

# Pedestrian Access Ways in Western Australia

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## Abstract

Pedestrian Access Ways (PAWs) have presented a significant and unresolved challenge to transport planners in local and State government. The result has been piecemeal local government and State government approaches that have frequently resulted in tensions between civic constituencies, high levels of administrative cost, adverse publicity, reduced transport functionality and compromises to the policy intentions of a range of government agencies. In part, this has been due to a gap between the intrinsic complexity of PAW eco-systems and the oversimplification of this complexity in ways that ignores issues of multiple uses, purposes, user interests, user groups, functionality, ownership, control and agency and the ways these vary across the day, week, seasons, years and planning fashions. In short, local interests and incomplete understanding the situation have limited the development of best practice in management of PAWs, have generated unnecessary problems, and in particular have prevented an integrated government approach.

This paper presents findings of recent research on the management of PAWs to reduce crime. This required identifying and addressing unresolved and overlooked issues.

Outcomes included:

- A morphology of PAWs and PAW functioning;
- the identification of information for understanding the functioning of individual PAWs;
- the discovery of the misapplication of Designing Out Crime techniques to PAWs;
- the identification of misunderstandings leading to flawed policy actions;
- the exposure of ways that adverse PAW outcomes are manufactured by planning policies and decisions;
- proposals for an improved approach to managing PAWs to reduce crime via Designing Out Crime techniques; and,
- the development of PAW Guidelines as a supplement to the State Designing Out Crime Planning Guidelines for use by local government.

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## 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. There is national commitment in Australia to the broad and relatively new area of 'Design Out Crime' research, which is also known as 'Crime Prevention Through Environmental Design' (CPTED). The State's Designing Out Crime Strategy (OCP, 2007) provides a plan of action to achieve specific goals such as contributing to the management of Pedestrian Access Ways (PAWs). Some PAWs are subject to crime and anti-social behaviour. This has been of particular concern in Western Australia in situations where their physical attributes and context provides support for burglary (Clarke, 2002). Overseas, the emphasis has been more on where the physical structure and context facilitates crimes against legitimate PAW users.

This paper reviews some unusual findings and outcomes from recent research by the authors into applying Design Out Crime approaches to Pedestrian Access Ways (PAWs) in Western Australia. This research, and the development of a set of State guidelines was funded by the Office of Crime Prevention. The research followed a fairly conventional format. The researchers:

- Reviewed national and international literature relating to PAWs
- Undertook a wide variety of site visits to PAWs
- Undertook a morphological analysis of existing PAWs
- Looked at the purposes, roles, users and dynamics of PAW use in a variety of circumstances
- Explored the planning, legal, ownership and control issues relating to PAWs.
- Identified the applicability of Design Out Crime/CPTED approaches to managing PAWS
- Developed some assessment tools and a decision tree for managing PAWS

Some findings identify serious problems in common crime prevention and planning practices aimed at reducing crime and anti-social behaviour in PAWs. The research suggests that some common crime prevention practices and planning strategies 'manufacture' crime and anti-social outcomes.

The paper identifies these problematic issues and outlines some new tools for PAW planning and management.

## Pedestrian Access Ways (PAWs)

PAWs are specific *physical* elements of urban, suburban and peri-urban space. PAWs are physical elements of the *walking* network used 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 alleyways 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. 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).

The research outlined in this paper focuses on the improved management of PAWs and is 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.

In technical and legal terms, 'pedestrian access way' is defined tightly in planning law, as is the term 'laneway' applying to a different transport planning way. 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).

In relation to practical concerns about crime and anti-social behaviour, there are many overlaps between PAWs and laneways – although there are significant differences that we have identified in terms of issues of territoriality. The research followed the common language understanding of PAWs as paths for pedestrians and cyclists that are not road elements of the Functional Road Hierarchy. 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). PAWs overlap with laneways. We refer to these collectively as PAWs, and where necessary distinguish between 'pedestrian path' PAWs and 'laneway' PAWs.

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.

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 are private. Over the years, some PAWs have been closed and sold to adjoining residents, often on the premise of apparent / alleged crime problems. This latter is a point that we will draw attention to later.

## **Main Findings**

In terms of understanding the historical background planning context we identified five historical 'eras' of PAW development broadly associated with specific eras and styles of urban planning. In each of these, PAWs have a different role in relation to the broader sweep of transport and access.

- 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.

The differing styles in urban planning of which PAWs are a component can be easily seen in road hierarchy maps of the Perth metropolis such as those in Figs 1 and 2

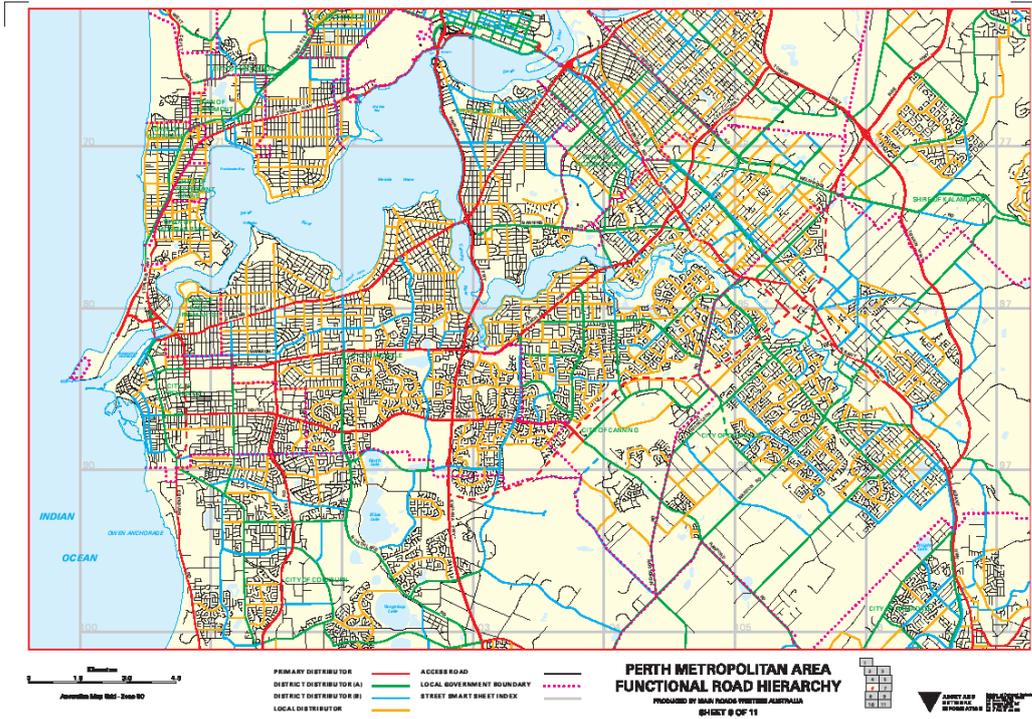


Fig 1: Perth South and Fremantle: distribution of suburb types

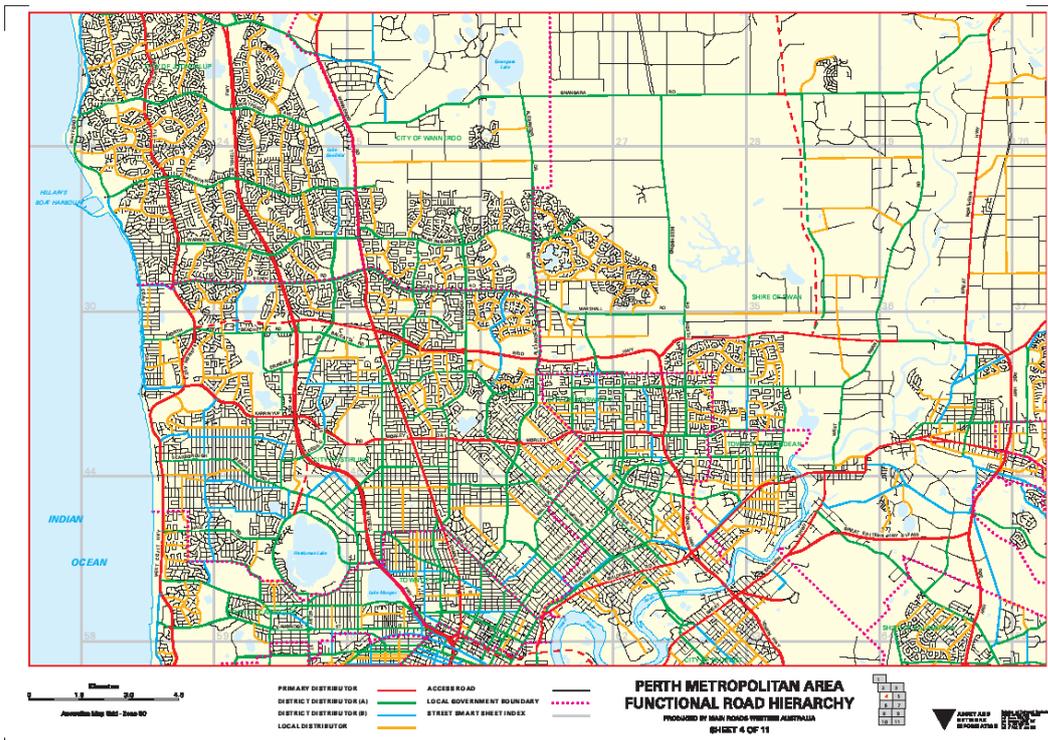


Figure 2: Perth North: distribution of suburb types

**Early Settlement PAWs**

Early settlement before the effects of the Metropolitan Region Planning Authority were felt typically contain either ad-hoc walkable road layouts or permeable rectilinear walkable road layouts designed around pre-existing pathways. PAWs are used to resolve relatively rare

problems in walkable accessibility. Shared access laneways with pedestrian path PAWS are used as a supplementary pedestrian network to streets and roads.

### **PAWs as an essential element of post-war pedestrian unfriendly car-centric suburbs that use long convoluted roads and cul-de-sacs**

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. PAWs provide access across these 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. In these post-war convoluted suburbs, PAWs are essential to achieving these government health, walkability and sustainability agendas.

### **PAWs in rectilinear developments echoing early settlement planning**

Many mid-20<sup>th</sup> century development of 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 rectilinear layout of coastal suburbs near to Scarborough.

### **PAWs in recently planned pedestrian friendly suburbs**

Recently some suburbs have been designed to be more pedestrian friendly and maintain high levels of pedestrian walkability and access with the associated health benefits. Through-traffic is reduced without long convoluted roads and cul-de-sacs. Layouts can range from linear or geometric forms to more organic freeform layouts with high levels of pedestrian interconnectivity. Examples include Joondalup City North areas and recent developments at South Beach in Fremantle. By observation, 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.

### **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 see Fig 4 below.

Against this historical backdrop we identified six classic morphologically different PAW forms. Each of these clustered a particular pattern of functioning, roles, purposes, user groups and time dynamics:

- 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.

Use is likely to be seasonal and the types of users 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 is particularly useful for developing targeted Designing Out Crime interventions.

## PAWs in post-war convoluted suburbs

PAWs in post-war convoluted suburbs are intentionally **essential** parts of the road access networks. In the current government policy environment, PAWs in post-war convoluted suburbs are usually essential in health and access terms because these suburbs were originally designed as pedestrian-unfriendly and car-centric with very low ped-shed ratios (typically around 0.3 instead of the preferred 0.6 or greater). 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.

These PAWs are often poorly designed in Designing Out Crime terms. Typically, they are narrow paths located between property boundaries (e.g. garden fences). Some have high traffic, particularly where they are the only pedestrian link to amenities, and some 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 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 inappropriate 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.

### **PAWs providing occasional access for 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 (local and longer distance). 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.

### **PAWs that are a pedestrian connection to a retail services area**

Pedestrian networks often focus on a retail services area. 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.

These near to retail services PAWs have a variety of roles. Some 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 because most retail land is not public: it is privately owned pseudo-public space. 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).

### **Residential laneway PAWs**

Laneway PAWs are commonly 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.

Timewise, 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.

Designing Out Crime approaches apply in many cases where the dominant use is by residents abutting the laneway PAW.

Many laneway PAWs are part of a network of paths and carry through-traffic (pedestrian and cycle traffic). In these cases, it is important to discourage feelings of 'territoriality' and sense of 'ownership' of nearby residents to avoid social tensions between those whose houses abut the laneway and those from a distance who are legitimately using the laneway as part of a walking or cycling route.

### **Industrial and commercial laneway PAWs**

Typically, some PAWs are found in industrial and commercial areas are laneways providing service access; others are pedestrian paths giving service and customer access. Most legitimate usage of these PAW is in working hours. In some cases, other pedestrian networks flow through commercial areas via these PAWs. In this case, it would be more appropriate to

provide alternative pedestrian and cyclist routes. In cases where public paths have direct routes through

Design Out Crime approaches apply in most cases, and in the commercial areas strong target-hardening, electronic surveillance and motion-sensitive or continuous night lighting is likely to be appropriate.

## Counter intuitive findings

The analyses revealed 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.

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## PAW Planning Instruments – Ped-Sheds, PCAPS and PB57

The research found problems, some serious, with the main three planning instruments, Ped-sheds, PCAPS and PB57 used in the management of PAWs.

### Ped-Shed Analyses

There are two main sorts of ped-shed analysis:

1. 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;
2. Ped-sheds focused on access routes to a particular point (preferred by those wishing to advocate PAW closure).

Both approaches are differently useful for understanding the role of an individual PAW and it is important not to confuse findings of both. That is, ‘walkability’ of a suburb is not equivalent to ‘good access to the bus stop’. Areas with good accessibility and walkability

have a ped-shed access ratio of  $\geq 0.6$ . Government department's target for the calculated ped-shed ratio is  $\geq 0.6$ . 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.*

## **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. WAPC has proposed an internal definition of a PCAP. This definition is at odds with international best practice and confuses the two types of Ped-shed approaches above and adds to it an intention to establish a PAW hierarchy – something that makes sense in road terms but conflicts badly with the multi-role network situation found in PAWs. This proposal for PCAP assessment also conflicts with other government agencies agendas for encouraging activity, health, economic development, sustainability, reducing obesity and reducing car use. Its contradictory position also presents some problems for the application of Designing Out Crime strategies and 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. Proposed amendments have similar problems to those identified in the use of PCAPS and Ped-sheds above.

There are further problems in terms of ownership and control which is complex in the case of PAWs. 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 locates a significant number of PAWs outside the current process, with no guidance at all.

## **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.

### **Pedestrian path 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.

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.

The balance of activities in narrow pedestrian path PAWs typically 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

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.

## Design Out Crime strategies

The physical characteristics of 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. 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. 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 not well maintained and give the impression of poor care. Contradicting this, however, is the observation that graffiti management has been implemented very 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 electronic surveillance and enhanced policing offers potential benefits.
4. Undertaking improvements to PAWs based on collaboration with PAW *users*, rather than residents living near to PAWs.
5. Avoidance of encouraging inappropriate territoriality as this is one of the factors that results in 'manufacturing' of crime and social tensions. That is, avoid encouraging local residents to feel that they 'own' a PAW or nearby areas.
6. Mak PAW closure more difficult.
7. Rethink the use of ped-sheds, PCAPS and PB57 in PAW management to refocus on PAW use to fulfil the full variety of government agency agendas in health, access, walkability, and the establishment of a network of longer-distance cross-suburb walking and cycling routes.

## Conclusion

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. For each

PAW, this requires identifying the users, roles, purposes, functions, user groups and distribution of different uses and user-groups during the day, week and year.

The research indicated that maximizing of benefit in management of PAWs emerges from a whole of government approach that aims to support the achievement of agendas of all government agencies and public interests. Contrary to the previous policy direction, this is likely to require retention of PAWs and, perhaps, an increase in the number of PAWs, especially in many post-war convoluted suburbs.

Designing Out Crime (CPTED) approaches have already proved to be of value worldwide in improved management of PAWs. These approaches can integrate well with the activities of State, Federal and local government agendas relating to the management of PAWs.

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