Public Open Space

City of South Perth Open Space Research:

Part 2 - Public Open Space Strategy




City of South Perth

Prepared for the City of South Perth by Professor David Hedgcock

Curtin University

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Public Open Space (POS) Strategy for the City has been prepared to:

- Understand the evolution, character and challenges facing the provision and management of POS in South Perth.
- Identify the ways the South Perth community is using POS in the City.
- Identify the values that the South Perth community attach to their POS system.
- Assess the contribution of existing POS reserves in meeting the challenge of building a sustainable future in which POS provides a range of recreational and social opportunities, which is readily accessible and enhances the natural and cultural resources of the City.
- Prepare a range of recommendations to guide the future design, development and management of the reserves that form the POS system in South Perth.

To achieve these objectives two reports have been prepared for the City:

1. *Public Open Space Issues and Challenges* - identifying the history of open space provision and recreation development in South Perth, as well as key challenges impacting open spaces in the future.
2. *Public Open Space Strategy* - evaluating POS within the City and presenting recommendations to guide the future development and management of individual parks and reserves within the City. This report also includes appendices documenting: 1) the results of an observation survey of the parks and reserves within the City; and, 2) a household survey investigating the recreation characteristics of South Perth households and their use and assessments of the reserve system.

The key findings for each report are presented below.

Public Open Space Issues and Challenges

- The City has a long history of providing open space for recreation purposes through different approaches. This has produced a diverse and complex range of public open spaces.
- POS in the City must forever adapt to constantly changing characteristics of recreation demand.
- There are significant environmental challenges facing POS in response to changing climate scenarios including the requirement for water conservation, the need to protect biodiversity and the impact of recreational use on land and water degradation.

- The South Perth community structure has changed significantly over the last thirty years with increasing housing density (apartments, town houses etc.) attracting different age groups with a variety of recreational needs. This process is forecast to continue in the future.
- The importance of POS in improving the community health and well-being.
- The increasing population and higher density housing outcomes will place pressure on the City's open space resources.
- The importance of recreation areas as a building block for community formation and identity.
- POS management costs are increasing, particularly the cost of managing reticulated turf.
- Revenue received from the use POS is limited and largely static.
- Joint development and management initiatives between the City and other public and private agencies are important in developing future POS plans.

Observation Survey

The observation survey was conducted during December 2011 and January 2012. Its key findings were:

- The high number of cyclists – both commuter and recreational – transiting through the City.
- Weekday park use peaking in the early morning and late afternoon.
- Most consistent users of parks were walkers, cyclists, dog walkers and joggers.
- The most intense users of parks were sporting teams either training or competing.
- Reserve use peaked at weekends particularly the use of sporting fields.
- Small parks and reserves attracted little to no observable use.
- Private and public events organised in reserves lead to the intense use of reserves over a short period of time.
- Those reserves with the greatest range of facilities attracted the greatest range of users.
- Many people come to parks (particularly the larger well used parks) just to 'sit and enjoy the view'.
- Playgrounds attracted use at various times of the day often in association with other activities, e.g., social gathering or sport events.
- Many recreation activities take place on parks that are not 'fit for purpose', e.g., passive use of active reserves.

Household Survey

The household survey was conducted in January and February 2012. Its key findings were:

- Walking, dog walking and cycling are the main recreation activities undertaken by residents in their immediate local areas.
- Walking, visiting a playground, cycling and dog walking are the more frequently performed activities outside of where a resident lives.
- Active sports (team and individual) are also an important recreation pursuit but this activity is more likely to occur outside of the area where a person lives.
- Most residents walk or bike to activities undertaken in their local area.
- The majority of residents are either very satisfied or satisfied with the parks provided by the City of South Perth.
- The parks attracting most positive comment were: Sir James Mitchell, Neil McDougall, George Burnett, South Perth Esplanade, Ernst Johnson Oval, Bodkin Park and Sandon Park.

POS Strategy

Each park in the city was individually assessed. The most common key findings were:

- High level of investment in reserve infrastructure.
- Overuse of flat reticulated turf as a landscape form.
- High level of maintenance.
- A number of iconic parks representing ‘best practice’.
- Lack of fit between the characteristics of the catchment population and the facilities provided within parks and reserves.
- High quality of sporting facilities to support South Perth based clubs.
- Lack of recreation and landscape variety.
- Limited biodiversity and use of native plantings.
- Lack of tree planting and shade.
- Need for greater seating.
- Need to plan for future changing housing/population structure.
- Lack of paths through and around reserves.
- Good relationships with State agencies producing a range of joint initiatives.

- Regional reserves fulfilling their role very effectively.
- General satisfaction with the quality of the reserve system.

Recommendations were prepared for individual parks. Common key recommendations were:

- Reduce the amount of reticulated turf.
- Increase the amount of native planting.
- Zone planting for differential watering requirements.
- Improve access within reserves.
- Increase tree planting.
- Encourage more mixed use of reserves.
- Investigate the potential for revenue raising possibilities.

Need to plan for forecast future housing and population characteristics.

GLOSSARY OF TERMS

The following terms are used throughout this document:

POS/Public Open Space – Council owned or managed land used as public park or recreational reserve.

The City – City of South Perth

Reserve system – network of protected areas; conserving examples of natural landscapes and native plants and animals for future generations.

Hydrozoning – selective watering regimes for different parts of a park depending on use.

The observation report – report on findings of park observations during December 2011. Found in Appendix.

The resident survey – report on survey of resident attitudes and recreation movements during January 2012. Found in Appendix.

Regional reserves - areas of publicly owned and managed land whose primary purposes are to protect and enhance their valued natural environment and encourage passive recreation and enjoyment. The reserves are considered of regional significance because of their important contribution to the metropolitan region's sense of place and their attraction of users from throughout the region.

District reserves - areas of publicly owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs.

Neighbourhood reserves - areas of publically owned and managed land whose primary purpose is to meet the recreational needs of the immediate local suburb and to develop/enhance the local 'sense of place'.

Local reserves - areas of publically owned and managed land whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

Small local reserves – local reserves under 4000m2.

Amenity – the sum of the expectations of residents concerning the character of their community.

Passive Recreation – the refreshment of the mind and body through informal physical activity.

Active Recreation – formal, organised sporting activity.

Sustainable Development – development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

Sustainability Assessment – assessment that considers environmental, social and economic impacts and the governance framework within which decisions are made.

Master Plan or Management Plan – a comprehensive and detailed plan that will determine the character of future development and management.

Community Engagement – the process by which community benefit organizations and individuals build ongoing, permanent relationships for the purpose of applying a collective vision for the benefit of a community.

Catchment – the area and population from which a city or individual service attracts visitors or customers.

Degradation – a decline to a lower condition, quality, or level.

Management Agreement –

Town Planning Scheme – a legal document dealing with land use, development control and infrastructure coordination for the City.

Biodiversity – the number of different native species and individuals in a habitat or geographical area.

Resilience – the capacity of an environment to respond to a perturbation or disturbance by resisting damage and recovering quickly.

INTRODUCTION

BACKGROUND

The public open space strategy for the City of South Perth's reserves has been a project that has been researched and presented over the last year.

This initiative was developed against a background of the City's commitment to a sustainable future and accordingly a strategic sustainability assessment framework has been used to drive this project from its inception and will continue to drive the project through to its future implementation.

The project began with the preparation of an outline of the history of the existing parks and reserves system in the City followed by an analysis of contemporary and future issues facing the development and management of public open space hereinafter referred to as the Stage 1 report. This report charted the development of the provision of recreation reserves in South Perth identifying how land was bought into public realm, how recreation activities and facilities were developed on this land and the manner in which this has changed and evolved to the present day. Against this backdrop the reserve *system* (rather than individual parks and reserves) was then assessed using environmental, social, economic and governance criteria to identify the key issues and problems facing the reserve system both now and in the future. The conclusion of this report consolidated the identified issues and problems into a list of key considerations that needed to be addressed in developing future plans for the City's open space reserves. These are listed below:

Key Issues for Consideration [Environment]

- Need to respond to the impact of climate change on the river and river foreshores
- The need for water conservation
- Increasing tree canopy cover to improve human comfort levels and reduce watering demand
- Planting regimes to respond to longer, dryer summers and restrictions to water budgets
- Application of technology to improve water use efficiency
- Use of native plantings to reduce management costs and watering demand
- Investment in development and management to reduce natural resource degradation
- Protection and/or enhancement of biodiversity

Key Issues for Consideration [Social]

- South Perth has a growing population and this is likely to continue into the foreseeable future

- South Perth has a very diverse population make up and this is likely to remain
- Contemporary lifestyles and preferences are reducing the time available and the time allocated to outside recreation pursuits
- The amount of time people are spending on recreation reserves is reducing
- Multi-purpose trips to recreation reserves are becoming more popular
- Diverse recreation facilities are required to meet the needs of the population
- Increases in population will increase the demand for recreational activity
- There will be increases in housing density in South Perth with particular increases in medium density and high density housing forms; town houses and units
- Increases in higher density housing forms (with less private open space provision) will increase the demand on publically provided open space
- Increases in residential density will reduce green space/tree cover on residential lots
- Recreation provision is an important component of local community formation
- Recreation activity improves public health outcomes in the community
- With increasing use of open space for a wider range of activities there may be conflict between uses
- Persons need to feel safe when they are using public spaces

Key Issues for Consideration [Economic]

- Significant future investment will be required to maintain the quality of open spaces
- The cycle of rising expectations has to be considered in investment decisions
- There are opportunities to improve open space management efficiencies
- The level of satisfaction with the current open space system is high
- Many users (the majority in some cases) of Council's open space are not residents of the City
- There are opportunities for revenue raising from the existing open space asset base through the leasing and sale of land and the imposition of user pay fees and charges
- Currently the revenue raised from bookings of reserve space is limited
- Public liability is a key consideration in considering development and management regimes
- Open spaces need to be managed in the public interest and never be sacrificed for private influence or gain

Key Issues for Consideration [Governance]

- There are many over lapping state and local government responsibilities in open space development and management
- Relationships between state and local government (professional and political) need to be carefully managed
- Effective community consultation and involvement is vital in the development of open space
- Conflict between different open space users should be expected and planned for

One of the key findings of the *Issues and Challenges* report was the need to plan reserves in a way that respected the community's changing attitudes and approaches to recreation and reserve use. This was considered of particular significance given the changing population and housing dynamics that has seen the City evolve from a predominantly single residential family suburb to a redeveloped higher density area attracting many single people and couples.

Accordingly prior to the preparation of a more detailed consideration of *individual* parks and reserves two comprehensive pieces of primary research were undertaken.

Firstly an observation survey was undertaken of parks and recreation reserves through the months of December 2011 and January 2012. Each park in the city was routinely observed on an hourly basis to determine what activities were taking place, where and with whom. The survey produced separate observations for week day, Saturday and Sunday use to ensure the significant variations over the weekly cycle could be monitored. The outcome of this survey (See Appendix 1) was used as a data base in this document to understand the pattern of usage taking place on the City's reserves.

Secondly a random sample of South Perth residents were surveyed to investigate their use of local parks, the recreation activities they participate in both in and outside the City and their assessment of the quality of facilities they use in the City. The survey was stratified into ten precincts to enable a relationship between a resident's location and their use of local parks to be established. The outcome of this survey (See Appendix 2) has been used to inform an understanding of the community attitudes to recreation and reserve use.

STRATEGIC VISION

The City has an endorsed strategic plan (City of South Perth, 2010) that provides a framework for Council decision making in the period 2010 – 2015. It is important that the public open space strategy conforms with the directions of this document to ensure that it accords with the values and objectives identified by the Council and community. The relevant sections of the Strategic Plan to the preparation of a Public Open Space strategy are:

1. Community – Create opportunities for a safe, active and connected community

    1.1 Develop, prioritise and review services and delivery models to meet changing community needs and priorities.

    1.2 Ensure the land use planning and service delivery aligns and responds to community safety priorities.

2. Environment – Nurture and develop natural spaces and reduce impacts on the environment

    2.1 Undertake assessments of the City's key natural areas, activity centres and streetscapes to identify opportunities to improve biodiversity.

    2.3 Review and integrate sustainable water management strategies to improve community and City practices.

    2.4 Review and establish contemporary sustainable building, land use, and environmental design standards.

    2.6 *Encourage the community to embrace sustainable lifestyles*.

4. Places – Plan and develop safe, vibrant and amenable places

    4.3 Engage the community to develop a plan for activities and uses on and near foreshore areas and reserves around the City.

Based on these objectives the following strategic vision has been prepared as a framework within which the Public Open Space Strategy will be conceived, prepared and implemented:

'To develop and manage public open space network that provides a range of recreational and social opportunities, which is readily accessible, conserves and enhances the natural and cultural resources of the municipality, and offers an environment in which to live, work and visit, for current and future generations'.

RESERVE CLASSIFICATION

There are a wide range of parks and reserves within the City that fulfil a range of different functions and accommodate different uses and activities. Not all parks could be expected to meet the full range of performance criteria identified above. Accordingly the city's parks have been categorised into a classification framework based on a classification system developed by the State Government (WA Govt, 2009) that identifies the differential roles of different types of park in meeting the needs of the local and wider community. This classification forms a background against which judgements can be made about their ability to meet the future needs of the City as well as its contribution to wider metropolitan populations. The classification is as follows.

Regional Reserves

Regional reserves are those areas of publicly owned and managed land whose primary purposes are to protect and enhance their valued natural environment and encourage passive recreation and enjoyment. The reserves are considered of regional significance because of their important contribution to the metropolitan region's sense of place and their attraction of users from throughout the region.

District Reserves

District reserves are those areas of publicly owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs.

Neighbourhood Reserves

Neighbourhood reserves are those areas of publically owned and managed land whose primary purpose is to meet the recreational needs of the immediate local suburb and to develop/enhance the local 'sense of place'.

Local Reserves

Local reserves are those areas of publically owned and managed land whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

Under this classification system a series of development guidelines have been developed by the Department of Sport and Recreation for each category of reserve relating to such factors as catchment, location and provision of facilities; see Table 1 below.

While such categories and guidelines are most commonly used in developing a new pattern of recreation provision in newly developing suburban areas they are also useful in providing a guide to facility provision in established suburban areas that have been subject to the vagaries of historic open space provision and development that often bears no relationship to contemporary standards. It must be understood that existing parks in South Perth have been designed and managed to meet the specific needs of the site and community at a given point of time and while standards based approaches are useful as a guide for facility provision they must not be used as a substitute for detailed research and community responsive design. The City of South Perth has established procedures that ensure all master and management plans for public open spaces are prepared in consultation with key agencies and the community, to clearly identify how the park is to be planned, developed and maintained. This requires are more individual and responsive approach which will drive later analysis in this strategy.

Table 2 identifies which of the Cities reserves fall into each category. In addition, there are numerous smaller reserves excluded from the above categories established by the State Government. These reserves are generally small spaces (compared to other park sizes) and are primarily used for playground or native planting purposes. State Government policy noted that 'small areas of undefined, residual or special purpose open spaces (less than 0.4 ha) are not included in this classification framework. Inclusion of small spaces within POS allocations is generally not considered optimal unless these spaces serve a demonstrated functional community purpose' (WA Government, 2009). These reserves will be assessed collectively (rather than individually) with recommendations made for their future development and management. The different parks and reserves within the City have been placed in the following categories.

Table 1: Reserve category and related factors

Classification	Size	Catchment	Location	Timing of use	Facilities
Local	0.4 – 1ha	• 400m • 5 minute walk	• 5 minute walk to local residents • Good, safe walk/cycle access	• Predominantly day time, to early evening (daytime hours & light) • Does not require lighting	• Limited on-street parking, with service level access provided • Possible playground equipment (based on catchment demographics) • Informal play and recreation areas • Areas for dog walking under control • Natural shade and tree cover • Possible reticulated turf (with hydro-zoning) • Possible bin and seats • Footpaths • Signage
Neighbourhood	1-5ha	• 800m • 10 minute walk	• Central to surrounding neighbourhood. • Access to good, safe walk/cycle paths. • Good passive surveillance. • Build on natural elements. • Sense of place. • Simultaneous use.	• Day to late evening	• As above as well as: • formalised verge parking where necessary • Community play equipment (based on catchment demographics) • Shelter structures • Irrigated lawn (incorporating hydro zoning) • Seating facilities • Drinking fountains • Picnic areas with barbecues and washing facilities • Small public toilet facilities • Small-scale hardstand multi-use court such as basketball/tennis • Lighting for limited evening use — safety and security only (e.g. barbecues) • Bus stop location desirable • Bicycle racks • Power supply access
District	5-20ha	• 2km • 5 minute drive	• Central to catchment • District distributor roads • Good passive surveillance • Public transport networks • Co-location of community facilities to create ‘hub’ feel	• Day to late evening	• On and off-street parking including associated public vehicle entry/s, with provision for service vehicles • Play equipment, appropriate to the size and location of the Reserve. The number and type of playgrounds will depend on the layout of the public open space and location of other play facilities in close proximity • Formal sport and recreation activities • Multi-purpose clubroom facility/s with outdoor open social areas, community areas, storage areas, informal spectator viewing facilities (where appropriate) • Sports field lighting • Informal active recreation facilities (multi-use courts etc.) • Informal play and recreation areas • Areas for dog walking under control and possible canine facilities • Natural shade and tree cover • Formal shelter structures • Reticulated turf accommodating hydro-zoning

Table 1: Reserve category and related factors

Classification	Size	Catchment	Location	Timing of use	Facilities
					• Waste facilities • Benches and seats etc. • Drinking fountains • Picnic areas with barbecues, shade structures, tables and washing facility/s. • Public toilet facilities • Safety and security lighting and possible ancillary features where required. • Path networks (informal trails, dual use paths, etc.) • Signage — directional and interpretive • Bicycle facilities (i.e. Racks) • Drainage, electrical, sewer and communication infrastructure
Regional	20ha +	• Most people drive, cycle or walk; • More than 1 geographic area	• Major road and public transport networks	• Day to late evening	• On-site and formal verge parking or on-street parking with restrictions • Internal roadways for service, building and car park access • Service access and compounds with lockable storage facilities • Regional play equipment - The number and type of playgrounds will depend on the layout of the POS and location of other play facilities within close proximity • Formal sport and recreation activities • Multi-purpose clubroom facilities with outdoor open social areas, community areas, storage areas, informal spectator viewing facilities etc • Sports field lighting • Informal active facilities (full court, multi-use court facilities etc.) • Informal play and relaxation areas • Areas for dog walking under control and possible canine facilities • Natural shade and tree cover • Formal shelter structures and or pavilions or varying sizes to cater for group functions and social activities • Reticulated turf, accommodating hydro-zoning • Waste facilities and possible compound for clubs/groups • Benches, seats, and other park furniture etc. • Drinking fountains • Several picnic areas with barbecues, picnic tables and washing facilities • Public toilet facilities distributed throughout the reserve servicing relevant nodes • Safety and security lighting and possible ancillary features where required. • Pedestrian and cycle path networks • Signage — directional, interpretive and informational (e.g. conservation points) • Bicycle facilities (i.e. racks) • Possible event infrastructure • Drainage, electrical, sewer and communication infrastructure

Table 2: Categorisation of City Reserves

Regional Reserve	District Reserve	Neighbourhood Reserve	Local Reserve	Small Local Reserve
• Milyu Nature Reserve (DEC Managed) • Mt Henry Reserve • Canning River Foreshore Reserve • Andrew Thompson Reserve • Sandon Park • Sir James Mitchell Park (incorporating South Perth Esplanade & Clydesdale Park) • Collier Park Golf Course • Royal Perth Golf Course (leased)	• Windsor Park • James Miller Oval • Richardson Park • Morris Mundy Reserve • Ernest Johnson Oval (incorporating Hensman Reserve and Sandgate Reserve • Collier Reserve, Collins Oval (leased) and Bill Grayden Reserve • Challenger Reserve • Neil McDougall Park • George Burnett Park • South Perth Lawn Tennis Club (leased)	• Comer Reserve • Karawara Greenways • Como Beach Reserve • Bodkin Park	• David Vincent Reserve • Bill McGrath Reserve • Mackie Street Reserve • Ryrie Avenue Reserve • Bradshaw / Conochie Reserve • Mt Henry Road Reserve • Davilak Reserve • Coolidge Street Reserve • Olives Reserve	• Carlow / Kilbride Reserve • Garvey Street Park • Hope Avenue Reserve • Isabella / Craigie Reserve • Marsh Avenue Reserve • Jan-Doo Park • Axford / Barker Reserve • Canavan Crescent Reserve • Moresby Street Reserve • Swanview Terrace Reserve • Warrego Street Reserve • Hensman Square • Meadowvale Avenue Reserve • Shaftesbury Street Reserve • Brandon / Darling Reserve • George / Gwenyfred Reserve • George Street Reserve (near Berwick)

City of South Perth Parks with 400 and 800 meter catchments

1. Ernest Johnston Oval
2. Richardson Park
3. Morris Mundy Reserve
4. Sir James Mitchell Park
7. James Miller Oval
8. Collier Reserve
9. Bill Grayden Reserve
10. Collins Oval
11. Challenger Reserve
13. Waterford Foreshore Reserve
14. Bodkin Park
15. George Burnett Park
16. Neil McDougall Park
17. Karawara Greenways
18. Hensman Square
19. Windsor Park / Mends Street Precinct
20. Stone Street Reserve
21. Bradshaw / Conochie Reserve
22. Carlow / Kilbride Reserve
23. Garvey Street Park
24. Hope Avenue Reserve
25. Isabella / Craigie Reserve
26. Jan-doo Park Estate
27. Sandon Park
28. Kilkenny Close Reserve
29. Doneraile Court Reserve
30. Marsh Avenue Reserve
31. Mt Henry Road Reserve
32. Elderfield Road Reserve
33. Canning / Cloister Foreshore
34. Redmond Street Reserve
35. Davilak Crescent Reserve
36. Coolidge Street Reserve
37. Canavan Crescent Reserve
38. Axford / Barker Reserve
39.Comer Reserve
40. Como Croquet Club
41. Como Beach Reserve
42. Melville Parade South
43. Olives Reserve
45. David Vincent Park
46. Ryrie Avenue Reserve
47. Mackie Street Reserve
48. Moresby Street Reserve
49. Brandon / Darling Reserve
50. Clydesdale Park
51. Meadowvale Avenue Reserve
52. Swanview Terrace Reserve
53. Shaftesbury Street Reserve
54. Kensington CHC
55. Manning Hall Precinct
56. Como CHC
57. South Perth Community Kindergarten
58. Hensman Street Pre-School / CHC
59. Como Community Kindergarten
62. Civic Centre Gardens
63. Manning Library
64. Collins St Hall
65. George Burnett Leisure Centre
66. Old Mill Gardens
67. South Perth Senior Citizens
68. Manning Senior Citizens
69. Infrastructure Depot
70. Transfer Station Grounds
71. Olive Street Memorial Garden
72. Bill McGrath Reserve
73. George Street Reserve
74. George / Gwenyfred Reserve
75. Melville Parade North
76. Bickley Reserve
77. Collier Retirement Village
78. South Perth Lawn Tennis Club
79. Collier Park Golf Course
80
86. Warrego Street Reserve

DISTRIBUTION OF PUBLIC OPEN SPACE

Percentage of POS by suburb

Overall, City of South Perth was found to have 11.5% of public open space. The results for individual suburbs varied, with the largest being the suburb of South Perth with 20.5% and the lowest being the suburb of Como with around 6%. The following table breakdowns areas and percentage of POS by suburb as well as individual parks.

Percentage and area of POS by suburb and individual parks

Suburb/Area	Open Space Name	Area m^2	% POS
Salter Point 1870000 m^2	Mt Henry Rd Reserve	4645	
	Mt Henry Reserve (Cloisters)	36717	
	Mt Henry Reserve (Spit)	39739	
	Mt Henry Reserve (Infill)	16166	
	Jan-Doo Park	3104	
	Hogg Avenue Bushland	7942	
	Sandon Park and Triangle	180097	
	Total	**288411**	**15.4%**
Waterford 1500000 m^2	Waterford Foreshore Reserve	142147	
	Bodkin Park	58983	
	Kilkenny Close Reserve	1435	
	Doneraile Court Reserve	8803	
	Carlow/Kilbride Reserve	765	
	Garvey St Reserve	5419	
	Total	**217553**	**14.5%**
Karawarra 990000 m^2	Karawarra Greenways	100754	
	George St Reserve	1908	
	Goss Ave Bushland	34790	
	Total	**137451.95**	**13.9%**
South Perth 4910000m^2	Old Mill Gardens	2967	
	Melville Pde North	8718	
	Stone St Reserve	6758	
	Western Foreshore (Groynes)	12947	
	Western Foreshore (Scouts)	1814	
	Western Foreshore (S. Canning)	22061	
	Western Foreshore (N. Canning)	30002	
	Western Foreshore (Scouts)	1422	
	Western Foreshore (Skinny)	17174	
	Western Foreshore (Palms)	7336	
	Windsor Park	21650	
	Richardson Park	65156	

Suburb/Area	Open Space Name	Area m^2	% POS
	Milyu Nature Reserve	36096	
	Sir James Mitchell Park	638883	
	Clydesdale Park	23054	
	Olives Reserve	26221	
	Ernest Johnston Oval	59378	
	Civic Centre Gardens	17518	
	Shaftesbury Street Reserve	3060	
	Meadowvale Ave Reserve	2231	
	Swanview Tce Reserve	3673	
	Total	**1008120.2**	**20.5%**
Como 5980000 m^2	Comer Reserve	17890	
	Melville Pde North	8718	
	Melville Pde South	19198	
	Western Foreshore (Como)	15089	
	Neil McDougall Park	91273	
	Collier Reserve	46784	
	Collins Oval	33934	
	Comer Reserve	17890	
	Bill Grayden Reserve	46784	
	Ryrie Ave Reserve	34425	
	Axford/Barker Reserve	3553	
	Coolidge St Reserve	17815	
	Total	**353352**	**5.9%**
Manning 1650000 m^2	Canavan Cres Reserve	6322	
	Davilak Crescent Reserve	24693	
	James Miller Oval	17595	
	Isabella/Craigie Reserve	3907	
	Challenger Reserve	79313	
	Bradshaw/Conochie Reserve	9333	
	Marsh Ave Reserve	4698	
	Elderfield Road Reserve	2289	
	Total	**148150**	**9.0%**
Kensington 2020000 m^2	David St Reserve	643	
	Moresby St Reserve	5308	
	David Vincent Park	6734	
	George St Reserve	1908	
	George/Gwenyfred Reserve	623	
	Mackie St Reserve	4225	
	Bill McGrath Reserve	4573	
	Total	**24014.118**	**11.9%**

This form of uneven distribution is not unusual for suburbs with a long history pre dating planning and recreational controls. However it is encouraging to see the majority of suburbs have access to a range and variety of spaces on which have been developed a wide range of recreation facilities. The assessment of these facilities will be addressed in the body of this report and recommendations developed for future intervention.

POS Catchments

The catchment for each individual area of POS will depend on a range of factors such as; facilities provided, mode of transport and competing open space areas. However as a background to the assessment of the adequacy of provision a range of catchment analyses were undertaken. The first of these used a 400metre catchment for each park. A 400 metre catchment is generally considered equivalent to a five minute walk, a 2 minute bike ride or a minute's drive subject to physical capability, road availability and traffic conditions etc. A map of this catchment distribution is reproduced below which shows the majority of residential areas in the City of South Perth are within 400 metre catchment of an area of POS. The major exceptions are in the suburbs of South Perth, Como and Manning.

Public open space 400m catchment areas

The second analysis doubled the size of this catchment to 800 metres. An 800 metre catchment is generally considered to equate to a ten minute walk and five minute cycle ride or a three minute drive again subject to physical ability road availability and traffic conditions. A map of this distribution is reproduced below – superimposed on the 400 metre catchment and it should be noted that in this distribution all areas of South Perth fall within the 800 metre catchment of an area of POS.

While catchment analysis is a useful method of looking at spatial distribution of open space it is only a very limited measure of the adequacy of open space provision. This form of analysis says nothing about the individual qualities of areas of POS, the fact that population of catchments vary significantly or the particular attraction that an area of POS may or may not have for the surrounding community. It may be that an area of POS is in close proximity to a residential area but is rarely used because it lacks the necessary characteristics and facilities to attract local use. Equally an area some way from a local community will be targeted for recreational use - despite the distance required to travel - because of the facilities and attractions offered.

Accordingly in the development of this strategy an assessment approach has been developed that moves beyond crude quantitative analysis of provision and embraces a more comprehensive understanding of the character of the POS under investigation, the characteristics of the catchment population, the accessibility between the catchment population and the POS and the opportunities to improve the attractiveness and performance of the individual park.

Public open space 800m catchment areas

METHODOLOGY

The key issues for consideration that formed the conclusion of the Issues and Challenges Report were translated into fourteen performance criteria to assess the degree an individual park or reserve was capable of meeting key sustainable criteria. For example, water conservation and multiple use of reserves were identified as critical issues confronting the City in the future management of its parks system. These issues were then translated into performance criteria; 'opportunities for water conservation' and 'diversity of recreation opportunity' that formed part of a suite of assessment criteria that were applied to existing areas of POS. In this way it was possible to assess whether existing and likely future performance of each park and reserve met the expectations of the City. The fourteen performance criteria are listed below along with sections of the Issues and Challenges Report that addressed their significance.

Reserve performance criteria	**'Sustainability Assessment Report' reference**
1. Protection/enhancement of biodiversity	3.1, 3.3
2. Climate change resilience	3.1, 3.2
3. Natural resource degradation	3.2
4. Opportunities to increase tree cover	3.1, 3.2, 5.3
5. Opportunities for water conservation	3.2, 5.2, 6.1
6. Access to and within reserve	4.2, 4.4
7. Use of area by current population	4.1, 5.3, 4.6, 4.7
8. Diversity of recreation opportunity	4.2, 4.3, 4.4, 4.5, 4.6
9. Opportunities to increase use/attraction	4.1, 4.3, 4.5
10. User safety	4.6, 4.7
11. Level of infrastructure investment	5.1, 5.2, 5.3
12. Opportunities for external revenue (fees, grants, leases etc)	5.1, 5.4
13. Management agreements in place	5.2, 6.1, 6.2

EXCLUSIONS

There are three important exclusions that need to be recognised to understand the scope and recommendations of this study.

Firstly, only those reserves that are categorised for parks and recreation purposes are included. This report does not include any assessment of reserves that have been vested for such purposes as schools, roads, health centres, or other purposes. While it is recognised that such reserves may have a landscape component, the nature of their development and management responsibilities take it outside the scope of this study.

Secondly, all areas of open space falling within the private domain are also excluded from this study. Of particular note (because of their size/area) are the private college grounds (4) that are located in the City. While these open spaces make an important contribution to the landscape character of the City, their development and management fall outside the City's responsibility.

Thirdly, there are a number of open space reserves within the City whose development and management has been vested (transferred) to other organisations. For example, the Perth Zoo, the Old Mill and reserves allocated to a particular club or activity such as the tennis, bowling and golf clubs. These clubs hold management responsibility for these spaces under a range of lease arrangements applied for the benefit of facility members and users rather than the broader community.

Fourthly, there are two areas of open space that are currently the subject of ongoing master planning exercises by the City; the Karawarra Greenways and the Donneraille Reserve. To avoid any duplication and confusion in the assessment and recommendations for these reserves they will not be addressed as part of this document. However, the City's staff undertaking the master planning exercises have been closely involved in the development of this strategy and this will ensure a consistency between these park plans and the broader POS strategy.

The central purpose of this exercise is to focus the City's resources on the future planning of its open space resources within its current strategic planning interval and this predicates that resources outside of its immediate control are excluded from such an analysis.

ASSESSMENT APPROACH

All regional, district, neighbourhood and local reserves (greater than 4000m2) will initially be described and explained so a clear profile of the existing recreation resource and its surrounding community is presented. This will include the following steps:

1. Park will be identified and located using aerial photography.
2. The physical landform of the park will be described and explained.
3. The existing landscape character of the park will be described and explained.
4. The facilities that have been developed in and around the park will be identified and assessed.
5. The surrounding residential area within an 800 metre catchment will be identified and explained.
6. The characteristics of the catchment population will be outlined focussing on the age and household structure.
7. The current predominant use of the park will be identified and the nature of any management agreements that exist between the City and sporting and/or other groups using the park/reserve will be identified.
8. The likely future development of the surrounding area will be outlined particularly to identify any proposed future changes in the character of the catchment population.

Against this background the park/reserve will then be assessed according to the sustainability performance criteria previously identified viz:

1. Protection/enhancement of biodiversity
2. Climate change resilience
3. Natural resource degradation
4. Opportunities to increase tree cover
5. Opportunities for water conservation
6. Access to and within reserve
7. Use of area by current population
8. Diversity of recreation opportunity
9. Opportunities to increase use/attraction
10. User safety

11. Level of infrastructure investment
12. Opportunities for external revenue (fees, grants, leases etc)
13. Management agreements in place

On the basis of these assessments conclusions and recommendations for the future development and management of the reserve will be presented. It is the intention that these recommendations will then form the basis of future planning and design initiatives as well as providing the City with a basis for programming and budgeting considerations.

Local reserves less than 4000m2 (which will be referred to as small local reserves) fall outside the reserve categories established by the state government. These reserves will be assessed collectively (rather than individually) with recommendations made for their future development and management.

It is not the purpose of the conclusions and recommendations to detail future design outcomes for each area of open space. Rather it is its purpose to provide a framework within which such considerations will be initiated and take place. Importantly the City has an established approach to open space development and management which involves a deliberative approach between professional officers, councillors and the community which takes into account environmental imperatives, social opportunities and economic constraints. The process works towards the production of master plans for individual parks that are the outcome of stakeholder engagement and participation. This strategy endorses this approach and provides the background information to ensure that such a process operates in an effective and equitable manner.

While it is not the purpose of this strategy to determine the detailed future development of each reserve equally is not the purpose of the strategy to identify individual reserves that the City may consider surplus to its needs. However, the City has developed the following provisions that would relate to any deliberations regarding the future supply of POS in the City.

Supply of Public Open Space

The City's public open spaces are highly valued community assets which are increasingly under pressure from high use by residents, higher densification, and competing demands from other community uses.

In the event that land currently used for POS is identified as being surplus to the City's needs, such an assessment would be based on the following:

- The available land offers poor amenity of POS use.
- Alternative sites of higher quality can be identified for acquisition or upgrade to a much higher function or use.

- The net community gain can be guaranteed by an alternative land use.

The criteria for definition of poor amenity of POS are:

- It is underutilised;
- It offers poor connection to other POS or streets;
- It is unsafe for users;
- It offers poor accessibility;
- It has little potential for improvement as functional POS.

Sale (or lease) of low performing open space to increase financial reserves for the purchase or redevelopment of quality open space will only be considered in conjunction with community consultation. POS identified for disposal will only be sold (or leased) where the proceeds can be applied to meeting the objectives of this Strategy (e.g. acquisition of new parks, redevelopment of existing parks) in a timely manner. Where this cannot be achieved, it is preferable to 'land bank' those assets until such time as the sale is required to progress the objectives of this Strategy.

REGIONAL RESERVES

1. SIR JAMES MITCHELL PARK AND CLYDESDALE PARK

Reserve Category: Regional Reserve

Source: Adapted from Google Earth (2011)

Location

Sir James Mitchell Park is an extensive area of open space that stretches from the edge of South Perth Esplanade East to Macallum Park bordering the Town of Victoria Park. Along with Clydesdale Reserve (a small section of open space separated by Douglas Avenue), it is comprised entirely of the Swan River Foreshore.

Landform

This originally low lying swamp and marshland has been extensively modified by drainage and filling in accordance to its evolving use and development. Its current landform is defined by expansive areas of flat drained turf with pockets of remanent wetland and damp-land environments.

Landscape Development

Reticulated turf dominates the landscape of the reserve interspersed with areas of plantings including groupings of small trees, such as Ti trees and Paperbarks, and large mature trees, such as Eucalypts and Sheoaks. The iconic South-of-the-river park status this reserve has held for almost 50 years has contributed to a range of implemented plans and plantings. For example, the Paperbark wetlands are currently under rehabilitation. In addition to native planted environments, there are exotic elements such as the perfumed gardens in the Western section of the Reserve.

In general, the Western section of the Reserve foreshore is lined by numerous constructed beaches, while the Eastern section by river walls. Sir James Mitchell Park is also the site of the Swan Canning Riverpark Riverbank Project which aims to rehabilitate and revegetate key foreshore areas.

The lake/wetlands areas between Coode Street Jetty and Hurlingham Road have been retained for conservation purposes as well as modified and integrated into the local drainage network.

Building Development

The most consistent built features of the Reserve are pedestrian and cyclist paths. Providing a commuter route from adjacent suburbs into Perth City and popular recreation circuit encompassing South Perth, Perth and Victoria Park foreshores, the Reserve is heavily used for a variety of physical activities. Separate cycle- and walk-ways will increase the safety and usability of the Reserve for cyclists and those on foot (walking, running, etc) with signage clearly demonstrating the appropriate use for each path. The rest of this section will detail other constructed features of the Reserve into four broadly grouped, but distinct, recreational nodes.

Scented Gardens, in the most westerly recreational node of Sir James Mitchell Park, is located adjacent to a large pay-per-use car park at the eastern end of South Perth Esplanade. Suitable for both individual reflection as well as private community gatherings, this node is named after the secluded constructed area of introduced plants and shrubs. The adjacent Paperbark wetland feature is characterised by a meandering boardwalk with educational signage points. A large adventure playground, toilets, change rooms facilities, BBQs and shaded areas are also found within the scented gardens and wetland. Other built attractions include bike racks, a beach shower and seats orientated to Perth City to enable users to enjoy the spectacular city backdrop. The area is serviced by a car park off the Esplanade with capacity for approximately 50 vehicles.

The Coode Street Jetty area includes development for river recreational activities, such as catamaran hire, as well as a jetty accommodating fishing and swimming. The central area of a large café, kiosk and restaurant with attached public toilets, several BBQ and shade facilities is adjacent to a car park with capacity for over 100 vehicles.

The eastern section of the Reserve has a co-located public-use boat ramp and private-use boat shed for Wesley College rowing activities as well as a playground, shade structures and BBQs. This area is serviced by car and trailer park with capacity for over 20 cars with trailers or over 50 cars. To its

south is the separately named Clydesdale Park with public toilets, a BBQ and seats, as well as a playground near the Lake Tondut water body.

In the far Eastern section of the Reserve are two smaller nodes of development. At the termination of Hurlingham Road are public toilets and a car park with capacity for approximately 40 cars surrounded by shade and BBQ facilities as well as an extensively shaded playground. At the Eastern end are more car parking facilities on the verge of Ellam Street and in a smaller car park within the Reserve (total capacity of close to 100 cars).

Current Use

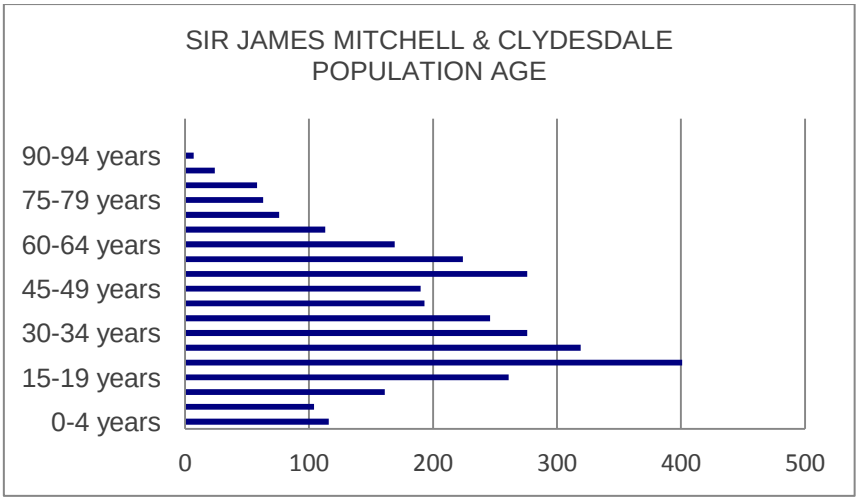
Cycling was the most prominent use of the reserve during the morning and evenings on all observation days (Appendix 2), followed by running and walking. The reserve was highly used during early morning and evenings on weekdays by both commuters and those interested in health. A wide range of site-specific recreational activities capitalising on the location and quality of Sir James Mitchell Park was observed, including corporate and community events as well as smaller family and friends gatherings. Specific uses relating the facilities provided at each of the recreational nodes were also noted. For example, wedding photos were a popular at the Scented Gardens, water sports and fitness groups at Coode Street, mothers groups at playground facilities and dog walking around the two designated dog exercise areas.

Surrounding Development

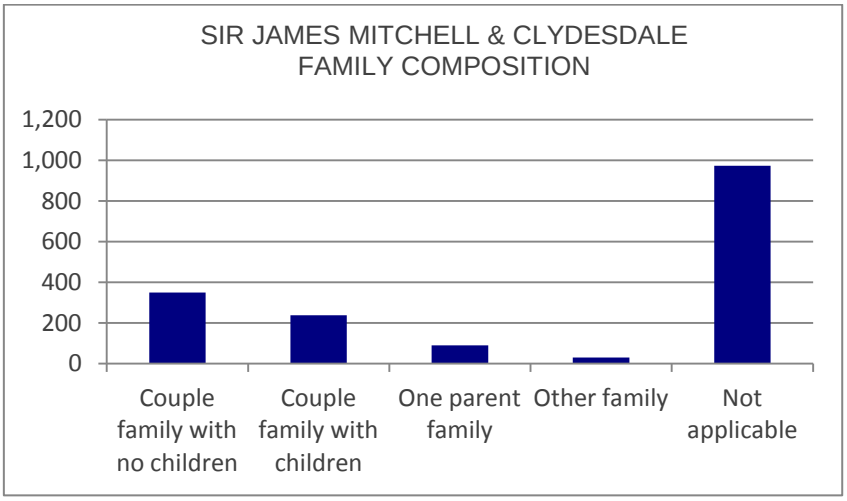
There has been considerable residential redevelopment where original single residences have been replaced by medium and high rise housing. High rise development is concentrated in the Western areas and medium density development more typically to the East. There is still a large single residential precinct in the Hurlingham area. Other development consists of the Mends Street commercial precinct and Perth Zoo to the West, St Columba's Catholic Primary School and attached convent, the Wesley College campus on Coode Street and a medical centre and small neighbourhood centre on Meadowvale Avenue.

Catchment Population

Sir James Mitchell Park is a regional reserve with a considerable catchment area attracting users and tourists from throughout Perth, the nation and the globe, with its most consistent return users being residents from surrounding suburbs of Mill Point, South Perth Central and Hurlingham. The largest age groups in this area are the 20-35 year olds followed by the 45-55 year olds. There are smaller numbers in the child age groups (0 – 15) and in the older age groups (65+). This is reflected in dominance of non-family households, that is, singles, de facto couples and groups.



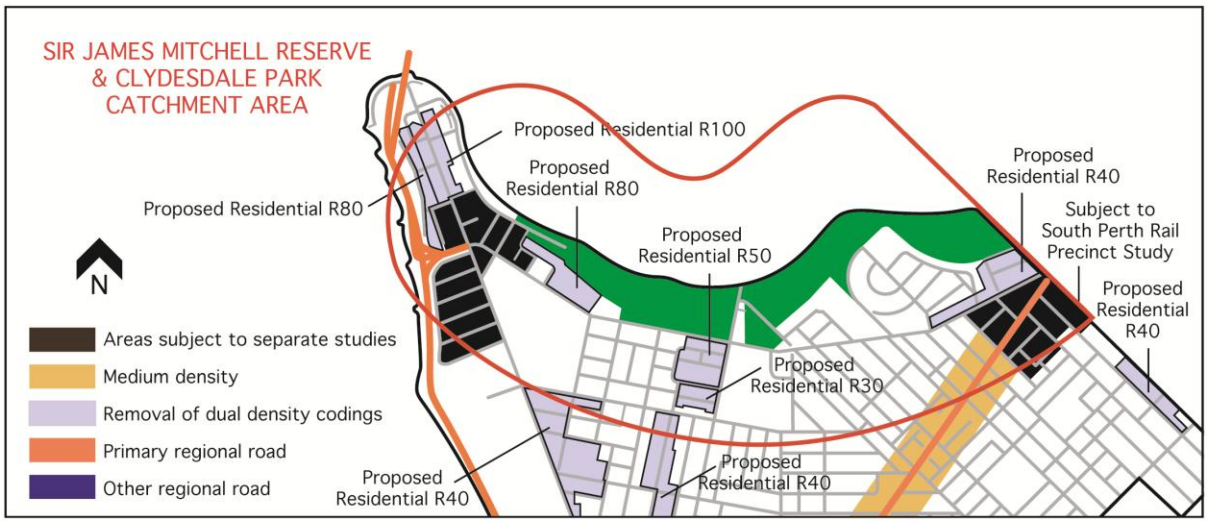
Source: Australian Bureau of Statistics (2006)



Source: Australian Bureau of Statistics (2006)

Future Development

There no major changes proposed to the future housing strategies of the area surrounding the Reserve. The dual density coding for parts of Mill Point, South Perth Central and Hurlingham will be dropped and replaced by the higher coding, which has dominated recent redevelopment subject to performance criteria. Future development is expected to follow the higher residential density of new developments, such as the two nodes of proposed redevelopment on the Western and Eastern edges of the catchment.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

Sir James Mitchell Park has been classified as a Regional Reserve. Regional reserves are those areas of publicly owned and managed land whose primary purposes are to protect and enhance their valued natural environment and encourage passive recreation and enjoyment. The reserves are considered of regional significance because of their important contribution to the metropolitan regions sense of place and their attraction of users from throughout the region

The park contains facilities and opportunities that are not available in other locations and as a consequence attracts users from throughout the region and beyond. For example, it hosts a regional cycle route for both for recreational and commuting purposes.

Protection and Enhancement of Biodiversity

There are significant areas of remnant and rehabilitated native vegetation within Sir James Mitchell Park, particularly in the remaining wetland and foreshore areas. This rehabilitation has been a focus of recent development in the park. These efforts are not just positive in their biodiversity outcomes but also in their ability to include community in the management of such an important open space and to build a communal sense of place with the natural environment. Nonetheless, there is also a level degradation, particularly in the wetland areas, which needs to be carefully managed.

Climate Change Resilience

The park's biodiversity credentials provides some resilience to climate change particularly as the ground water table is very close to the surface accommodating root penetration. However, biodiversity hot spots are relatively small compared to the vast areas of reticulated turf that make up the great majority of the park's area. Like all areas of reticulated turf, it is vulnerable to potential water restrictions of longer and drier summers.

Natural Resource Degradation

The degradation of several significant tree species (Flooded Gums) has been identified within the reserve, resulting in joint initiatives between the City and the community to protect these species. Erosion also poses a significant threat to recreational areas located adjacent to the waterline on the reserve. While new landscaping initiatives have developed more resilient forms (artificial beaches), large areas of river wall are still extensively damaged allowing erosion and salt water penetration of foreshore areas.

Opportunities to Increase Tree Cover

Efforts have already been undertaken to increase tree cover through the planting of Flooded Gums. Currently the main areas that could accommodate further tree cover are the dog exercise areas in the

East of the park. However, tree planting is resisted by residents who believe their views will be negatively affected. Such residents are the most likely cause of recent evidence pointing to the poisoning of trees. Aside from management issues, the central principle of prioritising public over private interests must be adhered to. Further tree planting in particular areas of the park would facilitate increased human comfort, reduce watering requirements and improve the environmental performance of the park. Equally, certain activities require large open areas such as various public events and associated car parking to support these events. However, there is clearly room to achieve both objectives.

Opportunities for Water Conservation

There are many opportunities to reduce water use in the park. Areas that are currently reticulated turf can be reduced or replanted with species requiring less watering. Currently, much of the foreshore treatment (particularly in the Eastern areas of the park) brings reticulated turf right to the water's edge. New foreshore planting regimes in the Western sections demonstrate a more natural approach to landscaping with little or no water requirement.

Access to and within the Reserve

The access to this reserve is excellent. Car access is to terminal parking in the park and available from four local roads providing access to different areas of the park. Pedestrian and cycle access into and through the park has been separated for safety reasons by high quality pathways. Both the cycle and pedestrian ways link directly to the City's wider pedestrian and cycle networks. There are also excellent public transport connections from the City including the ferry service which is particularly popular with interstate and international visitors.

Use of Area by Current Population

This area provides many regional attractions for visitors from throughout the city, as well as a very good range of facilities for local users. Respondents to the household survey identified Sir James Mitchell Park as the most visited park in the City (double the respondents to the next most popular park). Disaggregated results for the areas immediately around the park demonstrated uniformly high visitation levels. Activities at the park were varied but dominated by regularly undertaken walking, cycling, jogging and dog walking. The high local user satisfaction recorded was consistent with previous surveys of the area (Parkcheck, 2011).

Diversity of Recreational Opportunity

There is a very diverse range of recreation offerings provided by the park – from individual reflection through to mass events and most other activities in between. Formal sporting activities were the only aspect of the recreation spectrum not accommodated for in the park.

User Safety

As the most extensively used park in the City, the sheer numbers of users from morning until the evening ensure all-day built in security with the presence of others. Evening/night high use areas are provided with lighting, meaning safety concerns are primarily focussed on ill-lit low-use areas. The resident survey found conflict between different user groups was another aspect of safety concern. For example, cyclists traversing through at high speeds were a risk to pedestrian and other users, as well as dogs off leads straying on to cycle paths. These issues are persist despite being raised for a number of years and the City responding by separating pedestrian and cycle paths and zoning areas for on- and off- lead dog walking.

Level of Infrastructure Investment

As an iconic local and regional facility there has been considerable investment in this area by the City as well as joint-projects with various State and private agencies. This has produced a comprehensive range of infrastructure in the park including car parks, walk/cycle ways, a café, toilet blocks, playgrounds, jetties and beaches.

Opportunities for External Revenue

Over $70,000 in 2010, Sir James Mitchell Park returns by far the greatest revenue of all the parks in the City. The majority of this money comes from fees applied to events, corporate functions and private gatherings, as well as lease revenue from private facility operators in the park (e.g., catamaran hire and Boatshed Café). Given the setting, the high level of facilities, the infrastructure support and the high number of regularly users, further opportunities to raise revenue must be balanced against the areas' key widespread attraction - its ambience and natural character.

Management Agreements

Management agreements are in place for the businesses that operate within the park. For example, all events in the park are subject to temporary management agreements (for the duration of the event) that identify operational and management responsibilities.

CONCLUSIONS AND RECOMMENDATIONS

Sir James Mitchell Park, along with Clydesdale Park, is entirely comprised of the Swan River foreshore between South Perth Esplanade to the border with Town of Victoria Park. As well as forming a large component of the regional commuter and recreational route, it acts a major regional hub for residents and surrounding suburbs through a wide variety of recreational opportunities including access to and views of the Swan River.

The following recommendations are proposed for future development and management plans of the reserve:

1. Need to improve the environmental performance of large bland areas of reticulated turf through further planting.
2. The repair and replacement of the remaining river walls with more natural treatments that provide a more ecological transition between the river and the foreshore.
3. The reduction in reticulated turf.

2. SOUTH PERTH ESPLANADE

Reserve Category: Regional Reserve

Source: Adapted from Google Earth (2011)

Location

South Perth Esplanade stretches South-East from the Narrows Bridge to the edge of Sir James Mitchell Park. It is entirely comprised of the Swan River Foreshore between these two points.

Landform

Whilst the land is situated in low lying foreshore areas, the majority of open space has been filled and landscaped with irrigated turf. The primary exception to this is a small remnant wetland retained in the area adjacent to the Narrows Bridge (Point Belches). There is evidence of it being integrated into the stormwater drainage network as well as small restoration works in the form of retaining walls to maintain the integrity of the wetland. At Point Belches, river beaches have formed due to the reclamation process of the Narrows Bridge construction.

Landscape Development

Surrounding the wetland are significant River Red Gums and some Paperbarks. The great majority of the reserve is reticulated turf; mostly maintained to a quality suitable for recreational use. There are also planted beds of ornamental bushes, such as roses. Further to the South East are several introduced palm trees.

Building Development

The most consistent built features, like most of the foreshore reserves, are the pedestrian and cycle paths. As well providing a commuter passage from adjacent suburbs into the city, the reserve forms a section of a popular recreational circuit encompassing South Perth, Perth and Victoria Park foreshores. As such, it is heavily used for a variety of physical activities, making it necessary to provide a separate cycleway and walkway to increase the safety and usability of the reserve for both of cyclists and pedestrians with signage clearly demonstrating the appropriate use for each path. The other significant construction is the South Perth Ferry Station transforming an area of the reserve into a significant regional recreational and transport node that acts as a thoroughfare between the station and the Mends Street precinct. This area of the park also includes a playground, public toilets, a small shade pavilion, and a pay-per-use car park.

Current Use

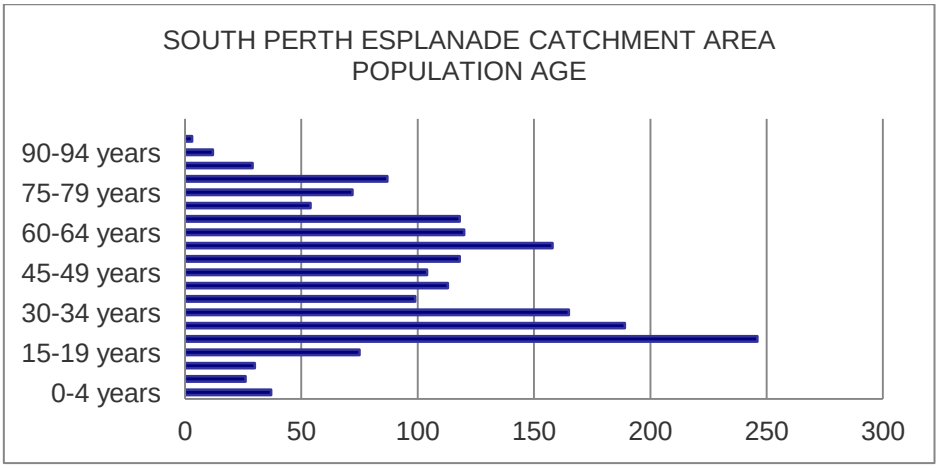
Cycling was the most prominent use of the reserve during the mornings and evenings of each observation days, followed by running and walking. The reserve had high levels of use during weekday early mornings and evenings by both commuters and exercisers. On weekends, a wider range of activities were observed along with a decrease in commuters. Due to its proximity to a regional river recreational zone, observations at Point Belches included water sport use such as jet-skiing and canoeing. The area is also a popular venue for wedding photography due to its river backdrop against the Perth CBD.

Surrounding Development

The surrounding Mill Point district is characterised by high density residential that is being progressively redeveloped. The rental flats, luxury apartment complexes and a range of other residential forms create a complex housing mix amongst other commercial and institutional uses. The other major use of the area is the Mends Street activity centre with a range of shopping, office and entertainment functions, as well as other adjacent reserves including Sir James Mitchell Park, Windsor Park and the Perth Zoo.

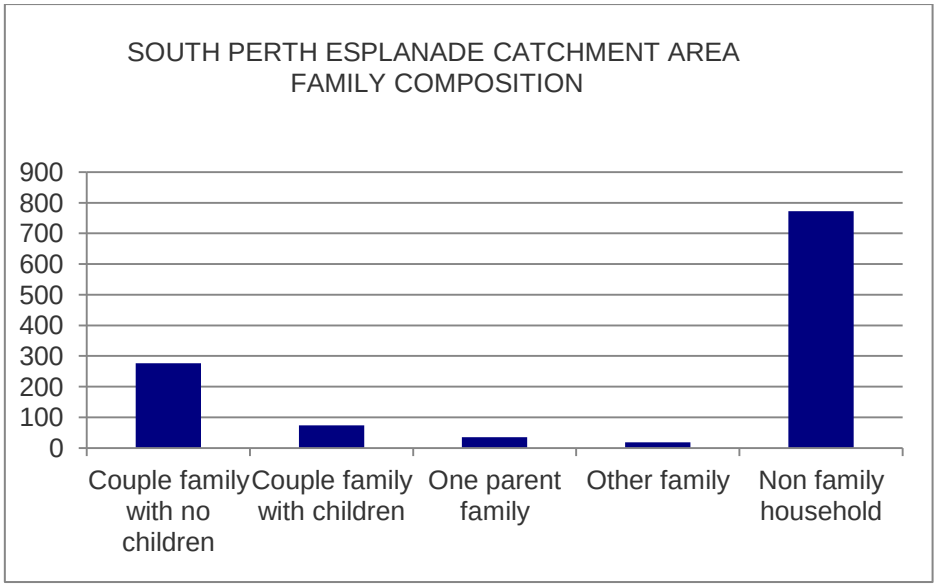
Catchment Population

The apartments and flats in this area attract two distinct age groups - young 20-35 year old singles and older 50-65 year old singles and couples. The smaller age groups in the area include children between 0-15, the younger middle-age (between 30-55) and the elderly over 65 year olds.



Source: Australian Bureau of Statistics (2006)

This is reflected in the household composition of the area being dominated by non-family households - singles, de-facto couples and group households. They account for approximately half of the residents, and couples with no children for the majority of the remaining households



Source: Australian Bureau of Statistics (2006)

Future Development

The City owns a large area of land within this catchment referred to as the 'Civic Triangle'. Recent City plans for the proposed development of this land noted 'given the prominent location, the City envisages that a landmark iconic building would be developed that will attract many visitors to the Mends Street precinct creating a vibrant hub comparable to Subiaco, East Perth, West Perth and Mount Lawley'. An artist's impression of the proposal is reproduced below.

Civic Triangle

Source: City of South Perth (2011)

Much of this catchment falls within the precinct boundaries of the new South Perth station. Density and building height increases are as indicated on the plan below.

South Perth Station Precinct

Source: City of South Perth (2011)

These proposals are anticipated to increase the number of dwellings in the catchment by 950 and resident population by 1,710.

Areas North of the precinct are predicted to drop their split R80/100 coding and divide this zoning with R80 in areas West of Labouchere Road and R100 to the East. As such, opportunities exist for mixed-use development (office/residential) within the heart of the catchment.

PERFORMANCE ASSESSMENT

This reserve can be viewed as an extension of the regionally classified Sir James Mitchell Park. Its main functions are to acts as a component of a regional transport route for both recreational and commuting purposes, as well as a significant recreational node linking Mends Street with South Perth Ferry Station. Regional reserves are publicly-owned and managed land areas whose primary purposes are to protect and enhance the valued natural environment and encourage passive recreation and enjoyment. The reserves are considered of regional significance given their important contribution to the metropolitan region's sense of place and broad attraction of users from throughout the region.

Protection and Enhancement of Biodiversity

There are few opportunities within South Perth Esplanade open space for either protection or enhancement of biodiversity. The reserve functions mainly as a recreational and commuter route with landscapes of primarily turf and constructed paths. The small wetland at Point Belches provides some environmental value, with its biodiversity potential limited by its size.

Climate Change Resilience

The landscape of this area entirely depends on reticulation, and subject to climate changes affecting summer seasonal duration or intensity. Though traffic-ability is not required from the turf to maintain functionality with the provision of separate pedestrian and cycle ways, the appearance of the area would be threatened.

Natural Resource Degradation

The landscape has largely been created with very few 'natural' elements. Erosion poses a threat to recreational areas located adjacent to the waterline of the reserve. While a river wall protects the integrity of a reserve largely subject to prevailing storms winds and tides, the intensifying cyclonic weather of Perth does not follow the prevailing South-Westerly conditions predicating much of the river's defences.

Opportunities to Increase Tree Cover

Excluding some significant river gums at Point Belches and introduced species near the ferry station, there is little tree cover in the reserve. The recently planted species in turf areas provides opportunities to create a more diverse and interesting landscape attracting and retaining users who otherwise use it as a thoroughfare to other areas.

Opportunities for Water Conservation

An overwhelming level of the recreational uses of South Perth Esplanade occur along the cycle and walk paths, and do not utilise the extensive areas of well-maintained reticulated turf. This provides opportunities to implement planting regimes less reliant on high levels of watering and turf management.

Access to and within the Reserve

This reserve has excellent access for nearby residents, with only South Perth Esplanade (road) separating the open space from adjacent properties. This suits the function of the reserve as a thoroughfare between the Mends Street precinct and the ferry terminus. The reserve and its dual-use paths are an extension of the regional open space transport and recreational route.

Use of Area by Current Population

The local population is likely to represent a small percentage of reserve users, given its position within the regional transport route. The range of recreational opportunities and experiences of the adjacent Sir James Mitchell Park is likely to attract users away this resource.

Diversity of Recreational Opportunity

The dual-use paths stretching the entire length of the reserve provide the majority of recreational opportunities. Additionally, a playground adds recreational value of the Mends Street node and water sports at Point Belches diversifies potential activities.

Seats dispersed along the length of the reserve facilitate relaxation with an outlook of Perth's city backdrop.

Opportunities to Increase Use/Attraction

Increasing the use of South Perth Esplanade primarily relies on further developing its passive recreational role. The addition of more passive facilities may encourage more users to prolong their stay within the reserve, transforming it into regionally significant recreational and community hub. While there are seats dispersed evenly between the Mends Street node and the Point Belches area, the addition of facilities (such as shade and BBQs) may encourage greater recreational use of the turfed area.

User Safety

The openness of this reserve creates a naturally safe and secure environment. The installation of dual cyclist/pedestrian use paths ensures its safety for both of user groups.

Level of Infrastructure Investment

The dual paths represent significant investment and a desirable model for other reserves similarly located along regional commuter and recreational routes. The ferry station and associated infrastructure (including public toilets) is a significant State investment. There is also a small jetty for fishing and swimming as well as good parking provision with two separate car parks at and street parking between the Mends Street node and Point Belches area.

Opportunities for External Revenue

Revenue is received from the commercial operator of a parasailing business close to the Narrows Bridge. Further commercial opportunities exist to leverage the large number of people accessing the ferry station, e.g., provision of kiosks, bike hire, etc.

Management Agreements in Place

There are no management agreements in place for this reserve.

CONCLUSIONS AND RECOMMENDATIONS

An extension of Sir James Mitchell Park, South Perth Esplanade is an important open space connector in the regional commuter and recreational route as well as a thoroughfare between the Mends Street precinct and South Perth ferry station. A small recreational node of playground and public toilets adjacent to the thoroughfare exists in addition to the reserves overwhelming use for cycling, walking and running. With a largely featureless public lawn, there is little environmental focus aside a small wetland area and surrounding retained trees at the Point Belches area. The following recommendations are proposed for consideration in the reserve's future development and management plans.

1. Strengthening the attraction of the recreational node adjacent to Mends Street precinct by extending it towards the Point Belches area. This may include installation of more shade and BBQs.

2. Investigation of the recreational value of turf areas located across the length of the reserve, given that its primary community use occurs on its dual cycle and pedestrian paths. This may include further planting of native plant species and shade trees.

3. WESTERN FORESHORE: MILL POINT RESERVE, MILYU NATURE RESERVE AND CANNING BRIDGE TO MT HENRY BRIDGE

Reserve Category: Regional Reserve

Source: Adapted from Google Earth (2011)

Location

These two reserves are a contiguous area of open space combining the foreshore of the Swan River from the Narrows Bridge to the Canning Bridge and the foreshore of the Canning River from Canning Bridge to the Mount Henry Bridge. The reserves comprise the remaining foreshore between the

Kwinana Freeway and the river environment. It includes Como Beach – a neighbourhood reserve incorporated into the larger structure of the regional reserve.

Landform

The land encompasses river beaches and low lying foreshore areas. Due to its sand composition, the majority of land is well-drained with some areas of marsh and inundation particularly in the Southern sections of the reserve. The land has been extensively used, altered, reclaimed and rehabilitated in the course of European settlement, making it now difficult to determine its natural landform. Part of the reclamation process has been to construct groynes (of various sizes and shapes) to trap sand drifting South to North along the reserve under prevailing wind and wave movements (long shore drift). This has produced a distinctive 'jagged' edge to the reserve as sand builds up to the South of the groynes. The width of the reserve varies considerably from a few metres in places (North of Canning Bridge) to up to 100 metres South of Canning Bridge

Landscape Development

There is a combination of introduced and natural vegetation on the reserve, with more recent plantings aiming to preserve existing native vegetation and reintroduce new native plantings. This has produced vegetation characterised by sheoak, wattle, paperbark and native reeds. There are still large areas of introduced grasses (mainly couch), some of which are maintained and managed for recreational purposes and others left to grow wild. There are also a few distinctive introduced trees such as palms, pines and coral trees.

Building Development

The most consistent built structure is the bikeway/walkway running along the length of the reserve. It is 'bitumenised' and lane-marked. In a southern section of the reserve, it splits to provide an alternative near-shore access route. This access route is networked to residential areas to East of the Kwinana Freeway via six pedestrian/cycle bridges across the freeway. In addition, one car access bridge from Gentilli Way, Manning, provides access to a parking and boat launching area. At the Northern most part of the reserve, a large area has been developed around a boat ramp constructed primarily for the launching of jet skis. The area also includes a large car parking area and a small kiosk. Access to this site is provided by a road that runs under the Narrows Bridge. A further node of public recreation space adjacent to the Coode street jetty, which used to be the hub of river recreation in South Perth, is a modest development with a toilet block, playground, shelters and turfed areas accessed by a footbridge from Preston Street. Though not a public facility, the other built facility is a sea scout hall on a promontory just North of Canning Bridge with a storage shed and jetty. These land-based facilities are also supported and protected by a range of river defences such as mega sand bags, rough limestone boulders and formal limestone walls. In recent years, an

increasing number of these defences have been constructed in response to destructive storm events severely eroded areas of the foreshore.

Current Use

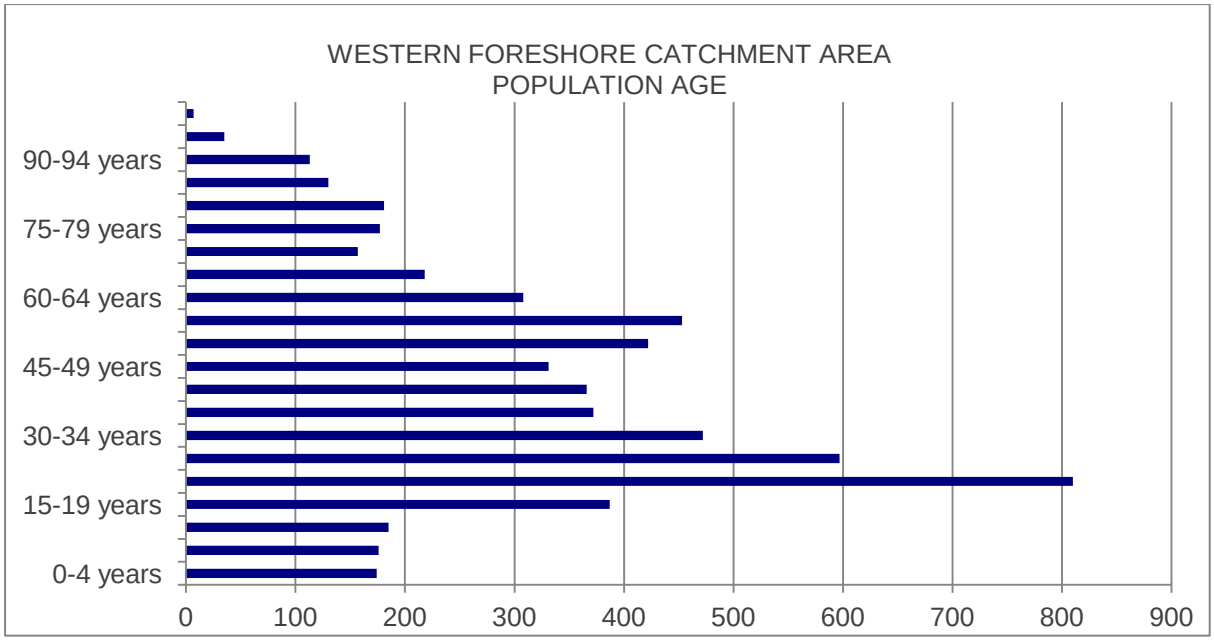
The overwhelming use of this reserve is as a commuter cycle conduit between Perth city and surrounding suburbs located adjacent to the Kwinana Freeway. Observation surveys revealed this usage can reach as high as 300 cyclists per hour during peak times. Though commuter cycling is replaced by recreational cycling on the weekend, numbers remain at around 300 per hour with peak usage continuing over a longer period. There are also walkers, some with dogs, on the reserve shared path and beaches. Despite a range of facilities, such informal use, centred primarily around Como Beach, is not high with peak numbers between 5-10. Other uses on the reserve occur at the two launching facilities - one at the Narrows and the other just South of Canning Bridge. The water and beach at the former attracts the greatest intensity of use, providing a 'place' of recreation for on-and-off shore enjoyment beyond its launching ramp facilities. The latter appears to serve primarily as a launch facility and associated car park rather than being any form of centre for on shore activity. Observation found boats appeared to be accessing the water ski area around Deepwater Point, Mt Pleasant, to avoid the launching congestion at the Narrows.

Surrounding Development

The reserve is bordered by the six-lane Kwinana Freeway on its East and the river (Swan and Canning) on its West. East of the Freeway are various land-use developments, the most prominent being medium to high density residential. Multi-storey residential and office development is more prevalent closer to Perth City, attracting residents and businesses with river views despite the negative impacts of the Freeway. A service node in Preston Street forms a distinctive centre of retail, entertainment and other commercial uses. A range of recreation reserves also border the Freeway such as Richardson Park, Royal Perth Golf Club and Olives Reserve. Land further from the freeway is dominated by single residential housing being replaced by medium density townhouses.

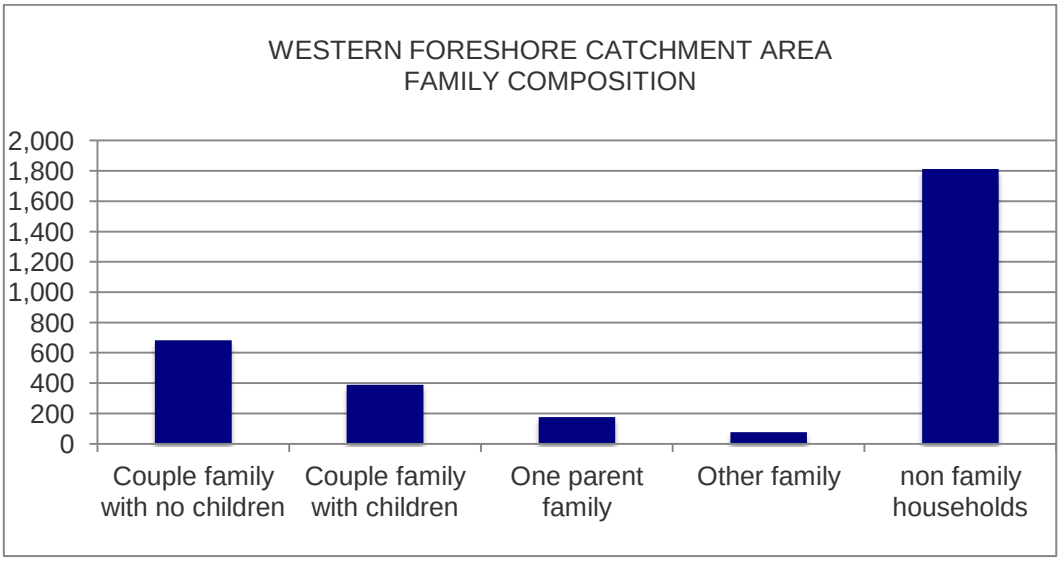
Catchment Population

The catchment for this reserve covers most of the suburbs adjoining the Freeway from South Perth down to Kwinana and beyond. It has a unique role of being a cycle conduit between these suburbs and the city, therefore analysis of the character of catchment populations achieves no further insight into its use. However, there is a distinctive local use of the reserve from South Perth residents living close to this facility. Their characteristics are illustrated in the below graph.



Source: Australian Bureau of Statistics (2006)

The graphs clearly show the age and household types attracted to this sort of locality where family homes are being removed and replaced with medium density housing forms. The dominant age groups attracted are in the 20 to 35 age group with non-family households. There are other significant groups including a high number of middle aged reflected in the household category of couple family with no children. These characteristics identify a local catchment population of young independent adults and older middle aged persons. The elderly and child age groups are the smaller groups within this population.



Source: Australian Bureau of Statistics (2006)

Future Development

The major development proposed in the vicinity of this reserve will be the Canning Bridge precinct. The reserve runs directly through this area so any future development would have a major impact on reserve use. The current plan for the area proposes major changes in zoning in the South Como, Manning area. This area is currently zoned R20 to R30 with pockets up to R40. Density is proposed to increase radically to accommodate mixed-use developments to a maximum of 10 storeys and high density residential development between 4 and 6 storey. Such development is expected to increase the amount of dwellings by 1,800 within an 80-metre catchment of the railway station. Such increases in density will significantly increase demand for recreation space as the majority of new dwellings developed in the area will have only minimal private open space placing further demands on publically provided facilities. In addition, the proposed plan (below) shows further reclamation of the river to accommodate a passive recreational hub in and around the railway station and proposed new ferry service jetty.

Long Term Vision for Canning Bridge Precinct

Source: City of South Perth (2011)

In addition to the Canning Bridge precinct, there are also future plans for the South Perth Precinct Plan including an additional station to the Perth to Mandurah railway at the North East corner of Richardson Park. Under this proposal, there are significant increases in density – up to 12 stories

along the land bordering the freeway and 6–8 stories for the land behind this frontage (see plan below). It is anticipated that this will generate an additional 950 dwellings with the majority being apartment units with little private open space. This will place additional pressure on publically provided recreation reserves within this vicinity.

South Perth Precinct Plan

Source: City of South Perth (2011)

PERFORMANCE ASSESSMENT

This reserve is a regional facility that has been reserved under the MRS for parks and recreation purposes. Its primary role is to protect the important environmental qualities of the foreshore particularly at a time when the integrity of this environmental system is under threat as a consequence of climate change. The Southern section of the reserve is classified as a 'Bush Forever' site (WA Government, 2000) and identified for conservation purposes. However, the reserve also accommodates a significant transport function providing a regional cycle route between the City and the suburbs to the South. There are also nodes of recreation along its length that provide opportunities for local and regional catchments to access the foreshore and waters of the Swan and Canning Rivers.

Protection and Enhancement of Biodiversity

The development and management of this reserve over recent times has targeted protecting and enhancing biodiversity. Reclamation works, planting programmes and recreation development have been planned and implemented to achieve long term sustainability outcomes. However, this has been challenging as the reserve is under the natural threat of increased erosion and the associated penetration of saline water into terrestrial landscapes. This threat is well understood by the City. In association with state government agencies, significant works have been undertaken and management plans introduced to reduce its impact. This will be a central and ongoing issue for the future management of this reserve.

Climate Change Resilience

The emerging negative impacts on the reserve outlined above can be related back to climate change, particularly the intensity of storm events. Therefore, it has to be concluded that the current form of this environment has not demonstrated resilience to this component of climate change. In fact, without past intervention in its development and management, some parts of the reserve would have been considerable reduced (in size/width) and some places would have disappeared altogether. Clearly, this is a very fragile environment requiring considerable management intervention to protect its integrity. However, there has been a willingness to invest in its protection because significant infrastructure (road drainage, bridges and the freeway) is dependent on its structural integrity. This has benefited the environment. There is no doubt that it requires such future investment to continue.

Natural Resource Degradation

The natural resource in this reserve is under constant threat particularly from erosion (as referred to above). This point needs to be emphasised, as much of the reserve is no longer natural but being managed back to a natural form. At this stage, this appears to have been successful as there is good evidence of the resource becoming more resilient. Importantly, the recreation component of the

reserve's use has been planned to accommodate an appropriate co-existence with the nature of the area. The bike path contains most of the recreation traffic through the area and there is little evidence of degradation in its vicinity. However, some of the recreation nodes along its length (e.g., Southern boat ramp, Como Beach) have required more invasive infrastructure works which have reduced the ecological integrity of the surrounding environment.

Opportunities to Increase Tree Cover

Although it is difficult to determine (after such extensive settlement and use of these foreshores), it is unlikely that tree cover (as it is understood in a terrestrial environment) is a natural component of this foreshore environment. Sheoak, Wattle and Paperbark trees adopt more shrub-like forms in these harsh saline environments. Trees appropriate for the reserve are more likely to be introduced species such as Palms, Pines and Coral trees. In these circumstances, the pursuit of increased tree cover must be secondary to conservation requirements particularly in Southern areas of the reserve protected under Bush Forever listing. While this may reduce human comfort levels, this has to be accepted as a constraint on recreation in an important regional conservation reserve.

Opportunities for Water Conservation

Very little of the reserve is actually watered in, other than a small section of reticulated turf in the Como Beach recreation reserve and a further section just South of Canning Bridge. The Como Beach area has a recently installed a reticulation system which ensures a suitable surface for passive recreation. Currently, the area South of Canning Bridge is more of an area to move through (rather than a destination to dwell), creating possibilities of reviewing water use in this node.

Access to and within the Reserve

The key characteristic of this reserve is its pedestrian inaccessibility due to the barrier of the freeway and the requirement to walk some distance between parking spaces to the East of the Freeway across bridges to the reserve to the West of the freeway. This is the main reason behind the limited informal recreation use of this reserve. However, this must be contrasted with the very high bicycle accessibility of the reserve with bicycle routes over and into the reserve connecting to a network of other bicycle routes within South Perth and beyond. This differential access is revealed in the use of the reserve with over 90% of its users being associated with cycle use – both commuter and recreational. This dominance is becoming increasingly self-perpetuating. As cycles come to dominate the use of paths, the paths become less attractive for pedestrians along with increasing amenity and safety issues.

Use of Area by Current Population

The immediate catchment population (East of the Freeway reserve) is only one component of the users of this reserve which serves an important regional transportation and recreational function.

Given the nature of a population dominated by 20-35 year olds, the cycle opportunities of the reserve are well balanced to an important component of the recreational needs of this group. However, cycling is only one of a number of activities associated with these age groups. Other active pursuits are accommodated through the provision of jet-ski and boat launching facilities. More informal use is constrained by the impact of the freeway separating this reserve from surrounding residential districts. This would particularly be the case for the older age cohorts in the catchment, another significant proportion of this community. Thus, the role of a potentially valuable local recreation resource is constrained by the dominating use of the reserve by cyclists and the difficulty of accessing the reserve with the impediment of the freeway.

Diversity of Recreation Opportunity

As was mentioned above the recreation opportunity is primarily limited to cycle use and boating/jet-ski activity. While Council has invested considerably to maintain the heritage of recreation use of Como Beach, there has had limited success in drawing significant recreation patronage back to this area. Additionally, it can be argued that the dual use bike/walk path has provided for a further range of recreation such as strolling, walking and jogging, which is now being constrained by the popularity of this route for cycling. There are a diverse range of recreation opportunities provided on the reserve but they are not producing diverse recreational use.

The facilities currently provided in various parts of this reserve accommodate; cycling, walking, jogging, swimming, boating (including jet skis), playing and relaxing. It is rare to come across a reserve with such a range of facilities

Opportunities to Increase Use/Attraction

The key challenge for this reserve use is the management of recreation activities to ensure that existing dominant uses do not deter the operation of other uses. The other challenge is to overcome the spatial barrier of the Kwinana Freeway. Against this background, the reserve has a regionally significant environmental role to play which must be prioritised above recreational exploitation. These factors limit the opportunities to increase its use and attraction.

User Safety

Given the approximately 1500 cyclists that move through this reserve each day, this area has high surveillance with people rarely feeling isolated or alone. In addition, most of the area is well lit at night due to the light spill from the Kwinana Freeway. There are certainly pockets of the reserve, particularly in the more heavily vegetated Southern section, that appear more threatening but even these areas are never far from activity or observation. In addition to the 1500 cyclists, it is worth noting that approximate 50,000 vehicles use the Kwinana Freeway every day. In terms of reserve access, safe passage is provided by six pedestrian bridges over the freeway and once in the reserve there is a well maintained fence between the freeway and the reserve. Probably the most significant

safety issue is the potential conflict between pedestrians and cyclists on the dual use path. Despite signs to the contrary, the heavy cycle use gives a sense that this is a dedicated cycle path with some cyclists using it at very high speeds and in groups. This safety issue is a disincentive for pedestrians and more casual cyclists using this route.

Level of Infrastructure Investment

The investment in this area has been significant by both the State and local government. The regionally significant infrastructure includes: the river defences, the drainage structures for the freeway, the dual use path and the bridges over the freeway accessing the reserve. The more local infrastructure includes: the car park, boat ramp and toilets at the far North of the reserve, the car park at the end of Gentilli Way and a jetty, playground and toilet block at Como Beach. This very comprehensive level of infrastructure serves the existing uses of the reserve well.

Opportunities for External Revenue

As a regional environmental reserve with limited access, there is little opportunity or incentive for a business to operate in the area. However, in the one area with easy car access there has been some success. There is a kiosk established just inland from the jetski area/beach. Prior this, fees were charged for an operator who ran a parasailing concession. This has now moved to a site on the other side of the Narrows Bridge. There would only be limited demand for such uses given the very limited access to the reserve.

Management Agreements in Place

As a regional significant reserve already, much of the investment in the area comes from the State government exclusively or in-joint funding arrangements between the State government and the City. Main Roads Western Australia (MRWA), the Swan River Trust, the Waters and Rivers Commission and Public Transport WA have all in the past invested in the facilities in this reserve. Though these forms of joint funding arrangements are important to the City, they limit control over development and management with grants tied to predetermined outcomes.

CONCLUSIONS AND RECOMMENDATIONS

The Milyu/Canning River Reserves are high quality environmental reserves that are under significant and ongoing threat from erosion. This issue is well known to State and local authorities, such that considerable investment has flowed to the reserve to protect its future integrity. As a consequence, the reserve supports a vital cog in the Perth bike network and attracts probably the highest volume bike riders in the entire metropolitan region. This in itself is of considerable environmental benefit due to the reduction in vehicle use it encourages, but in addition it is of enormous recreational benefit. These issues support the regional classification and value of this reserve. While many South Perth residents would also benefit from this facility, there is no doubt the local recreational attraction of this reserve declined rapidly with the establishment of the freeway when more direct access to the reserve was lost. From a local recreational point of view, the value of this reserve is much harder to establish. The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve.

1. There is a need to investigate the opportunity of a separate strolling, walking, jogging trail from the cycle-way to address conflict, safety and amenity issues. This will be difficult to achieve because in many places the width of the reserve only accommodates the width of the cycle way. However, there are alternatives such as identified lengths of shared and separate pathways and the establishment of boardwalks built over water. However, the cost and complexity of such development should not be underestimated.

2. The establishment of a high quality recreation node at Como Beach has shown that any amount of investment in high quality facilities (historic jetty, playground, turf, shade, toilets, beach etc.) will not overcome the locational disadvantage of being a 100-metre walk from a car park and next to a very busy and noisy freeway.

3. The environmental restoration of this area has been very positive and has involved the South Perth community. These relationships between population and place should be fostered and continued. There is still significant work undertaken to improve the ecological integrity of the reserve. Such initiatives sit well with the Bush Forever status of sections of the reserve. This requires the City to develop collaborative management plans in conjunction with state agencies and the local community to assist with the conservation of these areas.

4. BODKIN PARK, SANDON PARK AND THOMPSON RESERVE

Reserve Category: Regional Reserve

Source: Adapted from Google Earth (2011)

Location

These three reserves form a contiguous area of open space that includes the river foreshore from Mt Henry Bridge to Deerpark Gardens through the suburbs of Manning and Waterford.

Landform

The majority of these reserves are the low lying wetland areas that form the river foreshore, while Sandon and Bodkin Parks contain more formalised open spaces. The land surrounding the river foreshore would have been a continuation of the wetland vegetation, but this has been cleared and the low-lying land filled over the course of settlement.

Landscape Development

The foreshore areas that retain native vegetation are characterised by wetland species such as rushes and paperbarks. To the East of Bodkin Park, foreshore vegetation is made up of both native and introduced species, such as Palms and grasses. Weed invasion is evident in this section. Further away from the more natural river foreshore, the area has been extensively turfed. Sandon Park is mostly grass, with a few paperbark trees scattered across the reserve. A more natural wetland area is situated to the West of the boathouse. Apart from wetland vegetation along the river, Bodkin Park is a highly modified landscape. It contains two lakes (which form part of the land drainage system) connected by a stream running through the park. The park is grassed with scattered mature Eucalypts and Paperbarks throughout.

Building Development

Sandon Park houses the Stacey Boathouse (used by Curtin University Rowing Club) and Scout Hall (used by Salter Point Scout Group). These developments include a car park (for around 30 cars) and a boat ramp (attached to the boathouse). There is also a playground area set in a sandpit covered by a shade structure. In Bodkin Park, a playground has also been provided with associated park benches. A small, unmarked, parking area is located to the North of the park. A lookout/jetty is located along the river between Sandon Park and Treecy Way. Dual use paths are located in and around Sandon Park and Bodkin Park, as well as along the river as far as the corner of Treecy Way/Deerpark Gardens. A second boat access point is located between Sandon Park and Mt Henry Bridge.

Current Use

Observation surveys carried out in 2012 found that at Sandon Park, the majority of users were either using the playground facilities (including small picnic gatherings) or moving through to the Bodkin Reserve from the adjoining Mt Henry Reserve (walking, walking dog and cycling). Some users were observed playing catch, others sitting and enjoying the view.

In Bodkin Park, near to the river, key activities included walking (for exercise and with a dog), cycling, running and enjoying the view. Other observed activities were casual cricket, kids enjoying the playground and fishing with nets in the artificial pond. Where Bodkin Park traverses through the suburban area, the majority of users were moving through the park in activities such as walking, cycling and dog walking. A family photo session with a professional photographer was observed on one of the Sundays.

Mt Henry Reserve consistently attracted users throughout all days of observation. Key activities were walking, dog walking, running and generally enjoying the nature reserve. One man was observed practicing his swing and hitting golf balls into the water. There was also a diversity of users, including a person in a wheelchair parked at a viewing point

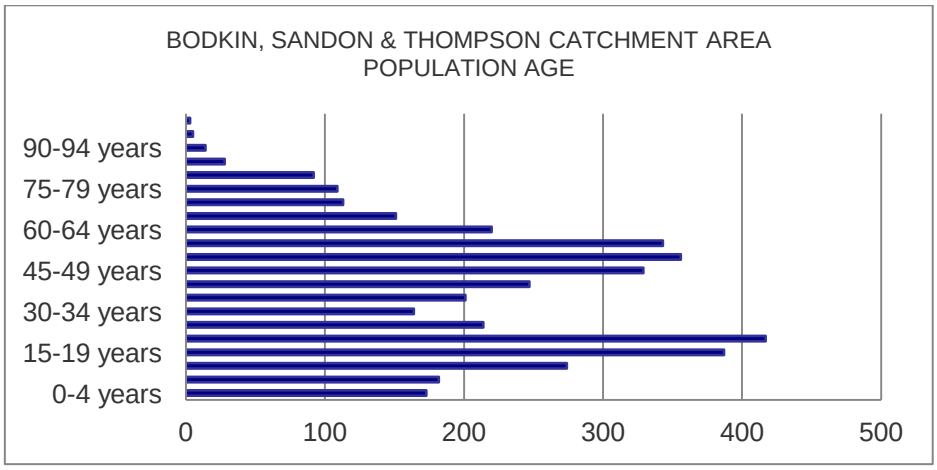
Surrounding Development

The surrounding development is mostly single residential development on large lots. Land within the catchment area is zoned Residential R20. In the Western section of the Catchment (not adjacent to the river), many of the original 1000m2 plus lots have been subdivided to form smaller lots (often in a battle axe formation).

Apart from residential development, a small portion of local commercial development is located along Letchworth Centre Avenue. Sandon Park and Challenger Reserve are also located within the catchment, as well as the Trinity College private playing fields located on Manning Road. In addition, there is the Manning Bowling Club and Tennis Courts, Stacey Boathouse (used by Curtin University Rowing Club) and Scout Hall (used by Salter Point Scout Group).

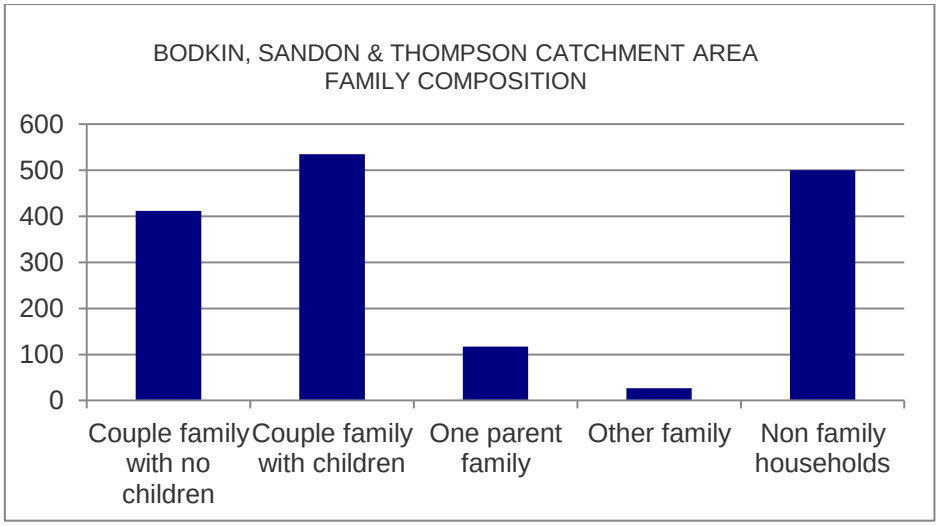
Catchment Population

The most prominent age groups within the catchment are the 20-24 year olds and 50–60 year olds. Children of all age groups are well-represented, as are the middle age groups. The smallest age group is 65 years plus.



Source: Australian Bureau of Statistics (2006)

Compared to most catchment areas within the City, there are an unusually high proportion of couple families with children. These family types are likely to be attracted to the larger single dwellings and the larger lot sizes. The middle age groups most likely represent the parents of the children 0-19 years. There are also a reasonable number of couple families without children. Many of these are likely to be empty-nesters, represented by the 50-60 year age group whose children have moved away from home but are still living in the larger family homes. However, the largest group of family types are the single persons, defacto households and shared households (described in the census as 'non family households'). Similarly, the large number of 20-24 year olds and 25-30 year olds may be shared households drawn to the area by the proximity of Curtin University.



Source: Australian Bureau of Statistics (2006)

Future Development

There are no major changes foreseen within the catchment area, with no changes proposed under the most recent Draft Local Housing Strategy. It is likely some redevelopment will continue under the R20 density in the form of the subdivision of larger lots into two smaller lots. This will apply to a minority of lots in the catchment.

PERFORMANCE ASSESSMENT

The reserve has been categorised as a regional facility, being a reserve that is publicly owned and managed whose primary purposes are to protect and enhance their valued natural environment and encourage passive recreation and enjoyment. The reserves are considered of regional significance because of their important contribution to the metropolitan region's sense of place and their attraction of users from throughout the region.

The following performance criteria have been developed for this category of reserve to address its contribution to the sustainable development of a reserve system in South Perth.

Protection/Enhancement of Biodiversity

The grassed areas adjacent to the natural foreshore areas will not offer any contribution to the protection of biodiversity within the catchment. However the foreshore and wetland vegetation play an important role in providing habitat for birds, reptiles and amphibians, as well as providing links to the river and from surrounding parks. The foreshore area is recognised as a Bush Forever site (WA Govt, 2000) and its conservation status is recognised at a national level of significance.

Climate Change Resilience

The ephemeral wetland vegetation is likely to be resilient to climate change. However, the grassed areas that require constant watering over the summer will be vulnerable to any climate change variable that may impact on the duration and intensity of the summer season. While natural river foreshores are more resistant to erosion than artificial defences, there is still the threat of further erosion from rising river levels and storm surges.

Natural Resource Degradation

The remnant wetland vegetation is degraded, particularly through the presence of invasive species. Despite this, a reasonable level of environmental integrity still exists in this area and is being enhanced by the rehabilitation efforts of local volunteer groups. The extensive provision of formal paths along the foreshore helps to concentrate traffic through the area and avoid degradation caused by persistent public access.

Opportunities to Increase Tree Cover

Bodkin Park has many trees that provide adequate shade. There are opportunities to increase tree cover around the playground at Sandon Park to improve the amenity and attractiveness of the space and encourage people to stay longer in the area. Further tree planting could be accommodated to shade the shared path and improve the experience of moving through the area (which dominates much of the use characteristics of this reserve).

Opportunities for Water Conservation

Wetland vegetation is sustained by the river; however, the grassed areas within the parks and along the river are reticulated. Opportunities exist to increase native vegetation to the park along the river, as well as within Sandon and Bodkin Parks. Use of native vegetation will reduce the need to water these areas and make it more difficult for introduced grasses to penetrate the foreshore area.

Access to and within the Reserve

Access along the river and through Sandon and Bodkin Parks is very well provided for with a dual-use path for cyclists and pedestrians. Access to the river from surrounding residential areas is more problematic because of the cul-de-sac layout of the surrounding suburbs. The reserves are easily accessible by car and limited parking is provided at both Parks, and along the foreshore.

Use of Area by Current Population

These reserves are well used by the current population, as well as providing recreation opportunities for the broader regional community in the form a cycle/walking route along the river and rowing facilities for Curtin University. Observation surveys found that many users moved through the parks in the course of walking, cycling or jogging. These activities were also noted as the most popular recreation activities by survey respondents within the catchment. These surveys also showed that most respondents within the catchment were satisfied with the quality of these reserves.

Diversity of Recreation Opportunity

The reserves provide an opportunity for wide range of recreational activities. In particular, they provide a contiguous area along and near the river that allows users to move through a changing and pleasant environment. Sandon and Bodkin Park contain play areas for children and seating and spaces for other recreational activities.

Opportunities to Increase Use/Attraction

The reserves are well used, as attested by the numbers of visitors recorded. Additionally, most respondents to the resident surveys were satisfied with the reserves. Suggestions for improvement for the parks by respondents included:

- More space for dogs-off-leash at Sandon Park and Mt Henry Reserve.
- Installation of playgrounds, seating, and shade (trees or other) to these facilities at Bodkin and Sandon Park.
- Weed control along river.
- Better footpath access and upkeep for walkers and people with low mobility.
- Mosquito management.
- More shade and better maintenance of existing trees.

More benches, picnic tables and chairs, BBQs would improve Sandon and Bodkin Parks. This would increase attractiveness for people using these areas for social gatherings, along with continued rehabilitation of the wetland areas and improvement to ecological integrity. Mosquito control is an ongoing issue that is currently being dealt with by Council, as discussed further in 'user safety' below.

User Safety

Turf and cycle paths are well maintained and do not present a hazard to users. The sand in the playground is sieved regularly by the City. Passive surveillance is provided to the majority of spaces within the reserves from surrounding dwellings. However there are some areas of potential concealment in the wetland areas and in Deerpark Gardens.

Mosquitoes are naturally occurring in wetland areas. Their management has been a contentious issue for residents near the river and for users of the river parks. Last year, a particularly high number of mosquitoes were found in the river parks and tidal wetlands. Concerns were around the nuisance caused as well as the health risks. There has been an ongoing debate about how to deal with the issue while maintaining a healthy river environment. The area is now subject to a mosquito management plan.

Level of Infrastructure Investment

Infrastructure investment is evident in the installation of access paths and play equipment throughout the reserves.

Opportunities for External Revenue (fees, grants, leases, etc.)

No lease agreements exist within the reserve. Total revenue from these reserves in 2011 was $64.

CONCLUSIONS AND RECOMMENDATIONS

The Swan and Canning Rivers are central to the sense of place for the wider population as well as local residents. The landscape along the river provides an ecological benefit to wildlife, as well as stabilising the river banks and providing a pleasant environment to walk, cycle through, or just to contemplate the view. While the river provides the main attraction more could be done to facilitate enjoyment of the area, particularly at Sandon Park, which lacks facilities and shade for users. Bodkin Park is a well-maintained and inviting space possessing many mature trees and an interesting feature in the stream that traverses the park.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. Provision of further seating and BBQ facilities in Sandon and Bodkin Parks.
2. Continued rehabilitation of the wetland areas to ensure a healthy natural ecosystem is operating effectively.
3. The planting of further trees on the reserve to improve the level of comfort and interest for those people traversing through the area.
4. Effective management of the mosquito problem to ensure that people are not discouraged from using and enjoying the facilities on the reserve.

DISTRICT RESERVES

4. WINDSOR PARK

Reserve Category: District Reserve

Source: Adapted from Google Earth (2011)

Location

Fronting onto Mill Point Road, Windsor Park is surrounded by the zoo and the buildings of Mends Street and Labouchere Road.

Landform

Originally with a natural gentle east-west slope, continued use and development has largely levelled this land outside of the introduced contours of its Eastern margins.

Landscape Development

Recently redesigned and redeveloped, the area's new landscape is still maturing. Its layout is dominated by the access way between Mends Street and the zoo entrance on its Western edge. There is an open semi-circular grassed space with perimeter planting of Plane trees to the East. Closer to the Mill Point Road boundary are a series of sculptured garden beds orientated around brick paved areas.

Building Development

Much of the new landscaping is made up of 'hard' landscaping including a dominant pathway through the space and a range of circular brick paved spaces, seating and public art work.

Current Use

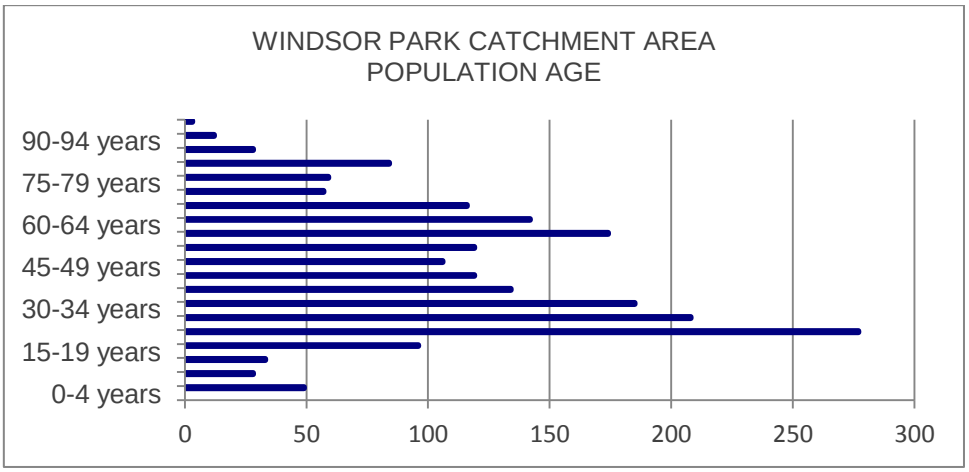
The landscape of the park primarily serves as a backdrop to the pedestrian movement between the zoo, the Mends Street shops and services and the Mends Street Jetty ferry terminal. Surveys conducted in 2011 found the majority of users were from interstate and overseas supporting observations of the importance of the zoo to park. The observation survey (see Appendix 2) confirmed this, with walking through the park noted as the dominant activity and only limited users observed sitting and resting in the park.

Surrounding Development

Immediately surrounding the park are two public car parks (associated with the zoo), the South Perth bowling club, the Old Mill theatre and South Perth Heritage House. Further away from the park is the Mends Street shopping and service precinct, as well as the Mill Point mixed-use residential and office district. Constantly undergoing redevelopment, the area is now dominated by eight-storey luxury residential apartment complexes. The Mends Street historic shopping precinct dating from the settlement of South Perth has evolved into an up-market entertainment district of coffee shops, bars and restaurants.

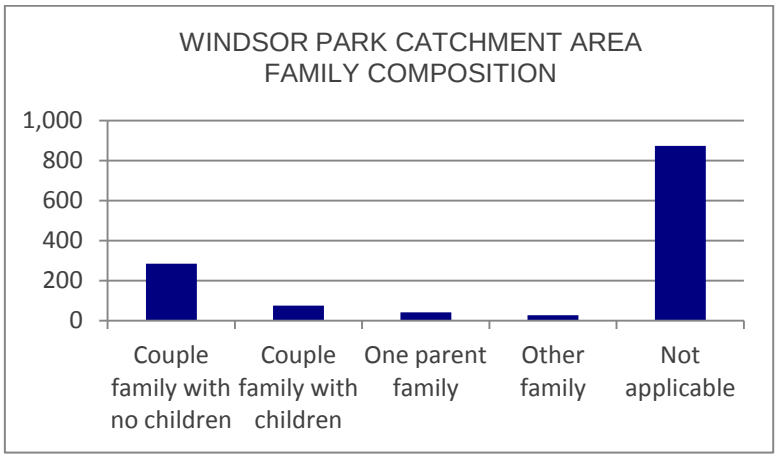
Catchment Population

The local catchment is dominated by residents in the 20-35 and 50-65 age groups. This is consistent with the nature of accommodation available and location of this area as an inner Perth city suburb close to the facilities and attractions of Perth city centre. Accommodation is dominated by a combination of owner-occupied and rented medium to high rise residential flats and apartments. The age, lifestyles and limited private open space of high rise housing would influence the recreation demanded by residents.



Source: Australian Bureau of Statistics (2006)

The household structure supports these observations being primarily of non-family households (single person and group households) followed by couple households as the only other significant group.



Source: Australian Bureau of Statistics (2006)

Future Development

The City owns a large area of land within this catchment referred to as the 'Civic Triangle'. Recent City plans for the proposed development of this land noted 'given the prominent location, the City envisages that a landmark iconic building would be developed that will attract many visitors to the Mends Street precinct creating a vibrant hub comparable to Subiaco, East Perth, West Perth and Mount Lawley'. An artist's impression of the proposal is reproduced below.

Civic Triangle

Source: City of South Perth (2011)

In addition, new South Perth station precinct plans to the West of this area have proposed a significant increase in density and building height in the residential cells surrounding the park as indicated on the plan below.

South Perth Station Precinct

Source: City of South Perth (2011)

These proposals are anticipated to increase the number of dwellings in the catchment by 950 and resident population by 1,710.

PERFORMANCE ASSESSMENT

Windsor Park is categorised as a regional facility because of its close association with the zoo as one of the States' most significant regional, interstate and international tourist and visitor attractions. District reserves are defined as those areas of publicly-owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs. This understanding will inform the following performance assessment.

Protection and Enhancement of Biodiversity

This park is designed and constructed in accordance with recently implemented plans, including native planting beds to showcase natural Western Australian flora.

Climate Change Resilience

While much of the park is comprised of watered turf and exotic trees dependent on regular reticulation during summer, large areas of pathway and brick paving contribute a hard landscape component. As such, this park could still fulfil its central role of providing access and resting space in a pleasant environment with the water restrictions of hotter, drier and longer summers.

Natural Resource Degradation

There are no natural resources in this area to be degraded.

Opportunities to Increase Tree Cover

Recent redevelopments of the park included the preservation of existing and extensive new tree planting. The primarily open and unshaded areas will progressively change as the significant height and wide canopy of the planted Plane Trees mature. The further planting trees may congest the growing space at the cost of existing plantings.

Opportunities for Water Conservation

The new design plans have targeted water conservation by lower watering requirements through the introduction of native plantings and use of brick paving and other hard surfaces. However, the majority of the park still contains an expanse of the most water demanding of all landscape treatments - reticulated turf. The growing shade of maturing trees is expected to reduce watering demand and grass growth, minimising further opportunities for watering reduction.

Access to and within Reserve

The park is well serviced by the distributor Labouchere and Millpoint Roads. Two pay car parks abut the park to the South and East but these fill quickly with zoo visitors on fine days. Another Council car park on the North side of Mill Point Road is primarily used by shoppers and patrons of the Windsor Hotel. Public transport access is high with a bus stop on the parks' Northern border and a ferry terminal at the end of Mends Street. Pedestrian access to the park from the surrounding residential areas is good despite the busy roads to cross. The Mends Street and Mill Point Road intersection has a pedestrian phase to assist crossing. There are no dedicated cycle routes/paths within this area.

Within the reserve, access is very good in the reserve with concrete paths linking its various elements and accommodating strollers given the attraction of the zoo to young children.

Use of Area by Current Population

Currently, the main users are those accessing the zoo, predominately using the walkway through the park and, less frequently, as a rest area pre and post entry/exit to the zoo. The park has been well-designed to meet these needs. There is less evidence of the local resident population using this area, most likely because surrounding roads are busy, there are nearby alternative iconic parks (e.g., Esplanade and Sir James Mitchell) and its size limits its role as a destination park. However, given its regional reserve status, competing with other recreational reserves for the attraction of local residents is not its key function or focus.

Diversity of Recreation Opportunity

As referred to above, this park has been custom-designed to accommodate access to and from the zoo, including its provided rest spaces. Beyond this, it does not cater to further recreational activity. The open turf area is more aesthetic than functional. As the new landscape plantings mature enclosing the park, it may attract surrounding residents for social gatherings, BBQs and relaxation.

Opportunities to Increase Use/Attraction

As noted, this park must be given the opportunity for the plantings to mature and for it to improve aesthetically. This may facilitate the attraction of other uses. In addition, the progress of surrounding redevelopment will increase the catchment workforce, generating more day time demands for the supply of passive recreation space. A further challenge for this park is to provide for predicted increasing adjacent residential populations under current City redevelopment proposals. Its existing high quality recreation spaces must be protected and enhanced to ensure public facilities provided meet increasing residential community demands. The regional use of this space (associated with the zoo) is 9.00am-5.00pm. From a sustainability point of view, such all-day use is important as it maximises the return on public investment. This park is well placed to do so well into the future.

User Safety

This park has an open aspect surrounded by busy land-uses generating activity throughout the day and night. There is no reason why people should not feel secure in such an environment.

Opportunities for External Revenue

This park does have the opportunity to generate revenue from commercial functions, although current takings are very small. The added attraction of water and city views of the competing spaces along the foreshore is the main aspect holding back its future revenue-raising capability. However, with increasing competition for space along the foreshore, the park provides a viable alternative. Certainly, its design accommodates such activity albeit its landscape is still maturing.

Management Agreements in Place

There are no management agreements in place.

CONCLUSIONS AND RECOMMENDATIONS

Windsor Park has recently been comprehensively redesigned and redeveloped by the City. This has produced a quality landscape that is now maturing. However, the current role of the park is mainly limited to providing a conduit between Mends Street and the zoo with planted areas are yet to fulfil its recreational potential. This will change as it becomes a gateway to the City and is subject to predicted redevelopments bringing new business, resident and visitor populations into this confined peninsula area. At this time, this park will be well placed to meet the challenges of increased use and attraction of the area's future growth.

5. RICHARDSON RESERVE

Reserve Category: District Reserve

Source: Adapted from Google Earth (2011)

Location

Richardson Park is located immediately East of the Kwinana Freeway, West of the Perth Zoo and North of the Royal Perth Golf Club. It is bordered by Labouchere Road, Richardson Street and Amherst Street.

Landform

The land would have been predominantly flat and low lying but over the years it has been progressively maintained to establish two large level playing surfaces with a small change in height between the two.

Landscape Development

Virtually all of the reserve is planted and maintained as a turf facility suitable for a range of playing surfaces. There are some mature peripheral and newer plantings. The two playing fields are divided by a row of trees. The edge planting of the reserve is not uniform. To the North and East of the reserve, mature Norfolk Island Pines are prevalent with the West (between the reserve and the freeway) having a mix of mature Fig trees. Also on the North of the reserve are some majestic mature gum trees. There are other plantings on the reserve edge of native and introduced trees, but these are less distinctive.

Building Development

There are two car parks on the reserve boundaries to the East and South which appear to be part of the reserve's operation. They will be discounted in this analysis, because they do not fall within the reserve boundaries and are directly related to the other adjacent land uses of The Royal Perth Golf Club and the Zoo.

The main building development on the reserve is a modern clubhouse which forms the home base of the sporting clubs using the reserve. It is a two-storey structure providing clear views over the Western oval. It has a range of functions including change rooms, bar, pavilion, equipment store and parking. It has regularly been updated to accommodate contemporary building standards. The building is supported by a car parking area with capacity for approximately 50 vehicles. Located in and immediately adjacent to the car park are separate male and female toilet blocks. There are two playgrounds located on the reserve one to the South and one to the North. Both are within the peripheral tree planting, so receive natural shading. However, the Southern one also has a protective artificial shade structure. There is also a shared cycle/walking path running along the Eastern and Northern side of the reserve which forms part of the South Perth bicycle network and critically provides a link to a cycle/pedestrian bridge just North of the reserve.

Current Use

The reserve is currently used by the South Perth Cricket Club in the summer months and the WASPS Hockey Club in winter. These activities essentially occupy all of the playing surfaces for both practice and match play. Apart from this, there was evidence of a walkers, dog walkers and joggers using the area – primarily during those times of the day when the reserve was not being used for sporting

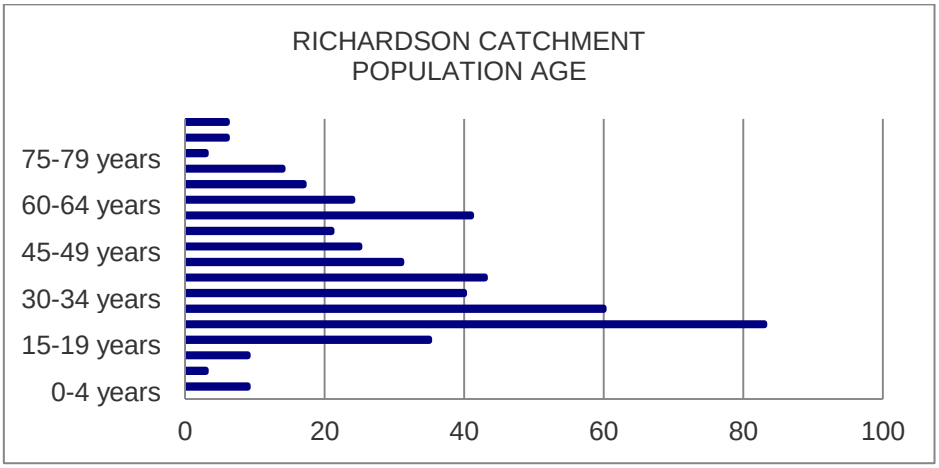
purposes. People using the park to sit and eat their lunch were also noted identifying a link to the commercial premises that occupy part of the catchment of this reserve.

Surrounding Development

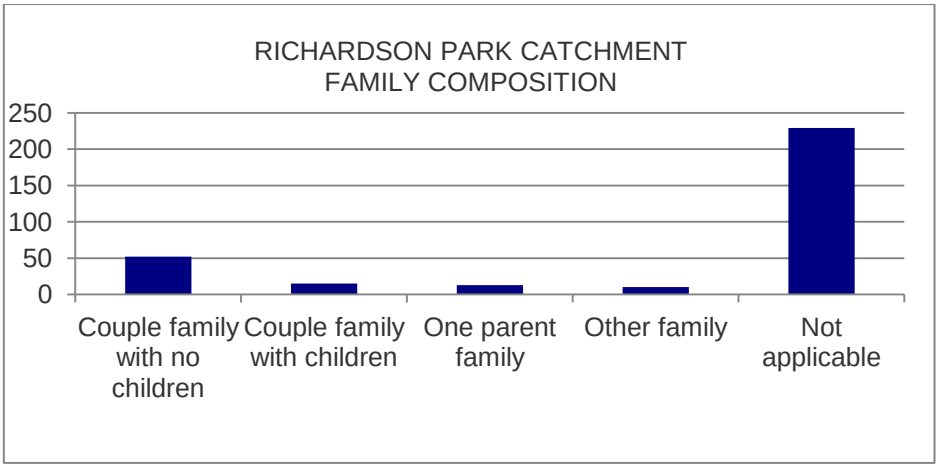
The catchment of this reserve is dominated by non-residential development. The freeway and river are to the West, the zoo is to the East and the golf club to the South. The only fully developed part of the catchment is to the North. This is a mixed-use area made up of residential and office development. Some of the office activity operates out of the old single residential housing that used to characterise this district but the majority of development in this area is made up of medium to high rise development from two to eight stories. The residential units are primarily flats and apartments. The office space is characterised by small tenancies in larger subdivided buildings.

Catchment Population

The population of the area is dominated by 20-40 year olds with 55-59 year olds being the only other age group with significant numbers. Very few children and elderly live in the area. It should also be noted that the resident population of this catchment is very small. This demographic structure is heavily influenced by the type of residences available in the catchment and the inner city location. Both of these characteristics make this area attractive to young single people and older adults working in the Perth central area. This is reflected in the household characteristics with predominating non-family households, and the only other group of any significance being couples.



Source: Australian Bureau of Statistics (2006)


RICHARDSON PARK CATCHMENT
FAMILY COMPOSITION
250
200
150
100
50
0
Couple family with no children
Couple family with children
One parent family
Other family
Not applicable

Future Development

There are significant future plans for this precinct with a proposal to add an additional station to the Perth-Mandurah railway at the North East corner of Richardson Park. Under the proposal, there are significant increases in density for the development of land within the catchment. This includes changes in zoning density with capacity to accommodate housing and commercial development up to 12 stories along the land bordering the freeway and 6-8 stories for the land behind this frontage (see plan below). It is anticipated that this will generate an additional 950 dwellings with the majority being apartment units with little private open space. This will place additional pressure on Richardson Reserve.

South Perth Rail Precinct Plan

Source: City of South Perth (2011)

PERFORMANCE ASSESSMENT

Richardson Reserve is one of the oldest sporting venues in South Perth with a development history stretching back to the early 1900s. Since that time, its role has changed moving from a centre of local attraction to one of district-wide appeal. The reserve has been classified as a district reserve. While its top sporting teams are probably more regional, more junior teams would attract the majority of members from the suburbs of the City. District reserves are defined as those areas of publicly-owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs. This understanding will inform the following performance assessment.

Protection and Enhancement of Biodiversity

Apart from a few mature gum trees on the Northern side of the reserve, there is very little biodiversity to either protect or enhance.

Climate Change Resilience

Playing-field turf is the most water-consuming form of landscape. As this accounts for virtually the entire area, the reserve is not resilient to any form of climate change leading to increased watering requirements (e.g., longer drier spells or hotter summer temperatures). If more water is required to sustain turf quality, it can only be accommodated by the re-allocation of water from another reserve given the City's already committed water budget.

Natural Resource Degradation

This reserve is an entirely artificial landscape and, as a consequence, there are no natural features to degrade.

Opportunities to Increase Tree Cover

Tree cover is an excellent way of reducing medium to long term watering demand, as shade reduces the evaporation rate allowing water to stay in the root zone longer. There are many areas of this reserve that could accommodate additional tree planting without compromising existing levels of sporting activity. The already a good level of tree cover on the Northern edge of the reserve could be considerably expanded. There are further opportunities at the Southern edge where there is the transition to the planting on the golf club. The existing tree planting between the ovals is also ideal area to increase tree cover, as its slope does not allow it to be used for sporting purposes. Further tree canopy in this area could decrease watering requirements and improve human comfort levels for walkers and spectators.

Opportunities for Water Conservation

This area is currently heavily watered during summer to maintain competition level pitches for cricket. Further tree planting, as discussed above, would facilitate a reduction in watering demand and the establishment of hydrozones. This would lead to positive water conservation outcomes while ensuring playing surfaces were maintained at a high level.

Access to and within the Reserve

Access to the reserve is good whether this be by car, bicycle or on foot. There are quite adequate roads, pavements and cycle routes to support this access. There is adequate parking for cars at the reserve albeit this is fee parking during weekday work hours. Access within the reserve is less consistent. There is a good dual-use path around the North and Eastern edges, but only trafficable turf within the reserve itself. Trafficable turf has its limitations as an access surface, as it is not suitable for wheeled access such as bikes, strollers or wheel chairs and can present a challenge for less confident or frail walkers due to its lack of consistency.

Use of Area by Current Population

As previously identified, while it is likely that higher-level sporting draws participants from more regional areas, junior sport (an important component of this clubs' operation) is primarily drawn from suburbs within the City or near City localities. This is consistent with the district role identified for this facility. At a more local level the park does attract walkers and dog walkers – particularly in the morning and a range of other users during the day including office workers having their lunch. This activity was mainly constrained to the edge of the park where shade is provided. The reserve is also used for cyclists accessing the wider cycle network.

Diversity of Recreation Opportunity

Richardson Reserve has been developed and managed as a sports facility and, accordingly, there is little opportunity for diversity in recreation. Other recreation activities (apart from cycling) tend to be squeezed to the peripheries of the space. Playgrounds are provided but attract little use and while walkers and dog walkers use the space it is not ideal for such activities with little interest provided in the landscape.

Opportunities to Increase Use/Attraction

As identified in considering an increase in tree cover, there are opportunities to make this area more attractive for non-sport users without sacrificing the quality of the sporting facilities. Further tree planting/landscaping would create a much more interesting environment for walkers, dog walkers and people (like the lunch-users) that are looking for a pleasant and quite place to sit. More formal walkways would also attract further use.

User Safety

The design of the park with its tall, spaced peripheral planting, its busy adjacent land uses (including the zoo and golf course) and overlooking houses and offices provide a very safe environment for users.

Level of Infrastructure Investment

The long history of development of this sporting complex has delivered significant investment in infrastructure not just by the City but also by sporting associations. The club house and associated facilities are the most obvious outcome of such investment. However, the City has also invested in toilets, playgrounds and the surrounding dual-use path. Less visible is the reticulation system that supports the quality turf provided in this location.

Opportunities for External Revenue

The City currently (2010 figures) receives almost $15000 dollars from the clubs that use these facilities. In addition, car parking on the reserve boundary is charged for working day, week day use (revenue figures are not available for this). Beyond these two sources, there is little opportunity for further revenue. The current sporting clubs use of the reserve does not provide room for further activities to be timetabled onto the reserve.

Management Agreements in Place

Management agreements exist with the sporting clubs using this reserve.

RECOMMENDATIONS AND CONCLUSIONS

Richardson Reserve is the oldest sporting ground in South Perth; its background stretching back to the early years of the twentieth century. There has always been a close relationship between the clubs using the reserve and the City (and its predecessors) as was outlined in the Sustainability Assessment Report. The reserve provides high quality turf sport facilities that support local clubs participating from junior to the highest senior levels of their sport.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. That the active sporting facilities characterising this reserve are maintained.
2. That plans are prepared to encourage greater use of the reserve for more passive, informal activities particularly on the margins of the reserve closest to surrounding housing and office areas.
3. That these plans recognise the evolution of size and character of the local catchment population as new higher density housing is developed in this area.

6. ERNEST JOHNSON RESERVE

Reserve Category: District Reserve

Source: Adapted from Google Earth (2011)

Location

Earnest Johnson Reserve is located in the suburb of South Perth, East of Canning Hwy and West of the Swan River. It is bounded by Hensman Street to the North, Sandgate Street to the East, South Terrace to the South and is adjacent to the South Perth Hospital and residential development to the West. The Como Bowling and Recreation Club and the Rotary Club are situated on the North East corner of the reserve, and that City of South Perth Council Offices and Memorial Gardens are located on the South East corner.

Landform

The natural land form of the site is a moderate slope from its South East corner. The site has been re-contoured using a cut-and-fill method to form a series of three terraced areas creating an oval and two smaller grassed areas. The Council offices, the grassed area adjacent to Sandgate Street and the oval have sloped banks to the perimeter of each. The grassed area adjacent to Hensman Street is level with the street. There is a further change of level between the reserve and the back fences of houses on the East side of Allen Street.

Landscape Development

The reserve is fully turfed. Mature trees flank the perimeter of the reserve: Peppermint Trees to the North; Moreton Bay Figs to the South; Jacarandas to the South East corner; Moreton Bay Figs, Jacarandas and Box Trees to the West; and Poplars to the South. A line of Jacaranda Trees runs along the East boundary of the small oval adjacent to the car park and up along the boundary between the large oval and small Eastern side oval. This oval is separated from the bowling club by a row of mature Lemon Scented Gums. There are four small ornamental garden beds adjacent to South Terrace, as well as a grove of medium trees, including some Box Trees, around the play area to the East of the reserve.

Building Development

The park is accessible by road from Hensman Street to the North, Sandgate Street to the East, South Terrace to the South and from the car park accessed via Burch and Pilgrim Streets to the West. This car park contains approximately 90 bays and also provides parking for the South Perth Hospital. There is also parking in an area accessible from Hensman Street (approximately 38 bays) and, outside office hours, in the council offices car park (approximately100 bays).

A toilet block is located between the large oval and the smaller oval on the Western side of the reserve; its structure is sturdy, but interior has been subject to graffiti and is unclean. A clubhouse is located on the West side of the oval. It contains a bar and lounge area and change rooms. A storage shed is located adjacent to the clubhouse. Two equipment sheds are located on the Northern side of the oval along with a four cricket nets with a concrete base.

A play area is located in the South West corner of the reserve next to the clubhouse, consisting of two small playgrounds (for younger children) set in sand. Two park benches have been provided. Semi mature trees shade the play area.

There are footpaths connecting the reserve to the surrounding suburbs along adjacent streets. Cycle access in the form of a dedicated cycle lane is possible from the City and River via Coode St to South Terrace and from the East via South Terrace. Shared paths provide access from the South and East of the reserve. However, there is no dedicated cycle route along South Terrace between Canning Hwy and Coode Street.

Current Use

This park is well used. Observation surveys carried out in 2011 found it attracted a significant number of people, particularly engaged in dog walking and sports such as cricket and personal training. The use of the reserve on weekdays is dominated by users in the morning and evenings while weekend use is spread more evenly throughout the day. This relates primarily to the use of the oval which is used for club matches on the weekend. The oval and associated club house/change rooms are used by a cricket club during summer and a junior football club during winter. In addition the clubhouse, oval and surrounding grassed areas are used extensively during winter for the training of WAFL umpires.

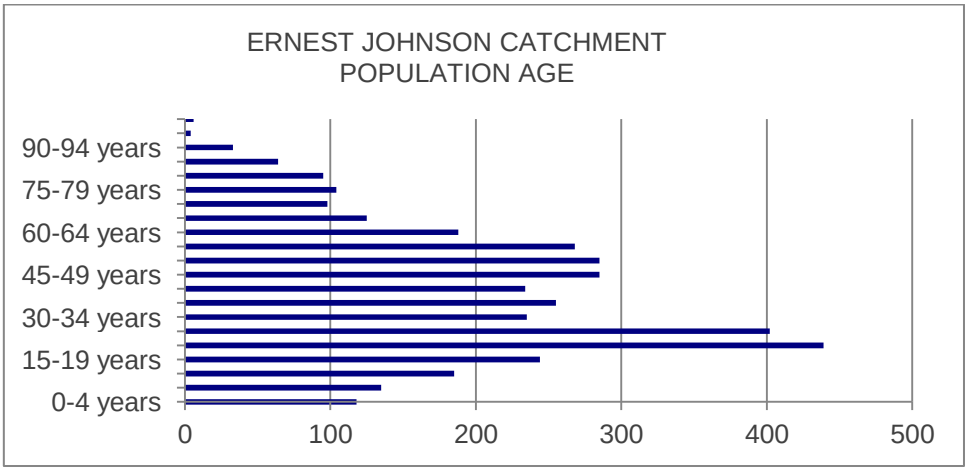
Surrounding Development

The reserve is surrounded by residential development. The catchment was developed in the pre and-war period into single residential lots. This pattern of development still exists to the North East of the reserve and in portions of the South West side of the catchment. The remainder of the catchment is subject to split density codings (R15/R25, R20/30, R25/R40, R30/50), resulting in the subdivision of the original lots to accommodate medium residential development.

As well as residential development, the catchment is home to the South Perth Community Hospital, the Como Recreation and Bowling Club and retail and entertainment facilities on Coode Street, South Terrace, and Canning Highway.

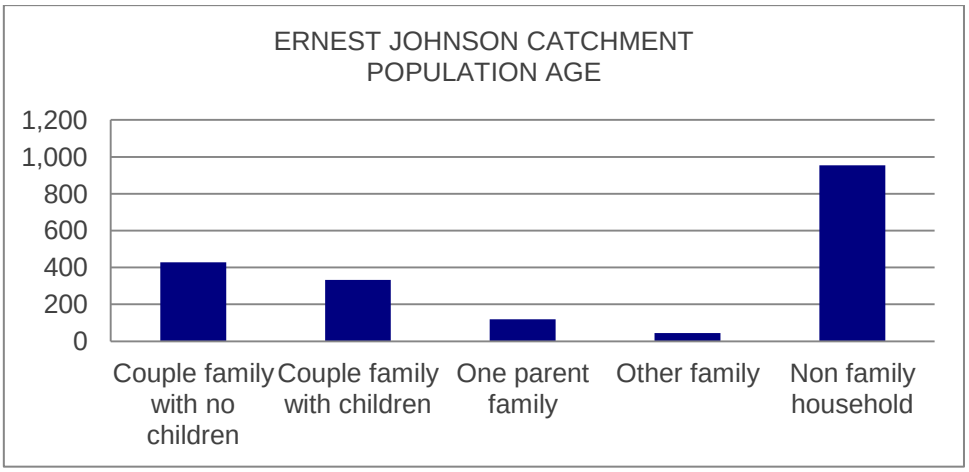
Catchment Population

The largest population group is 20-29 year olds followed by 45-54 year olds. There are also a significant number of residents aged 55-59 year. Teenagers 15-19 years are the most significant younger age group. Older age groups (65+) and children (0-15) are the smallest age groups in this area.



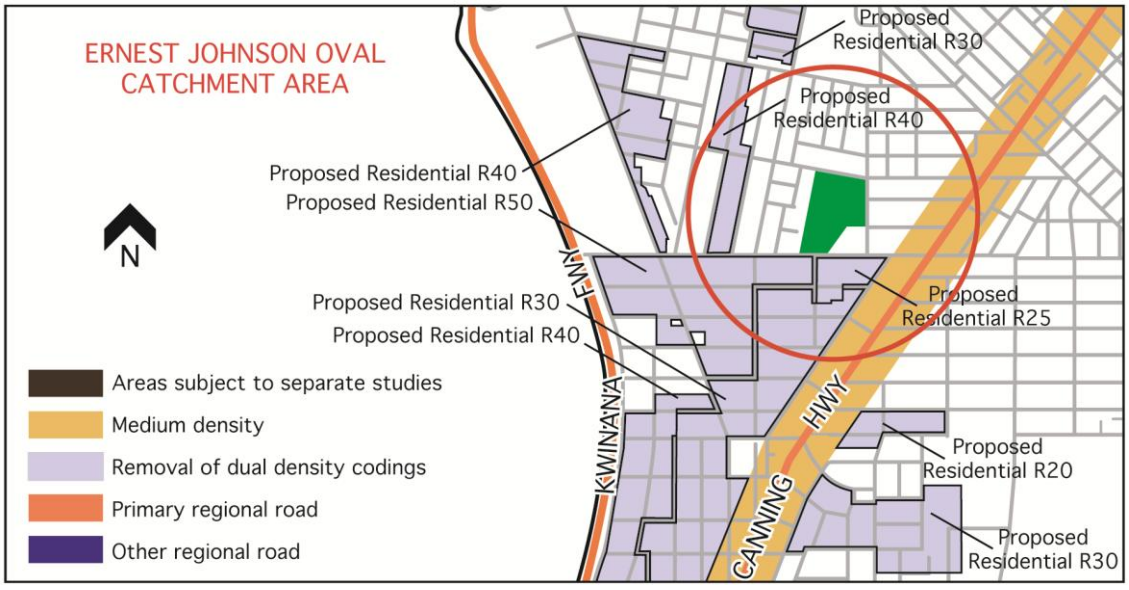
Source: Australian Bureau of Statistics (2006)

Non-family households were the largest population group, including single persons, de-facto couples, and shared households. This is likely to be due to the high number of younger people (20-29 years) located in the area. Couples with no children are the next largest category, perhaps correlating with the 55-59 age group (empty nesters) and younger age groups (20-44 years). Couple families with children and one parent families make up a smaller family grouping in the catchment.



Future Development

Under the most recent draft Local Housing Strategy, a pocket of R40 zoning is proposed to the East of the catchment area replacing the current split coding of R25/R40. To the South of the reserve, existing split coding will give way to medium density coding of R25, R30 and R50. This will lead to overall small increase in residential density within the catchment area.



Source: City of South Perth Draft Local Housing Strategy, 2011

PERFORMANCE ASSESSMENT

The reserve has been categorised as a District facility. District reserves are those areas of publicly owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from surrounding suburbs.

The following performance criteria have been developed for this category of reserve to address its contribution to the sustainable development of a reserve system in South Perth.

Protection/Enhancement of Biodiversity

The reserve provides little value in terms of biodiversity as little native vegetation has been retained or planted on the site.

Climate Change Resilience

The turf base of this reserve requires constant watering to maintain its integrity. Any climate change leading to longer or drier summers requiring any extension to the watering regime will leave this reserve vulnerable. Given that the great majority of the trees planted on the reserve are introduced species, any reduction in watering may threaten their survival.

Natural Resource Degradation

The reserve is entirely constructed, and as such has little or no natural resource value.

Opportunities to Increase Tree Cover

There is already a reasonable level of tree cover on this reserve, making it attractive to a wide range of users. However, there are clear opportunities for further plantings to improve comfort levels and reduce watering demand in a number of parts of the reserve. The informal grassed spaces to the North and East of the reserve could be further contained without unduly restricting the informal use of turfed area. In addition, there is a large area to the South of the reserve which is only used informally (e.g., exercise classes) that could be made considerably more attractive and environmentally-robust through tree planting initiatives.

Opportunities for Water Conservation

Currently this reserve is planted almost exclusively with introduced species. There are opportunities to introduce more native plantings into the reserve that, in the medium term, will require less water to support their growth.

Access to and within Reserve

The reserve is easily accessible by car and ample parking is provided, particularly on weekends and after office hours when additional parking is available in the vicinity of Council offices (the times when use will be at its peak).

Footpaths connect the reserve to the surrounding suburbs. Cycle access in the form of a dedicated cycle lane is possible from the City and River via Coode St to South Terrace and from the East via South Terrace. Shared paths provide access from the South and East of the reserve. However, there is no dedicated cycle route along South Terrace between Canning Hwy and Coode Street, such that these routes stop short of the park by approximately 500m reducing safety and efficiency of access.

There are no cycle/footpaths within the reserve, however the turf is trafficable. The slope between the three sections of the reserve might dissuade use of the reserve by elderly people or those with prams.

Use of Area by Current Population

Observation surveys carried out in 2011 found that the reserve was well used. Dog walking and sports such as cricket and exercise classes were particularly popular. Additionally, resident surveys carried out in 2012 found that walking, cycling and jogging were the most popular activities for respondents within the catchment, followed by team sports and dog-walking.

Diversity of Recreation Opportunity

The reserve provides for a range of active and passive facilities including formal sport, walking, exercise classes, playground use, as well as providing large areas of turf that can be used for an array of others uses (those noted were dog obedience classes, kite flying and kick-to-kick). The key issue with this reserve is that often its landscape is not ideal for the activities that take place upon it.

Opportunities to Increase Use/Attraction

Use and attraction of the reserve would be increased by providing more effective and formal access through the reserve and producing a more complex and interesting landscape environment more effectively relating to the informal use of the reserve while maintaining the focus of the central oval.

User Safety

Surrounding residential properties provide passive surveillance of the reserve, as do the patrons of the bowling club, hospital and Council offices. There is little low vegetation to obstruct views into and around the park. The turf on the reserve is well-maintained, providing a safe area for sports. The clubhouse and playground equipment appears to be in good condition. Regular sieving of the playground sand takes place.

Level of Infrastructure Investment

There has been considerable investment in this reserve over a long time period, particularly given its strategic location in the centre of South Perth and its adjacency to Council Offices and other facilities. There are a number of built structures throughout the reserve, which were likely to have attracted joint funding in the past. The reserve is entirely reticulated.

Opportunities for External Revenue (fees, grants, leases etc.)

In 2010, Council received revenue of $4798 from the reserve. This would have included contributions from the range of sporting bodies using the oval, including cricket, football, umpires association and little athletics clubs. Fees are also being collected from exercise class operators and a new lease agreement is currently being negotiated with South Perth United Football Club (Soccer). While this represents a good diversity in income sources, the quantum received is very small in relation to the cost of maintaining such a facility.

CONCLUSIONS AND RECOMMENDATIONS

Ernest Johnson Reserve is a well-established recreation node within the City with a history going back to the 1920s when the City first acquired this land and began to plan for its future development. Its critical role within the City has been secured with the construction of the City's offices and other recreation/education facilities on the site. As such, this whole area is very much a civic hub for the South Perth community. The reserve has evolved to meet this role in a way which has generated a rather fragmented and inefficient use of its space. There is a clear need for rationalisation and upgrading of landscape and facilities provided. Currently, the City is engaging with this process.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. Increase the level of biodiversity within the reserve through increased planting of native species.
2. Improve tree cover in a manner that delimits different areas of the reserve and improves human comfort levels for people moving through or resting in the reserve.
3. Improve access in and around the reserve particularly on areas of incline to provide opportunities for frailer members of the community and people using strollers.
4. Review management agreements with sporting users to clearly identify that this is a shared reserve.
5. Introduce BBQ facilities and seating to encourage more social gatherings on the reserve.
6. Investigate opportunities for kiosk development to support the use of the reserve and its surrounding activities, particularly Council Offices and the South Perth community hospital.

8. COLLIER RESERVE

Reserve Category: District Reserve

Source: Adapted from Google Earth (2011)

Location

Collier Reserve encompasses two contiguous open space areas: the Wesley College Oval and Collier Park. They are form part of a playing field complex that includes the Bill Grayden Reserve which has been separately assessed. Collier Reserve is located in East Como and is immediately to the North of the Collier Park Golf Course and to the West of the City's Engineering Services Depot.

Landform

Originally the land formed part of the Collier Pine Plantation but after the pines were harvested some of the land was used as the Council tip. The traffic entrance into the dump can still be seen as a slightly raised area that divides the two ovals and still carries the electricity transmission line that serviced the activities associated with the tip's management. The land is now effectively level with slight rises to its North and South boundaries.

Landscape Development

The land has been turfed and reticulated. The only other landscape on the reserve is some perimeter tree planting, which is more mature along its Northern boundary including some retained pine trees from the previous use of the area. There is a line of mature palms along the border with the Council's Operation Centre and a line of new Jacaranda plantings along the Southern boundary.

Building Development

There are two club houses /pavilions located on the reserve. In the North West corner is the Wesley College pavilion. This is a two level structure with the pavilion, change rooms/toilets on the ground floor level located above a basement storage area. This structure was constructed by, and is exclusively for the use of, Wesley College sporting teams. The second pavilion is at the East end of the reserve and was recently upgraded. It includes a change room, toilet and catering areas. It is a facility that is available for teams renting the adjacent sporting field. The reserves are also supported by extensive car parks to the South (approximately 200 bays) and to the North (approximately 100 bays). A concrete cricket pitch is located in the middle of the Wesley College playing fields.

Current Use

The reserve can broadly be split into two areas; the Wesley College playing fields to the West and the Collier Reserve to the East. The Wesley College playing fields are extensively used throughout the year. During winter, the School uses them for rugby and soccer purposes (training during the week and for inter-college matches on Fridays and Saturdays). During the summer, the playing fields are primarily allocated to the South Perth Baseball Club who use the space as their competition diamond for their senior teams as well as for training purposes. On rare occasions, the cricket pitch is used when this use does not conflict with the baseball activity.

Apart from these sporting activities and their attendant match day spectators, there is little use of the area. The observation surveys identified some dog walkers in the morning and evening and some individual walkers/exercisers

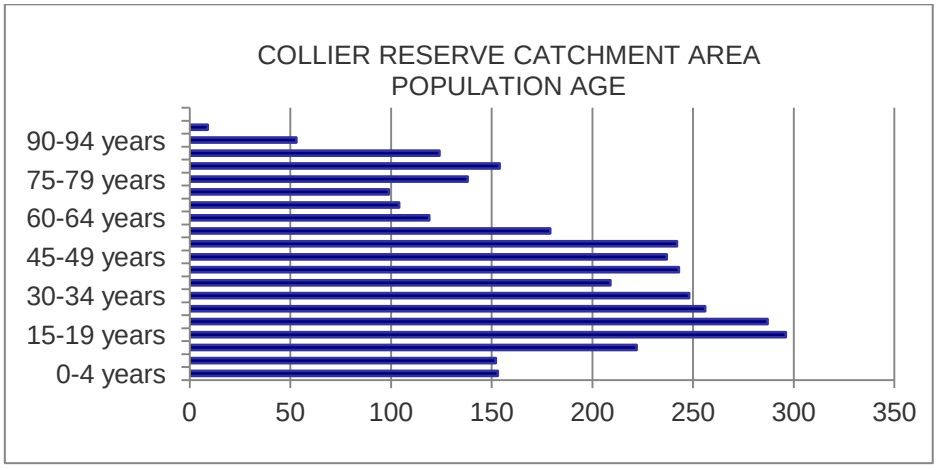
Surrounding Development

The surrounding residential area was initially developed with single storey houses on large lots primarily in the post war period. However since the 1980s, the area has been progressively redeveloped with duplex and triplex buildings being the most common outcome of development. There are cells within the precinct (particularly around Collier Primary School) that have been protectively zoned to maintain single residential housing. The State Housing Commission still owns pockets of land and houses in the vicinity of the park. These are being progressively redeveloped for supported accommodation or sold into the private market. Also, there is a very large aged-persons complex, Collier Village, developed by the City for aging residents.

Apart from the residential development, there are three schools in the catchment of the reserve: Penrhos College, Como College and Collier Primary School. There is also a small grouping of neighbourhood shops on the corner of Murray Street and Monash Avenue.

Catchment Population

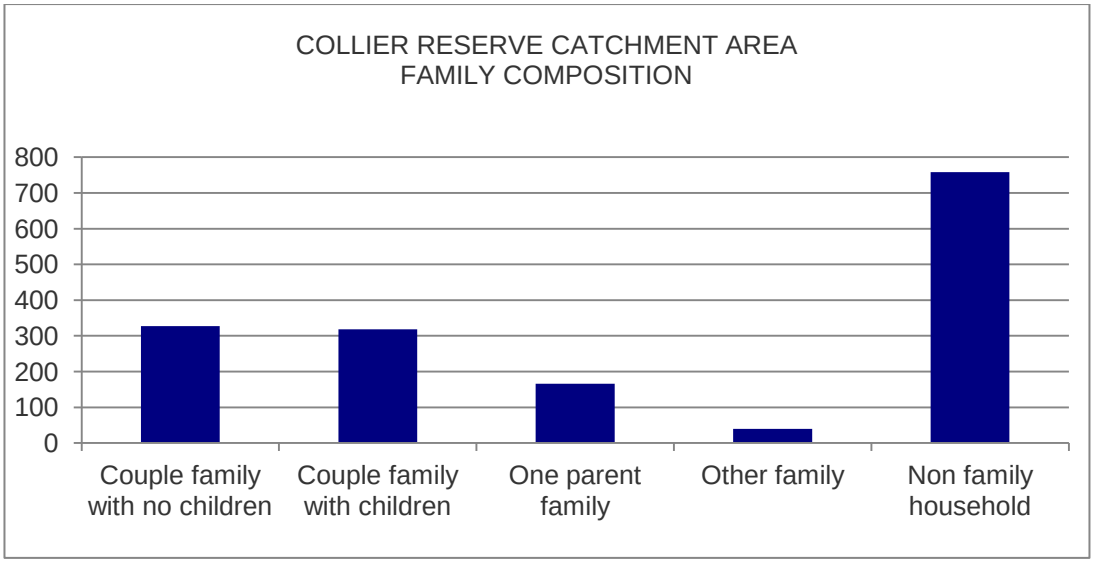
The catchment population is dominated by the 20-35 age group, followed by the 35-60 age group. The smallest age groups are the 0-10 and the 60-75 categories.



Source: Australian Bureau of Statistics (2006)

Middle-aged groups include the parents of the small number of under 10 year olds and their older adult children (represented in the 10-19 age group).

However, by far the biggest household group in this catchment are single person, couple households and shared households (described in the census as ‘non family households’). This accounts for the high numbers of 20-35 year olds and older aged groups including ‘empty nesters’ from earlier families that once resided in the area.

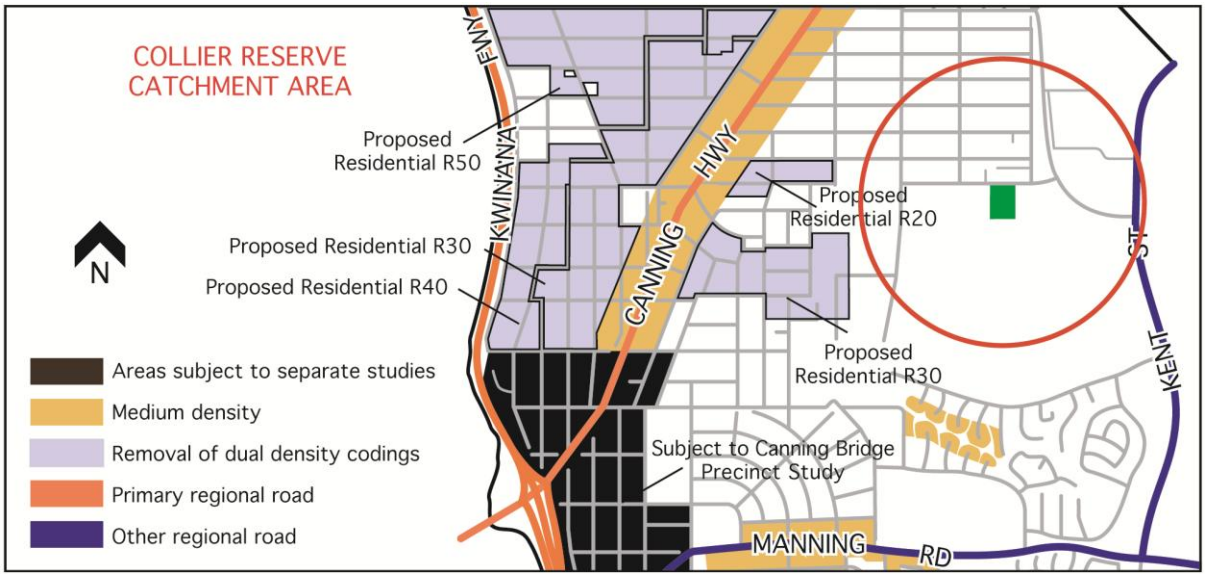


Source: Australian Bureau of Statistics (2006)

Smaller households would have been attracted by the more contained accommodation (duplex, triplex and multiple units) available in this catchment. The comparatively large number of elderly persons in the area can also be related to the location of Collier Village and a number of Ministry for Housing aged supported accommodation complexes.

Future Development

The planning for the precinct does not foresee any major changes to development outcomes in the area. Older single residential housing will continue to be replaced by more contained accommodation such as duplexes and triplexes. Under the most recent draft Local Housing Strategy, the City has proposed that two residential cells adjacent to Canning Highway be rezoned to the higher level of their past dual coding (City of South Perth, 2011). This will lead to increased opportunity for development of duplexes in this area. In the long term, the City expects this process to produce an additional 450 dwelling units in these cells.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

The reserve has been categorised as a District facility meaning that its primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance the valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs.

Protection/Enhancement of Biodiversity

There is no level of biodiversity on this reserve.

Climate Change Resilience

The whole reserve is turfed leaving it very vulnerable to any restrictions (natural or imposed) that may lead to a reduction in watering.

Natural Resource Degradation

There is very little 'natural' about this reserve. Even the peripheral vegetation planting is almost exclusively introduced and exotic species. As such, any natural qualities that once existed have now disappeared. Adjacent to the reserve is the Collier Park Golf Club, who has used extensive natural vegetation in its planting schemes. Clearly, there are opportunities to extend this in thinking about resource remediation for this locality also.

Opportunities to Increase Tree Cover

The lack of tree cover over the majority of this reserve undermines the long term sustainability of its use. A detractor for users to the reserve, it probably is the reason for the lack of local usage particularly during the summer months. It limits the opportunity for sporting users to train in the shade and exposes spectators to harsh conditions. Given that the whole reserve is uniformly watered, there would be minimal investment in initiating a planting programme. Such a programme would require careful management to maintain the management efficiencies of the turfed facilities, and presents clear opportunities currently being overlooked.

Opportunities for Water Conservation

Currently, the whole area is uniformly reticulated to support a uniform planting scheme of grass turf. There is some variety in the turf with the predominant Kikuri interspersed with couch over the old road base that used to transect the area. However, there is no differential watering to accommodate intensive or less intensive use despite clear patterns of use in different parts of the reserve with the Eastern section rarely and sparsely used over the summer months.

Access to and within the Reserve

The reserve's catchment is truncated by the Council's operation centre, the Collier Golf Club and the Bill Grayden Reserve on its Western boundary. Accordingly, most of its catchment is to its North and regular grid streets (North/South and East/West) provide access to the spaces along with adjacent pedestrian paths. Access by car is supported by the extensive car parking available, albeit that the large Southern car park requires a roundabout route with an access road off Murray street.

There is no formal internal access, with the turf providing the only trafficable access in and around the reserve. This limits the opportunity for more people to enjoy the potential benefits of this reserve.

As part of the City's bike path network, there is a bike path that traversing the Northern boundary of the park.

Use of Area by Current Population

The observation survey clearly identified this reserve as is dominated by formal sporting activity primarily associated with the main club user - the South Perth Baseball Club. There is extensive use made of the Wesley playing fields throughout the week with sporting practice from the late afternoon into the evening. On some days, this extends to the Collier Reserve site. On the weekends, there are a range of matches played across various age and gender divisions with games varying from week to week according to fixtures. Apart from this, there are regular informal games of soccer played on Collier Reserve on Sunday afternoons/evenings with participants observed bringing along their own equipment (including goal posts).

In addition, the survey noted some early morning and late afternoon dog walking and informal walking/exercise activities.

In the household survey of the surrounding residential catchment, none of the respondents mentioned using this reserve. Surveys of park use in 2011 (Parkcheck 2011) noted that non-South Perth residents accounted for up 60% of active sporting use of this reserve. The low level of use of this reserve by local residents is a significant issue and demonstrates a clear mismatch between the catchment population and the current facilities provided. As it stands, much of the considerable investment of the City into the reserve is benefitting a non-local population with provided facilities giving limited direct benefit to the surrounding population.

Diversity of Recreation Opportunity

There is very little diversity of recreation opportunity on Collier Reserve. Its facilities are all designed for intensive organised sporting activities with little attraction for other potential recreation users. The small number of walkers and dog walkers using the park appear to hug the boundary of the area utilising what little shade is provided. When sporting activity is taking place (either training or matches), this dominates the atmosphere of the park as attendees shout instructions, appeals and expletives. It is a very male atmosphere. This significantly limits the opportunity for other users to

feel comfortable and relaxed in the space except for the spectators of this activity. This is a considerable challenge for the future design, development and management of this park.

Opportunities to Increase Use and Attraction

The park is currently designed and managed with the sole purpose of organised sporting activities. However, areas of the park not used for this purpose include a large area between the two sporting field complexes and smaller peripheral areas around the edge of the designated sporting fields. In addition, there is some evidence that not all of the sporting fields are being used to capacity, particularly the Sothern most ground of Collier Reserve. These areas present significant opportunities to make the reserve more attractive for a wider range of uses that may attract the catchment population. This could include new landscaping to address its low level of environmental attraction as well as the provision of facilities to encourage reserve use by different groups in the population.

User Safety

The reserve has a very open aspect and is subject to surveillance by residences facing the park along its Northern border, Thelma Street. There is limited lighting along the line of the electricity main that bisects the reserve on the alignment of the old access road. Most people using the reserve do so for group sporting purposes and thus security would not be an issue. However, given the size of the park and adjacent land uses early morning users would feel isolated, particularly in the southern parts of the reserve. There is some evidence of anti-social activity (e.g., burn-outs, people sleeping cars) in the large car park area which would deter local use when there are no other activities taking place.

Level of Infrastructure Investment

The notable infrastructure in this reserve are the two pavilions and extensive car parking facilities. The Wesley Pavilion is now quite dated, but the other pavilion has only recently (two years ago) been updated to contemporary standards. The area is fully reticulated and is capable of hydrozoning. Given this investment, the continued use of the reserve for sporting purposes certainly meets the requirement for economic sustainability. A 200-bay car park isolated from residential areas is a clear opportunity cost in the future. It is very rare for a district sporting venue to be serviced at such a high level.

Opportunities for External Revenue

The city receives income from the sporting use of this reserve, but this only amounted to $4762 in 2011. This is a small fraction of the up-keeping costs of the reserve and its associated facilities. This figure is surprisingly low given the high level of use, particularly in the Wesley playing fields, and needs to be reviewed. As a stand-alone active sporting space, there is little other potential source of income beyond the fee-for-use. Attracting more informal uses into the area would not generate further revenue. It was noted that little use is made of the Eastern up-graded pavilion, therefore

opportunities may exist to leverage increased ‘pay-for-use’ of this facility. This would justify its recent investment and upgrading.

Management Agreements in Place

Management agreements exist with Wesley College and the South Perth Baseball Club. These need to be reviewed to ensure that the City is receiving adequate and appropriate return for its investment in this space, recognising that many of the intense users of the reserve come from outside the City and do not financially support reserve maintenance through rate revenue.

CONCLUSIONS AND RECOMMENDATIONS

Collier Reserve is a high quality sporting field complex. The Wesley playing fields section is well used with the Eastern fields receiving less use. Apart from the sporting use of the reserve, there is very little other use of the complex and opportunities exist to widen its attractions for local users.

The following recommendations are proposed as matters for consideration in future development and management plans for the reserve:

1. That new plans prepared for the reserve provide improved attractions for the local population to strengthen the district-wide recreational benefit of this resource.
2. That these new plans include increasing tree cover to enhance biodiversity and providing further shade for the activities on the reserve.
3. That the key active recreation spaces are maintained as part of the new plan for the area, with the long term viability of Comer Reserve (South) playing field assessed given its current low level of use.
4. That future management agreements with sporting users of the reserve make a greater contribution to maintenance requirements.
5. That future reserve planning provides a conduit for biodiversity between the Collier Golf Club landscape, the Blamey bushland and the Kensington bushland.

9. BILL GRAYDEN RESERVE

Reserve Category: District Reserve

Source: Adapted from Google Earth (2011)

Location

Bill Grayden Reserve is located in East Como immediately to the East of Penrhos College and to the North of the Collier Golf Club

Landform

The natural land form slopes from West to East and North to South. The land was originally part of the Collier Pine Plantation and therefore part of the later reserve development process which re-contoured the land with a cut-and-fill approach. That is, the higher land to the North and West were used to fill the lower land creating a flat oval with a significant perimeter bank to the North and West and a small ridge running along its Eastern boundary.

Landscape Development

In the development process, the land was turfed and reticulated to form a competition-sized football oval. In addition, there have been some perimeter tree and shrub plantings that combine the few remaining pine trees not affected by the re-contouring process. These plantings now provide an impenetrable screen to the North of shrubs and pines, a mature line of small trees/shrubs to the West and two groupings of majestic gum trees on the Eastern border of the site. Most recently, a line of Jacarandas have been planted on the Southern boundary adjacent to the access road.

Building Development

Road access into the site terminates into a small car park to the North (capacity approximately 5 vehicles) and a larger car park to the South (capacity approximately 40 vehicles). Mature trees provide excellent shading for the car parking areas. A modern club house/change room/toilet facility is located on the Eastern boundary and provides outlook to the oval as well as the playing fields to the East. A modern well-equipped playground is situated adjacent to the Northern car park and, while substantially in the shade of the gum trees, also has an artificial shade structure. A barbeque is located between the clubhouse and playground. A chainmesh fence (with a barbed-wire top) is located along the Western and Eastern edges of the park; its use/value is not apparent. Most recently, a bike path was built just inside the Northern boundary of the park that links to a dedicated bike path network to the East and residential streets to the West.

Current Use

Reserve use is dominated by active recreational use. In winter, it is the home ground of the Trinity Aquinas Amateur Football Club and, in summer, it is one of the home grounds of the South Perth Baseball Club. The clubhouse is shared by these two clubs who have exclusive use of the facility during their respective seasons. The football club has recently had flood lighting installed and the baseball club has also built practice nets and storage shed to support their use of the facility. There is a small amount of passive use (walking, playing etc.) that takes place on the margins of the reserve.

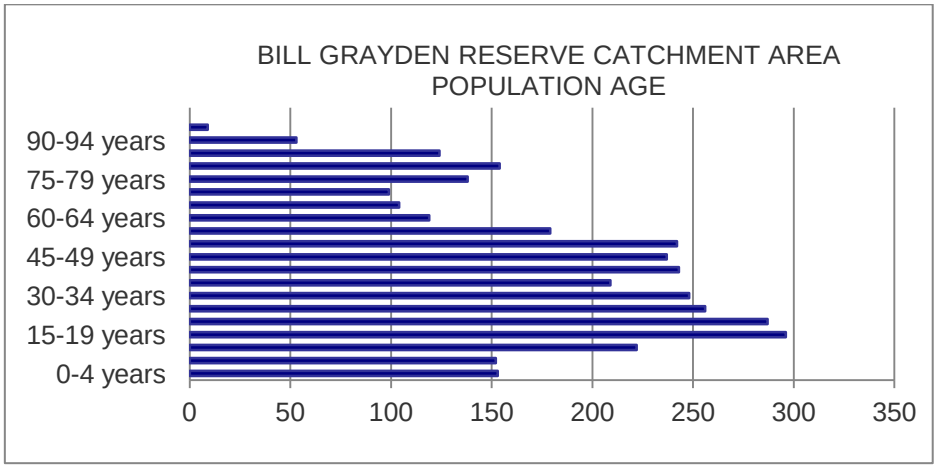
Surrounding Development

The surrounding residential area was initially developed with single storey houses on large lots primarily in the post war period. However, since the 1980s, the area has been progressively redeveloped with duplex and triplex buildings being the most common outcome of development. However, there are cells within the precinct, particularly around Collier Primary School, that have been protectively zoned to maintain single residential housing. The State Housing Commission still owns pockets of land and houses in the vicinity of the park. These are being progressively redeveloped for supported accommodation or sold into the private market. Also, within this area, is a very large aged-persons complex, Collier Village, developed by the City for its aging residents.

Apart from the residential development there are three schools in the catchment of the reserve: Penrhos College, Como College and Collier Primary School. There is also a small grouping of neighbourhood shops on the corner of Murray Street and Monash Avenue.

Catchment Population

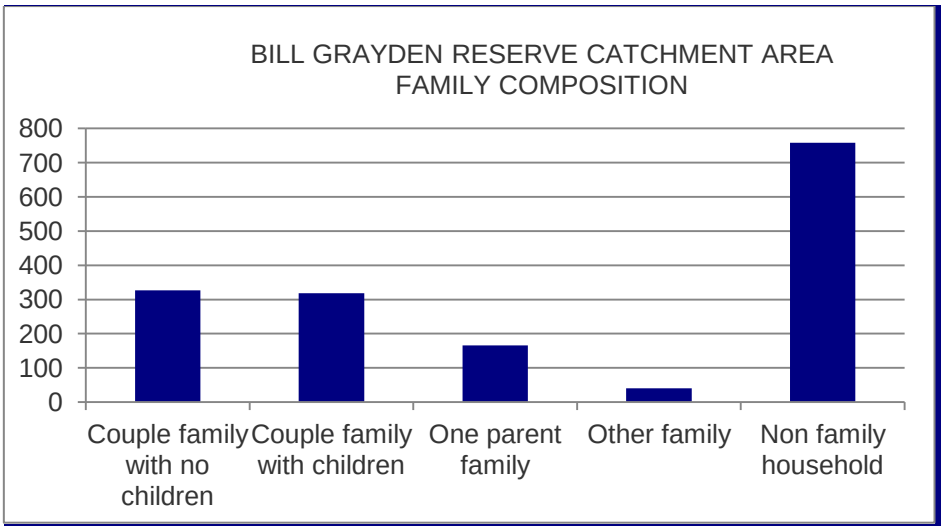
The catchment population is dominated by the 20-35 age group followed by the 35-60 age group. The smallest age groups are the 0-10 and the 60-75 categories.



Source: Australian Bureau of Statistics (2006)

Middle-aged groups include the parents of the small number of under 10 year olds and their older adult children (represented in the 10-19 age group).

However, by far the biggest household group in this catchment are single person, couple households and shared households (described in the census as ‘non family households’). This accounts for the high numbers of 20-35 year olds and older aged groups including ‘empty nesters’ from earlier families that once resided in the area.

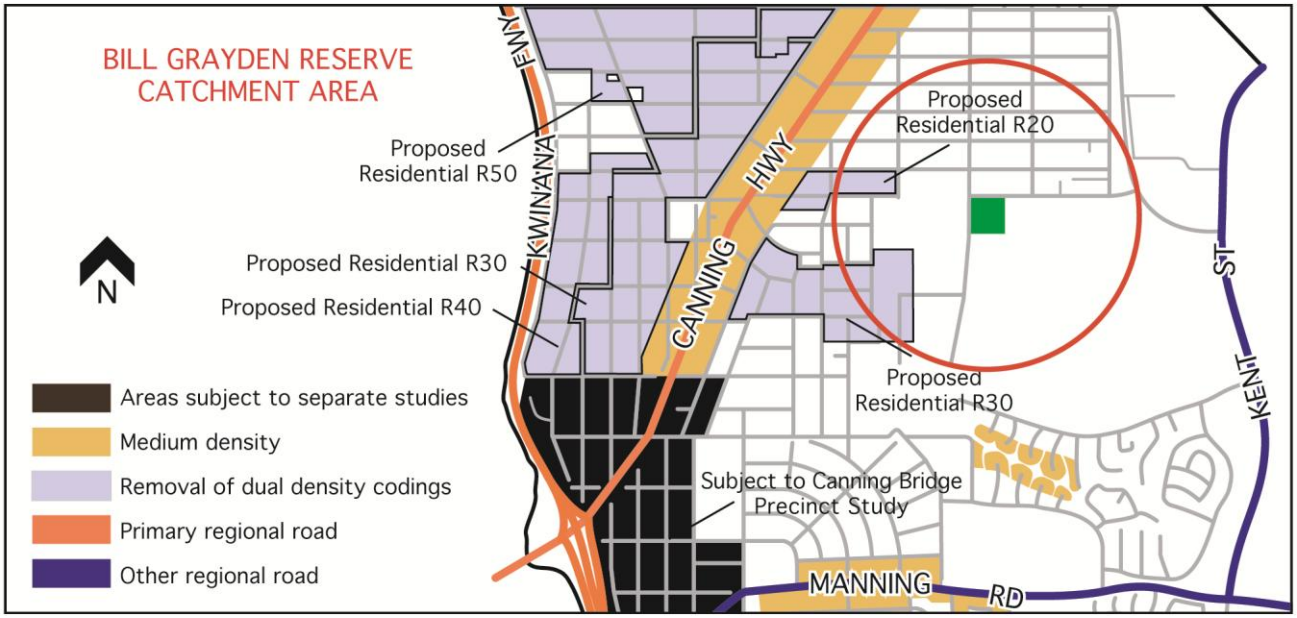


Source: Australian Bureau of Statistics (2006)

Smaller households would have been attracted by the more contained accommodation (duplex, triplex and multiple units) available in this catchment. The comparatively large number of elderly persons in the area can also be related to the location of Collier Village and a number of Ministry for Housing aged supported accommodation complexes.

Future Development

The planning for the precinct does not foresee any major changes to development outcomes in the area. Older single residential housing will continue to be replaced by more contained accommodation such as duplexes and triplexes. Under the most recent draft Local Housing Strategy, the City has proposed that two residential cells adjacent to Canning Highway be rezoned to the higher level of their past dual coding (City of South Perth, 2011). This will lead to increased opportunity for development of duplexes in this area. In the long term, the City expects this process to produce an additional 450 dwelling units in these cells



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

The reserve has been categorised as a District facility meaning that its primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserve is considered of district significance because of its attraction to a wide range of users from a range of surrounding suburbs.

Protection and Enhancement of Biodiversity

There is very little biodiversity in this reserve. What biodiversity exists relates to stands of trees within the reserve, particularly the mature gum trees.

Climate Change Resilience

Given that the reserve is almost entirely composed of reticulated turf, there is little resilience to any climate change scenario requiring a reduction in watering input. The mature native trees on the reserve would resist reductions in watering due to their access to the shallow groundwater table.

Natural Resource Degradation

The reserve is entirely 'constructed' and the natural resource value is close to nil. The natural vegetation was clear felled with the development of the pine plantation in the 1930s and the natural landform was totally changed with the later construction of the oval.

Opportunities to Increase Tree Cover

While the area of the oval and its immediate surrounds need unimpeded turf access, there are still significant areas of surrounding space that could accommodate increased tree cover. All of this area is currently reticulated, so any new plantings would require no change to existing watering regimes. Tree planting in this area would have no negative effect on the quality of the sporting field and its extensive use.

Opportunities for Water Conservation

Reticulated turf is one of the most water-demanding landscape types. It requires significant levels of water throughout the summer months to maintain its integrity as a playing surface. Given that the playing surface does not account for the whole reserve area, there are opportunities to hydrozone to accommodate water conservation.

Access to and within Reserve

The park catchment is unusual as land to the South and West is non-residential (Collier Golf Club and Penrhos College). As such, the park does not form a focal point of a local residential community. This is reinforced as access from suburbs to the South is constrained by the fact that Murray Road does not connect to the Karawara local road network. However road, pedestrian and cycle connections to the North and West are good and car access is supported by the provision of good quality car parking within the reserve boundaries that has the capacity to accommodate even the highest demand peaks (generally senior team match days).

Access within the reserve is less effective. There is a peripheral bike/walk shared access path along the Northern boundary. The reserve itself is trafficable by foot (reticulated turf), but there are no other formal paths. The relatively steep incline of the Western side of the park makes walking in this area difficult and forces walkers and other exercisers onto the oval itself setting up potential conflict with the active sports users.

Use of Area by Current Population

The use of the park is dominated by active recreation users. At the time of the observation survey (summer), the South Perth Baseball Club were using the reserve on weekdays almost continuously from 4 to 7 o'clock. A number of teams were training including junior, senior and women. On the weekends, those teams drawn at home were occupying the space against opposing teams at various times throughout the day, sometimes through to 6 o'clock in the evening. These competition days also attracted a moderate level of spectator activity.

Apart from the baseball, remaining use was limited and sporadic. In the early morning and late afternoon, a few dog walkers used the area along with some individuals walking and training. At odd times during the day, children were seen in the playground with attendant adults. The playground was used the most during the weekend when baseball competitions were taking place.

In the morning, one or two cyclists were observed using the bike path. They appeared to be morning commuters heading to work.

The area does not appear to be extensively used by the local catchment population. That is, the baseball club structure attracts members from the local region at the junior level, but as teams become more senior links to the local region become more tenuous. A survey of users in 2011 (ParkCheck, 2011) found that up to 60% of users of this reserve were from outside the City.

The survey of the area conducted in 2012 found few residents in the park catchment used this park and those that did were more likely to use it for passive, such as walking and playing, rather than active purposes.

Diversity of Recreation Opportunity

While this reserve is very successful at meeting the needs of active sports users, particularly for the two clubs granted exclusive use over its playing surface, there is only limited opportunity for other recreational users. The landform away from the oval is not conducive to walking because of the slope, the landscape itself is uninteresting and there is very little shade provided. Passive users have little to attract them to the site apart from the playground. The message that the existing development sends to potential users is that this is a sports ground leased to particular clubs and if you are not a member of these clubs you are not welcome in the area. It is revealing in the observation survey that as soon as the baseball users' move onto the reserve the range of other users declines.

Opportunities to Increased Use/Attraction

The current layout and management of the park does little to attract local use. Existing use by local residents does not capitalise on the existing character of the space, as local use has to fit around the occupation of the park by active sporting groups. However, there is no shortage of space to accommodate a greater range of users while respecting the predominant active recreation focus of the park. The banks to the West and North of the oval are obvious spaces that could provide greater diversity of recreation opportunity.

User Safety

The area is generally very open but surveillance from adjacent residential properties is limited by the dense plantings to the North of the site. In the course of team training and playing, there are many people in and around the reserve, but it appears empty and lonely when this activity is not taking place. The observation survey noted that it was most common to see dog walkers in small groups, while this may just be related to companionship, it may make people feel more secure in the area.

Level of Infrastructure Investment

Infrastructure investment in this reserve has been consistent and sustained since its establishment leading to high quality contemporary facilities that more than adequately meet the needs of the active recreation users of the reserve. The area is fully reticulated and is capable of hydrozoning although, as the whole, area is turfed meaning no current requirement for differential watering regimes. There is little evidence of damage to current facilities although the Northern car park is poorly designed and degraded through root upheaval of the bitumen surface.

Management Agreements in Place

Management agreements exist with both clubs using this space. Under these agreements, a fee is paid each year for use of the space creating a revenue flow to the City of $13,500. The City of South Perth absorbs all management costs of the reserve, such as watering, fertilising and mowing. The

clubs are responsible for the upkeep and management of the club house and ancillary developments, such as stores and nets. The sharing of this facility has worked well, with the City advising that the seasonal transfer of the clubhouse occurs in a seamless manner.

CONCLUSIONS AND RECOMMENDATIONS

Bill Grayden Reserve is a high quality sporting arena with excellent support facilities such as the clubhouse and car parking. Most recently, it has been advised that the clubhouse will be further updated with a significant State Government grant. While it is well-used and well-regarded as a playing field, there are opportunities for the reserve to be enhanced to encourage use by wider sections of the local community.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve.

1. Maintain the oval, club house and associated facilities as an exemplar of a high quality active recreation reserve.
2. Revegetate the banks (inclines) with tree cover/natural plantings.
3. Provide formal walkways and rest areas around the reserve to allow ease of walking/jogging/resting.
4. Tailor water, herbicide, and fertiliser use to the (new) differential needs of the reserve.
5. Open up view-lines into the park from the North.

10. NEIL MCDOUGALL PARK

Reserve Category: District Reserve

Source: Adapted from Google Earth (2011)

Location

Neil McDougall Park is located in the suburb of Como, East of Canning Bridge and adjacent to Coolidge Reserve to the North. Davilak Reserve is to the South East of the park.

Landform

The natural landform of the site was flat and swampy. The City of South Perth Municipal Heritage Inventory indicates that the site was used for dairy farming in the early-190s to mid-1900s before being sold to the City and developed for open space purposes. A lake was constructed in the park

and the remainder landscaped with trees and turf. The farmhouse (known as Hazel McDougall House) and some outbuildings remain on site, these are heritage listed.

Landscape Development

Development of the park involved the construction of a lake and landscaping of the remaining areas with trees and turf. The park was developed in 1968 and, accordingly, its trees are mostly mature and well-established. Trees are both native and non-native, with species including Willows, Paperbarks, Peppermint Trees and Lemon Scented Gums. Portions of the bank of the lake have been recently re-vegetated with reeds and grasses. In the southern part of the park, narrow garden beds with low planting and mature trees form fingers of garden, interspersed with shady and inviting grassed spaces.

Building Development

The park is accessible by road from Henley, Ley, Davilak and Clydesdale Streets. Parking is provided on surrounding streets. An innovative and interesting new playground is located in the Southern portion of the reserve. It includes a flying fox and climbing frame on a surface of woodchips, and swings and a slide set in a sandpit. The play area is shaded by tall Eucalypt trees and surrounded by lawn. Modern well-maintained toilet facilities are located close by. There are two BBQ areas (BBQs and seating) within the reserve: one next to and one to the East of the playground.

An extensive path network provides access through the reserve, and connects to footpaths of surrounding streets.

Hazel McDougall House is situated on the West side of the reserve, along with the remaining outbuildings of the former dairy farm. These buildings are currently used for a range of community purposes. A community garden is also planned in the area around the buildings.

Public art has been incorporated within the reserve. There are panels throughout the reserve depicting verses of poetry, as well as a sculpture/decorative iron fencing depicting wetland life of the reserve.

Current Use

Hazel McDougall House is the headquarters of the South Perth Society of Art and Craft Society. The house and outbuildings are open to visitors interested in local heritage.

Resident surveys completed in 2012 showed that the most popular activities for residents within the catchment area are walking, followed by cycling, dog walking and using the playground. The surveys also revealed that residents' most common form of transport to the park was to walk or walk with a dog. This park was the most frequently visited reserve for residents within the catchment.

Observation surveys carried out in 2012, showed that walking was the most common activity during the week, followed by dog walking and 'enjoying the view'. The park showed a greater diversity of activity compared to other parks in the City. On the weekend, walking, playground use and gatherings/BBQs were the most popular activities.

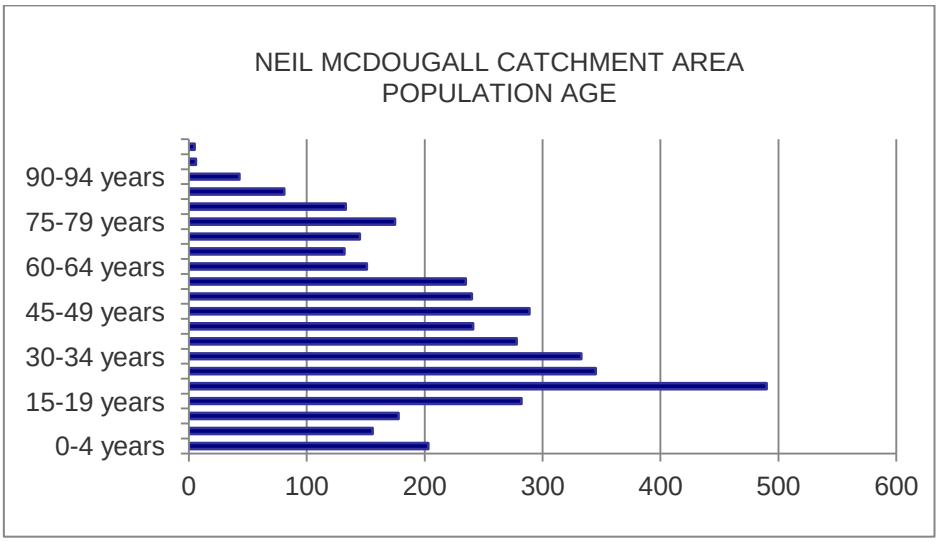
Surrounding Development

The suburb was developed in the post war period into single residential lots. Redevelopment of the area has occurred primarily in the form of grouped dwellings on smaller lots. Some larger lots remain - the South East of the catchment is zoned Residential R20 and the South West is zoned R20 and R15. To the North West, nearer to Canning Hwy and the Mitchell Freeway, land is subject to medium density split coding. Lot sizes decrease in land closer to the freeway lot sizes decrease, being zoned R40 with a few pockets of few split coding at a medium density

As well as residential development, Manning Primary School, Toy Library and Childcare Centre are located to the South adjacent to James Miller Oval. Como Secondary College is located partially within the catchment to the East of the reserve. McDougall Park Aged Care Facility is located on Ley Street opposite the park.

Catchment Population

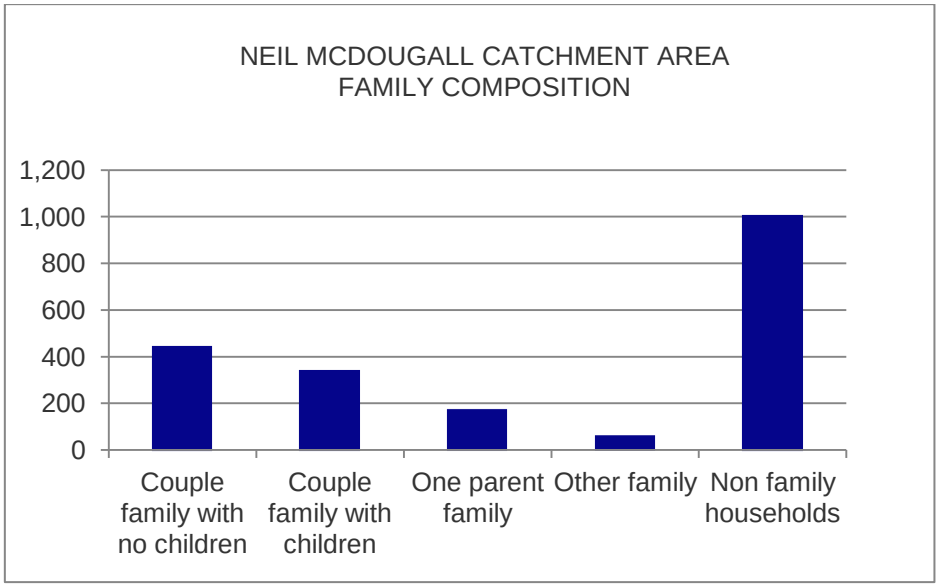
The age bracket of 20-24 year olds is by far the largest age group in the catchment area. The 25-34 year old bracket is also well represented, as are 45-49 year olds and 15-19 year olds. The smallest age groups are 5-9 years, 65-69 years and 80 years and over.



Source: Australian Bureau of Statistics (2006)

The largest household group is non-family households - this category includes single persons, de-facto, couples, and shared households, while the second largest group is couple families with no children. These groups are likely to correspond with the 20-35 year age group who do not have

children, as well as older couples whose children have left home (empty-nesters). These household types are likely to be attracted to more compact housing forms available in the catchment. Residents of the aged-persons home, McDougall Park Aged Care Facility, opposite Neil McDougall Park will also account for some of the older population in the 75 plus age groups. Couple families with children make up less than one quarter of the catchment population. This family type would align a number of the middle age groups, with children in the 0-19 year age groups.



Source: Australian Bureau of Statistics (2006)

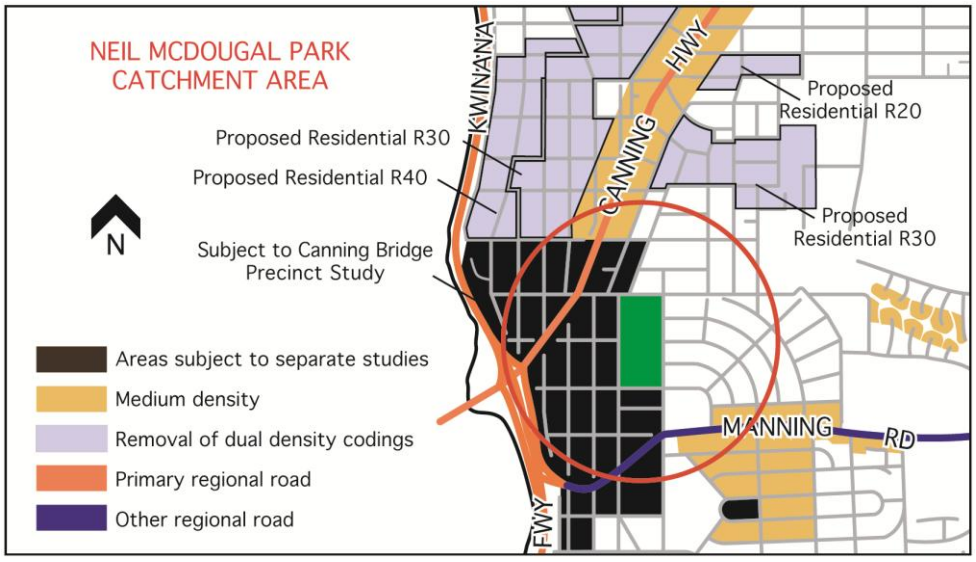
Future Development

The South West portion of the of the catchment is subject to the Canning Bridge Precinct Plan (WAPC 2011), a guiding document setting out building height limits that increase with proximity to the train station (3 storeys, 4 storeys and 6 storeys). The plan does not include amendments to existing residential densities; however, it is reasonable to assume that densities within the 800m walkable catchment of the train station will be reviewed as part of the planning process for the precinct. This will result in a large increase of the population within the catchment area. The family types attracted to the area, given its increased density and proximity to the train station and, consequently, the city, are likely to be young professionals and empty nesters (non-family households and couple families with no children). The smaller lot sizes resulting from medium/high density development, as well as the increase in this demographic and will impact on use of and requirements for open space within the catchment.

Long Term Vision for Canning Bridge Precinct

Source: City of South Perth (2011)

Under the most recent draft Local Housing Strategy, a small portion of the South East corner of the catchment will be subject to a medium density coding.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

The reserve has been categorised as a District Reserve. District reserves are those areas of publicly owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs.

The following performance assessment has been developed to address the extent to which this reserve is meeting this role within the context of the future sustainable development of reserve within the city.

Protection/Enhancement of Biodiversity

The lake and surrounding vegetation contribute to protection of biodiversity within the City. In particular, the lake provides habitat for the long-necked tortoise, as well as water birds. Native vegetation is also contained in the garden beds throughout the park. The reserve forms part of vegetation corridor, which includes Coolidge Reserve and Davilak Reserve.

Climate Change Resilience

The reserve is well-shaded by mature trees. The root systems of these trees would have penetrated the superficial aquifer and as such are resilient to any reduction in watering. Similarly, the lake provides water to vegetation on its banks. These factors will reduce water use and increase resilience to climate change. By contrast turfed areas used throughout the reserve are vulnerable to any climate change variable that may lead to a constraint on watering volumes (e.g., government restrictions, reduction in groundwater levels, longer and drier summers).

Natural Resource Degradation

Although the natural landform of the reserve has been modified, the reserve has been re-vegetated with native vegetation around the lake and on the island, as well as in garden beds. As such it exhibits a reasonable level of natural resource integrity. Paths are provided through the reserve, reducing the potential for natural resource degradation.

Opportunities to Increase Tree Cover

The reserve possesses a wealth of mature trees, which provide shade to users of the reserve. As such, there is little opportunity or need to increase tree cover on this reserve.

Opportunities for Water Conservation

The native planting and shaded spaces of this reserve open up the opportunity to reduce watering volumes while still maintain the attraction of the reserve as an important recreation space for the district. There may also be opportunities to reduce the amount of turf and replace it with surfaces not requiring summer watering, e.g., brick paving, pressed clay etc.

Access to and within Reserve

It is easy to access the reserve by car from Henley, Ley, Davilak and Clydesdale Streets. There is ample parking shaded by verge trees provided along Henley and Ley Streets. The reserve is accessible by bike from the South and West, although dedicated bike paths are not provided until very near to the park. Footpaths connect the park from adjacent and intersecting roads, and access through the reserve is provided in the form of paths adjacent to, or close to, the perimeter of the reserve and through the reserve. The footpaths within the reserve provide high levels of accessibility to all users but particularly for the elderly and those with strollers. In this way, the reserve meets the particular needs of residents of the adjacent McDougall Park Nursing Home, many of whom are confined to wheelchairs, and allows for enjoyment of the park by these residents.

Use of Area by Current Population

The park is well used by surrounding populations. It attracted a higher number of people engaging in a wider range of activities compared to other parks in the Southeast section of the City. The most popular activities observed on weekdays were primarily walking (for exercise, with dogs and young children), group exercises (Tai chi, fitness groups) and those just enjoying the view. There were also a significant number of elderly persons from the adjacent elderly home walking and picnicking with family members, as well as groups of special-needs persons with carers. The park accommodates this use with grade crossings and good quality paths in and around the reserve. Weekends attracted those wishing to use the BBQ and playground equipment.

A survey of South Perth residents carried out in 2011 recorded a 61% visitation rate to this park by persons in the surrounding catchment. All respondents rated the park positively, with over half being very satisfied with the reserve. Walking, cycling, using the playground and dog walking were the most popular activities of respondents within the catchment area. Other activities reported were playground visits and group fitness. The park provides spaces and facilities to accommodate all of these activities.

Diversity of Recreation Opportunity

The park provides spaces for a diverse range of recreational activities. Paths provide excellent conditions for walking (including for the elderly and disabled) and jogging, play equipment is high quality, BBQ facilities are provided, and there are ample grassed spaces for a range of informal

sporting activities (e.g., cricket) as well as activities like tai chi or group fitness classes. The park also has a high level of visual amenity and, as such, provides a reflective space.

Opportunities to Increase Use/Attraction

There is no need to modify the park to increase its attraction. The high levels of use witnessed by the user surveys carried out in 2011 attest to its attractiveness, and the quality of the landscaping and facilities is evident. The park is well equipped to meet its user's requirements. Playground, BBQ and toilet facilities are of high quality. Shaded parking is provided, as are walking/jogging paths throughout the reserve. Landscaping is of high quality and the park is a pleasant and attractive space.

User Safety

Passive surveillance is provided to the park from surrounding residential properties. Paths and lawn are well-maintained and does not present any obvious risks. Sand in the playground is regularly sieved. As with any water body, the lake could provide a risk to young children left unsupervised but its banks are well-graded and the water body itself is not deep.

Level of Infrastructure Investment

It is evident that many resources have been put into installing and maintaining facilities and landscape within the park. Recently, a new and innovative playground was installed, which has raised the standard of the park.

Opportunities for External Revenue (fees, grants, leases etc)

The attractive spaces of this park do provide opportunities for fee-based use of the park for corporate gatherings, functions etc. However the revenue from these activities was only $1400 in 2010. There is an opportunity to grow this figure in the future. However, management of events must ensure that the events do not detract from the widespread use and value of the park enjoyed by residents within its catchment and beyond.

CONCLUSIONS AND RECOMMENDATIONS

Neil McDougall Park is an example of the kind of high-quality space that can be produced with imagination and resources. It is sensitive to the surrounding community's needs, especially those of the nearby elderly person's home, and provides a variety of recreational opportunities within a relatively small space. The park meets functional and environmental criteria within an aesthetic context.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. Continue to maintain the park to a high standard as an exemplar for others in the City.
2. Provision of more seating within the park, especially given elderly persons home across the road.
3. Investigation of water conserving strategies through the reduction of reticulated turf and its replacement with hard surfaces.
4. The integration of the new community garden with the other activities on the reserve.
5. Improved accessibility between the catchment and the park for both cyclists and pedestrians.

11. GEORGE BURNETT PARK

Reserve Category: Local Regional

Source: Adapted from Google Earth (2011)

Location

The reserve is located in the suburb of Manning to the East of the Kwinana Freeway. The reserve is bounded by Gillon Street to the North and East, Manning Road to the South and Goss Ave Bushland to the West.

Landform

The natural landform would have been gently sloping from the North to the South of the site. Remnants of the natural vegetation remain in Goss Ave Reserve, as well as in the South East portion of the reserve, which contains Lake Gillon. The remainder of the reserve has been cleared and filled to create an oval and a grassed area.

Landscape Development

The reserve contains three distinct areas of landscaping. The Western Area contains turfed playing fields. The Eastern area is a gently undulating, grassed area circled by a wide cycle racing track. A smaller walking path also circles the space. This portion of the reserve has been planted with trees in various stages of maturity. In the South Eastern corner of the reserve is an area of constructed bushland/wetland commonly referred to as Lake Gillon.

Building Development

The playing field area of the reserve is supported by a range of built developments including club rooms and pavilion, a playground and cricket nets. The playing field area and nets are surrounded by a chainmesh fence. The club house is serviced by an access road and the playing fields are provided with lighting towers. The Eastern area is circled by a wide cycle-racing track and a range of walking paths. There are also two play grounds provided on the reserve. A skate park is located in the South East corner of this space, and the a Recreation Centre complex is located on the Manning Road frontage of the reserve adjacent to a major car park supporting reserve activities. The car park has two sections - a larger one with 180 bays supporting the playing fields area and a smaller with 80 bays supporting the recreation centre and skate park. There are also paths through the bushland/wetland area.

Current Use

The reserve's three distinct areas have differing levels and types of use. Observation surveys carried out in 2011 found the main uses of the turfed playing field were afterschool cricket practice and weekend games. Weekday cricket practice attracted users for 1-2 hours, whilst weekend games saw the average time for any particular user rise to between 8-10 hours. Other activities included running/walking (for exercise, with dog or pram), children skating down paths and playing at the playground. This facility and clubhouse is also widely used by the South Perth Rugby League Club who have a lease agreement with the City for use of the grounds and clubhouse. In the Eastern area of the park, the minimal usage observed during the week primarily focussed on walking (either as exercise, with dog or pram) with some informal sporting activity. Youths were found to gather particularly after school and on weekends to enjoy the skate park. User activity rose on the weekends with various sporting events and training (mainly cricket), as well as gatherings of people using the

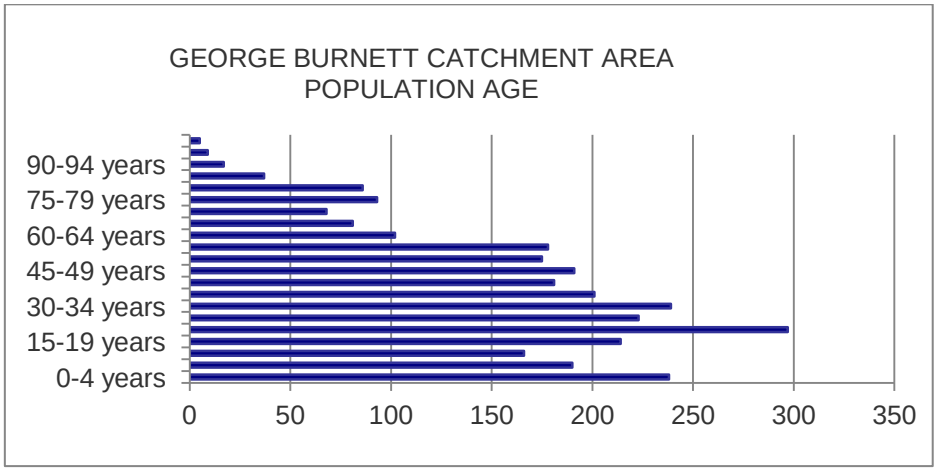
playground/picnic facilities. The Lake Gillon area of the park was the least popular, with walkers and dog walkers were found to be the primary users.

Surrounding Development

Surrounding development is largely single dwellings on reasonable large lots zoned Residential R20. To the East of the catchment, closer to Waterford Plaza and Curtin University, land is zoned residential R30 and supports single or grouped dwellings on smaller lots. The Manning Library and George Burnett Leisure Centre are located in the reserve, along Manning Road. Curtin Primary is located to the North West corner of the reserve. The Collier Park Golf Course and Karawara Greenways area located within the catchment area. The Waterford Plaza shopping centre is located just outside the catchment area.

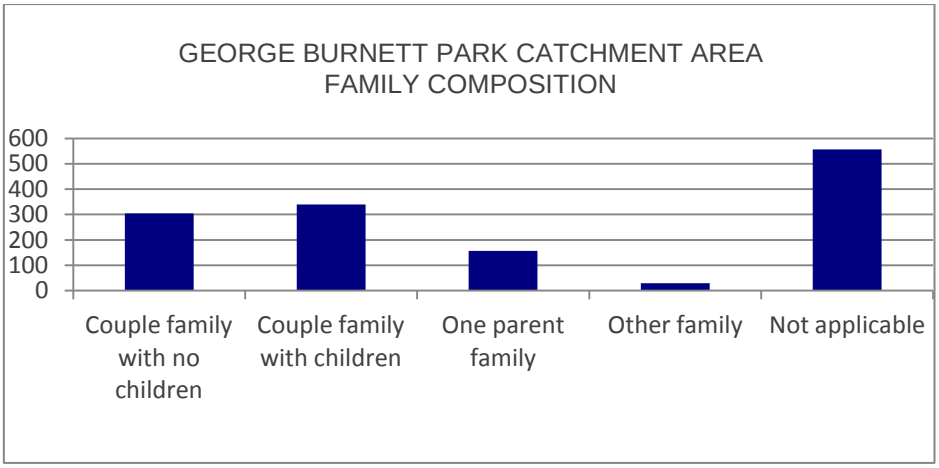
Catchment Population

The largest age group within the catchment was 20-24 year olds. There are also a large number of 0-4 year-olds and children to the age of 19. The middle age groups are also well populated, with the smallest group being those aged 60 years plus.



Source: Australian Bureau of Statistics (2006)

Non family households comprise the largest population group, including single persons, de-facto couples, and shared households. This is likely to correlate with the location of nearby Curtin University, as well as the provision of medium-density housing within the catchment. Couples with children are the next largest category, most likely attracted to the area by the availability of single residential housing and the proximity of the Curtin Primary School.

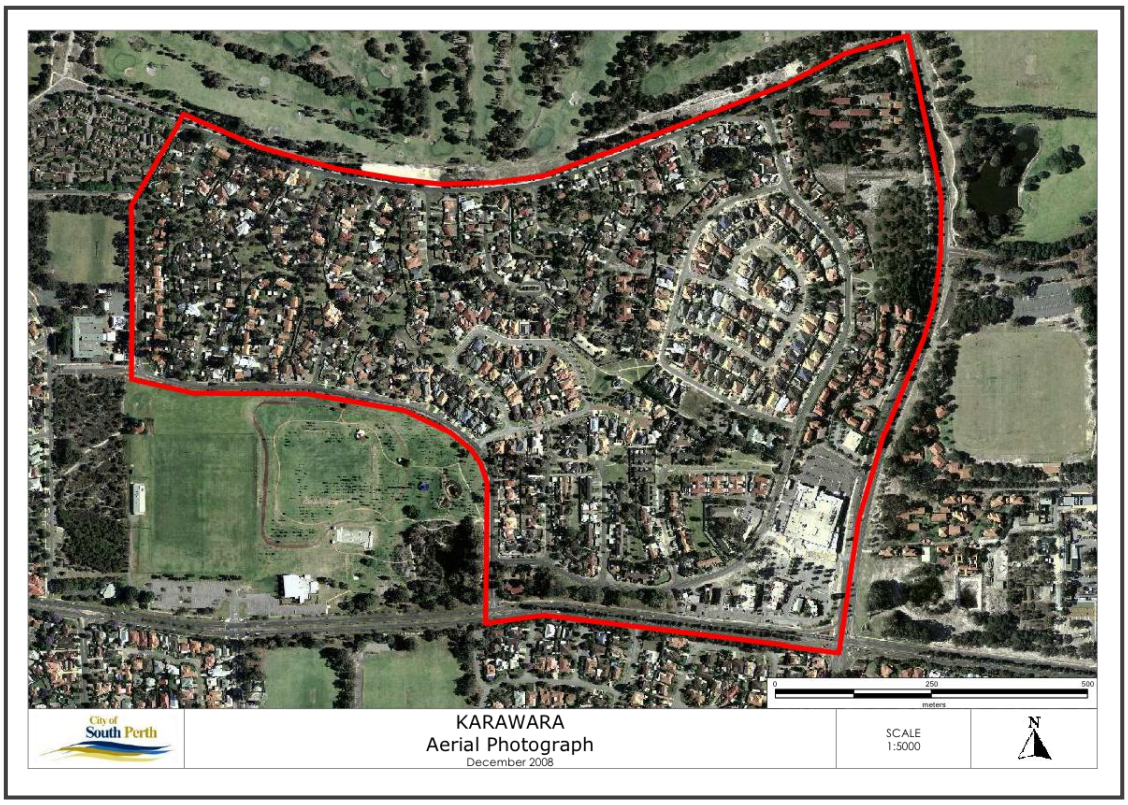


Source: Australian Bureau of Statistics (2006)

Future Development

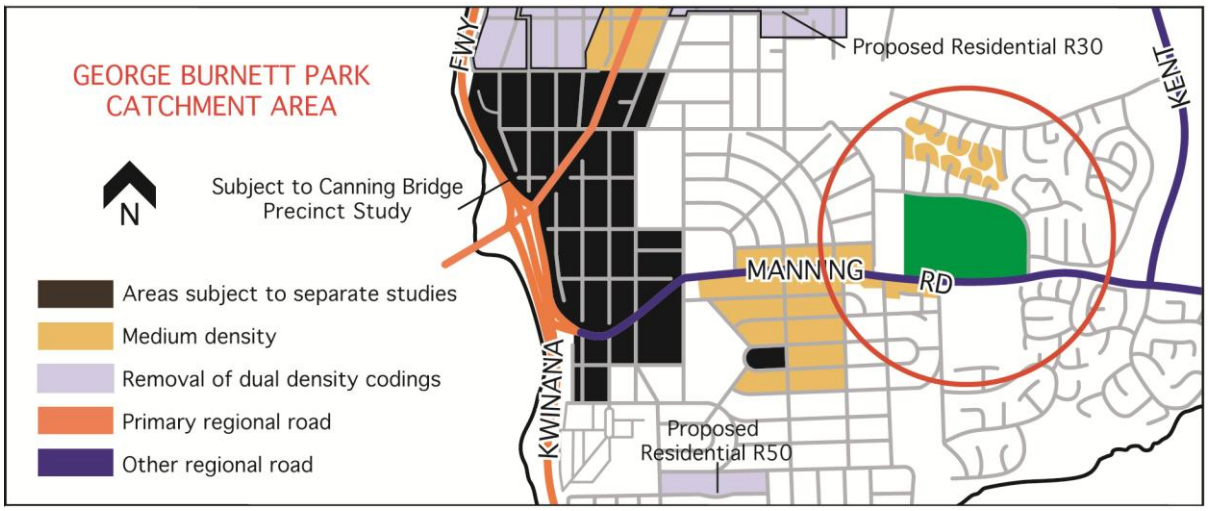
The suburb of Karawara, located to the North and East of the reserve is currently subject to a study to determine the future development of the area. The study centres on updating planning requirements to reflect current practices and create a better interface with greenways. As part of this, community consultation and visioning has taken place.

Area subject to further Study



Source: City of South Perth (2011)

As part of this process, under the Draft Housing Strategy (City of South Perth 2011), portions of land closest to the Karawara Greenways are highlighted for medium density development. The strategy also allocates a medium density zoning to portions of land on both sides of Manning Road, to the South and West of the reserve.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

In addition to these changes, the Curtin Town Development Plan will see the expansion of Curtin University campus to include more housing, educational, and commercial uses to meet its role as a Specialised Centre under the State Planning Policy 4.2 – Activity Centres for Perth and Peel. Although the Campus is located just outside the City, the City will need to consider how housing and commercial development relate to this. This may also result in an increasing amount of people visiting Waterford Plaza and, potentially, using reserves.

PERFORMANCE ASSESSMENT

The reserve has been categorised as a district reserve whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance the valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs

The following performance criteria have been developed for this category of reserve to address its contribution to the sustainable development of a reserve system in South Perth.

Protection/Enhancement of Biodiversity

The large grassed areas of the reserve will not offer any contribution to protection of biodiversity within the catchment, however the wetland vegetation on the South East corner of the park, while degraded, is likely to do so by sheltering birds and small mammals and reptiles. The wetland may also provide a link through the park to Goss Ave Bushland and Curtin School Bushland. Much of the Eastern section of the reserve has been extensively planted, as this areas matures its ecological credentials will be enhanced.

Climate Change Resilience

The majority of the reserve is turfed and, as such, requires a large amount of water. Though this is not a resilient response to a drying climate, the native vegetation within the reserve does not require watering and therefore is likely to be more resilient to climate change. In addition, as the trees planted in the Eastern portion of the reserve mature, they will provide opportunities to reduce watering.

Natural Resource Degradation

The grassed areas are so far altered from their natural state that no natural resource value remains. There is some degradation in the Lake Gillon area but nothing that targeted management input could not address

Opportunities to Increase Tree Cover

Tree cover could be increased to the North of the reserve, near the playground area without impacting the use of the playing field. The Eastern portion of the park has been planted with trees, which as they mature will provide more shade making it more attractive for a range of activities

Opportunities for Water Conservation

Reducing the amount of turf and replacing it with native plantings would reduce water use within the reserve. This would enable more efficient hydrozoning of the area.

Access to and within Reserve

The reserve is easily accessible by car, with ample parking provided. Access through the Eastern portion of the reserve by foot and cycle is excellent; it is also accessible for disabled people and mothers with prams.

Use of Area by Current Population

The area was reasonably well used, with activities observed aligning well with those mentioned in 2011 user surveys. It should be noted that users of the playing field (e.g. South Perth Rugby League Club) are not necessarily from the local area. In fact, a survey of parks in South Perth in 2011 found that up to 60% of participants in active recreation can be from outside the local government area (Parkcheck 2011). The most popular activities mentioned in the resident survey were walking and individual sports. Cycling, jogging, using the playground, team sports, dog walking and social gatherings were also popular. The survey found that the visitation rate to this reserve by respondents was very high.

Diversity of Recreation Opportunity

This park provides an unusual diversity of recreation opportunity: it caters for formal sports such as rugby and cricket as well as activities like walking, cycling, using the playground, nature appreciation and skateboarding. The skate park, in conjunction with the recreation centre, provides for youth sporting activity and socialising. The cycle track is unusually wide and provides an opportunity for organised events, as well as including uses such as para-cycling.

Opportunities to Increase Use/Attraction

The park is excellent in many ways, it provides for a wide range of activities including youth activities which are less well-catered for elsewhere in the City. In addition, tree planting to the Eastern side of the reserve will enhance the reserve by providing shade once the trees mature. Resident surveys found that respondents were satisfied with the park. Suggestions for improvement were:

- More seats, tables, rubbish bins, toilets and a water fountain.
- Increased shade around the skate park.
- Install exercise machines.
- Build aquatic centre.
- Provide more play equipment and move the younger children playground closer to older children's playground.
- Seating for larger numbers.

Better provision of picnic facilities would certainly enhance the usability of the space, as would an improved interface between this reserve and the adjacent Goss Avenue Bushland. Access to the playground on the Western portion of the space could be improved, as well as that between the Western and Eastern parts of the reserve.

User Safety

Turf is well maintained and does not present a hazard to users. Sand in the playground is regularly sieved by the City. Walking paths are provided throughout the area. Passive surveillance is provided to the playing fields from dwellings to the North and East, and to some extent from Manning Road. However, the reserve is very large, making those traversing feel quite isolated especially in the evening or early morning. By nature skate boarding is a risky activity, and the City has installed a warning sign at the skate park. The wetland area provides opportunities for concealment and could, consequently, be considered an unsafe space.

Level of Infrastructure Investment

Infrastructure investment in this reserve has been very high with a wide range of high quality facilities including a recreation centre, car parking, highly accessible pathways, skate park and cycle track.

Opportunities for External Revenue (fees, grants, leases etc)

Income generated from the reserve in 2011 was $13,881 from use by sporting clubs and events. The majority of this income would have come from the Western area of the reserve, containing the active playing field. In addition, more casual users of the playing fields and events using the cycle track would also pay a fee. This figure compares favourably with other reserves within the City.

Management Agreements in Place

A management agreement and lease agreement is in place with the South Perth Rugby League Club for use of playing fields and clubhouse.

CONCLUSIONS AND RECOMMENDATIONS

The George Burnett Reserve provides for an unusually wide range of activities, including youth and environmental attractions. As planting in the area matures the attraction of this park is likely to increase and as it does so the City will be creating a very strong recreation hub supported by the recreation centre and associated facilities.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve.

1 Better provision of picnic facilities and seating to enhance usability of the space and provide seating for social gatherings.

3. Replace portions of turf within the Eastern part of the reserve with native plantings to reduce water use and to complement existing native bushland in Goss Ave Reserve and Collins Lake.

4. Provide a better interface between the reserve and Goss Avenue Bushland.

5. Improve access from East to West across the reserve.

12. JAMES MILLER OVAL

Reserve Category: District

Location

James Miller Oval is located in the suburb of Manning, to the South of Manning Road and to the East of Kwinana Freeway. The reserve is bound by Downey Drive to the North, Jarman Avenue and Duckett Drive to the East, Gentilli Way to the South and Ley Street to the West. Manning Primary School is located adjacent to the reserve.

Landform

The natural landform would have gradually sloped from the East to the West of the site. However a large area of the land has been re-contoured to produce a large flat oval surface and this has produced sloping banks from Jarman Avenue and Duckett Drive to the playing field. . A smaller section of the reserve has been partly retained as natural bushland to the South side of the reserve.

Landscape Development

The reserve is effectively divided into two sections: a large oval and a section of degraded bushland. The oval, is landscaped with well-maintained turf. A stand of mature Peppermint, Cape Lilac and Coral Trees line the West side of the Oval. Young Jacaranda Trees have been planted on the East side of the reserve along the verge. The bushland is degraded remnant native vegetation. Some mature trees remain within this section, as well as smaller shrubs. An area of this land adjacent to the primary school has been cleared and grassed, but no longer watered. A sump site is located in the reserve.

Building Development

The oval is used for cricket in summer and football in winter. In response to this, there is an in-ground concrete cricket pitch and football goal posts. There is a club house/pavilion in the North West corner of the reserve with an attached car parking area with capacity for approximately 10 vehicles. There are lighting towers accommodating for evening/night training. Four concrete-based cricket nets are located to the South of the reserve. A dual use cycle/walk track skirts the edge of the reserve joining Duckett Drive to the primary school site.

In the partly cleared bushland area, a previously-established BMX/bike track is now in an incomplete condition (following new development in the school grounds) with a small shade structure still standing next to the derelict track. Informal paths and a concrete pathway run through the bush connecting this facility to surrounding streets.

Current Use

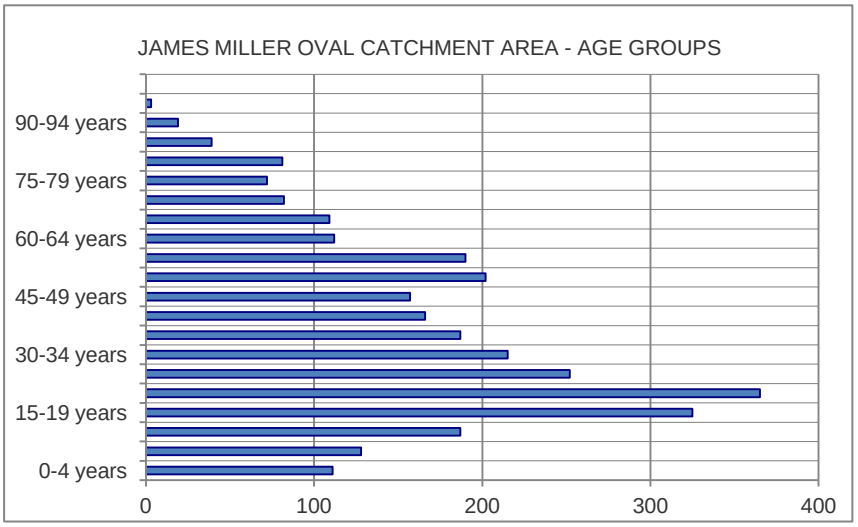
The reserve is reasonably well used, particularly for sporting and exercise-related activities. Observation surveys carried out in 2011 showed that the reserve attracted a variety of users engaged in exercise-related activities (cricket practice in the nets, cricket games, fitness groups and running), as well as walking, dog walking, cycling and those just enjoying sitting in the park. Peak use of the oval was for sports on Saturday morning to early afternoon. This corresponds with organised sporting activities as the reserve is home to the Manning Rippers Football Club.

Surrounding Development

North, East and South of the catchment is predominantly single houses on residential lots zoned residential R20. To the West, some pockets of land are zoned Residential R50. There are also a few pockets of split-coded land along Manning Road (R20/30) as well as some highway commercial (R80) development

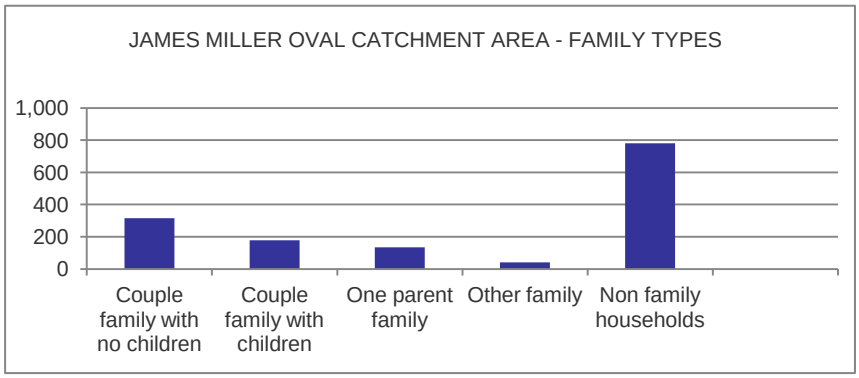
Apart from residential development, Manning Primary School, St Pius X Primary School, Manning Hall and Tennis Courts, Manning Toy Library and Manning Senior Citizens Centre are all located in the area immediately surrounding the oval. A little further away are the Welwyn Avenue shops and a range of commercial uses at the intersection of Manning Road and Ley Street. Davilak Reserve is also located on the edge of the catchment area.

Catchment Population



The most prominent age group is the 20-24 year old age group. There are also a large number of 15-19 year olds and 50-59 year olds. The middle age groups are also reasonably well represented. The least populated age groups are 0-9 years and 60 years plus.

The biggest household group in this catchment are single person, defacto households and shared households (described in the census as 'non-family households') which would account for the high numbers of 20-24 year olds. This group is likely to be attracted to the higher density residences in the West of the catchment, or could be singles living in shared rented larger dwellings awaiting redevelopment. The high number of 50-59 year olds are likely to align with the second biggest group - couple families with no children or 'empty nesters' whose children have left home. There are a small number of couple families with children. The children of these families will be in the 15-19 year age group, as well as the younger age groups, while the parents will be represented by the middle age groups. This last group is likely to be accommodated in single residences on larger lots to the East of the catchment.

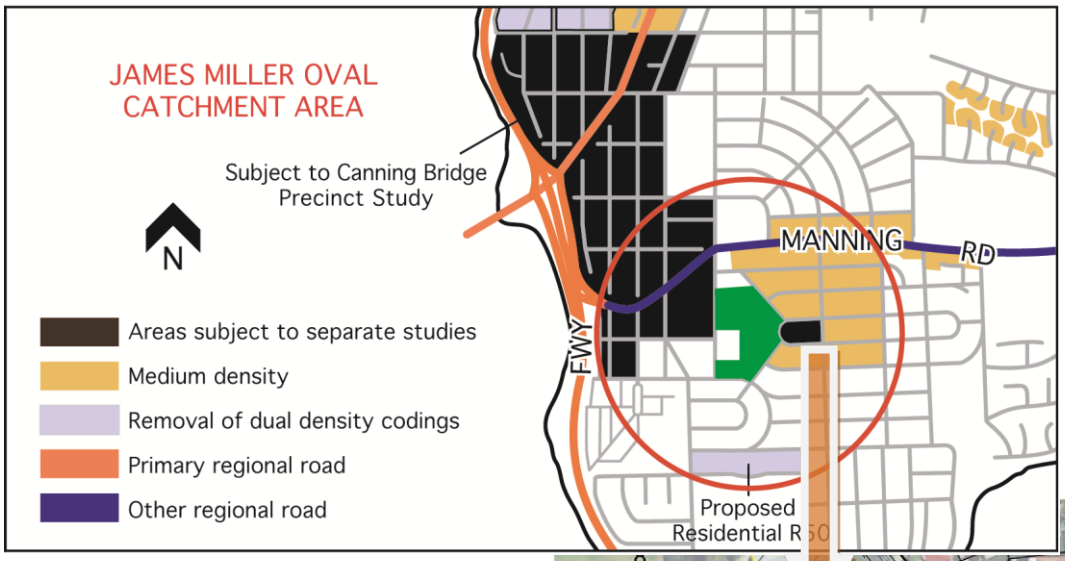


Future Development

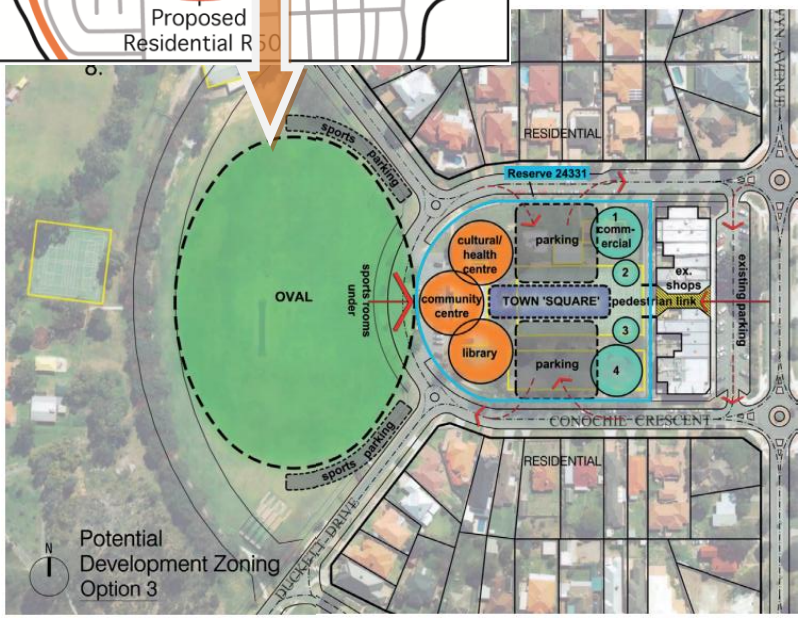
The most significant changes are likely to occur in the North West portion of the of the catchment, which is subject to the Canning Bridge Precinct Plan (WAPC 2011) - a guiding document setting building height limits that increase with proximity to the train station (up to 6 storeys). A performance-based mixed-use centre to 10 stories is planned on a site at the Manning Road/Ley Street intersection and 20-story residential development is proposed on the old Manning Hotel site.

Long Term Vision for Canning Bridge Precinct

Under the most recent draft Local Housing Strategy (City of South Perth 2011), a large portion of the North of the catchment will be subject to a medium density coding. The pocket of land along Hope Ave will no longer be subject to a split coding of R15/R20, but zoned R20. These density increases, along with those planned as part of the Canning Bridge precinct. will result in a large rise in the population within the catchment area. The household types attracted to the area, given its increased density and proximity to the train station and consequently the city, are likely to be young professionals and empty nesters (non-family households and couple families with no children). The smaller building/apartment sizes resulting from medium/high density development, will impact on the use of, and requirements for, open space within the catchment.



Adjacent to this higher density residential area is the James Miller Oval. This is the proposed to be redeveloped into the Manning Hub with a variety of community facilities for Manning residents. This development includes cultural health and community centres, library, a town square and retail stores. It is likely to heavily influence the future direction of James Miller Oval.



PERFORMANCE ASSESSMENT

The reserve has been categorised as a District facility. District reserves are those areas of publicly owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs.

The following performance criteria have been developed to address its contribution to the sustainable development of a reserve system in South Perth.

Protection/Enhancement of Biodiversity

The oval is entirely a constructed space and does not contribute to biodiversity within the catchment. The bushland area, although degraded and partly cleared still retains remnant native vegetation which contributes to the protection of biodiversity within the catchment by providing valuable habitat that links to the nearby Craig Isabella and Davilak Reserve to affect an ecological link for bird species.

Climate Change Resilience

Turf is an intensive water user and, as such, is not resilient to a drying climate resulting from climate change. Mature Peppermint Trees have a developed root system potentially reaching the water table and, as such, will be resilient to climate change. The native bushland is likely to be resilient to climate change and require little intervention to manage it. However, there is growing evidence of native flora not being able to survive the longer and hotter summers that Perth has been experiencing.

Natural Resource Degradation

The oval is an entirely constructed space and, as such, has no natural resource value. The remnant bushland has been degraded over time, despite the presence of mature trees and undergrowth. Weed intrusion to the reserve is evident, as is litter, particularly adjacent to surrounding streets. Fire is also a threat to native bushland, as more intense summers with the progress of climate change are experienced.

Opportunities to Increase Tree Cover

There is very little opportunity to increase tree cover in the vicinity of the reserve without impacting its use for sporting activities. However, in the bushland reserve, further tree planting is needed to address the existing degradation of the area.

Opportunities for Water Conservation

There are few opportunities to effect water conservation without impacting on the integrity of the playing field.

Access to and within Reserve

The reserve is easily accessible by car from the surrounding streets, with parking is accommodated on adjacent verges. The reserve is accessible by bike along surrounding roads. There is a dedicated bike lane connecting the North and West sides of the park to Canning Hwy and a shared path from the North East that connects the area to Manning Road and Hayman roads to Waterford Plaza and Curtin University. However, there is a gap between the shared path and the cycle lane from Manning road to the Park. Access through the reserve from North to South is excellent. A formal path is provided from the clubhouse around the perimeter of the oval, connecting the school to the ovals. Footpaths are provided along surrounding roads. A footpath leading to the school is also provided through the bushland.

Use of Area by Current Population

The reserve is reasonably well used, particularly for sporting and exercise-related activities. Observation surveys carried out in 2011 showed that the reserve attracted a variety of users engaged in exercise-related activities (cricket practice in the nets, cricket games, fitness groups and running), as well as walking, dog walking, cycling, children in the playground and those just enjoying sitting in the park. User evaluation of the park in 2011 showed that all respondents thought the park was ‘OK’. The most popular activities for respondents were walking and cycling. This contrasts with the uses observed, which were mainly sporting and exercise-related. Football training and games are likely to attract users from outside the immediate area, which may account for the disparity in results between the two surveys.

Diversity of Recreation Opportunity

The oval caters well for organised sporting activities, in particular cricket and football. The clubhouse is old but in reasonable condition. It is proposed to be demolished in 2015/16 as part of the Manning Hub redevelopment and replaced with a new multi-purpose facility. The oval also provides recreation opportunities for school children during lunch and recess. Play equipment provided in the adjacent school grounds is also freely available to the public. The bush reserve, though degraded, still provides some opportunity for a more natural experience in the reserve. There are few facilities provided to allow people to stay in the park for any length of time, for example, no toilets, limited seating and no BBQs.

Opportunities to Increase Use/Attraction

User surveys carried out in 2011 showed that all respondents thought the park was 'OK'. Suggestions for improvement from these surveys were for more seating, parking and lighting and for the play equipment near the clubrooms to be updated. Given the tight fit of the oval onto the reserve, it would be difficult to accommodate further facilities to improve the reserve. However, the bush area is significantly degraded and appears neglected. While further planting might improve this, there are clear opportunities to link this area more effectively with surrounding uses – particularly the school. These opportunities would include educational restoration as well as more pleasing access through the area.

User Safety

Passive surveillance of the park is provided on the outskirts of the reserve from surrounding residential properties. However, the reserve is so vast that users could feel isolated, and perhaps unsafe, particularly in the treed area between the two reserves. The native bushland portion of the reserve is quite densely vegetated obscuring surrounding development. Consequently, this portion of the reserve could feel very unsafe, particularly in the evening and at night.

Infrastructure Investment

There has been significant investment in the oval space and more is proposed with the up-grading of the clubhouse. This high quality sports field is the result of consistent investment in the area over a long period of time. However, in contrast, the bush area is neglected and degraded undermining the quality and impressions of the oval space. This is the result of limited to nil investment in the area, such that existing facilities (bike track) are now being removed. Bush areas also require levels of investment to insure they present to the public as spaces that are cared for and valued by the City.

Opportunities for External Revenue

External revenue for the use of the oval returned just under $6000 in 2010. This is a reasonable return for a single oval. However, its use is consistently committed to existing local clubs so opportunities for further revenue are limited by this context. The bush area, as such, has no opportunity for any revenue.

Management Agreements

There are existing management agreements with the sports clubs using the oval.

CONCLUSIONS AND RECOMMENDATIONS/ACTIONS

James Miller Reserve is well-developed sporting facility linking well with adjacent sporting, community and educational facilities. It is recognised as a part of recreation hub in the suburb of Manning, with plans already in train to consolidate this role with the redevelopment of the club house in 2015/16. The remaining bush area is less successful and currently serves little purpose beyond a limited ecological role.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. Need to plan the area as a whole to provide a clear focus for the Manning community including existing public uses as well as the adjacent shopping centre.
2. As part of these plans, the future of the bush area needs to be resolved. Its degraded nature means that there is the opportunity to terminate this use and to provide more useable facilities in this area. Alternatively, its natural qualities could be substantially improved with an effective planting and management program which could involve the adjacent School whose students would be the main users of this area.
3. Provision of seating to provide the opportunity for people to remain in the space for longer periods of time.

13. CHALLENGER RESERVE

Reserve Category: District Reserve

Source: Adapted from Google Earth (2011)

Location

Challenger Park is located between Manning Road and the Canning River. It is bounded by Griffin Crescent to the North, Elderfield Road to the East, Sandon Park to the South and Challenger Avenue to the West.

Landform

The natural landform of the site would have been low lying swamp and damp lands gently sloping toward the river. However, the site has been almost totally cleared and filled during development of the soccer playing fields. A small portion of degraded native wetland vegetation exists to the south side of the park along a drainage swale adjoining Sandon Park.

Landscape Development

To the North West side of the reserve, around the clubhouse and play area, there are a number of mature trees including Peppermints and Eucalypts. Additional Peppermint Trees have recently been planted. Mature and semi-mature Paperbarks are distributed along the Northern border of the park. To the Eastern side of the reserve, a row of mature Paperbarks line the verge. To the South a small portion of degraded native wetland vegetation grows along a drainage swale ending in a portion of ephemeral wetland adjacent to Sandon Park. Two parallel stands of semi-mature Peppermint Trees line Challenger Ave.

Building Development

A brick clubhouse is located to the North West corner of the reserve. Parking areas surround the clubhouse. A shared parking area (with the bowling club) is located just to the North of the club house with a capacity for over 80 cars. A smaller dedicated parking area exists to the West of the clubhouse with capacity for a further 40 cars. A BBQ, picnic table and playground with slide and miniature rock climbing wall are located adjacent to the clubhouse. A walkway/cycleway borders the reserve to the South and East.

Current Use

During observation surveys conducted in 2011, a variety of walkers, dog walkers, runners and cyclist used the Northern area of the park, containing the active playing fields, on all observations days. Soccer training was observed after school on weekdays. Currently, a lease agreement is being negotiated with South Perth United Football Club. Though not observed during the survey, it is assumed that home games would occur on weekends increasing the number of weekend users. The playground was more likely to be used on the weekend. The surveys also showed a large number of users moving through the park (cycling, walking, dog walking and running) to and from the adjacent Mt Henry Reserve to the South the park. A small gathering after school of adults and children were observed having a picnic.

Surrounding Development

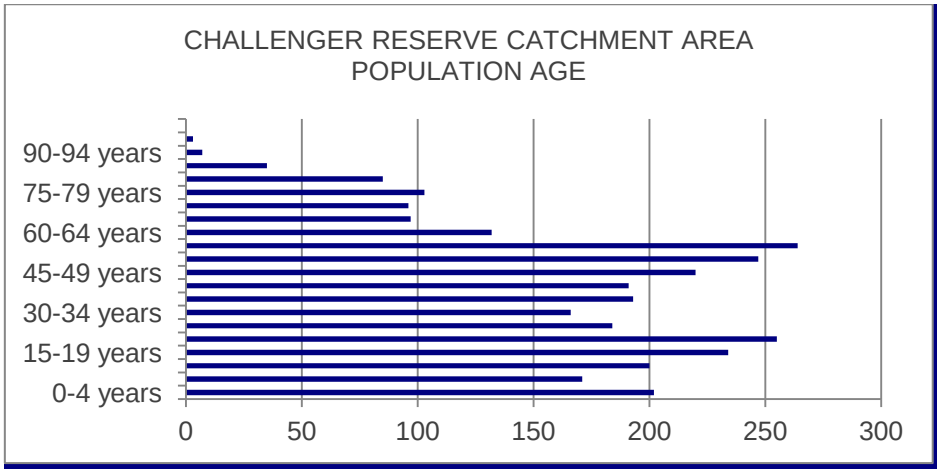
The surrounding development is single residential on large lots. Land within the catchment area is zoned Residential R20. Along the river, lot and house sizes are large. In the Western portion of the

catchment, many of the original 1000m2 plus lots have been subdivided to form smaller lots accommodating duplex development.

Apart from residential development, Sandon Park (containing the Stacey Boathouse and Scout Hall) are located to the South of the reserve. Bodkin Park is located to the South East and private playing fields are located on Manning Road. The reserve also adjoins the Manning Bowling Club and Tennis Courts. A small portion of local commercial development exists along Letchworth Avenue.

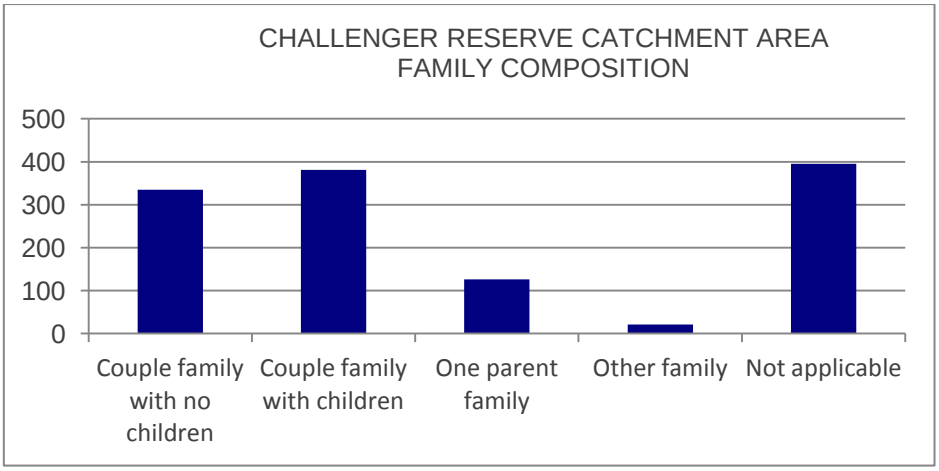
Catchment Population

The most prominent age groups within the catchment are the 20-24 year olds and 50–60 year olds. However, children of all age groups are well represented. The smallest age group is 65 years plus.



Source: Australian Bureau of Statistics (2006)

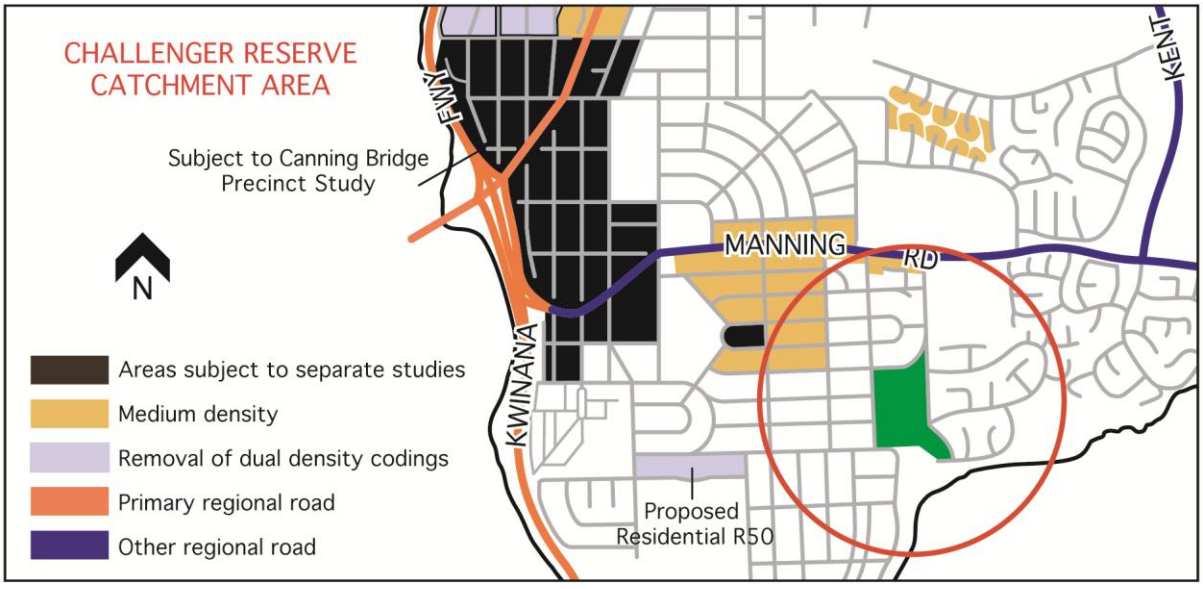
Compared to most catchment areas within the City, there are an unusually high proportion of couple families with children, these family types are likely to be attracted to the larger single dwellings and lot sizes. The middle age groups represent the parents of the children 0-19 years. There are also a reasonable number of couple families without children. Many of these are likely to be empty nesters, represented by the 50-60 year age group, whose children have moved away from home but are still living in the larger family homes or have relocated to more contained, newer accommodation in the area. However, the largest group of family type is still single person, defacto households and shared households (described in the census as 'non-family households'). These households are likely to be accommodated in the dwellings on smaller lots to the West of the catchment. Similarly, the large number of 20-24 year olds and 25-30 year olds could represent shared households or defacto couple households attracted to the older rental housing in the district awaiting redevelopment. The location of Curtin University just outside the catchment area would make this area attractive for student accommodation.



Source: Australian Bureau of Statistics (2006)

Future Development

It is not likely that any major changes will take place within the catchment area. The whole area is zoned R20, which will lead to continuing redevelopment of the area with duplex housing and more contained single residential housing replacing the original single residential housing. This process is already well advanced. Under the most recent Draft Local Housing Strategy, a small portion on the edge of the catchment is proposed to be rezoned to accommodate medium density housing.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

The reserve has been categorised as a District facility. District reserves are those areas of publicly owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs.

Protection/Enhancement of Biodiversity

The playing fields will not offer any contribution to protection of biodiversity within the catchment. However, the degraded wetland vegetation around the park is likely to contribute to bio-diversity by sheltering birds, small mammals and reptiles as well as providing links through to the adjacent river reserve.

Climate Change Resilience

The reserve is only slightly elevated above the groundwater table meaning that the roots of mature plantings in and around the reserve will have already penetrated this resource. This will provide the trees with a natural resilience to climate change so long as the groundwater table does not drop to any great extent. However, the extensive areas of turf planting make the sporting fields vulnerable to natural or imposed water restrictions.

Natural Resource Degradation

The playing fields have been entirely constructed and have no natural resource value. The remnant wetland vegetation is degraded with weed intrusion and litter noticeable. However, the wetlands and native vegetation will help to provide links through the park and to the river for native birds, mammals and reptiles. Fire is also a threat to native bushland, particularly with the more intensifying summers resulting from climate change.

Opportunities to Increase Tree Cover

It is evident Council has been making an effort to increase tree cover to the reserve; many young trees have been planted to the North of the reserve. This will provide much needed shade to this area.

Opportunities for Water Conservation Strategies

Opportunities exist to decrease water usage by incorporating of more native landscaping to the edges of the reserve. Further opportunities exist to the South of the reserve where reticulated turf areas are hardly used.

Access to and within Reserve

The reserve is easily accessible by car, and ample parking is provided. The reserve is turfed and allows foot traffic, but formal access through the reserve is not well provided for except on its edges. In particular, access through the reserve at the North end is poor. A path belonging to Sandon Reserve provides access from the South of the reserve to Sandon Park. A footpath is provided along Challenger Parade on the opposite side of the road to the park.

Use of Area by Current Population

The park appears to be reasonably well used by the surrounding population for activities such as walking, dog walking, running and cycling. However, the use of the reserve for soccer is likely to cater for a wider rather than local population.

During 2011 observation surveys, a variety of walkers, dog walkers, runners and cyclist used the North portion of the park, containing the active playing fields, on all observations days. Soccer training was observed after school on weekdays. The surveys showed a large number of users engaged in activities such as cycling, walking, dog walking and running to and from the adjacent Mt Henry Reserve.

Resident surveys conducted in 2012 found most respondents within the catchment were satisfied with the reserve. The most popular activities for respondents were walking, cycling and using the playground.

Diversity of Recreation Opportunity

Active sporting pursuits, such as soccer, are well provided for. However, the reserve could cater better for more local uses such as walking, dog walking, playground use and social gatherings which currently have to adapt their activities to the constraints of a sporting field.

Opportunities to Increase Use/Attraction

The reserve provides a well-maintained playing space for soccer. However, as mentioned earlier, use of the reserve for soccer is likely to cater for a wider rather than local population. To cater better for local uses (such as walking, dog walking, playground use and social gatherings) more tables, benches, play equipment and landscaping could be provided, along with better connections to the river from the North of the park as this reserve appears to be used in conjunction with the river parks. Suggestions from the resident survey for improvements within the Manning area were for more trees and vegetation (to encourage native birds) to form enclaves for picnics and social functions, and the installation of art works (e.g., sculptures, child interactive art).

User Safety

Turf is well maintained and does not present a hazard to users. Passive surveillance is provided to the playing fields from surrounding dwellings. The wetland area towards Sandon Park provides opportunities for concealment and could consequently be an unsafe space.

Mosquitoes are naturally occurring in wetland areas. However, management of mosquitoes becomes an issue that the City is required to manage when areas around wetlands are developed for residential purposes. Management of mosquitoes has been a contentious issue for residents near the river and for users of the river parks. Last year, a particularly high number of mosquitoes were found in the river parks and tidal wetlands. Concerns arose regarding the nuisance and health risks of Ross River Virus. There has been an ongoing debate about how to deal with the issue while maintaining a healthy river environment. As part of the Council's response, the "City of South Perth Mosquito Management Plan 2011/2012" has been updated. New breeding grounds have also been identified. Known breeding grounds within the catchment for Challenger Reserve are: 1) the wetlands at the foot of the park in Sandon Park; 2) the tidal wetland area at the foot of Bodkin Park; and, 3) the tidal wetlands along Salter Point Parade.

Level of Infrastructure Investment

Infrastructure investment in this reserve has been high, providing a high quality sporting environment that is well supported by ancillary uses, such as car parking and playing areas, and a well-equipped club house. Away from the sporting fields, investment is less evident but there has been some new planting to the South of the reserve.

Opportunities for External Revenue (fees, grants, leases etc)

In 2011, Council received revenue of $2,927 from the reserve. This is low compared with other active open spaces, but a lease agreement with South Perth United Football Club is currently being finalised. The propensity for sporting uses to draw many players into the area from outside the City requires careful consideration of the level of subsidy provided by the City.

CONCLUSIONS AND RECOMMENDATIONS

Challenger Reserve is very effective and well-used sporting facility located in the heart of the suburb of Manning. It provides opportunity for more passive use of the area, though the dominant sporting focus of this reserve means other uses are not an integral component of the design of the reserve.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. The trees planted near the play area will improve the park when mature, allowing the area to accommodate further landscaping in the form of native garden beds. This would increase water efficiency as well as provide an attractive space to walk/jog through.
2. Formal paths through the North and East and West sides of the reserve to allow better access for walkers/joggers and provide better connection to other river parks often used in conjunction with this one.
3. More tables, benches, BBQ facilities could improve the reserve.
4. Review lease agreements.

14. MORRIS MUNDY RESERVE

Reserve Category: District Reserve

Source: Adapted from Google Earth (2011)

Location

Morris Mundy Reserve is located on Oxford Street in Kensington to the East of Canning Hwy and North of Douglas Ave.

Landform

The natural land form of the site has a gradual slope from the North East to the South West. This slope has been 'cut and filled' to form a large flat surface that now characterises the reserve on its Oxford Street frontage. However, the creation of this space has formed a sloping bank to the South West boundary that gradually decreases along the North West boundary. A fenced drainage basin is located on the North East boundary.

Landscape Development

The reserve is characterised by turfed development that is only broken by some discontinuous perimeter planting. There is a small area of decorative garden planted at the entrance to the car park off Oxford Street. There is stand of mature Box Trees line the Oxford Street boundary, two stands of very striking, mature Lemon Scented Gums located along the top of the bank on the South West Perimeter and a number of mature and semi-mature trees (both introduced and native) in the North corner of the reserve. There is also a range of shrub and tree planting around the drainage basin and club house facility.

Building Development

There is a club house and associated car parking for 8 vehicles in the North Easterly corner of the reserve. The club house provides change room, toilet and catering facilities. A new well-equipped playground is located in the North of the reserve; it is well shaded by shade sails and by surrounding trees. A picnic table is also provided there. Four shaded park benches are located on the North East boundary of the park.

A basketball hoop set in a small concrete pad has been installed in the South West corner of the park. One set of AFL goal posts (not full field) are located in the reserve, along with two cricket nets with an artificial surface.

Current Use

Kensington Cricket Club uses the oval for training. This is consistent with the key activity recorded during 2011 observation surveys being cricket, with bowling and batting practice during the week and games on the weekend. Running, dog walking and walking were also frequently noted activities.

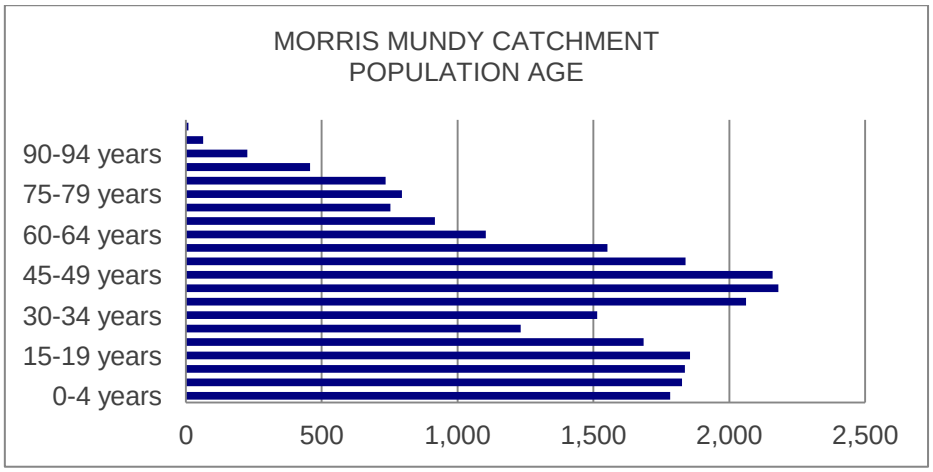
Surrounding Development

There has been recent redevelopment in the area with the establishment of new single residential dwellings, as well as the renovation of older character weatherboard and brick housing stock. The surrounding residential development is predominately comprised of single residential dwellings on large (approximately 670m2) lots. The majority of the catchment is zoned R15. Adjacent to Canning Hwy, land is zoned Highway Commercial/R80. This has led to the development of uses such as

apartments, shops, offices and some new medium density accommodation. Lots adjacent to this area are zoned R25. In addition to the residential and commercial development, Kensington Primary School is located in the catchment area, along with a small pocket of local commercial development. There are two buildings used for public worship in the catchment area.

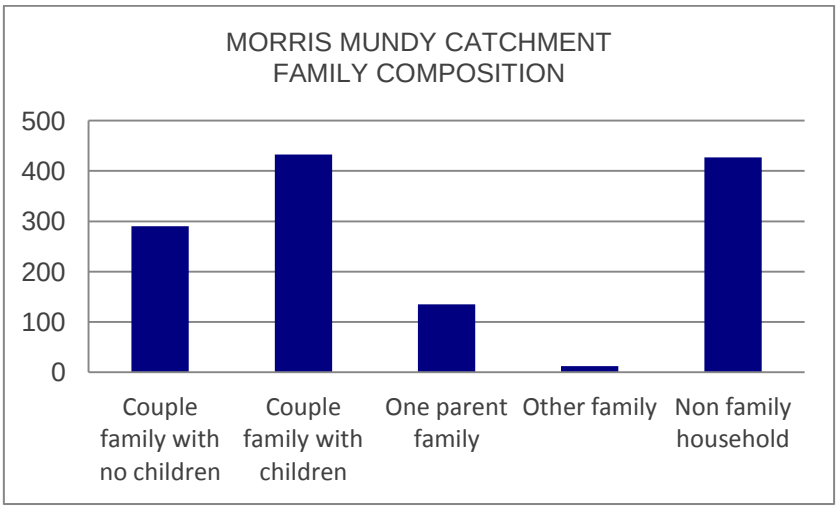
Catchment Population

The dominant age group in the catchment area is 40-49 year olds. There are also a large number of 35-39 year olds and 50-54 year olds. There are a significant number of children in the age groups of 0-14 years and adolescents in the 15- 24 years age group.



Source: Australian Bureau of Statistics (2006)

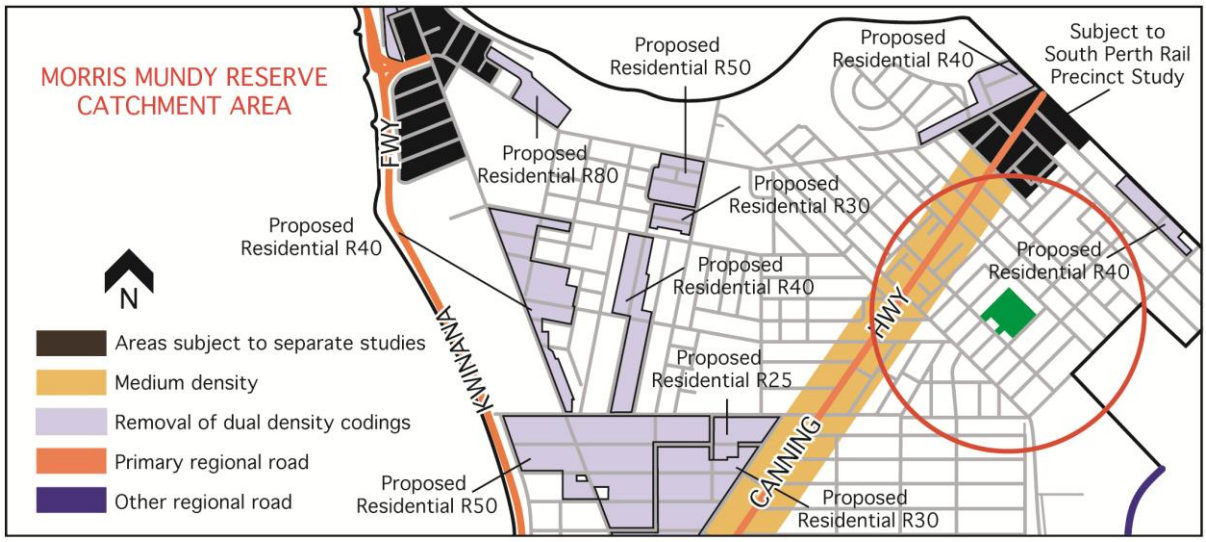
The most prominent household type is couple families with children, followed by non-family households; a category including single persons, de-facto couples, and shared households. There are also a significant amount of couples with no children. The large amount of people spread across the 30-59 and 0-20 age groups accounting for couples with children of various ages.



Source: Australian Bureau of Statistics (2006)

Future Development

Under the most recent draft Local Housing Strategy (City of South Perth, 2011), the land adjacent to Canning Highway and within 100m of the highway is earmarked to be developed at a medium density. The rest of the catchment is not subject to any proposals for change.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

The reserve has been categorised as a District facility. District reserves are those areas of publicly owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs.

The following performance criteria have been developed for this category of reserve to address its contribution to the sustainable development of a reserve system in South Perth.

Protection/Enhancement of Biodiversity

The park does not contribute to protection of biodiversity as it is an entirely constructed space.

Climate Change Resilience

Turf is an intensive water user and, as such, not resilient to a drying climate resulting from climate change. It is particularly vulnerable to longer and drier summer seasons in a political environment where water restrictions are an accepted component of public policy.

Natural Resource Degradation

The park's constructed nature means that it has no natural resource value.

Opportunities to Increase Tree Cover

Additional tree planting could be accommodated to the North West and South West boundaries of the reserve with no impact on organised sport activity. This would have the advantage of reducing watering demand in the medium term and providing a more complex and interesting areas of open space to encourage greater use.

Opportunities for Water Conservation

The reserve is comprised mainly of reticulated turf, a water intensive landscape type as it requires large amounts of water over the summer to maintain its quality. While active sporting spaces require a high level of integrity in relation to turf quality to maintain traffic-ability this does not hold for surrounding areas. There are opportunities for water conservation particularly in association with new planting regimes.

Access to and within Reserve

The reserve is easily accessible by car from the catchment area. There is a small parking area in good condition, as well as informal verge parking adjacent to the reserve. There is a footpath on Oxford Street on the opposite side of the road from the park – this is reasonably well connected to the surrounding area, including the Kensington Primary School. There is no cycle path; however, streets are quiet enough to be cycle-friendly. There is a pedestrian/cycle underpass at Canning Highway and dedicated two lane cycle-way on Banksia St that connects the catchment to the foreshore. The grid layout of the residential development aids navigation on foot and by bike.

Although the turf is trafficable, there are no formal paths within the reserve particularly to accommodate access to the playground which is situated some way from the road. This makes the park less attractive for passive use, particularly for the frail or for parents with prams wanting to use the playground.

In many cases, the houses abutting the reserve have direct access to the reserve in the form of gates. The park is also accessible by foot from Collins Street through two grassed access ways. One of these appears to be used for vehicle access and parking by adjoining properties.

Use of Area by Current Population

Kensington Cricket Club uses the oval for training, and the key activity of this park recorded during observation surveys carried out in 2011 was cricket: bowling and batting practice during the week and games on the weekend. Resident surveys carried out in 2011 showed that most respondents were satisfied or very satisfied with the reserve. Dog walking and using the playground, followed by walking were the most popular activities mentioned by respondents. The popularity of playground use will coincide with the unusually high number of families living in the area.

Diversity of Recreation Opportunity

The main use of this oval is for cricket games and practice, and it provides well for this. There is sufficient shade provided to the perimeter of the reserve to encourage walking; this is not the case for many other areas of the reserve. In addition, the sloping banks of the reserve, and lack of paths restrict a broader range of more informal uses. At the moment, this reserve appears as a single use reserve that limits the opportunity for diversity of recreational use.

Opportunities to Increase Use/Attraction

Formal walkways around the park, in particular to the playground, would provide better access for walking, jogging and playground users increasing the attraction of the park for surrounding residents. Toilets that are accessible on weekdays would also allow users to stay in the area longer

User Safety in Area

Surrounding properties provide passive surveillance of the reserve, particularly those more recently constructed, which address the reserve with open fencing and include two storey developments.

The turf is well maintained and does not present a hazard. The reserve boundaries and playground are well shaded. Regular sieving of the playground sand takes place. The drainage basin is fenced to prevent entry and potential injury.

Level of Infrastructure Investment in Area

Infrastructure investment is evident in the clubhouse and good quality play equipment.

Management Agreements in Place

There are no management agreements in place for this reserve.

Opportunities for External Revenue

The City received $941 of revenue generated by this reserve. The reserve is primarily used by the Kensington Cricket Club, but no management agreement is in place.

CONCLUSIONS AND RECOMMENDATIONS

Morris Mundy Reserve provides good sporting opportunities for the surrounding residential community that includes a high proportion of children and adolescents. However, beyond this role, its opportunities are more limited and there is scope to improve the attractions of the reserve to encourage greater recreational use by wider sections of the community. The following recommendations are proposed:

1. Provision of formal walkways around the park, in particular to the playground, to allow improved access for walking and jogging and a more effective way of negotiating the slopes in the park.
2. Provision of toilets that are accessible on weekdays for user's convenience.
3. The clear establishment of a boundary between what is public and private space on the reserve. Formalisation of access via Collins Street (in conjunction with the establishment of paths) may be a way of achieving this.
4. The use of water sensitive design techniques to more effectively integrate the drainage sump into the recreational and environmental performance of the reserve.
5. Future policies and strategies to encourage visually permeable fencing for development adjoining POS where practical. This will facilitate passive surveillance and promote a soft interface between residential development and POS.

NEIGHBOURHOOD RESERVES

15. COMER RESERVE

Reserve Category: Neighbourhood Reserve

Source: Adapted from Google Earth (2011)

Location

Comer Reserve is located just East of the Kwinana Freeway. It is bordered by Melville Parade, Comer Street, Eric Street and the Como Croquet Club.

Landform

The park forms two largely flat terraces separated by a slope. The park itself forms the larger Eastern terrace, while the car parking and toilet block form the Western terrace.

Landscape Development

The reserve is predominantly turf, with some peripheral tree planting on its South, West and Northern aspects. The planting to the North and the West are mainly mature trees including Moreton Bay Figs, Peppermints and Camphor Laurel. These trees are now substantial and throw shade over a considerable area of the park. Unfortunately, a number of these trees are now coming to the end of their lives and will have to be removed in the foreseeable future. Plantings to the South of the reserve consist of immature Peppermints. There is no planting between the croquet club and the reserve.

Building Development

In the South West corner of the reserve, there are a large toilet block and separate change rooms. Though these have been on the site for several years, they are well maintained and updated. Car parking for the reserve is provided within its boundary on the Western side with access from Melville Parade and Eric Street. Approximately 40 bays are provided. There is additional street parking provided on the Northern and Southern boundaries of the reserve (60 bays). The built facilities provided on the reserve are an in-ground concrete cricket pitch, playground equipment and two BBQs. The reserve is also the anchor point for a major pedestrian bridge over Melville Parade and the Kwinana Freeway which provides access to the Swan River foreshore. The bridge on-ramp is located in the Northern section of the reserve.

Current Use

The reserve is currently used for a range of largely informal purposes. The turf area is reserved for an occasional sporting fixture but these are casual affairs as the park does not provide a large enough space for any formal competitive sport. The large areas of shade provided by the trees attract people to walk in and around the area, as does its ready access to the summer sea breezes coming off the river. The playground, BBQ and adjacent turf provide opportunities for a range of mixed-age gatherings. The nearby toilet block is also a valuable support of this activity. However, the greatest quantifiable use of the reserve is the access it provides for cyclists using the bridge to cross the freeway and join up with foreshore cycle way. All of these uses are supported by free and ready-accessible car parking in and around the reserve.

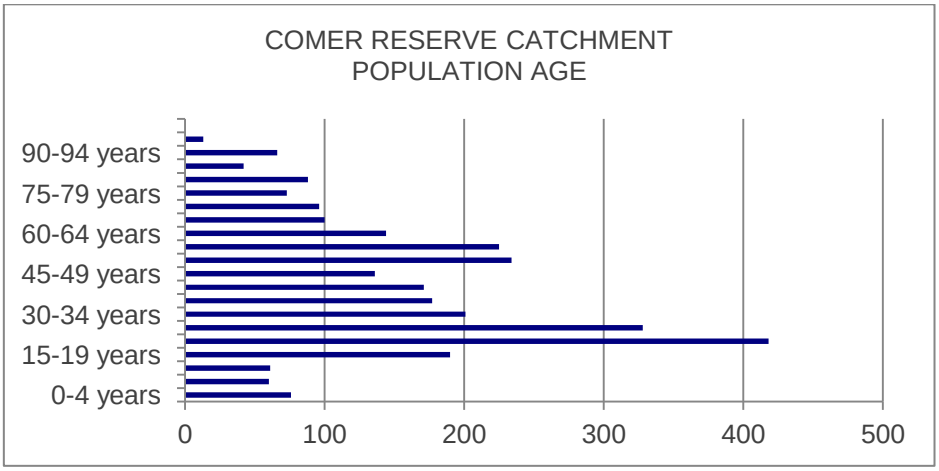
Surrounding Development

The surrounding residential development is restricted by the freeway and the river to the West and Royal Perth Golf Club to the North. Thus, the catchment of the reserve is primarily to the South and

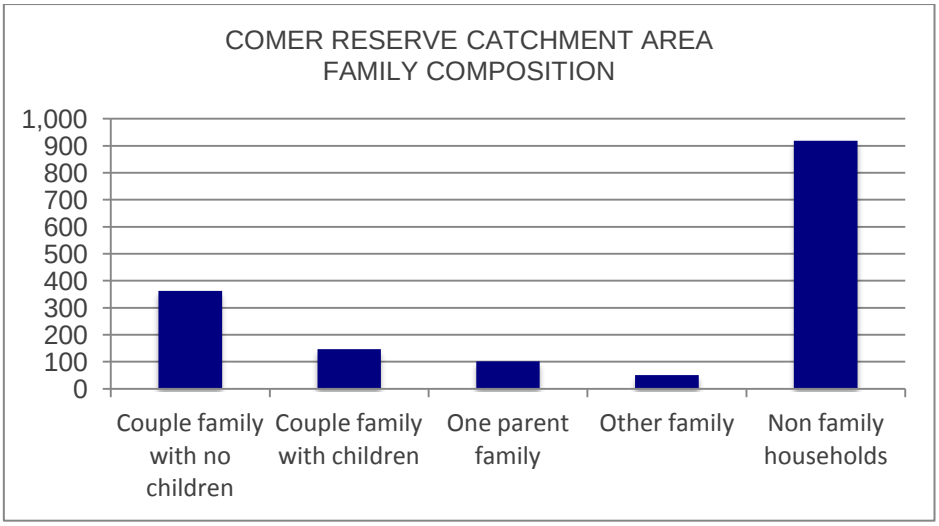
East. This area is dominated by unit development and very few single residential houses remain. The units are dominated by medium density town houses, with occasional higher density flats. This process of redevelopment has continued over the last fifty years and, as a consequence, there is a diversity of housing forms and appearances. Apart from the residential development, just to the South of the reserve is Preston Street shopping centre with a wide range of shops, entertainment and office facilities. Further commercial development exists along Melville Parade overlooking the freeway and river.

Catchment Population

The catchment population is dominated by young adults and the middle aged. 20-30 year olds are the largest age group followed by 50-60 year olds. The elderly (70+) and children (0-15) are the smallest age groups. This profile is typical of redeveloped inner urban areas. The more contained accommodation attracts young renters and non-family middle aged people (usually owners) who wish to be close to the employment and facilities that a central location offers. This profile is reflected in the structure of households with non-family households (singles and group households) dominating the community followed by couples. Households with dependents are a minority of the population.



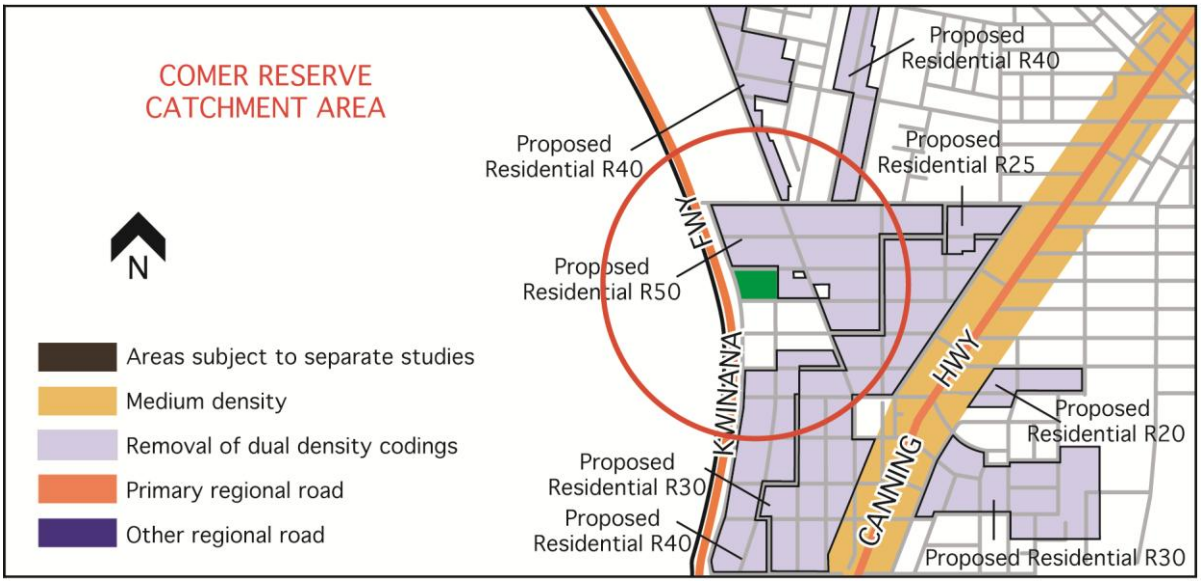
Source: Australian Bureau of Statistics (2006)



Source: Australian Bureau of Statistics (2006)

Future Development

Currently, the catchment area is divided into three split-coded zones allowing for greater intensity of development if certain performance criteria are met. The area to the North is zoned at the highest density, R30/50; the area to the East at the lowest density, R20/30; and, the area to the South, R30/40. These density codings have led to the now characteristic medium-density redevelopment of the district. In the future, these density codings are proposed to be effectively increased by dropping the lower density code and allowing all development to be at the higher density range. This will effectively increase the density of the area. The City has forecast that this change may produce an additional 450 dwellings, though not all would be within the boundaries of this catchment.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

Comer reserve is classified as a neighbourhood reserve. Neighbourhood reserves are those areas of publically owned and managed land whose primary purpose is to meet the recreational needs of the immediate local suburb and to develop and enhance local 'sense of place'. This context will be used in assessing the sustainability qualities of this reserve.

Protection and Enhancement of Biodiversity

This reserve is very much a manufactured space and, as such, the quality of its biodiversity is very low. Apart from some older and newer plantings of Peppermint Trees, there are few elements of the native vegetation.

Climate Change Resilience

Apart from the Peppermint Trees referred to above, the plantings on this reserve are all introduced species and therefore dependent on regular summer watering for survival. As such, any change involving longer and drier summers will require more water to sustain the landscape. Given the age of some of the trees, it is likely that their roots have penetrated below ground water as the ground water table is essentially at the river level (approximately two metres below the ground). This would protect these plantings from climate change impacts, but as noted some trees are now nearing the end of their lives meaning the City will have prepare for their removal and replacement.

Natural Resource Degradation

The natural resource qualities of this area have long since been extinguished, thus it is not possible to assess current level of degradation.

Opportunities to Increase Tree Cover

The tree cover on much of this reserve is excellent but, as noted, may require replacement. There is a gap in the planting along the Northern boundary and while this space is constrained, there is room for further tree planting. The existing attraction of this area for walking and relaxing reinforces the need to improve this experience. A continuity of shade planting would achieve this.

Opportunities for Water Conservation

This reserve is fully reticulated providing a lush surface attracting people to the area. Despite being of competition standard, much of its turf facility is only used informally. From a water budget point of view, there are opportunities to grade water use from high on the periphery (currently attracting the greatest use) to less in the centre (which only hosts an occasional social game of cricket). This form

of hydrozoning while not leading to massive reductions in water demand begins to instil the important principle of future water use – fit for purpose.

Access to and within the Reserve

The reserve is readily accessed from the surrounding areas via residential roads that are suitable and safe for walking and cycling. Adequate end-of-journey car parking is available for those using the reserves, albeit there is often competition for spaces from car parking servicing adjacent commercial uses. Within the reserve, the only access provided is between Comer Street and the footbridge catering for the cyclists and few pedestrians wanting to traverse the freeway to go the foreshore. The turf on the reserve is readily trafficable. The limitations of this form of access means there are opportunities to improve movement within the reserve.

Use of Area by Current Population

The park is generally well visited, particularly on weekends when sporting activity and associated spectators generated an active atmosphere. It is not possible to determine the percentage of local people using the area, but given informal nature of sport on this reserve it is likely to be associated with local organisers. This sort of activity also relates to the dominant demographic living in the area - young adults from 20-35. There was also evidence of middle-aged groups in the walkers, dog walkers and strollers; it was representatives of this group that responded to the household survey. In all cases, they were satisfied with facilities provided by the reserve. The group less likely to be local were the large number of cyclists traversing the reserve either to or from the foreshore cycleway. An on-ramp/bridge would draw cyclists from South Perth and beyond. However, such a regional-use would not diminish local enjoyment of the area.

Diversity of Recreation Opportunity

There is a good range of uses provided for in the park for a wide range of users. The turfed space is ideal for a variety of informal active recreation and can be used more formally, albeit with some restrictions. The old spreading trees on the reserve provide good shade for passive recreation (sitting, strolling, etc.). There is a range of complementary facilities to reinforce uses, such as the playground and BBQ. Most importantly, both the more active and passive uses of the reserve are supported by toilet facilities allowing people to stay in the area longer. Additionally, the park provides an attractive conduit space for walkers and cyclists traversing the area.

Opportunities to Increase Use/Attraction

As discussed above, the park has a good facility base. There are opportunities to increase peripheral tree planting to provide more comfort and interest for walkers as would more formal walkways around the reserve. This reserve has the sort of facilities that attract people to linger and stay in the area.

More seating would certainly improve this quality, particularly for the older and important demographic of the catchment population.

User Safety

For the most part, this is an open and well patronised reserve with adjacent uses generating activity throughout the day and night as well as providing overlooking. As such, the reserve is well observed and feels safe.

Level of Infrastructure Investment

This is an old reserve which the City has been investing in for a long period of time. As a consequence, it has with a wide range of recreation facilities to encourage its use. In particular, a number of shaded parking spaces and public toilet facilities support people visiting the area.

Opportunities for External Revenue

At present, only a small amount of income is derived from this reserve; in 2010, this was just over $1000. This would most likely be from informal sports and associated functions taking place on the reserve. However, because such activities do serve more local demands/needs many of these types of activities would not attract a fee. With a reserve such as this, the opportunities for revenue are limited and could well be counterproductive in ensuring the local value of this reserve is maintained.

Management Agreements

There are no management agreements in place.

CONCLUSIONS AND RECOMMENDATIONS

This is high quality reserve used by the local population whilst providing a cog in the wider regional recreation system. It is a well-established reserve with mature plantings that attract people to the facilities provided by the site.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. To address the issue that some of the mature vegetation requires replacement, and that following their removal, the reserve will lose part of its 'established' character.
2. Further tree planting opportunities exist to enclose the oval, particularly to the North, to improve the attraction of the area as a place to both dwell and traverse.
3. Currently, there are no pathways on the reserve (except for access to the on-ramp/bridge). This would improve the experience for older residents using the reserve and provide an additional facility for children and people using strollers.
4. More seating would encourage people to remain in the park.

16. COOLIDGE RESERVE

Reserve Category: Local Reserve

Source: Adapted from Google Earth (2011)

Location

Coolidge Reserve is located in the suburb of Como, East of Canning Bridge and adjacent to Neil McDougall Park. The reserve is bounded by Coolidge Street to the North, Baldwin Street to Henley Street to the South.

Landform

The natural landform of the site is largely flat. The site was cleared as part of the development of surrounding land for residential development.

Landscape Development

The reserve is a flat and barren looking. The majority of the reserve is sand and browned grass. Scattered throughout the reserve are some semi-mature and mature Eucalyptus Trees. There are also two islands of native shrubbery located towards the centre of the reserve, bordered by cut tree trunks. There is a sandy area that used to house a play area, which has recently been removed. A row of semi-mature Eucalypt Trees is located along Baldwin Street and a row of Peppermint Trees has recently been planted along Henley Street.

Building Development

There are footpaths along Henley and Baldwin Streets, but otherwise the park is bare of any building development.

Current Use

A survey of South Perth residents carried out in 2011 recorded a minimal visitation rate by residents of the catchment area, particularly compared to the very high visitation rate associated with the adjacent Neil McDougall Park. All respondents within the catchment area were dissatisfied with the reserve.

Observation surveys of the park carried out in 2011 showed that the reserve attracted few users. Those observed were primarily moving through the park (walking, dog walking, cycling). Only one user was found sitting in the area.

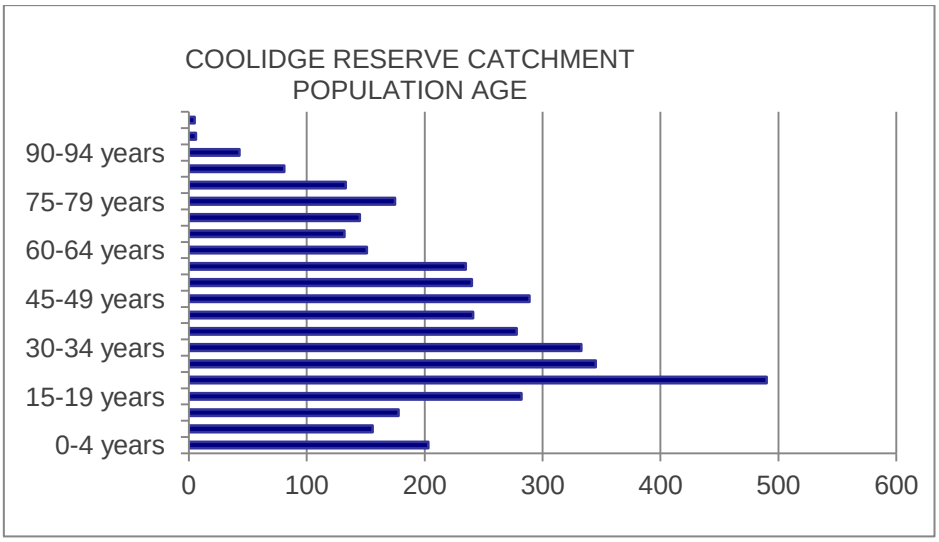
Surrounding Development

The suburb was developed in the post war period into single residential lots. Redevelopment of the area has occurred primarily in the form of grouped dwellings on smaller lots. Some larger lots remain; the South East of the catchment is zoned Residential R20 and the South West is zoned R20 and R15. To the North West, nearer to Canning Hwy and the Mitchell Freeway, land is subject to medium density split-coding, and in closer proximity to the freeway lot sizes decrease and land is zoned R40.

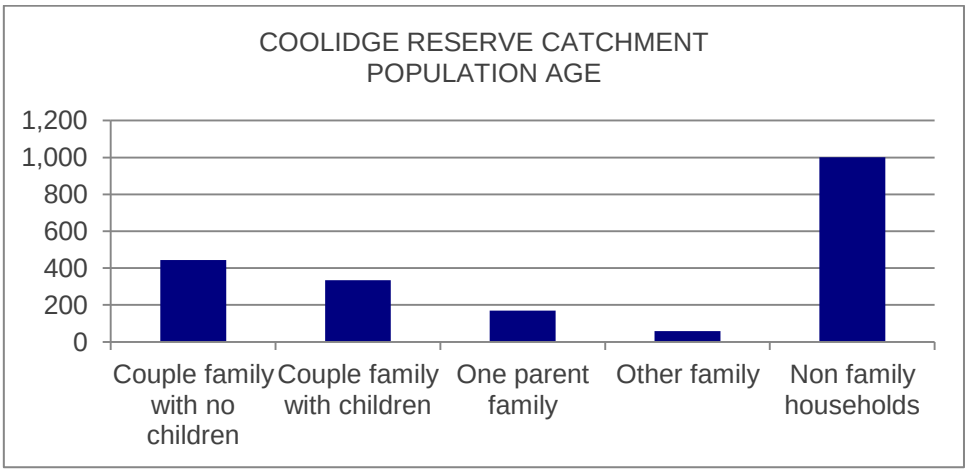
As well as residential development, Manning Primary School, Toy Library and Childcare Centre are located to the South of the reserve adjacent to James Miller Oval. Como Secondary College is also located partially within the catchment to the East of the reserve. McDougall Park Aged Care Facility is located on Ley Street opposite Neil McDougall Park.

Catchment Population

The age bracket of 20-24 year olds is by far the largest in the catchment area. The 25-34 year old bracket is also well represented, as are 45-49 year olds and 15-19 year olds. The smallest age groups are 5-9 years, 65-69 years and 80 years and over.



Source: Australian Bureau of Statistics (2006)



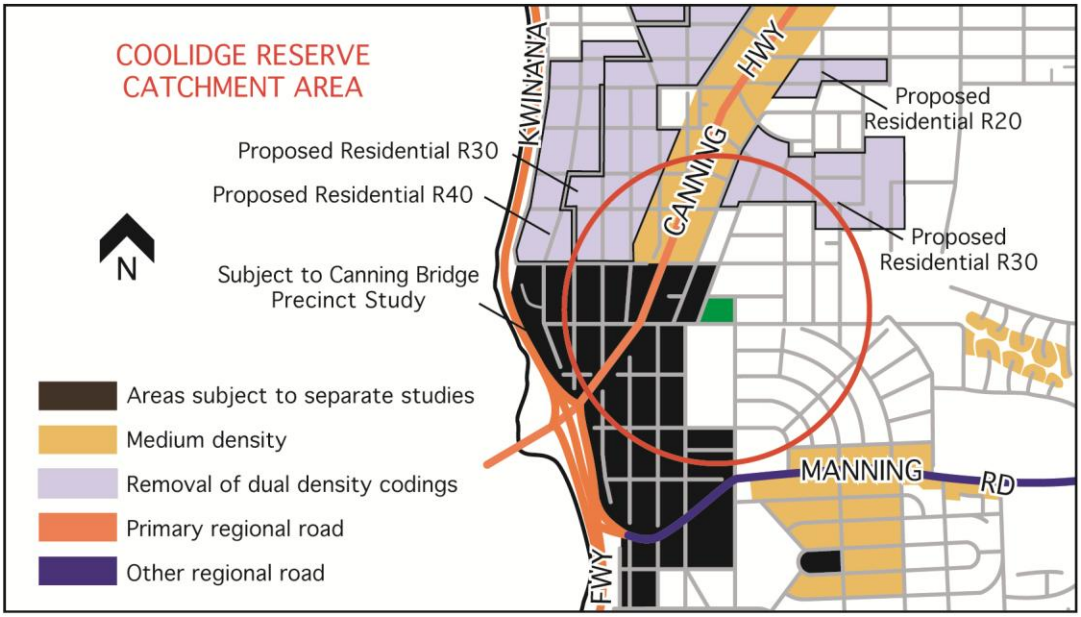
Source: Australian Bureau of Statistics (2006)

The largest population group is non-family households - this category includes single persons, de-facto, couples, and shared households. The second largest group is couple families with no children. These groups are likely to correspond to the 20-35 year age group who do not have children, as well as older couples whose children have left home (empty nesters); these household types are likely to be attracted to more compact housing types. Residents of the aged persons' home opposite Neil McDougall Park, McDougall Park Aged Care Facility, will account for some of the older population of the 75 plus age groups. Couple families with children make up less than one quarter of the catchment

population. This family type will align to the middle age groups, with children in the 0-19 year age groups. There are a small number of one-parent families and other families.

Future Development

Under the most recent draft Local Housing Strategy, a small portion of the South East corner of the catchment will be subject to a medium density coding.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

The South West portion of the of the catchment is subject to the Canning Bridge Precinct Plan (WAPC 2011), a guiding document setting out building height limits that increase with proximity to the train station (3 storeys, 4 storeys and 6 storeys). The plan does not include amendments to existing residential densities; however, it is reasonable to assume that densities within the 800m walkable catchment of the train station will be reviewed as part of the future planning process for the precinct. This will result in a large increase of the population within the catchment area. Given its increased density and proximity to the train station and consequently the city, the family types attracted to the area are likely to be young professionals and empty nesters (non-family households and couple families with no children). The smaller lot sizes resulting from medium/high density development, as well as the increase in this demographic, will impact on use of and requirements for open space within the catchment.

Long Term Vision for Canning Bridge Precinct

Source: City of South Perth (2011)

PERFORMANCE ASSESSMENT

The reserve has been categorised as a District Reserve. District reserves are those areas of publicly owned and managed land whose primary purpose is to accommodate formal sport, other forms of recreation and to protect/enhance their valued natural environment. The reserves are considered of district significance because of their attraction to a wide range of users from a range of surrounding suburbs.

The following performance assessment has been developed to address the extent to which this reserve is meeting this role within the context of the future sustainable development of reserves within the City.

Protection/Enhancement of Biodiversity

The reserve possesses some native vegetation and, as such, may contribute to protection of biodiversity within the catchment. The reserve may also provide an ecological connection to Neil McDougall and Davilak Reserves to the South.

Climate Change Resilience

The reserve's native mature trees and scrub are likely to be resilient to climate change. The reserve does not appear to be irrigated at present and much of the taller vegetation has survived the summer. However, the turf has not, requiring regular watering to maintain its integrity as a trafficable surface.

Natural Resource Degradation

Little resource degradation has occurred because the reserve is used by few people.

Opportunities to Increase Tree Cover

Tree cover could be increased to provide more shade to the reserve. Semi-mature street trees will improve the amount of shade provided as they mature.

Opportunities to Increase Water Conservation Strategies

The reserve does not appear to be watered. The native vegetation contributes to reduction of water use.

Access to and within Reserve

The reserve is accessible by bike from the South and West, although dedicated bike paths are not provided until very near to the park. Footpaths run alongside the park on Baldwin and Henley Streets. A pedestrian crossing at grade is also provided across Henley Street from Neil McDougall Park.

There is no formal access through the park and turf is dry and sandy making access through the reserve unpleasant and impossible for frailer members of the community.

Use of Area by Current Population

The park is not well used by the surrounding population. Observation surveys conducted in 2011 showed that the reserve attracted few users; those observed were primarily moving through the park rather than recreating within it.

Diversity of Recreation Opportunity

The park offers little in the way of diversity of recreation opportunity. The park's small size and vegetation cover precludes active recreational use and it is not an appealing space for passive uses. In particular, the grass is sandy and not inviting to use. There are no formal paths through the reserve and almost no facilities are provided to support passive use (only one bench). As such, the park has little appeal as a passive space and people likely bypass it to use the adjacent Neil McDougall Park.

Opportunities to Increase Use/Attraction

At present, the park is underutilised and poorly maintained. As such, there are many ways in which the use and attraction of the park could be increased. The high level of use recorded at the adjacent Neil McDougall Park attest to the attraction of a well maintained, accessible passive recreation space. As population within the catchment increases due to development around the Canning Bridge precinct, park usage is likely to increase. This is especially relevant, as provision of private open space diminishes as densities increase. Walking, cycling, using the playground and dog walking were the most popular activities of respondents within the catchment area. Other activities recorded included personal training and individual sports. All of these activities could be better catered for within Coolidge Reserve. Installation of footpaths through the reserve, play facilities and well maintained turf would help achieve this. Neil McDougall Park is already a well visited park; an increase in population will increase pressure on this facility. An improved Coolidge Park could help meet the demand for space, as well as providing a pleasant thoroughfare for cyclists and walkers accessing Neil McDougall Park.

User Safety

Passive surveillance of the park is provided from surrounding residential properties. Vegetation is either tall or very low, so there are few opportunities for concealment within the park.

Level of Infrastructure Investment

There is little evidence of investment in the reserve in terms of maintenance or infrastructure. In fact, a playground was recently removed from the park.

Opportunities for External Revenue (fees, grants, leases, etc.)

There is currently no opportunity given the level of use, size and passive nature of the reserve.

CONCLUSIONS AND RECOMMENDATIONS

Coolidge Reserve is currently poorly maintained and managed. As a consequence it is rarely used. However, it does contain some mature plantings that could form the basis of improved landscape outcomes. The two most critical issues for this reserve are the impending development of the Canning Bridge high density residential precinct and the high quality of the adjacent McDougal Park.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. Plan for the future of this reserve within the context of the design and development of the Canning Bridge precinct.
2. Integrate the future planning and design of this reserve with plans for the future development and management of the adjacent McDougall Park.
3. Investigate opportunities for traffic calming along Henley Street to facilitate easy access and movement between the reserves.

LOCAL RESERVES

17. GOSS AVE RESERVE

Reserve Category: Local Reserve

Source: Adapted from Google Earth (2011)

Location

The reserve is located in the suburb of Manning. The reserve is bounded by Gillon Street to the North, George Burnett Park to the East, Manning Road to the South and Goss Ave to the West.

Landform

This site is remnant Banksia bushland and much of the natural flat landform remains on-site. However, the bushland has been degraded. The taller trees are likely to have been removed during the early years of settlement and weed invasion has occurred. The quality of the bushland has been improving as a result of remediation by the City and local residents.

Landscape Development

No landscape intervention or development works have occurred on this site.

Building Development

The only building development on site is in the form of a crushed limestone pathway leading through the reserve from East to West and treated pine fencing around the reserve.

Current Use

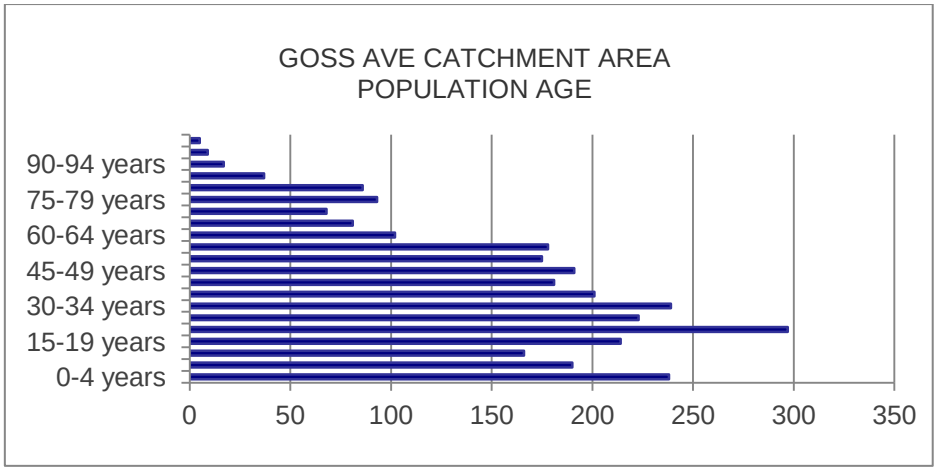
Observation surveys carried out in 2011 found the reserve was not well used. Only one person was observed enjoying the park environment during the week.

Surrounding Development

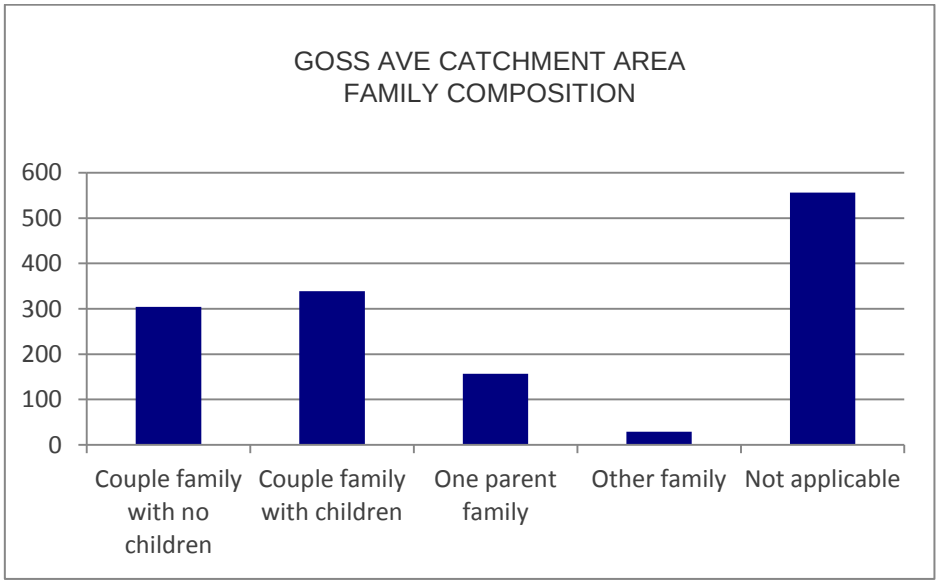
Surrounding development is largely single residential dwellings on reasonable large lots zoned Residential R20. To the East of the catchment, closer to Waterford Plaza and Curtin University, land is zoned residential R30 and supports single or grouped dwellings on smaller lots. The Manning Library and George Burnett Leisure Centre are located in the reserve, along Manning Road. Curtin Primary School is located to the North West corner of the reserve. The Collier Park Golf Course and Karawara Greenways area located within the catchment area. The Waterford Plaza shopping centre is located just outside the catchment area, along with the substantial campus of Curtin University. It is likely that students from the university form a significant proportion of the people residing within the catchment.

Catchment Population

The most populated group within the catchment area is 20-24 year olds. There are also a large number of 0-4 year-olds, and children to the age of 19. The middle age groups are all well populated. The smallest group is people aged 60 years plus.



Non-family households comprise the largest population group including single persons, de-facto couples, and shared households. This is likely to correlate with the location of the nearby Curtin University, as well as the portion of medium density housing within the catchment. Couples with children are the next largest category; perhaps correlating with the larger Residential R20 zoned lots and location of the Curtin Primary School. Couple families with children are likely to align with the older age groups who are still living in the family home despite their children having left (empty nesters).



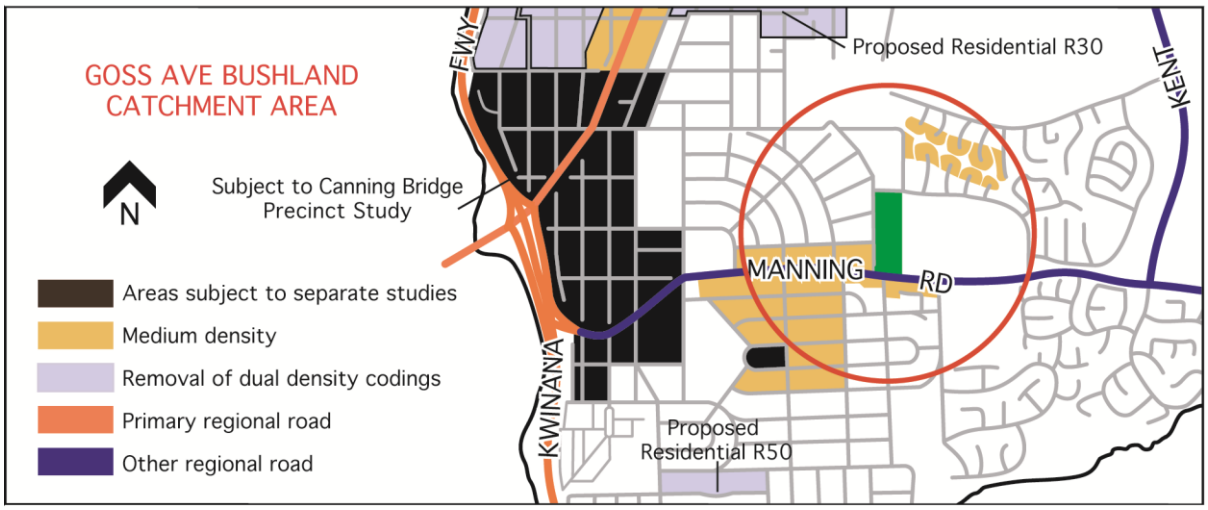
Future Development

The suburb of Karawara, located to the North and East of the reserve is currently subject to a number of planning studies to determine the future development of the area. The studies centre on updating planning requirements to reflect current practices and create a better interface with the Greenways.

Area subject to further study

Source: City of South Perth (2011)

As part of this process, under the Draft Housing Strategy (City of South Perth 2011), portions of land closest to the Karawara Greenways have been proposed for medium density development. The strategy also allocates a medium density zoning to portions of land to both sides of Manning Road to the South and West of the reserve.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

In addition to these changes, the Curtin Town Development Plan will see the expansion of Curtin's campus to include more housing, educational, and commercial uses to meet its role as a Specialised Centre under the State Planning Policy 4.2 – Activity Centres for Perth and Peel.

PERFORMANCE ASSESSMENT

The reserve has been categorised classification as a local park whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

The following performance criteria have been developed for this category of reserve to address its contribution to the sustainable development of a reserve system in South Perth.

Protection/Enhancement of Biodiversity

The remnant banksia woodland vegetation, while degraded, will contribute to the biodiversity in the catchment by providing important habitat for birds, small mammals and reptiles. This reserve will also form part of a vegetation corridor to other adjacent bushland and river foreshore environments.

Climate Change Resilience

The native vegetation within the reserve does not require watering and, as such, is likely to be resilient to climate change. However, there is growing evidence that native vegetation is becoming susceptible to drying conditions. This will need to be monitored.

Natural Resource Degradation

The bushland is remnant bushland that has degraded over time. Natural resource degradation in the form of weed intrusion is evident. Fire is also a threat to native bushland, particularly in the light of the increasingly intense summers being experienced.

Opportunities to Increase Tree Cover

It is highly likely that the larger trees that would have once been part of the vegetation associated with this reserve were removed for firewood and construction purposes in the early years of settlement. There are now opportunities to replant the Jarrah, Marri and Sheoak that would have formed a discontinuous over storey over this area.

Opportunities for Water Conservation Strategies

The reserve is not watered.

Access to and within Reserve

The reserve is accessible by foot from the surrounding area, although Manning Road is a barrier to the South. Access to the reserve from the East is in the form of a limestone path that runs alongside

George Burnett Park and through the reserve from North to South in the form of a crushed limestone park. The reserve is easily accessible by car with ample parking provided at George Burnett Park.

Use of Area by Current Population

Observation surveys carried out in 2011 found that the area is not well used by the current population.

Diversity of Recreation Opportunity

Overall the park offers limited diversity of recreation opportunity. The park provides enjoyment of natural scenery, and access through the reserve for walkers/ joggers.

Opportunities to Increase Use/Attraction

The reserve could be better utilised, and opportunities exist to increase use of the reserve. However with increased use, further resource degradation could occur. The crushed limestone path offers access by foot but is limited to those with good mobility. A formal path better connected to, and more easily accessible from, George Burnet Park would increase the ability of the wider population to use the park. A better interface between the reserve and George Burnet Park, particularly the nearby playground, could also be provided.

User Safety

The combination of vegetation within the park, the setback from Manning Road and the vast space of George Burnett Park and beyond isolates the park from surrounding activities and makes the space feel very unsafe, particularly in the early morning and evening.

Level of Infrastructure Investment

There is little evidence of infrastructure investment, beyond fencing of the park.

Opportunities for External Revenue

There is little or no opportunity for external revenue, as the reserve is bushland.

CONCLUSIONS AND RECOMMENDATIONS

This reserve provides an important contribution to biodiversity within the catchment and the City as a whole, being one of the largest remaining pieces of remnant bushland left. It also forms part of a vegetation corridor, in association with Curtin Primary Bushland and the wetland in George Burnet Park. Resident surveys carried out in 2012 found all respondents were very satisfied with the reserve, perhaps reflecting their environmental awareness. However, the reserve is not well used by residents.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve.

1. Improve the accessibility and attractiveness of the park to local residents.
2. Provide a better interface between the reserve and George Burnet Park, particularly the nearby playground.
2. Increased tree planting to improve the ecological integrity of the area.
4. Provision of further opportunities and facilities to encourage the local community to participate in rehabilitation activities.

18. DAVILAK RESERVE

Reserve category: Local Reserve

Location

Davilak Reserve is located in the suburb of Como East of Canning Bridge and adjacent to the corner of Neil McDougal Park. The reserve is bounded by Davilak Crescent to the North and East, and Ley Street to the West.

Landform

The flat natural landform of the site does not appear to have been altered to any great extent. The site contains remnant native vegetation, primarily Banksia woodland, which has been undergoing rehabilitation.

Landscape Development

The vegetation on the reserve is predominantly remnant Banksia woodland which has been undergoing rehabilitation. The verge and boundary of the reserve are grassed providing a 'lawn' buffer between the road environment and the retained bushland. A native seed orchard is also located within the reserve; this is fenced.

Building Development

There are limestone tracks leading through the reserve and a wooden paved gazebo located within the bushland to the North side of the reserve.

Current Use

Observation surveys of the park carried out in 2011 showed that very little activity took place at the park on weekdays and Sundays. However, the park was well used on Saturdays, with a range of users engaged in dog walking, walking and cycling, as well as generally enjoying the environment of the park and using it as a picnic location.

Surrounding Development

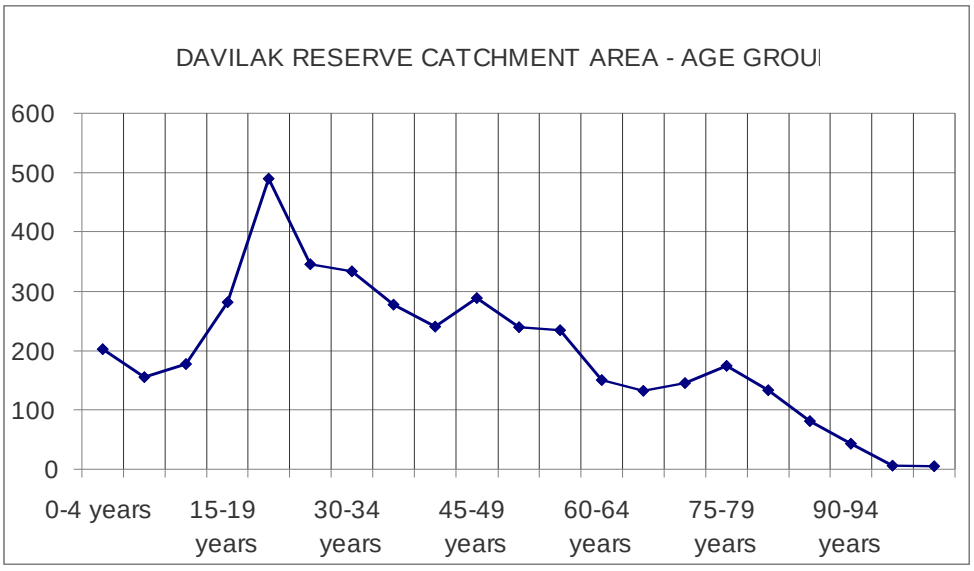
The suburb was developed in the post war period into single residential lots. Redevelopment of the area has occurred primarily in the form of grouped dwellings on smaller lots. Some larger lots remain - the South East of the catchment is zoned Residential R20 and the South West is zoned R20 and R15. To the North West, nearer to Canning Hwy and the Mitchell Freeway, land is subject to medium density split coding. In closer proximity to the freeway, lot sizes decrease and land is zoned R40 with a few pockets of few split coding at a medium density.

As well as residential development, Manning Primary School, Toy Library and Childcare Centre are located to the South of the reserve adjacent to James Miller Oval. Como Secondary College is also located partially with in catchment to the East of the reserve. McDougall Park Aged Care Facility is located on Ley Street opposite the park.

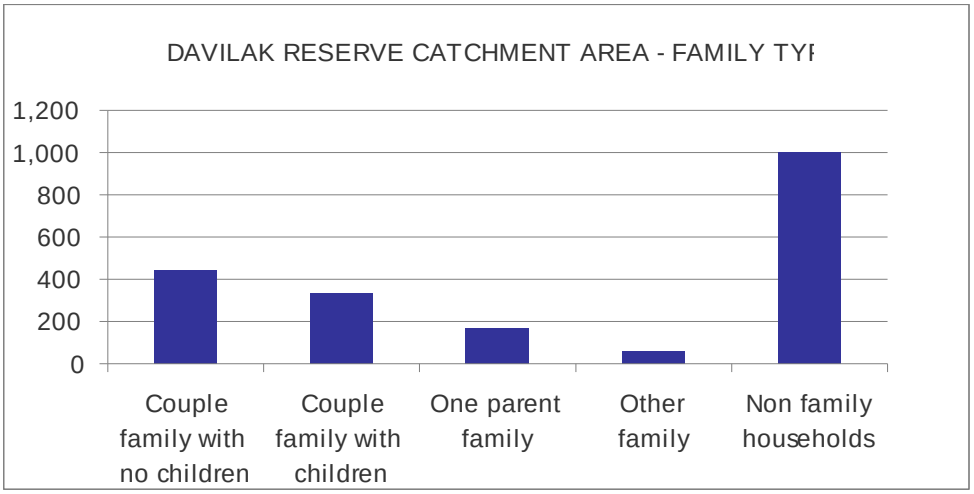
An area of land reserved for Public Purposes is located immediately to the South of the reserve. This land is now in private ownership and negotiations are continuing with Council regarding its future use and development.

Catchment Population

The age bracket of 20-24 year olds is by far the largest in the catchment area. The 25-34 year old bracket is also well represented, as are the 45-49 and 15-19 year olds. The smallest age groups are 5-9 years, 65-69 years and 80 years and over.

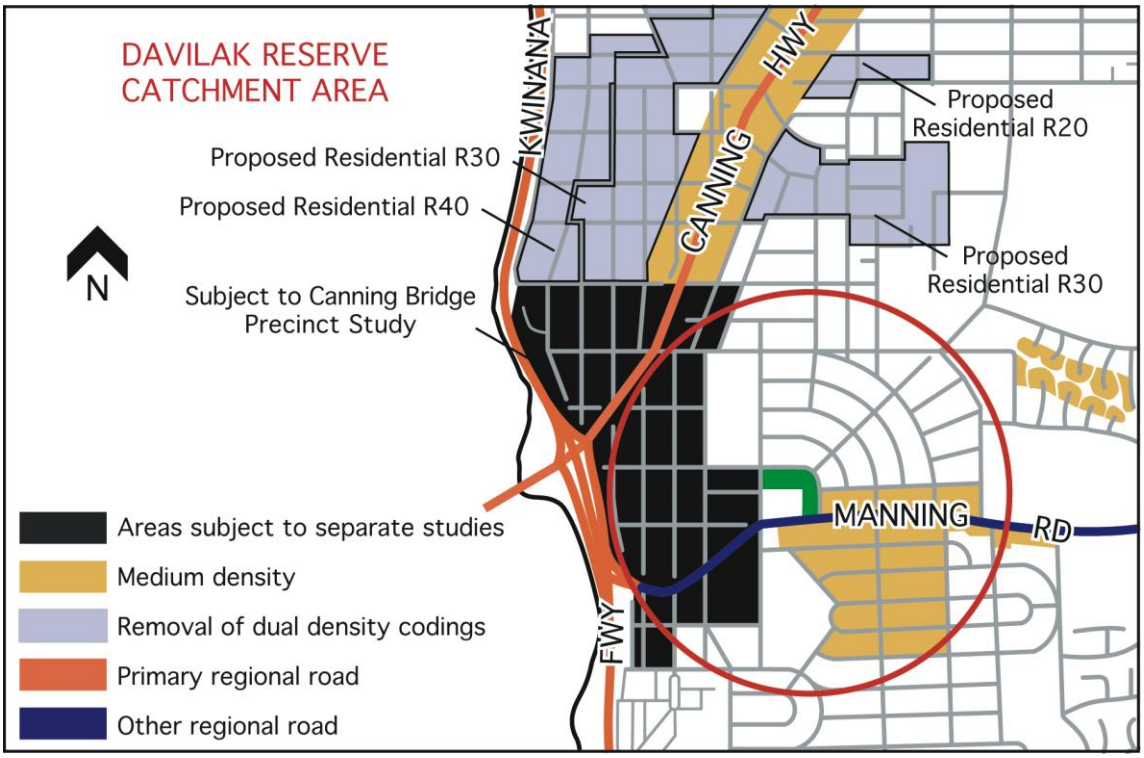


The largest population group is non-family households including single persons, de-facto, couples, and shared households, while the second largest group is couple families with no children. These groups are likely to correspond to the 20-35 year age group who do not have children, as well as older couples whose children have left home (empty nesters). Both these household types are likely to be attracted to more compact housing types. Residents of the aged persons home Mcdougall Park Aged Care Facility opposite Neil Mcdougall Park will also account for some of the older population of the 75 plus age groups. Couple families with children make up less than one quarter of the catchment population; this family type will also be aligned to the middle age groups with children in the 0-19 year age groups.



Future Development

Under the most recent draft Local Housing Strategy, a small portion of the South East corner of the catchment will be subject to a medium density coding.



The South West portion of the of the catchment is subject to the Canning Bridge Precinct Plan (WAPC 2011), a guiding document setting out building height limits to increase with proximity to the train station (3 storeys, 4 storeys and 6 storeys). The plan does not include amendments to existing residential densities. However, it is reasonable to assume that this will occur in the course of future planning for the area. This will result in a large increase of the population within the catchment area. The family types attracted to the area, given its increased density and proximity to the train station and consequently the city, are likely to be young professionals and empty nesters (non-family households and couple families with no children). The smaller lot sizes resulting from medium/high density development, as well as the increase in this demographic and will impact on use of, and requirements for, open space within the catchment.

The current reserved land to the South of the reserve has been identified on the precinct plan as a future performance based zone to encourage 'mixed use development (commercial/residential/community uses) to a maximum of 10 storeys' (GHD, 2011).


LONG TERM VISION
* THIS VISION IS SUBJECT TO FURTHER STUDIES AS PER THE IMPLEMENTATION ACTION FRAMEWORK
BUILDING HEIGHTS
PERFORMANCE BASED ZONE. HEIGHT/STOREYS SUBJECT TO DELIVERY OF COMMUNITY BENEFITS TO A MAXIMUM OF 20 STOREYS
PERFORMANCE BASED ZONE. MIXED USE DEVELOPMENT (COMMERCIAL/RESIDENTIAL/COMMUNITY USES) TO A MAXIMUM OF10 STOREYS
RESIDENTIAL LAND USES TO A MAXIMUM OF 5 STOREYS AS TRANSITIONAL DEVELOPMENT TO SURROUNDING RESIDENTIAL AREA
RESIDENTIAL DEVELOPMENT TO A MAXIMUM OF 4 STOREYS
RESIDENTIAL DEVELOPMENT TO A MAXIMUM OF 6 STOREYS. EXISTING COMMERCIAL USES TO REMAIN
RESIDENTIAL DEVELOPMENT TO 3 STOREYS
COMMUNITY/PUBLIC USES
FURTHER INVESTIGATION OF PROPOSED HEIGHT AND DENSITY REQUIRED
CANNING BEACH RD
TWEEDDALE RD
KINTAIL RD
KISHORN RD
MARINE RD
CANNING HWY
HELM ST
KAMANAGH ST
GALE ST
HENLEY ST
MCDOUGALL ST
DAVILAK ST
WOLTANA ST
PATERSON ST
GENTILI WY
KWINANA FWY
MANNING RD

PERFORMANCE ASSESSMENT

The reserve has been categorised classification as a local park whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

The following performance criteria have been developed for this category of reserve to address its contribution to the sustainable development of a reserve system in South Perth.

Protection/Enhancement of Biodiversity

The reserve contains native vegetation in the form of Banksia woodland, which, although degraded, will contribute to protection of biodiversity within the catchment by sheltering birds and small mammals and reptiles. The seed orchard will also contribute to the further enhancement of biodiversity. The reserve also forms part of vegetation corridor which includes Neil McDougall Park and Coolidge Reserve.

Climate Change Resilience

The native bushland is likely to be resilient to climate change and require little intervention to manage. However, there is growing evidence of native flora not being able to survive the longer and hotter summers that Perth has been experiencing. As such, this will need to be monitored and managed.

Natural Resource Degradation

The bushland is remnant bushland that has been degraded over time, however, the quality of the reserve has been increased through rehabilitation. Natural resource degradation in the form of weed intrusion is evident. If efforts are made to increase use, further natural resource degradation could result including 'edge effects' such as weed intrusion from pathways and litter. Fire is also a particular threat to these sorts of native bushland, particularly as summers are becoming hotter and longer.

Opportunities to Increase Tree Cover

The reserve is currently well treed albeit with medium sized Banksia trees. Originally larger trees like Jarrah and Marri would have probably existed on the reserve. There may be opportunities to replant these species to widen biodiversity opportunities. The green lawn 'desert' surrounding the reserve to depths of up to 40 metres also provides opportunities for further planting. Currently, the contrast between mowed turf and retained bushland is an extreme one. Opportunities exist for a more complex landscaped transition, including tree planting, between the street environment and the reserve.

Opportunities for Water Conservation

The native vegetation is not watered and contributes to reduction of water use in the City. However, the bordering turf does require watering. Opportunities exist to decrease water usage through incorporation of more native landscaping and more efficient watering regimes.

Access to and within Reserve

The reserve is accessible by car from Davilak Crescent and Ley Street. Parking is not provided adjacent to the reserve, however, cars were observed parking on the verge. Parking is also provided along Ley Street adjacent to Neil McDougall Park. The reserve is accessible by bike from the South and West. A footpath is provided along Ley Street and Davilak Cres on the opposite side of the road. Access through the reserve is in the form of limestone paths. While these paths are consistent with the natural bush landscape, they are rough and uneven making access difficult for more frail users.

Use of Area by Current Population

The park is not particularly well used, especially during the week. Observation surveys of the park carried out in 2011 showed that very little activity took place at the park on weekdays and Sundays. However, the park was comparatively well used on Saturdays, with a range of users engaged in dog walking, walking and cycling, as well as generally enjoying the environment of the park and using it as a picnic location.

Despite the popularity of the park on Saturday, a survey of South Perth residents carried out in 2011 recorded low visitation rates by residents of the catchment area, particularly in comparison to nearby Neil McDougall Park. However, all respondents responded they were very satisfied with the reserve. This may be because they perceive its role as being a more natural space contributing to conservation of biodiversity, rather than recreational use.

Diversity of Recreation Opportunity

Overall the park offers limited diversity of recreation opportunity. The park is unsuited to active recreational use and few facilities are provided to support passive use. The park does provide enjoyment of native scenery and paths allow walkers/joggers access through the park. The rehabilitation programme at the reserve does attract community interest and participation is a vital component of building understanding and appreciation of natural bush habitats.

Opportunities to Increase Use/Attraction

Although there are opportunities to increase use of the reserve, further resource degradation could occur as a trade-off impacting the reserve's natural resource integrity. The high level of use recorded at the adjacent Neil McDougall Park attest to the attraction of a well-maintained accessible passive recreation space. As the population within the catchment increases with development around the

Canning Bridge precinct, park usage is likely to increase. This is especially relevant, as provision of private open space diminishes as densities increase. The native vegetation is an attraction in itself, however, few facilities are provided to allow enjoyment of the reserve. The gazebo offers seating, but there are no other facilities to encourage people to use and enjoy the reserve apart from the limestone paths that provide access albeit a somewhat limited.

User Safety

Passive surveillance of the park is provided in the outskirts of the reserve from surrounding residential properties. However, the vegetation obscures surrounding development from sight and prevents observation of those walking through the park on the path. Consequently, the reserve could feel very unsafe, particularly in the early morning and evening.

Level of Infrastructure Investment

Investment in the reserve has been in the form of bush rehabilitation works and reticulation of the surrounding turf.

Opportunities for External Revenue (fees, grants, leases, etc.)

There is no opportunity for external revenue as the reserve is primarily bushland.

CONCLUSIONS AND RECOMMENDATIONS

Davilak Reserve is one of a few neighbourhood reserves within the City that have pursued a natural environmental remediation approach to landscaping. It has had some success in developing a rehabilitation programme involving community groups. This should be seen as important and valued work as the City seeks to embrace environmental sustainability as a key value of the organisation. However, this approach has limited the attractiveness of this reserve for a wider range of recreational activities.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. Increased tree planting on the reserve boundary to provide a more complex and interesting landscape transition between the street and bush environment.

2. Increased tree planting within the reserve to provide some measure of an over-storey to the Banksia woodland.

3. Provision of improved seating and shelter to encourage users to enjoy the environment of the reserve.

4. The provision of improved access through the reserve to provide opportunities to link use in this reserve with the adjacent McDougal Park.

5. Recognition in the design and development of this reserve that a potential 10-storey mixed use development is proposed on the current public purposes site adjacent to the reserve.

19. COOLIDGE RESERVE

Reserve Category: Local Reserve

Source: Adapted from Google Earth (2011)

Location

Coolidge Reserve is located in the suburb of Como, East of Canning Bridge and adjacent to Neil McDougall Park. The reserve is bounded by Coolidge Street to the North, Baldwin Street to Henley Street to the South.

Landform

The natural landform of the site is largely flat. The site was cleared as part of the development of surrounding land for residential development.

Landscape Development

The reserve is a flat and barren looking. The majority of the reserve is sand and browned grass. Scattered throughout the reserve are some semi-mature and mature Eucalyptus Trees. There are also two islands of native shrubbery located towards the centre of the reserve, bordered by cut tree trunks. There is a sandy area that used to house a play area, which has recently been removed. A row of semi-mature Eucalypt Trees is located along Baldwin Street and a row of Peppermint Trees has recently been planted along Henley Street.

Building Development

There are footpaths along Henley and Baldwin Streets, but otherwise the park is bare of any building development.

Current Use

A survey of South Perth residents carried out in 2011 recorded a minimal visitation rate by residents of the catchment area, particularly compared to the very high visitation rate associated with the adjacent Neil McDougall Park. All respondents within the catchment area were dissatisfied with the reserve.

Observation surveys of the park carried out in 2011 showed that the reserve attracted few users. Those observed were primarily moving through the park (walking, dog walking, cycling). Only one user was found sitting in the area.

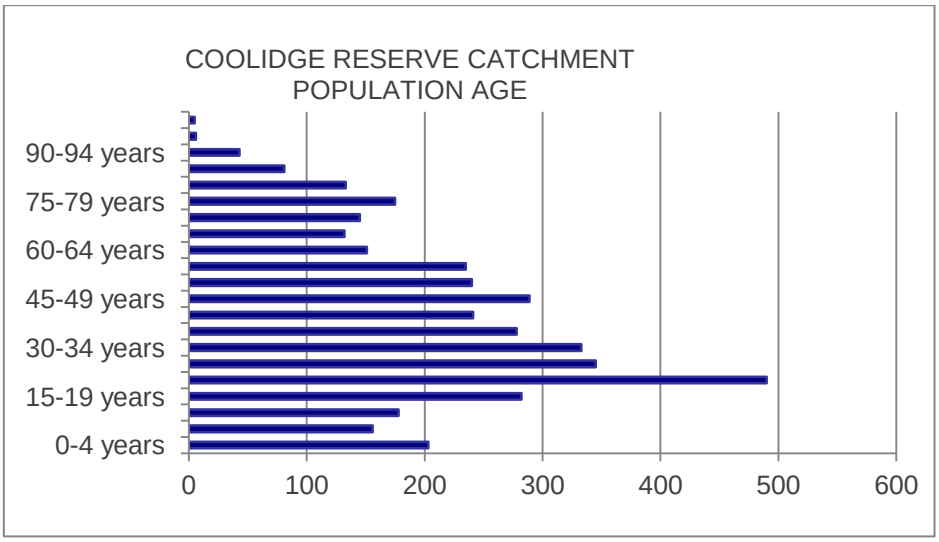
Surrounding Development

The suburb was developed in the post war period into single residential lots. Redevelopment of the area has occurred primarily in the form of grouped dwellings on smaller lots. Some larger lots remain; the South East of the catchment is zoned Residential R20 and the South West is zoned R20 and R15. To the North West, nearer to Canning Hwy and the Mitchell Freeway, land is subject to medium density split-coding, and in closer proximity to the freeway lot sizes decrease and land is zoned R40.

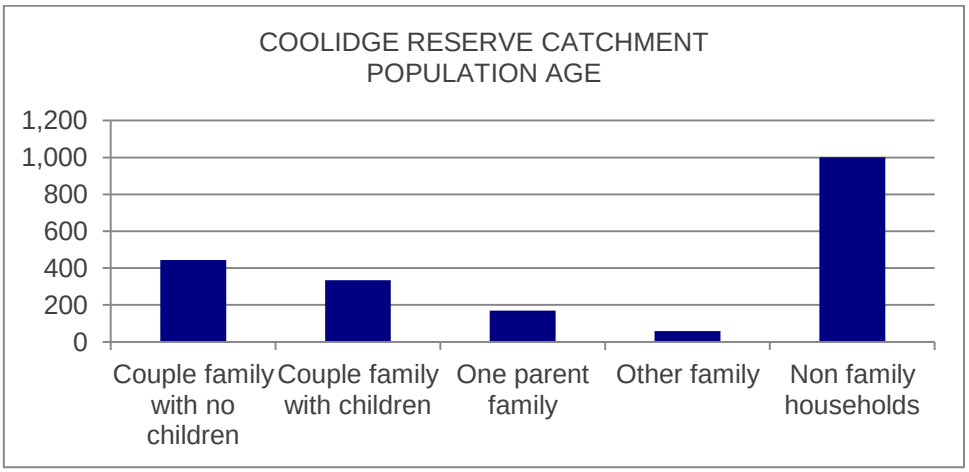
As well as residential development, Manning Primary School, Toy Library and Childcare Centre are located to the South of the reserve adjacent to James Miller Oval. Como Secondary College is also located partially within the catchment to the East of the reserve. McDougall Park Aged Care Facility is located on Ley Street opposite Neil McDougall Park.

Catchment Population

The age bracket of 20-24 year olds is by far the largest in the catchment area. The 25-34 year old bracket is also well represented, as are 45-49 year olds and 15-19 year olds. The smallest age groups are 5-9 years, 65-69 years and 80 years and over.



Source: Australian Bureau of Statistics (2006)



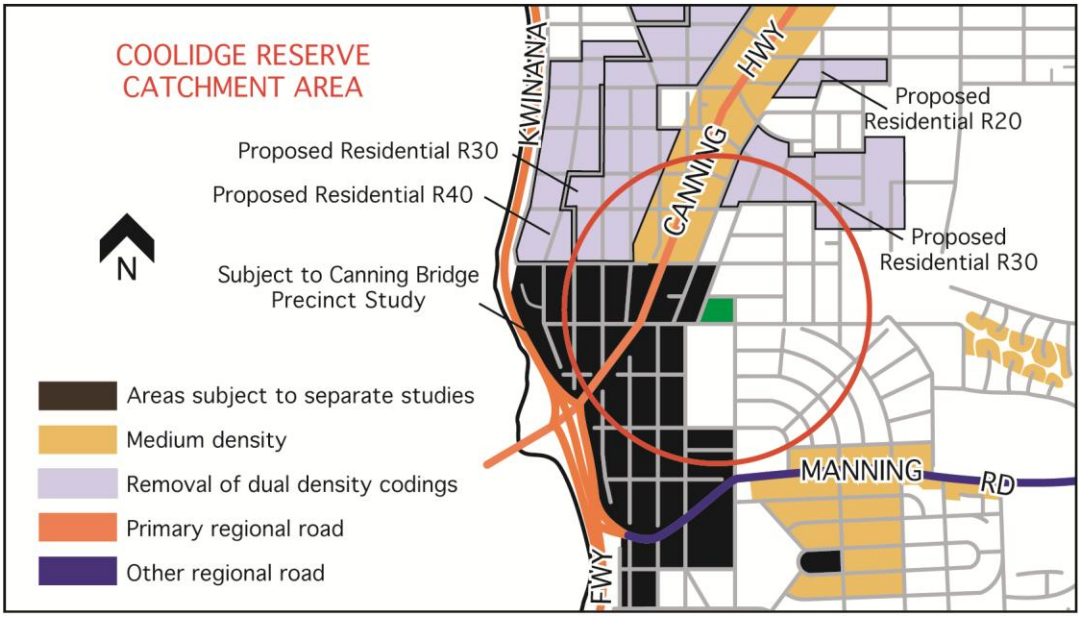
Source: Australian Bureau of Statistics (2006)

The largest population group is non-family households - this category includes single persons, de-facto, couples, and shared households. The second largest group is couple families with no children. These groups are likely to correspond to the 20-35 year age group who do not have children, as well as older couples whose children have left home (empty nesters); these household types are likely to be attracted to more compact housing types. Residents of the aged persons' home opposite Neil McDougall Park, McDougall Park Aged Care Facility, will account for some of the older population of the 75 plus age groups. Couple families with children make up less than one quarter of the catchment

population. This family type will align to the middle age groups, with children in the 0-19 year age groups. There are a small number of one-parent families and other families.

Future Development

Under the most recent draft Local Housing Strategy, a small portion of the South East corner of the catchment will be subject to a medium density coding.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

The South West portion of the of the catchment is subject to the Canning Bridge Precinct Plan (WAPC 2011), a guiding document setting out building height limits that increase with proximity to the train station (3 storeys, 4 storeys and 6 storeys). The plan does not include amendments to existing residential densities; however, it is reasonable to assume that densities within the 800m walkable catchment of the train station will be reviewed as part of the future planning process for the precinct. This will result in a large increase of the population within the catchment area. Given its increased density and proximity to the train station and consequently the city, the family types attracted to the area are likely to be young professionals and empty nesters (non-family households and couple families with no children). The smaller lot sizes resulting from medium/high density development, as well as the increase in this demographic, will impact on use of and requirements for open space within the catchment.

Long Term Vision for Canning Bridge Precinct

Source: City of South Perth (2011)

PERFORMANCE ASSESSMENT

The reserve has been categorised classification as a local park whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

The following performance assessment has been developed to address the extent to which this reserve is meeting this role within the context of the future sustainable development of reserves within the City.

Protection/Enhancement of Biodiversity

The reserve possesses some native vegetation and, as such, may contribute to protection of biodiversity within the catchment. The reserve may also provide an ecological connection to Neil McDougall and Davilak Reserves to the South.

Climate Change Resilience

The reserve's native mature trees and scrub are likely to be resilient to climate change. The reserve does not appear to be irrigated at present and much of the taller vegetation has survived the summer. However, the turf has not, requiring regular watering to maintain its integrity as a trafficable surface.

Natural Resource Degradation

Little resource degradation has occurred because the reserve is used by few people.

Opportunities to Increase Tree Cover

Tree cover could be increased to provide more shade to the reserve. Semi-mature street trees will improve the amount of shade provided as they mature.

Opportunities to Increase Water Conservation Strategies

The reserve does not appear to be watered. The native vegetation contributes to reduction of water use.

Access to and within Reserve

The reserve is accessible by bike from the South and West, although dedicated bike paths are not provided until very near to the park. Footpaths run alongside the park on Baldwin and Henley Streets. A pedestrian crossing at grade is also provided across Henley Street from Neil McDougall Park. There is no formal access through the park and turf is dry and sandy making access through the reserve unpleasant and impossible for frailer members of the community.

Use of Area by Current Population

The park is not well used by the surrounding population. Observation surveys conducted in 2011 showed that the reserve attracted few users; those observed were primarily moving through the park rather than recreating within it.

Diversity of Recreation Opportunity

The park offers little in the way of diversity of recreation opportunity. The park's small size and vegetation cover precludes active recreational use and it is not an appealing space for passive uses. In particular, the grass is sandy and not inviting to use. There are no formal paths through the reserve and almost no facilities are provided to support passive use (only one bench). As such, the park has little appeal as a passive space and people likely bypass it to use the adjacent Neil McDougall Park.

Opportunities to Increase Use/Attraction

At present, the park is underutilised and poorly maintained. As such, there are many ways in which the use and attraction of the park could be increased. The high level of use recorded at the adjacent Neil McDougall Park attest to the attraction of a well maintained, accessible passive recreation space. As population within the catchment increases due to development around the Canning Bridge precinct, park usage is likely to increase. This is especially relevant, as provision of private open space diminishes as densities increase. Walking, cycling, using the playground and dog walking were the most popular activities of respondents within the catchment area. Other activities recorded included personal training and individual sports. All of these activities could be better catered for within Coolidge Reserve. Installation of footpaths through the reserve, play facilities and well maintained turf would help achieve this. Neil McDougall Park is already a well visited park; an increase in population will increase pressure on this facility. An improved Coolidge Park could help meet the demand for space, as well as providing a pleasant thoroughfare for cyclists and walkers accessing Neil McDougall Park.

User Safety

Passive surveillance of the park is provided from surrounding residential properties. Vegetation is either tall or very low, so there are few opportunities for concealment within the park.

Level of Infrastructure Investment

There is little evidence of investment in the reserve in terms of maintenance or infrastructure. In fact, a playground was recently removed from the park.

Opportunities for External Revenue (fees, grants, leases, etc.)

There is currently no opportunity given the level of use, size and passive nature of the reserve.

CONCLUSIONS AND RECOMMENDATIONS

Coolidge Reserve is currently poorly maintained and managed. As a consequence it is rarely used. However, it does contain some mature plantings that could form the basis of improved landscape outcomes. The two most critical issues for this reserve are the impending development of the Canning Bridge high density residential precinct and the high quality of the adjacent McDougal Park.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. Plan for the future of this reserve within the context of the design and development of the Canning Bridge precinct.
2. Integrate the future planning and design of this reserve with plans for the future development and management of the adjacent McDougall Park.
3. Investigate opportunities for traffic calming along Henley Street to facilitate easy access and movement between the reserves.

20. RYRIE RESERVE

Reserve Category: Local Reserve

Source: Adapted from Google Earth (2011)

Location

Ryrie Reserve is located in Como East and is bordered by Penrhos College, Throssel Street, Ryrie Avenue and Murray Road.

Landform

The area naturally would have sloped gently from East to West, but has been re-contoured to produce two terraces connected by a banked section. The land was originally proposed for residential development, but since the individual lots were acquired by Council the space has been managed as a recreation resource. However, the Western edge of the reserve remains as a road reserve and recently a small access road (between the car park and Murray Road) has been built along its alignment.

Landscape Development

Both terraces of the reserve have been planted with turf which is bordered by a combination of Peppermint and Eucalypt Trees. In addition, on the Easterly terrace, there have been groups of trees planted in a more random pattern, giving this area a more informal appearance. The Eucalypt plantings are quite mature with many of these trees having significant crowns that throw shade over large parts of the reserve.

Building Development

The Southern boundary of the reserve has been provided with a car park off Throssel Street with approximately 30 bays. There is a playground and basketball backboard located on the Eastern terrace along with a BBQ and seating.

Current Use

The reserve does not appear to have any dominant use. The observation surveys identified a few people walking through the reserve in the morning and afternoon who were clearly students of Penrhos College, probably living in the surrounding residential houses or walking from a bus stop on Murray Road. In addition, there were a limited numbers of walkers, dog walkers and parents with children accessing the playground. Overall, the level of use was low. However, in winter months, the Western Terrace of the reserve is regularly used by Penrhos College teams for hockey and soccer training and matches.

Surrounding Development

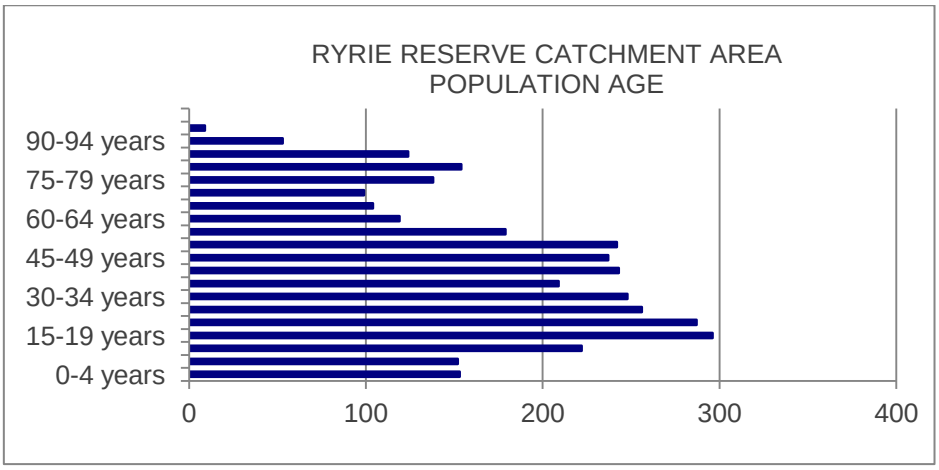
The surrounding residential area was initially developed with single storey houses on large lots primarily in the post war period. However, since the 1980s, the area has been progressively redeveloped with duplex buildings being the most common outcome of development. Cells within the precinct, particularly in areas around Collier Primary School and close to Canning Highway, have been protectively zoned to maintain single residential housing. Many large single residential houses are now replacing the older more modest post war residences in these areas. The State Housing Commission still owns pockets of land and houses to the East of the reserve. These are being

progressively redeveloped for supported accommodation or sold into the private market. Also, within this area, is a very large aged persons' complex, Collier Village, developed by the City for its aging residents.

Apart from the residential development, there are three schools in the catchment of the reserve: Penrhos College, Como College and Collier Primary School. There are also small groupings of neighbourhood shops and services on the corner of Murray Street and Monash Avenue and along Canning Highway.

Catchment Population

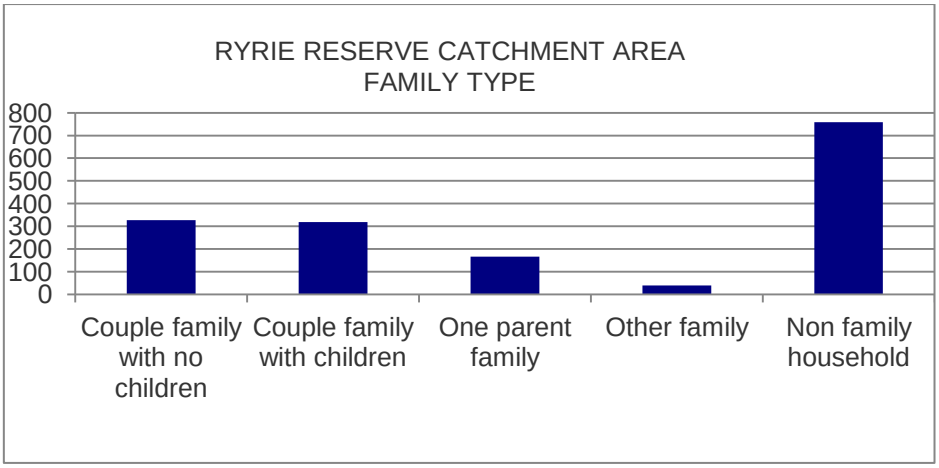
The catchment population is dominated by the 20-35 age group with the 35-60 age group also prominent. The smallest age groups are the 0-10 and 60-75 categories.



Source: Australian Bureau of Statistics (2006)

The middle age groups include the parents of the small number of under 10 year olds in the area and their older adult children would be represented in the 10-19 age group.

However, by far the biggest household group in this catchment are single person, couple households and shared households (described in the census as 'non-family households'). These account for the high numbers of 20-35 year olds and older age groups. The older age groups would represent some 'empty nesters' from earlier families once residing in this area.

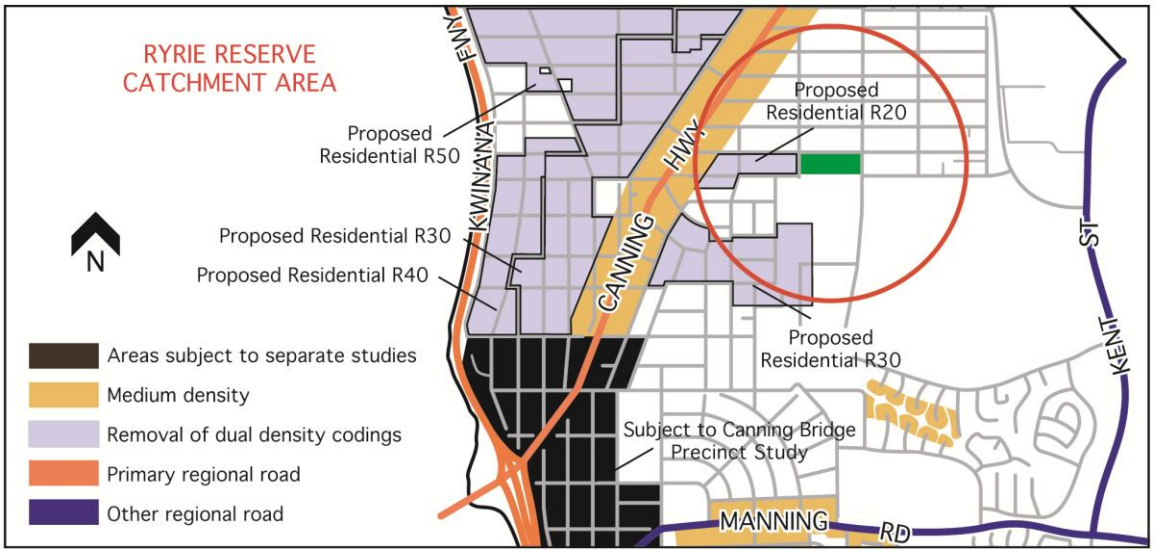


Source: Australian Bureau of Statistics (2006)

The smaller households would have been attracted by the more contained accommodation (duplex, triplex and multiple units) available in the catchment. The comparatively large number of elderly persons in the area can also be related to the location of Collier Village and a number of Ministry for Housing aged supported accommodation complexes.

Future Development

The planning for the precinct does not propose any major changes to development outcomes. Older single residential housing will continue to be replaced by more contained accommodation such as duplexes and triplexes. Under the most recent draft Local Housing Strategy, the City has proposed that two single residential cells (zoned R15) adjacent to Canning Highway be rezoned to the higher level of their past dual coding (R20) (City of South Perth, 2011). This will lead to increased opportunity for development of further duplexes in this area. The City expects this process (in the long term) to produce an additional 450 dwelling units in these cells.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

The reserve has been categorised classification as a local park whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

Protection/Enhancement of Biodiversity

The majority of the reserve is made up of reticulated turf. However, the mature native trees were observed to provide opportunities as a habitat for insects and birds. Given the largely informal nature of the Eastern terrace, there are clear opportunities to enhance biodiversity in this area and provide important ecological links to adjacent open spaces forming a contiguous link to the East and South including Bill Grayden, Collier Reserve and the Collier Golf Club landscaping and open spaces beyond (including the Blamey and Kensington Bushland Reserves). The western terrace is more problematic as already sporting uses are squeezed into this area leaving little room for further boundary planting.

Climate Change Resilience

The shading of trees on the reserve provides some additional human comfort and potentially reduces watering demands. However, the majority of landscape is turfed. With longer drier summers, this will require further watering to maintain its integrity particularly for sporting activity.

Natural Resource Degradation

This area has been re-contoured removing all evidence of past natural landscapes. The subsequent native plantings have provided some elements of naturalness, but these are limited.

Opportunities to Increase Tree Cover

There are opportunities on the Eastern terrace to add to the planting of the area while maintaining opportunities for informal recreation. However (as discussed above), if the Western terrace is going to continue to be used for sporting activity further planting opportunities are limited.

Opportunities for Water Conservation

The two terraces are currently differentially watered with additional water being applied to the Western terrace to accommodate more intensive sporting uses. This form of hydrozoning not only identifies opportunities to match planting to water needs, but also highlights the additional burden placed on water resources by the requirements of sporting activity. This is further compounded by fertiliser and herbicide applications required to maintain trafficable turf suitable for sport.

Access to and within the Reserve

Access to the reserve is primarily from the North and West along the grid system of roads that characterise these areas. There is more limited access from the East due to the location of Bill Grayden and Collier Reserves and access from the South due the Penrhos College campus. Pedestrian access duplicates the road system. There are good bike path routes that form part of the South Perth bikeway system running along the Southern and Eastern edge of the reserve. Public transport access is also available along Murray Street. Within the reserve, there are no formal pathways.

Use of Area by Current Population

Despite the observation survey showing low levels of use, the reserve was identified by 67% of respondents in the household survey. The main activities carried out in the park were walking, dog walking, cycling and playground use. Clearly, the park provides a focus for the local population and was the most mentioned park in this catchment very significantly ahead of the adjacent Bill Grayden and Collier Reserves. However, it should be noted that survey returns were at their lowest in this precinct and statistical validity would be questionable.

Diversity of Recreation Opportunity

The reserve provides for a range of sporting and informal recreation opportunities. The Western terrace can be used for formal sports, although dimensions are not ideal with proximity to the local roads being a concern. However, while not being used for formal sport, this space is well turfed and potentially could be used for a range of more informal activities: training, exercise, kick-to-kick, etc. The Eastern terrace with its more diverse planting and shade provides opportunity for less active recreation pursuits, such as dog walking, playground activity, BBQs, etc. The bike paths with their links to the broader City network also open up recreational and commuter opportunities.

Opportunities to Increase Use and Attraction

Despite its existing facilities and use, there are considerable opportunities to increase the attraction of this reserve. The Western portion of the reserve is currently underutilised with school winter sports being its major role. The high intensity management of this space over the summer months is not returning adequate local recreational benefit which is primarily accommodated for on the Eastern terrace. This Eastern area, while providing facilities and attractions for local recreation, receives less management attention and as a consequence appears tired and run down. Further investment in this area would produce higher quality experiences for those people using this reserve. The survey elicited comments regarding the need for further shade, seating and to look after the trees in this area. The reserve has a high level of accessibility and surveillance and is well placed to make a greater contribution to recreation opportunity in this locality

User Safety

This reserve has a number of qualities that make it a safe place for recreational activity. Its location adjacent to the school makes it a close to a centre of activity throughout the day, meaning people are regularly in and around the area avoiding any sense of isolation for users of the reserve. In addition, there are surrounding residential properties and well-used roads that overlook the reserve providing surveillance (real and perceived). This would offer comfort for users and apprehension for those contemplating anti-social activity. However, the close proximity of playing surfaces to the roads provides a potential threat to users.

Level of Infrastructure Investment

The reserve is fully reticulated. There is a modern playground and basketball backboard with a concrete playing surface. A free electric barbeque and seating area has been installed. A bikeway is located along the reserve's southern boundary. A dedicated car parking area provides for 30 cars, but this appears to be used primarily for visitors/drop off to Penrhos College rather than to support the activities of the reserve.

Opportunities for External Revenue

Currently, the only opportunity for income from this reserve is via ground lease arrangement for the sporting surfaces on the Western side of the reserve. This returns a revenue stream of just over $5000. If the informal elements and design of the reserve were improved, there may be further opportunity for revenue from functions. The adjacent location of Penrhos College and the limitations on their campus space may provide opportunities for revenue-raising, but these need to be very carefully considered in the context of fulfilling community recreation obligations.

Management Agreements in Place

There is a management agreement in place with Penrhos College.

CONCLUSIONS AND RECOMMENDATIONS

As a local space this reserve goes a significant way to meeting the diverse needs of the surrounding residents; however, further action is required for its longer term sustainable future. The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. The underuse of the turfed western terrace for sporting activity opens up opportunities to improve recreation opportunities for the local residents. The limited use of this area does not justify the current investment in the management of this space.

2. Further tree planting of the area would improve comfort levels for users, reduce watering requirements and improve the biodiversity performance of this and surrounding reserves.

3. The Western terrace is not ideal for the two North- and South-orientated playing fields given the limited space. A single West/East orientated space would be more preferable and open up the surrounding space for further planting and informal use, e.g., walking, sitting, etc.

4. The facilities on the Eastern terrace provide a sound basis to develop a high quality passive recreation space attracting users, but further landscaping is required to create a more engaging background to these activities.

21. OLIVES RESERVE

Reserve Category: Local Reserve

Source: Adapted from Google Earth (2011)

Location

Olives reserve is located in the Southern part of Como just North of Canning Bridge. It is bounded by the Freeway, Mary Street and Cale Street.

Landform

The reserve is entirely level ground. Whether this is naturally so or manufactured is difficult to determine.

Landscape Development

The entire reserve is turfed. In the South of the reserve, this is the extent of the landscape except for some peripheral planting adjacent to the freeway. To the North of the reserve, there is an array of mature trees with Peppermint trees the most common but there are also Norfolk Island Pines and Poplars that provide a strong vertical element to the landscape. These trees are planted irregularly with closed canopy spaces providing consistent shade to parts of the reserve.

Building Development

The reserve provides access to a dual-use freeway overpass via a short pathway in the reserve. There is also a road into the reserve terminating in a car park with capacity for over 50 vehicles. Facilities built in the reserve are a sheltered playground and BBQ and table/seating park furniture.

Current Use

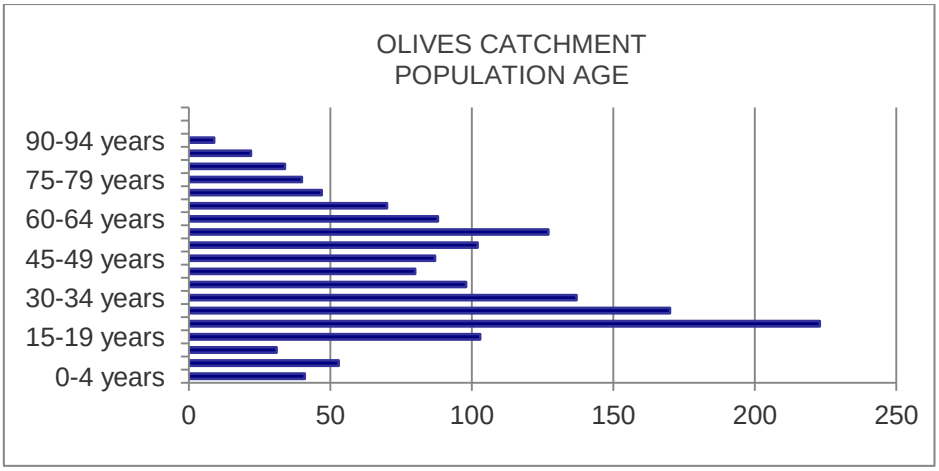
The access to the bridge over the freeway provides for the major use of this park - cycling. However, this only involves a short section of pathway to the North of the reserve and the access road and car park to the South (another access route to the on ramp of the bridge). However, there are also more passive uses of the reserve with walking and dog walking popular in the morning and late afternoon and use of the playground at other times during the day. There was evidence of people sitting in the park and shaded areas, and of informal sport (kick to kick, throwing a ball etc.) on the weekends.

Surrounding Development

The reserve catchment is located between the freeway and Canning Highway. Residential development is dominated by duplex, triplex and quadruplex development. There are few of the original single residential houses remaining and a few new single residential houses. There are also one or two flat complexes in the catchment. The area is currently zoned R30/40 closer to the freeway and R20/30 closer to the highway. Apart from residential development, there are some commercial establishments around the Canning Highway/Henley Road intersection.

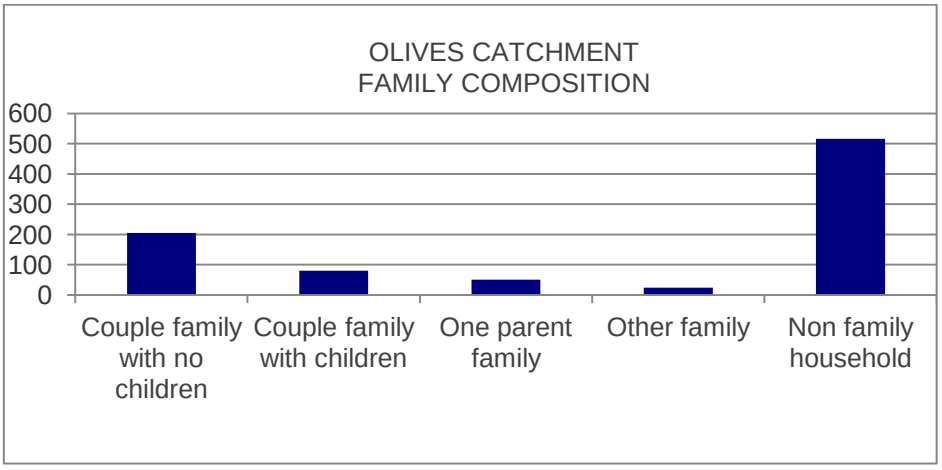
Catchment Characteristics

The catchment population is dominated by two age groups: 20-35 year olds (the largest group) and 45-60 year olds. This is typical for the housing stock of the catchment and the location of the area - close to the facilities and opportunities of the inner suburbs and the city centre. The less significant age groups are children (0-15), the middle aged (35-50) and the elderly (65+).



Source: Australian Bureau of Statistics (2006)

The housing in the area is important in attracting some age groups and not others. The twin peaks of the young adults and the older middle-aged will likely be separated by the type of occupancy with the younger group being predominantly renters and the older groups owner-occupiers. Population characteristics are further revealed in the household composition with the predominant category being non-family based. Singles, groups and couples households are the only other categories to have a significant impact on this profile.



Source: Australian Bureau of Statistics (2006)

Future Development

Much of the catchment area falls within the boundaries of the Canning Bridge Station precinct proposed for significant redevelopment under the current Capital City Planning Framework (WAPC, 2011); see plan below. It is proposed that developments in the Southern part of the catchment be allowed up ten stories with one group at six stories, and a maximum of four stories in the area immediately around the reserve. While these are only still proposals for a future planned development, such increases in density could fundamentally affect the character of this area bringing in new populations and new housing forms. From a recreation point of view, it would likely increase demand on publically provided facilities as private open space within the anticipated apartment complexes would be constrained.

Long Term Vision for Canning Bridge Precinct

Source: City of South Perth (2011)

In addition to the proposals for the Canning Bridge precinct, it is also anticipated that housing densities increase in the areas to the North and East of the catchment with the current 'split' zoning replaced by the higher density code. This will produce pockets of R40 and R30 zoning. It is not anticipated that this would significantly change development outcomes in this area.

PERFORMANCE ASSESSMENT

Olives Reserve is categorised as a local park whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

Protection and Enhancement of Biodiversity

The only native plantings in the reserve that would attract biodiversity are the mature Peppermint Trees. Unfortunately, these may well be close to the end of their natural life. Thus, there is very little biodiversity to protect or enhance.

Climate Change Resilience

Given that reticulated turf totally dominates this reserve, it is highly vulnerable to any climate change impacting watering regimes, such as longer and drier summers, and any change to groundwater tables impacting bore water extraction. Due to the low lying nature of this land, established trees would have root systems already penetrating the superficial ground water system that would probably be less than two metres beneath the surface in this location. This fact would provide some resilience to the tree cover in this area.

Natural Resource Degradation

Apart from the Peppermint Trees there are no natural resources to degrade in this area. The Peppermint Trees currently appear healthy and robust.

Opportunities to Increase Tree Cover

This reserve, particularly the Southern section, is desperately in need of further tree cover for both environmental and functional reasons. Given that this whole area is fully reticulated, there would be no difficulty in establishing further tree cover. This would improve the environmental performance of this reserve by reducing its water demand and introducing further elements to support biodiversity. Moreover, the use of the shaded areas of the Northern part of the reserve shows how recreational users are drawn to these conditions.

Opportunities for Water Conservation

There are significant opportunities for water conservation in this area. The large area of open turfed grass at the South of this reserve could reap significant water savings with a different management approach. Currently, this space is watered, mowed and fertilised for little to no recreational benefit. Turf is used in recreation spaces as a trafficable surface to provide access and a secure and resilient surface for formal and informal games. In this setting, neither of these criteria apply and alternative planting regimes would produce a landscape that required significantly less water.

Access to and within the Reserve

Access to this reserve by car, foot or on a bike is very high. Car-based use is supported by a very large car parking area and cycle access through the reserve forms part of the City's cycle network. Access within the reserve is mainly by trafficable turf, which does has its limitations for frailer members of the community.

Use of the Area by the Current Population

There is only limited use of this reserve by the local community and this is mainly for walking, dog walking and playground use. One of the major constraints on use is the persistent and significant noise emanating from the freeway which is reinforced by the very visible presence of the freeway and its associated light and power towers. However, what use does take place is drawn to the shaded more enclosed areas of the reserve.

Diversity of Recreation Opportunity

A range of uses is accommodated for on this reserve: cycling, walking, playing, sitting, etc. The issue is that few people make use of this opportunity.

Opportunities to Increase Use/Attraction

The core problem with this reserve is the proximity and negative impact of the freeway. While much could be done to improve the planting and facilities in this reserve, their level of use will be constrained. In these circumstances, opportunities to increase the use of the area will be determined by the extent to which the impact of the freeway can be mitigated.

User Safety

The reserve is made up of flat well maintained turf. This is a safe surface. The playground equipment is contemporary, well shaded and the sand is regularly sieved. There are a number of houses overlooking the reserve that provide a clear 'sense' of surveillance. Trees have been 'undercut' to ensure good visibility in most parts of the reserve.

Infrastructure Investment

The City has invested in this reserve through the provision of access facilities: on-site car parking and bicycle paths, the provision of on-site facilities, playground equipment, BBQ and seating, and the provision of a reticulation system throughout the reserve

Opportunities for External Revenue

There is little use made of this reserve; what use is made is informal and passive. As has been established, this park is not ideally located with the freeway dominating its outlook and atmosphere. In these circumstances, it is highly unlikely that any group would want to pay for its use.

Management Agreement in Place

There are no management agreements in place.

CONCLUSIONS AND RECOMMENDATIONS

Olives Reserve is well maintained and managed reserve but it fails to attract any significant use from the surrounding local population. The main reason behind this is the location of the reserve next to a very busy freeway and railway track which significantly reduce the recreational benefit of the park. The following recommendations are proposed as matters that should be considered in the course of preparing future development and management plans for the reserve.

1. Increase planting in the reserve with the aim of reducing the visual impact of the adjacent freeway and railway.
2. Increase tree planting on the reserve to increase the amount of shade available.
3. Plan for the replacement of reticulated turf with native plantings to reduce management costs and extract environmental value in areas where there will be little social dividend eg the Southern extent of the reserve.
4. Ensure that the future planning and design of the reserve is consistent with and complements the evolution of plans and designs for the Canning Bridge Precinct. The future of the reserve is very much tied to the future development of this precinct.

22. DAVID VINCENT RESERVE

Reserve Category: Local Reserve

Source: Adapted from Google Earth (2011)

Location

David Vincent Reserve is located generally between Canning Highway, Dyson Street, Vista Street and Collins Street. It is only 'generally' between these streets because it only has a small area of road frontage to Collins Street. The remaining edges of this park are the back boundaries of houses that front these streets. On the North Western side of the park, a rear laneway (Pennington Lane)

divides the rear of the houses from the park. This is an unusual arrangement for a local park, but not unprecedented.

Landform

The park is a swale-like feature with the lowest point being in the centre with edges of the park rising to the rear fences of the surrounding development. Many of the surrounding residential blocks were most likely filled before development leaving them at a higher level to the park below them.

Landscape Development

This park does not appear to have had a long history of competent development and management. The older plantings in the reserve are predominantly Box trees and have been planted along the edge of the reserve presumably to screen the rear fences of the surrounding properties. Over the time these have grown up and now only the trunks of the tree stand between the park and the fences. There are other random plantings in the reserve; some mature and some more recently established. The majority of the park surface is grassed and it appears to be recently reticulated. Planting within the park is also embellished by trees planted in the surrounding rear yards as there is now a seamless canopy in places between the public and private realm.

Building Development

The building development has only occurred more recently and includes a shaded playground area and a BBQ.

Current Use

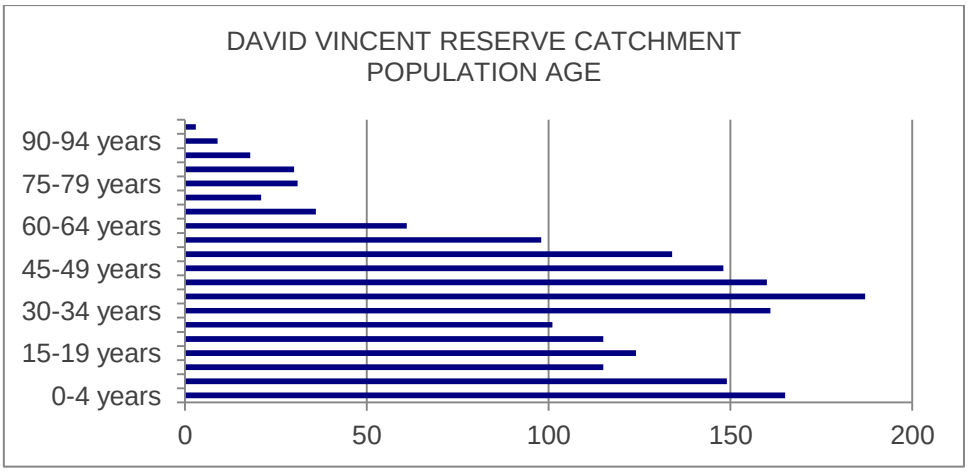
This reserve is used as a local park with activities such as dog walking and playing. One of the buildings backing onto the park is the Collins Street Kindergarten and the children of this facility use the park on occasions. This provides day time activity in the area.

Surrounding Development

The buildings backing on to the park are predominantly single residential houses, but also include a kindergarten and child health centre. More generally the catchment is made up of the residential area of Kensington. Kensington is unusual in this part of South Perth, because it was protectively zoned for single residential development. As a consequence, redevelopment has seen older single residential houses replaced with new ones maintaining the low density of the area. The area is more characterised by the conservation of older pre- and post-war housing stock than renovated and extended designs to meet the needs of contemporary lifestyles. Apart from residential development, there is a strip of retail shops and services along the Highway; Morris Mundy Reserve is a few streets to the East and on the edge of the catchment is the Kensington Primary School.

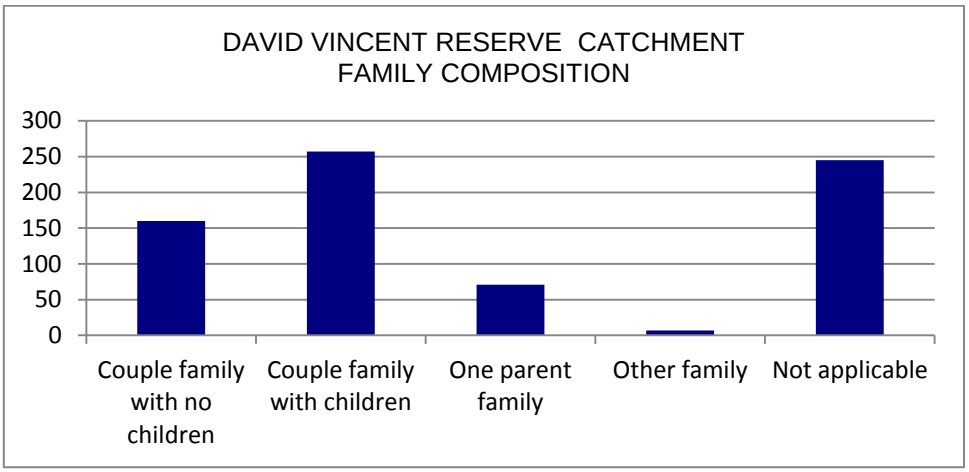
Catchment Population

Both the residential and population structure of the catchment are unusual for this Northern part of South Perth. The dominant cohorts are the 0-10 and 30-50, the classic structure for a family suburb with middle age parents and their young children. The older age groups would probably be the original residents of the suburb who would slowly be dying or moving out of the suburb to more appropriate housing options. This would account for their limited numbers. There would also be middle-aged childless couples and post-child couples living in the area.



Source: Australian Bureau of Statistics (2006)

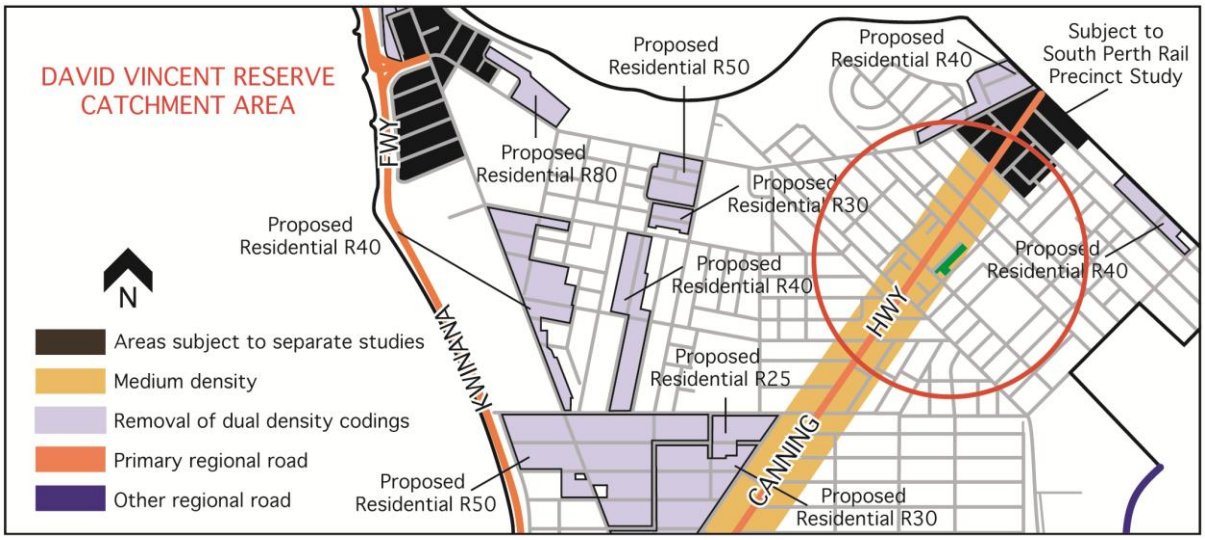
The age structure is reflected in the family composition with couples with children and one parent families being much higher than these categories in other suburbs in the City. Non-family households would pick up the remaining single elderly persons within the district as well as group households sharing the single residential houses on a rental basis.



Source: Australian Bureau of Statistics (2006)

Future Development

Most of the area in the catchment of the park is zoned R15 which has restricted development to single residential housing. However, lots adjacent to Canning Highway are zoned R80 with pockets of R30 and R50 just to the North of the reserve. These higher zonings would allow development of medium density units. The most recent housing strategy for the City proposed to expand the medium density zoning over areas within 100 metres of the highway. This would affect all of the area immediately surrounding the park. If this proposal is implemented, there would be changes in the housing density which would probably attract different population groups. In addition, the relationship between the park and the surrounding residential development would most likely change affecting issues such as overlooking, privacy, car parking intrusion, etc.



Source: Adapted from City of South Perth Draft Local Housing Strategy (2011)

PERFORMANCE ASSESSMENT

David Vincent Reserve is an unusual park with its constrained road frontage and general lack of exposure to a broader public. These characteristics define its classification as a local park whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

Protection/Enhancement of Biodiversity

There is little biodiversity present in the park. Most past plantings have been of introduced species and more recent development has concentrated on providing a reticulated turf base for most of the reserve.

Climate Change Resilience

The turf orientation of the park makes this area vulnerable to any climate changes that may impact the availability of groundwater over the later parts of the summer e.g., longer drier summers. However, it is noted that the installation of reticulation does not reticulate the whole park and the treed areas are not part of the reticulation cover. This builds a more resilient landscape able to survive changes to temperature and rainfall.

Natural Resource Degradation

There is very little that is natural about this reserve to be degraded.

Opportunities to Increase Tree Cover

This reserve currently has good tree cover that throws shade over parts of the park at all times of the day. Many of the trees are introduced species and there may be opportunities to progressively replace these with more resilient local stock.

Opportunities for Water Conservation

A new reticulation system for this park has recently been installed, facilitating increases in water input. However, the temptation to reticulate the whole reserve has been avoided. This will lead to a reduction in the volume of water drawn from groundwater. The differential watering of park areas is a good sustainable practice and it is encouraging to see the City embracing such concepts.

Access to and within the Reserve

The park has very limited road access as it is mostly located behind houses fronting onto the road. The only direct road frontage is approximately 30 metres long bordering Vista Street. This makes the park a rather hidden public asset. However, road, pedestrian and cycle access are all readily available as long as users are aware of the park's location. As mentioned earlier, one edge of the park is a paved right of way (Pennington Lane that runs behind the houses fronting Canning Highway). This is used for access and there are parked vehicles in the reserve area. However, it is likely that these vehicles are accessing the houses rather than the reserve. Access within the reserve is confined to the trafficable turf.

Use of Area by Current Population

The park does not appear to be widely used but certainly has its adherents. The survey revealed a number of local users of the area for such activities as playing and dog walking. There was also some criticism of the park regarding the quality and lack of its facilities. However, the major users of the space would come from the development that backs on to this park. Reference has already been made to the adjacent kindergarten which accesses its space and facilities. In addition, a number of houses have been orientated during redevelopment to look over the park. This is most obvious for those houses with Canning Highway frontage but also occurred with newer development along Dyson and Vista Streets. The creation of 'outlook parks' has precedent but a prevailing problem with such spaces is the perception that the park becomes privatised for the benefit of the few residents that directly overlook the area thus detracting further people from using the space.

Diversity of Recreation Opportunity

The reserve is currently used for playing and walking. As a small local park, this is consistent with expectations. However, with the newly installed and operating reticulation system there is no doubt that the area could attract further users as the environment of the park becomes more attractive.

Opportunities to Increase Use/Attraction

See above.

User Safety

With the surrounding residential uses, some orientated to look over the park, there is very good passive surveillance in this reserve. In addition, its size ensures that users are never far from surrounding development including buildings which are consistently occupied throughout weekday work hours (e.g., the kindergarten). The trees in the area are mature ensuring an open vista throughout the park.

Level of Infrastructure Investment

The new reticulation system has been a major recent investment in this reserve. Apart from this, the playground and barbeque are the only other facilities provided. This level of investment is consistent with the local use of the reserve.

Opportunities for External Revenue

There are no opportunities for external revenue given the nature of its facilities and its use.

Management Agreements in Place

There are no management agreements in place.

CONCLUSIONS AND RECOMMENDATIONS

David Vincent Reserve is a local park used by the local population, particularly local children at the kindergarten backing onto the park. The city has recently committed to the reserve with new investment in an upgraded reticulation system. This will mean that the quality of the park and the opportunities for further planting will increase in the future. The other aspect of this park that needs to be managed is the increasing orientation of residential development over the park. This carries with it the benefit of surveillance and security, but the potential cost of the perception of privatisation. It is important that the public investment in the reserve generates public benefit.

The following recommendations are proposed as matters that should be considered in future development and management plans for the reserve:

1. Improved planting in the reserve with an emphasis on improving biodiversity in the area.
2. Improved signage to identify the area as a public reserve.
3. Improved path access into the area from the road frontage to clearly indicate the public nature of this space.
4. Future policies and strategies to encourage visually permeable fencing for development adjoining POS where practical. This will facilitate passive surveillance and promote a soft interface between residential development and POS.

23. BRADSHAW/CONOCHIE RESERVE

Reserve Category: Local Reserve

Source: Adapted from Google Earth (2011)

Location

The Bradshaw/Conochie reserve is bounded by Bradshaw Crescent and Conochie Crescent to its North, South and East and Challenger Avenue to the West.

Landform

The land is largely flat but does slope gradually away from the roads that surround the area.

Landscape Development

The most mature and longstanding landscape features on the reserve are the mature Peppermint street trees that surround the reserve and provide a buffer between the road and park environment. Where these have died or been removed they have been replaced by newer planting of the same species. The surface of the park is dominated by reticulated turf but more recently five beds of native

planting has been introduced to break up the continuity of the grassed area. These are distributed towards the edge of the reserve leaving an open, contiguous turfed surface in the central area.

Building Development

A large, shaded playground has been developed in the Northern segment of the reserve. Adjacent to the playground is a table and seating facility and a basketball ring. The only other introduced development is an intermittent pine log barrier fence that runs around the edge of the reserve to allow access by pedestrians but prevent vehicle access onto the reserve.

Current Use

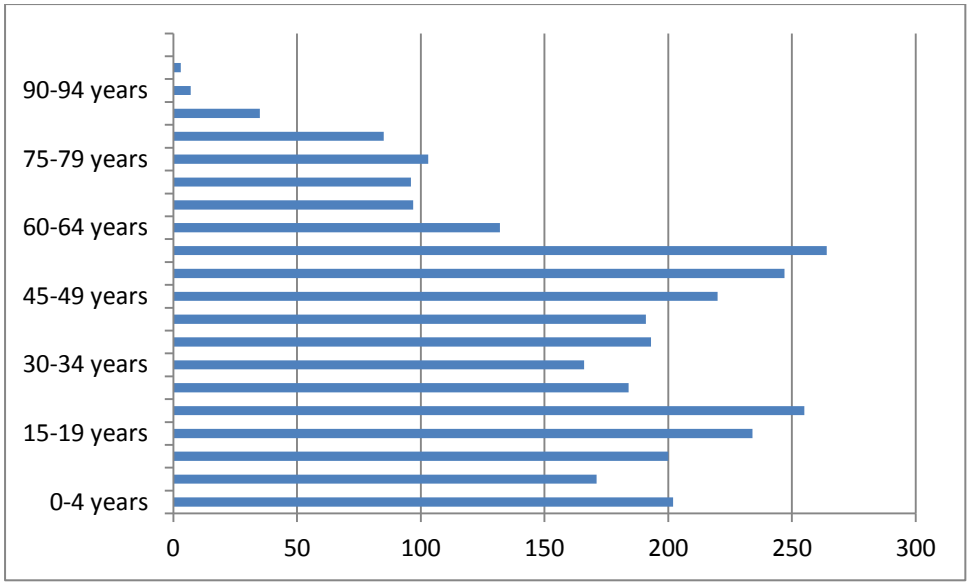
There was little observable use of the facilities provided on the reserve. However there was evidence that the playground had been in recent use. It was also noted that that the shade provided by the mature trees around the edge of the reserve were used by parked vehicles some of which were occupied trades persons resting/eating in the course of the working day.

Surrounding Development

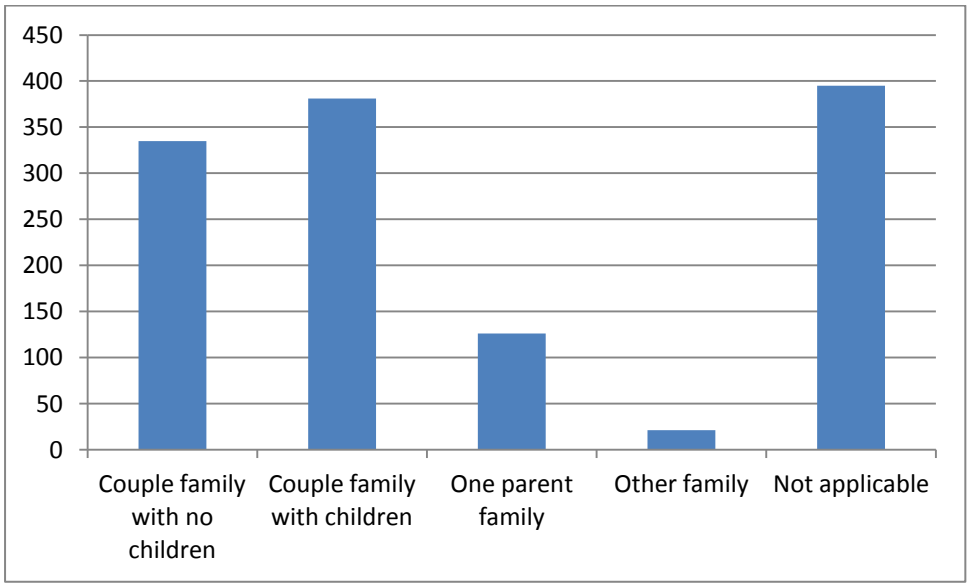
The immediate surrounding development is dominated by single residential development although much of this is duplex development that has followed the resubdivision of older, larger lots that typically characterised this area. There is also an element of grouped housing development. Within the broader catchment are the Challenger Reserve sporting and recreation complex and the Trinity College playing fields.

Catchment Population

The most prominent age groups within the catchment are the 20-24 year olds and 50–60 year olds. However children of all age groups are also well represented. The smallest age group is 65 years plus.

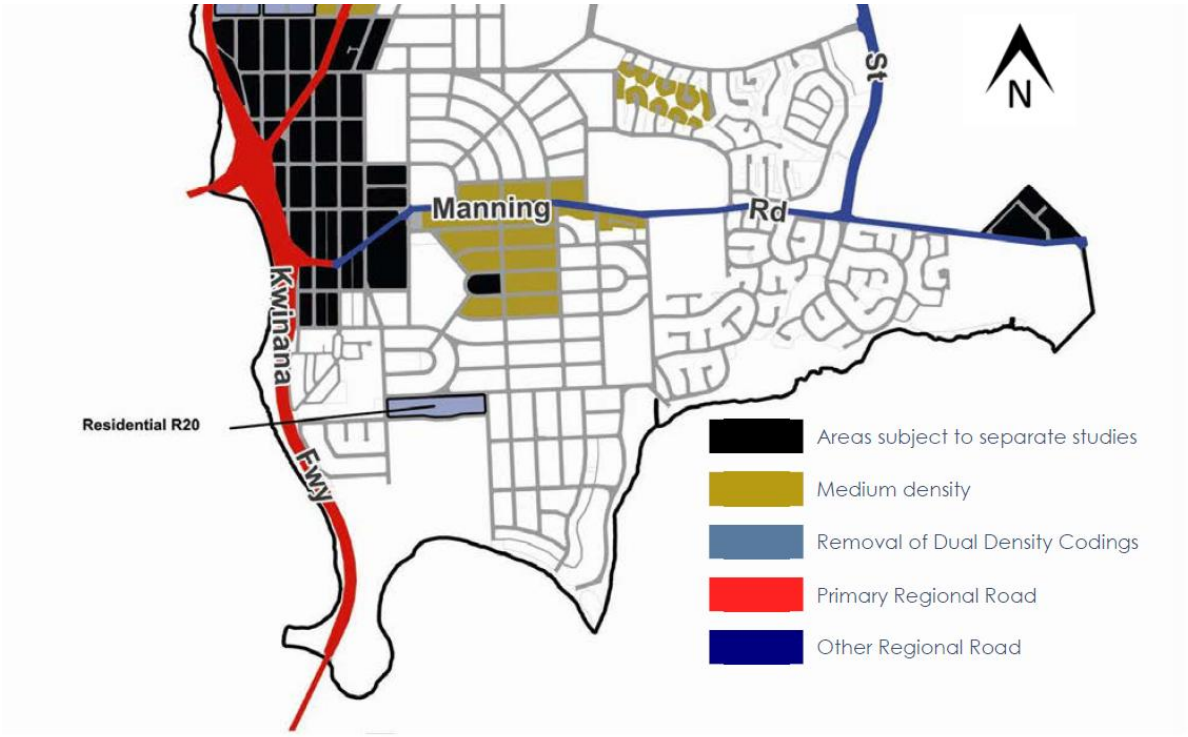


Compared to most catchment areas within the City, there are an unusually high proportion of couple families with children, these family types are likely to be attracted to the larger single dwellings and lot sizes. The middle age groups will represent the parents of the children 0-19 years. There are also a reasonable number of couple families without children. Many of these are likely to be empty nesters, represented by the 50-60 year age group, whose children have moved away from home but are still living in the larger family homes or have relocated to more contained, newer accommodation in the area. However, the largest group of family type is still single person, defacto households and shared households (described in the census as 'non family households'). Similarly, the large number of 20-24 year olds and 25-30 year olds could represent shared households or defacto couple households attracted to the older rental housing in the district awaiting redevelopment. The location of Curtin University just outside the catchment area would make this area attractive for student accommodation.



Future Development

It is not likely that any major changes will take place within the catchment area. The whole area is zoned R20 and this will lead to the continuing redevelopment of the area with duplex housing and more contained single residential housing replacing single residential housing. This process is already well advanced. Under the most recent Draft Local Housing Strategy, a small portion on the edge of the catchment is proposed to be rezoned to accommodate medium density housing..



PERFORMANCE ASSESSMENT

Bradshaw/Conochie Reserve is categorised as a local reserve. A local reserve is an area of publically owned and managed land whose primary purpose is to meet the recreational needs of the surrounding residential population and to develop/enhance the local sense of place.

Protection and Enhancement of Biodiversity

The reserve is very much a manufactured space and as such the quality of its biodiversity is relatively low. However the older mature plantings of Peppermint street trees and the newer beds of native plantings do provide elements of the natural environment that once existed in this area.

Climate Change Resilience

The dominant reticulated turf base of this oval does make it vulnerable to any change that may impact on watering regimes such as longer drier summers or a drop in the groundwater table. However the tree and shrub planting in the area are more resistant to change as they are naturally adapted to drier conditions.

Natural Resource Degradation

This is a manufactured space so effectively there is no natural environment to degrade. However, the grassed surfaces that have been developed appear to be well maintained and managed and in a healthy condition.

Opportunities to Increase Tree Cover

There has already been a move towards increased tree cover in this park and new tree planting exists around the playground, in the native planting beds and on the verges – to replace the aging Peppermint trees. However further opportunities exist to throw further shade over the park while maintaining view corridors for the surrounding housing. While it is important to maintain open grassed areas for informal games there is a still a considerable area that could be used to increase planting in the reserve.

Opportunities for Water Conservation

The reserve is fully reticulated to support its turf base but if further native planting was introduced this could be reduced to accommodate the reduced water requirements of this vegetation. In addition further tree planting and the maturation of existing newer tree planting would cast further shade that would in turn lead to a reduction in watering demand.

Access to and Within the Reserve

The reserve is readily accessible from the surrounding residential streets via both roads and pedestrian paths. While there are no formal parking spaces on the reserve there is adequate road and verge parking for the limited use that the reserve receives. Within the reserve there is no access provided except for trafficable turf.

Use of Area by Current Population

There was no observable use of the reserve. However it is likely that the playground and turf area are used by surrounding residents for children's play. The park also provides a pleasant park outlook for surrounding residents.

Diversity of Recreation Opportunity

There is only a limited range of facilities provided on this reserve and these would primarily be used by surrounding children. The space in the middle of the park could be used by older children for informal games such as 'kick to kick' although there are clear limits to the space available. The park is too small for a destination park and there is little to attract walkers, dog walkers, bike riders etc.

Opportunities to Increase Use and Attraction

The size of the park limits the opportunity for further development or facility provision particularly given its local classification and orientation. Further tree planting could provide further landscape interest to the area and provide a more comfortable environment during the hot summer months. This may also contribute to attracting to improving biodiversity and thus the movement of birds through the area – particularly given its proximity to the foreshore and the other bushland areas in proximity to the reserve.

User Safety

Currently the reserve has a high level of surveillance from the surrounding housing and this provides a good level of safety. The surrounding roads are used primarily by local traffic and road geometry slows vehicles at the Eastern end of the reserve. While the pine log fencing is permeable from the point of view of pedestrian movement it also sends a strong perceptual message to children using the reserve of the boundary between park and road environment.

Level of Infrastructure Investment

The park has a fully automated reticulation system run off a bore. The playground equipment is in good condition and is well shaded by a contemporary shade structure. Other facilities (basketball ring and seating table) are also provided.

Opportunities for External Revenue

There are no opportunities for external revenue for this type of park.

Management Agreements

There are no management agreements in place for this reserve

CONCLUSIONS AND RECOMMENDATIONS

This is a well maintained local reserve that provides opportunities for child recreation. It also provides a pleasant 'outlook park' for the surrounding residents. However there are opportunities to increase its value and attraction to the community by:

1. Increased tree planting to improve biodiversity, comfort conditions and reduce watering demand.

SMALL LOCAL RESERVES

SMALL LOCAL RESERVES

There are also numerous small reserves that fall outside the categories established by the State Government. These reserves are generally small spaces (compared to other park sizes) and primarily used for playground or native planting purposes. The State Government policy notes that 'small areas of undefined, residual or special purpose open spaces (less than 0.4 ha) are not included in this classification framework. Inclusion of small spaces within POS allocations is generally not considered optimal unless these spaces serve a demonstrated functional community purpose' (WA Government 2009). These reserves will be assessed collectively (rather than individually) with recommendations made for their future development and management.

Including in this category are the following reserves:

Roebuck Reserve	Moresby Street Reserve	Garvey Street Park
Gwenyfred Reserve	Hobbs Avenue Reserve	George Street Reserve
Shaftsbury Avenue Reserve	Axford Barker Reserve	Carlow/Kilbride Reserve
Swan View Terrace Reserve	Bill McGrath Reserve	Jan Doo
Hensman Square	Canavan Cresent Reserve	Hope Avenue Reserve
Mackie Park	Doneraille Reserve	Isabella Craigie Reserve
Marsh Avenue Reserve	Blamey Place	Warrego Street Reserve
Meadowvale Avenue Reserve	Brandon/Darling Reserve	

Location

These spaces are located throughout the City. They are often the result of past subdivision practices that have left small areas of unusable/unsellable land in the public domain by default. Alternatively, the scale of subdivision has produced small areas of open space that are allocated under the 10% contribution requirement. These spaces are very much a legacy of the past, as current planning and design practices generally avoid this pattern of provision via policies such as cash-in-lieu of open space where the money value of the land contribution is transferred to Council and the revenue used to upgrade other open space in the vicinity.

Landform

Most of these spaces are flat land and some have retained elements of natural vegetation cover.

Landscape Development

These spaces tend to fall into two categories. Firstly, those spaces developed for playground purposes; generally with a central sitting of playground equipment with surrounding watered turf and sometimes with some planted trees. Secondly, those maintained or developed for environmental purposes. In these cases, native vegetation has either been retained or enhanced through planting regimes. Sometimes a pathway is also provided through the area.

Current Use

The observation survey recorded no use of these reserves. That it is not to say they are never used but rather that their use is so low as not to register on a consistent basis.

Surrounding Development/Catchment Population/Future Development

This obviously varies according to catchment and a generic description of these characteristics would not serve any useful purpose.

PERFORMANCE ASSESSMENT

Protection/Enhancement of Biodiversity

The environmental reserves in this category, such as Roebuck, Gwenyfred and Blamey Place Reserves, make a contribution to the biodiversity of an area albeit a minor one. They provide an opportunity for retention or planting of natural landscapes, including an understory and shrubs that are often avoided in larger scale landscape projects because of their security/safety implications. While their small size mitigates their environmental performance, they provide a natural profile of an area pre-development. This can play important educational and historical roles in the community. The playgrounds reserves (grass and equipment) make little contribution to biodiversity.

Climate Change Resilience

The environmental reserves are clearly more capable of adapting to climate change without the intervention of management, though this may change with growing evidence of native flora not being able to survive Perth's longer and hotter summers. However, clearly native flora is better placed to adapt compared to species introduced from more temperate areas, such as grasses (turf). The playground reserves have little natural resilience to climate change and, in fact, could only survive with increased management input, particularly turf management. Already the Council has invested heavily in artificial shading of these facilities.

Natural Resource Degradation

These environmental reserves receive very little use or activity and, as a consequence, there is very little degradation that occurs. These reserves are certainly vulnerable to degradation, particularly from fire as they do not appear to have been the target of vandalism to date. The playground reserves have no (or little) natural resource value so degradation is not an issue.

Opportunities to Increase Tree Cover

There is significant opportunity in this area. The playground reserves are often landscaped with reticulated turf and, thus, there is the space and ground moisture to establish trees. The advantage of tree planting in these locations is that it provides natural shade to the playgrounds which, in the longer term, will reduce watering requirements. In addition, it provides valuable tree cover in those areas of the City that are losing their private open space as the City moves to increase its housing density. Even on the environmental reserves, further tree planting would be of long term value as it would provide greater resilience to under-storey plants to withstand increases in summer temperatures.

Opportunities for Water Conservation

These reserves serve as the best and worst examples of water conservation in the City. The environment reserves once established require little if any watering while the playground reserves are a significant water management problem. The size of these reserves often does not justify bore water use and, thus, mains-reticulated water is used to maintain rarely used turf. There are significant opportunities to adapt these spaces to accommodate water conservation.

Access to and within Reserves

Generally, these reserves are in readily-accessible locations with easy road and pedestrian access. However, the size and proximity to roads of these reserves means road environments dominate their character and, in some cases, present a danger to young children. This is another factor undermining their attraction as a recreation asset, leading to low usage levels. There is rarely any access within the playground reserves beyond trafficable turf. For an environmental reserve, internal access is often restricted with the only trafficable surface being exposed sand.

Use of Area by Current Population

The observation survey identified no use of these reserves. They were mentioned by one or two survey respondents and there was physical evidence of people using the spaces. However, use is very limited. For the playground reserves, this can be partly explained by the small number of 0-10 year old children in the population. These age groups (0-5 and 6-10) are the smallest age groups (by numbers and percentage) in the population structure of the City. In addition, there are numerous other playgrounds to use in other reserves in the City that are better located and often have better facilities such as adjacent toilet facilities, seating, etc. For the environmental reserves, there is little reason to visit these areas. Although bushland is seen by many to be attractive and to walk through and as a place of rest (sitting) and contemplation, this is not practical in small areas of open space adjacent to residential roads.

Diversity of Recreation Opportunity

Given the size of these spaces, there is very little opportunity to establish any other form of recreation pursuit. The majority of recreation pursuits require space. That space may be required to undertake a physical activity, such as walking or kicking/throwing a ball, or to provide an escape from the suburban environment. Small open space areas rarely provide such opportunity.

Opportunities to Increase Use and Attraction

Opportunities to increase the use of these areas are limited as the facilities they can accommodate are limited by space availability. However, opportunities to increase attraction are available. Given the increasing loss of tree cover in the private residential domain, tree planting in these areas could

be seen to provide important aesthetic attributes beyond the environmental issues already discussed. The planting established on surplus road reserve space at the intersection of David and Mabel Streets is an example of such treatment. Such development requires virtually no on-going management once established and appears to be well regarded by surrounding residents as an element that breaks up the monotony of suburban streetscapes.

User Safety

The problem with these parks is their proximity to residential streets and, in the specific case of intensively planted environmental reserves, their potential for hidden anti-social activities.

Level of Infrastructure Investment

The playground reserves have significant investment (on a per area basis) given the cost of equipment, artificial shading and reticulation. By contrast, environmental reserves have little or no infrastructure.

Opportunities for External Revenue

There is very little opportunity given the level of use. However, opportunities to lease the land for complementary recreation activity associated with adjacent uses such as child care centres, health/community centres or education facilities.

Management Agreements in Place

There are no management agreements in place for these sorts of reserves. There are examples in the City of volunteer groups becoming involved in the management of natural environmental areas, but such activity is drawn to larger and more interesting and complex environments that the City has in abundance within its boundaries.

CONCLUSIONS AND RECOMMENDATIONS

The playground reserves pose a problem for the city as they are a significant management cost for little recreational benefit. The environmental reserves also generate little recreational benefit, but in their favour they have few management costs and they do make a contribution to the environmental values the City espouses. There are also examples where these reserves serve as a 'demonstrated functional community purpose' (WA Government 2011). This may be useful criteria in developing future management plans for these areas.

The following generic recommendations have been prepared to address the future sustainability of these reserves:

Playground reserves:

1. Play equipment that is not being used be removed.
2. Progressive planting on these reserves to increase tree cover.
3. Planting regimes be established that will require less management intervention.

Environmental reserves:

1. Increased tree cover with the intention of providing improved aesthetic outcomes.
2. Explicit educational role for the reserves to reflect the sense of place they bring to an area.

IMPLEMENTATION

The recommendations prepared for this report will have implications for the future upgrading and management of open spaces. This will have budgetary implications if the City is to progress to meeting the expectations contained within this strategy. It is not the role of this strategy to:

- Fully cost any particular upgrading proposal.
- Prioritise works between reserves.
- Determine the future budget that the City will allocate to the upgrading process.

Rather this strategy has sought to identify how the existing reserve system can best meet the objectives of the City in achieving a more sustainable approach to the future development and management of its public open space resources that best meets the current and future interests of the community.

However, it must be recognised that in the future the City will have to look for new and innovative approaches to funding reserve upgrading and achieving improved management efficiencies if the recommendations of this study are to be effectively implemented. In addressing this context, some of the issues that will need to be considered include:

Asset Management

The effective management of the City's assets is central to its future prosperity and will determine the extent of its potential to meet the future expectations of its residents. An integral part of such a process would require an assessment of the extent to which reserves are meeting an effective ratio between the benefits generated by the asset against the costs of maintaining that asset. Where such an assessment leads to the conclusions that the reserve land is not delivering a level of benefit commensurate to the costs of maintaining it, the City would need to consider the option of realising that asset in the interests of maintaining the viability and quality of the broader reserve system. Where reserve land is determined to be surplus to the City's needs, such an assessment should be based on the following:

- The existing amenity of the reserve.
- The extent of use of the reserve.
- The value attached to the reserve by the local community.
- It's potential for improvement.
- The availability of proximate sites suitable for further investment and upgrading.

Sale (or lease) of low performing open space to increase financial reserves for the redevelopment of quality open space should only be considered in conjunction with community consultation. POS

identified for disposal should only be sold (or leased) where the proceeds can be applied to meeting the objectives of this Strategy (i.e., the upgrading and redevelopment of existing parks) in a timely manner.

Partnerships

South Perth is an established and developed local authority with very limited opportunities to create new public open spaces. Partnership opportunities are paramount to meeting increasing expectations for access to POS to cater for a range of activities. This may involve looking outside the core open space resource and engaging in joint management and land use arrangements with the State Government agencies, education establishments and community organisations may offer opportunities to share the use of reserves that are outside the domain of public open space, such as school grounds and drainage reserves.

Other Recreation Spaces

While this study has analysed the recreation reserve system within the City, it is recognised that other reserves perform important recreation functions. Of particular note are the road reserves and verges that that together make up the streetscapes of the City. This research (consistent with research across Australia) found that walking and cycling was by far the most popular recreation activities of the South Perth community. While opportunities for increasing the facilities to attract walkers and cyclists to use public open space reserves have been referred to throughout this strategy, it must also be recognised that the streetscapes of the city play a very important role in this regard. Thus, in addressing public open space upgrading to further attract walkers and cyclists such consideration must also include the surrounding streets where the City still maintains control over development and management outcomes.

Master Planning

This strategy has identified (as recommendations) the important findings that should inform the future planning, development and management of individual reserves. However, it must be understood that such broad recommendations must be passed through a competent planning and design framework before any form of effective implementation can take place. The appropriate approach in this regard is referred to as a master planning process and ensures that any detailed proposals for change are conceived and evaluated within a competent planning framework. The purpose of such master plans would be to:

- Detail the future use, development and management of a park/reserve.
- Identify the capital cost associated with recommended works.
- Identify the management implications of the plan.
- Engage the local community in the planning process.

REFERENCES

WA Government (2009) Industry Accepted Classification Framework for Open Space, Department of Sport and Recreation, Perth.

City of South Perth (2011) Draft Local Housing Strategy, City of South Perth, Perth.

ABS (Australian Bureau of Statistics) (2006) Census of Population and Housing, AGPS, Canberra.

APPENDICES

APPENDIX 1 RESIDENT SURVEY

APPENDIX 2 OBSERVATION FINDINGS

APPENDIX 3 TABLE OF ALL PUBLIC OPEN SPACE