

# Emerging Constraints for Public Open Space in Perth Metropolitan Suburbs



## Implications of Bush Forever, Water Sensitive Urban Design and Liveable Neighbourhoods for Active Sport and Recreation

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- benefit from sport and recreation association.

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The land-use photographs used in this report (cover, page 2, page 3) were taken by Garry Middle.

## Background

There is a general view amongst local government park managers and planners in Perth that the implementation of Bush Forever, Water Sensitive Urban Design (WSUD) and Liveable Neighbourhoods (LN) has led to a decrease in the number and amount of active open space being provided. Unfortunately, there is no published hard data in support of this view. In 2010 the Department of Sport and Recreation (DSR) commissioned Curtin University, through the Centre for Sport and Recreation Research (CSRR) and the Department of Urban and Regional Planning, to undertake a study to determine whether these three planning policies have had a significant impact on the supply of active public open space (POS) and, if so, whether this is having an impact on the users of the active POS areas.

The specific aims of the study were to:

- document changes to the nature and extent of POS in new residential areas due to Bush Forever and WSUD (and to examine the impacts of LN where possible);
- investigate the impacts of these changes on the users of the open space;
- explore the policy implications that arise from the data; and
- to propose some specific planning policy measures.

It should be noted that this study does not recommend specific quantitative criteria for what should be considered an adequate supply of active POS. Instead, the data are used to propose some guidelines for planners as to when serious consideration should be given to providing additional active open space i.e. when it is highly likely that there will be a significant undersupply of active open space.

## Terminology

In WA, publically owned open space is generally categorised as either local open space or regional open space. Local open space is called public open space and is vested in, and managed by, local government. Regional open space (ROS) generally serves the interests of a larger population (at a regional level or all of Perth) and is usually reserved, purchased and managed by the state government. In the metropolitan area regional open spaces are set aside as Park and Recreation Reserves.

This study is primarily interested in POS and, in particular, active POS.



## Study methodology

A total of 41 suburbs were selected for study to represent different times in the history of Perth's planning. These included 12 old inner suburbs (pre- 1950s); 15 middle suburbs (1960s, 1970s and 1980s); 11 Bush Forever and WSUD constrained suburbs; and three LNS only suburbs (called here urban design suburbs). The middle suburbs were developed during a time when it was mandatory to give up 10% of developable land to POS.

There were two broad stages in this study:

- Stage One: Documenting the nature and extent of change to public open space in selected new Perth suburbs; and
- Stage Two: A case study of the usage of active open space in the south west corridor.

In Stage One each piece of POS had a detailed map drawn showing the use 'zones', the zones being Passive Recreation, Active Recreation, Nature Conservation, Permanent Stormwater Management and Seasonal Stormwater Management.

The areas of each zone were calculated and summary data was produced for each suburb. Figure 1 shows a typical map produced for this stage.

**Figure 1: Example of POS area map showing zones (Quinns Rock).**



In Stage Two, the ground usage patterns for two sports (cricket and soccer) in the south west corridor were studied in detail.



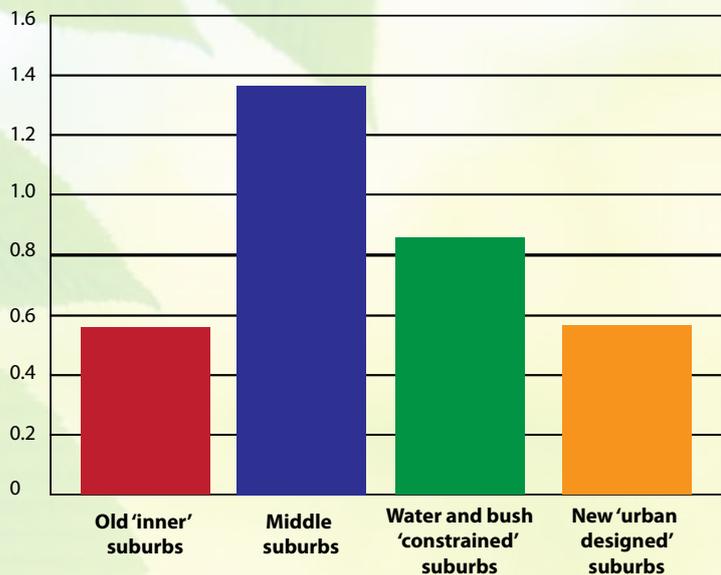
## Study findings

### Changes to the nature and extent of POS

This study found that implementation of both Bush Forever and WSUD has caused a reduced supply of active open space, and that the implementation of LN may have also caused a reduced supply of active POS. Figure 2 shows the results of all the suburbs studied categorised into the four suburb types. The numbers on the vertical axis represent the average per cent of the suburb's residential area that is active open space.

NOTE: In this study, active open space is the area of actual playing fields and not the surrounding infrastructure and passive space i.e. only the light green areas in Figure 1.

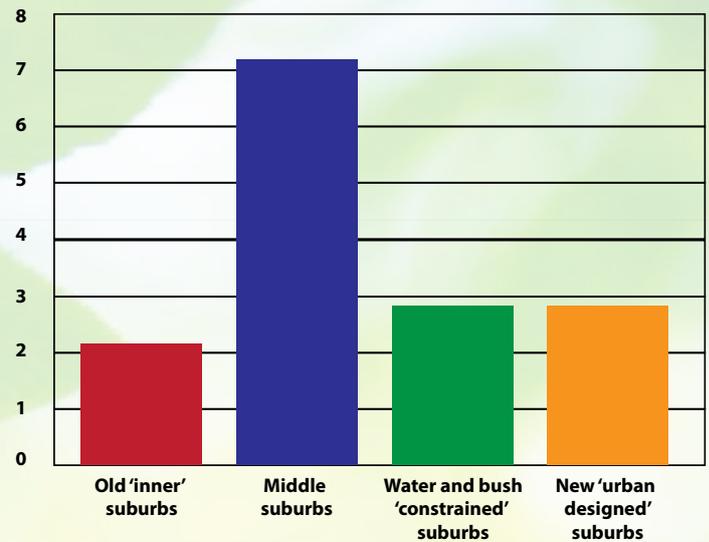
**Figure 2: Per cent of the suburb's residential area that is available for active recreation, by suburb type**



This finding is also reflected in the data on area of active open space per resident, as shown in Figure 3.



**Figure 3: Area of active open space per resident, by suburb type.**



It is clear that, compared with the middle suburbs, the proportion of the residential component of each suburb given up to active POS is significantly reduced under both Bush Forever and WSUD, from an average of 1.38% of the area of the suburb to 0.87%; a reduction of nearly 37%. The data on area of active POS per resident is consistent with this, a decrease from an average of 7.16 m<sup>2</sup> per resident to 2.90 m<sup>2</sup> per resident; a reduction of nearly 60%.

This represents, on average, a loss of 1.85ha of active open space per suburb, which equates to two and a half soccer pitches or about 1.2 AFL ovals. Across the 11 suburbs, this is a total loss equivalent to some 28 soccer pitches and 13 AFL ovals.

With respect to LN, only three LN only constrained suburbs were covered in this study, and whilst this sample size is insufficient to draw firm conclusions, the data is suggestive of a similar problem of reduced active POS within these suburbs. The percentage of the suburb available for active recreation is much less than the middle suburbs i.e. 0.79% compared with 1.38% for the middle suburbs. This is even less than the Bush Forever and WSUD constrained suburbs.

In short, the implementation of both Bush Forever and WSUD has caused a reduced supply of active open space in the new suburbs studied in this research. Further, the data presented here suggests that the implementation of LN may have also caused a reduced supply of active POS in these new suburbs.

## What are the impacts of these changes in active POS provision on the users of the open space?

To test whether this reduced allocation of active open space in these new suburbs is having an impact on active sport, a case study of two sports in one region of Perth was carried out. The region was the northern portion of the south west corridor of Perth, and the sports studied were cricket (summer) and soccer (winter). The case study area included all grounds, both POS and ROS, used for those sports in the City of Fremantle, the Town of East Fremantle, the City of Melville and the City of Cockburn.

The aim was to determine if the reduced allocation of active open space in the newer suburbs in the south of the corridor was impacting on overall ground usage in the corridor and, consequently, causing grounds to be overused. Central to this idea is determining the level of ground usage that would be considered heavy and not sustainable in the long term. This was done taking into account the data on ground usage and the advice of both the steering committee and park managers.

Based on this assessment, it was determined that seven of the 17 soccer grounds in the corridor are being heavily used and 14 of the 35 cricket grounds are being heavily used.

The clear implications are that there is a shortage of grounds in this corridor given the number of grounds being heavily used, and that this shortage is due to fewer grounds being provided in the Bush Forever and WSUD constrained suburbs.

The situation would be worse if it were not for the active open space available within the ROS of Melville and Fremantle/East Fremantle. Should Bush Forever and WSUD constrained suburbs continue to be developed in the south of the corridor with the same lack of active POS areas, then the pressure on existing grounds located elsewhere would grow, and more grounds would become heavily used. This situation is considered unsustainable.

Additionally, there is an issue of 'spatial equity', where the residents of the new suburbs of Cockburn have to travel much further to access these playing fields than the residents in the established suburbs.



## Policy implications

There are two clear policy implications or questions that arise out of this work:

1. How much is enough active open space?
2. What needs to be done to secure enough active open space to meet any current or potential future shortfall?

### How much is enough active open space?

The data presented in this study can be used as a useful starting point for future planning to identify areas where the active open space may be insufficient to meet existing and future demands. However, it is not recommended that these data be used as rigid criteria to determine and set the amount of POS that should be provided for active pursuits.

The data on the per cent of the suburb set aside as active POS is a useful starting point in looking at planning for new greenfield site suburbs.

NOTE: In this study, active open space is the area of actual playing fields and not the surrounding infrastructure and passive space i.e. only the light green areas in Figure 1.

As a guide to planners, and not a fixed criterion, setting aside around 7m<sup>2</sup> per resident as active open space would be adequate. By extension, anything significantly less than this figure would seem inadequate and serious consideration needs to be given to providing additional active open space.

For those inner suburbs undergoing infill, many of which are likely to have ROS already supplementing the active POS, then the data on area of active open space per resident is likely to be a more relevant consideration because of the likely density difference.

As a guide to planners, and not a fixed criterion, setting aside around 1.4% of the residential part of new suburbs as active open space is likely to be adequate. By extension, anything significantly less than this 1.4% would seem inadequate and serious consideration needs to be given to providing additional active open space through either ROS or through a reduction in other forms of open space, for example, passive open space.

Again, it is important to stress that these two metrics should not be seen as design criteria, but as guides in planning for the future. This study is not recommending that the figure of 1.4% of the suburb for active open space, or the figure of 7m<sup>2</sup> per resident, be used as the standards for the provision of active open space.

## What needs to be done to secure enough active open space to meet any current or potential future shortfall

The findings of this study have both policy and strategic implications. There are two clear choices for the planning agencies—modify the implementation of the three policies referred to here and/or provide additional active open space through regional as opposed to public open space.

There is considerable room to modify the implementation of Bush Forever and WSUD without compromising their key objectives of conservation and better water management. Well over half of POS is provided for passive recreation, often in smaller parks and also as part of open space with a drainage function. Providing more active open space becomes a design issue and planners at state and local government level need to elevate the priority given to active open space as part of structure planning at both the district and local levels.

A suitable response to this issue would be through the issue of a new Planning Bulletin which would set out the broad principles to be supported with a revision of the existing Development Control Policy 2.3.—Public Open Space in Residential Areas. This policy makes no mention of active open space in its objectives, nor is there a major heading which discusses the values and need for active open space.

The LN policy should also be evaluated. The small number of LNs only suburbs studied here suggest that its implementation is providing fewer active playing fields and may well favour the provision of many smaller parks over fewer larger ones that are of suitable size to provide active playing fields.

It will be very difficult to retrofit existing Bush Forever and WSUD constrained suburbs. Additional active open space could be made available by the state government intervening and providing active open space through ROS allocation.

The data from this study shows that inner suburbs are undersupplied with active open space as part of POS but that, at least in the south west corridor, this is well supplemented with active open space in ROS. Many of these suburbs are undergoing redevelopment leading to increasing densities of dwellings.

There is an urgent need for a study into the supply of active open space in all of these inner suburbs and to then determine any existing and predicted future needs. The information in this study provides useful benchmarks for that study. Where there is a shortfall in supply, options for providing additional active open space can then be explored.

## Study conclusions

The key conclusion, findings and recommendations from this study are as follows:

1. The implementation of both Bush Forever and WSUD has caused a reduced supply of active open space in the new suburbs studied in this research.
2. The data presented here suggests that the implementation of LN may have also caused a reduced supply of active POS in these new suburbs.
3. The reduction in the provision of active POS in these new suburbs because of the implementation of both Bush Forever and WSUD does matter.
  - Around half of the grounds in the study area are being heavily used, primarily because of the absence of grounds in the Bush Forever and WSUD constrained areas.
  - The situation would be worse if it were not for the active open space available within the ROS of Melville and Fremantle/East Fremantle. Should Bush Forever and WSUD constrained suburbs continue to be developed in the south of the corridor with the same lack of active POS areas, then the pressure on existing grounds located elsewhere will grow, and more grounds will become heavily used. This situation is considered unsustainable.
  - Additionally, there is also an issue of 'spatial equity', where the residents of the new suburbs of Cockburn have to travel much further to access these playing fields than the residents in the established suburbs.
4. The data presented in this study provides useful guidelines as to what can be considered adequate active open space. It is not recommended that these data be used as rigid criteria to determine and set the amount of POS that should be set aside for active pursuits – they provide a useful planning tool but are not design criteria. In summary:
  - Suburbs setting aside around 1.4% of the suburb for active open space will likely meet the demand. For suburbs with significantly less than this, serious consideration needs to be given to providing additional active open space.
  - For existing suburbs undergoing re-development with increased density, having around 7m<sup>2</sup> of active open space per resident will likely meet the demand. For suburbs with significantly less than this, serious consideration needs to be given to providing additional active open space.
5. The WAPC's policy framework does not adequately address the active open space needs of Perth, particularly taking into account the predictions of an additional half a million people in the region by 2031 (WAPC 2009).

- The WAPC's existing Development Control Policy 2.3 needs to be revised to give increased importance to the provision of active POS.
- The implementation of LN should also be evaluated as it may well be favouring many smaller parcels of POS over fewer larger ones more suited to active playing fields.
- Whilst it is difficult to retrofit existing Bush Forever and WSUD constrained suburbs, the provision of active open space as part of ROS would address the shortage of active POS in these suburbs.

6. There is an urgent need for a study into the supply of active open space in all of these suburbs and to then determine any existing and predicted future needs. The information gathered to date provides useful benchmarks for future works. Where there is a shortfall in supply, options for providing additional active open space can then be explored.



## Where to from here

This study is part of a broader piece of research into active open space in the Perth Metropolitan area. Two further stages of this research are currently underway.

Stage 2 focuses on the fringe suburbs of Perth experiencing substantial growth. The specific aims of this stage are to:

- ascertain the supply of active reserves within these fringe local government authorities;
- determine the levels of demand on those reserves;
- determine areas where demand exceeds supply; and
- make some predictions as to how shortages may be addressed.

The local governments to be covered in this study include Swan, Mandurah, Kwinana, Joondalup, Rockingham, Gosnells, Armadale, Wanneroo, Cockburn and Serpentine Jarrahdale.

Stage 3 focuses on certain inner suburbs of Perth, notably the western suburbs. The key purposes of this study are to:

- investigate whether the current supply of active open space in the western suburbs of Perth meets both current and future demands; and
- in the event that supply does not meet demand, make recommendations on where additional active open space could be provided.

The findings of this Stage 1 study raise some important issues that require further research. Those of note include:

- The active open space guidelines (setting aside 1.4% of the suburb or 7m<sup>2</sup> per resident for active open space) needs to be further tested. This should lead to a useful planning tool for calculating active POS needs more accurately.
- Can the current 10% allocation of POS, and the discount allowed for under LN, meet the many competing demands for open space? That is to say, can it deliver sufficient active open space, provide parks within accessible distance to residences, provide for passive uses, meet conservation objectives and allow for water sensitive design?



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