions of safety are not associated with criminal events (Brantingham and Brantingham, 1995; Pfisterer, 2002; Westover, 1982).

The findings of Herzog and Kropscott (2004), as well as Schroeder and Anderson (1984), who found that visual access, open areas and distant views as patterns that reduce fear, were important in promoting positive perceptions of safety. Further, the earlier research undertaken by Schroeder and Anderson (1984) found that a high level of visibility, the presence of developed park features, and the proximity of populated areas were important factors in contributing to positive perceptions of security within these settings. The research method that was adopted to evaluate the physical characteristics of park settings incorporated factors including visual access, open areas and distant views. A statistically significant difference was demonstrated for participant scores for perception of safety between the two groups of park settings classified as either 'inviting' or 'uninviting'. As the park settings classified as 'inviting' exhibited these characteristics, the previous research of Kropscott (2004) as well and Schroeder and Anderson (1984) was supported.

The current research findings also supported the findings of Pfisterer (2002), who determined that there was no correlation between park user perceptions of safety and concentrated areas of crime within the city of Providence, New York. Specifically, it was found that park user perceptions of safety for urban parks were not influenced by the presence of crime hot spots. Similarly, the research findings partially support the previous research undertaken by Westover (1982), who found that perceptions of safety were not influenced by knowledge or experience of criminal events. Westover (1982), also found that there was a significant difference in park user perceptions of safety and reported avoidance behaviour; however this was not supported by the findings of the present research as participant scores for park use were not found to be related to the same participant scores perception of safety.

In this context, the current research demonstrated that the findings of previous research, which explored relationships between park use, park settings, perceptions of safety and crime in parks, could be supported.

5.6 Future Considerations

There are a range of methodological considerations for future research that may either support the findings of this research, or improve our understanding of the relationship between park use, park settings, crime incidents and perceptions of personal safety in urban parks.

In terms of park settings, opportunities for future research include further examination of the physical arrangement of urban park settings, and the relative importance in promoting positive perceptions of safety. While this issue has been examined previously by Herzog and Kropscott (2004) in the context of forest settings, there is an opportunity to examine these influences in an urban park context. Similarly, the influence of a presence or absence of specific park facilities such as pathways, public toilets on park visitor perceptions of safety, could be investigated. The research findings demonstrated that of the activities most likely to be undertaken by the participant sample, walking was the most popular response. While urban parks can provide a single destination for walking activities, they are more likely to contribute as a facility within a more extensive 'network' of parks and/or roads that provide a continuous route or circuit. Further research could examine the locations that are most likely to facilitate this activity and the factors that contribute to participant perceptions of safety.

In terms of crime incidents, there is an opportunity to explore the impact of crime incidents on existing and potential park users. While the research findings did not support that the incidence of criminal events in parks effected perceptions of safety, there may be other effects on use of park facilities. This may include avoidance behaviour relative to specific park facilities, such as public toilets, skate facilities, car-parking areas and playgrounds which can be targets of vandalism, graffiti, assault and other anti-social behaviour. Similarly, there is also an opportunity to further examine the influence and effectiveness of lights in urban parks. Approximately half the participant sample inaccurately identified the presence of lights within their respective parks. It is important that appropriate lighting is provided in public spaces and that the broad range of issues associated with lighting are considered (Queensland Government, 2007).

As the participant sample was strongly represented by older adults and females, there is another opportunity for future research to examine perceptions of safety within specific groups. Young people generally and young women were cohorts poorly represented by the participant sample. The literature identified that these are some of the groups, in addition to people from diverse ethnic backgrounds, which are less likely to undertake adequate levels of physical activity (Parks and Leisure Australia and SGL Consulting, 2003). As the research was unable to demonstrate that the physical characteristics or crime incidents influence park use, there remains an opportunity to further examine other factors that limit use of urban parks.

Finally, given the generally limited range of previous research that addresses the relationship between park use, park settings, criminal events and perceptions of personal safety in urban parks, there are opportunities to undertake further research. This could include longitudinal research to reflect the impact of increased urban densities and the associated community value of parks as areas of public open space. Similarly, comparative analyses of urban parks in other local government area would provide valuable research in determining and understanding any geographical and socio-demographic variations.

5.7 Conclusions

Urban parks are key areas of public open space within the built environment. It is important that the phenomenon of fear of crime is understood, and further, that positive perceptions of safety within the community are achieved through effective management and design of parks as places for people to increase urban park use. This research explored whether crime incidents and the physical arrangement of park settings influence the community perceptions of safety, and ultimately use of urban parks. The research findings provided a valuable perspective in responding to the research question as well as the research objectives proposed from the literature and previous studies. Moreover, the research demonstrates that while crime incidents may not have a significant influence, the physical characteristics of park settings play a very important role in promoting positive perceptions of safety within the community.

At a time where urban development continues to meet the demands of a rapidly increasing population in south east Queensland (Office of Urban Management, 2005),

provision of parks as areas of public open space becomes increasingly difficult with increasing pressure from urban development. Understanding the value of parks and their use by the community is critical to ensure that parks are provided to appropriately meet their recreational, aesthetic, environmental, social, economic and physical needs for users, today and in the future. If parks are to be enjoyable, meaningful and equitable for all people who use them, it is critical that all demographic groups have a positive perception of personal safety as either an existing park user, or a potential park visitor.

REFERENCES

- Alvi, Shahid, Martin D. Schwartz, Walter S. DeKeseredy and Michael O. Maume (2001) 'Women's Fear of Crime in Canadian Public Housing' *Violence Against Women*. 7 (6): 638 - 661.
- Australian Bureau of Statistics (ABS) (2006) *Census of Population and Housing – CProfile 2001*
<http://www.abs.gov.au/websitedbs/d3310114.nsf/home/Census%20Products>
- Australian Bureau of Statistics (ABS) (2002) *Ausstats: Community Safety Survey, Tasmania*.
<http://www.abs.gov.au/ausstats/abs@.nsf/0/3021023cd3224329ca256bd000281c58?>
- Australian Institute of Landscape Architects (AILA) (2006a) *Australian Institute of Landscape Architects 2006 National Project Awards: Information, Guidelines and Submission Form*. Canberra, ACT: Australian Institute of Landscape Architects
- Australian Institute of Landscape Architects (AILA) (2006b) *What is Landscape Architecture?* Canberra, ACT: Australian Institute of Landscape Architects
<http://www.aila.org.au/information/about.htm>
- Babbie, E. (2001) *The Practice of Social Research*. (9th Ed.) Belmont, CA: Wadsworth.
- Banks, Andrea, David Chee-Hung, Nigel Graham, Elery Hamilton-Smith, Jennifer Hodges, Paul Stampton and Tony Wissendon (1989) *Darebin Parklands: Study of Neighbours and Visitors*. Melbourne: Department of Leisure Studies, Phillip Institute of Technology.
- Bell, Wendy (1998) 'Women and Community Safety.' *Safer Communities: Strategic Directions in Urban Planning Conference*.
<http://www.aic.gov.au/conferences/urban/bell.html>
- Bently, Ian, Alan Alcock, Paul Murrain, Sue McGlynn and Graham Smith (1985) *Responsive Environments: A Manual for Designers*. London: The Architectural Press.
- Bottoms, A.E. and Wiles, P.E. (1997) 'Environmental Criminology' in Maguire, M., Morgan, R. and Reiner, R. (eds) *The Oxford Handbook of Criminology*. New York: Oxford University Press.
- Boyle, Rhonda (1983) 'Survey of the Use of Small Parks.' *Australian Parks and Recreation* 20 (4): 41 – 43.
- Brantingham, P.J. and Brantingham, P.L. (1995) 'Understanding and Controlling Crime and Fear of Crime: Conflicts and Trade-Offs in Crime Prevention Planning' in S. P. Lab (ed) *Crime Prevention at a Crossroads*. Cincinnati, OH: Anderson Publishing Co.
- Brantingham, P.J. and Brantingham, P.L. (1993) 'Environment, Routine, and Situation: Toward a Pattern Theory of Crime' in Clarke, R.V. and Felson, M. (eds) *Routine Activity and Rational Choice: Advances in Criminological Theory*. (Vol. 5) New Brunswick, NJ: Transaction Books.

Bull, Catherin (2002) *New Conversations with an Old Landscape*. Mulgrave, Victoria: The Image Publishing Group.

Burgess, Jacquelin, Carolyn M. Harrison and Melanie Limb (1988) 'People, Parks and the Urban Green: A Study of Popular Meanings and Values for Open Spaces in the City.' *Urban Studies* 25 (2): 455 – 473.

Carcach, Carlos, Peta Frampton, Kaye Thomas and Matthew Cranich. (1995) 'Explaining Fear of Crime in Queensland.' *Journal of Quantitative Criminology*, Vol. 11, No. 3, pp. 271 – 287.

Cheung Wing Yu, Stathi Galanakis, Elery Hamilton-Smith, Chris Hodgetts and Fiona McIntosh (1988) *Fairfield Park: A study of the Benefits of an Urban Park*. Melbourne: Department of Leisure Studies, Phillip Institute of Technology.

Chiesura, Anna (2004) 'The Role of Urban Parks for the Sustainable City.' *Landscape and Urban Planning* 68 (1): 129 – 138.

City of Toronto (2001) *Planning, Designing and Maintaining Safer Parks*. Toronto: City of Toronto Parks and Recreation Department.

Clarke, R.V. (1997) *Situational Crime Prevention: Successful Case Studies*. New York: Harrow and Heston.

Clarke, Ronald V. (1980) *Situational Crime Prevention*.

Clarke, R. V. and Cornish, D.B. (1985) 'Modelling Offenders' Decisions: A Framework for Research and Policy' *Criminal Justice: An Annual Review of Research* 6: 147-185.

Clarke, R.V. and Felson, M. (1993) 'Criminology, Routine Activity and Rational Choice.' In Clarke, R.V. and Felson, M. (eds) *Routine Activity and Rational Choice: Advances in Criminological Theory*. (Vol. 5) New Brunswick, NJ: Transaction Books.

Clarke, R.V. and Felson, M. (1993) *Routine Activity and Rational Choice: Advances in Criminological Theory*. (Vol. 5) New Brunswick, NJ: Transaction Books.

Clouston (1996) *Ipswich Open Space and Recreation Development Plan*. Townsville, QLD: Clouston.

Cohen, L.E. and Felson, M. (1979) 'Social Change and Crime Rate trends: A Routine Activity Approach' *American Sociological Review* 44: 588-605.

Cole, Alan. (1977) 'Perception and Use of Urban Parks: A Melbourne Case Study'. In Mercer, David (ed) *Leisure and Recreation in Australia*. Malvern, Victoria: Sorrett Publishing Pty Ltd.

Cooper Marcus, Clare and Francis, Carolyn. (1998) *People Places: Design Guidelines for Urban Open Space*. New York: John Wiley and Sons.

Cranz, Galen (1981) 'Women in Urban Parks' In Stimson, Catherine et. al. *Women and the American City*. Chicago: University of Chicago Press.

Crilley, Gary (2006) 'Benchmarking Service Quality in Australian Leisure and Tourism Today.' *Australasian Parks and Leisure* 9 (2): 24-25.

Crilley, Gary and Price, Bianca (2006) *Visitor Service Quality, Visitor Benefits, and Behavioural Intentions: An Empirical Investigation at an Australian Botanic Garden*. Proceedings of the Council for Australian Tourism and Hospitality Education (CAUTHE) Conference, Melbourne 2006.

Cybriwsky, Roman (1999) 'Changing Patterns of Urban Public Space: Observations and Assessments from the Tokyo and New York Metropolitan Areas.' *Cities* 16 (4): 223 – 231.

Dancey, Christine P. and Reidy, John (2002) *Statistics Without Maths for Psychology*. (2nd Ed.) Harlow, ESSEX: Prentice Hall.

Davis, Mike. (1992) *City of Quartz: Excavating the Future in Los Angeles*. New York: Vintage Books.

Ditton, J. and Farrall, S. (eds) (2000) *The Fear of Crime*. Ashgate, Aldershot:

Ditton, J., Farrall, S., Bannister, J. and Gilchrist, E. (2000) 'Crime Surveys and the Measurement Problem: Fear of Crime.' in Jupp, V., Davies, P. and Francis, P. (eds) (2000) *Doing Criminological Research*. London: Sage.

Farrall, S.D. (2003) *Measuring the Fear of Crime with Greater Accuracy*.
http://www.regard.ac.uk/research_findings/RES-000-22-0040/report.pdf

Federal Bureau of Investigation (1998) *National Incident-Based Reporting System: Volume 1 Data Collection Guidelines*. Washington, D.C.: U.S. Department of Justice, Federal Bureau of Investigation.

Flink, Charles A. and Searns, Robert M. (1993) *Greenways: A Guide to Planning, Design, and Development*. Washington, D.C.: Island Press

Fogg, George E. (1990) *Park Planning Guidelines*. (3rd Ed.) Arlington, Va : National Recreation and Park Association.

Gobster, Paul H. and Westphal, Lynne M. (2004) 'The Human Dimensions of Urban Greenways: Planning for Recreation and Related Experiences.' *Landscape and Urban Planning* 68, pp. 147 – 165.

Godbey, Geoffrey, Laura Payne and Elizabeth Orsega-Smith (2002) *Increasing Physical Activity Among Older Adults*. Testimony to a US Congressional briefing sponsored by the National Coalition for Promoting Physical Activity, Washington, DC.
http://www.ncppa.org/Godbey-Congress_final.pdf

Hamilton-Smith, Elery and Mercer, David (1991) *Urban Parks and Their Visitors*. Melbourne, VIC: Board of Works Victoria.

Harris, Michael and Jensen, Ben (1998) 'Fear of Crime and Perceptions of Safety.' *Australian Social Monitor*, September 1998, pp. 8-10.

- Harnik, Peter and Kimball, Amy (2005) 'If You Don't Count, Your Park Won't Count: Estimating the Number of City Park Users Can Be Difficult, But Is Important to Receiving Funding'. *Parks and Recreation*. June 2005. Ashburn, VA: National Recreation and Parks Association.
http://findarticles.com/p/articles/mi_m1145/is_6_40/ai_n13825540
- Harrison, C. and Burgess, J. (1989) 'Living Spaces' *Landscape Design*. September 1989, pp. 14-16.
- Hendry, Margaret (1997) 'The Profession of Landscape Architecture in Australia: Some Historical Influences on the Theory and Practice' *Landscape Australia* 3 1997.
<http://www.aila.org.au/information/historyhendry/history-hendry.htm>
- Herzog, Thomas R. and Kirk, Kristin M. (2005) 'Pathway Curvature and Border Visibility as Predictors of Preference and Danger in Forest Settings' *Environment and Behaviour* 37 (5): 620-639.
- Herzog, Thomas R. and Kropscott, Laura S. (2004) 'Legibility, Mystery and Visual Access as Predictors of Preference and Perceived Danger in Forest Settings without Pathways' *Environment and Behaviour* 36 (5): 659 – 677.
- Heywood, Jeffrey (1989) 'Urban Parks: Research, Planning and Social Change in Public Places.' In Altman, I. and Zube, E. (eds) *Public Places and Spaces*. New York: Plenum Press.
- Hines, Susan. (2005) 'Contested Terrain' *Landscape Architecture*. May 2005, 95 (5):114 – 125; 146 – 147.
- Hitchmough, J.D. (1994) *Urban Landscape Management*. Sydney, NSW: Inkata Press.
- Hopper, Leonard J. and Drodge, Martha J. (2005) *Security and Site Design: A Landscape Architectural Approach to Analysis, Assessment, and Design Implementation*. Hoboken, NJ: John Wiley and Sons.
- Howell, David C. (1999) *Fundamental Statistics for the Behavioural Sciences*. (4th Ed.) Pacific Grove, CA: Duxbury Press.
- Integrated Open Space Services (2003) *Park User Satisfaction Benchmark Survey – SEQ Regional Parklands Round 5: November 2002 – March 2003*. Kenmore, QLD: Integrated Open Space Services.
- Ipswich City Council (unpublished) Ipswich Region Demographic Profile (2001 Census). Ipswich, QLD: Ipswich City Council.
- Jacobs, Jane. (1961) *The Death and Life of Great American Cities*. Harmondsworth, Middlesex: Penguin Books.
- Jeffery, C. Ray and Zahm, Diane L. (1993) 'Crime Prevention through Environmental Design, Opportunity Theory, and Rational Choice Models' in Clarke, R.V. and Felson, M. (eds) *Routine Activity and Rational Choice: Advances in Criminological Theory*. (Vol. 5) New Brunswick, NJ: Transaction Books.

Jeffery, C. Ray (1971) *Crime Prevention Through Environmental Design*. Beverley Hills, CA: Sage.

Jupp, V., Davies, P. and Francis, P. (eds) (2000) *Doing Criminological Research*. London: Sage.

Kaplan, R., Kaplan, S. and Ryan, R.L. (1998) *With People in Mind: Design and Management of Everyday Nature*. Washington, DC: Island Press.

Kenkre, Ashima R. (1993) *Evaluation of the Seven Qualities Proposed in Responsive Environments for Enhancing Sense of Place in the Built Environment*. Kansas: Kansas State University (Masters Thesis).

Kent, Fred (2004) 'Parks for the Future: Framing the Debate on Contemporary Park Design and Landscape Architecture.' *Making Places* September 2004.
http://www.pps.org/info/newsletter/september2004/september2004_design

Lab, S.P. (1995) *Crime Prevention at a Crossroads*. Cincinnati, OH: Anderson Publishing Co.

Lynch, Kevin (1994) *Good City Form*. Cambridge, Massachusetts: MIT Press.

Lynch, Kevin (1960) *The Image of the City*. Cambridge, Massachusetts: MIT Press.

McCormick, Joel. (2006) 'Designing Against Crime: Time Spent at the Drafting Table Can Make Parks and Green Spaces Safer.' *Parks and Recreation*. May 2006. Ashburn, VA: National Recreation and Parks Association.
<http://www.nrpa.org/content/default.aspx?documentId=4205>

McHarg, Ian L. (1969) *Design with Nature*. New York: Natural History Press

Madden, Kathy (2004) 'Six Parks We Can All Learn From.' *Making Places* September 2004.
http://www.pps.org/info/newsletter/september2004/september2004_feature

Madden, Kathy and Benjamin, Fried (2004) 'Which Direction For Our Parks?' *Making Places* September 2004.
http://www.pps.org/info/newsletter/september2004/september2004_park_news

Maller, C.J., Townsend, M., Brown, P. and St Ledger, L. (2002) *Healthy Parks, Healthy People: The Health Benefits of Contact with Nature in a Park Context*. Report to Parks Victoria. Burwood, Melbourne: Deakin University.
<http://www.parkweb.vic.gov.au/resources/mhphp/pv1.pdf>

Maxfield, M. G. and Babbie, E. (2001) *Research Methods for Criminal Justice and Criminology*. Belmont, CA: Wadsworth.

Maguire, M., Morgan, R. and Reiner, R. (1997) *The Oxford Handbook of Criminology*. New York: Oxford University Press.

Melbourne and Metropolitan Board of Works (1983) *Melbourne Parks: A Survey of the Use of Selected Sites*. Melbourne: Board of Works, Melbourne Water Corporation.

Mercer, David (1977) *Leisure and Recreation in Australia*. Malvern, Victoria: Sorrett Publishing Pty Ltd.

Michael, Sean Edward (1997) *Behavioural Scripts of Urban Park Offenders: A Rational Choice Perspective on Influences of the Park Setting*. (PhD Dissertation) Virginia: Virginia Polytechnic Institute and State University.

Molnar, Donald J. and Rutledge, Albert J. (1986) *Anatomy of a Park: The Essentials of Recreation Area Planning and Design*. (2nd Ed.) Prospect Heights, IL: Waveland Press Inc.

Morgan, Gillian (1991) *A Strategic Approach to the Planning and Management of Parks and Open Spaces*. Berkshire: Institute of Leisure and Amenity Management.

Mowen, Andrew J., Laura L. Payne and David Scott (2005) 'Change and Stability in Park Visitation Constraints Revisited.' *Leisure Sciences* 27 (2): 191 – 204.

National Heart Foundation (2001a) *Physical Activity Policy*. A position paper prepared by the National Physical Activity Program Committee, National Heart Foundation of Australia.

http://www.heartfoundation.com.au/downloads/phys_policy_2001.htm

National Heart Foundation (2001b) *Promoting Physical Activity: Ten Recommendations from the Heart Foundation*. A position paper for health professionals and organisations planning to develop and promote physical activity programs. Prepared by the National Physical Activity Program Committee, National Heart Foundation of Australia.

http://www.ausport.gov.au/fulltext/2001/nhf/promo_physi_act.asp

Nasar, Jack L. (1999) 'Perception and Evaluation of Residential Street Scenes.' in Nasar, J.L. and Preiser, W.F.E. *Directions in Person-Environment Research and Practice*. Aldershot, England: Ashgate.

NSW National Parks and Wildlife Service. (1991) *A Visitor Survey Handbook*. Hurstville, NSW: NSW National Parks and Wildlife Service.

Nicholls, Sarah (2003) 'Measures of Success: Measuring Park Accessibility Using GIS.' *Parks and Recreation*. August 2003. Ashburn, VA: National Recreation and Parks Association.

http://www.findarticles.com/p/articles/mi_m1145/is_8_38/ai_108114373

Office of Urban Management (OUM) (2006) *South East Queensland Infrastructure Plan and Program 2006 – 2026*. Brisbane, QLD: The Coordinator-General.

Office of Urban Management (OUM) (2005) *South East Queensland Regional Plan 2005 – 2026*. Brisbane, QLD: Department of Local Government, Planning, Sport and Recreation.

Orsini, David (1990) *Mitigating Fear in the Landscape: Recommendations for Enhancing User's Perceptions of Safety of Urban Parks*. Guelph, ONT: University of Guelph. (Masters Dissertation)

Pallant, J. (2001) *SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS*. Crows Nest, NSW: Allen and Unwin.

Pain, R., Williams, S. and Hudson, B. (1999) *Auditing Fear of Crime on North Tyneside: A Qualitative Approach*. The British Criminology Conference: Selected Proceedings. Volume 3. Liverpool, July 1999.
<http://britsoccrim.org/bccsp/vol03/pain.html>

Panza, Joseph A. and Cipriano, Robert E. (2004) 'People's Perceptions of Parks and Recreation.' *Parks and Recreation*. December 2004. Ashburn, VA: National Recreation and Parks Association.
<http://www.nrpa.org/content/default.aspx?documentId=1746>

Parker, John (2000) *Safer Spaces and Places: Reducing Crime by Urban Design*. Council of Europe International Conference on the Relationship between the Physical Environment and Crime Patterns. Szczecin, Poland.

Parks and Leisure Australia (PLA) and SGL Consulting Group (2003) *The Benefits of Leisure: A Literature Review of the Social, Economic and Environmental Benefits of Parks and Recreation*. Bendigo, Victoria: Parks and Leisure Australia.

Pfisterer, Miriam (2002) *Understanding Crime and Perceptions of Safety in Providence's Parks*. Brown University.
<http://envstudies.brown.edu/thesis/2002/pfisterer>

Phillips, Leonard E. (1995) *Parks: Design and Management*. New York: McGraw-Hill.

Preiser, Wolfgang F.E. (1999) 'Built Environment Evaluation: Conceptual Bias, Benefits and Uses.' in Nasar, J.L. and Preiser, W.F.E. *Directions in Person-Environment Research and Practice*. Aldershot, England: Ashgate.

Queensland Government (2007) *Crime Prevention Through Environmental Design – Guidelines for Queensland Part A: Essential Features of Safer Places*. Brisbane, Qld: Queensland Government.
<http://www.police.qld.gov.au/programs/crimeprevention>

Robertson, Iain M. and Friedman, Susanne K. (2005) 'A Closer Look at Seattle's Freeway Park Suggests Lessons for Other Cities' *Landscape Architecture* 95 (11): 78-85.

Rudofsky, Bernard. (1969) *Streets for People: A Primer for Americans*. New York: Anchor Press / Doubleday.

Sampson, R.J. and Raudenbush, S.W. (2001) 'Disorder in Urban Neighbourhoods – Does it Lead to Crime?' in J.E. Samuels (ed) *National Institute of Justice - Research in Brief. February 2001*.

Sampson, R.J., Raudenbush, S.W. and Earls, F. (1997) 'Neighbourhoods and Violent Crime: A Multilevel Study of Collective Efficacy.' *Science* 277: 918 – 924.

Schroeder, Herbert W. and Anderson, L. M. (1984) 'Perception of Personal Safety in Urban Recreation Sites.' *Journal of Leisure Research* 16 (2): 178 – 194.

Schroeder, Herbert W. (1983) 'Variations in the Perceptions of Urban Forest Recreation Sites.' *Leisure Sciences* 5 (3): 221 - 230.

Simonds, John Ormsbee (1994) *Garden Cities 21: Creating A Livable Urban Environment*. New York: McGraw-Hill Inc.

Simonds, John Ormsbee (1983) *Landscape Architecture: A Manual of Site Planning and Design (2nd Ed.)*. New York: McGraw-Hill Inc.

Stimson, R., Western, J. and McCrea, R. (2003) *Assessing Quality of Life in Brisbane – South East Queensland: An Overview of Findings from the 2003 Survey*. Brisbane: Centre for Research into Sustainable Urban and Regional Futures and the Centre for Social Research – University of Queensland.

Stratcorp Consulting Pty Ltd (2005) *Analysis of Sport, Recreation and Physical Activity Trends in Ipswich City*. Brisbane, Qld: Stratcorp Consulting Pty Ltd

Sullivan, William C., Frances E. Kuo, Stephen F. Depooter. (2004) 'The Fruit of Urban Nature: Vital Neighbourhood Spaces'. *Behavior and Environment* 36 (5): 678 – 700.

Tabachnick, Barbara G. and Fidell, Linda S. (2001) *Using Multivariate Statistics*. (4th Ed.) Needham Heights, MA: Allyn and Bacon.

Thorpe, Stephen and Deakin, Chris (1994) 'People in Urban Landscape Management' in Hitchmough, J.D. (1994) *Urban Landscape Management*. Sydney, NSW: Inkata Press.

Tonry, M. and Farrington, D.P. (1995) *Building A Safer Society: Strategic Approaches to Crime Prevention*. Chicago, IL: University of Chicago Press.

Veal, A.J. and Lynch, R. (2001) *Australian Leisure (2nd Ed.)* Frenchs Forest, NSW: Pearson Education.

Vold, George B., Bernard, Thomas J. and Snipes, Jeffrey B. (2002) *Theoretical Criminology*. (5th Ed.) New York: Oxford University Press.

Warr, Mark (2000) 'Fear of Crime in the United States: Avenues for Research and Policy.' in National Institute of Justice *Criminal Justice 2000*, Vols. 1-4. Washington, DC: U.S. Department of Justice Office of Justice Programs.

Weatherburn, D. and Lind, B. (1998) 'Poverty, Parenting, Peers and Crime-Prone Neighbourhoods.' Australian Institute of Criminology *Trends and Issues in Crime and Criminal Justice* No. 85, April 1998.

Wekerle, Gerda R. and Whitzman, Carolyn. (1995) *Safe Cities: Guidelines for Planning, Design and Management*. New York: Van Nostrand Reinhold.

Welch, David. (1995) *Managing Public Use of Parks, Open Spaces and Countryside*. London: Pitman.

Wen, Li Ming, Margaret Thomas, Helen Jones, Neil Orr, Renee Moreton, Lesley King, Penny Hawe, Jeni Bindon, Jenni Humphries, Karen Schicht, Shauna Corne and Adrian Bauman (2002) 'Promoting Physical Activity in Women: Evaluation of a 2-Year Community-Based Intervention in Sydney, Australia.' *Health Promotion International* 17 (2): 127 – 137.

Westover, T.N. (1988) 'Urban Parks as Social Settings: Visitor's Perceptions of Anti-social Behaviour and Crowding.' *Trends* 25 (3): 9-12.

Westover, T.N. (1986) 'Park Use and Perception: Gender Differences.' *Journal of Park and Recreation Administration* 4 (2): 1-8.

Westover, T.N. (1985) 'Perceptions of Crime and Safety in Three Midwestern Parks.' *Professional Geographer* 37 (4): 410 – 420.

Westover, Theresa N. (1982) *Perceptions of Crime and Conflict in Urban Parks and Forests*. (PhD Dissertation) Michigan: Michigan State University.

Whyte, William (1980) *The Social Life of Small Urban Spaces*. Washington, DC: The Conservation Foundation.

Wikstrom, P.H. (1995) 'Preventing City-Centre Street Crimes' in Tonry, M. and Farrington, D.P. (eds) *Building a Safer Society: Strategic Approaches to Crime Prevention*. Chicago, IL: University of Chicago Press.

Williams, Katie and Green, Stephen. (2001) *Literature Review of Public Space and Local Environments for the Cross Cutting Review*. Oxford: Oxford Centre for Sustainable Development, Oxford Brookes University.

Wilson, James Q. and Herrnstein, Richard J. (1985) *Crime and Human Nature* New York: Simon and Schuster.

Winter, Caroline and Lockwood, Michael (2002) *Measuring Community Values for Nature: Overview of a Research Project*. Johnstone Centre Report No. 161. Albury, NSW: Charles Sturt University.

Young, Terence (1995) 'Modern Urban Parks.' *Geographical Review* 85 (4): 535 – 551.

Zacharias, John, Ted Stathpoulos and Hanqing Wu. (2004) 'Spatial Behaviour in San Francisco's Plazas: The Effects of Microclimate, Other People and Environmental Design'. *Environment and Behavior* 36 (5): 638 – 658.

Zahm, Diane (2004) *Iceburg or Oil Slick: The History of CPTED as Innovation*. Proceedings of the 9th Annual International CPTED Conference, Brisbane 2004.

APPENDICES

Appendix A Dwelling Structure Distribution

Dwelling Structure Distribution by Park Areas*

Dwelling Type	Park #1	Park #2	Park #3	Park #4
	% (n)	% (n)	% (n)	% (n)
Attached (Flat / Unit / Apartment)	4.1 (98)	2.8 (22)	3.0 (65)	7.2 (230)
Semi-Detached (Townhouse)	4.5 (108)	2.0 (14)	1.6 (35)	3.8 (123)
Detached (Single House)	91.4 (2189)	95.5 (757)	95.4 (2082)	89.0 (2850)

* Denotes the total for the relevant Statistical Local Area/s (SLA) as collected during the 2001 Census.

Appendix B Park Inventory

Park Selection - Developed District Parks in Urban Areas

Park	Area (Ha)	Score: Pattern of Fear	Score: Pattern of Preference	Score: Pattern Total	Crime Reports	Needle and Syringe Reports	Police Service Incidents	Total Incidents
Park A	1.5	4	5	9	78	49	128	255
Park B	5.7	4	11	15	3	4	46	53
Park C	7.1	9	11	20	4	4	35	43
Park D	3.3	7	11	18	5	4	25	34
Park E	2.7	6	12	18	1	0	8	9
Park F	7.5	7	10	17	13	0	68	81

Appendix C Park Setting Evaluation Matrix

Assessment Criteria	Performance Indicators and Levels of Attainment			
	Poor (0)	Satisfactory (1)	Good (2)	Excellent (3)
FEARS				
1. <i>Visual Access</i>	Views at eye level through the site are largely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides frequent hiding places; most trees have low canopies and/or low branches appear to have not been pruned; areas of dense vegetation are immediate to the edge of most pathways; longer views from pathways are infrequent.	Views at eye level through the site are occasionally blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides occasional hiding places; some trees have low canopies and/or low branches appear to have been pruned though not recently; areas of moderately dense vegetation are within 3 metres of the edge of some pathways; longer views from pathways are occasional.	Views at eye level through the site are rarely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides few hiding places; trees generally have moderate to high canopies and/or low branches have been removed; areas of moderately dense vegetation are 3-6 metres off the edge of most pathways; longer views from pathways are regular.	Views at eye level through the site are not blocked or unlimited by built components (such as buildings/structures/fences/signs) or vegetation; built components and/or vegetation does not provide any hiding places; trees generally have high canopies with no low branches; areas of moderately dense vegetation are >6 metres off the edge of all pathways; longer views from pathways are frequent.
2. <i>Enhance Familiarity</i>	Short interpretive trails / circuits / paths are few if any; trails / paths are distant from parking areas; self-guiding / directional / informative signs are non-existent / few.	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 20 metres from parking areas; self-guiding / directional / informative signs are present though minimal (1-2).	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 15 metres from parking areas; self-guiding / directional / informative signs are noted occasionally.	Short interpretive trails / circuits / paths are extensive; trails / paths are < 10 metres from parking areas; self-guiding / directional / informative signs are noted frequently.
3. <i>Human Signs</i>	Few indications that people have been / are present at the site; human signs are mostly negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be poorly maintained / managed (many examples of peeling painted surfaces / damage awaiting repair); vegetation is over-grown or in need of pruning; weeds are excessive; dead/damaged plants / fallen branches have not been removed.	Some indications that people have been or are present at the site; human signs are a mixture of positive and negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be moderately maintained / managed (some evidence of peeling painted surfaces / damage awaiting repair); some vegetation is over-grown / in need of pruning; weeds are present; occasional dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are mostly positive images with some negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be well maintained / managed (occasional evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are controlled; few dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are generally all positive images with few if any negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be highly maintained / managed (no evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are rare; no dead/damaged plants / fallen branches have not been removed.
PREFERENCES				
4. <i>Coherent Areas</i>	The setting is incoherent; unintriguing, illegible and does not entice further investigation; separate areas are difficult to distinguish from each other; plant species are highly dissimilar; borders between areas are not present or difficult to identify; arrangement of the overall site results in difficulty in determining a clear, accurate image of the site; may be difficult to provide clear directions to facilities; may be difficult to recall locations and / or directions to facilities; limited paths, precincts, nodes, and / or landmarks.	The setting is partially coherent; provides a small degree of intrigue, is partially legible and invites further investigation of some areas; separate areas can generally be distinguished from each other; plant species are mostly similar; borders between areas are present but may be difficult to identify; arrangement of the overall site may enable some to determine a clear, accurate image of some parts of the site; able to provide clear directions to some facilities; recollection of the locations and / or directions to some facilities; some evidence of paths, precincts, nodes, and / or landmarks.	The setting is mostly coherent; provides a moderate degree of intrigue, is mostly legible and invites further investigation; separate areas can clearly be distinguished from each other; plant species are similar; borders between areas are present and generally easy to identify; arrangement of the overall site may enable most visitors to determine a clear, accurate image of most parts of the site and able to provide clear directions to most facilities; recollection of the locations and / or directions to most facilities; evidence of well-used paths, precincts, nodes, and / or landmarks.	The setting is very coherent; provides a high degree of intrigue, is highly legible and invites further investigation; separate areas can be distinguished easily from each other; plant species are very similar; borders between areas are easy to identify; arrangement of the overall site may enable most visitors to easily determine a clear, accurate image of the whole of the site; able to provide clear directions to most facilities with ease; recollection of the locations and / or directions to most facilities with ease; evidence of busy paths, precincts, nodes, and / or landmarks.
5. <i>Smooth Ground</i>	Ground plane conditions prevent / highly restrict / impair locomotion; paths are uneven / non-paved surfaces; smooth surfaces are limited and / or narrow; very limited choice of access across through the site - identification of access routes is greatly restricted / impeded by topography.	Ground plane conditions prevent / restrict / impair some locomotion; paths are sometimes uneven; some non-paved surfaces; smooth surfaces are present however may be narrow; limited choice of access across through the site - identification of access routes is sometimes restricted / impeded by topography.	Ground plane conditions occasionally prevent / restrict / impair some locomotion; paths are even; few non-paved surfaces; smooth surfaces are present and are mostly wide; good choice of access across through the site - identification of access routes is rarely restricted / impeded by topography.	Ground plane conditions rarely prevent / restrict / impair some locomotion; paths are even paved surfaces; smooth surfaces are present and are very wide; extensive choice of access across through the site - identification of access routes is unrestricted / unimpeded by topography; access is visible and facilitated in many directions.
6. <i>Mystery</i>	No or very few partial views of areas and / or features that lie ahead because trees are closely spaced / dense to prevent views between; paths are mostly straight; predominantly heavy shadows / dark areas due to tree species & spacing.	Occasional partial views of areas and / or features that lie ahead because trees are spaced to sometimes prevent views between; some paths are winding though mostly straight; Some heavy shadows / dark areas due to tree species & spacing.	Partial views of areas and / or features that lie ahead are regular; foliage sometimes hides what lies ahead as trees are mostly spaced / dense to enable views between; most paths are winding though some parts are straight; few heavy shadows / dark areas due to tree species & spacing.	Frequent partial views of areas and / or features that lie ahead because trees are spaced to enable regular views between; most paths are winding with few sections that are straight; Rarely heavy shadows / dark areas due to tree species & spacing.
7. <i>Sense of Depth</i>	Visible bands/layers across the site and/or topographic variation is difficult to distinguish / determine; no vistas; few/no visible landmarks.	Some visible bands/layers across the site and/or topographic variation is distinguishable; 1-2 vistas; 1 visible landmark but not always visible.	Visible bands/layers across the site and/or topographic variation is distinguishable; 2-4 vistas; at least 1 visible landmark usually visible.	Visible bands/layers across the site and/or topographic variation is easily distinguishable; 4+ vistas; more than 1 visible landmark frequently visible.
8. <i>Openings</i>	Few openings; difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures highly restrict access to the site.	Some openings; sometimes difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures partially restricts access to the site.	Several openings; mostly unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures occasionally restricts access to the site.	Many openings; unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures rarely restricts access to the site.

Overall Rating:

Evaluation Form for the Assessment of Existing Parks

Property Address:

Evaluation undertaken by:

Date / Time:

Assessment Criteria	Performance Indicators and Levels of Attainment				Code
	Poor (0)	Satisfactory (1)	Good (2)	Excellent (3)	
FEARS					
1. Visual Access	Views at eye level through the site are largely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides frequent hiding places; most trees have low canopies and/or low branches appear to have not been pruned; areas of dense vegetation are immediate to the edge of most pathways; longer views from pathways are infrequent.	Views at eye level through the site are occasionally blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides occasional hiding places; some trees have low canopies and/or low branches appear to have been pruned though not recently; areas of moderately dense vegetation are within 3 metres of the edge of some pathways; longer views from pathways are occasional.	Views at eye level through the site are rarely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides few hiding places; trees generally have moderate to high canopies and/or low branches have been removed; areas of moderately dense vegetation are 3-6 metres off the edge of most pathways; longer views from pathways are regular.	Views at eye level through the site are not blocked or unlimited by built components (such as buildings/structures/fences/signs) or vegetation; built components and/or vegetation does not provide any hiding places; trees generally have high canopies with no low branches; areas of moderately dense vegetation are >6 metres off the edge of all pathways; longer views from pathways are frequent.	0
2. Enhance Familiarity	Short interpretive trails / circuits / paths are few if any; trails / paths are distant from parking areas; self-guiding / directional / informative signs are non-existent / few.	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 20 metres from parking areas; self-guiding / directional / informative signs are present though minimal (1-2).	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 15 metres from parking areas; self-guiding / directional / informative signs are noted occasionally.	Short interpretive trails / circuits / paths are extensive; trails / paths are < 10 metres from parking areas; self-guiding / directional / informative signs are noted frequently.	2
3. Human Signs	Few indications that people have been / are present at the site; human signs are mostly negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be poorly maintained / managed (many examples of peeling painted surfaces / damage awaiting repair); vegetation is over-grown or in need of pruning; weeds are excessive; dead/damaged plants / fallen branches have not been removed.	Some indications that people have been or are present at the site; human signs are a mixture of positive and negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be moderately maintained / managed (some evidence of peeling painted surfaces / damage awaiting repair); some vegetation is over-grown / in need of pruning; weeds are present; occasional dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are mostly positive images with some negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be well maintained / managed (occasional evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are controlled; few dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are generally all positive images with few if any negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be highly maintained / managed (no evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are rare; no dead/damaged plants / fallen branches have not been removed.	2
PREFERENCES					
4. Coherent Areas	The setting is uncoherent; unintriguing, illegible and does not entice further investigation; separate areas are difficult to distinguish from each other; plant species are highly dissimilar; borders between areas are not present or difficult to identify; arrangement of the overall site results in difficulty in determining a clear, accurate image of the site; may be difficult to provide clear directions to facilities; limited paths, precincts, nodes, and / or landmarks.	The setting is partially coherent; provides a small degree of intrigue, is partially legible and invites further investigation of some areas; separate areas can generally be distinguished from each other; plant species are mostly similar; borders between areas are present but may be difficult to identify; arrangement of the overall site may enable some to determine a clear, accurate image of some parts of the site; able to provide clear directions to some facilities; recollection of the locations and / or directions to some facilities; some evidence of paths, precincts, nodes, and / or landmarks.	The setting is mostly coherent; provides a moderate degree of intrigue, is mostly legible and invites further investigation; separate areas can clearly be distinguished from each other; plant species are similar; borders between areas are present and generally easy to identify; arrangement of the overall site may enable most visitors to determine a clear, accurate image of most parts of the site and able to provide clear directions to most facilities; recollection of the locations and / or directions to most facilities; evidence of well-used paths, precincts, nodes, and / or landmarks.	The setting is very coherent; provides a high degree of intrigue, is highly legible and invites further investigation; separate areas can be distinguished easily from each other; plant species are very similar; borders between areas are easy to identify; arrangement of the overall site may enable most visitors to easily determine a clear, accurate image of the whole of the site; able to provide clear directions to most facilities with ease; recollection of the locations and / or directions to most facilities with ease; evidence of busy paths, precincts, nodes, and / or landmarks.	2
5. Smooth Ground	Ground plane conditions prevent / highly restrict / impair locomotion; paths are uneven / non-paved surfaces; smooth surfaces are limited and / or narrow; very limited choice of access across through the site - identification of access routes is greatly restricted / impeded by topography.	Ground plane conditions prevent / restrict / impair some locomotion; paths are sometimes uneven; some non-paved surfaces; smooth surfaces are present however may be narrow; limited choice of access across through the site - identification of access routes is sometimes restricted / impeded by topography.	Ground plane conditions occasionally prevent / restrict / impair some locomotion; paths are even; few non-paved surfaces; smooth surfaces are present and are mostly wide; good choice of access across through the site - identification of access routes is rarely restricted / impeded by topography.	Ground plane conditions rarely prevent / restrict / impair some locomotion; paths are even paved surfaces; smooth surfaces are present and are very wide; extensive choice of access across through the site - identification of access routes is unrestricted / unimpeded by topography; access is visible and facilitated in many directions.	1
6. Mystery	No or very few partial views of areas and/or features that lie ahead because trees are closely spaced / dense to prevent views between; paths are mostly straight; predominantly heavy shadows / dark areas due to tree species & spacing.	Occasional partial views of areas and / or features that lie ahead because trees are spaced to sometimes prevent views between; some paths are winding though mostly straight; Some heavy shadows / dark areas due to tree species & spacing.	Partial views of areas and/or features that lie ahead are regular; foliage sometimes hides what lies ahead as trees are mostly spaced / dense to enable views between; most paths are winding though some parts are straight; few heavy shadows / dark areas due to tree species & spacing.	Frequent partial views of areas and/or features that lie ahead because trees are spaced to enable regular views between; most paths are winding with few sections that are straight; Rarely heavy shadows / dark areas due to tree species & spacing.	1
7. Sense of Depth	Visible bands/layers across the site and/or topographic variation is difficult to distinguish / determine; no vistas; few/no visible landmarks.	Some visible bands/layers across the site and/or topographic variation is distinguishable; 1-2 vistas; 1 visible landmark but not always visible.	Visible bands/layers across the site and/or topographic variation is distinguishable; 2-4 vistas; at least 1 visible landmark usually visible.	Visible bands/layers across the site and/or topographic variation is easily distinguishable; 4- vistas; more than 1 visible landmark frequently visible.	0
8. Openings	Few openings; difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures highly restrict access to the site.	Some openings; sometimes difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures partially restricts access to the site.	Several openings; mostly unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures occasionally restricts access to the site.	Many openings; unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures rarely restricts access to the site.	1

Overall Rating:

9

Evaluation Form for the Assessment of Existing Parks

Property Address:

Evaluation undertaken by:

Date / Time:

Assessment Criteria	Performance Indicators and Levels of Attainment				Code
	Poor (0)	Satisfactory (1)	Good (2)	Excellent (3)	
FEARS					
1. <i>Visual Access</i>	Views at eye level through the site are largely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides frequent hiding places; most trees have low canopies and/or low branches appear to have not been pruned; areas of dense vegetation are immediate to the edge of most pathways; longer views from pathways are infrequent.	Views at eye level through the site are occasionally blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides occasional hiding places; some trees have low canopies and/or low branches appear to have been pruned though not recently; areas of moderately dense vegetation are within 3 metres of the edge of some pathways; longer views from pathways are occasional.	Views at eye level through the site are rarely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides few hiding places; trees generally have moderate to high canopies and/or low branches have been removed; areas of moderately dense vegetation are 3-6 metres off the edge of most pathways; longer views from pathways are regular.	Views at eye level through the site are not blocked or unlimited by built components (such as buildings/structures/fences/signs) or vegetation; built components and/or vegetation does not provide any hiding places; trees generally have high canopies with no low branches; areas of moderately dense vegetation are >6 metres off the edge of all pathways; longer views from pathways are frequent.	2
2. <i>Enhance Familiarity</i>	Short interpretive trails / circuits / paths are few if any; trails / paths are distant from parking areas; self-guiding / directional / informative signs are non-existent / few.	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 20 metres from parking areas; self-guiding / directional / informative signs are present though minimal (1-2).	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 15 metres from parking areas; self-guiding / directional / informative signs are noted occasionally.	Short interpretive trails / circuits / paths are extensive; trails / paths are < 10 metres from parking areas; self-guiding / directional / informative signs are noted frequently.	1
3. <i>Human Signs</i>	Few indications that people have been / are present at the site; human signs are mostly negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be poorly maintained / managed (many examples of peeling painted surfaces / damage awaiting repair); vegetation is over-grown or in need of pruning; weeds are excessive; dead/damaged plants / fallen branches have not been removed.	Some indications that people have been or are present at the site; human signs are a mixture of positive and negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be moderately maintained / managed (some evidence of peeling painted surfaces / damage awaiting repair); some vegetation is over-grown / in need of pruning; weeds are present; occasional dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are mostly positive images with some negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be well maintained / managed (occasional evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are controlled; few dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are generally all positive images with few if any negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be highly maintained / managed (no evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are rare; no dead/damaged plants / fallen branches have not been removed.	1
PREFERENCES					
4. <i>Coherent Areas</i>	The setting is uncoherent; unintriguing, illegible and does not entice further investigation; separate areas are difficult to distinguish from each other; plant species are highly dissimilar; borders between areas are not present or difficult to identify; arrangement of the overall site results in difficulty in determining a clear, accurate image of the site; may be difficult to provide clear directions to facilities; limited paths, precincts, nodes, and / or landmarks.	The setting is partially coherent; provides a small degree of intrigue, is partially legible and invites further investigation of some areas; separate areas can generally be distinguished from each other; plant species are mostly similar; borders between areas are present but may be difficult to identify; arrangement of the overall site may enable some to determine a clear, accurate image of some parts of the site; able to provide clear directions to some facilities; recollection of the locations and / or directions to some facilities; some evidence of paths, precincts, nodes, and / or landmarks.	The setting is mostly coherent; provides a moderate degree of intrigue, is mostly legible and invites further investigation; separate areas can clearly be distinguished from each other; plant species are similar; borders between areas are present and generally easy to identify; arrangement of the overall site may enable most visitors to determine a clear, accurate image of most parts of the site and able to provide clear directions to most facilities; recollection of the locations and / or directions to most facilities; evidence of well-used paths, precincts, nodes, and / or landmarks.	The setting is very coherent; provides a high degree of intrigue, is highly legible and invites further investigation; separate areas can be distinguished easily from each other; plant species are very similar; borders between areas are easy to identify; arrangement of the overall site may enable most visitors to easily determine a clear, accurate image of the whole of the site; able to provide clear directions to most facilities with ease; recollection of the locations and / or directions to most facilities with ease; evidence of busy paths, precincts, nodes, and / or landmarks.	2
5. <i>Smooth Ground</i>	Ground plane conditions prevent / highly restrict / impair locomotion; paths are uneven / non-paved surfaces; smooth surfaces are limited and / or narrow; very limited choice of access across through the site - identification of access routes is greatly restricted / impeded by topography.	Ground plane conditions prevent / restrict / impair some locomotion; paths are sometimes uneven; some non-paved surfaces; smooth surfaces are present however may be narrow; limited choice of access across through the site - identification of access routes is sometimes restricted / impeded by topography.	Ground plane conditions occasionally prevent / restrict / impair some locomotion; paths are even; few non-paved surfaces; smooth surfaces are present and are mostly wide; good choice of access across through the site - identification of access routes is rarely restricted / impeded by topography.	Ground plane conditions rarely prevent / restrict / impair some locomotion; paths are even paved surfaces; smooth surfaces are present and are very wide; extensive choice of access across through the site - identification of access routes is unrestricted / unimpeded by topography; access is visible and facilitated in many directions.	2
6. <i>Mystery</i>	No or very few partial views of areas and/or features that lie ahead because trees are closely spaced / dense to prevent views between; paths are mostly straight; predominantly heavy shadows / dark areas due to tree species & spacing.	Occasional partial views of areas and / or features that lie ahead because trees are spaced to sometimes prevent views between; some paths are winding though mostly straight; Some heavy shadows / dark areas due to tree species & spacing.	Partial views of areas and/or features that lie ahead are regular; foliage sometimes hides what lies ahead as trees are mostly spaced / dense to enable views between; most paths are winding though some parts are straight; few heavy shadows / dark areas due to tree species & spacing.	Frequent partial views of areas and/or features that lie ahead because trees are spaced to enable regular views between; most paths are winding with few sections that are straight; Rarely heavy shadows / dark areas due to tree species & spacing.	1
7. <i>Sense of Depth</i>	Visible bands/layers across the site and/or topographic variation is difficult to distinguish / determine; no vistas; few/no visible landmarks.	Some visible bands/layers across the site and/or topographic variation is distinguishable; 1-2 vistas; 1 visible landmark but not always visible.	Visible bands/layers across the site and/or topographic variation is distinguishable; 2-4 vistas; at least 1 visible landmark usually visible.	Visible bands/layers across the site and/or topographic variation is easily distinguishable; 4< vistas; more than 1 visible landmark frequently visible.	3
8. <i>Openings</i>	Few openings; difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures highly restrict access to the site.	Some openings; sometimes difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures partially restricts access to the site.	Several openings; mostly unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures occasionally restricts access to the site.	Many openings; unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures rarely restricts access to the site.	3

Overall Rating:

15

Evaluation Form for the Assessment of Existing Parks

Property Address:

Evaluation undertaken by:

Date / Time:

Assessment Criteria	Performance Indicators and Levels of Attainment				Code
	Poor (0)	Satisfactory (1)	Good (2)	Excellent (3)	
FEARS					
1. Visual Access	Views at eye level through the site are largely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides frequent hiding places; most trees have low canopies and/or low branches appear to have not been pruned; areas of dense vegetation are immediate to the edge of most pathways; longer views from pathways are infrequent.	Views at eye level through the site are occasionally blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides occasional hiding places; some trees have low canopies and/or low branches appear to have been pruned though not recently; areas of moderately dense vegetation are within 3 metres of the edge of some pathways; longer views from pathways are occasional.	Views at eye level through the site are rarely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides few hiding places; trees generally have moderate to high canopies and/or low branches have been removed; areas of moderately dense vegetation are 3-6 metres off the edge of most pathways; longer views from pathways are regular.	Views at eye level through the site are not blocked or unlimited by built components (such as buildings/structures/fences/signs) or vegetation; built components and/or vegetation does not provide any hiding places; trees generally have high canopies with no low branches; areas of moderately dense vegetation are >6 metres off the edge of all pathways; longer views from pathways are frequent.	2
2. Enhance Familiarity	Short interpretive trails / circuits / paths are few if any; trails / paths are distant from parking areas; self-guiding / directional / informative signs are non-existent / few.	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 20 metres from parking areas; self-guiding / directional / informative signs are present though minimal (1-2).	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 15 metres from parking areas; self-guiding / directional / informative signs are noted occasionally.	Short interpretive trails / circuits / paths are extensive; trails / paths are < 10 metres from parking areas; self-guiding / directional / informative signs are noted frequently.	2
3. Human Signs	Few indications that people have been / are present at the site; human signs are mostly negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be poorly maintained / managed (many examples of peeling painted surfaces / damage awaiting repair); vegetation is over-grown or in need of pruning; weeds are excessive; dead/damaged plants / fallen branches have not been removed.	Some indications that people have been or are present at the site; human signs are a mixture of positive and negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be moderately maintained / managed (some evidence of peeling painted surfaces / damage awaiting repair); some vegetation is over-grown / in need of pruning; weeds are present; occasional dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are mostly positive images with some negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be well maintained / managed (occasional evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are controlled; few dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are generally all positive images with few if any negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be highly maintained / managed (no evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are rare; no dead/damaged plants / fallen branches have not been removed.	2
PREFERENCES					
4. Coherent Areas	The setting is uncoherent; unintriguing, illegible and does not entice further investigation; separate areas are difficult to distinguish from each other; plant species are highly dissimilar; borders between areas are not present or difficult to identify; arrangement of the overall site results in difficulty in determining a clear, accurate image of the site; may be difficult to provide clear directions to facilities; may be difficult to recall locations and / or directions to facilities; limited paths, precincts, nodes, and / or landmarks.	The setting is partially coherent; provides a small degree of intrigue, is partially legible and invites further investigation of some areas; separate areas can generally be distinguished from each other; plant species are mostly similar; borders between areas are present but may be difficult to identify; arrangement of the overall site may enable some to determine a clear, accurate image of some parts of the site; able to provide clear directions to some facilities; recollection of the locations and / or directions to most facilities; some evidence of paths, precincts, nodes, and / or landmarks.	The setting is mostly coherent; provides a moderate degree of intrigue, is mostly legible and invites further investigation; separate areas can clearly be distinguished from each other; plant species are similar; borders between areas are present and generally easy to identify; arrangement of the overall site may enable most visitors to determine a clear, accurate image of most parts of the site and able to provide clear directions to most facilities; recollection of the locations and / or directions to most facilities; evidence of well-used paths, precincts, nodes, and / or landmarks.	The setting is very coherent; provides a high degree of intrigue, is highly legible and invites further investigation; separate areas can be distinguished easily from each other; plant species are very similar; borders between areas are easy to identify; arrangement of the overall site may enable most visitors to easily determine a clear, accurate image of the whole of the site; able to provide clear directions to most facilities with ease; recollection of the locations and / or directions to most facilities with ease; evidence of busy paths, precincts, nodes, and / or landmarks.	2
5. Smooth Ground	Ground plane conditions prevent / highly restrict / impair locomotion; paths are uneven / non-paved surfaces; smooth surfaces are limited and / or narrow; very limited choice of access across through the site - identification of access routes is greatly restricted / impeded by topography.	Ground plane conditions prevent / restrict / impair some locomotion; paths are sometimes uneven; some non-paved surfaces; smooth surfaces are present however may be arrow; limited choice of access across through the site - identification of access routes is sometimes restricted / impeded by topography.	Ground plane conditions occasionally prevent / restrict / impair some locomotion; paths are even; few non-paved surfaces; smooth surfaces are present and are mostly wide; good choice of access across through the site - identification of access routes is rarely restricted / impeded by topography.	Ground plane conditions rarely prevent / restrict / impair some locomotion; paths are even paved surfaces; smooth surfaces are present and are very wide; extensive choice of access across through the site - identification of access routes is unrestricted / unimpeded by topography; access is visible and facilitated in many directions.	3
6. Mystery	No or very few partial views of areas and / or features that lie ahead because trees are closely spaced / dense to prevent views between; paths are mostly straight; predominantly heavy shadows / dark areas due to tree species & spacing.	Occasional partial views of areas and / or features that lie ahead because trees are spaced to sometimes prevent views between; some paths are winding though mostly straight; Some heavy shadows / dark areas due to tree species & spacing.	Partial views of areas and / or features that lie ahead are regular; foliage sometimes hides what lies ahead as trees are mostly spaced / dense to enable views between; most paths are winding though some parts are straight; few heavy shadows / dark areas due to tree species & spacing.	Frequent partial views of areas and / or features that lie ahead because trees are spaced to enable regular views between; most paths are winding with few sections that are straight; Rarely heavy shadows / dark areas due to tree species & spacing.	2
7. Sense of Depth	Visible bands/layers across the site and/or topographic variation is difficult to distinguish / determine; no vistas; few/no visible landmarks.	Some visible bands/layers across the site and/or topographic variation is distinguishable; 1-2 vistas; 1 visible landmark but not always visible.	Visible bands/layers across the site and/or topographic variation is distinguishable; 2-4 vistas; at least 1 visible landmark usually visible.	Visible bands/layers across the site and/or topographic variation is easily distinguishable; 4+ vistas; more than 1 visible landmark frequently visible.	2
8. Openings	Few openings; difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures highly restrict access to the site.	Some openings; sometimes difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures partially restricts access to the site.	Several openings; mostly unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures occasionally restricts access to the site.	Many openings; unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures rarely restricts access to the site.	3

Overall Rating:

18

Evaluation Form for the Assessment of Existing Parks

Property Address:

Evaluation undertaken by:

Date / Time:

Assessment Criteria	Performance Indicators and Levels of Attainment				Code
	Poor (0)	Satisfactory (1)	Good (2)	Excellent (3)	
FEARS					
1. Visual Access	Views at eye level through the site are largely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides frequent hiding places; most trees have low canopies and/or low branches appear to have not been pruned; areas of dense vegetation are immediate to the edge of most pathways; longer views from pathways are infrequent.	Views at eye level through the site are occasionally blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides occasional hiding places; some trees have low canopies and/or low branches appear to have been pruned though not recently; areas of moderately dense vegetation are within 3 metres of the edge of some pathways; longer views from pathways are occasional.	Views at eye level through the site are rarely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides few hiding places; trees generally have moderate to high canopies and/or low branches have been removed; areas of moderately dense vegetation are 3-6 metres off the edge of most pathways; longer views from pathways are regular.	Views at eye level through the site are not blocked or unlimited by built components (such as buildings/structures/fences/signs) or vegetation; built components and/or vegetation does not provide any hiding places; trees generally have high canopies with no low branches; areas of moderately dense vegetation are >6 metres off the edge of all pathways; longer views from pathways are frequent.	1
2. Enhance Familiarity	Short interpretive trails / circuits / paths are few if any; trails / paths are distant from parking areas; self-guiding / directional / informative signs are non-existent / few.	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 20 metres from parking areas; self-guiding / directional / informative signs are present though minimal (1-2).	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 15 metres from parking areas; self-guiding / directional / informative signs are noted occasionally.	Short interpretive trails / circuits / paths are extensive; trails / paths are < 10 metres from parking areas; self-guiding / directional / informative signs are noted frequently.	3
3. Human Signs	Few indications that people have been / are present at the site; human signs are mostly negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be poorly maintained / managed (many examples of peeling painted surfaces / damage awaiting repair); vegetation is over-grown or in need of pruning; weeds are excessive; dead/damaged plants / fallen branches have not been removed.	Some indications that people have been or are present at the site; human signs are a mixture of positive and negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be moderately maintained / managed (some evidence of peeling painted surfaces / damage awaiting repair); some vegetation is over-grown / in need of pruning; weeds are present; occasional dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are mostly positive images with some negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be well maintained / managed (occasional evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are controlled; few dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are generally all positive images with few if any negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be highly maintained / managed (no evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are rare; no dead/damaged plants / fallen branches have not been removed.	3
PREFERENCES					
4. Coherent Areas	The setting is uncoherent; unintriguing, illegible and does not entice further investigation; separate areas are difficult to distinguish from each other; plant species are highly dissimilar; borders between areas are not present or difficult to identify; arrangement of the overall site results in difficulty in determining a clear, accurate image of the site; may be difficult to provide clear directions to facilities; may be difficult to recall locations and / or directions to facilities; limited paths, precincts, nodes, and / or landmarks.	The setting is partially coherent; provides a small degree of intrigue, is partially legible and invites further investigation of some areas; separate areas can generally be distinguished from each other; plant species are mostly similar; borders between areas are present but may be difficult to identify; arrangement of the overall site may enable some to determine a clear, accurate image of some parts of the site; able to provide clear directions to some facilities; recollection of the locations and / or directions to some facilities; some evidence of paths, precincts, nodes, and / or landmarks.	The setting is mostly coherent; provides a moderate degree of intrigue, is mostly legible and invites further investigation; separate areas can clearly be distinguished from each other; plant species are similar; borders between areas are present and generally easy to identify; arrangement of the overall site may enable most visitors to determine a clear, accurate image of most parts of the site and able to provide clear directions to most facilities; recollection of the locations and / or directions to most facilities; evidence of well-used paths, precincts, nodes, and / or landmarks.	The setting is very coherent; provides a high degree of intrigue, is highly legible and invites further investigation; separate areas can be distinguished easily from each other; plant species are very similar; borders between areas are easy to identify; arrangement of the overall site may enable most visitors to easily determine a clear, accurate image of the whole of the site; able to provide clear directions to most facilities with ease; recollection of the locations and / or directions to most facilities with ease; evidence of busy paths, precincts, nodes, and / or landmarks.	2
5. Smooth Ground	Ground plane conditions prevent / highly restrict / impair locomotion; paths are uneven / non-paved surfaces; smooth surfaces are limited and / or narrow; very limited choice of access across through the site - identification of access routes is greatly restricted / impeded by topography.	Ground plane conditions prevent / restrict / impair some locomotion; paths are sometimes uneven; some non-paved surfaces; smooth surfaces are present however may be arrow; limited choice of access across through the site - identification of access routes is sometimes restricted / impeded by topography.	Ground plane conditions occasionally prevent / restrict / impair some locomotion; paths are even; few non-paved surfaces; smooth surfaces are present and are mostly wide; good choice of access across through the site - identification of access routes is rarely restricted / impeded by topography.	Ground plane conditions rarely prevent / restrict / impair some locomotion; paths are even paved surfaces; smooth surfaces are present and are very wide; extensive choice of access across through the site - identification of access routes is unrestricted / unimpeded by topography; access is visible and facilitated in many directions.	1
6. Mystery	No or very few partial views of areas and / or features that lie ahead because trees are closely spaced / dense to prevent views between; paths are mostly straight; predominantly heavy shadows / dark areas due to tree species & spacing.	Occasional partial views of areas and / or features that lie ahead because trees are spaced to sometimes prevent views between; some paths are winding though mostly straight; Some heavy shadows / dark areas due to tree species & spacing.	Partial views of areas and / or features that lie ahead are regular; foliage sometimes hides what lies ahead as trees are mostly spaced / dense to enable views between; most paths are winding though some parts are straight; few heavy shadows / dark areas due to tree species & spacing.	Frequent partial views of areas and / or features that lie ahead because trees are spaced to enable regular views between; most paths are winding with few sections that are straight; Rarely heavy shadows / dark areas due to tree species & spacing.	2
7. Sense of Depth	Visible bands/layers across the site and/or topographic variation is difficult to distinguish / determine; no vistas; few/no visible landmarks.	Some visible bands/layers across the site and/or topographic variation is distinguishable; 1-2 vistas; 1 visible landmark but not always visible.	Visible bands/layers across the site and/or topographic variation is distinguishable; 2-4 vistas; at least 1 visible landmark usually visible.	Visible bands/layers across the site and/or topographic variation is easily distinguishable; 4+ vistas; more than 1 visible landmark frequently visible.	3
8. Openings	Few openings; difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures highly restrict access to the site.	Some openings; sometimes difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures partially restricts access to the site.	Several openings; mostly unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures occasionally restricts access to the site.	Many openings; unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures rarely restricts access to the site.	2

Overall Rating:

17

Evaluation Form for the Assessment of Existing Parks

Property Address:

Evaluation undertaken by:

Date / Time:

Assessment Criteria	Performance Indicators and Levels of Attainment				Code
	Poor (0)	Satisfactory (1)	Good (2)	Excellent (3)	
FEARS					
1. <i>Visual Access</i>	Views at eye level through the site are largely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides frequent hiding places; most trees have low canopies and/or low branches appear to have not been pruned; areas of dense vegetation are immediate to the edge of most pathways; longer views from pathways are infrequent.	Views at eye level through the site are occasionally blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides occasional hiding places; some trees have low canopies and/or low branches appear to have been pruned though not recently; areas of moderately dense vegetation are within 3 metres of the edge of some pathways; longer views from pathways are occasional.	Views at eye level through the site are rarely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides few hiding places; trees generally have moderate to high canopies and/or low branches have been removed; areas of moderately dense vegetation are 3-6 metres off the edge of most pathways; longer views from pathways are regular.	Views at eye level through the site are not blocked or unlimited by built components (such as buildings/structures/fences/signs) or vegetation; built components and/or vegetation does not provide any hiding places; trees generally have high canopies with no low branches; areas of moderately dense vegetation are >6 metres off the edge of all pathways; longer views from pathways are frequent.	3
2. <i>Enhance Familiarity</i>	Short interpretive trails / circuits / paths are few if any; trails / paths are distant from parking areas; self-guiding / directional / informative signs are non-existent / few.	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 20 metres from parking areas; self-guiding / directional / informative signs are present though minimal (1-2).	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 15 metres from parking areas; self-guiding / directional / informative signs are noted occasionally.	Short interpretive trails / circuits / paths are extensive; trails / paths are < 10 metres from parking areas; self-guiding / directional / informative signs are noted frequently.	3
3. <i>Human Signs</i>	Few indications that people have been / are present at the site; human signs are mostly negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be poorly maintained / managed (many examples of peeling painted surfaces / damage awaiting repair); vegetation is over-grown or in need of pruning; weeds are excessive; dead/damaged plants / fallen branches have not been removed.	Some indications that people have been or are present at the site; human signs are a mixture of positive and negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be moderately maintained / managed (some evidence of peeling painted surfaces / damage awaiting repair); some vegetation is over-grown / in need of pruning; weeds are present; occasional dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are mostly positive images with some negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be well maintained / managed (occasional evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are controlled; few dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are generally all positive images with few if any negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be highly maintained / managed (no evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are rare; no dead/damaged plants / fallen branches have not been removed.	3
PREFERENCES					
4. <i>Coherent Areas</i>	The setting is uncoherent; unintriguing, illegible and does not entice further investigation; separate areas are difficult to distinguish from each other; plant species are highly dissimilar; borders between areas are not present or difficult to identify; arrangement of the overall site results in difficulty in determining a clear, accurate image of the site; may be difficult to provide clear directions to facilities; limited paths, precincts, nodes, and / or landmarks.	The setting is partially coherent; provides a small degree of intrigue, is partially legible and invites further investigation of some areas; separate areas can generally be distinguished from each other; plant species are mostly similar; borders between areas are present but may be difficult to identify; arrangement of the overall site may enable some to determine a clear, accurate image of some parts of the site; able to provide clear directions to some facilities; recollection of the locations and / or directions to some facilities; some evidence of paths, precincts, nodes, and / or landmarks.	The setting is mostly coherent; provides a moderate degree of intrigue, is mostly legible and invites further investigation; separate areas can clearly be distinguished from each other; plant species are similar; borders between areas are present and generally easy to identify; arrangement of the overall site may enable most visitors to determine a clear, accurate image of most parts of the site and able to provide clear directions to most facilities; recollection of the locations and / or directions to most facilities; evidence of well-used paths, precincts, nodes, and / or landmarks.	The setting is very coherent; provides a high degree of intrigue, is highly legible and invites further investigation; separate areas can be distinguished easily from each other; plant species are very similar; borders between areas are easy to identify; arrangement of the overall site may enable most visitors to easily determine a clear, accurate image of the whole of the site; able to provide clear directions to most facilities with ease; recollection of the locations and / or directions to most facilities with ease; evidence of busy paths, precincts, nodes, and / or landmarks.	2
5. <i>Smooth Ground</i>	Ground plane conditions prevent / highly restrict / impair locomotion; paths are uneven / non-paved surfaces; smooth surfaces are limited and / or narrow; very limited choice of access across through the site - identification of access routes is greatly restricted / impeded by topography.	Ground plane conditions prevent / restrict / impair some locomotion; paths are sometimes uneven; some non-paved surfaces; smooth surfaces are present however may be narrow; limited choice of access across through the site - identification of access routes is sometimes restricted / impeded by topography.	Ground plane conditions occasionally prevent / restrict / impair some locomotion; paths are even; few non-paved surfaces; smooth surfaces are present and are mostly wide; good choice of access across through the site - identification of access routes is rarely restricted / impeded by topography.	Ground plane conditions rarely prevent / restrict / impair some locomotion; paths are even paved surfaces; smooth surfaces are present and are very wide; extensive choice of access across through the site - identification of access routes is unrestricted / unimpeded by topography; access is visible and facilitated in many directions.	3
6. <i>Mystery</i>	No or very few partial views of areas and/or features that lie ahead because trees are closely spaced / dense to prevent views between; paths are mostly straight; predominantly heavy shadows / dark areas due to tree species & spacing.	Occasional partial views of areas and / or features that lie ahead because trees are spaced to sometimes prevent views between; some paths are winding though mostly straight; Some heavy shadows / dark areas due to tree species & spacing.	Partial views of areas and/or features that lie ahead are regular; foliage sometimes hides what lies ahead as trees are mostly spaced / dense to enable views between; most paths are winding though some parts are straight; few heavy shadows / dark areas due to tree species & spacing.	Frequent partial views of areas and/or features that lie ahead because trees are spaced to enable regular views between; most paths are winding with few sections that are straight; Rarely heavy shadows / dark areas due to tree species & spacing.	2
7. <i>Sense of Depth</i>	Visible bands/layers across the site and/or topographic variation is difficult to distinguish / determine; no vistas; few/no visible landmarks.	Some visible bands/layers across the site and/or topographic variation is distinguishable; 1-2 vistas; 1 visible landmark but not always visible.	Visible bands/layers across the site and/or topographic variation is distinguishable; 2-4 vistas; at least 1 visible landmark usually visible.	Visible bands/layers across the site and/or topographic variation is easily distinguishable; 4- vistas; more than 1 visible landmark frequently visible.	2
8. <i>Openings</i>	Few openings; difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures highly restrict access to the site.	Some openings; sometimes difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures partially restricts access to the site.	Several openings; mostly unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures occasionally restricts access to the site.	Many openings; unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures rarely restricts access to the site.	2

Overall Rating:

20

Assessment Criteria	Performance Indicators and Levels of Attainment				Code
	Poor (0)	Satisfactory (1)	Good (2)	Excellent (3)	
FEARS					
1. <i>Visual Access</i>	Views at eye level through the site are largely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides frequent hiding places; most trees have low canopies and/or low branches appear to have not been pruned; areas of dense vegetation are immediate to the edge of most pathways; longer views from pathways are infrequent.	Views at eye level through the site are occasionally blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides occasional hiding places; some trees have low canopies and/or low branches appear to have been pruned though not recently; areas of moderately dense vegetation are within 3 metres of the edge of some pathways; longer views from pathways are occasional.	Views at eye level through the site are rarely blocked or limited by built components (such as buildings/structures/fences/signs) or by vegetation; built components and/or vegetation provides few hiding places; trees generally have moderate to high canopies and/or low branches have been removed; areas of moderately dense vegetation are 3-6 metres off the edge of most pathways; longer views from pathways are regular.	Views at eye level through the site are not blocked or unlimited by built components (such as buildings/structures/fences/signs) or vegetation; built components and/or vegetation does not provide any hiding places; trees generally have high canopies with no low branches; areas of moderately dense vegetation are >6 metres off the edge of all pathways; longer views from pathways are frequent.	3
2. <i>Enhance Familiarity</i>	Short interpretive trails / circuits / paths are few if any; trails / paths are distant from parking areas; self-guiding / directional / informative signs are non-existent / few.	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 20 metres from parking areas; self-guiding / directional / informative signs are present though minimal (1-2).	Short interpretive trails / circuits / paths are present though limited; trails / paths are < 15 metres from parking areas; self-guiding / directional / informative signs are noted occasionally.	Short interpretive trails / circuits / paths are extensive; trails / paths are < 10 metres from parking areas; self-guiding / directional / informative signs are noted frequently.	2
3. <i>Human Signs</i>	Few indications that people have been / are present at the site; human signs are mostly negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be poorly maintained / managed (many examples of peeling painted surfaces / damage awaiting repair); vegetation is over-grown or in need of pruning; weeds are excessive; dead/damaged plants / fallen branches have not been removed.	Some indications that people have been or are present at the site; human signs are a mixture of positive and negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be moderately maintained / managed (some evidence of peeling painted surfaces / damage awaiting repair); some vegetation is over-grown / in need of pruning; weeds are present; occasional dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are mostly positive images with some negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be well maintained / managed (occasional evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are controlled; few dead/damaged plants / fallen branches have not been removed.	Good indications that people have been or are present at the site; human signs are generally all positive images with few if any negative images such as forms of vandalism (graffiti / damage / theft) and / or disorder (rubbish on the ground / discarded bottles and/or cans); site appears to be highly maintained / managed (no evidence of peeling painted surfaces / damage awaiting repair); vegetation is pruned; weeds are rare; no dead/damaged plants / fallen branches have not been removed.	2
PREFERENCES					
4. <i>Coherent Areas</i>	The setting is uncoherent; unintriguing, illegible and does not entice further investigation; separate areas are difficult to distinguish from each other; plant species are highly dissimilar; borders between areas are not present or difficult to identify; arrangement of the overall site results in difficulty in determining a clear, accurate image of the site; may be difficult to provide clear directions to facilities; may be difficult to recall locations and / or directions to facilities; limited paths, precincts, nodes, and / or landmarks.	The setting is partially coherent; provides a small degree of intrigue, is partially legible and invites further investigation of some areas; separate areas can generally be distinguished from each other; plant species are mostly similar; borders between areas are present but may be difficult to identify; arrangement of the overall site may enable some to determine a clear, accurate image of some parts of the site; able to provide clear directions to some facilities; recollection of the locations and / or directions to some facilities; some evidence of paths, precincts, nodes, and / or landmarks.	The setting is mostly coherent; provides a moderate degree of intrigue, is mostly legible and invites further investigation; separate areas can clearly be distinguished from each other; plant species are similar; borders between areas are present and generally easy to identify; arrangement of the overall site may enable most visitors to determine a clear, accurate image of most parts of the site and able to provide clear directions to most facilities; recollection of the locations and / or directions to most facilities; evidence of well-used paths, precincts, nodes, and / or landmarks.	The setting is very coherent; provides a high degree of intrigue, is highly legible and invites further investigation; separate areas can be distinguished easily from each other; plant species are very similar; borders between areas are easy to identify; arrangement of the overall site may enable most visitors to easily determine a clear, accurate image of the whole of the site; able to provide clear directions to most facilities with ease; recollection of the locations and / or directions to most facilities with ease; evidence of busy paths, precincts, nodes, and / or landmarks.	1
5. <i>Smooth Ground</i>	Ground plane conditions prevent / highly restrict / impair locomotion; paths are uneven / non-paved surfaces; smooth surfaces are limited and / or narrow; very limited choice of access across through the site - identification of access routes is greatly restricted / impeded by topography.	Ground plane conditions prevent / restrict / impair some locomotion; paths are sometimes uneven; some non-paved surfaces; smooth surfaces are present however may be narrow; limited choice of access across through the site - identification of access routes is sometimes restricted / impeded by topography.	Ground plane conditions occasionally prevent / restrict / impair some locomotion; paths are even; few non-paved surfaces; smooth surfaces are present and are mostly wide; good choice of access across through the site - identification of access routes is rarely restricted / impeded by topography.	Ground plane conditions rarely prevent / restrict / impair some locomotion; paths are even paved surfaces; smooth surfaces are present and are very wide; extensive choice of access across through the site - identification of access routes is unrestricted / unimpeded by topography; access is visible and facilitated in many directions.	2
6. <i>Mystery</i>	No or very few partial views of areas and/or features that lie ahead because trees are closely spaced / dense to prevent views between; paths are mostly straight; predominantly heavy shadows / dark areas due to tree species & spacing.	Occasional partial views of areas and / or features that lie ahead because trees are spaced to sometimes prevent views between; some paths are winding though mostly straight; Some heavy shadows / dark areas due to tree species & spacing.	Partial views of areas and/or features that lie ahead are regular; foliage sometimes hides what lies ahead as trees are mostly spaced / dense to enable views between; most paths are winding though some parts are straight; few heavy shadows / dark areas due to tree species & spacing.	Frequent partial views of areas and/or features that lie ahead because trees are spaced to enable regular views between; most paths are winding with few sections that are straight; Rarely heavy shadows / dark areas due to tree species & spacing.	3
7. <i>Sense of Depth</i>	Visible bands/layers across the site and/or topographic variation is difficult to distinguish / determine; no vistas; few/no visible landmarks.	Some visible bands/layers across the site and/or topographic variation is distinguishable; 1-2 vistas; 1 visible landmark but not always visible.	Visible bands/layers across the site and/or topographic variation is distinguishable; 2-4 vistas; at least 1 visible landmark usually visible.	Visible bands/layers across the site and/or topographic variation is easily distinguishable; 4- vistas; more than 1 visible landmark frequently visible.	3
8. <i>Openings</i>	Few openings; difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures highly restrict access to the site.	Some openings; sometimes difficult to visually and / or physically access specific areas within the site; site boundary conditions / structures partially restricts access to the site.	Several openings; mostly unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures occasionally restricts access to the site.	Many openings; unrestricted to visually and / or physically access specific areas within the site; site boundary conditions / structures rarely restricts access to the site.	2

Overall Rating:

18

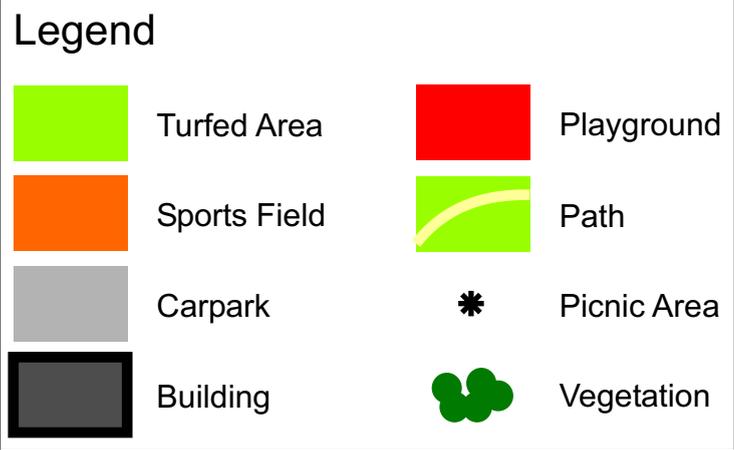
Appendix D Park Site Plans

PARK A



Legend			
	Turfed Area		Playground
	Sports Field		Path
	Carpark		Picnic Area
	Building		Vegetation

PARK B



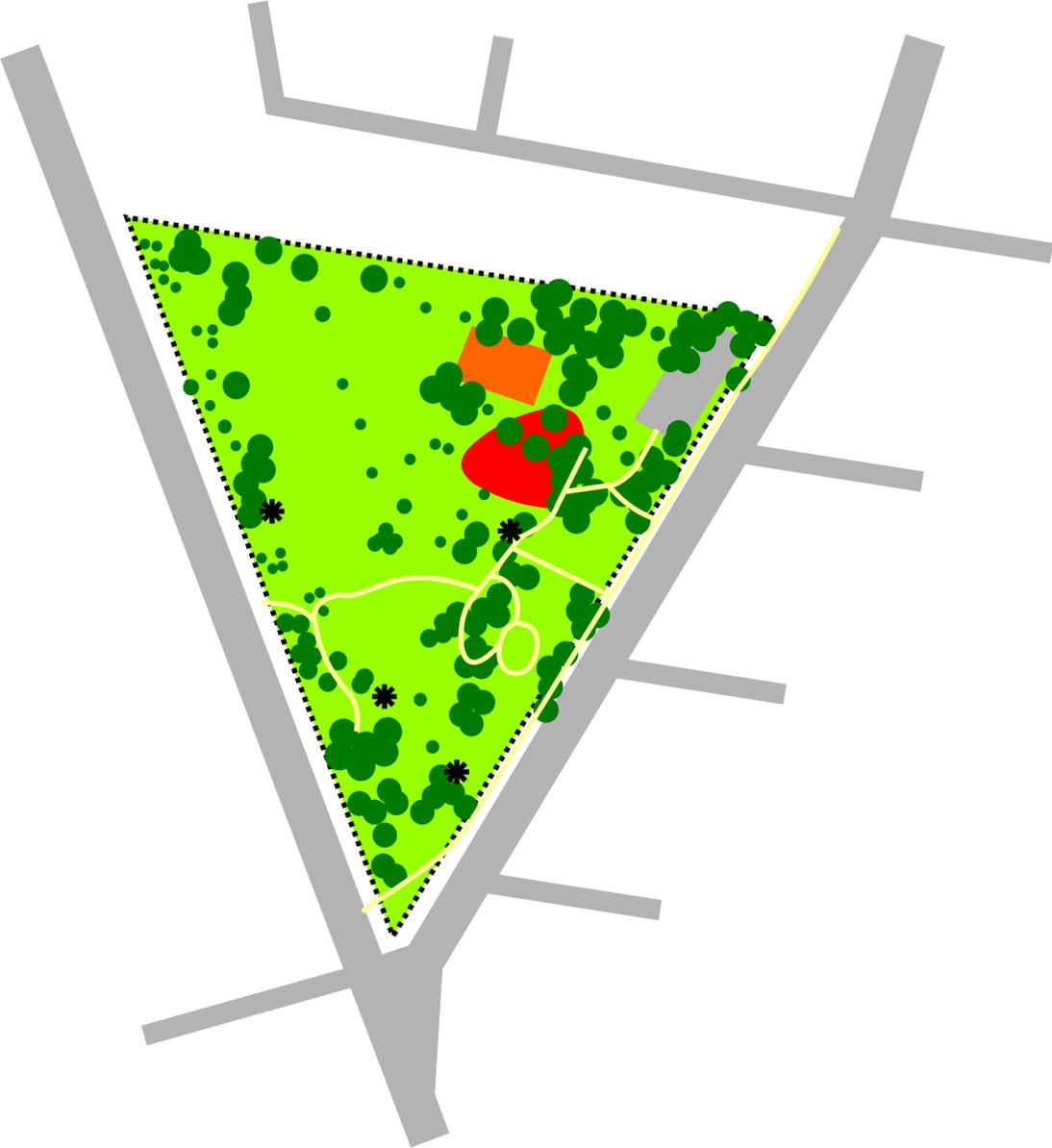
PARK C

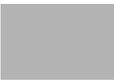
Legend

	Turfed Area		Playground
	Sports Field		Path
	Carpark		Picnic Area
	Building		Vegetation



PARK D



Legend	
	Turfed Area
	Sports Field
	Carpark
	Building
	Playground
	Path
	Picnic Area
	Vegetation

PARK E



Legend	
	Turfed Area
	Sports Field
	Carpark
	Building
	Playground
	Path
	Picnic Area
	Vegetation

PARK F



Legend	
	Turfed Area
	Sports Field
	Carpark
	Building
	Playground
	Path
	Picnic Area
	Vegetation

Appendix E Park Descriptions

Park A

The smallest in area of the study sites (1.5 hectares), Park A was generally flat with street frontage to all property boundaries. Park A was characterised by large mature shade trees to sections of the property boundary, lawn areas, rose gardens, arbours, concrete pathways, rotunda and a memorial feature. In terms of visitor facilities, the park provided an adventure play-space, picnic settings, public toilets, drink fountains, and an electric barbecue. The park was shared by a small bowls club, fenced-off from the park proper, with facilities that included a clubhouse and two bowling greens. Surrounding land uses were predominantly residential, with some commercial, light industrial and educational uses.

Park B

At 5.7 hectares, Park B was gently sloped with street frontage to all property boundaries. Park B was characterised by large, mature fig trees to most property boundaries, entry arbours, concrete pathways, large open lawn areas and a memorial feature. In terms of visitor facilities, the park provided a small adventure play-space, picnic settings and shelters, public toilets associated with a community stage / performance area, drink fountains, and electric barbecues. The park was shared with a small bowls club, partially fenced-off from the park proper, with facilities that included a major clubhouse, kiosk, off-street car-parking areas and three bowling greens. A number of buildings located along the western park boundary were used infrequently by community organisations. Surrounding land uses were predominantly residential, with some commercial, light industrial and educational uses.

Park C

The second largest of the park sites at 7.1 hectares, Park C was gently sloped toward the adjacent creek with street frontage to most of the remaining property boundary. Park C was characterised by stands of large eucalypts, casuarinas and native tree species, a concrete pathway parallel to the creek, and large open grassed areas. A second footpath was provided adjacent to the street. In terms of visitor facilities, the park provided a small adventure play-space, picnic settings and shelters, public toilets, drink fountains, skate facilities, an off-street car-parking area and electric barbecues. Surrounding land uses were predominantly residential, with a nearby major retail centre.

Park D

Park D was a moderately sloped site consisting 3.3 hectares with street frontage to two of three property boundaries. Park D was characterised by some large mature shade trees and informal grouping of native tree species, lawn areas, formal gardens, arbours, concrete pathways and a large rotunda. In terms of visitor facilities, the park provided an adventure play-space, picnic settings, public toilets, drink fountains, electric barbecues, basketball court, cricket pitch, and water feature. Surrounding land uses were predominantly residential, with some commercial, light industrial, educational and recreational uses (golf course).

Park E

At 2.7 hectares, Park E was gently to moderately sloped with a drainage easement truncating the park toward the southern-most end. With street frontage provided mostly by way of no through roads, most of the property boundary adjoined residential areas. Park E was characterised by large areas of open eucalypts and native tree species and a concrete pathway with connections to local streets. In terms of visitor facilities, the park provided a small adventure play-space, picnic settings and shelters, drink fountain, electric barbecues and a half basketball court. Surrounding land uses were predominantly residential, with a nearby local retail centre.

Park F

The largest of the park sites at 7.5 hectares, Park F was slightly undulating and sloped toward the adjacent drainage swale parallel to the northern property boundary and adjoining street, with further street frontage to the remaining property boundary. Park F was characterised by stands of large eucalypts, casuarinas and native tree species, a concrete pathway, and large open grassed areas. The park was shared with a small football club with facilities that included a major clubhouse incorporating a kiosk and public toilets, off-street car-parking areas and two fields. A second footpath was provided adjacent the street to the southern and eastern boundaries. In terms of visitor facilities, the park provided a small adventure play-space, picnic settings and shelters, drink fountains, skate facilities, and electric barbecues. Surrounding land uses were predominantly residential, with a nearby major retail centre.

Appendix F Community Questionnaire

Community Questionnaire

Park Name **Street Address**

Image of Map from Street Directory / "Whereis.com.au"

OFFICE USE ONLY

Part A: The Park Facilities and Environment

For the QUESTIONS below, use your existing KNOWLEDGE of PARK ACTIVITIES to indicate the response which BEST describes your EXPERIENCE.

1. Do SPORTING CLUBS / GROUPS conduct regular activities in this park? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure	<input type="checkbox"/>
2. Do OTHER PEOPLE regularly visit / use this park? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure	<input type="checkbox"/>
3. People of which GENDER mostly visit this park? <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Both <input type="checkbox"/> Not Sure	<input type="checkbox"/>
4. People of which AGE GROUP mostly visit this park? <input type="checkbox"/> Children (0 - 12 yrs) <input type="checkbox"/> Young People (12 - 25 yrs) <input type="checkbox"/> Adults (25 - 45 yrs) <input type="checkbox"/> Older Adults (45 + yrs) <input type="checkbox"/> Not Sure	<input type="checkbox"/>
5. Have YOU ever visited this park? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure	<input type="checkbox"/>
6. How OFTEN do you visit this park? <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Fortnightly <input type="checkbox"/> Monthly <input type="checkbox"/> 3-6 times / year <input type="checkbox"/> Rarely / Never	<input type="checkbox"/>
7. How much TIME do you / would you most likely spend at this park? <input type="checkbox"/> None <input type="checkbox"/> Less than 1 hour <input type="checkbox"/> 1 - 2 hours <input type="checkbox"/> 3 hours or more	<input type="checkbox"/>
8. During which PERIOD/S are you / would you be most likely to visit this park? <input type="checkbox"/> None <input type="checkbox"/> Morning (Before 10am) <input type="checkbox"/> Midday (10am - 2pm) <input type="checkbox"/> Afternoon (2pm - 6pm) <input type="checkbox"/> Evening (After 6pm)	<input type="checkbox"/>
9. Which DAYS do you / would you be most likely to visit this park? <input type="checkbox"/> Weekdays <input type="checkbox"/> Weekends <input type="checkbox"/> Both <input type="checkbox"/> Neither	<input type="checkbox"/>
10. Are you most likely / would you be WITH ANOTHER PERSON during your visit? <input type="checkbox"/> Alone <input type="checkbox"/> Another Person <input type="checkbox"/> Small Group (3-5 people) <input type="checkbox"/> Large Group (6 or more people) <input type="checkbox"/> Would not visit	<input type="checkbox"/>

For the **QUESTIONS** below, use your **EXISTING KNOWLEDGE** of **PARK FACILITIES** to indicate the response which **BEST** describes your **OPINION**.

11. Of the **FACILITIES** listed below, tick those which you can best recall that **ARE FOUND** at this park?

<input type="checkbox"/>	War Memorial	<input type="checkbox"/>	Seats / Tables	<input type="checkbox"/>	Playground	<input type="checkbox"/>	Lights	<input type="checkbox"/>	Gazebo / Picnic Shelter	<input type="checkbox"/>	Courts	<input type="checkbox"/>
<input type="checkbox"/>	Murals / Artwork	<input type="checkbox"/>	Public Toilets	<input type="checkbox"/>	Barbecues	<input type="checkbox"/>	Car-parking Area	<input type="checkbox"/>	Clubhouse / Kiosk	<input type="checkbox"/>	Kick-a-bout Area	
<input type="checkbox"/>	Access to a Creek / River	<input type="checkbox"/>	Pathway	<input type="checkbox"/>	Drink Fountain	<input type="checkbox"/>	Playing Field/s	<input type="checkbox"/>	Community Planting Areas	<input type="checkbox"/>	Cricket Pitch	

12. If you either **DO** or **WOULD** visit the park, which (1) term best describes the **ACTIVITY** you are most likely to do while visiting this park?

<input type="checkbox"/>	Walking / Jogging	<input type="checkbox"/>	Cycling	<input type="checkbox"/>	Nature Study	<input type="checkbox"/>	Relaxation / Meditation	<input type="checkbox"/>	Visit Playground	<input type="checkbox"/>	Sport / Recreation	<input type="checkbox"/>
<input type="checkbox"/>	Picnic / BBQ	<input type="checkbox"/>	Leisure Activity	<input type="checkbox"/>	Group Planting	<input type="checkbox"/>	Skate / BMX	<input type="checkbox"/>	Rollerblade	<input type="checkbox"/>	Other	

For the **QUESTIONS** below, circle a number on the scale indicating the response which **BEST** describes your **OPINION** of **PARK FACILITIES**?

13. How would you best describe the **LAY-OUT** of this park as an open space area?

1	2	3	4	5	6	7	8	9	10	11	<input type="checkbox"/>
<small>Very Complicated / Confusing</small>					<small>Neither Complicated / Confusing nor Clear</small>					<small>Very Clear</small>	

14. How would you best describe the **ACCESS** for **PEDESTRIANS** ?

1	2	3	4	5	6	7	8	9	10	11	<input type="checkbox"/>
<small>Very Inaccessible</small>					<small>Neither Inaccessible nor Accessible</small>					<small>Very Accessible</small>	

15. How would you best describe the **CHOICE OF ENTRY / EXIT POINTS**?

1	2	3	4	5	6	7	8	9	10	11	<input type="checkbox"/>
<small>Very Limited Choice</small>					<small>Some Choice</small>					<small>Unlimited Choice</small>	

16. How would you best describe the **VIEWS** at eye level through this park?

1	2	3	4	5	6	7	8	9	10	11	<input type="checkbox"/>
<small>Very Restricted</small>					<small>Neither Restricted nor Open</small>					<small>Very Open</small>	

For the **STATEMENTS** below, circle a number on the scale indicating the response which **BEST** describes your **EXPERIENCE**.

17. This park accommodates a wide range of **PRIMARY USES** and many **OTHER USES**.

1	2	3	4	5	6	7	8	9	10	11	<input type="checkbox"/>
<small>Strongly Disagree</small>					<small>Neither Disagree or Agree</small>					<small>Strongly Agree</small>	

18. This park has pedestrian and / or vehicular **PATHWAYS** that are in close proximity to facilities.

1	2	3	4	5	6	7	8	9	10	11	<input type="checkbox"/>
<small>Strongly Disagree</small>					<small>Neither Disagree or Agree</small>					<small>Strongly Agree</small>	

19. Evidence of **ACTIVITY AREAS** for walking, cycling and other sport and recreational activities are very obvious at this park.

1	2	3	4	5	6	7	8	9	10	11	<input type="checkbox"/>
<small>Strongly Disagree</small>					<small>Neither Disagree or Agree</small>					<small>Strongly Agree</small>	

20. This park is used by people from a broad range of ETHNIC and CULTURAL backgrounds?

1	2	3	4	5	6	7	8	9	10	11
Strongly Disagree			Neither Disagree or Agree					Strongly Agree		

21. This park is used by people in large and small GROUPS and also by INDIVIDUALS.

1	2	3	4	5	6	7	8	9	10	11
Strongly Disagree			Neither Disagree or Agree					Strongly Agree		

22. When describing this park to a visitor, I would find it easy to provide CLEAR DIRECTIONS to this park's facilities.

1	2	3	4	5	6	7	8	9	10	11
Strongly Disagree			Neither Disagree or Agree					Strongly Agree		

For the QUESTIONS below, circle a number on the scale indicating the response which BEST describes your OPINION.

23. Does this park appear to be MOWED regularly?

1	2	3	4	5	6	7	8	9	10	11
Rarely / never			Sometimes					Very regularly		

24. Does this park appear to be kept CLEAN AND TIDY of litter, broken glass, and other rubbish?

1	2	3	4	5	6	7	8	9	10	11
Rarely / never			Sometimes					Very regularly		

25. Do the gardens and trees appear to be PRUNED regularly?

1	2	3	4	5	6	7	8	9	10	11
Rarely / never			Sometimes					Very regularly		

26. If there are the PUBLIC TOILETS, do they appear to be generally clean?

1	2	3	4	5	6	7	8	9	10	11
Rarely / never			Sometimes					Very regularly		

27. If there are PICNIC FACILITIES, do they appear to be well maintained?

1	2	3	4	5	6	7	8	9	10	11
Rarely / never			Sometimes					Very regularly		

28. Overall, how would you rate the MAINTENANCE of this park?

1	2	3	4	5	6	7	8	9	10	11
Very poor			Average					Excellent		

29. What 3 words BEST DESCRIBE this park? _____

Part B: The Park and Your Personal Safety

For the STATEMENTS below, circle a number on the scale indicating the response which BEST describes your OPINION.

1. If I were to FEEL THREATENED while visiting this park, I am confident that I would be able to obtain assistance.

1	2	3	4	5	6	7	8	9	10	11
Strongly Disagree			Neither Disagree or Agree					Strongly Agree		

2. In the case of AN EMERGENCY, I am confident that I would be able to obtain assistance.

1	2	3	4	5	6	7	8	9	10	11
Strongly Disagree			Neither Disagree or Agree					Strongly Agree		

3. There are usually OTHER PEOPLE in this park during the time I would be most likely to visit.

1	2	3	4	5	6	7	8	9	10	11
Strongly Disagree			Neither Disagree or Agree					Strongly Agree		

4. During the evening, this park is sufficiently ILLUMINATED to enable visibility of most activity in the park.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree
5. The LIGHTING in this park is evenly distributed so that most areas are visible during the evening.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree
6. This park has very few PLACES for people to HIDE.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree
7. It is mostly RESIDENTIAL areas that adjoin this park.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree
8. Security Personnel regularly PATROL this park during the evening.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree
9. Police MONITOR the activities of this park during their patrols of the neighbourhood.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree
10. When I visit or pass this park, it rarely looks ISOLATED.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree
11. When I visit / consider visiting this park during the DAY (6am - 6pm), I am not overly concerned about my personal safety.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree
12. When I visit / consider visiting this park during the EVENING (6pm - 6am), I am not overly concerned about my personal safety.												<input type="checkbox"/>	
1	2	3	4	5	6	7	8	9	10	11	Strongly Disagree		Neither Disagree or Agree

Part C: Incidents of Crime

For the QUESTIONS below, indicate the response which BEST describes your EXPERIENCE.

1. Do you know if there have been any reported or unreported INCIDENTS of CRIME at this park during the past 12 months?												<input type="checkbox"/>
<input type="checkbox"/> Yes	<input type="checkbox"/> No										<input type="checkbox"/> Not Sure	
2. If you think there has been an incident/s, which of the following TERMS would you use to describe them?												<input type="checkbox"/>
<input type="checkbox"/> Unauthorised Access	<input type="checkbox"/> Trail Bike Riding	<input type="checkbox"/> Drunkenness										
<input type="checkbox"/> Vandalism	<input type="checkbox"/> Graffiti	<input type="checkbox"/> Littering	<input type="checkbox"/> Wilful Destruction of Property									<input type="checkbox"/> Other Small Offence
<input type="checkbox"/> Theft	<input type="checkbox"/> Robbery	<input type="checkbox"/> Prostitution	<input type="checkbox"/> Physical Assault								<input type="checkbox"/> Arson	
<input type="checkbox"/> Drug Use / Dealing	<input type="checkbox"/> Sexual Assault / Rape	<input type="checkbox"/> Other Serious Offence										<input type="checkbox"/> Murder / Homicide

3. Do you know if there have been any (reported or unreported) INCIDENTS of SUBSTANCE ABUSE / DRUG USE at this park during the past 12 months?

Yes No Not Sure

For the STATEMENTS below, circle a number on the scale indicating the response which BEST describes your EXPERIENCE.

4. Incidents of CRIME in this park are rare.

1 2 3 4 5 6 7 8 9 10 11
 Strongly Disagree Neither Disagree or Agree Strongly Agree

5. Incidents of SUBSTANCE ABUSE in this park are rare.

1 2 3 4 5 6 7 8 9 10 11
 Strongly Disagree Neither Disagree or Agree Strongly Agree

6. Incidents of CRIME in this park are DECREASING.

1 2 3 4 5 6 7 8 9 10 11
 Strongly Disagree Neither Disagree or Agree Strongly Agree

7. Incidents of SUBSTANCE ABUSE in this park are DECREASING.

1 2 3 4 5 6 7 8 9 10 11
 Strongly Disagree Neither Disagree or Agree Strongly Agree

8. Incidents of CRIME in this park are INCREASING.

1 2 3 4 5 6 7 8 9 10 11
 Strongly Disagree Neither Disagree or Agree Strongly Agree

9. Incidents of SUBSTANCE ABUSE in this park are INCREASING.

1 2 3 4 5 6 7 8 9 10 11
 Strongly Disagree Neither Disagree or Agree Strongly Agree

Part D: Respondent Details

For the QUESTIONS below, indicate the response which BEST describes YOURSELF.

1. Age Group

18 - 24 25-34 35-44 45 - 54 55 +

2. Employment Status

Full Time Part Time Casual Unemployed Other

3. Household Size

1 2 3 4 5 +

4. Stakeholder

Property Owner Tenant Park Volunteer Park Sporting Club / Group Council / Police Officer

5. Gender

Male Female

Griffith University thanks you for your participation.

Please forward your completed questionnaire to Griffith University in the Reply-Paid envelope provided.

Appendix G *Dependant Variable: Park Use*

Range of Possible Scores: 5 – 20

Reliability Analysis (5 items)

Cronbach alpha Co-efficient: .73

Levels of Park Visitation – Scale Items (Recoded)				
ID	Item	Response	Level of Visitation	Value
A6	Frequency	Daily / Weekly	High	4
		Fortnightly / Monthly	Moderate	3
		Less than Monthly	Low	2
		Never	None	1
A7	Duration	> 3 hours	High	4
		1 – 3 hours	Moderate	3
		< 1 hour	Low	2
		None	None	1
A8	Time of Day	Day and Night	High	4
		Day*	Moderate	3
		Morning or Midday or Afternoon or Evening*	Low	2
		None	None	1
A9	When	Weekdays & Weekends	High	4
		Weekdays	Moderate	3
		Weekends	Low	2
		Neither	None	1
A10	Who	Alone	High	4
		Another Person	Moderate	3
		Small or Large Group	Low	2
		No Use	None	1

*Note: *Day* means the participant visited the park at more than one time during the day (moderate level of visitation therefore more exposure to park activities/conditions) whereas only one part of the day. *Morning or Midday or Afternoon or Evening* means the participant visited the park only at one time during the day (low level of visitation therefore less exposure to park activities/conditions).

Appendix H Dependant Variable: Perception of Park Setting

Range of Possible Scores: 10 – 110

Reliability Analysis (9 items)

Cronbach alpha Co-efficient: .84

Perception of Park Setting Scale	
ID	Item
A13	Park Layout
A14	Access for Pedestrians
A15	Choice of Entry/Exit Points
A16	Views at Eye Level
A17	Accommodates Primary uses and other uses
A18	Pathways in close proximity to activity areas
A19	Obvious activity areas for walking, cycling and other sport and recreation activities
A20*	Use by broad range of ethnic and cultural groups
A21	Use by individuals and groups
A22	Able to provide clear directions

* Note: *Item removed from scale to improve level of internal consistency.*

Appendix K Dependant Variable: Experience/Knowledge of Crime

Range of Possible Scores: 6 – 66

Reliability Analysis (6 items)

Cronbach alpha Co-efficient: .80

Knowledge /Experience of Crime Scale	
ID	Item
C4	Incidents of Crime
C5	Substance Abuse
C6	Crime decreasing
C7	Substance Abuse decreasing
C8	Crime increasing
C9	Substance Abuse increasing

Appendix L Questionnaire Pack: Covering Letter

29 August, 2006

The Resident

Dear Sir or Madam:

I am studying Criminology and Criminal Justice at Griffith University. As part of my degree, I am required to conduct research.

My research is looking at community member's perceptions of personal safety in relation to four urban parks in the [REDACTED] area. I am therefore seeking your participation with this research.

Please read the enclosed Information Sheet and Questionnaire. While your participation is voluntary, I would appreciate your time in completing this task.

Sincerely,

Chris Boulton
MA (Hons) CCJ Student
School of Criminology & Criminal Justice
GRIFFITH UNIVERSITY

Appendix M Questionnaire Pack: Information Sheet

Information Sheet – Community Questionnaire

Urban Parks: Understanding Crime, Park Settings and Community Perceptions of Safety

Research team

Dr Susan Dennison
School of Criminology and Criminal Justice
Phone: 3875 6808
Susan.Dennison@griffith.edu.au

Assoc. Prof. Lorraine Mazerolle
School of Criminology and Criminal Justice
Phone: 3875 5938
l.mazerolle@griffith.edu.au

Chris Boulton
School of Criminology and Criminal Justice
Contact: 0428 598 073
Chris.Boulton@student.griffith.edu.au

Research Description

Recreation provides numerous social, environmental, and economic benefits to the community, and consequently parks are primary areas of public open space for recreational activity. Personal safety has been identified in the literature as a key barrier to people's participation in leisure activities based in areas of public open space. The aim of this research is to explore whether crime and / or park settings influence people's perceptions of safety, fear and usage of a park. The report of this research will be used as a reference for future urban park planning and design.

Participants

I am seeking the opinion of people who live in close proximity to four district parks. Participation in this study asks you to take part in completing a questionnaire, answering questions about your experiences and perceptions of safety relating to a nominated urban park. It is anticipated that the questionnaire will take no more than ten (10) minutes to complete, and should be returned completed in the reply-paid envelope provided, within seven (7) days of receiving the information. A reminder will be distributed after seven (7) days via a postcard to remind participants to complete the questionnaire, however if you have already sent back your questionnaire, please disregard this reminder.

Taking part in this research poses minimal risk to you as a participant. There is no risk to you being identified in the reporting of the data as only a limited amount of identifying material will be used (e.g. age, gender, employment status). Participants and their responses will not be individually identifiable in the results. Confidentiality of all participants will be maintained to negate any risk of being identified. Collective responses may be published, but no individual responses will be identified.

Confidentiality

The confidentiality of all participants will be strictly maintained. No identifying information will be reported. Gender, age and employment status will be the only personal particulars reported. The names of participants will not be recorded and such identity information should not be provided on the reply-paid envelope. All data including completed questionnaires will be kept in a locked filing cabinet for a period of five (5) years before destruction.

Participation is voluntary

Your decision to participate in this project is completely voluntary and you are not obliged to give your consent. Consent will be assumed if you complete and return the questionnaire.

Feedback

At the conclusion of this project and upon request, a summary of the results of the research will be available to participants. An invitation will also be distributed inviting participants to attend a general information session to hear of the results of the study.

Further Questions

You may contact Chris Boulton, Student, School of Criminology and Criminal Justice, Griffith University, Phone: 0428 598 073 Chris.Boulton@student.griffith.edu.au if you have any further questions relating to this research. If you wish to speak to my Supervisor, please contact Dr Susan Dennison, School of Criminology and Criminal Justice, Griffith University, Phone: 3875 6808 Susan.Dennison@griffith.edu.au

Ethics

If you have any concerns or complaints about the ethical conduct of this research project you should contact:

Manager
Research Ethics
Office for Research
Bray Centre
Nathan Campus
Griffith University
3875 5585
research-ethics@griffith.edu.au

Privacy Statement

The conduct of this research involves the collection, access and / or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded. For further information consult the University's Privacy Plan at www.gu.edu.au/ua/aa/vc/pp or telephone (07) 3875 5585.

Griffith University thanks you for your consent and participation in this research.

Appendix N Reminder Postcard



Chris Postcard 1

17/8/05, 3:14:23 PM

Did you complete and return the Community Questionnaire about your park?

If you haven't - it's not too late!

Just complete the Community Questionnaire and return it in the Reply-Paid envelope that you received during the past week, in your Questionnaire Pack.

Remember, your participation is voluntary, however your time may help make better parks for everyone to enjoy.

If you have misplaced or did not receive a Community Questionnaire Pack, please contact the Research Team on the numbers provided and we can provide you with another one.

If you have already returned your questionnaire, please disregard this reminder.

Griffith University thanks you for your participation.

**Ipswich Urban Parks: Understanding Crime, Park Settings and Community Perceptions of Safety
Griffith University School of Criminology & Criminal Justice**

RESEARCH TEAM:

Dr. Susan Dennison

Phone: (07) 3875 6808

susan.dennison@griffith.edu.au

Dr. Lorraine Mazerolle

Phone: (07) 3875 5938

l.mazerolle@griffith.edu.au

Chris Boulton

Phone: 0428 598 073

chris.boulton@student.griffith.edu.au

Chris Postcard 2

17/8/05, 3:14:25 PM

Appendix O Research Data Set CD