ST CLAIR RESIDENTIAL DEVELOPMENT OPEN SPACE MANAGEMENT PLAN

Prepared for the St Clair Joint Venture
March 2010

HASSELL

Working Document Only - Initial Concepts to Progress Final Design - To be revised on the basis of ongoing Community, Council and Designer Inputs
# St Clair Residential Development Open Space Management Plan

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00 Executive Summary

This Open Space Management Plan (OSMP) has been prepared by the St Clair Joint Venture (SJV) in consultation with the City of Charles Sturt to show in detail how the SJV will plan, develop and manage the public open space within the proposed development.

The OSMP provides a clear set of landscape guidelines that dovetails with the Council’s Open Space Strategy. The landscape function of any new parcel of public open space will be developed in accordance with agreed reserve hierarchy classifications, general development requirements and associated standards of provision. Following on from this, ongoing maintenance levels will be prescribed based on the reserve type and function.

This document will also be used to inform the detail design of the St Clair Wetland and Aquifer Storage and Recovery System (ASR), providing context to adjoining public open space types.

Having set the fundamental levels of provision, the following key principles will underpin the future development of public open space within St Clair:

- Biodiversity
- Sustainable landscapes
- Water sensitive urban design
- Crime prevention through environmental design
- Quality landscape design
- Accessible communities
- Ease of maintenance

The OSMP will also set down a consistent palette of landscape surface treatments, public domain elements, and plant materials which will help provide a strong visual theme, as well as help simplify ongoing maintenance requirements.

The St Clair developments planting palette will reinforce Council’s strategic goals that have been expressed in the “Towards One Planet Living: Greening the Western Suburbs 2008–2013”.

St Clair Residential Development Open Space Management Plan
INTRODUCTION
01__Introduction

1.1 Introduction

The St Clair Joint venture, in conjunction with the City of Charles Sturt, has prepared a Development Deed to guide the future development of the St Clair site.

The Open Space Management Plan (OSMP) is one of two key framework documents for the Deed, responsible for guiding the long term development of the St Clair site.

The OSMP will address issues associated with: Distribution and classification of open space, Pedestrian and cycle movement, Open space quality, Stormwater management (ASR, wetlands), Public domain elements, Landscape, Maintenance standards, Development staging.

It will be consistent with the Charles Sturt City Development Plan and the Open Space Development Guidelines, and will be provided to Council’s Elected Members for endorsement.

1.2 Purpose of this Document

This Open Space Management Plan (OSMP) has been produced in consultation with the City of Charles Sturt in order to fulfil the St Clair Joint Venture’s (SJV) obligations as described in the Commitment Deed (between the State Government, the SJV, and the South Australian Jockey Club), and the Development Deed (between the City of Charles Sturt and the SJV). This document will also inform the design of the St Clair Wetland.

It is the SJV’s goal that the Open Space Management Plan will clearly convey how public open space and the landscape within the St Clair land division will be planned, developed and managed. It will also describe how the Council, in partnership with the SJV, will undertake public consultation on the OSMP so that community input can be sought.

The final document will be approved by the Development Committee (established by the Commitment Deed) and the Council’s Elected Members.

1.3 Existing Character

The St Clair development site is a combination of the former industrial site (Sheridan/Actil) and the former SAJC Cheltenham racecourse.

The former site use impacted on the landscape character, will little worth retaining. Due to the requirements to treat the former industrial site for soil contamination, little vegetation has remained.

There are a number of existing trees still remaining across the site, in particular against the boundary of the rail corridor. The SJV will work collaboratively with the Council to retain healthy existing trees, wherever possible.

1.4 Vision

St Clair will become a vibrant, inner metropolitan neighbourhood, complementing the proud local heritage of the surrounding established community and raising the bar for environmental residential developments.

This parkland village will feature one of the largest areas of community open space within a new residential address anywhere in Australia.

St Clair’s unique setting amid playing fields, expansive and connected parklands, traditional parks, gardens, and a riverine biodiversity corridor will provide amenities for comfort and convenience, as well as promote active recreation.

The presence of native flora and fauna will be encouraged. Boardwalks will provide views across water bodies and reed beds, allowing for close community interaction with the natural environment.

Weaving through the parklands will be a continuous belt of walking and cycling trails that lead to a variety of destinations: a shopping precinct with alfresco dining, sportsgrounds with new changing room facilities and barbecues, or local parks for quiet contemplation. These new facilities will allow the existing and new communities to pursue an active and healthy lifestyle.

St Clair will be an extraordinary new address that enriches people’s spirit of life through environment, location, amenity and quality design. The essence of St Clair will hold the following characteristics:

- Be a passion for life and the environment. Participating in life rather than letting it pass by.
- Exuding an uplifting, invigorating feeling that enlivens the senses and the spirit.
- Neighbourly and friendly – a united sense of belonging.
- Proud to be part of something special and new.
- De-stressed. Easy going, but not complacent.
- The green jewel of the West. An air of prosperity and quality, but not arrogant.
- The Open Space Management Plan promotes a landscape and urban design vision for St Clair that is visually appealing, sustainable, and will create a unique sense of place.

The key principles that underpin St Clair’s vision are:

Quality Design

Open space that is fit for purpose, is visually attractive, safe and welcoming, and minimises ongoing maintenance requirements. Landscape design that is contemporary and relaxed, yet conveys a sense of vibrancy. A distinctive style that draws from built form that exists within Cheltenham and Woodville. Design that incorporates ‘Crime Prevention through Environmental Design’ principles.

Environmental Sustainability

Provide parks and wetlands in an urban setting whilst maintaining natural ecological processes. Use recycled water to establish and sustain ‘green assets’.

Accessibility

Provide active, safe and healthy environments for users within St Clair, as well as the wider community, that can be easily accessed by pedestrians and cyclists.

Biodiversity

Promote revegetation of previously derelict land with locally native species. Establish aquatic biodiversity within the constructed wetlands. Establish large native tree species in new reserves. Promote educational opportunities.

Diversity

Provide a diverse array of public open space that provides passive and active recreation opportunities to a wide variety of users, of all ages and cultural groups.
Introduction

1.5 Location
The St Clair development is located in Cheltenham within the City of Charles Sturt.

The site is bounded by Torrens Road (north), Woodville Road (East), Cheltenham Parade (west) and the Adelaide - Port Adelaide rail corridor (south).

The surrounding land uses include a mix of residential, retail and industrial developments.

The site is within close proximity to public transport benefiting from the boundary main roads and rail corridor. Woodville station is located approximately 300 metres from the south-eastern corner of the development on Woodville Road.

The site, between the Woodville train station and the St Clair Oval precinct is the likely location for the future establishment of a Transport Orientated Development (TOD).

The St Clair development is located within 1.5 kilometres of the Arndale shopping centre (Centro Arndale) and approximately 7 kilometres from the Adelaide CBD.

It has access to a range of local community services including:
- Local shopping, including a Foodland supermarket
- Woodville High School
- Woodville Primary School and Centre for the Hearing Impaired
- Woodville Day Nursery and Kindergarten
- St Margaret's Kindergarten
- Civic Centre and Library
- St Clair Youth Centre and recreation Centre
- Queen Elizabeth Hospital
- Community Childcare Centre
- Family and Youth Services
- Woodville Spastic Centre
- Various churches
- Various sporting clubs
- Various medical facilities
01____Introduction

1.6 Development Objectives
The City of Charles Sturt, in collaboration with the St Clair Joint Venture, has prepared a Development Deed to guide the future development of the St Clair site, including the following objectives.

General
_A new integrated, sustainable and vibrant community
_Closely linked physically and visually to adjoining urban areas
_Safe and convenient transport networks
_Orientation of residential allotments for appropriate solar access, buffers and integration with adjacent areas
_Potential new train station

Open Space
_Minimum 35% Public Open Space
requirement for the Cheltenham site and separate to the open space provided for the 'Woodville' parcel
_Wetlands and associated infrastructure
_Low maintenance and environmentally sustainable Public Open Space
_Provision of sports and recreation grounds, play equipment and park furniture
_Linkages between Open Space
_Water use minimised by planting native or drought tolerant species

ASR
_Wetland areas and ASR designed to receive stormwater from the catchment area
_Up to 6 ha of wetland areas to treat internal and external stormwater
_Wetlands to retain stormwater until water quality is appropriate for aquifer recharge
_Incorporate a ‘third pipe’ system to provide non-potable water

Affordable Housing
_Minimum 15% of dwellings
_Diversity of affordable housing units spread throughout the development
_Variety of housing reflecting the needs of all demographic groups
_Developed concurrently with other dwellings
_Sited in equally desirable locations as other dwellings

Public Realm
_Public realm infrastructure designed and constructed considering life cycle costs
_Street network designed to allow safe and convenient access for emergency vehicles, trucks and cycles
_Verges designed to provide for hard waste collection
_Energy efficient lighting for streets and public areas

Sustainable Urban Design Guidelines
_Design and orientation of buildings to maximise passive energy efficiency
_Limit front dwelling setbacks to minimise water use
_Drought tolerant plant species
_Retain existing mature trees where practicable
_Energy efficient street lighting
_Dwellings to meet minimum energy rating
_Use of a ‘third pipe’ system for non-potable water
_Water sensitive urban design principles

Community and Social Objectives
/Public realm infrastructure to reflect local culture and history via a public art strategy and plan
_Education and training opportunities in association with local schools and organisations
 Seek to build a sense of community through various initiatives

1.7 Master Plan
The St Clair development is to be an integrated, sustainable and vibrant community, comprising a broad range of housing amongst a network of quality open spaces. The development will include retail and commercial activities to service the local and the wider community.

1.8 Sustainability Initiatives
The following sustainability initiatives have influenced the master planning process:
_Linkages to public transport
_Stormwater management - wider catchment
_Stormwater harvesting and ASR collection re-use
_‘Lilac pipe’ system
_Recreation/healthy lifestyle
_Outdoor opportunities
_Walkable living community
_Integrated cycling network
_Accessible retail and community facilities
_Water sensitive urban design
_Endemic and drought-tolerant plant selection
_Energy efficient street lighting
_Minimum ‘star rated’ energy efficient housing design
_Creation of urban linear biodiversity corridors

1.9 Land Use
The land use plan demonstrates the application of the development objectives, including:
_Solar access for residential allotment
_Minimum 35% open space
_Upto 6 ha of wetlands, with ASR
_Integrated, sustainable and vibrant community
_Close links with adjoining urban areas

1.10 Pedestrian Circulation Network
The Master Plan, through the distribution of open space and the road arrangement will provide a safe and accessible pedestrian and cycle network through the development, providing for circulation and connection between homes, parks, shops, public transport and the adjacent neighbourhoods.

The aims of the development are reflected in the Heart Foundation’s ‘Healthy by Design: a planner’s guide to environments for active living’. The purpose of this guide is to encourage design considerations that positively impact on the health and well being of the community through the design and planning process.

These design considerations include:
_Walking and cycle routes (including recreation routes)
_Streets
_Local destinations
_Open space
_Public transport
_Seating, signage, lighting, fencing and walls
_Fostering community spirit

The OSM will address all of these topics, and ensure their aims are integrated into the objectives of the development.

1.11 Crime Prevention Through Environmental Design (CPTED)
The City of Charles Sturt has established a policy of CPTED which will be a reference document to the development of the Master Plan and integral in the detail design of each open space.

The key CPTED strategies are:
_Natural surveillance
_Natural access control
_Territorial reinforcement
_Maintenance

To implement these strategies, the following concepts must be considered:
_Lighting
_Sight lines
_Clear ownership of space
_Escape routes
_Signage
_Movement predictors
_Safe routes
_Activities
_Mixed use of public space and land
_Materials
_Maintenance and management

1.12 Staging
The St Clair development is likely to be delivered in the following stages:
_1 Woodville Stage 1
_2 Cheltenham Precinct 1
_3 Cheltenham Precinct 2
_4 Cheltenham Precinct 3
_5 Cheltenham Precinct 4

It is expected the delivery of the landscape, including open space and streetscape works, would follow the relevant civil works and seasonal conditions.

The timing and sequence of staging will be at the discretion of the Joint Venture.

Refer to Appendix B for a detailed breakdown of the timing for each stage and its relevant scope of works.
01 Introduction

MASTER PLAN

Working Document Only - Initial Concepts to Progress Final Design - To be revised on the basis of ongoing Community, Council and Designer Inputs
01 Introduction
02 Public Consultation

PUBLIC CONSULTATION
2.1 Market Research

Market research enables us to identify trends and emerging challenges, to plan for the allocation of resources, and to measure the success of improvements that have been implemented.

The St Clair Joint Venture (SJV) regards market research on recreation and public open space as a useful tool that can help develop healthy communities. For example, St Clair may have a large number of ‘empty nesters’ who have different recreation needs to teenagers. If this were the case, facilities in reserves could be developed to reflect the needs of this user group.

The SJV will develop a research strategy that will concentrate on focus groups (a small number of individuals brought together to discuss a particular topic) that are related to the project’s sales and marketing efforts. These could include the following groups:
- Purchasers in St Clair
- Residents in St Clair (including children and youth)
- People who have a registered interest in St Clair

It is important to have an understanding of the Council’s Open Space Strategy, as well as Council’s policies for the environment, sport and recreation. This will provide a clear direction on what types of facilities are permitted in certain types of reserves, and will establish a realistic discussion on a range of issues.

The SJV will also review previous public consultation undertaken by the Charles Sturt Council to gain an understanding of the broader community’s needs and desires, and then focus on those groups that best represent the future of St Clair.

2.2 Public Consultation

Public consultation helps us to identify the needs and expectations of specific community groups so that we can incorporate their views into the way our services are planned and delivered. It is also an important method that brings together and engages new and existing communities, and encourages participation and ownership from the wider community.

The City of Charles Sturt will work with the SJV to deliver a community engagement and information dissemination process. This will be an opportunity for the community to provide input into the proposed features of public open space areas.

It is important that both the existing surrounding community and the new community that will live in St Clair are engaged, as the significant area of open space contained within this development is going to be a regional community asset. The types of elements that will be consulted on in the questionnaire could include the location of playgrounds, type of recreational equipment, public lighting, quality of maintenance, seating, public art, directional/educational signage, and landscaping. There will be some elements of the public open space that are non-negotiable, and will not be presented for deliberation, for example, the number and location of playing fields, some sporting and community infrastructure, and wetland size and configuration.

This consultation will be led by Council but undertaken in partnership with the SJV and is likely to be undertaken in early 2010. The results of this consultation will inform and update the OSMP and requires the endorsement of Council and the SJV.
03 Open Space Strategy

OPEN SPACE STRATEGY
3.1 Open Space Strategy

The distribution of open space within the St Clair Master Plan is consistent with the original development concept plan, and includes the following:

- 35.3% (17.2 ha) open space (within Cheltenham Precincts only; does not include Woodville Stages)
- Ten local reserves spread throughout development
- A central and rail corridor linear trail as part of future extended biodiversity corridor
- Nine pedestrian/cycle links to adjacent areas
- Four playgrounds within 250 m of most dwellings

Open Space Requirements

In 2009 the City of Charles Sturt prepared ‘Engineering and Open Space Development Guidelines’ to assist in the development of new open spaces in the St Clair development. The guidelines establish a reserve hierarchy that includes the following reserve types:

- Regional
- District
- Neighbourhood
- Local Parks

The purpose of the strategy is to establish standards for the design of St Clair open spaces in a manner that is attractive, functional, accessible and sustainable. The Guidelines set standards which respond to the recreational needs of the community as well as recognises the maintenance resources of the Council.

The Guidelines include:

- Reserve Classifications and General Development Requirements
- Types of Open Space
- Standard of Provision
- Maintenance Guidelines
- Specific Design Guidelines

3.2 Reserve Classification

The City of Charles Sturt ‘Engineering and Open Space Development Guidelines (2008)’ identifies the hierarchy of Open Space classifications:

Regional

Regional Open Space serves or attracts people from across the entire City of Charles Sturt due to its location, size, uniqueness, quality or focus of the activity and beyond, whether adjoining council areas or beyond (e.g. Henley Square, Woodville Oval).

District

District Open Space draws people from one or more (adjoining) suburbs due to its larger size, higher quality or uniqueness to the district.

Neighbourhood

Neighbourhood Open Space caters for people in one or more (adjoining) suburbs due to its size (larger than a local park), appeal or activities. The neighbourhood area will depend on the size of the suburb, e.g. a neighbourhood could be one large suburb such as Fulham Gardens or a cluster of smaller suburbs such as Croydon and West Croydon.

Local

Local Open Space caters for a local community and will generally not attract people from a wider catchment. A local area is generally part of a suburb or a small suburb.

There will be no local sportsgrounds as the competitive nature of sport tends to attract people from a wider catchment.

Regency Park Playspace_
OPEN SPACE DISTRIBUTION PLAN WITH PEDESTRIAN AND CYCLE PATHS
03 Open Space Strategy

3.3 Open Space Typology

The following open space types are to be found in the St Clair development. These reserves correspond to the typologies set out in the City of Charles Sturt “Engineering and Open Space Development Guidelines”.

Sportsgrounds
- District

A sportsground is an area of open space that primarily caters for sport through playing fields and other structures, e.g. soccer pitch, football oval, cricket pitch, softball diamond, synthetic hockey field, tennis or netball courts. A sportsground could also be linked to a recreation park or include features that cater for recreation such as a playground.

Park
- Regional
- District
- Neighbourhood
- Local

A park is an area of open space that primarily caters for recreation through grassed areas, playgrounds, seating, pathways, picnic facilities and other activity areas. A park could be linked to another type of open space, e.g. a sportsground or natural area.

Natural Area (Often Managed Landscapes)
- Watercourse/Wetland

Natural area refers to open space that is dominated by natural vegetation and habitats with the main objective to protect, enhance or recreate the natural environment. Generally, protecting the environment includes maintaining the land in a natural state and the careful management of activities. Sport will usually not be appropriate in natural areas and recreation should be consistent with the setting and the environmental objectives.

In addition: _Wetland or watercourse will incorporate aquatic systems and vegetation, e.g. a creekline, lake, pond or low lying wetland area, and is likely to be relatively undeveloped_

Linear Parks and Corridors

A linear park or corridor refers to a continuous length of land that provides a connection or supports movement between open space or other features and facilities. A linear park or corridor could be designed as a park setting with grassed areas, trees, pathways and seating or include substantial vegetation and provide a movement corridor for birds and other fauna.

Streetscapes

Streetscapes include landscaped traffic aids, roundabouts, street tree planting and associated understorey planting, their purpose is to provide a “softening” effect in a harsh environment of hard infrastructure and built form, enhance the streetscape through the creation of streetscapes incorporating avenues and boulevards wherever possible and should incorporate Water Sensitive Urban Design (WSUD) wherever possible.

Verges

Verges must be developed as part of the overall development of the land division.

3.4 Open Space Standards

The City of Charles Sturt (‘Engineering and Open Space Development Guidelines’, 2009) identifies the following standards for open space design:

High Quality

The open space and related facilities are of superior quality and provide a high level of service to users.

Some examples could be:
- Quality function area and amenities
- Regularly irrigated grassed area
- Quality structures, e.g. quality shelters and seating; protection of the natural environment (flora and fauna)

In addition, the settings and facilities would be safe and have a high level of appeal.

The term appeal can be defined as ‘attraction, interest, enjoyment’.

Good Quality

The open space and related facilities are of a good quality and provide an appropriate level of service.

Some examples could be:
- Well maintained clubroom and amenities
- Regularly mown grassed areas and maintained garden beds

In addition, the settings and facilities would be safe and appealing.

Safe and Appealing Quality

The open space and related facilities are of sound quality and are safe to use. In particular, the open space and facilities should:
- Have appeal from a visual and user perspective, i.e. people will appreciate and where appropriate use the reserve or feature within a reserve
- Statutory and/or Council health and safety and risk management requirements

3.5 Open Space Matrix

The following table provides a summary of Council’s Open Space hierarchy and design standard expectation, and will form the design brief for all open spaces within the St Clair development (refer to the following pages and the Open Space Distribution Plan).
# Open Space Strategy

<table>
<thead>
<tr>
<th>Open Space Type</th>
<th>Standard of Provision</th>
<th>Potential Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Park</td>
<td>High quality, with the capacity to cater for large numbers of users</td>
<td>Trees and landscaping (possibly including more formal gardens)</td>
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<tr>
<td></td>
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<td>Irrigated grassed areas (this could be sections of the park strategically irrigated)</td>
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<td>Picnic areas (including barbecue facilities)</td>
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<td></td>
<td>Seating and tables</td>
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<tr>
<td></td>
<td></td>
<td>Shelters</td>
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<tr>
<td></td>
<td></td>
<td>Walking tracks/pathways</td>
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<td></td>
<td></td>
<td>Cycle tracks</td>
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<td>High standard or unique playground (including potential to cater for children and</td>
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<td></td>
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<td>carers with a disability and the visually impaired – appreciation gardens)</td>
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<td>Water or natural features</td>
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<td></td>
<td>Drinking fountains</td>
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<td></td>
<td></td>
<td>Lighting (including security)</td>
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<td></td>
<td>Signage and interpretation</td>
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<tr>
<td>District Park</td>
<td>Good quality</td>
<td>Trees and landscaping (possibly including more formal gardens)</td>
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<td>Irrigated grassed areas (this could be sections of the park strategically irrigated)</td>
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<td>Cycle tracks</td>
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<td>Playground</td>
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<td>Water or natural features</td>
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<td>Public artwork</td>
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<td></td>
<td>Drinking fountains</td>
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<td>Lighting (including security)</td>
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<td>Signage and interpretation</td>
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<td></td>
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<td>Pathways to the park</td>
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<tr>
<td>Neighbourhood Park</td>
<td>Safe and appealing quality</td>
<td>Trees and landscaping</td>
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<td>Irrigated grassed areas (this could be sections of the park strategically irrigated)</td>
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<td>Signage</td>
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<td>Public artwork</td>
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<td>Pathways to the park</td>
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<tr>
<td>Local Park</td>
<td>Safe and appealing quality</td>
<td>Trees and landscaping</td>
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<td>Some irrigated grassed areas (may only be part of the park and may not be for all</td>
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<td>local parks</td>
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<td>Seating</td>
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<td></td>
<td>Walking tracks/pathways</td>
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<td></td>
<td></td>
<td>Playground (not all local parks)</td>
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<td></td>
<td></td>
<td>Drinking fountain</td>
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<td></td>
<td></td>
<td>Could have security lighting, particularly if part of walking network</td>
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<td>Signage</td>
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<td></td>
<td>Pathways to the park</td>
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<thead>
<tr>
<th>Open Space Type</th>
<th>Standard of Provision</th>
<th>Potential Development</th>
</tr>
</thead>
</table>
| **Natural Area Wetland/Watercourse**                 | Generally good quality although some settings and locations could justify higher quality| _Trees and landscaping_  
   - Irrigated grassed areas  
   - Walking tracks/pathways  
   - Playground  
   - Seating and tables  
   - Shelter  
   - Drinking fountains  
   - Security lighting  
   - Natural or constructed water feature, e.g. creek or wetland  
   - Walking track/pathway  
   - Signage and interpretation |
| Refer Open Space Distribution Plan, p.14             | _Trees and landscaping_  
   - Walking track/pathway  
   - Seating  
   - Shelter  
   - Playground (possibly as part of a local or neighbourhood park linked to the corridor/linear park)  
   - Lighting  
   - Signage and interpretation  
   - Links to other open space or community facilities |
| WP 1 - 1 / 2 / 3 / 4                                | _Trees and landscaping_  
   - Walking track/pathway  
   - Cycle track  
   - Seating  
   - Shelter  
   - Lighting  
   - Signage and interpretation  
   - Cycle tracks |
| CP 1 - 2                                            | _Quality will vary depending on the topography, location and related facilities and open space_ | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| CP 2 - 4                                            | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| CP 3 - 1 / 2 / 5                                    | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| CP 4 - 2 / 4                                        | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| **Linear Parks and Corridors**                       | _Quality will vary depending on the topography, location and related facilities and open space_ | _Quality will vary depending on the topography, location and related facilities and open space_ |
| Refer Open Space Distribution Plan, p.14             | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| WP 1 - 1 / 2 / 3 / 4                                | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| CP 1 - 2                                            | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| CP 2 - 4                                            | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| CP 3 - 1 / 2 / 5                                    | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| CP 4 - 2 / 4                                        | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| **Streetscapes and Verges**                         | _Quality will vary depending on the topography, location and related facilities and open space_ | _Quality will depend on the type and use of the street_  
   - Arterial roads should be of a high quality  
   - Major collector roads should be of a high quality  
   - Minor collector roads should be of a good quality  
   - Access streets should be of a safe and appealing quality |
| **Sportsgounds (District)**                         | _Good quality, with the capacity to support higher level competitions_ | _Good standard ovals/fields (mown regularly and good surface)_  
   - Irrigation and drainage  
   - Support structures relating to the sport, e.g. cricket nets or training fields  
   - Toilet facilities  
   - Change rooms linked to club facility  
   - Sports lighting  
   - Seating  
   - Landscaping and shade  
   - Playground (for sport participants and wider community)_  
   - Pathways to and around the ground  
   - Signage  
   - On-site car parking including disability car parking |
| Refer Open Space Distribution Plan, p.14             | _Good quality, with the capacity to support higher level competitions_ | _Good standard ovals/fields (mown regularly and good surface)_  
   - Irrigation and drainage  
   - Support structures relating to the sport, e.g. cricket nets or training fields  
   - Toilet facilities  
   - Change rooms linked to club facility  
   - Sports lighting  
   - Seating  
   - Landscaping and shade  
   - Playground (for sport participants and wider community)_  
   - Pathways to and around the ground  
   - Signage  
   - On-site car parking including disability car parking |
| WP 1 - 1 (Within Regional Reserve Corridor)          | _Good quality, with the capacity to support higher level competitions_ | _Good standard ovals/fields (mown regularly and good surface)_  
   - Irrigation and drainage  
   - Support structures relating to the sport, e.g. cricket nets or training fields  
   - Toilet facilities  
   - Change rooms linked to club facility  
   - Sports lighting  
   - Seating  
   - Landscaping and shade  
   - Playground (for sport participants and wider community)_  
   - Pathways to and around the ground  
   - Signage  
   - On-site car parking including disability car parking |
STORMWATER AND WETLANDS
04 Stormwater and Wetlands

4.1 Introduction

The importance of water conservation and management will be demonstrated in the St Clair development by the extensive wetland and ASR systems.

These systems will ensure the long term irrigation demand for the development will be met.

The detail design of the open spaces will be integrated with the functional requirements of the wetlands and ASR infrastructure to ensure conflict with activity, presentation, safety and maintenance is avoided.

4.2 Wetland Design

The design of the St Clair Wetland will be guided by a Project Steering Group comprised of members from the Land Management Corporation, The City of Charles Sturt and the St Clair Joint Venture.

The layout and configuration of the wetland will be undertaken by specialist designers and consultants who will consider a variety of parameters that will ensure that the wetland functions as required; harvesting and cleansing stormwater, whilst providing a recreational setting that is bio-diverse, visually attractive, safe and accessible.

Wetland concept plans that have been developed as part of the Master Plan (refer pages 5 & 21) are for illustrative purposes only and will not necessarily form part of the final wetland design.

4.3 Water Sensitive Urban Design (WSUD)

The design and detail of the landscape will include WSUD practices to appropriately manage water demands through efficient irrigation techniques, improved moisture retention, reduction of waste (run-off) and reducing the overall irrigation requirements of the landscape.

These water sensitive design measures will be integrated with the landscape to give a positive impact on the presentation or function of the open space network, including:

- Limit irrigated grass to useable open spaces
- Irrigation of all open spaces to be in line with current Local Government Water Restrictions and in accordance with the Code of Practice for Irrigated Public Open Space (IPGS)
- Efficient irrigation techniques, including sub surface drip irrigation to all planting beds, pressure regulated pop up spray irrigation to grassed areas and separate drip irrigation for all tree planting
- Appropriate planting bed preparation, including amelioration of site soil to assist in moisture retention and drainage and use of organic mulches
- Selection of drought tolerant species, suited to the local soil and climate conditions
- Avoid irrigated grass along verges, and replace with mulched beds of drought tolerant small shrubs, sedges or groundcovers and inorganic materials such as ornamental gravel mulch
- Street tree pit preparation to include amelioration of site soils (including addition of water crystals) to assist in moisture retention and drainage, use of water spirals to allow deep irrigation to roots and use of organic mulch

These measures are additional to the other major WSUD practices relating to the wetlands and ASR systems.

4.4 Stormwater Harvesting

An urban wetland, with an area of approximately 6 hectares, is to be constructed for the following purposes:

- Create a safe recreational environment that benefits the local and wider community
- Improve stormwater quality using natural treatment systems
- Capture pollutants to protect downstream waterways
- Reduce St Clair’s use of mains water by maximising use of recycled water
- Increase biodiversity through the creation of aquatic and riparian habitats

Catchment Area

The proposed wetland will harvest stormwater from:

- The development area
- A part of the adjacent Torrens Road catchment (as well as an area further to the east that will be connected to the Torrens Road catchment)
- River Torrens catchment; pumping flows from the River Torrens at Bowden into the Torrens Road catchment

This harvesting scenario would yield 1,000–1,300 ML per year. The proposed wetland would remove 130–140 tonnes of sediment per year, and would remove 1,800–2,300 kg of nutrients per year.

Wetland Treatment System

The proposed stormwater treatment system will be a constructed wetland. This will treat the water to a sufficient water quality to allow it to be stored in an underground aquifer.

The wetland will be extensively vegetated, with alternating sections of deeper open water, and shallow reed beds (between 100–400 mm deep). Pollutants will be removed through sedimentation, filtration and other biological processes.

The water level will rise above the static design water level by some 500 mm during rainfall events, and will slowly draw down over several days.

4.5 Aquifer Storage and Recovery (ASR)

An ASR system is proposed whereby the cleansed water held in the wetland will be injected down a series of wells into a confined aquifer for storage. Most of this storage will occur in winter. Some of this water will be recovered for topping up the wetland and irrigation use during summer.
5.1 Introduction
A cohesive palette of materials, furniture and other design elements will provide the St Clair development with a distinctive, high quality and robust public domain.

The palette will consider the following criteria:
- Site conditions
- High pedestrian traffic and use
- Complementary character
- High quality and durable materials
- Low maintenance, in keeping with Council’s expectations

Where appropriate, recycled or renewable materials, or materials with low embodied energies will be considered.

5.2 Public Domain Elements

The range of elements will include:

- Paving
  - The paving palette will provide legibility through the development and reinforce the hierarchy of streets and open spaces. Paving types and construction methodology will be in accordance with City of Charles Sturt standards.

- Street Furniture
  - The palette of street furniture will contribute to the distinctive presentation of the development, provide greater amenity and encourage greater use of the public realm by the community. The selection of furniture will be in accordance with the City of Charles Sturt requirements.

- Lighting
  - The selection of lighting, including light poles, fittings, lighting types and light colour will have an important role in the presentation of the development, its entrances, streetscapes and open spaces.
  - Lighting is important in addressing public safety and legibility, as well as providing effect at entrances or to highlight features within the public realm. Lighting Design to AS/NZS 1158 and utilise low energy lamps such as LED, CF and ‘Cosmopolis’. These locations may include wetland crossing, points and areas along the Port Rail Corridor which are not affected by street lighting. Specific lighting strategies will be developed as part of the detail design of all relevant open spaces.

SJV will consider lighting in public open space at the detail design stage for each precinct and lighting design will be underpinned by OPTED and Guidelines for Water Safety in Urban Developments (Royal Life Saving Society).

- Shelter/Shade Structures
  - The provision of shade/shelter within the open spaces will identify the parks as destinations and encourage greater use. Structures should be simple and robust, providing contemporary forms appropriate to the presentation of the development. Across the open space network, a consistent approach to shelter design is recommended.
  - The structures may be selected from catalogues, individually designed, or a modified version of a standard form. The materials and colours used in the detail of the shelters should be appropriate to the public domain palette and to Council’s design standards.
  - The shelters should be supported with appropriate hard paving, planting and furniture. Lighting should be considered in high profile reserves.

- Fitness Equipment
  - Fitness equipment will be provided within the public domain, to encourage greater use of the open space network, including greater use by seniors. Additional to the provision of equipment, signage will be used to encourage greater use of walking and running trails across the development, through directional and distance markers.
  - A variety of fitness equipment is available ‘off the shelf’ for consideration.
  - The placement of this furniture should consider the placement of individual stations as part of a broader recreation network, or as a cluster of stations concentrated in one open space.

- Corridor which are not affected by street lighting.

Regardless of the final arrangement, the equipment should be placed in a setting which identifies it as a destination and encourages use, including the use of planting, paving, signage and shade/shelter.

- Play Equipment
  - The distribution of play equipment will accommodate a range of different age groups across the development. The open space master plan identifies four locations for playgrounds. Play equipment should not be considered as single features, but rather part of an integrated play setting which combines individual ‘off the shelf’ pieces of play equipment with rubber surfacing, planting, shade/trees, sculpture, seating, bins, fencing and open space.

  - The design of the playgrounds should create unique (possibly themed) settings which encourage interaction and will safely accommodate a variety of age groups and abilities.

  - The design of all play spaces should be robust to an intensity of use, tolerant of vandalism, and comply with all relevant Council and Australian standards including free fall heights and clear zones.

Signage

Guidelines for a signage strategy for the development relating to information content, coordination, image and integration will be provided for marketing, wayfinding and education signage.

- A signage strategy will be considered to provide a coordinated approach to signage and the presentation of information across the development.

  - The strategy should consider marketing signage as well as other signage, including:
    - Directional signage to public transport, local services and shops, parks and sporting grounds and regional facilities
    - Street sign
    - Interpretive signage, referring to local culture and history, educational signage regarding the wetlands, habitat creation and stormwater treatment

- Entry signage (entry walls/entry statements)

Where possible, signage should be integrated with the design of the public realm, and be compliant with Council standards.

Public Art

SJV will work closely with the Council and community groups to promote public art. A public art strategy and plan will be developed that identifies pragmatic ways in which standard public realm infrastructure and furniture can be customised to reflect local culture and history, based on the Arts SA 2008 guidelines “Public Art: Making It Happen - commissioning guidelines for local councils.”

The public art strategy should include:
- Public art procurement process, including brief, artist selection design approval and commissioning, installation and maintenance.
- Identification of public art opportunities (locations, scale and message)
- Coordination with relevant staff
- Identification of possible funding sources (Arts SA)

The following themes may be appropriate for the St Clair development:
- Former industrial history of Sheridan site
- Former SAJC Cheltenham racecourse history
- Local history
- Indigenous culture
- Ecology
- Sustainability

Entry Statements

The creation of recognisable entry points is important in providing legibility and a sense of place for St Clair. Entries should integrate the following design elements:
- Signage
- Public art
- Signature planting of trees and shrubs
- High quality repeated urban elements

The design of the entries should relate to both pedestrian and vehicle traffic, and contribute to the character of the neighbourhood once advertising signage has been removed.
6.1 Introduction

Landscape, including street trees, streetscape and open space planting will enhance the presentation of the development, adding colour and interest and improving legibility, structure and amenity.

Landscape will include:
- Definition of entry points and boulevards
- Stormwater management
- Education
- Biodiversity
- Seasonal change
- Low maintenance requirements

Planting within St Clair will be a combination of native and exotic species. The planting palette will be developed in conjunction with the City of Charles Sturt, and based on soil conditions, climate, drought tolerance and low maintenance requirements.

6.2 Existing Character

The St Clair development site is a relatively featureless, flat, open plain of some 50 hectares. The northern and western edges of the site are bounded by busy arterial roads: Torrens Road (northwest-southeast) and Cheltenham Parade (north-south).

Views out of the site to the north, west and south are generally of low visual appeal, with industrial buildings and post-war housing dominating the low quality streetscape. Buffer plantings of Athel Pine, Gum trees, Monterey Cypress, and Bracelet Honey Myrtle were planted whilst the Cheltenham Racecourse was operational, however the termination of horticultural maintenance and drip irrigation has resulted in most of the exotic species, particularly the Monterey Cypress, exhibiting signs of poor health and die-back. Views to the south-east of the site include the Woodville High School and open irrigated sportsfields associated with the St Clair Recreation Centre.

Common Name | Botanical Name
--- | ---
Norfolk Pine | Araucaria heterophylla
Spotted Gum | Corymbia maculata
Monterey Cypress | Cupressus macrocarpa
River Red Gum | Eucalyptus camaldulensis
Sugar Gum | Eucalyptus cladocalyx
SA Blue Gum | Eucalyptus leucophylla
Norseman | Eucalyptus leucoxylon
Hibiscus | Lagunaria patersonii
Peppercorn Tree | Schinus arenaria
Athel Pine | Tamarix aphylla

Many of the large gum trees are in particularly good condition and will be retained within future reserves.

All existing trees (except woody weed species, such as Olives, Athel Pine and self seeded Aleppo Pine), have been assessed for health and structural defects by a qualified arborist (Arborman Tree Solutions - Cheltenham Racecourse Development Tree Report 2009). Further to this, existing trees will be visually assessed on site (by Council staff and the SJV) to ascertain the merits of each tree’s retention.

Large areas of the former racecourse site are covered with kikuyu grass, herbaceous weeds and patches of groundcover such as Enchytraea tomentosa (Ruby Saltbush).

A small playground facility is located at the northern end of the site, at the intersection of Cheltenham Parade and Torrens Road.

The largest visual intrusion into the site is the Trident plastics factory, which has a frontage on Torrens Road. The western boundary of the Trident factory has a number of mature gum trees that help screen the industrial buildings and should be retained if healthy and of sound structure.

None of the other buildings that remain on the site as part of the SA Jockey Club’s infrastructure will be retained.

The existing mature trees within the development site are generally planted in corridors along the boundaries of the site. Years of neglect have rendered some trees unsuitable for retention, however native trees such as Red Gum and Sugar Gum were of high priority for inclusion in future designs and will be pruned and protected wherever possible.

Other trees such as the Athel Pine and Cypress are of low visual quality and will be replaced with new street and reserve tree plantings.

Darrell Kraehenbuehl assumes pre-European vegetation may have been:
- *E. porosa* - Open Woodland
- *Danthonia spp, Stipa spp - Herbland
- *E. camaldulensis - Woodland

These plant associations will form the basis of any native revegetation within St Clair, such as the Port Rail Corridor Linear Park.
06____Landscape

6.3 Landscape Types

The types of landscape will include:

Signature Trees
To create landmark entry points, important intersections, buildings, boulevards or features within the landscape, a signature tree species will be proposed.

The selected species will be distinctive in its form/foliage/flower, and able to be sourced in an advanced size. A consistency of use and location will be required to emphasise its ‘signature’ role.

Street Trees
Street trees assist in providing legibility and orientation through the development, and in the creation of attractive and pedestrian friendly streets.

Urban Planting
The urban planting palette for St Clair is a combination of native and exotic species to provide colour and interest across the development. The plant palette will include shade trees, low shrubs, ground covers and sedges/grasses.

Corridor Planting
Corridor planting supports the use of local native species, and the promotion of habitat creation and biodiversity throughout the development.

Wetland Planting
The palette of wetland species provide an important role in the overall stormwater master plan for the development, assisting in water quality treatment and protection of stormwater infrastructure.

6.4 Street Trees

Street tree species selection is based on the following considerations:

- Scale of street or open space
- Continuity and consistency along the street, i.e. avenue creation
- Diversity of species to promote individual street identity and ecological diversity
- Street orientation; north/south - deciduous, east/west - evergreen
- Mix of exotic and native species
- Tolerant of urban streetscape conditions

To ensure sustained growth and successful establishment of the street trees, the following measures will be considered:

- Tree pit preparation and planting technique, including soil type, amelioration and additives
- Protection from vandalism/accidental damage by builders
- Avoid compaction at the base of the tree
- Establish an appropriate irrigation program (recommended two summers minimum)
- Irrigation by recycled stormwater

Depending on the type of street, the density of tree planting and detailing of the verges will vary accordingly, however one street tree should be considered per allotment, and two street trees be allowed for larger frontages or side allotments.

Verges

The appearance of street verges will be considered in association with the street tree planting program.

Street trees and landscaped verges will have a significant impact in the presentation of each particular street, and contribute to the quality of the overall development.

Verges may be surfaced with decorative gravel fines, and some planting of low shrubs, ground covers or sedges around the base of each tree (refer Urban Plant List).
## 6.4 Street Trees

- **Botanic Name:** Fraxinus pennsylvanica 'Cimmzam'
  - **Common Name:** Cimmaron Ash
  - **Height x Width:** 11 x 8 m
  - **Location:** Minor Road

- **Botanic Name:** Pyrus calleryana 'Capital'
  - **Common Name:** Capital Pear
  - **Height x Width:** 11 x 4 m
  - **Location:** Minor Road

- **Botanic Name:** Lagerstroemia indica x L. fauriei 'Biloxi'
  - **Common Name:** Crepe Myrtle
  - **Height x Width:** 7 x 5 m
  - **Location:** Laneways

- **Botanic Name:** Koelreuteria paniculata
  - **Common Name:** Golden-rain Tree
  - **Height x Width:** 7-10 x 4-7 m
  - **Location:** Minor Road

- **Botanic Name:** Ulmus parvifolia 'Burnley select'
  - **Common Name:** Chinese Elm
  - **Height x Width:** 12 x 6 m
  - **Location:** Minor Road

- **Botanic Name:** Lagerstroemia fauriei 'Natchez'
  - **Common Name:** Crepe Myrtle
  - **Height x Width:** 7 x 5 m
  - **Location:** Laneways

- **Botanic Name:** Eucalyptus leucoxylon Megalocarpa
  - **Common Name:** Large Fruited SA Blue Gum
  - **Height x Width:** 4-8 x 5-9 m
  - **Location:** Minor Road

- **Botanic Name:** Cupaniopsis anacardioide
  - **Common Name:** Tuckeroo
  - **Height x Width:** 8-15 x 5-15 m
  - **Location:** Collector Road

- **Botanic Name:** Celtis australis
  - **Common Name:** European Nettle Tree
  - **Height x Width:** 12-15 x 5-8 m
  - **Location:** Collector Road

- **Botanic Name:** Koelreuteria paniculata
  - **Common Name:** Golden-rain Tree
  - **Height x Width:** 7-10 x 4-7 m
  - **Location:** Minor Road

- **Botanic Name:** Pistacia chinensis
  - **Common Name:** Chinese Pistachio
  - **Height x Width:** 8-10 x 6-10 m
  - **Location:** Minor Road

- **Botanic Name:** Koelreuteria paniculata
  - **Common Name:** Golden-rain Tree
  - **Height x Width:** 7-10 x 4-7 m
  - **Location:** Minor Road

- **Botanic Name:** Ipomoea x alba 'Silvio'
  - **Common Name:** Chinese Elm
  - **Height x Width:** 7 x 5 m
  - **Location:** Laneways

- **Botanic Name:** Lagerstroemia indica x L. fauriei 'Natchez'
  - **Common Name:** Crepe Myrtle
  - **Height x Width:** 7 x 5 m
  - **Location:** Laneways

- **Botanic Name:** Lagerstroemia indica s. L. fauriei 'Natchez'
  - **Common Name:** Crepe Myrtle
  - **Height x Width:** 7 x 5 m
  - **Location:** Laneways

- **Botanic Name:** Koelreuteria paniculata
  - **Common Name:** Golden-rain Tree
  - **Height x Width:** 7-10 x 4-7 m
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  - **Height x Width:** 7-10 x 4-7 m
  - **Location:** Minor Road

- **Botanic Name:** Koelreuteria paniculata
  - **Common Name:** Golden-rain Tree
  - **Height x Width:** 7-10 x 4-7 m
  - **Location:** Minor Road
6.5 Plant List - Urban Areas

The Urban plant list is a combination of native and drought tolerant species and contains a number of more colourful cultivars.

The plant list will be used for the majority of open space parks, entries, boulevards and other higher profile pedestrian locations through the development.

### Tree Planting

- **Reserve Trees**
  - *Brachychiton ‘Beau Bellies’*
  - *Celtis australis*
  - *Corymbia maculata*
  - *Cupaniopsis anacardioides*
  - *Eucalyptus leucoxylon*
  - *Fraxinus pennsylvanica ‘Cimmzam’*
  - *Gingko biloba*
  - *Gleditsia triacanthos (sterile)*
  - *Jacaranda mimosifolia*
  - *Lagerstroemia indica*
  - *Pistacia chinensis*
  - *Ulmus parvifolia ‘Todd’*

### Shrub Planting

- *Acacia cognata ‘Limelight’*
- *Acacia glaucoptera (shrub form)*
- *Acacia pravissima ‘Little Nugget’*
- *Acmena ‘Allyn Magic’*
- *Bankia blechnifolia*
- *Calytrix tetragona*
- *Carpobrotus rossii*
- *Correa ‘Dusky Bells’*
- *Correa ‘Ivy Bells’*
- *Correa ‘Marian’s Marvel’*
- *Correa glabra*
- *Correa pulchella*
- *Correa reflexa*
- *Correa reflexa ‘Fat Fred’*
- *Dodonaea viscosa spp. spathulata*
- *Eremophila glabra*
- *Eremophila glabra ‘Murchison River’*
- *Eremophila maculata*
- *Eremophila maculata ‘Aurea’*
- *Eremophila nivea*
- *Escallonia ‘Pink Pixie’*
- *Eutaxia obvata nana*
- *Grevillea obtusifolia*
- *Grevillea ‘Mt Tamboritha’*
- *Hardenbergia violacea (shrub form)*
- *Leucophyta brownii*
- *Limonium prezii*
- *Philotheca myroporoides*
- *Rhagodia spinescens var. deltophylla*
- *Westringia ‘Wynyabbie Gem’*
- *Westringia ‘Zena’*

### Groundcover Planting

- *Acacia glaucoptera (prostrate form)*
- *Carpobrotus rossii*
- *Eremophila glabra prostrate*
- *Goodenia amplexans*
- *Grevillea ‘Bronze Rambler’*
- *Grevillea longica ‘Mt Tamboritha’*
- *Grevillea obtusifolia (prostrate form)*
- *Hardenbergia violacea prostrate*
- *Myoporum parvifolium*

### Grasses and Sedges

- *Dianella caerulea ‘Cassa Blue’*
- *Dianella caerulea ‘Little Jess’*
- *Dianella tasmanica ‘Les Red’*
- *Ficinia nodosa*
- *Lomandra fluviatils ‘Shara’*
- *Lomandra longifolia ‘Patrus Deluxe’*
- *Lomandra longifolia ‘Tanika’*
- *Lomandra multiflora ssp. Dura*

### Groundcover Planting

- *Dianella caerulea ‘Cassa Blue’*
- *Dianella caerulea ‘Little Jess’*
- *Dianella tasmanica ‘Les Red’*
- *Ficinia nodosa*
- *Lomandra fluviatils ‘Shara’*
- *Lomandra longifolia ‘Patrus Deluxe’*
- *Lomandra longifolia ‘Tanika’*
- *Lomandra multiflora ssp. Dura*
### 06 Landscape

#### 6.6 Plant List - Revegetation Areas

This list identifies native plant associations that would have been common to the original Cheltenham region and suited to its climate and soil type. Where possible, local growers will be engaged to supply plants as required.

The plant list will be suited for use within the proposed landscape corridors, linear trails, wetlands and other more informal open spaces.

Use of local species within the open space network will help support biodiversity and habitat creation within the local area, without compromise to public use/safety (CPTED).

<table>
<thead>
<tr>
<th>Tree Planting</th>
<th>Shrub Planting</th>
<th>Groundcover Planting</th>
<th>Grasses and Sedges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocasuarina verticillata</td>
<td>Atriplex australisca</td>
<td>Acacia echinata var. echinata</td>
<td>Athrospodium sp.</td>
</tr>
<tr>
<td>Banksia marginata</td>
<td>Atriplex paludosa ssp. paludosa</td>
<td>Athrospodium strictum</td>
<td>Baumea juncea</td>
</tr>
<tr>
<td>Callitris preissii</td>
<td>Atriplex semibaccata</td>
<td>Atriplex suberecta</td>
<td>Carex bichoviania</td>
</tr>
<tr>
<td>Callistemon ‘Little John’</td>
<td>Callistemon</td>
<td>Boerhavia domini</td>
<td>Carex pumila</td>
</tr>
<tr>
<td>Eucalyptus camaldulensis</td>
<td>Calothamnus quadrifidus dwarf</td>
<td>Brachycome ciliaris var. ciliaris</td>
<td>Chloa tricolor</td>
</tr>
<tr>
<td>Eucalyptus leucoxylon</td>
<td>Correa alba</td>
<td>Brachycome perpusilla</td>
<td>Cymbopogon ambiguous</td>
</tr>
<tr>
<td>Eucalyptus microcarpa</td>
<td>Correa decumbens</td>
<td>Centella</td>
<td>Danthonia sp.</td>
</tr>
<tr>
<td>Eucalyptus porosa</td>
<td>Enchylaena tomentosa</td>
<td>Cotula australis</td>
<td>Dianella revoluta var. revoluta</td>
</tr>
<tr>
<td>Melaleuca lanceolata</td>
<td>Eucalyptus</td>
<td>Crassula decumbens var. decumbens</td>
<td>Eljymus scabrous var. scabrous</td>
</tr>
<tr>
<td>Pittosporum phylilaeoides</td>
<td>Grevillea lavandulacea</td>
<td>Drosera</td>
<td>Ficinia nodosa</td>
</tr>
<tr>
<td></td>
<td>Grevillea olivacea</td>
<td>Euphorbium bilanderianum</td>
<td>Juncus kraussii</td>
</tr>
<tr>
<td></td>
<td>Helichrysum apiculatum</td>
<td>Epilobium</td>
<td>Juncus pallidus</td>
</tr>
<tr>
<td></td>
<td>Leucophyta brownii</td>
<td>Epilobium bilanderianum ssp. bilanderianum</td>
<td>Lomandra densiflora</td>
</tr>
<tr>
<td></td>
<td>Lotus australis</td>
<td>Epilobium hirtigenum</td>
<td>Lomandra multiflora</td>
</tr>
<tr>
<td></td>
<td>Maireana aphylla</td>
<td>Geranium potentilloides var. potentilloides</td>
<td>Poa (bilanderia) var. bilanderia</td>
</tr>
<tr>
<td></td>
<td>Maireana brevifolia</td>
<td>Goodenia blackiana</td>
<td>Poa poiformis</td>
</tr>
<tr>
<td></td>
<td>Myoporum viscosum</td>
<td>Hardenbergia violacea (prostrate form)</td>
<td>Spinifex sericeus</td>
</tr>
<tr>
<td></td>
<td>Nitrania bilaraderi</td>
<td>Kennedia prostrata</td>
<td>Stipa flavesens</td>
</tr>
<tr>
<td></td>
<td>Olearia ramulosa</td>
<td>Senecio lautus</td>
<td>Stipa sp.</td>
</tr>
<tr>
<td></td>
<td>Pelargonium australe</td>
<td>Tetragonia implexicoma</td>
<td>Themeda triandra</td>
</tr>
<tr>
<td></td>
<td>Pimelea curviflora var. sericea</td>
<td>Vittadinia gracioliro</td>
<td>Xanthorrhoea sp.</td>
</tr>
<tr>
<td></td>
<td>Pimelea gauca</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pimelea stricta</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rhoagal pandaloviana</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rhododendron parabola</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scenedra crassifolia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sclerolaena munata var. villosa</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sclerolaena uniflora</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Senecio cunninghamii</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Threlkeldia diffusa</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vittadinia blacki</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vittadinia sp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Westringia fruticosa</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Working Document Only - Initial Concepts to Progress Final Design - To be revised on the basis of ongoing Community, Council and Designer Inputs**
6.7 Plant List - Littoral Zone

The wetlands systems proposed for the St Clair development will require particular species types to assist in the treatment of stormwater, the improvement of water quality and the protection of the stormwater infrastructure from erosion and blockage.

Riparian planting should consider ornamental wetland species to provide an appropriate presentation and integration with the surrounding open spaces, as well as allowing for interpretation/education and wetland biodiversity.

Tree Planting
- *Acacia retinodes* var. *retinodes*
- *Acacia stenophylla*
- *Callistemon salignum*
- *Casuarina cunninghamiana*
- *Eucalyptus camaldulensis*
- *Eucalyptus leucoxylon* ssp. *leucoxylon*
- *Melaleuca halmaturorum*

Shrub Planting
- *Callistemon ‘Little John’*
- *Correa pulchella*
- *Correa reflexa*
- *Thryptomene saxicola*

Groundcover Planting
- *Grevillea obtusifolia* (prostrate form)
- *Hardenbergia violacea* (prostrate form)
- *Myoporum parvifolium*
- *Marsilea drummondii*
- *Persicaria decipiens*
- *Ranunculus inundatus*

Grasses and Sedges (suited to ephemeral conditions)
- *Bolboschoenus caldwellii*
- *Carex bichenoiana*
- *Carex pumila*
- *Carex tereticaulis*
- *Cyperus gunni* ssp. *gunni*
- *Cyperus gymnocaulus*
- *Dianella caerulea ‘Cassa Blue’*
- *Dianella caerulea ‘Little Jess’*
- *Eleocharis sphacelata*
- *Ficinia marginata*
- *Ficinia nodosa*
- *Juncus bufonius*
- *Juncus kraussii*
- *Juncus patidus*
- *Lomandra fluviatilis ‘Sharra’*
- *Lomandra longifolia ‘Katrinaus Deluxe’*
- *Lomandra longifolia ‘Tanika’*
- *Lomandra multiflora* ssp. *Dura*
- *Poa labillardieri var. labillardieri*
- *Poa pfolmis*
- *Schoenoplectus pungens*
- *Schoenoplectus validus*
6.8 Irrigation

Across the St Clair development, automatic irrigation systems will be installed to service each open space. As part of the detail design of each open space, an irrigation design will be completed that responds to Council’s preference for the following:

- All planting beds to have individual drippers installed to each individual plant
- Subsurface irrigation systems installed to all turfed areas, with the exception of sportsgrounds
- Separate drip irrigation to all tree planting
- Lilac-pipe watering system for all street trees

The aim of the development is to become self-sufficient in its demand for irrigation water by constructing a series of stormwater wetlands and ASR system that will provide all open spaces with recycled water.

Irrigation of all verges and laneways by the residents will be actively encouraged. It is envisaged that a “welcome pack” (provided to all new homeowners) will describe the benefits of recycling grey water on street trees.

All irrigation systems shall be connected to Council’s centralised controller system.

6.9 Soils

The existing soils at St Clair are typical of Adelaide Plains Red Brown Earths. They are comprised of shallow brown silty sand top soil, 100-300 mm deep overlying brown and red brown clay and silty clay of medium to high plasticity.

The Cheltenham racecourse has been topped with imported sandy material that will be harvested for use in reserves as needed to enhance the existing top soil.

Recommendations for amelioration within the open space network will be carried out as part of the civil/landscape scope of works.

Soil amelioration will improve the quality of the soils, assisting the establishment of the landscape and improve the longevity of plantings.

The program of soil amelioration will be provided to Council for review and approval.
07__MAINTENANCE
07 Maintenance

7.1 Introduction

The St Clair development will include a range of open spaces that will initially be the responsibility of the Joint Venture, however will ultimately be handed over to the City of Charles Sturt for their long term upkeep.

The range of open space types will include:

- Feature landscape areas (entry statements and main boulevards)
- Open space reserves
- Grassed areas
- Street tree planting
- Irrigation systems
- ASR system
- Wetlands
- Footpaths
- Play equipment
- Outdoor furniture and signage

Maintenance will be considered in the design and detail of the public realm, including the selection of materials and finishes, to ensure that maintenance can be sustained for the long term.

In accordance with the City of Charles Sturt Open Space Strategy, the maintenance objectives for St Clair include:

- Maintaining an attractive, healthy and clean environment
- Encouraging ongoing use of open spaces
- Providing effective upkeep (good working order) of all introduced elements (long term - Council assets)
- Complying with all regulatory and statutory obligations
- Maintaining healthy growth through good horticultural practices
- Promoting sustainable maintenance practices, including minimising waste through recycling and reuse
- Monitoring irrigation requirements and engaging in responsive practices to conserve water use

Wetland maintenance will be set out in an agreement to be undertaken by the key stakeholders.

7.2 Handover

SJ/V will have a standard maintenance period of one year for all new landscape works, unless, by mutual agreement between Council and the JV, the period is extended.

The St Clair Joint Venture may choose to continue the maintenance of some high profile open spaces beyond the minimum requirements, subject to Council approval.

To ensure continuity in maintenance standards and to avoid creating unrealistic long term expectations, it is important that the standard of maintenance by the Joint Venture is appropriate to the guidelines set by Council.

The table opposite is a summary of Council's standards and guidelines for maintenance appropriate to the classification of open space. The guidelines form a basis for the standard of maintenance proposed by the Joint Venture.
## Maintenance

<table>
<thead>
<tr>
<th>Open Space Type</th>
<th>Maintenance Standard</th>
<th>Maintenance Guidelines</th>
</tr>
</thead>
</table>
| Regional Park                   | High quality, with the capacity to cater for large numbers of users | - Irrigated areas to be mown on a regular basis and to a high standard (regularity to depend on growth conditions)  
- Garden beds to be maintained to a good standard  
- Non-irrigated areas to be maintained to a safe and appealing standard  
- Any structures or amenities, such as toilet facilities, picnic and barbecue areas, playgrounds, seating, shelters and pathways to be maintained to a high standard and in accordance with Australian Standards, Industry Standards and best practice |
| District Park                   | Good quality         | - Irrigated areas to be mown on a regular basis and to a good standard (regularity to depend on growth conditions)  
- Garden beds to be maintained to a safe and appealing standard  
- Any structures or amenities, such as toilet facilities, picnic and barbecue areas, playgrounds, seating, shelters and pathways to be maintained to a good standard and in accordance with Australian Standards, Industry Standards and best practice |
| Neighbourhood Park              | Safe and appealing quality | - Irrigated areas to be mown on a regular basis and to a safe and appealing standard (regularity to depend on growth conditions)  
- Garden beds to be maintained to a safe and appealing standard  
- Any structures or amenities, such as toilet facilities, picnic and barbecue areas, playgrounds, seating, shelters and pathways to be maintained to a safe and appealing standard and in accordance with Australian Standards, Industry Standards and best practice |
| Local Park                      | Safe and appealing quality, although some lower use/less developed parks will require less maintenance | - Irrigated areas to be mown on a regular basis and to a safe and appealing standard (regularity to depend on growth conditions)  
- Garden beds to be maintained to a safe and appealing standard  
- Any structures or amenities, such as toilet facilities, picnic and barbecue areas, playgrounds, seating, shelters and pathways to be maintained to a safe and appealing standard and in accordance with Australian Standards, Industry Standards and best practice |
| Natural Area Wetland/Watercourse| Generally good quality although some settings and locations could justify higher quality | - Non-irrigated areas to be maintained to a good standard to maintain a quality ecosystem and a safe setting  
- Aquatic environments to be maintained to a good standard to maintain a quality ecosystem and a safe setting. |
| Linear Parks and Corridors      | Quality will vary depending on the topography, location and related facilities and open space | - Irrigated areas to be mown to a safe and appealing standard as a minimum. Some areas will justify a higher standard (regularity to depend on growth conditions)  
- Any structures or amenities, such as toilet facilities, picnic and barbecue areas, playgrounds, seating, shelters and pathways to be maintained to a safe and appealing standard as a minimum and in accordance with Australian Standards |
| Streetscapes and Verges         | Quality will depend on the type and use of the street | - Quality will depend on the type and use of the street: Arterial roads should be of a high quality; Major collector roads should be of a high quality; Minor collector roads should be of a good quality; and Access streets should be of a safe and appealing quality  
- Trees to be maintained to Australian Standard 4737/2007 |
### 7.3 Maintenance Specification

Further to the broad standards and guidelines set by Council for the maintenance of the open space, the following table describes the typical maintenance specification that will be used for all landscape works throughout St Clair. The scope of works is indicative and a detailed specification will be developed to suit the requirements of each open space.

Irrigation of all spaces to be in line with current Local Government Water Restrictions and in accordance with the Code of Practice for Irrigated Public Open Space (IPGS).

#### Maintenance Method and Frequency

<table>
<thead>
<tr>
<th>Item</th>
<th>Aim</th>
<th>Inspection Method and Frequency</th>
<th>Maintenance Method and Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Soft Landscape Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Watering</td>
<td>To maintain active healthy growth of all plant materials.</td>
<td>Visual - weekly</td>
<td>• Apply appropriate amount of water to surrounding soil to maintain healthy and vigorous growth to all plant materials.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Ensure no visible signs of wilting leaves or stems.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Ensure all plants fully turgid at all times.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Ensure no signs of over watering such as constantly wet soil, brown leaf margin, stem rot or brown sports on foliage.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• All watering is to be undertaken in accordance with the requirements of relevant water authority.</td>
</tr>
<tr>
<td>(b) Weed Control</td>
<td>To maintain garden beds and individual tree planting from weeds.</td>
<td>Visual - monthly</td>
<td>• No weed infestation garden beds.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• No weeds within 600mm diameter around individual tree plantings or within tree guards.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Monthly rectification as necessary.</td>
</tr>
<tr>
<td>(c) Plant Replacement</td>
<td>To maintain planting areas free from failed plants and gaps.</td>
<td>Visual - monthly</td>
<td>• Failed plants replaced within 1 (one) week of failure.</td>
</tr>
<tr>
<td>(d) Fertilising</td>
<td>To maintain in healthy growing conditions.</td>
<td>Visual - monthly</td>
<td>• Foliage healthy, with no symptoms of nutrient deficiencies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Plants shown signs of active growth, appropriate to the season.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Application in September/October and February.</td>
</tr>
<tr>
<td>(e) Pruning</td>
<td>To maintain dense foliage and even crown shape.</td>
<td>Visual - fortnightly</td>
<td>• Remove damaged or vandalised material and encourage appropriate growth habit.</td>
</tr>
<tr>
<td>(f) Disease and pest control</td>
<td>To maintain plants free of pest and disease.</td>
<td>Visual - fortnightly</td>
<td>• No visible signs of pests or disease or effects thereof. Fortnightly rectification as necessary.</td>
</tr>
<tr>
<td><strong>Hard Landscape Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(g) Organic/Inorganic Mulch</td>
<td>To maintain a supply of mulch material to the soil.</td>
<td>Visual - monthly</td>
<td>• Retain mulch to specified depths and finishes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Top-up garden mulch identical to mulch as in place at commencement of contract.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Mulch maintained neatly within garden bed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Minimum monthly tidy.</td>
</tr>
<tr>
<td>(h) Grassing</td>
<td>To maintain grassed areas in a neat and tidy condition</td>
<td>Visual – fortnightly</td>
<td></td>
</tr>
<tr>
<td>(i) Staking and Tree Guards</td>
<td>To maintain active plant growth.</td>
<td>Visual – fortnightly</td>
<td>• Existing staking maintained plumb until trees become self-supporting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Plant ties maintained sufficiently taut to support the plant while allowing a reasonable degree of movement and normal plant growth.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Replacement plants stakes, painted and tied as scheduled.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Stakes removed from trees when they become established.</td>
</tr>
<tr>
<td>(j) Erosion Control Mat</td>
<td>Erosion control.</td>
<td>Visual – weekly</td>
<td>• Maintain erosion control matting by checking, firming and re-securing as required.</td>
</tr>
<tr>
<td>(k) Crushed Rock and Pebble Areas</td>
<td>To maintain a supply of gravel and pebble material.</td>
<td>Visual – monthly</td>
<td>• Retain gravel and pebble material to specified depths and finishes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Top-up gravel and pebble material identical to material as in place at commencement of contract.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Gravel and pebble material to be maintained neatly within garden bed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Minimum monthly tidy.</td>
</tr>
<tr>
<td>(l) Footings and Pavements</td>
<td>To maintain in a clean and safe order.</td>
<td>Visual – weekly</td>
<td>• Cleaning, graffiti and glass removal, repairs as required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Movement, cracking and failure to be repaired within twelve hours of notification.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Any major defects or hazards (e.g. structural failings, safety hazards) which cannot be rectified immediately the Contractor must make the area safe and immediately report the defect or hazard to Superintendent.</td>
</tr>
</tbody>
</table>
07 Maintenance

Hard Landscape Maintenance - continued

<table>
<thead>
<tr>
<th>Item</th>
<th>Aim</th>
<th>Inspection Method and Frequency</th>
<th>Maintenance Method and Frequency</th>
</tr>
</thead>
</table>
| **(m) Walls (including Natural Stone Wall and Rock Clad Concrete Walls)** | To maintain furniture in a safe and functional condition. | Visual – fortnightly | • Keep all walls free of vegetation, posters, graffiti or other material that detracts from presentation of functionality.  
• Re-pack top face of gabion walls with rocks as specified to maintain flat top.  
• Action immediately upon detection.  
• Movement, cracking and failure to be repaired within twelve hours of notification.  
• Any major defects or hazards (e.g. structural failings, safety hazards) which cannot be rectified immediately the Contractor must make the area safe and immediately report the defect or hazard to Superintendent. |
| **(n) Rockwork (including boulders and edge rock)** | To maintain rockwork in a safe and functional condition. | Visual – fortnightly | • Graffiti removal.  
• Re-bed, stabilise and replace rocks as required to ensure safe and functional within twelve hours of notification.  
• Backfill and plug gaps between rocks as required to ensure no erosion.  
• Action immediately upon detection.  
• Any major defects or hazards (e.g. structural failings, safety hazards) which cannot be rectified immediately the Contractor must make the area safe and immediately report the defect or hazard to Superintendent. |
| **(o) Furniture, Bollards and Fencing including TPZ (Tree Protection Zone) Fencing** | To maintain furniture, fencing and bollards in a safe and functional condition. | Visual – weekly | • Keep all furniture, fencing and bollards in a safe and useable condition free of vegetation, posters, graffiti or other material that detracts from presentation of functionality.  
• Where repairs cannot return equipment to its original function, the Contractor shall immediately notify the Superintendent.  
• Routine minor repairs including re-tensioning fencing wires, replacing signs on TPZ fencing, tightening any loose bolts or fittings. |

Hard Landscape Maintenance - continued

| (o) Furniture, Bollards and Fencing including TPZ (Tree Protection Zone) Fencing | To control silt and debris build up in wetland until planting is established | As required during construction and once during maintenance period, confirmed by superintendent |
| | | • Concrete aprons are to be kept in a clean and safe condition. Any holes or cracks or lifting of the path are to be repaired immediately. Paths are to be swept as required and any glass cleared within twelve hours of detection.  
• Ensure removal bollards replaced and padlocked immediately following removal.  
• Any major defects or hazards (e.g. structural failings, safety hazards) which cannot be rectified immediately the Contractor must make the area safe and immediately report the defect or hazard to Superintendent.  
• Remove plant material, debris and rubbish within the TPZ area plus a 2 meter radius. Action immediately on detection.  
• Maintain TPZ thought contract period. Remove TPZ fencing at end of maintenance only as instructed in writing by Superintendent. |

<p>| (p) Wetland | To control silt and debris build up in wetland until planting is established | As required during construction and once during maintenance period, confirmed by superintendent |
| | | • Remove excess silt and debris along wetland and drainage zone. |</p>
<table>
<thead>
<tr>
<th>Paving</th>
<th>Location</th>
<th>Specification</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Exposed Aggregate Insitu Concrete</td>
<td>To be used as primary paving material for street footpaths, shared-use paths and pathways within the open space network and small areas for pedestrian gathering</td>
<td>Supplier: Hanson or similar. Construction: Reinforced concrete, 100 mm quarry rubble sub-base compacted to 98% M.D.D. (Modified), sub-grade compacted to 95% MDD (Standard). Finish: Hanson ‘Exposemasta’. Colour: ‘Kimberley’.</td>
<td><img src="image" alt="Exposed Aggregate Insitu Concrete Example" /></td>
</tr>
<tr>
<td>03 Concrete Unit Pavers</td>
<td>To be used to mark entries, plazas and other gathering areas within the public realm</td>
<td>Supplier: Urbanstone, Best or similar. Dimension: 400 x 400 x 60 mm pavers. Construction: 100 mm quarry rubble sub-base compacted to 98% MDD (Modified), sub-grade compacted to 95% MDD (Standard). Finish: New Yorker (colour). Colour: Charcoal.</td>
<td><img src="image" alt="Concrete Unit Pavers Example" /></td>
</tr>
<tr>
<td>04 Interlocking Concrete Unit Pavers</td>
<td>To be used at street and lane junctions and driveway crossovers</td>
<td>Supplier: Boral or similar. Dimension: ‘Interpave’ 80 mm thick pavers. Construction: 100 mm quarry rubble sub-base compacted to 98% MDD (Modified), sub-grade compacted to 95% MDD (Standard, with Boral ‘Trupave’ 80 mm thick header course). Finish: Natural (colour).</td>
<td><img src="image" alt="Interlocking Concrete Unit Pavers Example" /></td>
</tr>
<tr>
<td>05 Banding</td>
<td>Alternating materials, colour and finishes may be used to highlight and articulate particular locations, or assist in breaking up large areas of paving</td>
<td>Products suited for use as banding may include: 150/200 mm cut Kanmantoo stone (35 mm depth), 200 mm Urbanstone pavers (honed/shot blasted) with contrasting colours, Coloured concrete, 220 x 110 mm precast concrete pavers (header course), Saw cutting of insitu concrete.</td>
<td><img src="image" alt="Banding Example" /></td>
</tr>
<tr>
<td>Paving</td>
<td>Location</td>
<td>Specification</td>
<td>Example</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------</td>
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<td>---------</td>
</tr>
</tbody>
</table>
| 06 Ornamental Gravel      | To be used as primary paving material for street verges, informal pathways and small informal gathering areas within the parks   | Supplier: Stonefield Fines  
Dimension: 75 mm compacted depth  
Construction: laid on sub-grade compacted to 95% MDD (Standard)  
Finish: Cream/red colour                                                                                                                                                                                                                                                   |         |
| 07 Timber Decking         | To be used for boardwalks and viewing platforms within the wetland system | Supplier: Hardwood timber Decking  
Dimension: 35 mm thickness (pedestrian)/45 mm thickness (vehicle)  
Construction: Engineer certified framing (steel/timber)  
Finish: Natural/rough sawn                                                                                                                                                                                                                                                   |         |
| 08 Rubber Safety Surfacing| To be used in playground settings                                         | Supplier: Safety Surface Solutions or similar  
Dimension: Minimum depth as specified by equipment manufacturer (free fall height)  
Construction: 100 mm quarry rubble sub-base compacted to 98% MDD (Modified), sub-grade compacted to 95% M.D.D. (Standard, with Boral ‘Trupave’ 80 mm thick header course)  
Finish: Variety of colours to enhance children’s play experience                                                                                                                                                                                                         |         |
| 09 Bitumen/Hotmix          | To be used for secondary paths and shared use pedestrian/cycle paths      | Supplier: Safety Surface Solutions or similar  
Dimension: AC 7 - AC 10 (smooth finish/small aggregate)  
Construction: 100 mm quarry rubble sub-base compacted to 98% MDD (Modified), sub-grade compacted to 95% MDD - steel/timber edging  
Finish: Smooth finish, with appropriate line marking/signage as required                                                                                                                                                                                                   |         |
<table>
<thead>
<tr>
<th>Street Furniture</th>
<th>Location</th>
<th>Specification</th>
<th>Example</th>
</tr>
</thead>
</table>
| **01 Seat** | To be included within all open spaces, along pathways, at entries or combined with other park facilities including barbecue, picnic settings and play settings, or strategic locations associated with recreation/sport | Supplier: Street Furniture Australia or similar  
Model: Eco-Seat CMM104 - neo seat with armrests and pedestal legs  
Finish: Upper support and legs painted Deep Ocean  
Fixing: Subsurface | ![Seat Image] |
| **02 Bin** | To be included within all major open spaces, along pathways, at entries or combined with other park facilities including barbecue, picnic settings and play settings  
Location of bins should consider Council maintenance access requirements | Supplier: Street Furniture Australia or similar  
Model: WBE-AP-140K with/without angle roof and hole perforations  
Dimension: To contain standard Council 120 litre bin  
Finish: Roof and frame finished stainless steel  
Colour: Panel powdercoated Deep Ocean  
Fixing: Surface | ![Bin Image] |
| **03 Picnic Setting** | To be included within all major open spaces, located in conjunction with shelters or shade  
Picnic settings should be combined with other park facilities including barbecue, bins, play settings | Supplier: Street Furniture Australia or similar  
Model: Eco-Table CMM608 - neo table with bench  
Finish: Upper support and legs painted Deep Ocean  
Fixing: Subsurface | ![Picnic Setting Image] |
| **04 Bike Rack** | To be included in all major pedestrian gathering areas, or strategic locations associated with recreation/sport | Supplier: Street and Park Furniture or similar  
Model: 'Shoreline' bike rack  
Finish: Brushed  
Fixing: Subsurface | ![Bike Rack Image] |
### Street Furniture

<table>
<thead>
<tr>
<th><strong>Location</strong></th>
<th><strong>Specification</strong></th>
<th><strong>Example</strong></th>
</tr>
</thead>
</table>
| **05** Bollard | _Where required to assist in traffic management and controlled vehicle access in high profile areas such as the shopping precinct_ | High Profile Locations:  
Supplier: Street and Park Furniture or similar  
Model: 'Senate' stainless steel bollard  
Finish: Stainless Steel  
Fixing: Subsurface  

Other Locations:  
Supplier: Street and Park Furniture or similar  
Model: 120 x 120 hardwood timber bollards (seasoned)  
Finish: Natural stain with steel capping  
Fixing: Subsurface | ![Bollard Example](image) |
| **06** Drinking Fountain | _Limited locations, in specific pedestrian gathering areas, or strategic locations associated with recreation/sport in accordance with AS1428.2_ | Supplier: Street Furniture Australia  
Model: 'Arqua' Drinking Fountain  
Finish: Powdercoat  
Fixing: Subsurface | ![Drinking Fountain Example](image) |
| **07** Fencing | _If required, in locations to ensure greater public safety, including surrounding playgrounds, culverts/headwalls, public spaces adjacent high traffic areas_ | Supplier: A.R.C. Fencing or similar  
Model: 'Bass' 16/19 mm vertical tube  
Fixing: Subsurface  
Finish: Powdercoat ‘Deep Ocean’ | ![Fencing Example](image) |
| **08** Designer Seating | _Limited locations in specific high profile pedestrian gathering areas_ | _Furniture selection may be from a catalogue, or a public/community art opportunity_  
_Furniture design must comply with council standards_ | ![Designer Seating Example](image) |
<table>
<thead>
<tr>
<th>Lighting</th>
<th>Location</th>
<th>Specification</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>09 Street lighting</td>
<td>Use along all streets, excluding laneways</td>
<td>Supplier: Sylvania or similar&lt;br&gt;Lamp Type: Elipt&lt;br&gt;Fitting: 6.0 / 9.0 m standard ETSA pole&lt;br&gt;Colour: Powdercoat (Black)</td>
<td></td>
</tr>
<tr>
<td>10 Pedestrian/Laneway Lighting</td>
<td>Use along laneways and within high profile pedestrian areas</td>
<td>Supplier: Sylvania or similar&lt;br&gt;Lamp Type: Elipt&lt;br&gt;Fitting: 4.5 / 6.0 m tapered pole&lt;br&gt;Colour: Powdercoat (Black)</td>
<td></td>
</tr>
<tr>
<td>11 Up-lighting Type 1</td>
<td>To highlight and accent landscape features, including existing trees, entry walls and other elements&lt;br&gt;Lighting over 3.0 m height</td>
<td>Supplier: BEGA 8586 1 HI/HST-DE 70 W or similar&lt;br&gt;Lamp Type: 70 W Floodlight (55/88° beam angle)&lt;br&gt;Fitting: G ½ mounting bush (permanent)&lt;br&gt;Cage required&lt;brColour: Powdercoat (Black standard colour)</td>
<td></td>
</tr>
<tr>
<td>12 Up-lighting Type 2</td>
<td>To highlight and accent landscape features, including public art, entry walls, shelters and other elements&lt;br&gt;Lighting below 3.0 m height</td>
<td>Supplier: Thorn ‘MICA Slim’ or similar&lt;br&gt;Lamp Type: LED QR 20/35 W HIT-TC-CE&lt;br&gt;Fitting: In-ground, flush mounted&lt;br&gt;Colour: Stainless Steel</td>
<td></td>
</tr>
</tbody>
</table>
### Capability / Experience Matrix

<table>
<thead>
<tr>
<th>Precinct 1 – Woodville</th>
<th>Area</th>
<th>Standard of Provision</th>
<th>Proposed Development</th>
</tr>
</thead>
</table>
| **Reserve 1 - Local Park**   | 0.76 ha    | Safe and appealing quality | _Trees and landscaping_  
                             |                        |  
                             |                        | _Some irrigated grassed areas_  
                             |                        |  
                             |                        | _Seating_  
                             |                        |  
                             |                        | _Walking tracks/pathways_  
                             |                        |  
                             |                        | _Drinking fountain_  
                             |                        |  
                             |                        | _Signage_ |
|                        |            |                        | **Construction Commencement**: Jan/Feb 2010  
                             |            |                        | **Budget (ex GST)**: $270,000 |
| **Reserve 2 - Local Park**   | 0.049 ha    | Safe and appealing quality | _Trees and landscaping_  
                             |                        |  
                             |                        | _Some irrigated grassed areas_  
                             |                        |  
                             |                        | _Seating_  
                             |                        |  
                             |                        | _Walking tracks/pathways_  
                             |                        |  
                             |                        | _Drinking fountain_  
                             |                        |  
                             |                        | _Signage_ |
|                        |            |                        | **Construction Commencement**: June 2010  
                             |            |                        | **Budget (ex GST)**: $35,000 |
| **Reserve 3 - Local Park**   | 0.015 ha    | Safe and appealing quality | _Trees and landscaping_  
                             |                        |  
                             |                        | _Some irrigated grassed areas_  
                             |                        |  
                             |                        | _Seating_  
                             |                        |  
                             |                        | _Walking tracks/pathways_  
                             |                        |  
                             |                        | _Drinking fountain_  
                             |                        |  
                             |                        | _Signage_ |
|                        |            |                        | **Construction Commencement**: June 2010  
                             |            |                        | **Budget (ex GST)**: $25,000 |
| **Reserve 4 - Local Park**   | 0.15 ha     | Safe and appealing quality | _Trees and landscaping_  
                             |                        |  
                             |                        | _Some irrigated grassed areas_  
                             |                        |  
                             |                        | _Seating_  
                             |                        |  
                             |                        | _Walking tracks/pathways_  
                             |                        |  
                             |                        | _Drinking fountain_  
                             |                        |  
                             |                        | _Signage_ |
|                        |            |                        | **Construction Commencement**: Jan/Feb 2010  
                             |            |                        | **Budget (ex GST)**: $5,600 |
| **Reserve 5 - District Sportsground** | 3.97 ha | Good quality, capacity to support higher level competition | _Good standard ovals/fields (mown regularly and good surface)_  
                             |                        |  
                             |                        | _Irrigation and drainage_  
                             |                        |  
                             |                        | _Support structures relating to the sport, e.g. cricket nets or training fields_  
                             |                        |  
                             |                        | _Toilet facilities_  
                             |                        |  
                             |                        | _Change rooms linked to club facility_  
                             |                        |  
                             |                        | _Sports lighting_  
                             |                        |  
                             |                        | _Seating_  
                             |                        |  
                             |                        | _Landscaping and shade_  
                             |                        |  
                             |                        | _Pathways to and around the ground_  
                             |                        |  
                             |                        | _Signage_  
<p>| |
|                        |<br />
|                        | <em>On-site car parking including disability car parking</em> |</p>
<table>
<thead>
<tr>
<th>Precinct 1 - Cheltenham</th>
<th>Area</th>
<th>Standard of Provision</th>
<th>Proposed Development</th>
<th>Construction Commencement</th>
<th>Budget (ex GST)</th>
</tr>
</thead>
</table>
| Reserve 1 - District Sportsground | 2.51 ha  | Good quality, capacity to support higher level competition                               | Good standard ovals/fields (mown regularly and good surface)  
Irrigation and drainage  
Support structures relating to the sport, e.g. cricket nets or training fields  
Seating  
Landscaping and shade  
Pathways to and around the ground  
Signage  
On-site car parking including disability car parking | S            | S                                          |
| Reserve 2 - Local Park   | 0.08 ha  | Safe and appealing quality                                                               | Trees and landscaping  
Some irrigated grassed areas  
Seating  
Walking tracks/pathways  
Drinking fountain  
Signage | S            | S                                          |
| Reserve 3 - Linear Park  | 0.56 ha  | Safe and appealing quality                                                               | Trees and landscaping  
Walking track/pathway  
Cycle track  
Seating  
Shelter  
Playground  
Signage and interpretation  
Links to other open space or community facilities | G            | G                                          |
| Reserve 4 - Neighbourhood Park | 0.91 ha  | Safe and appealing quality                                                               | Trees and landscaping  
Irrigated grassed areas  
Seating  
Walking tracks/pathways  
Drinking fountains  
Signage  
Public Artwork  
Pathways to the park | S            | S                                          |
<table>
<thead>
<tr>
<th>Precinct 2 - Cheltenham</th>
<th>Area</th>
<th>Standard of Provision</th>
<th>Proposed Development</th>
<th>Construction Commencement</th>
<th>Budget (ex GST)</th>
</tr>
</thead>
</table>
| Reserve 1 - Neighbourhood Park (CP 2 - 1) | 0.50 ha | Safe and appealing quality | _Trees and landscaping_  
  _Irrigated grassed areas_  
  _Seating_  
  _Walking tracks/pathways_  
  _Playground_  
  _Drinking fountains_  
  _Signage_  
  _Public Artwork_  
  _Paths to the park_ | | G |
| Reserve 2 - Linear Park | 0.62 ha | Safe and appealing quality | _Trees and landscaping_  
  _Walking track/pathway_  
  _Cycle track_  
  _Seating_  
  _Shelter_  
  _Signage and interpretation_  
  _Links to other open space or community facilities_ | | S |
| Reserve 3 - Wetland | 4.10 Ha | Good quality | _Trees and landscaping_  
  _Irrigated grassed areas_  
  _Walking tracks/pathways_  
  _Seating and tables_  
  _Shelter_  
  _Drinking fountains_  
  _Natural or constructed water feature, e.g. creek or wetland_  
  _Walking track/pathway_  
  _Signage and interpretation_ | | G |
| Reserve 4 - Local Park | 0.23 ha | Safe and appealing quality | _Trees and landscaping_  
  _Some irrigated grassed areas_  
  _Seating_  
  _Walking tracks/pathways_  
  _Drinking fountain_  
  _Signage_ | | S |
<table>
<thead>
<tr>
<th>Precinct 3 - Cheltenham</th>
<th>Area</th>
<th>Standard of Provision</th>
<th>Proposed Development</th>
<th>Construction Commencement</th>
<th>Budget (ex GST)</th>
</tr>
</thead>
</table>
| Reserve 1 - Local Park | 0.11 ha    | Safe and appealing quality | _Trees and landscaping  
_Some irrigated grassed areas  
_Seating  
_Walking tracks/pathways  
_Playground (not all local parks)  
_Drinking fountain  
_Signage |                           | G                |
| Reserve 2 - Local Park | 0.06 ha    | Safe and appealing quality | _Trees and landscaping  
_Some irrigated grassed areas  
_Seating  
_Walking tracks/pathways  
_Playground (not all local parks)  
_Drinking fountain  
_Signage |                           | S                |
| Reserve 3 - Linear Park | 0.80 ha    | Safe and appealing quality | _Trees and landscaping  
_Walking track/pathway  
_Cycle track  
_Seating  
_Shelter  
_Playground (possibly as part of a local or neighbourhood park linked to the corridor/linear park)  
_Lighting  
_Signage and interpretation  
_Links to other open space or community facilities |                           | S                |
| Reserve 4 - Neighbourhood Park | 0.71 ha | Safe and appealing quality | _Trees and landscaping  
_Irrigated grassed areas  
_Seating  
_Walking tracks/pathways  
_Playground  
_Drinking fountains  
_Security lighting  
_Signage  
_Public artwork  
_Pathways to the park |                           | G                |
| Reserve 5 - Local Park | 0.07 ha    | Safe and appealing quality | _Trees and landscaping  
_Some irrigated grassed areas  
_Seating  
_Walking tracks/pathways  
_Playground (not all local parks)  
_Drinking fountain  
_Signage |                           | G                |
<table>
<thead>
<tr>
<th>Precinct 4 - Cheltenham</th>
<th>Area</th>
<th>Standard of Provision</th>
<th>Proposed Development</th>
<th>Construction Commencement</th>
<th>Budget (ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserve 1 - Neighbourhood Park (CP 4 - 1)</td>
<td>0.31 ha</td>
<td>Safe and appealing quality</td>
<td>Trees and landscaping, Irrigated grassed areas, Seating, Walking tracks/pathways, Playground, Drinking fountains, Signage, Public artwork, Pathways to the park</td>
<td>G</td>
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</tr>
<tr>
<td>Reserve 2 - Corridor (CP 4 - 2)</td>
<td>0.23 ha</td>
<td>Safe and appealing quality</td>
<td>Trees and landscaping, Walking track/pathway, Cycle track, Seating, Shelter, Signage and interpretation, Links to other open space or community facilities</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Reserve 3 - Wetland (CP 4 - 3)</td>
<td>1.50 ha</td>
<td>Safe and appealing quality</td>
<td>Trees and landscaping, Irrigated grassed areas, Walking tracks/pathways, Seating and tables, Shelter, Drinking fountains, Natural or constructed water feature, e.g. creek or wetland, Walking track/pathway, Signage and interpretation</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Reserve 4 - Local Park (CP 4 - 4)</td>
<td>0.07 ha</td>
<td>Safe and appealing quality</td>
<td>Trees and landscaping, Some irrigated grassed areas, Seating, Walking tracks/pathways, Drinking fountain, Signage</td>
<td>G</td>
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<tr>
<td>Precinct 4 - Cheltenham</td>
<td>Area</td>
<td>Standard of Provision</td>
<td>Proposed Development</td>
<td>Construction Commencement</td>
<td>Budget (ex GST)</td>
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<tr>
<td>Reserve 5 - Wetland</td>
<td>0.31 ha</td>
<td>Good Quality</td>
<td>_Trees and landscaping&lt;br&gt; _Irrigated grassed areas&lt;br&gt; _Walking tracks/pathways&lt;br&gt; _Seating and tables&lt;br&gt; _Shelter&lt;br&gt; _Drinking fountains&lt;br&gt; _Natural or constructed water feature, e.g. creek or wetland&lt;br&gt; _Walking track/pathway&lt;br&gt; _Signage and interpretation</td>
<td>G</td>
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</tr>
<tr>
<td>Reserve 6 - Regional Park</td>
<td>0.78 ha</td>
<td>High quality, with the capacity to cater for large numbers of users</td>
<td>_Trees and landscaping (possibly including more formal gardens)&lt;br&gt; _Picnic areas (including barbecue facilities)&lt;br&gt; _Seating and tables&lt;br&gt; _Shelters&lt;br&gt; _Walking tracks/pathways&lt;br&gt; _Cycle tracks&lt;br&gt; _High standard or unique playground (including potential to cater for children and carers with a disability and the visually impaired)&lt;br&gt; _Water or natural features&lt;br&gt; _Drinking fountains&lt;br&gt; _Signage and interpretation</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Reserve 7 - Wetland</td>
<td>3.05 ha</td>
<td>Good quality</td>
<td>_Trees and landscaping&lt;br&gt; _Irrigated grassed areas&lt;br&gt; _Walking tracks/pathways&lt;br&gt; _Seating and tables&lt;br&gt; _Shelter&lt;br&gt; _Drinking fountains&lt;br&gt; _Natural or constructed water feature, e.g. creek or wetland&lt;br&gt; _Walking track/pathway&lt;br&gt; _Signage and interpretation</td>
<td>G</td>
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Precinct 5 - Cheltenham contains no open spaces