

OFFICE OF | CRIME PREVENTION

Planning Guidelines
for
Reducing Crime and Anti-Social Behaviour
associated with Pedestrian Access Ways
in Western Australia

Supplement to the
Designing Out Crime Planning Guidelines

Published by the
Office of Crime Prevention

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1.0 Introduction

The Office of Crime Prevention (OCP) has developed the State's Community Safety and Crime Prevention Strategy (OCP, 2004) which is committed to reducing crime through Designing Out Crime (Goal 5) strategies. The State's Designing Out Crime Strategy (OCP, 2007) provides a plan of action to achieve specific goals and the publication of these Pedestrian Access Way (PAW) Guidelines is part of this vision. The problems of crime and anti-social behaviour associated with PAWs represent a specific area of concern and commitment by Government. These PAW Guidelines provide advice for local government planners in addressing these issues.

This publication provides a practical guide for local governments to reduce crime and anti-social behaviour associated with PAWs in Western Australia (WA), particularly in the Perth metropolitan region. Specifically, the guidelines provide a framework to assist local governments in crime risk evaluation and management of PAWs in WA.

These guidelines are to be used as a supplement to the State's Designing Out Crime Planning Guidelines (WAPC, 2006a) and Designing Out Crime Planning Bulletin (WAPC, 2006b).

This guidance forms part of the State's Community Safety and Crime Prevention Strategy (OCP, 2004) and the Designing Out Crime Strategy (OCP, 2007) and is also designed to fulfil policy objectives such as increasing walkability and promoting more active lifestyles (Premier's Physical Activity Taskforce, 2007). It provides the basis for developing and refining 'best practice' in using Designing Out Crime approaches to reduce crime and anti-social behaviour for PAWs in WA. It builds on earlier work by the Office of Crime Prevention, and research undertaken by the Designing Out Crime Research Group at Curtin University of Technology and Edith Cowan University.

There is national commitment in Australia to this broad and relatively new area of 'Design Out Crime' research, which is also known as 'Crime Prevention Through Environmental Design' (CPTED). The Australian and New Zealand Crime

Prevention Ministerial Forum has developed guidelines and codes, and each of the States is implementing these ideas to various degrees and at different time-scales.

This supplementary guide from the OCP, supports the WA government and the community by developing 'best practise' crime prevention considerations in the management of PAWs in order to facilitate a balanced and informed decision-making process that considers walkability, connectivity and access to amenities and public transport, as well as proving a more scientific appreciation of crime and anti-social behaviour in relation to PAWs and their management. The PAW Guidelines provide a basic risk assessment procedure and decision tree for the options available for problematic PAWs.

Role of these guidelines

These guidelines are for use by local government both as a tool in the decision-making processes in the risk evaluation and management of PAWs, and in the case of the most intractable PAWs in decision-making about potential temporary or permanent closure. The guidance on crime should be considered in combination with existing planning policy advice on important issues such as walkability and access, equity and ownership, conservation, community and of course, cost in a balanced approach to planning. Currently, it is policy of several Western Australian government departments to strongly support pedestrian and cyclist activity for health (see, for example, *Perth Walking: The Metropolitan Region Pedestrian Strategy*, the work of the *Physical Activity Taskforce*, the *Sustainability Policy*, the WA walking committee, the *Australian Pedestrian Charter*, 'Be Active WA', TravelSmart, the Sustainability Policy Unit, the Health Department of Western Australia, and the Department of Sport and Recreation).

This illustrated supplementary guide identifies different types of PAWs and describes an extensive range of place-based crime prevention options for local government, for reducing crime and anti-social behaviour in PAWs in WA in the form of an easily readable and user-friendly text.

Background

This supplement to the Designing Out Crime Guidelines is based on five components.

- Literature review
- Morphological analysis
- Site visits
- Refining the Situational Crime Prevention Assessment
- Decision tree

The authors reviewed the international literature on PAWs to identify 'best practice' strategies and techniques from the realms of Designing Out Crime and CPTED. A morphological analysis of PAWs was undertaken to identify a useful typology of PAWs that captures the main characteristics of the diverse range of PAWS and their contextual issues to provide the basis for decision-making about applying appropriate strategies for reducing crime and anti-social behaviour linked to PAWs. It does this within the broader context of government sponsored Pedestrian and Cycle Access Plans (PCAPs) applied across larger areas. In addition, site visits to a wide variety of PAWs have provided photographs that give examples of 'good' and 'bad' PAWs and practices in WA. These have been re-produced as illustrations to protect their anonymity.

The Situational Crime Prevention Assessment (SCPA) provides an important tool in evaluating the crime risk of specific individual PAWs. The SCPA integrates the knowledge identified from the other elements into a user-friendly decision-making process for local governments in reducing crime and anti-social behaviour in PAWs processes and addressing requests for closure of PAWs. Together these elements form the basis of a decision tree approach linking specific PAWs with their wider contexts. It provides a step-by-step process for improving PAWs using Designing Out Crime and a basic risk assessment that can be used in the decision-making for closure, when all other options have been expended.

Document Structure

These PAW guidelines comprises of eight sections. The introduction is followed by a review of PAWs in WA and a description of the problematic situations associated with PAWs, since understanding the problems is essential to solving them effectively. The third section provides a brief review of the international literature on environmental criminology and on addressing problems of crime and anti-social behaviour in and around PAWs. Section four provides a range of Designing Out Crime principles and advice that may have some generic application to problems associated with PAWs. The fifth section describes the five components of the Situational Crime Prevention Assessment, which include a decision tree. This can be used for evaluating and making decisions in the case of individual PAWs about appropriate Design Out Crime strategies to reduce crime and anti-social behaviour, and addressing requests for temporary or permanent closure. Section six introduces the 3-D approach (*Designation, Definition and Design*) to the decision-making of PAWs, while section 7 provides some illustrated examples of 'good' and 'bad' features associated with crime in PAWs. The eighth and concluding section provides a list of references and a bibliography of online and print-based resources.

Objectives of the Guidelines

- Provide a brief overview of the problems associated with PAWs;
- Outline general designing out crime advice for PAWs;
- Deliver specific designing out crime advice for PAWs;
- Provide a balanced approach to the closure of PAWs which considers planning and health policy considerations alongside crime, and;
- Provide a tool for use by local government in assessing and responding to crime risks associated with PAWs.

2.0 PAWs in Western Australia

Background

PAWs are specific *physical* elements of urban, suburban and peri-urban space. PAWs are physical elements of the walking network used in a suburb, alongside other features such as road and street footpaths, lanes, public open space, beaches, and pseudo-public spaces such as shopping centres, rail and bus stations. Some PAWs and many laneways and alley-ways are also pseudo-public space in that they are privately owned and access across them is permitted by the owners subject to behaviour and access rules that the owners devise.

The problems addressed by these guidelines are located at the intersection of ease of pedestrian access to resources and amenities, health and walkability, personal and private space, crime prevention and the reduction of antisocial behaviour and the balance between pedestrians and vehicles in urban planning.

Terminology

In technical and legal terms, 'pedestrian access way' is defined tightly in planning law, as is the term 'laneway'. Significantly, both are usually regarded as different physical entities to the road network with its footpaths on the road reserve (although many PAWs have a footpath in parallel to a road access).

There is no single common language conceptualization of PAW in WA.

In relation to practical concerns about crime and anti-social behaviour, there are many overlaps between PAWs and laneways – although there are differences, e.g. in terms of issues of territoriality. These guidelines follow the common language understanding of PAWs as paths for pedestrians and cyclists that are not road elements of the Functional Road Hierarchy (ref). They are paths in the public domain available for use by pedestrians and vehicles that do not fall under the road traffic acts (e.g. electric buggies for disabled people, cycles, skateboards and roller skates).

These Design Out Crime guidelines, therefore, address the crime situation for both pedestrian access way paths and the laneways that pedestrians, cyclists and non-road vehicles use, PAWs overlap with laneways. We will refer to these collectively as PAWs, and where necessary distinguish between 'pedestrian path' PAWs (see, Fig X) and 'laneway' PAWs (see, Fig Y).

PAWs are extremely diverse in terms of their location, design, geometry, purposes and uses. PAWs function as an integral part of local pedestrian and cycling networks and as a vital means to access shops, public transport and amenities. In addition, they have a substantial role in public health.

Ownership considerations

An important consideration relates to ownership and control of PAWs. In a large number of cases, authority is granted to local and state government to manage PAWs. Many PAWs have in the past been created as part of the subdivision of land under S. 20A of the Town Planning and Development Act 1928 (TPD Act) as an alternative means of access between gazetted streets and for services. For some PAWs, however, ownership and control is private. Over the years, some PAWs have been closed and sold to adjoining residents, often on the premise of apparent / alleged crime problems.

The crime situation

Some PAWs are subject to crime and anti-social behaviour. This has been of particular concern in Western Australia where their physical attributes and context provides support for burglary (Clarke, 2002). Overseas, a significant concern is where the physical structure and context facilitates crimes against legitimate PAW users (refs).

Many PAWs created in the past are narrow and have poor surveillance. The maintenance of some has been neglected – a significant Design Out Crime concern (ref – DOC guidelines). Many PAWs are an essential part of the post-war car-centric suburb design that used long convoluted roads and cul-de-sacs to discourage through traffic. PAWs provide pedestrians in these suburbs with the only way to avoid impossibly long journeys if they had to follow the internal

suburban convoluted road network. The post-war convoluted suburbs model is now considered incompatible with best suburban design practice and Livable Neighbourhoods (WAPC, 2004). The PAWs in these older car-centric suburbs, however, remain essential to supporting their walkability.

This presents a problem to which Design Out Crime strategies offer perhaps the only solution. Many PAWs in these post-war suburbs are, in their basic form, poorly designed in crime prevention terms – narrow with weak surveillance. Some are associated with crime, yet are essential to maintaining walkability.

PAWs and laneways are found in a variety of other contexts besides post-war suburbs (see later sections). In each context, some PAWS are associated with elevated crime and antisocial behaviour relative to the background levels.

Three types of adverse outcomes are found:

- Outwards from the PAW (e.g. burglary or criminal damage of nearby buildings or noisy behaviour spilling into the roads);
- Behaviour within the PAW including graffiti and criminal damage to the PAW fence or roadway or unacceptable personal activities such as drug taking, drinking, sex, sleeping out), and;
- Against other PAW users (e.g. threats, violence, robbery and rape).

Crime prevention guidance

Currently, there is little guidance available for local governments in terms of what they can do to reduce opportunities for crime and anti-social behaviour in problematic PAWs. Additionally, there is need for guidance to effectively evaluate crime risk in the decision-making process associated with addressing requests by adjoining landowners to close a specific PAW.

In particular, there has been a significant, and to this point unfulfilled, necessity for practical government guidelines specific to reducing crime and anti-social behaviour in PAWS. This has left an overly large step between the generic Designing Out Crime guidelines to reduce crime and at the other extreme, the planning guidelines to close PAWs. This gap in guidance has presented a

particularly serious problem in the post-war convoluted suburbs where PAWs are, in walkability and access terms an essential part of the suburb design, and at the same time these PAWs have been poorly designed in crime prevention terms.

PAWs are seen as public spaces to be improved rather than routes to be removed. If there is crime on the public transport system, we do not immediately shut it down. The appropriate strategy after identifying a crime risk is to find ways of maintaining services whilst reducing the risk.

These guidelines are about providing information, tools and processes to help identify specific problems in specific PAWs and identify contextually appropriate designing out crime modifications and other crime prevention strategies.

Goal five of the State's Community Safety and Crime Prevention Strategy relates to using Designing Out Crime and technology to reduce crime and anti-social behaviour. Furthermore, the Designing Out Crime Strategy (OCP, 2007) endorsed by Cabinet is committed to ensuring that the planning system utilises Designing Out Crime ideas. PAWs represent a specific aspect of urban space that is currently lacking guidance. Guidance for managing PAWs is the concrete outcome of this supplement to the Designing Out Crime guidelines. Closure of PAWs is the last resort.

The Western Australian Planning Commission's (WAPC) Planning Bulletin No. 57 (PB57) '*Closure of Pedestrian Access Ways - Planning Considerations*' (WAPC, 2008) sets out the processes to be followed to seek closure whilst advising all concerned to preferentially seek other alternatives because of the adverse effect on planning issues such as walkability and access. PB57 also provides basic advice on improving PAWs (lighting, graffiti removal, gates and redesign), but does not provide specific detail or any risk assessment mechanism. In the limit, however, PB57 Section 2.1 (v) indicates that 'the incidences of crime and social difficulties being experienced by the adjoining landowners' (WAPC, 2003 – PB57, 2008) are a significant issue in decisions for closure. PB57 describes the process to be used in cases of requests for closure of PAWs. It focuses on a small ped-shed analysis, consulting users within the local ped-shed of 400m. This may be

problematic in terms of integrated government policy, e.g. involving Dept of Health and Dept of Sport and Recreation and other agencies (see above). PAWs are an important component of suburban walkability and health planning. PAWs typically are elements of pedestrian and cycling networks much larger than 400m, in many cases, for example, in the case of coastal PAWs, of routes up to 6km.

History, Morphology, Types and Use

There are several different reasons PAWs have been used in WA's suburbs. Morphologically, PAW types are broadly associated with specific eras and styles of urban planning:

- Early settlement PAWs;
- PAWs as a solution to pedestrian access problems in post-war pedestrian unfriendly car-centric suburbs that use long convoluted roads and cul-de-sacs to discourage through traffic;
- PAWs in rectilinear developments echoing early settlement planning;
- PAWs in recently planned pedestrian friendly suburbs, and
- Informal regional and per-urban PAWs.

Early settlement PAWs

Early settlement developments before the establishment of the creation of the Metropolitan Region Planning Authority in 1951 and shortly thereafter, typically contain either ad-hoc walkable road layouts or permeable rectilinear walkable road layouts. Much of these ad-hoc urban and suburban arrangements were designed around pre-existing pathways. See areas marked XXX on Map below (Fig. XXX). In these cases, PAWs are used to resolve the relatively rare problems in walkable accessibility. In these areas, rear and side laneways abound to provide rear access to premises for trades, services and, in earlier times, night soil removal. Typically, shared access laneways with pedestrian path PAWs are used as a supplementary pedestrian network to that of the streets and roads.

PAWs in pedestrian unfriendly car-centric suburbs

In WA, from the post-war period to the change of millennium, suburb planning typically used Functional Road Hierarchy in conjunction with long, convoluted road layouts with a high proportion of cul-de-sacs to discourage through vehicle traffic in suburban 'cells' about 3 km across. Through traffic, traffic to and from suburbs, and public transport is directed onto efficient highways at the perimeter of these suburban cells. See maps below (Figs. 1 and 2).

Suburban planning using convoluted roads is a now highly criticised planning strategy because of the way that it privileges cars over pedestrians and cyclists. It is an approach that is intrinsically pedestrian-unfriendly. Pedestrian access and walkability in these suburbs depends crucially on PAWs. The PAWs provide essential access across the suburbs, providing short-cuts between the long curvilinear roads and between the ends of cul-de-sacs and nearby roads. PAWs are an essential part of the suburban infrastructure in the post-war convoluted suburbs.

Government policy of many departments is to encourage walking, cycling, running and other forms of exercise that require a substantial network of paths of a suitable length. PAWs are essential to achieving these government health, walkability and sustainability agendas in post-war convoluted suburbs. PAWs in these suburbs significantly increase community access to opportunities for healthy walking, cycling, running and other physical activities that naturally use the suburban environment. This opens up the question as to whether local government and urban planners should encourage the establishment of additional PAWs to increase the opportunities to make walkable and healthy these post-war car-centric suburbs.

PAWs in rectilinear developments echoing early settlement planning

The mid-century development of many suburbs close to Perth and Fremantle echoed early ad-hoc walkable road layouts. Similar to early settlements, PAWs are used to resolve rare problems in walkable accessibility. Rear and side laneways provide rear access to premises for trades and services. In many

cases, shared access laneways are used as PAWs as a part of a supplementary pedestrian network to that available via streets and roads. This can be seen for example in the layout of coastal suburbs near to Scarborough (See Map, Fig 2)

PAWs in recently planned pedestrian-friendly suburbs

Recently planned suburbs have been designed to be more pedestrian friendly. Such suburbs maintain high levels of pedestrian walkability and access with the associated health benefits. They discourage through-traffic by a variety of means of traffic control without long convoluted roads and cul-de-sacs.. Typical suburban roads in these pedestrian-friendly suburbs are short with many intersections. The layouts can range from linear or geometric forms to more organic freeform layouts with high levels of pedestrian interconnectivity. Examples include Joondalup inner city and City North areas and recent developments at South Beach in Fremantle. In both, a good pedestrian and cycling network of paths that works at the neighbourhood and larger scale is planned from the outset. It is apparent that in many newer PAW developments, Designing Out Crime and CPTED considerations have been integrated into the conceptual design of the PAWs (see for example, Figs. X, X and X).

Informal regional and peri-urban PAWs

In regional centres and peri-urban suburbs at the urban edge, are found informal PAWs that later may or may not become formalised as parts of future developments. These PAWs often comprise paths for pedestrians and vehicles across currently undeveloped land. These PAWs typically provide access to services (shops, bus services, etc) or key amenities such as beaches, rivers, or sports fields. Examples are shown in Figs X, X and X.

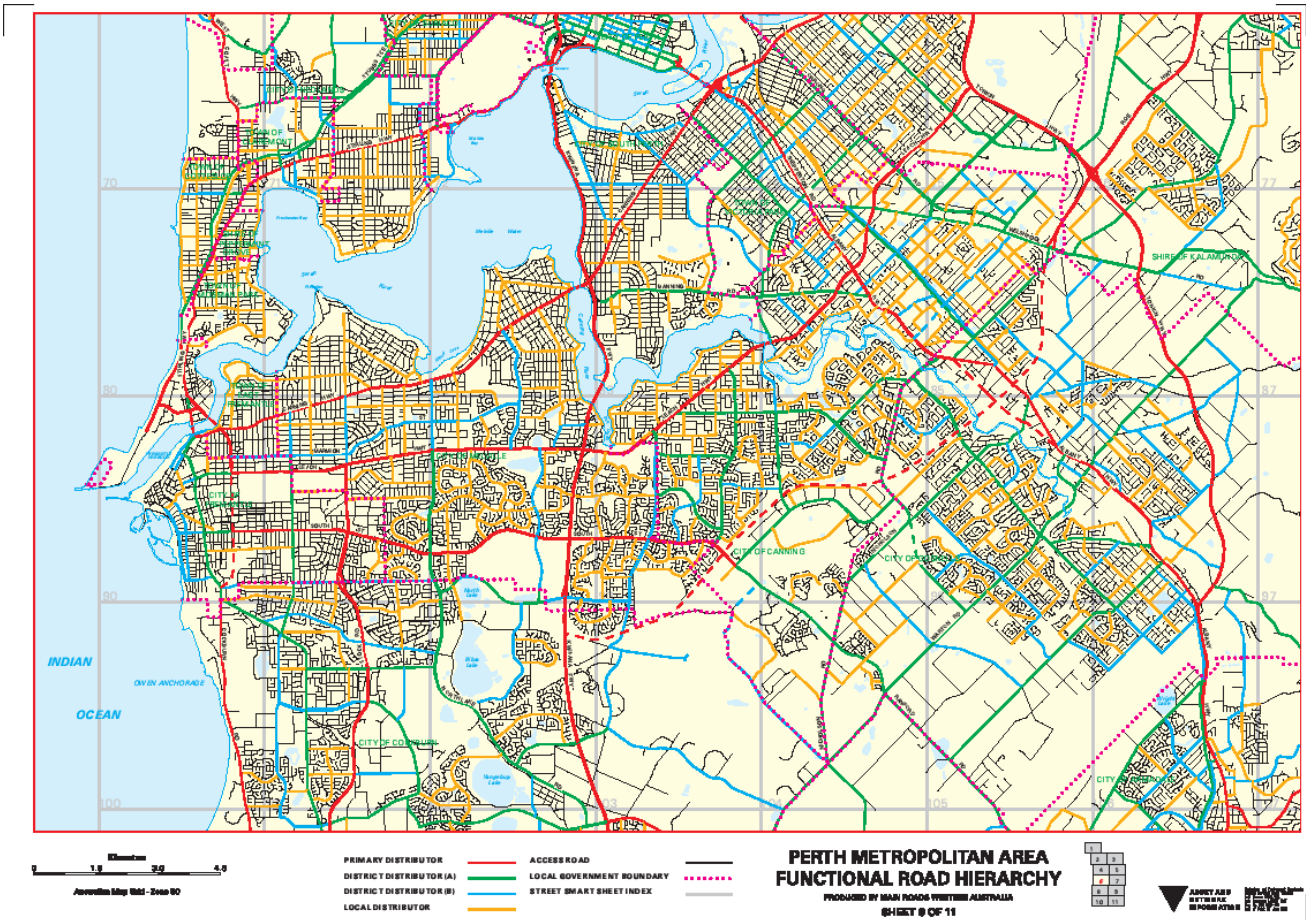


Fig 1: Perth South and Fremantle: distribution of suburb types

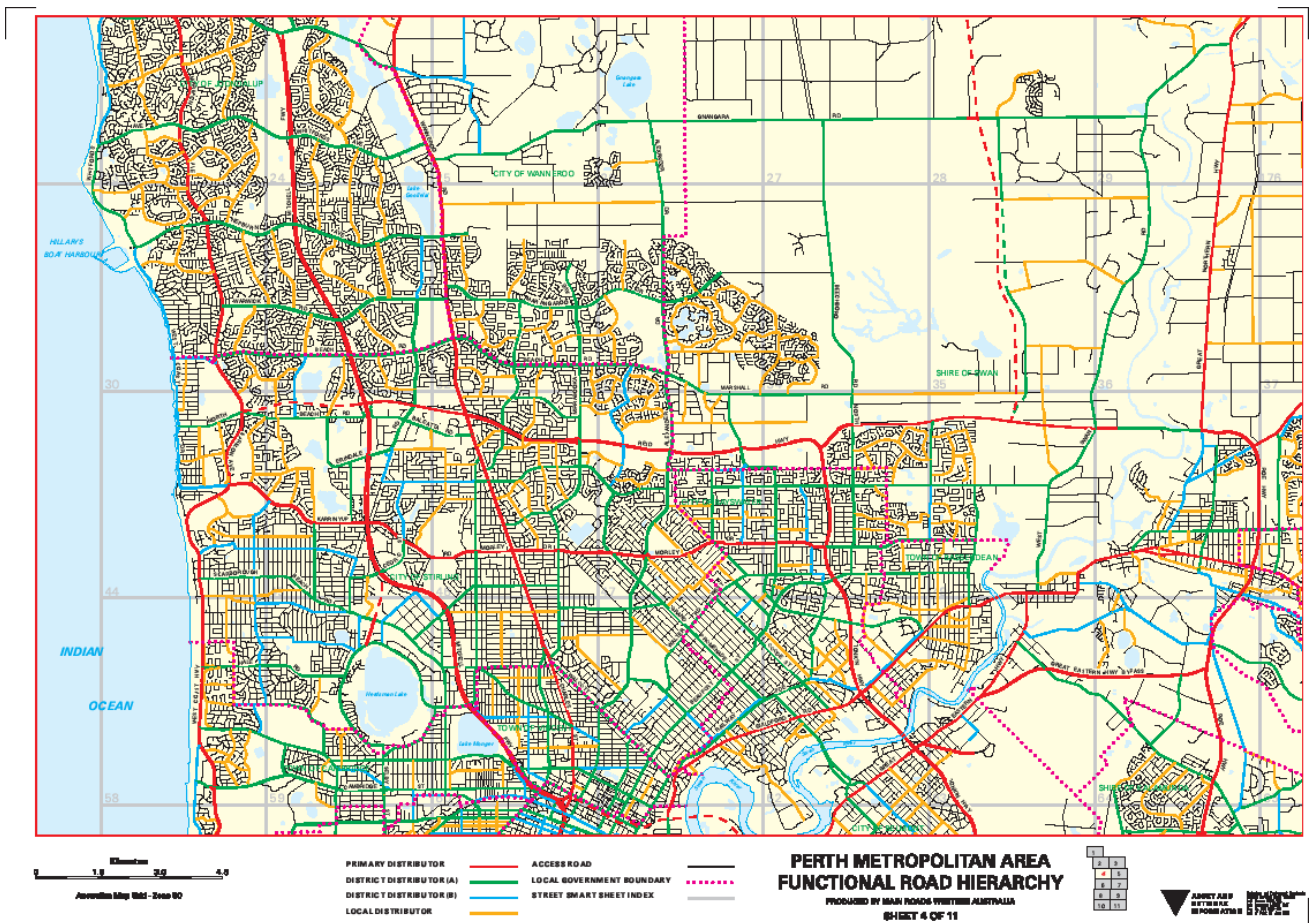


Figure 2: Perth North: distribution of suburb types

Classic types of PAWs

PAWs can also be morphologically grouped by similarity of roles, purpose and uses. Alongside these factors, PAWs comprise elements of multiple networks of paths by individuals walking cycling and running for health and recreation. Any individual PAW will be an element of many different routes of up to 10km in length and crossing several suburbs.

Six classic PAW types that have been identified are:

- Coastal PAWs;
- PAWs in post-war convoluted suburbs;
- PAWs providing occasional access for major events;
- PAWs that are a pedestrian connection to a retail services area;
- Residential laneway PAWs, and

- Industrial and commercial laneway PAWs.

Coastal PAWs

Coastal PAWs provide:

- Access to the beach from nearby streets;
- Improved use of backstreet parking for beach visitors from other suburbs, and;
- Access to beaches as elements of longer-distance pedestrian and cycle routes from inland suburbs.

Coastal PAWs form a distinct class whose function is to provide pedestrians and cyclists from inland with access to the beachfront. They have three roles. They provide access the beach by residents living in the suburbs immediately behind the beach. They facilitate use of the beach by visitors with cars by encouraging distribution of parking away from the beachfront and enabling easy pedestrian access from the backstreets. They have a strong health role as are component of a larger pedestrian and cycling path access to the beach for communities' suburbs away from the beach. Typically, these longer routes combine multiple PAWs, roads, parks and footpaths with walking distances typically up to 3km each way and cycling distances up to 10km. Examples include: Craigie to Mullaloo beach, Hilton to Fremantle's South Beach, Merriwa to Quinns Rocks beach, Floreat to City Beach, Carine to North Beach and Duncraig to Hillarys.

For coastal PAWs, their use is likely to be seasonal and the types of users are likely to vary depending on time of day and day of week.

In crime prevention terms, developing Designing Out Crime strategies are likely to be most effective and least intrusive on PAW use if they target specific seasons, times of day, PAW users, and PAW behaviours. Crowe's 3-D model described later is particularly useful for developing targeted Designing Out Crime interventions.

PAWs in post-war convoluted suburbs

PAWs in post-war convoluted suburbs have several key characteristics:

- PAWS are usually essential in health and access terms because these suburbs were originally designed as pedestrian-unfriendly and car-centric.
- PAWs are essential because these suburbs have very low ped-shed scores (typically around 0.3 instead of the preferred 0.6 or greater).
- PAWs are often poorly designed in Designing Out Crime terms. Typically they are narrow paths located between property boundaries (e.g. garden fences);
- Some PAWs have high traffic, particularly where they are the only pedestrian link to amenities;
- Some PAWs have inappropriate and problematic high territoriality and sense of ownership by abutting residents. This can act to reduce PAW functionality and increase social tension.
- Any individual PAWs typically has a different balance of uses at different times of day (exercise, parks, school, shopping, bus access, tavern access etc).
- Crime and anti-social behaviour is typically linked to specific users, times of day and days of week.
- Many post-war convoluted suburbs have a low socio-economic index and relatively high levels of crime. These provide various routes for the community including;
 - Bus access;
 - Train access;
 - Retail access;
 - Access to public open space and other natural amenities (bush, lakes, national parks etc);
 - Home business access, and
 - Through-access as part of longer-distance pedestrian and cycle pathways from and to other nearby suburbs.

PAWs in post-war convoluted suburbs are intentionally essential parts of the road access networks. With the increased government emphasis on health via activity such as walking and cycling, the importance of these PAWs has increased significantly and this trend is likely to continue.

The characteristics of PAWS in post-war convoluted suburbs combine to produce an associated pattern of difficult problems. Any attempt to improve crime and anti-social behaviour outcomes on a problem PAW is bounded by the need to address or avoid adversely affecting the following issues:

- the poor suburban walkability in these suburbs (ped-shed index ~ 0.25)
- high importance of PAWs in access and health terms
- high use for some PAWs with naturally proportionally higher crime and anti-social behaviour potential associated with
 - number of users
 - poor CPTED design of PAWs and properties
 - high levels of territoriality of residents abutting PAWs
- high social tensions,
- use of PAWs by non-local walkers and cyclists
- different patterns of PAW use at different times of day
- different PAW crime risks and vulnerability at different times of day.

Many post-war convoluted suburbs have higher crime levels overall. Crime allegedly associated with PAWs needs to be assessed relative to background levels. A simple comparison might be made with crime levels on corner block residences. A particular issue is the combination between low ped-shed score (low number of interconnecting paths), high importance and apparently high crime. In situations where there are only a low number of paths, the statistics on the level of problem for an individual PAW is that which would otherwise be distributed across multiple paths in suburbs with a higher walkability. In other

kinds of suburbs, with high walkability (ped-shed ≥ 0.6), each individual PAW contains only a small amount of the crime/anti-social behaviour potential.

This suggests that an integrated government approach driven by crime prevention would be to identify the potential for creating additional PAWs. This would facilitate the achievement of other government agendas for improving health, reducing obesity, increasing walkability, creating liveable neighbourhoods also ease some of the other urban design problems with these post-war convoluted suburbs. It follows a similar line to Christchurch City's suggestions to acquire adjoining properties to widen existing narrow path PAWs (Christchurch City Council, 2004). Such widening can also extend to take the form of new road to provide access to both vehicles and pedestrians.

PAWs used for access to major events

Some PAWs, often laneway PAWs, have a sporadic role in providing pedestrian access to large public events. This leads them to having a double life in crime prevention terms. At the times of public events, these PAWs become taken over by visiting members of the public. This is a situation in which crime and anti-social behaviour would be expected to increase. At other times, they typically provide access and exercise for much lower numbers of users, many of whom would be local. This double life of these PAWs suggests using two separate and distinctly different strategies for developing Designing Out Crime interventions. It is important that the interventions aimed at the time of public events do not impact adversely on the functioning of the PAW in normal use.

Interestingly from a crime prevention point of view, in longer term multi-day events, event-goers often establish a mild form of protective ownership of 'their' pathways to the event. These can act as a protective against problem behaviours. Mechanical surveillance and policing on the days of events may be appropriate on PAWs to some venues. Other Designing Out Crime approaches are likely to be conventional for both of the PAWs roles.

PAWs that are a pedestrian connection to a retail services area

Pedestrian networks often focus on retail services clusters. Retail centres can form a turning point for walking routines as well as being of practical purpose for shopping. Many pedestrian routes terminate at a PAW adjacent to a shopping centre.

Most of this land is not public. It is privately owned pseudo-public space.

These PAWs have a variety of possible roles. Some of these PAWs are nodes of the PAW network in that they carry the foot and cycle traffic from multiple routes. Others provide pedestrian access between parts of shopping complexes. Some provide pedestrian access from car parks, bus stops and rail stations.

These PAWs are typically high use, high importance and high risk for antisocial behaviour and crime. The situation is complicated by the patchwork of ownerships and management responsibilities.

A key characteristic of this situation is that it involves multiple stakeholders, constituencies and user groups with different interests and spheres of action. It also can involve multiple security organisations with different priorities and specialist expertise (shopping centre security, rail security, police, youth workers, council rangers etc).

Successful Designing Out Crime strategies are those that build on the strengths of the groups involved using a multi-agency approach. Where young people are involved, youth services agencies provide a powerful Designing Out Crime resource. Experiences in shopping centres in WA have shown that involvement of youth service agencies can result in changes over short timelines that can almost significantly reduce crime and anti-social behaviour issues.

Residential laneway PAWs

Some laneway PAWs are a secondary use of rear shared service access roads. These are often road only and without footpaths e.g. in City North, Joondalup, and in older rectilinear suburbs that have rear tradespersons access or access for night soil removal.

Classic Designing Out Crime approaches apply in most cases where the dominant use is by residents abutting the laneway PAW. Where the PAW is part of a network of paths and carries through-pedestrian and cycle traffic, feelings of 'territoriality' and sense of 'ownership' need to be restrained to avoid social tensions between those whose houses abut the laneway and those from a distance legitimately using the laneway as part of a walking or cycling route.

Temporally, legitimate PAW use may be erratic and extend from early morning to the late evening in line with social and work behaviours and daily routine activities.

Industrial and commercial PAWs

PAWs are found in industrial and commercial areas. Typically, some are laneways providing service access; others are pedestrian paths giving service and customer access. Most legitimate usage of the PAW will be in working hours.

Classic Designing Out Crime approaches apply in most cases. Mechanical surveillance and motion-sensitive or continuous night lighting may be appropriate where abutting businesses have high value stock.

The situation is complicated where other pedestrian networks flow through commercial areas. In this case, it would be more appropriate to provide alternative pedestrian and cyclist routes. In cases where public paths have direct routes through commercial areas, a mix of Designing Out Crime strategies and strong target-hardening is likely to be more appropriate.

PAW Planning Instruments – Ped-Sheds, PCAPS and PB57

Understanding existing planning instruments used in the management of PAWs is required to understand how these PAW Guidelines function.

This supplement to the Design Out Crime Guidelines provides specific Designing Out Crime tools to assist in the risk assessment and management of PAWs.

Designing Out Crime strategies offer the primary response to complaints about crime and anti-social behaviour in a PAW. In general, a crime risk assessment and the installation of appropriate Designing Out Crime strategies should always

be conducted in the case of problematic PAWs. This publication provides this guidance in the form of a decision-tree with a wealth of supporting material to help address the intrinsic complexities of this situation.

If Designing Out Crime strategies have proved ineffective after a reasonable time (1 year?), the powers of the proposed PB57 offer local government a process to develop a case for temporary closure of a PAW, or in extreme cases, full closure. The analyses presented below suggest, however, that as it stands, the PB57 proposal is problematic in terms of delivering an integrated government response to PAW related issues, and act against health and sustainability initiatives involving PAWs.

Not fully addressed in these guidelines, or addressed by PB57, is a means of evaluating whether Designing Out Crime strategies have failed to provide a sufficient benefit. A common sense approach might be to evaluate the crime levels in a PAW after Designing Out Crime treatment over say 1 year and compare them in terms of them being within a given range (+/- 25%) of a reference crime situation in the same suburb. An appropriate reference would be the crime levels in corner blocks these properties also have public access to the sides of the plot.

Ped-Shed Analyses

There are two main sorts of ped-shed analysis:

- Ped-sheds access ratios assessing an area's walkability and access (preferred by government agencies involved in encouraging activity, health, economic development, sustainability, reducing obesity and reducing car use), and;
- Ped-sheds focused on access routes to a particular point (preferred by those wishing to advocate PAW closure).

Both approaches are useful for understanding the role of an individual PAW. Ped-sheds that focus on walkability and access are constructed by drawing a circle of a particular radius (2Km, 800m and 400m are common radii) and counting the number of properties that lie within the circle as the crow flies from the centre. This gives the *'total number of properties'*. On long walking routes, the radius of a circle is conducted along roads and PAWs from the centre point and the number of front entrances of properties that are passed are counted. This gives the *'number of accessible properties'*. Dividing the number of accessible properties by the total number of properties gives the *ped-shed access ratio*.

The higher the ped-shed access ratio, the more walkable the area is and the easier it is to access different parts of the suburb.

High ped-shed ratios are regarded as important by many government departments involved in encouraging activity, health, economic development, sustainability, reducing obesity and reducing car use, including the Departments of Health, Sport and Recreation and Planning and Infrastructure.

Areas with good accessibility and walkability have a ped-shed access ratio of ≥ 0.6 . Government departments target for ped-shed ratios is ≥ 0.6 . Post-war convoluted suburbs, however, have ped-shed ratios of as low as 0.2.

This is why PAWs are so essential in post-war convoluted road suburbs.

An alternative approach to ped-sheds is to count the number of routes to a point and assess whether access is still possible if a route is removed (almost always true). This version of ped-shed is primarily used in new development planning in identifying routes to a new amenity: for example, to identify possible routes to a new shopping centre or new bus stop. This version of ped-shed is proposed (along with a 400m assessment circle) by those wishing to close PAWs. Problematically, this method excludes much of the important evidence for keeping PAWs open. The approach is currently used in the proposed new PB57 guidelines on making decisions about PAW closure. These Designing Out Crime Guidelines contradict the proposed new PB57 on this point and suggest further revision is necessary.

PCAPs

PCAPs are a Western Australian variant on Pedestrian Access and Mobility Plans (PAMPs), often shortened to Pedestrian Access Plans (PAPs) (see, for example, RTA, 2002; URaP-TTW, 2005a, 2005b).

PCAPs have not yet been formally defined in WA. They have been tentatively used by TravelSmart and the Cities of Canning and Fremantle,.

WAPC has proposed an internal definition of a PCAP. This definition is in conflict with international best practice. WAPC has tentatively proposed that a PCAP should be “is a comprehensive strategic, and action, plan that identifies existing and future pedestrian and cycle access ways, and includes a classification system to identify the relative importance of each access way in the local movement system” (PB57, 2008, p?). This follows the second of the two ped-shed approaches above and adds to it an intention to establish a PAW hierarchy. The WAPC proposal for PCAP assessment conflicts with other government agencies agendas for encouraging activity, health, economic development, sustainability, reducing obesity and reducing car use. Its contradictory position presents some problems for the application of Designing Out Crime strategies. It tends to ‘manufacture consent’ in the direction of closure of PAWs.

Proposed amended Planning Bulletin 57

Planning Bulletin 57 sets out procedures for closing a PAW based on the WAPC proposal for PCAP ped-shed analysis. The proposed PB57 divides PAWs between those that have been included in a PCAP (Option A), and PAWs not under a PCAP (Option B). PAWs that have been assessed as part of a WAPC-approved PCAP must undergo a crime assessment. Similarly, if a PAW is not part of PCAP it also requires an assessment of crime issues outlined in Step 8 - Safety and Security.

Appendix 1 of PB57 (2008 –ref) sets out the process for closing PAWs. It categorises PAWs in terms of their being:

Essential (E): The PAW *should be retained and kept open* because it plays an essential role in the local movement network.

Retain (R): The PAW *should be retained and kept open where possible* because it has some significance for the local movement network. It should be noted that closure of a PAW with this classification *may be acceptable* in some circumstances, particularly where there is:

- clear evidence that significant criminal or anti-social behaviour associated with the access way has persisted after a range of design-focused measures have been implemented to reduce the opportunities for such behaviour to occur.
- significant local community support for the closure

Non-essential (NE): The PAW *could be closed without causing significant disadvantage to local residents* because it is not essential to the local movement network.

It is proposed that the PCAP may also be used to :

- identify which PAWs need to be upgraded and improved; and
- identify where additional public access is needed in terms of the local movement system.

In the case of local governments deciding to use PB57 as a process for applying for temporary or permanent closure of a PAW, the case is then presented to the State planning authority for review and if appropriate, ratification. The powers of PB57 apply only to PAWs that are under the jurisdiction of a State government institution (i.e the PAW is not privately owned or controlled). This places a significant number of PAWs outside the current process, with no guidance at all.

Implications of these PAW Guidelines

The Designing Out Crime approach presented in these guidelines suggests that the proposed PB57 is badly compromised. In the main, the problems are due to weaknesses in the strategies it proposes to gather data on which the above decisions are made.

The approach of PB57, as drafted, is open to accusations from other government departments and the public that it 'manufactures consent' in the direction of closure of PAWs.

3.0 Crime and PAWs – A Review of literature

Literature Review

This review focuses on the international Designing Out Crime and CPTED literature relating to crime prevention and reduction of anti-social behaviour. It has a special focus on PAWs (laneways and pedestrian paths) and is multidisciplinary. It explores the literature from a variety of viewpoints including criminology, environmental psychology, planning, community health, social equity and urban design.

Over the last thirty-years, there has been increasing by crime and security analysts to the development of crime prevention and awareness programmes. These programmes make society more aware of environments, situations and settings where crime may happen. Over the last five years, there has been a significant shift to successful 'Whole of Government' approaches that drive an integrated inclusion of social issues alongside situational factors (Homel, 2005). This resolves the problems of lack of performance in crime prevention associated with the earlier community-based crime prevention. Recent successful approaches reduce crime and anti-social behaviours efficiently by government interagency collaboration in interventions in e.g. health, equity, sport and recreation, employment and crime prevention. Crime prevention in PAW pedestrian paths and laneways is a classic example of a crime prevention situation that includes issues of concern to multiple government agencies (particularly in crime prevention, health, sport and recreation, planning and employment) and in which integrated intervention offers clear benefits.

Recently in Western Australia, attention has been focused on 'Designing Out Crime' (DOC) as a crime prevention strategy (Office of Crime Prevention, 2007). Proactive (primary) programs such as DOC attempt to 'anticipate' criminal opportunities and develop strategies to reduce such opportunities (Office of Crime Prevention, 2004). DOC methods can assist in the management of PAWs in a variety of ways, including techniques to reduce opportunities for crime and

support increases in legitimate use. This offers potential for developing the Designing Out Crime approach as the basis for integrated 'whole of government' response to crime.

Current planning policy supports walkable, interconnected and accessible neighbourhoods to promote physical activity, social interaction and thereby reduce crime (Western Australian Planning Commission, 2000). From this perspective, connectivity is 'good' and reduces crime and PAWs are essential.

Environmental criminology research, however, strongly associates busy activity nodes and permeable layouts with increased levels of crime (Brantingham and Brantingham (1993) (for a review also see Cozens, 2008). To some extent, this is a numbers issue in that crime increases linearly with people count.

Environmental criminology studies crime as it relates to particular locations, and to the way that individuals modify their activities by place-based factors.

Brantingham and Brantingham (1993) demonstrated how planning decisions shape both the character and level of crime. Personal crimes largely occur at home or in and around drinking establishments (e.g. Baldwin and Bottoms, 1976; Rand, 1986). Crimes against property tend to cluster at or near major personal attractors, where citizens congregate (Brantingham and Brantingham, 1993).

These locations include the home, shopping centres, work / school, well-known sports areas, parks and recreation centres, transport nodes and along the routes that connect these nodes / attractors.

Cohen and Felson argued via 'Routine activities theory' (RAT) that for a crime to take place, there must be the convergence of a motivated offender, a suitable target and the absence of capable guardians at a specific point in space and time (Cohen and Felson 1979; Felson, 1987). Designing Out Crime approaches can positively influence all three factors and thus reduce the emotional motivation for crime in potential offenders, reduce the scale and attractiveness of target realms, and improve the guardianship of a location.

Citizens (including offenders) have routine daily activities (work / school, visiting friends, shopping and entertainment), which develop a 'awareness space' (Brantingham and Brantingham, 1984) of the local environment (see Figure 1).

Routine activities and travel routes form the 'awareness space' of potential offenders who may discover or search for potential targets (e.g. Maguire, 1982).

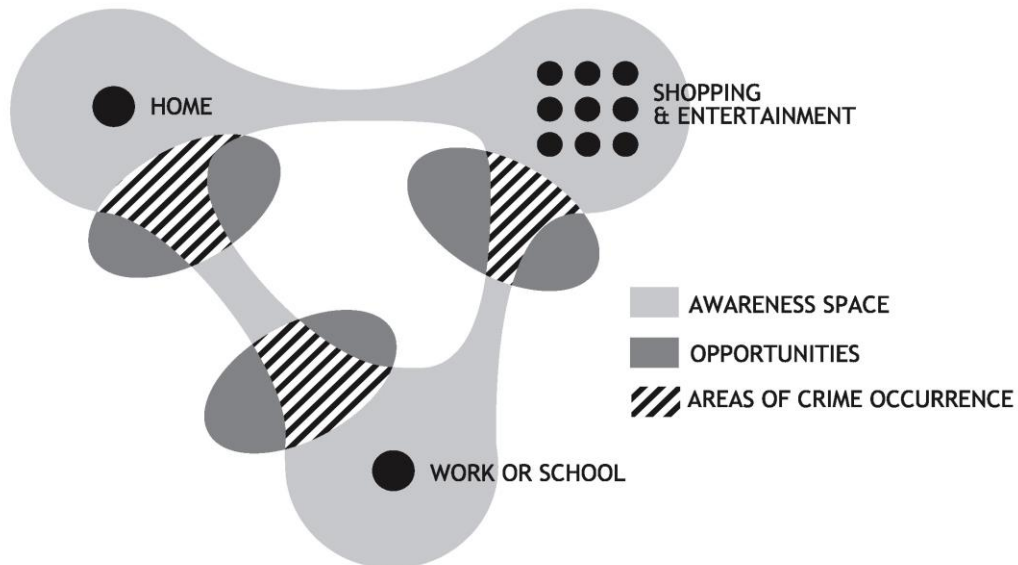


Figure 1. Awareness Spaces - Routine Activities Theory (Source: Adeane (2007) adapted from Brantingham and Brantingham (1981))

From this perspective PAWs might be considered 'bad' and problematic, like all roads and elements of urban design that facilitate access to properties, since they provide increased access to otherwise inaccessible criminal targets. From a 'whole of government' perspective on crime prevention, crime is NOT the only issue (nor perhaps always the most important) and effective solutions lay in addressing crime issues alongside other considerations such as walkability at a site-specific level.

PAWs with angles, bends or curvatures restrict opportunities for surveillance and can provide places of concealment for potential offenders and entrapment spots for potential users / victims. Research by Herzog and Miller (1998) and Herzog and Flynn-Smith (2001) reveal that users prefer short, wide PAWs, which are

well-maintained. The surface texture is also important. Good, smooth surface textures are easier to maintain and this is linked to maintenance and 'setting care', which can influence the perceptions of crime and user's sense of personal safety. The presence of trees and foliage can hinder surveillance opportunities, but in the right places, it can enhance user's sense of personal safety and encourage use (Kuo et al., 1998; Kuo and Sullivan, 2001). Lighting is documented as having a positive effect on personal safety (Nasar and Jones, 1997) and on reducing levels of crime (Farrington and Welsh, 2002). However, a well-lit PAW, particularly a laneway PAW, that is not overlooked may encourage activity that is not desired (a place to gather) and provide potential offenders with a better view of this space and the opportunities that it might provide – including vandalism, burglary and theft. The building height and set back of properties along the PAW can also affect levels of surveillance and sense of personal safety. Enclosed spaces that are not overlooked are perceived as being more dangerous (National Crime Prevention Council, 2003).

For laneway PAWs, whose main user group live or work in abutting properties, a sense of territoriality and ownership can be beneficial. Wise (Wise, 2004, p. 102) claimed that for a laneway PAW "the lack of ownership ... is by far the greatest threat to its viability. For laneway PAWs, being well-maintained, ordered, with clear evidence of 'setting care' and a 'sense of ownership' are linked to notions of personal safety and security (Newman, 1973; Herzog and Miller, 2001; Wilson and Kelling, 1981).

For narrow pedestrian path PAWs the situation is radically different. The majority of users of narrow pedestrian path PAWs live at a distance to the PAW. Inappropriate territoriality and ownership can present problems that reduce the functionality of the PAW (including reducing its health and access benefits) and increase the potential for crime. An adverse chain of events is set in motion if abutting residents invest effort into maintaining a PAW or otherwise feel territoriality or ownership towards it. The sense of territoriality and ownership by abutting residents acts against legitimate users of the PAW, most of whom live at a distance. Where abutting residents feel a sense of territoriality and ownership of a PAW space, this is disturbed by legitimate PAW use and users. Feelings of

territoriality and ownership of the PAW lead abutting residents to view more critically the actions of legitimate PAW users. Abutting residents are likely to undertake actions to try to dissuade others from using the PAW ranging from personal antagonism to attempts to block access to the PAW, hide the PAW, or try to integrate it into their own land (see Figs XXXX). In addition it results in increased objections to some perfectly legitimate PAW user behaviours. This is particularly relevant in relation to behaviours whose acceptability or not depends on circumstance. For example, legitimate activities in public spaces such as talking loudly, singing, swearing, young people gathering in groups can be interpreted as anti-social if a PAW becomes regarded territorially as 'privately owned' space of the abutting owners. All of these consequences of inappropriate sense of territoriality and ownership of PAWs lead to increased social tensions and can lead to wasting of police time and resources and inappropriate complaints against legitimate PAW users.

Using territoriality and false sense of ownership in this manner is open to the criticism of crime prevention 'manufacturing crime' .

It is not uncommon for public mistakes in assessment of crime risks and levels. A well documented documented example of erroneous public assessment of relative levels of legitimate and criminal behaviour is found in the CPTED analysis of Banfield Park in the City of Victoria in which it emerged the park had lower crime than the surrounding area (Perkins, Daly, Bate, & Ramsay, 2005),

In addition, inappropriate sense of territoriality and ownership of PAWs also leads to problems for local government and WAPC. Where abutting residents have gained inappropriate feelings of territoriality and ownership of a PAW, the pathways to emotional resolution are limited. This, together with the inappropriate feelings of territoriality and false ownership, drive the abutting owners to seek closure of the PAW and purchase of it, to make their false sense of ownership real and to resolve their false territorial social tensions.

To some extent, CPTED practitioners have been responsible for this state of affairs. There has been an unfortunate tradition of mistakenly applying CPTED

techniques for laneways in which the users are the abutting owners. For pedestrian path PAWS, the users are different and mainly live at a distance.

Interestingly, this suggests the potential for crime prevention benefits from encouraging ownership and territoriality by the users of narrow pedestrian path PAWs rather than abutting residents. Care must be taken in following this or any other path involving encouraging territoriality or false sense of ownership. In effect, taking steps to encourage territoriality is to provide the basis for conflict between social groups and thus increase social tension and the potential for increased crime.

Best practice in PAW management

Identifying the functions and uses of a PAW is important in deciding what modifications are appropriate. Again narrow pedestrian path PAWs differ significantly from laneway PAWs.

For narrow pedestrian path PAWs, activities are primarily travel-based and involve walking, cycling or some other human powered locomotion such as skating. Travel on any individual narrow pedestrian path PAW is typically a component of a longer route that may involve other PAWs, roads, streets, public open space and pseudo-public space such as shopping centres and car parks. Narrow pedestrian path PAWs are dominated by public space and public space and equity considerations (Boyd, Love, Sercombe, & Booth, 2001; Delaney, Prodigalidad, & Sanders, 2002; Hyde, 1998; M & P Henderson and Associates Pty Ltd., 2002; McVie & Norris, 2006; a. White, 1998; R. White, 1997; R. E. White, 2004). Purposes of activities in narrow pedestrian path PAWs are dominated by health, in getting exercise; recreation activities, in walking and cycling for pleasure; and functional activities such as walking to catch a bus, taking children to school, shopping etc. Significantly, the balance of activities in narrow pedestrian path PAWs are likely to strongly differ at different times of day (and days of week) and involve differing groups of PAW users, most of whom live at a distance to the PAW. This complex routine of legitimate activity and use of narrow pedestrian path PAWs provides the basis for identifying appropriate PAW management and crime prevention strategies that take into account 'whole of

government' issues. Because of this, the full breadth of PAW users is the primary focus of any community participation in any development of crime prevention intervention.

Laneway PAWs present a very different and somewhat simpler picture. Unlike narrow pedestrian path PAWs, the primary users of laneway PAWs are the abutting owners. Activities in laneway PAWs can include children playing, dog walking, gardening, socialising, home / car repair, cycling or walking or there may be little or no activity. In the case of laneway PAWS, community participation in developing strategies is relatively straightforward if adequate representation of users using the laneway as a travel route can be achieved. Such community participation and creative thinking can potentially provide a plethora of suggestion for improving the management of a particular laneway PAW.

The literature review revealed a range of strategies that have been applied to PAWs, which represent 'best practice' within the context of the diverse use, functionality and design of PAWs. For the WA context, most of the findings from the international literature apply to laneway PAWs and pedestrian/cycling PAWs in new developments. It is clear that the findings in the literature can be easily transposed to those particular environments. Conventional CPTED and Designing Out Crime approaches apply with some evidence of success for access control in laneways that do not provide the public with through access. A list of readings is found in the reference section in the appendix and some examples are described below. Some view laneway PAWs as "a hidden resource waiting to be recognised" (Voelker, 1982, p71). Laneway PAWs have been transformed into multiple uses. e.g., conservation, community gardens, private 'mini' parks and neighbourhood courtyards with community art programs brightening vertical surfaces promoting a 'sense of ownership' and to reduce the canvases available to graffiti artists {Wise, 2004 #2072} (see Martin paper).

Narrow pedestrian path PAWs present a more complex problem that is not well addressed in the international literature. Perth and other WA regional centres have very large numbers of narrow pedestrian path PAWs in post-war convoluted suburbs. The physical characteristics of these narrow pedestrian path PAWs

along with their significant importance in multiple dimensions of health, access and functionality in these post-war suburbs makes the development of Designing Out Crime interventions more complex. Most international guidelines for application of Designing Out Crime do not apply well to the physical constraints of narrow pedestrian path PAWs of the post-war convoluted suburbs. They instead offer best practice for developing footpaths in new and unconstrained planning environments (see, for example, Atlas, ; Christchurch City Council, 2004; McCormick, 2007; Perkins et al., 2005; Prince William County Police Department, 2006). Fortunately, most of WA's narrow pedestrian path PAWs function with minimal crime and anti-social behaviour problems which reduces the scale of the Designing Out Crime problem. Singapore's CPTED guidelines are particularly useful in the context of WA's narrow pedestrian path PAWs and their use of Crowe's 3-D is supported are supported by Virginian strategies for CPTED (National Crime Prevention Council, 2003; Prince William County Police Department, 2006).

The international literature and the above analyses suggest the most obvious opportunities for crime prevention of narrow pedestrian path PAWs are:

1. Improved local government maintenance. By observation, many narrow pedestrian path PAWs in post-war convoluted suburbs are badly maintained and give the impression of poor care. Contradicting this is the observation that graffiti management has been implemented effectively in many suburbs.
2. Use of Crowe's 3-D approach to guide the design of Designing Out Crime interventions. 3-D provides a sound foundation to addressing the complexities in a manner that supports achieving 'whole of government' integrated benefits.
3. Designing Out Crime strategies targeting specific problem behaviours/ times of day/ days of week and user groups. This avoids compromising the benefits of the PAW to normal users. Combining CPTED strategies, and other methods with mechanical surveillance and enhanced policing offers potential benefits.

No two PAWs are the same, their design, use and functionality are different and consequently, the problems associated with them and the solutions applied to them will need to be different to respond appropriately and effectively to the local context.

4.0 Designing Out Crime - Generic Guidance

This section outlines the generic DOC principles that can be applied to improving PAWs and the following section provides a framework for using them at the site-specific level.

Caveat

The analyses presented point to particular problems with government processes relating to pedestrian path PAWs and some laneway PAWs in terms of:

1. Structural 'manufacturing crime and anti-social behaviour' by routine application of CPTED approaches. This occurs when CPTED or DOC interventions affect individual behaviours in ways that increase crime. An example is encouraging abutting residents to have a sense of territoriality and false ownership of narrow footpath PAWs. This leads to increased social tensions, attempts to discourage use, reduced PAW functionality, and requests for closure – with potential for criminal reactions. Another example is the use of increased lighting where there are no activities around to 'see' the well-lit space. Increased lighting in this case increases the victim's visibility to potential offenders.
2. 'Manufacturing consent' for closure of PAWs by the PB57 and similar decision making processes. This occurs where partial failures of process or limitations of process act to 'manufacture' consent for one answer as the process proceeds.
3. Lack of consultation with the full range of PAW users and PAW user groups (mostly not local), and;
4. Lack of consultation with government departments and non-governmental organizations (NGOs) with an interest.

These points are serious issues that fundamentally compromise the development of processes for management of PAWs, using Designing Out Crime in PAWs, and the use of PB57 as a process for addressing requests for closure of PAWs.

What follows is a description of generic and specific application of Designing Out Crime processes to PAWs in WA bearing in mind the above caveats and problems raised in earlier analyses relating to differences in PAW types and the need for 'whole of government' integrated solutions.

Generic use of Designing Out Crime Guidelines

The DOC Planning Guidelines (OCP, 2006) provides valuable generic advice on applying Designing Out Crime a broad range of environments, including PAWs. The guidelines assert that the location, design and use of PAWs can affect the actual and perceived crime and suggests the need to consider;

- Likely movement patterns, times, user groups;
- Nearby land use influences
- Surveillance and sightlines; and
- Potential entrapment spots.

The document sets out a range of generic factors to consider in relation to PAWs which focus on location, design, surveillance, sightlines, lighting, access, orientation and maintenance (the reader is directed to Sections 5.11 and 5.18 for further information). However, the guidance does not provide a site-specific approach.

The DOC Planning Guidelines discusses the principles of access control, territorial reinforcement, target hardening and management and maintenance as they might be applied in various generic places and settings. However, more specific guidance for PAWs is needed.

DOC strategies can be applied specifically to define ownership, improve surveillance, control access, set rules, define activities, remove excuses and harden targets for potential offenders.

Analyses earlier in these guidelines drew attention to the serious problems associated with inappropriately encouraging territoriality and false 'sense of ownership' that can result in the generation of crime and social tensions.

DOC strategies to CLEARLY DEFINE OWNERSHIP and use of the PAW.

- rapid removal of graffiti removes the 'rewards' for the offenders and also sends the message that the PAW is being managed as public space (or private space in the case of privately owned PAWs) and that such behaviour is not acceptable. This approach reduces the potential for more graffiti;
- clean ups and vandalism repair removes the 'rewards' for the offenders and also sends the message that such behaviour is not acceptable. This approach reduces the potential for more vandalism and removes materials that could potentially be used for crime (e.g. starting fires or throwing missiles); and,
- ensure walking surfaces are even and well-maintained.

DOC strategies to improve SURVEILLANCE.

- improve lighting to enhance visibility at both ends of the PAW and along the length of the PAW;
- mirrors to improve visibility where PAWs are not straight or direct;
- shrub clearance to improve sightlines throughout the PAW;
- install permeable fencing where appropriate (where PAW abuts public rather than private space) to improve sightlines;
- where adjacent land / properties are vacant, encourage 'eyes on the street' overlooking the PAW (where appropriate);
- consider using movement-sensored lighting where appropriate;
- consider deploying mobile CCTV to record incidents at problematic PAW locations, and;
- consider use of mechanical surveillance in high use PAWs close to commercial areas.

DOC strategies to set rules, DEFINE ACTIVITIES and REMOVE EXCUSES

- install signage that prohibits graffiti, vandalism and the dumping of rubbish;
- use signage to clearly indicate where the PAW leads to. Clear way-finding is linked to perceptions of personal safety, and;
- install 'positive' signage where appropriate – e.g. indicating that the PAW is part of a well-used pedestrian and cycle network such as a PCAP.

DOC strategies for TARGET HARDENING properties abutting the PAW

- upgrading the fencing on properties that abut PAWs;
- if a laneway PAW is not part of a through-route, but is nonetheless required for use by local residents, consider gating the PAW and providing each property with a gateway to the PAW with a set of keys;
- consider using bougainvillea (or other thorny, climbing plants) on blank walls to reduce opportunities for graffiti and to hinder attempt to illegally access properties, and;
- remove physical objects that could potentially assist offenders in gaining illegal access to properties or which could be used to commit criminal damage or vandalism.

DOC strategies for ACCESS CONTROL to laneway PAWs

- consider installing bollards to prevent access to vehicles;
- consider installing barriers to manage cycling travel speeds;
- consider closing access to the PAW at vulnerable times, and;
- if a laneway PAW is not part of a through route, but is nonetheless required for use by local residents, consider gating the PAW and providing each property with a gateway to the PAW with a set of keys;

Each individual PAW will vary in terms of use, design and crime issues such that a more targeted approach is needed. The next section focuses on applying these principles to specific PAWs.

In PAWs that present significant crime problems consider:

- monitoring the PAW via mobile CCTV (covert or overt);
- use signage to inform the public that overt CCTV is being monitored and that a security response to any problems will result;
- use signage to suggest to the public (and potential offenders) that covert CCTV could be in operation and that any problems will be responded to, and;
- establish police or security patrols to provide routine and regular surveillance of the PAWs at times designated to be the most problematic.

Other Generic Designing Out Crime Issues

- The potential for entrapment presents a problem with many PAWs where they are bounded by fencing or walls and form a predictable route. Narrow pedestrian path PAWs are a particular problem because attackers can get legitimately close to a victim. DOC solutions are in ensuring the potential for surveillance, providing adequate lighting. Where possible improvements can be gained by widening the walking space of PAWs and shortening its constricted length. Potential entrapment areas should be treated either to remove them or enable the potential for multiple exit paths.
- In narrow pedestrian path PAWs in postwar suburbs, designing out crime approaches are constrained by the need to have rigid barriers that define the public space of the PAW from the private abutting space. Commonly, high, solid, asbestos or fiber-cement fences are used. Houses are typically single storey. This situation presents two problems. The fences are opaque and surveillance opportunities are removed because the top of the fence is above viewing level from inside the abutting property. Second, the

fence provides a reasonable surface for graffiti. An obvious solution is for the fencing to be a physically robust but visually porous barrier. However, this can compromise privacy.

- Of particular concern are intersections in narrow pedestrian routes in which pedestrians cannot see whether there is anyone hiding in the other pathway. High levels of uniform lighting and well-placed mirrors can improve sense of safety and reduce crime in these circumstances.
- Singapore CPTED guidance utilises robust see-through fencing – sometimes of tunnel form (with a roof) - with good visibility from all sides for isolated routes between places of safety.
- Several of the details from Singapore's comprehensive CPTED manual can be expressed as 'pedestrians should be able to see that their route is safely clear ahead and behind; that they cannot be attacked from the side on route; and that their safe passage is observed by others who can intervene to protect them'.
- Where there are alternative and safe or less safe routes in a PAW and public space network, signage or signals via street furniture and lighting cues can help pedestrians choose safer routes, particularly at night.
- Where appropriate, mechanical approaches such as movement-sensitive lighting, mechanical surveillance, help telephones, security escorts, special buses can reduce security risks.
- Lighting and mechanical Designing Out Crime devices should be protected from vandalism themselves.
- Multiple exits are important to providing escape routes and avoiding entrapment. This applies to both narrow pedestrian path PAWs and laneway PAWs. Laneway PAWs present specific risks and generate safety fears in terms of the number of potential access points for attacks where multiple property accesses connect with the laneway.
- Increased activity levels can act as a protective mechanism for some PAWs. This depends on users, purposes, time of day and location of the

PAW. In some cases, increased activity will be associated with increased levels of crime in total but reduced levels of crime experienced by each PAW user.

- Activity generators close to PAWs can act as a source of surveillance and guardianship or as a source of potential crime and anti-social behaviour. This depends on users, purposes, time of day and the location of a PAW.

Designing Out Crime: New Urbanism, Studio Flats and Car Parking

New Urbanism seeks to remove the car from view and utilise laneway PAWs for garages and car parking in addition to promoting the use of studio flats which overlook the laneway PAW. This approach promotes passive surveillance and activity in rear lanes (frequent use of and number of garages, etc) and clear sight lines from street/s in terms of the lane layout. This can be achieved using lighting, landscaping, fencing for rear yard security and minimising recesses or corners and low shrubs (to deter hiding), (Fulton, 1994). However, although this approach is highly regarded, very little criminological evidence exists to support the claims of New Urbanism (Cozens, 2008). On the contrary, permeability and mixed uses are associated with increased levels of crime and rear laneways can provide access to the rear of properties and vehicle largely unseen by residents.



Fig XXX Overlooking Activities in Rear Lanes (to redraw)

Designing Out Crime: Alley-Gating details

Gating of laneway PAWs that do not carry through pedestrian or vehicular traffic and providing residents with keys has been a successful Designing Out Crime strategy in the UK. It has received widespread support from UK communities, police and local authorities (Rogers, 2005) and reinforces the crime prevention technique of 'access control'. It reduces opportunities for crime and anti-social behaviour by restricting access to potential targets, creating a heightened perception of risk of apprehension and prosecution for offenders. Studies report reductions in problems such as noise, litter, anti-social behaviour, traffic issues, drug taking, prostitution and burglary.



Fig XXX. Alley-gating – closing and locking ends of laneway PAWs.

5.0 Situational Crime Prevention Index for PAWs

The Situational Crime Prevention Assessment (SCPA) described here comprises a suite of 5 tools for assessing and reducing crime risks in PAWs. These five tools build on and extend the previous SCPA prepared by the Department of Premier and Cabinet's Office of Crime Prevention.

The primary aim of the suite of tools in this SCPA is to assist local government in crime prevention and reduction of anti-social behaviour in PAWS. A secondary objective is to provide a basic crime risk assessment for the decision-making associated with PB57. These tools apply also within the framework of PB57 and local PCAPs bearing in mind the earlier caveats about PB57 and PCAP analyses. They also provide the basis to assess the level of safety and security of each PAW within the area of a PCAP or as an individual PAW.

The effective functioning of PAWs is important for the Australian community. It is a significant issue in terms of government policies encouraging increased levels of walking and cycling and reductions in car use. Crime associated with particular PAWs, acts to reduce the proper functioning of PAWs and can present considerable concern to PAW users and those living in nearby residences.

Addressing crime and antisocial behaviour associated with PAWs and making decisions about the criminological significance of PAWs requires sound information about the physical aspects of the individual PAW, and the local context of its uses, purposes, roles and users as they change during the day, week and year. A key differentiating factor is socio-economic and it is assumed that a suitable indicative metric is a SEIFA assessment of the PAW users. It is important to note that usage of any individual PAW is complex and may involve several distinct and different user groups and contrasting uses during each day, over the course of a week and across the seasons of the year. Commonly, any individual PAW is a small part of several longer pathways. Often daily use has a routine of uses and foot traffic in different directions and at various times per day. For example, commuters walking to the bus stop, high school children going to distant schools, local school children walking with parents, mothers with toddlers

to kindergarten, the local circulation of retired people, people walking to shops, recreational walking and cycling, walking to the beach and citizens collecting alcohol from the bottle shop. Problem behaviour occurs in a small number of PAWs as a tiny part of their complex routine of use and is commonly associated with specific parts of the routine and with specific user groups. Understanding how a PAW is used at the level needed to implement good CPTED requires understanding which groups use the PAW at different times and days of the week, and seasons of the year and why these journeys take place.

The SCPA described below comprises five assessments relating to crime and anti-social behaviour that are designed to improve the decision-making associated with local government managing a problematic PAW and identifying PAWs that might be potentially problematic in crime and anti-social behaviour terms.

These five tools of the SCPA are:

1. Designing Out Crime Risk Assessment (DOCRA)
2. Contextual Crime Assessment (CCA)
3. Socio-economic Vulnerability Assessment (SEVA)
4. PAW Use and Context Assessment (PUCA)
5. Decision Tree

Part 1. Designing Out Crime Risk Assessment (DOCRA)

A Designing Out Crime Assessment (DOCRA) (Figure XXX. below) provides planners and decision makers with a detailed, simple and rapid snapshot about the potential vulnerability of a PAW to crime in terms of use, crime problems and design factors associated with discouraging or encouraging crime.

Risk Criteria	Yes	No
1. The PAW is overlooked at its entrance.		
2. The PAW is overlooked at its exit.		
3. The PAW is overlooked along its route.		
4. Does it feel like it is being overlooked?		
5. Does the PAW have adequate lighting? (facial recognition at 10m distance)		
6. On entering the PAW, can you see the exit?		
7. The PAW is devoid of entrapment spots or hiding places along it.		
8. The PAW is devoid of entrapment spots within 25m of each end of the PAW.		
9. The PAW is well-maintained.		
10. Are the boundaries between public space and private space clearly defined?		
11. Are the boundaries between public space and private space robustly fenced?		
12. The PAW is free from dumped rubbish / litter.		
13. Does the PAW have signs indicating acceptable behaviour?		
14. The PAW is free from graffiti.		
15. The PAW is free from syringes and needles.		
16. The PAW is free from empty alcohol containers.		
17. The PAW is free from condoms.		
18. The PAW is free from signs of people sleeping / living in the PAW.		
19. The PAW is wide enough to allow pedestrians to pass at a distance of 3m apart.		
20. The PAW has pavement or other markings to indicate separation between those travelling in opposite directions.		
21. The PAW is NOT adjacent to vacant land or property		
22. The PAW is NOT a direct connection between affluent and deprived areas.		
23. The PAW is NOT close to a supplier of alcohol (liquor store, hotel, tavern, bottle shop etc)		
24. The PAW is NOT a path to a high school.		
25. The PAW is NOT close to an ATM.		
26. The PAW is NOT close to a public telephone box.		
27. The PAW is NOT close to public toilet		
Totals		

Designing Out Crime Score (number of yes)

Low vulnerability PAW	16 - 27
Medium vulnerability PAW	8 - 15
High vulnerability PAW	0 - 7

Figure XXX: Designing Out Crime Assessment

The DOCRA score of Figure XXX provides the basis for an initial crime risk assessment of an individual PAW.

The DOCRA provides an initial crime risk assessment of an individual PAW. Primarily, the DOCRA score provides a list of things to consider rather than as an accurate measuring stick for crime problems. The answers to each question will have a different level of importance in any individual PAW, so scores should not be used as a definitive measure. Simply, a low DOCRA score indicates that the PAW, in purely physical design terms, has characteristics associated with opportunities for crime. It may require physical improvement, and there is a range of designing out crime options to consider. However, crime problems are related to more than just design. Indeed, a PAW with a DOCRA score of 27 may, in purely physical design terms, provide limited opportunities for crime, but can still suffer from chronic and repeated crime problems.

The DOCRA should be considered against the detailed contextual information identified in the other four parts of the SCPA.

In the right context, highly specific minor modifications can bring immediate benefits to a PAW. More extensive Designing Out Crime interventions may also be appropriate where they are lacking. The questions themselves suggest in part, what might be appropriate solutions.

A PAW with a low DOCRA suggests that a range of DOC strategies may be useful in enhancing the personal safety of users and residents nearby.

The DOCRA score may also be used by local governments following PB57.

Part 2: Contextual Crime Assessment (CCA)

Sound information on actual and perceived levels of crime associated with the PAW is important as a crucial backdrop to decision-making about interventions aimed at reducing crime and anti-social behaviour.

It is uneconomic to commit resources to crime prevention or improving the security of a PAW that does not have a crime problem. Figure XXX. below indicates information that must be gathered

Gather information from reliable sources (police, court records) about *actual* crime activities associated with the PAW.

1. Collect data on recorded crimes against users of the PAW
2. Collect data on recorded crime involving damage of the PAW
3. Collect data on recorded crimes against properties on or near to the PAW

Survey a fully representative sample of PAW users (different PAW user groups) and those living and working near to the PAW about their *fear* of crime. If necessary, use professional data collection services for this.

1. Collect data on the fear of crime of PAW users (for different user groups)
2. Collect data on the fear of crime of those living and working near to the PAW

Figure XXX: Gathering information about actual crime and fear of crime from users of the PAW and those living or working nearby.

Information from the process in Figure XXX is an important element of the decision tree in section 5 of the SCPA. The information may also be of use to local governments in steps 3-9 in the Appendix of PB57.

Part 3. Socio-economic Vulnerability Assessment (SEVA)

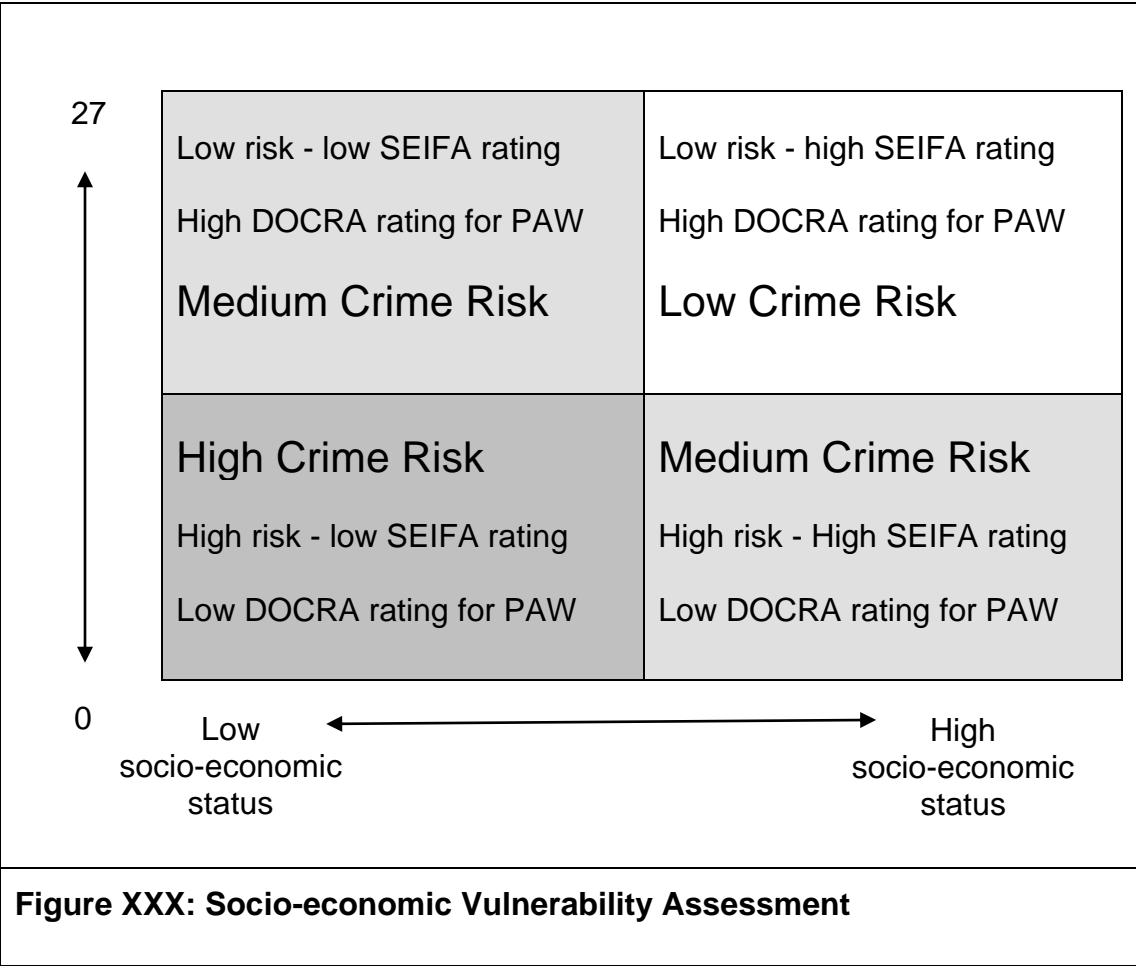
A key issue in understanding the crime risk of an individual PAW is the combination of the relative physical vulnerability of a PAW and the relative socio-economic index of the users of that PAW.

The Australian Bureau of Statistics' Socio-Economic Index for Areas (SEIFA) offers a surrogate for socio-economically related risks for crime and antisocial behaviour. The Index of Relative Socio-Economic disadvantage can be used alongside the physical analysis of Part 1 (the DOCRA) to provide an assessment of potential vulnerability that is weighted by socio-economic factors, thus combining social and situational crime assessment. This local data can be obtained by using the ABS website. For example, using the Census data, Walter Road, Bassendean is located in the Census Collection District of 5111103.

Assessment of PAW risk can be represented in terms of a four-quadrant chart (see Figure XXX. below) to identify whether a PAW is likely to be of high or low crime risk due to the socio-economic context.

The focus is on the users of a PAW. In the case of PAWs, such as semi-private, shared access laneway PAWs, where the users live abutting the PAW, the address of the PAW provides the basis for the SEIFA rating.

For many PAWs, some or all user groups are likely to come from outside the immediate PAW location. In these cases, the findings from Part 4 of the SCPA (the PUCA) will identify the user groups, their location and use of the PAW in ways that enable the SEVA to be applied.



Care is needed in applying this tool to avoid ethical and practical problems. Areas of low-socio-economic status are often associated with increased levels of crime. That is, they are statistically associated with increased crime risks. That does not imply that an individual who is socio-economically disadvantaged is a criminal. It is ethically and professionally important that assessors of PAWs avoid regarding PAW users from socio-economically deprived areas as criminals.

Practically, care must be taken to understand the flow of risk between areas of low and high socio-economic advantage. This is particularly important in PAWs between low and high socio-economic advantage where the traffic may be predominately high, low or mixed.

This SEVA tool forms Part 3 of the SCPA and may be used by local governments following PB57 in Steps 7 (PAW Inspection and Assessment) and 8 (Safety and Security Assessment).

The DOCRA with the CCA and the SEVA provide a basic crime risk assessment for PAWs. PAWs with poor scores / ratings indicate that crime risk may be high and that this evidence should be used as to guide improvements initially.

The following section describes the PAW Use and Context Assessment (PUCA) which identifies the roles, contexts, users, uses and dynamics of an individual PAW in order to provide meaning and relevance to the above measures assessment of crime and crime prevention in the context of the beneficial functionality of the PAW and its value to wider community.

Part 4. PAW Use and Context Assessment (PUCA)

PAWs have many roles and uses. Most PAW roles and uses are functionally important for families in the Australian community: e.g. providing access to buses, shops and schools and as components of healthy walking and cycling routes. For PAWs that experience more than low-level background crime, crime-related issues occupy a very small slice of the overall PAW usage and is typically localised to a very small group of PAW users and occurs across a very limited range of times.

Managing crime issues in a particular PAW requires an understanding of the pattern of use of the PAW, the different groups of users, the different PAW roles, the PAW's special importance in foot traffic terms, and the time dynamics of its uses. Six cases below illustrate some of the benefits of understanding the use and contexts of an individual PAW for identifying appropriate crime prevention strategies. This is particularly important in view of the problem identified earlier that CPTED can also have negative effects if applied inappropriately.

Case 1: A PAW is heavily used by mothers and toddlers in the mornings and afternoons to get to and from kindergarten. It has a minor role during the day providing access to the shops. In the evening it provides a path to and from the tavern for drinkers from all over the suburb. Criminologically, it is more likely that any problems will be associated with its evening role even though its main use may be by mothers and toddlers. Crime prevention can focus on this narrow evening crime activity window.

Case 2: Spatially, some PAWs are nodes for pedestrian and cycle traffic. For example, PAWs closest to shops, taverns, bus and rail, special event locations, beaches etc carry the pedestrian and cycle traffic from multiple PAWs and roads further out. In crime prevention terms, these nodal PAWs can be problematic. They are triple 'H' situations with *higher* use, *higher* community importance, and *higher* crime. Commonly, this restricts the palette of crime prevention methods and precludes closure.

Case 3: A large number of coastal PAWs provide access to or towards beaches. For some, their main summer users are out of area visitors. These coastal PAWs have a significant role in reducing congestion at the beach front. Beach visitors from outside the area park inland from the beach and use coastal PAWs for access. Similar PAWs provide access to events for out of area visitors who park at a distance from the events. In both cases, gathering use information from locals will result in unreliable data on PAW uses, users and importance. Criminologically, it is important for a balanced distribution of use of CPTED and DOC methods between residences and shops in the location as well as the PAW. Closure or temporary closure may have different implications in the different contexts of use: during events and at times when an event is not happening.

Case 4: Suburbs and PAWs can change their roles and importance over a relatively short timescale in line with social dynamic changes. This dynamic behaviour of PAW use and crime levels is strongly influenced by the outward flowing nature of Perth's corridor approach to development. Outermost suburbs are characterised by young less well off families with young children. Suburbs slightly closer to the city, are characterised by a heavy teenage demographic – the families that had young children a decade before. Others are characterised by a preponderance of older residents. Others still are gentrified by young relatively wealthy professionals. These regions flow outwards as their populations age. In terms of crime prevention, it may be sufficient to provide a temporary ameliorating effect via Design Out Crime techniques or temporary closure until the social dynamics of a suburb have changed.

Case 5: Local governments and state government agencies are increasing looking to the role of PAWs that, with roads and pavements, together provide a rich variety of extended networks of pedestrian paths and cycle access paths for health and recreation (PCAPs) that may stretch many kilometres. Where these complexes of routes utilise PAWs whose main traffic is relatively local, crime prevention measures are likely to be substantially dictated by the local conditions. Requests for closure, however, must take into account the significance of PAWs roles in the formal and informal long distance pathways that the public develops independently of the PCAP system.

Case 6: Management of PAWs can present significant ethical issues in the public-private ownership and public management. This is particularly significant in view of the earlier caveats suggesting that some of the institutional processes undertaken with regard to PAWs can be accused of both the ‘manufacture of crime’ and the ‘manufacture of consent’ for PAW closure. Closure of a PAW offers significant financial benefits to properties abutting if owners can persuade the Council to close the PAW. Owners realise the profit of paying lower price for their house and also gain the potential substantial cash windfall of future subdivision where the additional land from a PAW increases their plot area above subdivision limits. This is well known: Real Estate agents advise potential purchasers of houses abutting PAWs of these benefits if they can persuade local government to close the PAW. Encouraged territoriality can make this situation worse. These factors can be the basis for social tensions with legitimate PAW users and distortion of crime reporting about PAWs. It suggests that on ethical grounds care be taken in cases of requests for closure.

PAW Use and Context Assessment can be done in many ways. One is to use qualitative questions that then guide the use of quantitative information from other parts of the SCPA. Example questions are shown in Figure XXX below:

PUCA Questions
What are the main uses of the PAW?
Which groups use the PAW?
How important is PAW use by groups from outside of the neighbourhood? In what ways?
What is the distribution of use of the PAW for different purposes/roles – across the day, week and year?
Is the PAW part of a longer path or extended informal and formal network of paths and cycle paths (PCAPs)?
Is the PAW a significant node that carries traffic for other PAWs?
Is this PAW close to point of interest (shops, bottle shop, bus stop, train station, church, beach, sports stadium etc)
Is the PAW a triple ‘H’ PAW (higher use, higher user importance, higher crime)?
How different is the confirmed crime/antisocial behaviour rate of the PAW from that of nearby streets?
What are the time dynamics of crimes directly associated with the PAW? Evening? Night? Morning? Daytime?
If there is an application for closure, how is the ethical integrity of the application? Is it driven by profiteering or by an excessive level of crime that cannot be addressed by CPTED or DOC or in any other way?

Figure XXX: PAW Use and Context Assessment: typical questions

The qualitative answers to the above questions provide the necessary qualitative context to making sense of quantitative crime-related factors. Without the qualitative context, the quantitative information is unusable. For example, many PAWs in low crime areas are unproblematic despite having a poor design of crime features; for some PAWs, high crime rate is associated with them being in a key location with very high levels of use; for coastal PAWs their function can be dominated by their non-local role.

The above integrated use of qualitative and quantitative analysis in the SCPA may also be used in the assessment of PAWs in PCAPs and as a means of assessing whether PAWs are 'essential' and well used for local governments following PB57.

Part 5: Decision Tree

This section, Part 5 of the SCPA, provides a Decision Tree based on the current intentions of PB57 and the provisional approaches to PCAPs. Again, in line with the caveats earlier and the earlier discussions, we caution that there are foundational problems in current approaches to manage PAWs. The current interpretation of PCAPs, the draft revised PB57 and the application of some aspects of conventional CPTED may lead to:

- Adverse outcomes in terms of compromising the agendas and intended outcomes of other government agencies, particularly in Health, Sport and Recreation and Employment and Productivity;
- Reduced potential for developing 'whole of government' solutions in relation to integrating crime prevention with positive outcomes;
- Increased crime and social tensions;
- Public criticism of 'manufacturing consent' for PAW closure; and,
- Increased pressure on lower socio-economic index communities.

The Decision Tree below follows a five stage process that aligns with the structure of the draft revised PB57:

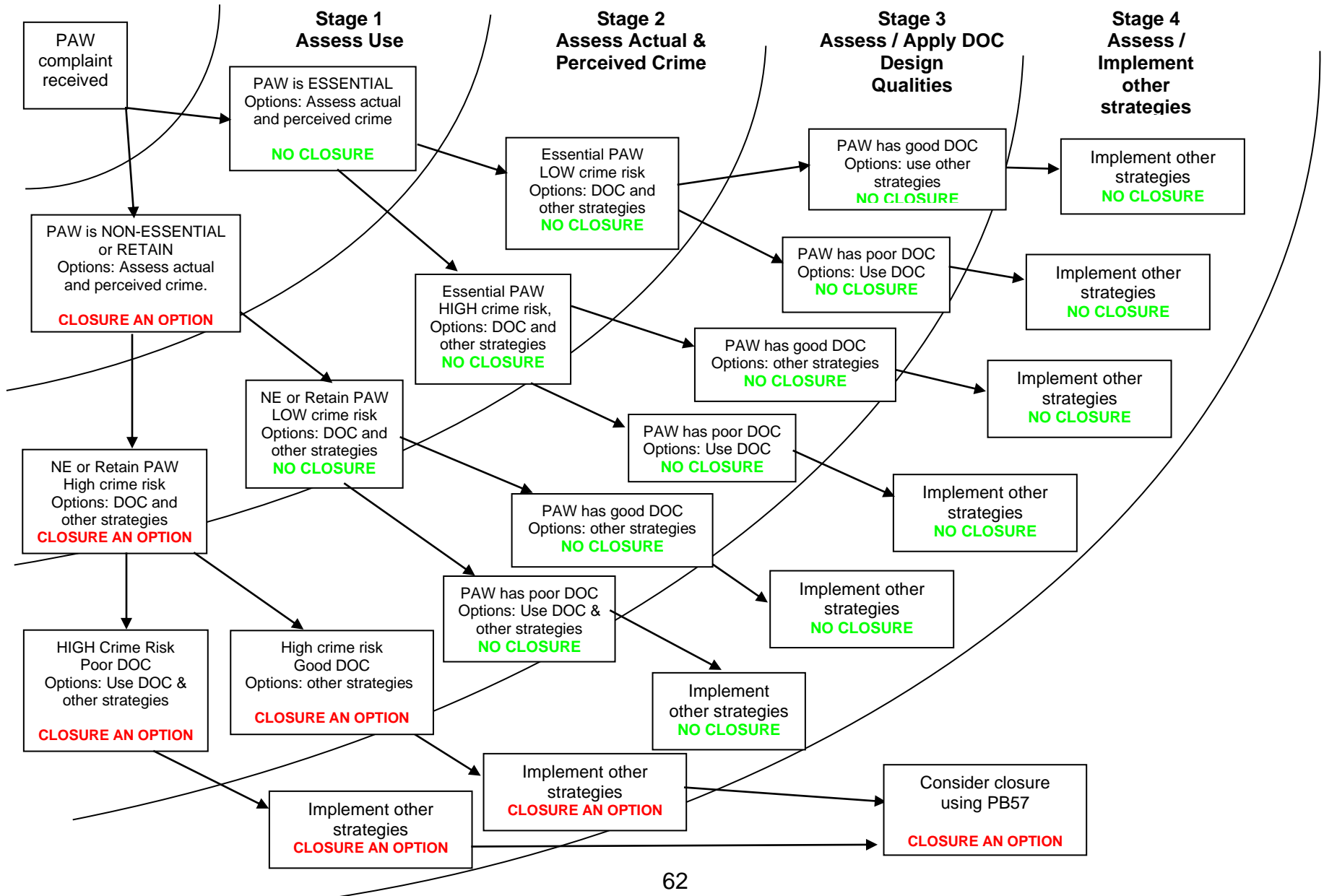
1. Complaint received
2. Assess use
3. Assess actual and perceived crime
4. Assess and apply Design Out Crime design qualities
5. Assess and implement other strategies

The initial issue focuses on how *'essential'* the PAW is. An assessment of the PAW using steps 3-9 in the Appendix of PB57's provides guidance on this.

There are two important indices in the decision between improvement and closure. Firstly, a PAW that is *'essential'* and well-used (Risk Criteria A) should not be considered for closure. In terms of the user groups and communities that use the PAW and in planning terms, these are vital. Criteria for defining PAWs (including an *'essential'* PAW) are provided in Appendix 1 of PB57.

If the PAW is designated *'non-essential'* or *'retain'*, various Designing Out Crime options are still available. Only PAWs where there is demonstrable evidence of high levels of actual and perceived crime should be considered for closure (Risk Criteria B). If there is evidence of actual or perceived crime risk (not necessarily both), temporary or permanent closure is an option.

Figure 3. The Decision-Tree for the DOC Risk Assessment and Management Process.



Summary

The above tools together form a Situational Crime Prevention Index (SCPA) for PAWs with 5 dimensions:

1. Designing Out Crime Risk Assessment (DOCRA)
2. Contextual Crime Assessment (CCA)
3. Socio-economic Vulnerability Assessment (SEVA)
4. PAW Use and Context Assessment (PUCA)
5. Decision Tree

Together, these provide an integrated basis to assess the potential contribution of the physical attributes of the PAW to crime and to reducing crime; to assess the scale of crime problems associated with an individual PAW; to provide a comprehensive understanding of the local environmental and social contexts within which the PAW is located. This is necessary to effectively identify appropriate Design Out Crime, CPTED and other strategies for minimising crime and managing the PAW. This approach also relates the context of the PAW to PCAP plans and assessments and to the PB57 process.

6.0 Designing out Crime using the 3-D approach

Designing Out Crime and CPTED strategies are a toolbox from which appropriate measures or combination of measures can be drawn to form a solution.

Crowe's 3-D concept (Crowe, 2000) provides a sound well-justified framework for choosing appropriate Designing Out Crime and CPTED techniques to form integrated solutions intended to reduce crime and anti-social behaviour.¹

The 3-D approach of Designation-Definition-Design

A useful way of looking at the PAW in designing out crime terms is to think locally and specifically about its elements and uses focusing on their *designation*, *definition* and *design*. The 3-D approach is grounded in these three fundamental characteristics of *Designation*, *Definition* and *Design* for the management of human space:

1. All planned human space has some *designated* purpose(s).
2. The use of all planned human space is associated with acceptable and desired behaviours that are prescribed and *defined* in social, cultural, legal and physical terms.
3. All planned human space is *designed* to support and encourage desired behaviours and discourage and control unwanted behaviours.

A starting point for developing a strategy for intervention using the 3-D approach of *Designation*, *Definition* and *Design* is to ask the following questions:

Designation

- *What are the current designated purposes of this space? Ask relevant constituencies, e.g. all groups of users of the PAW, planners, government health and recreation policy makers, walking and cycling access groups. When is the PAW used, by which users, and for which uses?*
- *What purposes was the space originally intended? Ask relevant constituencies, e.g. users, planners, developers, walking and cycling access groups.*

¹ This section echoes the CPTED Guidebook from the National Crime Prevention Council of Singapore (National Crime Prevention Council, 2003).

- *How well does the space support its current purposes and its original intended purposes? Ask relevant constituencies, e.g. all user groups, planners, government health and recreation policy makers, developers, walking and cycling access groups.*
- *Are there any conflicts? Ask relevant constituencies, e.g. all user groups, planners, government health and recreation policy makers, developers, police, local government community development, walking and cycling access groups. Which times, uses and users of the PAW are problematic?*

Definition

- *How is the space defined?*
- *Is it clearly defined who owns the space – legally, socially etc?*
Note: for pedestrian PAWs it is better that socially-perceived ownership resides with users of the PAW rather than abutting residents. For semi-private laneway PAWs with vehicle access, then it is more appropriate that socially-perceived ownership resides with abutting residents when they are the main users of the space.
- *How does the definition of legal ownership of the PAW in question affect the potential for intervention? Note: some PAWs are privately owned.*
- *Are the borders of the space clearly defined?*
- *Are ownership changes at the borders of the space clearly defined?*
- *Are internal territories within the space clearly defined? E.g. separating walkers from cyclists, separating vehicles from people, separating people walking in opposite directions, separating sitting space from walking or cycling space etc.*
- *What social and cultural definitions affect how the space is used?*
- *Which legal and administrative rules define the use of the space and the appropriate behaviours?*
- *Are legal and administrative rules defined and reinforced in policy?*
- *Are there signs that describe appropriate use and behaviours?*
- *Are there conflicts and confusion between purposes, uses, behaviours and definitions?*

It is unlikely that unless they are well designed, either designation or definition issues are consistent for elements of public space such as PAWs. Sometimes what is an acceptable behaviour can be different at different times, e.g. singing, shouting and running may be appropriate or inappropriate depending on context, use of PAW and time of day. Improved designation and definition can resolve many crime prevention and anti-social behaviour issues in PAWs.

Design

- *How well and in what ways does the physical design of the PAW support its roles and purposes as identified via the answers to the questions of designation and definition above.*

- *What is the ped-shed access ratio of the PAW? How close is it to 0.6 (the preferred minimum for good walkability and access)*
- *How well and in what ways does the physical design of the PAW support and encourage acceptable and desired behaviours, and discourage and control inappropriate behaviours?*
- *Does the physical design of the PAW conflict with or impede the productive use of the space and the proper functioning of the human activities?*
- *Is there confusion or conflict in the manner in which the physical design of the PAW controls behaviour?*

Answers to these questions indicate the potential for beneficial changes and improvements that will improve the functioning of the PAW for the users as well as reduce crime and minimise anti-social or inappropriate behaviours.



For example, the designation of use of a PAW by government policy encouraging recreational walking for health increases the number of legitimate users; increases the number of potential guardians; improves the utility of the PAW; and simultaneously results in improved surveillance. Improving the definition of the boundary to abutting properties and defining acceptable behaviours via signs or lines on the pavement can offer benefits in terms of reducing fear of crime, more clearly defining territory, and giving improvements in sense of maintenance and care of public ownership. Some examples of 'good' and 'bad' design features in PAWs are illustrated below.

7.0 'Good' and 'Bad' PAW Design Features

Below is a selection of illustrations for 'good' and 'bad' design features in PAWs

Surveillance

Explain the good and bad illustrations used below. To complete after final illustrations have been agreed.

	
A 'Good' example	A 'Bad' Example

Maintenance / Management

Explain with good and bad illustrations below

	
A 'Good' example	A 'Bad' Example

Territoriality / Sense of Ownership

Explain with good and bad illustrations below

	
<p>A 'Good' example</p>	<p>A 'Bad' Example</p>



Overlooking Activities

Explain with good and bad illustrations below

	
<p>A 'Good' example (Taken from a New Urbanism presentation)</p>	<p>A 'Bad' Example</p>

Entrapment Spots

Explain with good and bad illustrations below

	
A 'Good' example	A 'Bad' Example


Lighting

Explain with good and bad illustrations below

To be confirmed – Penrith sketch	Redraw with shaded areas and poor lighting
A 'Good' example	A 'Bad' Example

Landscaping – ‘high’ and ‘low’ vegetation

Explain with good and bad illustrations below

To be confirmed – Penrith sketch	
A ‘Good’ example	A ‘Bad’ Example

Back Cover

Overview of book

Images

Role of OCP

ISBN

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8.0 References

- Baldwin, J. & Bottoms, A. E. (1976) *The Urban Criminal* (London, Tavistock).
- Brantingham, P.J, and Brantingham, P.L. (1993) Nodes, paths and edges: considerations on the complexity of crime and the physical environment, *Journal of Environmental Psychology*, 13, pp. 3-28.
- Clarke, R. 2002. Closing Streets and Alleys to Reduce Crime: Should You Go Down This Road? Problem-Oriented Guides for Police Response Guides Series No. 2. U.S. Department of Justice Office of Community Oriented Policing Services. Online: www.cops.usdoj.gov.
- Cohen, L. and Felson, M. (1979) Social change and crime rate trends: a routine activity approach, *American Sociological Review*, 44, pp. 588-608.
- Cozens, P., and Hillier, P. 2008. New Urbanism, Crime and the Suburbs: An Environmental Criminological Overview. *Urban Theory and Practice*. In press
- Farrington, D.P. and Welsh, C. (2002) Effects of Improved Street Lighting on Crime: A Systematic Review. Home Office Research Study 251. Development and Statistics Directorate, Crown Copyright, London.
- Felson, M. (1987) Routine activities and crime prevention in the developing metropolis, *Criminology*, 25, pp. 911-931.
- Herzog, T. R., & Flynn-Smith, J. A. (2001). "Preference and Perceived Danger as a Function of the Perceived Curvature, Length, and Width of Urban Alleys." *Environment and Behavior*. 33(5), 653-666.
- Herzog, T. R., & Miller, E. J. (1998). "The Role of Mystery in Perceived Danger and Environmental Preference." *Environment and Behavior*. 30(4), 429-449.
- Kuo, F. E., & Sullivan, W. C. (2001). "Environment and Crime in the Inner City: Does Vegetation Reduce Crime?" *Environment and Behavior*. 33(3), 343-367.
- Kuo, F. E., Bacaicoa, M., & Sullivan, W. C. (1998). "Transforming Inner-City Landscapes: Trees, Sense of Safety, and Preference." *Environment and Behavior*. 30(1), 28-59.
- McCamley, P. (2002) Minimising Subjectivity: A New Risk Assessment Model for CPTED. *The Journal of the International Crime Prevention Through Environmental Design Association*, 1(1): 25-34.
- Nasar, J. L., & Jones, K. M. (1997). "Landscapes of Fear and Stress." *Environment and Behavior*. 29(3), 291-323.
- Newman, O. (1973) *Defensible Space People and Design in the Violent City* (London: Architectural Press).

Office of Crime Prevention. (2007), *State Designing out Crime Strategy: A Journey From Common Sense to Common Practice*. Office of Crime Prevention, Perth, WA. Online at <http://www.crimeprevention.wa.gov.au>

Office of Crime Prevention. 2004. *Prevention Crime: State Community Safety and Crime Prevention Strategy*. Department of Premier and Cabinet: Perth, Western Australia.

Premier's Physical Activity Taskforce. (2007), *Walk WA: A Walking Strategy for Western Australia 2007 – 2020*. Department of Sport and Recreation, Government of Western Australia. Online at: <http://www.beactive.wa.gov.au>

Rand, A. (1986) Mobility triangles, in R. Figlio, S. Hankim & G. Rengert, (Eds.) *Metropolitan Crime Patterns* (New York, Monsey).

Rogers, C. 2005. Alley-gates – Redesigning the Community Landscape. *Town and Country Planning*. Volume 74, No.2, pp64-66.

Voelker, W. 1982. Behind the False Fronts: Alleys Come Out of Hiding. *Landscape Architecture*. Volume 72 (6), pp71-73.

WAPC, 2003. Planning Bulletin No. 57 (PB57) Closure of Pedestrian Access Ways - Planning Considerations. The Western Australian Planning Commission, Perth.

WAPC. (2004), *Liveable Neighbourhoods. Edition 3*. Western Australian Planning Commission. Website: <http://www.planning.wa.gov.au/cgi-bin/index.cgi?page=/about/content.html>. Visited 15/12/04.

Western Australian Planning Commission (WAPC). 2006a. Designing Out Crime Guidelines. WAPC: Perth, Western Australian,. Online. <http://www.wapc.wa.gov.au>.

Western Australian Planning Commission (WAPC). 2006b. .Designing Out Crime Planning Bulletin No.79. WAPC, Perth, Western Australian. Online. www.wapc.wa.gov.au.

Wilson J and Kelling G 1982 The Police and Neighbourhood Safety. 'Broken Windows'. *The Atlantic Monthly*. Volume 3, pp29-38.

References - Endnote

Atlas, R. I. *Crime Prevention Through Environmental Design in Designing Safe Paths, Trails and Greenways*. Retrieved Feb 2008, from http://cpted-security.com/atlas/index2.php?option=com_docman&task=doc_view&gid=43&Itemid=63.

- Boyd, S., Love, T., Sercombe, H., & Booth, S. (2001). *Jumping at Shadows: Young People and Public Space*. Perth: City of Joondalup.
- Christchurch City Council. (2004). *Safer Canterbury, Creating Safer Communities*. from <http://www.ccc.govt.nz/Environment/UrbanDesign/Guides/CPTEDFull.pdf>.
- Crowe, T. (2000). *Crime Prevention Through Environmental Design* (2nd ed.). Boston: Butterworth - Heinman.
- Delaney, K., Prodigalidad, M., & Sanders, J. (2002). Young People and Public Space. Retrieved July 2006, 2006, from <http://www.theshopfront.org/documents/PSpace.pdf>
- Homel, P. (2005). A short history of crime prevention in Australia. *Canadian Journal of Criminology and Criminal Justice*, 47(2), 355-368.
- Hyde, J. (1998). Young People's Access To Public Places. 2000, from www.wama.wa.gov.au/cgi-bin/display.cgi?tp=template/WAMAPress.tp&ID=909544873202
- M & P Henderson and Associates Pty Ltd. (2002). *Good Practice Features of Community Crime Prevention Models*. Brisbane: Dept of Premier and Cabinet, Queensland Government.
- MCCormick, J. (2007). Better park design can prevent crime. from <http://www.americantrails.org/resources/safety/designcrime.html>
- McVie, S., & Norris, P. (2006). *Neighbourhood effects on youth delinquency and drug use*. Edinburgh: Centre for Law and Society, The University of Edinburgh.
- National Crime Prevention Council. (2003). *Crime Prevention Through Environmental Design Guidebook*. from <http://www.ncpc.gov.sg/pdf/CPTED%20Guidebook.pdf>.
- Office of Crime Prevention. (2004). *Preventing Crime: State Community Safety and Crime Prevention Strategy*. Perth: Dept of Premier and Cabinet, Western Australian Government.
- Office of Crime Prevention. (2007). *State Designing out Crime Strategy: A Journey From Common Sense to Common Practice*. from <http://www.crimeprevention.wa.gov.au>
- Perkins, G. N., Daly, J., Bate, D., & Ramsay, K. (2005). *Crime Prevention Through Environmental Design (CPTED) Review of Banfield Park*. Retrieved Feb 2008, from www.victoria.ca/residents/pdfs/prksrc_prks_bnfldp_cpted.pdf.
- Prince William County Police Department. (2006). *CPTED Strategies: Crime Prevention Through Environmental Design A guide to safe environments in*

Prince William County, Virginia., from
<http://www.pwcgov.org/docLibrary/PDF/002035.pdf>.

RTA. (2002). *How to Prepare a Pedestrian Access and Mobility Plan: A three stage easy guide*. Retrieved Feb 2008, from
http://www.rta.nsw.gov.au/doingbusinesswithus/downloads/technicalmanuals/mobility-plan_how-to.pdf.

URaP-TTW. (2005a). *North Sydney Council Public Domain Strategy - North Sydney Centre Traffic Management Plan*. Sydney: URaP-TTW.

URaP-TTW. (2005b). Pedestrian access and mobility plan. In URaP-TTW (Ed.), *North Sydney Council Public Domain Strategy - North Sydney Centre Traffic Management Plan*. Sydney: URaP-TTW.

Western Australian Planning Commission. (2000). *Liveable Neighbourhoods. Street Layout, Design and Traffic Management Guidelines*. Perth, Western Australia: Western Australian Planning Commission.

White, a. (1998). *Public spaces for young people: a guide to creative projects and positive strategies*. East Sydney, NSW: Australian Youth Foundation in partnership with the National Campaign against Violence and Crime.

White, R. (1997). Public space and youth crime prevention : institutions and strategies. Retrieved 5 Feb 2007, 2007, from
<http://www.aic.gov.au/conferences/juvenile/white.pdf>

White, R. E. (2004). *No. 274: Police and community responses to youth gangs*. Canberra: Australian Institute of Criminology.

Wise, D. (2004). *The Physical Design of Alleys: An Evaluation of Alleys in the Montreal Plateau*. Retrieved Feb 08, from
<http://www.syldavia.net/Files/David%20Wise%20-%20Masters%20Thesis%20-%20Montreal%20Alleys.pdf>.